Commanding Officer
Navy Center for Tactical Systems Interoperability
53690 Tomahawk Drive, Suite A125
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OPERATIONAL SPECIFICATION

FOR OVER-THE-HORIZON TARGETING GOLD

REVISION C

CHANGE 2

OS-OTG (Rev C) (Ch 2)

PUBLISHED UNDER THE DIRECTION OF CNO (N62)

by

NAVY CENTER FOR TACTICAL SYSTEMS INTEROPERABILITY

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DEPARTMENT OF THE NAVY
NAVY CENTER FOR TACTICAL SYSTEMS INTEROPERABILITY
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IN REPLY REFER TO:
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From: Commanding Officer, Navy Center for Tactical Systems Interoperability

Subj: PROMULGATION OF OPERATIONAL SPECIFICATION FOR OVER-THE-HORIZON TARGETING GOLD (OS-OTG), REVISION C, CHANGE 2

Encl: (1) OS-OTG, Revision C, Change 2
(2) Summary of Changes

1. This letter promulgates the Operation Specification for Over-the-Horizon Targeting GOLD, Revision C (Rev C), Change 2 (Ch 2). Enclosure (1) dated 01 September 1999 is effective 01 October 1999.

2. This document supersedes OS-OTG, Rev C, Change 1 of 01 September 1998. The superseded document is to be destroyed upon receipt of enclosure (1). Enclosure (2) provides a brief summary of changes to OS-OTG, Rev C.

3. Recommended changes or corrections to enclosure (1) should be forwarded to:

Commanding Officer
Navy Center for Tactical Systems Interoperability (NCTSI)
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4. NCTSI point of contact is LT Star Langhorne Rhodes, phone: (619) 553-7309; DSN 553-7309; Fax: 553-7526; E-mail: srhodes@nctsi.spawar.navy.mil.

S. P. GIZA
Acting

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28K2	COMSUBRON ELEVEN
28K2	COMSUBRON ONE
29A2	USS CHOSIN
41A	COMSC WASHINGTON DC CODE NG1
42P1	FMP MOCC BRUNSWICK ME
46Y	MCTSSA CAMP PENDLETON CA ATTN: INTEROP(6)
50G	JICPAC HONOLULU HI
A1J10	PEOSPACOMMSENS SAN DIEGO CA
A3	CNO WASHINGTON DC N07, N095, N62G (5), N62CTPM (25), N8651F, N65D8, N8724,
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B2	JOINT STAFF WASHINGTON DC J-6F
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FD1	COMNAVMETOCCOM STENNIS SPACE CENTER MS
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FKP27	AEGIS TECHREP MOORESTOWN NJ
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FKR6A	COMNAVAIRWARCENACDIV PATUXENT RIVER MD CODE SY-40C, 4.1.2.3
FKR6A	NAVAIRWARCEN TRASYSDIV ORLANDO FL
FKR6A	NAVAIRWARCENACDIV INDIANAPOLIS IN CODE 4.5.3.1, MS61H, MS44
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FT65	FITCPAC SAN DIEGO CA CODE 03

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RECORD OF CHANGES

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CHAPTER 1

OVER-THE-HORIZON TARGETING GOLD GENERAL DESCRIPTION

1.1 BACKGROUND

The Operational Specification for Over-The-Horizon Targeting GOLD (OS-OTG) (Rev C) Change 2 of 1 September 1999 provides a standardized method for transmitting selected data between Over-The-Horizon-Targeting (OTH-T) systems and OTH-T support systems. This document will be effective 1 October 1999. It is the primary message format for Tactical Data Processor (TDP) to TDP information exchange on the Officer in Tactical Command Information Exchange System (OTCIXS) and Tactical Data Information Exchange System (TADIXS). It is designed to be easily man readable for the non-TDP user.

1.2 PURPOSE

The purpose of this document is to promulgate a message standard which:

a. Standardizes OTH-T reporting formats.

b. Contains unambiguous format and content specifications.

c. Is suitable for the exchange of processed contact data between computer systems.

d. Is designed to reduce message transmission times.

e. Is designed to be easily and correctly used by personnel when transmitting, analyzing or processing messages.

f. Identifies minimum data fields and sets that must be implemented in order to properly use each OTG message.

1.3 SYSTEM DESCRIPTION

The OTG format is based on the set of message text formats (MTFs) described herein. Each MTF is based on an ordered series of sets from the appropriate set library. Each message must be constructed in accordance with the rules for the specific MTF, the sets used to compose the MTF, their supporting tables and entry lists, and the General Formatting Rules contained in Chapter 2.

a. **Approved MTFs.** Approved OTG MTFs, approved sets, and their supporting tables and entry lists are contained in Chapters 3, 4, and 5, respectively. The implementation of each OTG MTF by a TDP is optional. TDPs may implement whatever OTG MTFs are needed to support their mission. However, the current Battle Group Data Base Management (BGDBM) System Specification (SPAWAR-B-832) describes the minimum TDP capabilities required to operate in a BGDBM environment.

b. **Developmental MTFs.** Developmental OTG MTFs, developmental sets and developmental tables and entry lists are contained in Chapters 7, 8, and 9, respectively. Developmental MTFs may use any approved set, table or entry list. Developmental MTF information is provided to inform members of the OTG user community of potential OTG format changes and enhancements, to promote the coordinated development of new MTFs to meet validated operational requirements, to promote the coordinated implementation of approved changes and enhancements to the OTG Format, and to aid program managers in identifying system software changes that will be required in order to maintain interoperability with other OTH-T systems. Once a developmental item has been approved, an implementation date will be set. The implementation date will be annotated on each approved item. Upon implementation, these items will migrate from Chapters 7, 8, and 9 to Chapters 3, 4, and 5, respectively.

CHAPTER 2

GENERAL FORMATTING RULES

2.1 OTG MTFs

OTG MTFs follow standard communications procedures for message headings, precedence and classification. These procedures are explained in Section II of JANAP 128. The current Over-The-Horizon Targeting (OTH-T) System Level Specification, Communications (SPAWAR 316-S-00509) lists the format types used to identify OTG and other MTFs in the TADIXS A and OTCIXS frame header protocols.

Each OTG MTF format consists of a specified sequence of sets, and is uniquely identified by the contents of Field 2 of the MSGID set. Unique OTG formatting begins with the MSGID set, which is the first formatted set following the classification line. OTG formatting ends with the ENDAT set, which is the final set of each OTG MTF. Approved OTG MTFs are described in Chapter 3. Developmental MTFs are described in Chapter 7.

2.2 OTG SETS

Each OTG set consists of a three- to five-letter set identifier (e.g., CTC, MSGID), which uniquely identifies each set. Each set identifier is followed by a predetermined sequence of fields. Approved OTG sets are described in Chapter 4. Developmental OTG sets are described in Chapter 8.

a. **Line Length.** A message line (i.e., a physical line of text) is limited to a maximum of 69 characters. In many cases OTG sets will exceed 69 characters, and must be continued on subsequent lines. The following rules must be followed when OTG sets must be continued beyond one line:

(1) The set identifier initiates the first line of each set; it is not used to initiate subsequent lines.

(2) Do not split a field. The second and subsequent lines of a set are initiated with a field marker ("/") in the left margin, followed by the remaining fields.

(3) Any set which is continued to a subsequent line must contain data in the final field before it is continued on the next line. Thus, a set which is continued to a subsequent line must not end with one or more field markers (i.e., ".../" or ".....//").

Example: The first line of the CTC set ends with the 68th character. The 69th character, which is a field marker (/), and all remaining fields are brought down to the next line.

```
CTC/T7130/SOVREMENNY-BEZUPRECHNY//DDG/NAV/821/UR/A12345//HIT/17/0217
//23/50/3234//W4GBP
```

b. **Free-Text Sets.** The ARMKS, NARR, RMKS, and SIGAM sets are free-text sets, which provide the capability to include unformatted explanatory information. The NARR, RMKS, and SIGAM sets may only be used where specifically permitted by the MTF structure described in Chapters 3 and 7. In addition to the character set defined in paragraph 2.3, the slant (/) character may be used in free-text sets.

c. **Fields.** Sets are made up of a predetermined sequence of fields. Each field is designed to contain a specific element of information. Some of the information is coded, abbreviated, or specially formatted. Specific instructions for entering data into each field are provided in Chapters 4 and 8.

d. **Field Markers.** The fields in a set are separated by field markers (/). These symbols are critical to automatic processing since they separate information. Field markers (/) must not be used within the text of formatted sets except to separate fields of information, as shown in the Set Libraries. Furthermore, if there is no information to be reported in a specific field, the information may be omitted but all intervening slant marks must be included. Optional fields and their associated field markers (/) at the end of a set may be omitted where no further information within the set is reported. In specific situations mandatory fields and field markers in the CTC set may be omitted. See paragraph 2.5a for an explanation of these special cases. Examples are:

(1) A set in which all fields are completed:

```
POS/012345Z5/JUN/8020N0/12040W7/ES/325.5T/1234NM/123NM/180.5T/14K
/ALT035/25.00HZ//OSIS/127385/NPH/4
```

(2) The same set with Field 5 (Sensor Code) omitted. Note the double slant.

```
POS/012345Z5/JUN/8020N0/12040W7//325.5T/1234NM/123NM/180.5T/14K
/ALT035/25.00HZ//OSIS/127385/NPH/4
```

2.3 CHARACTER SET

The allowable set of characters for OTG messages is:

Alphabetic (A):	Upper case A through Z
Numeric (N):	0 through 9
Space (B):	Space (ASCII 040 octal code)
Special (S):	Period (.), comma (,), colon (:), percent (%), pound (#), asterisk (*), hyphen (-), carriage return (CR), and line feed (LF).

NOTE: When used in Field 2 of the CTC set, the hyphen serves only as an internal field delimiter and may not be used as part of a class or name.

2.4 SET USAGE

a. **Set Order Within a Message.** The order in which data sets occur within a message is specified in the Chapter 3 annex for that message. If a set may be repeated within a message, instructions for its repetition are also stated.

b. **Repeatable Segments.** A group of related sets which may be repeated as a group is called a repeatable segment. In the Contact Report message the CTC through RMKS sets form a repeatable segment. These sets may be repeated as a group to report multiple contacts in a single message.

c. **Set Usage Categories.** For each message, each set is designated as mandatory, conditional or optional.

(1) Mandatory sets must be included each time a particular message is composed.

(2) Conditional sets are required only under certain conditions. If the condition is met, the set must be included in the message. If the condition is not met, the set remains optional and may be used unless there are specific instructions to the contrary. The conditions pertaining to each conditional set are included at the end of the set order map for each message.

(3) Optional sets may be included in the message if desired. The availability of information and the value of this information to the recipient are considerations when deciding whether or not to include an optional set.

2.5 FIELD USAGE

Within individual sets, each field is designated as mandatory, conditional or optional.

a. **Mandatory Fields.** Mandatory fields must be included when the associated set is to be used. Mandatory fields must contain data unless otherwise indicated by the explanation of that field in the Set Library section. If "no data" is permitted by the Set Library section, then

(1) Data for a subsequent field will be entered after the field marker following the blank field.

(2) A "no data" mandatory field is not permitted as the last field used in the set.

b. **Conditional Fields.** Conditional fields are fields whose use is dependent on the entry or omission of data in other fields. If the condition is met, the field must be used. If the condition is not met, the field remains optional and may be used unless there are specific instructions to the contrary. The condition pertaining to each conditional field are included at the end of the set order map for each message and in the set library.

c. **Optional Fields.** Optional fields may be included if desired. The availability of information and the value of this information to the recipient are considerations when deciding whether or not to include an optional field.

d. **Repeatable Fields.** In some cases the last field of a set is repeatable. In this case the field (Field 3 in this example) would be repeated as:

SET ID/FIELD1/FIELD2/FIELD3/FIELD3/...

In cases where more than one field is repeatable, these fields must be repeated as a group in order to maintain the proper field order. In this case the fields (Fields 3 and 4 in this example) would be repeated as:

SET ID/FIELD1/FIELD2/FIELD3/FIELD4/FIELD3/FIELD4/...

2.6 MISCELLANEOUS INSTRUCTIONS

a. **Checksum.** A checksum is a single digit derived from the sum of all digits of the field or subfield to which the checksum applies. When the computed sum is more than a single digit, only the unit' s digit is used. For example, the sum of digits in 15605E is 17, thus the checksum is 7. The instructions for each field will indicate whether checksums are required or permitted.

b. **Date-Time Groups (DTGs).** DTGs contain eight characters: day of the month (2 digits), hour (2 digits), minutes (2 digits), the letter "Z" (indicating Greenwich Mean Time), and a checksum (1 digit) in some cases. The instructions for each field will indicate whether checksums are required or permitted (e.g., 020230Z7, 012345Z5, 282215Z0).

c. **Special Handling Instructions.** Special handling instructions may be included in the Security Classification set in accordance with standard U.S. Navy Communications procedures (e.g., Basic Operational Communications Doctrine, NWP 6-01). All classification data required by the communications protocol in use (e.g., JANAP 128) shall appear before the formatted section of the OTG message.

d. **Maximum Message Length.** The maximum length allowed for an OTG message is 100 69-character lines. In cases where one set requires continuation lines, these continuation lines are included in the total. Line count for each message shall begin with the MSGID set and continue to, and include, the ENDAT set.

e. **Data Truncation.** Data truncation shall be performed on non-quantitative data which exceeds the maximum field length of a field. Data truncation consists of dropping the right-most characters until the data will fit into the field. Ship names, classes, trademarks, etc. shall not be abbreviated in order to fit them into a particular field. Quantitative data (e.g., frequencies, PRF, PRI, etc.) shall be rounded rather than truncated in cases where it is necessary to reduce the number of characters used to express a particular value. It may also be necessary to round off certain quantitative values in order to sanitize the information being reported.

f. **Nautical Mile.** The standard distance of a nautical mile as defined by the WGS-84 Earth Model (accepted by DOD 1 July 1959) is:

(1) 1 NM = 6,076.11 feet

(2) 1 NM = 1,852 meters

g. **Chaining Instructions.** Overlay 2 (OVLY2) and Gridded Field (GRIDFLD) messages that exceed the maximum message length specified in paragraph 2.6d may be linked to another message of the same type by chaining. An overlay that requires more than 100 lines to describe may be broken into two or more separate messages that are linked together with the chaining information contained in Field 4 of the OVLY set. If the overlay information must be broken in order to comply with paragraph 2.6d, it may be broken at a logical point or it may be

broken at the last possible line that will permit the addition of an ENDAT line and still comply with the maximum message length. In the following example, a hypothetical overlay requiring over 100 lines to express is broken into two separate Overlay 2 messages which are chained together. These messages define a single overlay, and systems receiving these messages should concatenate this information to construct, store and display a single overlay. Example:

[MESSAGE HEADER]

```
MSGID/NCTSI/OVLY2/0010/JUN
SEC/UNCLASSIFIED
ADDEE/TWCS
OVLY/FLEETEX 2 98/271600Z6/JUL/1OF2
/FLEETEX WARNING AREAS
LINE/40/1/C/...                          First part of OVLY2 message
...                                      broken at 95th line.
...
SYMB/...
SYMB/...
ENDAT
```

[END OF MESSAGE SEQUENCE]

[MESSAGE HEADER]

```
MSGID/NCTSI/OVLY2/0011/JUN
SEC/UNCLASSIFIED
ADDEE/TWCS
OVLY/FLEETEX 2 98/271600Z6/JUL/2OF2
/FLEETEX WARNING AREAS
SYMB/...                                 Second part of OVLY2
SYMB/...                                 message - total of 50 lines.
TEXT/...
TEXT/...
...
...
...
RMKS/...
ENDAT
```

[END OF MESSAGE SEQUENCE]

2.7 TRADEMARKS

a. **General.** Refer to NWP 1-03.41 for instructions on the construction of trademarks.

b. **Special Cases.** The information for developing trademarks contained in NWP 1-03.41 is intended to enhance standardization; however, it is recognized that, in special cases, a different means of developing trademarks may be necessary. These instances will be addressed in other directives.

CHAPTER 3

APPROVED OTG MTFs

3.1 PURPOSE

This chapter contains a detailed explanation of the structure of each formally approved OTG MTF. Each MTF has its own annex, which are arranged in alphabetical order by their message identifier (e.g., AOI, FOTC, GRIDFLD).

3.2 DESCRIPTION

Each annex consists of four paragraphs. The GENERAL paragraph describes the purpose of the message and any overall constraints concerning the MTF structure. The SET ORDER MAP lists all sets that are used to construct the MTF and the order in which they may be used. Paragraph 3.3 explains the SET ORDER MAP in greater detail. The TABLES AND ENTRY LISTS show each table and entry list used by the MTF. The MESSAGE EXAMPLES paragraph shows one or more example MTF. In cases where an MTF is used for multiple purposes an example of each is provided.

3.3 SET ORDER MAP

The following hypothetical example describes the conventions used in the set order map.

STATUS	:	AGREED
DATE	:	30 JUNE 1999
MSG IDENTIFIER	:	XYZ
MSG NAME	:	XYZ STATUS REPORT
FUNCTION OR PURPOSE	:	USED TO PROVIDE STATUS OF XYZ SYSTEM
SPONSOR(S)	:	NONE
RELATED DOCUMENT(S)	:	NONE

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
[		(M)	AOI	/C/M/C/C/C/C/C/C/C/C/C/C/O	AREA OF INTEREST
[		(M)	ORGIN	/M/M	ORIGIN
[	*	(C)	CAT	/M/O/O/O/O/O	CATEGORY
END OF SEGMENT					
[		(O)	XAOI	/M	EXCLUDED AREA OF INTEREST
[		(C)	RARC	/M/O/O/O/O/O/M/O/C/O/C	RELATIVE ARC
[	*	(C)	CAT	/M/O/O/O/O/O	CATEGORY
END OF SEGMENT					
		(M)	ENDAT	/C/*C/*C	END OF DATA

STATUS: The status will be either AGREED (i.e., approved for operational use) or DEVELOPMENTAL.

DATE: The date of the last revision.

MSG IDENTIFIER: The message identifier that appears in Field 2 of the MSGID set.

MSG NAME: The long name of the MTF.

FUNCTION OR PURPOSE: A brief description of the function or purpose of the MTF.

SPONSOR(S): The sponsor, if known, of the MTF.

RELATED DOCUMENT(S): A listing of any related documents.

SEG: A vertical bracket in this column indicates that the set is included in the segment of sets preceding the "END OF SEGMENT" line. A segment is a group of sets related by their content and designated in a message format so that they may be repeated as a group.

RPT: An asterisk (*) in this column indicates that the set is repeatable.

USE: This column indicates the usage category (Mandatory, Conditional, or Optional) of the set.

SET ID: The abbreviated set name.

FIELD ORDER AND USE: This column indicates the proper order and usage category (Mandatory, Conditional, or Optional) for each field in the set. An asterisk preceding the usage category, e.g., *O, indicates that the field indicated and all subsequent fields or groups of fields (such as a latitude/longitude or bearing/range pair) is repeatable numerous times within the set. The allowable number of repetitions is specified in the individual set instructions.

SET FORMAT NAME: Full name of set.

ANNEX 3A

AREA OF INTEREST FILTER

(AOI)

1. GENERAL

The AOI message is used by one system to inform another of the type of tracks and geographic regions in which it is interested. A geographic region may be fixed or relative to the position of a specified track. A system can have a maximum of one OTH Master filter, either fixed or relative.

There are three types of fixed or relative AOI filters: CDS, OTH, and OTH Master. Multiple fixed or relative AOI filters of any type may be described in the same message. Due to the complexity of this message format, there are six set order maps. There is a fixed and relative CDS, OTH, and OTH Master set order map, although these filter types may be mixed in the same message.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	**22 OCTOBER 1997**
MSG IDENTIFIER	:	AOI
MSG NAME	:	AREA OF INTEREST FILTER
FUNCTION OR PURPOSE	:	USED BY ONE SYSTEM TO INFORM ANOTHER OF THE TYPE OF TRACKS AND GEOGRAPHIC REGIONS IN WHICH IT IS INTERESTED.
SPONSOR(S)	:	NONE
RELATED DOCUMENT(S)	:	NONE

The AOI filter message format allows any combination of fixed or relative AOI filters in the same message. However, a system can have only a single OTH Master filter, either relative or fixed. To delete a filter it must be identified and the starting and ending DTGs must be identical (use Fields 1 through 7 of the AOI set).

A. RELATIVE OTH AOI FILTER FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
[		(M)	AOI	/C/M/C/C/C/C/C/C/C/C/C/C/O	AREA OF INTEREST

2. SET ORDER MAP (Continued)

A. FIXED CDS AOI FILTER FORMAT (Continued)

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
One or more of the following (ARC or LINE, CAT, PUFLT, SECT, STN, TSOI) must be used. If more than one of these sets is used, the information contained therein will be interpreted as an "or" condition (e.g., tracks that meet any, but not necessarily all, of these conditions will be reported). The sets in the segment which follow AOI may be used in any order.					
[		(C)	ARC	/M/O/O/O/M/M/M/O/C/O/C	ARC
[		(C)	LINE	/M/O/O/*M/*M/O/O	LINE
[	*	(C)	CAT	/M/O/O/O/O/O	CATEGORY
[	*	(C)	PUFLT	/M/M/O/O/O/O	PU FILTER
[		(C)	SECT	/M/O/O/O/M/M/M/M/O/M	SECTOR
[	*	(C)	STN	/M/*O (Total of 30 Fields)	SYSTEM TRACK NUMBER
[	*	(C)	TSOI	/O/C/C/O/O/O/O	TACTICAL SIGNALS OF INTEREST
END OF SEGMENT					
[		(O)	XAOI	/M	EXCLUDED AREAS OF INTEREST
If the XAOI set is used, one or more of the following (ARC or LINE, CAT, PUFLT, SECT, STN, TSOI) must be used. If more than one of these sets is used, the information contained therein will be interpreted as an "or" condition (e.g., tracks that meet any, but not necessarily all, of these conditions will be excluded). The sets in the segment which follow the XAOI set may be used in any order.					
[		(C)	ARC	/M/O/O/O/M/M/M/O/C/O/C	ARC
[		(C)	LINE	/M/O/O/*M/*M/O/O	LINE
[	*	(C)	CAT	/M/O/O/O/O/O	CATEGORY
[	*	(C)	PUFLT	/M/M/O/O/O/O	PU FILTER
[		(C)	SECT	/M/O/O/O/M/M/M/M/O/M	SECTOR
[	*	(C)	STN	/M/*O (Total of 30 Fields)	SYSTEM TRACK NUMBER
[	*	(C)	TSOI	/O/C/C/O/O/O/O	TACTICAL SIGNALS OF INTEREST
END OF SEGMENT					
		(M)	ENDAT	/C/*C/*C	END OF DATA

2. SET ORDER MAP (Continued)

A. FIXED CDS AOI FILTER FORMAT (Continued)

NOTE: The following conditional sets/fields are mandatory:

AOI:

Field 1: This field shall be set to blank if Field 2 is CDS or MOTH.

Fields 3-7: These fields are mandatory if Field 2 is OTH.

Fields 8-12: These fields are mandatory if Field 2 is CDS unless the line is used for deletion of the filter.

NOTE: The following conditional sets/fields are mandatory whether following the AOI or XAOI (if used) sets:

ARC: This set is mandatory if XAOI or AOI is used and LINE, CAT, PUFLT, SECT, STN, or TSOI is not used.

Field 9: This field is mandatory if Field 8 is used and contains a lesser value than Field 7.

Field 11: This field is mandatory if Field 10 is used.

LINE: This set is mandatory if ARC, CAT, PUFLT, SECT, STN, or TSOI is not used.

CAT: This set is mandatory if ARC, LINE, PUFLT, SECT, STN, or TSOI is not used.

PUFLT: This is mandatory if ARC, LINE, CAT, SECT, STN, or TSOI is not used.

SECT: This set is mandatory if ARC, LINE, CAT, PUFLT, STN, or TSOI is not used.

STN: This set is mandatory if ARC, LINE, CAT, PUFLT, SECT, or TSOI is not used.

2. SET ORDER MAP (Continued)

A. FIXED CDS AOI FILTER FORMAT (Continued)

TSOI: This set is mandatory if ARC, LINE, CAT, PUFLT, SECT, or STN is not used.

Field 2: This field is mandatory if Field 3 is not used.

Field 3: This field is mandatory if Field 2 is not used.

NOTE: If used, Fields 6 and 7 of the LINE/RLINE will always be the last fields output for the sets, regardless of the number of repetitions of Fields 4 and 5.

2. SET ORDER MAP (Continued)

B. RELATIVE CDS AOI FILTER FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
[		(M)	AOI	/C/M/C/C/C/C/C/C/C/C/C/C/O	AREA OF INTEREST FILTER
[		(M)	ORGIN	/M/M	ORIGIN

One or more of the following (RARC or RLINE, CAT, PUFLT, RSECT, STN, TSOI) must be used. If more than one of these sets is used, the information contained therein will be interpreted as an "or" condition (e.g., tracks that meet any, but not necessarily all, of these conditions will be reported). The sets in the segment which follow ORGIN may be used in any order.

[		(C)	RARC	/M/O/O/O/O/O/M/O/C/O/C	RELATIVE ARC
[		(C)	RLINE	/M/O/O/*M/*M/O/O	RELATIVE LINE
[	*	(C)	CAT	/M/O/O/O/O/O	CATEGORY
[	*	(C)	PUFLT	/M/M/O/O/O/O	PU FILTER
[		(C)	RSECT	/M/O/O/O/M/M/M/M/O/M	RELATIVE SECTOR
[	*	(C)	STN	/M/*O (Total of 30 Fields)	SYSTEM TRACK NUMBER
[	*	(C)	TSOI	/O/C/C/O/O/O/O	TACTICAL SIGNALS OF INTEREST
END OF SEGMENT					
[		(O)	XAOI	/M	EXCLUDED AREA OF INTEREST

If the XAOI set is used, one or more of the following (RARC or RLINE, CAT, PUFLT, RSECT, STN, TSOI) must be used. If more than one of these sets is used, the information contained therein will be interpreted as an "or" condition (e.g., tracks that meet any, but not necessarily all, of these conditions will be excluded, or not reported). The sets in the segment which follow XAOI may be used in any order.

[		(C)	RARC	/M/O/O/O/O/O/M/O/C/O/C	RELATIVE ARC
[		(C)	RLINE	/M/O/O/*M/*M/O/O	RELATIVE LINE
[	*	(C)	CAT	/M/O/O/O/O/O	CATEGORY

2. SET ORDER MAP (Continued)

B. RELATIVE CDS AOI FILTER FORMAT (Continued)

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
[	*	(C)	PUFLT	/M/M/O/O/O/O	PU FILTER
[		(C)	RSECT	/M/O/O/O/M/M/M/M/O/M	RELATIVE SECTOR
[	*	(C)	STN	/M/*O (Total of 30 Fields)	SYSTEM TRACK NUMBER
[	*	(C)	TSOI	/O/C/C/O/O/O/O	TACTICAL SIGNALS OF INTEREST
END OF SEGMENT					
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTE: The following conditional sets/fields are mandatory:

AOI:

Field 1: This field shall be set to blank if Field 2 is CDS or MOTH.

Fields 3-7: These fields are mandatory if Field 2 is OTH.

Fields 8-12: These fields are mandatory if Field 2 is CDS unless the line is used for deletion of the filter.

NOTE: The following conditional sets/fields are mandatory whether following the AOI or XAOI (if used) sets:

RARC: This set is mandatory if RLINE, CAT, PUFLT, RSECT, STN, or TSOI is not used.

Field 9: This field is mandatory if Field 8 is used and contains a lesser value than Field 7.

Field 11: This field is mandatory if Field 10 is used.

2. SET ORDER MAP (Continued)

B. RELATIVE CDS AOI FILTER FORMAT (Continued)

RLINE: This set is mandatory if RARC, CAT, PUFLT, RSECT, STN, or TSOI is not used.

CAT: This set is mandatory if RARC, RLINE, CAT, PUFLT, RSECT, STN, or TSOI is not used.

PUFLT: This set is mandatory if RARC, RLINE, CAT, RSECT, STN, or TSOI is not used.

RSECT: This set is mandatory if RARC, RLINE, CAT, PUFLT, STN, or TSOI is not used.

STN: This set is mandatory if RARC, RLINE, CAT, PUFLT, RSECT, or TSOI is not used.

TSOI: This set is mandatory if RARC, RLINE, CAT, PUFLT, RSECT, or STN is not used.

Field 2: This field is mandatory if Field 3 is not used.

Field 3: This field is mandatory if Field 2 is not used.

NOTE: If used, Fields 6 and 7 of the LINE/RLINE will always be the last fields output for the sets, regardless of the number of repetitions of Fields 4 and 5.

2. SET ORDER MAP (Continued)

C. FIXED OTH AOI FILTER FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
[		(M)	AOI	/C/M/C/C/C/C/C/C/C/C/C/C/O	AREA OF INTEREST FILTER

One or more of the following (ARC or LINE or CAT) must be used. If more than one of these sets is used, the information contained therein will be interpreted as an "or" condition (e.g., tracks that meet any, but not necessarily all, of these conditions will be reported). The sets in thesegment which follow AOI may be used in any order.

[		(C)	ARC	/M/O/O/O/M/M/M/O/C/O/C	ARC
[		(C)	LINE	/M/O/O/*M/*M/O/O	LINE
[	*	(C)	CAT	/M/O/O/O/O/O	CATEGORY
END OF SEGMENT					
[		(O)	XAOI	/M	EXCLUDED AREAS OF INTEREST

If the XAOI set is used, one or more of the following (ARC or LINE or CAT) must be used. If more than one of these sets is used, the information contained therein will be interpreted as an "or" condition (e.g., tracks that meet any, but not necessarily all, of these conditions will be excluded, or not reported). The sets in the segment which follow XAOI may be used in any order.

[		(C)	ARC	/M/O/O/O/M/M/M/O/C/O/C	ARC
[		(C)	LINE	/M/O/O/*M/*M/O/O	LINE
[	*	(C)	CAT	/M/O/O/O/O/O	CATEGORY
END OF SEGMENT					
		(M)	ENDAT	/C/*C/*C	END OF DATA

2. SET ORDER MAP (Continued)

C. FIXED OTH AOI FILTER FORMAT (Continued)

NOTE: The following conditional sets/fields are mandatory:

AOI:

Field 1: This field shall be set to blank if Field 2 is CDS or MOTH.

Fields 3-7: These fields are mandatory if Field 2 is OTH.

Fields 8-12: These fields are mandatory if Field 2 is CDS unless the line is used for deletion of the filter.

NOTE: The following conditional sets/fields are mandatory whether following the AOI or XAOI (if used) sets:

ARC: This set is mandatory if LINE or CAT is not used.

Field 9: This field is mandatory if Field 8 is used and contains a lesser value than Field 7.

Field 11: This field is mandatory if Field 10 is used.

LINE: This set is mandatory if ARC or CAT is not used.

CAT: This set is mandatory if ARC or LINE is not used.

NOTE: If used, Fields 6 and 7 of the LINE/RLINE will always be the last fields output for the sets, regardless of the number of repetitions of Fields 4 and 5.

2. SET ORDER MAP (Continued)

D. RELATIVE OTH AOI FILTER FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(O)	SEC	/M/O	SECURITY
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
		(O)	CTC	/M/M/O/O/O/O/O/O/O/O/M/O/M/O/O/O/O/O/O/O	CONTACT
		(C)	POS	/M/M/M/M/O/C/O/O/O/O/O/O/O(See Note 1)/O/O**/O/O**	POSITION
[		(M)	AOI	/C/M/C/C/C/C/C/C/C/C/C/C/C/O	AREA OF INTEREST FILTER
[		(M)	ORGIN	/M/M	ORIGIN

One or more of the following (RARC or RLINE or CAT) must be used. If more than one of these sets is used, the information contained therein will be interpreted as an "or" condition (e.g., tracks that meet any, but not necessarily all, of these conditions will be reported). The sets in the segment which follow ORGIN may be used in any order.

[		(C)	RARC	/M/O/O/O/O/O/M/O/C/O/C	RELATIVE ARC
[		(C)	RLINE	/M/O/O/*M/*M/O/O	RELATIVE LINE
[	*	(C)	CAT	/M/O/O/O/O/O	CATEGORY
END OF SEGMENT					
[		(O)	XAOI	/M	EXCLUDED AREAS OF INTEREST

If the XAOI set is used, one or more of the following (RARC or RLINE or CAT) must be used. If more than one of these sets is used, the information contained therein will be interpreted as an "or" condition (e.g., tracks that meet any, but not necessarily all, of these conditions will be excluded or not reported). The sets in the segment which follow XAOI may be used in any order.

[		(C)	RARC	/M/O/O/O/O/O/M/O/C/O/C	RELATIVE ARC
[		(C)	RLINE	/M/O/O/*M/*M/O/O	RELATIVE LINE
[	*	(C)	CAT	/M/O/O/O/O/O	CATEGORY
END OF SEGMENT					
		(M)	ENDAT	/C/*C/*C	END OF DATA

2. SET ORDER MAP (Continued)

D. RELATIVE OTH AOI FILTER FORMAT (Continued)

NOTES:

1. The spare field is used as a position filler and does not convey any data.

2. The following conditional sets/fields are mandatory:

POS:

Field 6: This field is mandatory if Field 8 is used and is not equal to Field 7.

AOI:

Field 1: This field shall be set to blank if Field 2 is CDS or MOTH.

Fields 3-7: These fields are mandatory if Field 2 is OTH.

Fields 8-12: These fields are mandatory if Field 2 is CDS unless the line is used for deletion of the filter.

NOTE: The following conditional sets/fields are mandatory whether following the AOI or XAOI sets:

RARC: This set is mandatory if RLINE or CAT is not used.

Field 9: This field is mandatory if Field 8 is used and contains a lesser value than Field 7.

Field 11: This field is mandatory if Field 10 is used.

RLINE: This set is mandatory if RARC or CAT is not used.

CAT: This set is mandatory if RARC or RLINE is not used.

NOTE: If used, Fields 6 and 7 of the LINE/RLINE will always be the last fields output for the sets, regardless of the number of repetitions of Fields 4 and 5.

2. SET ORDER MAP (Continued)

E. FIXED OTH MASTER AOI FILTER FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
		(M)	AOI	/C/M/C/C/C/C/C/C/C/C/C/C/O	AREA OF INTEREST FILTER
		(M)	LINE	/M/O/O/*M/*M/O/O	LINE
		(O)	XAOI	/M	EXCLUDED AREAS OF INTEREST
		(C)	LINE	/M/O/O/*M/*M/O/O	LINE
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTE: The following conditional sets/fields are mandatory:

AOI:

Field 1: This field shall be set to blank if Field 2 is CDS or MOTH.

Fields 3-7: These fields are mandatory if Field 2 is OTH.

Fields 8-12: These fields are mandatory if Field 2 is CDS unless the line is used for deletion of the filter.

NOTE: The following conditional sets/fields are mandatory whether following the AOI or XAOI (if used) sets:

LINE: This set is mandatory following XAOI if XAOI is used.

NOTE: If used, Fields 6 and 7 of the LINE/RLINE will always be the last fields output for the sets, regardless of the number of repetitions of Fields 4 and 5.

2. SET ORDER MAP (Continued)

F. RELATIVE OTH MASTER AOI FILTER FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
		(O)	CTC	/M/M/O/O/O/O/O/O/O/O/M/O/M/O/O/O/O/O/O/O	CONTACT
		(O)	POS	/M/M/M/M/O/C/O/O/O/O/O/O/O(See Note 1)/O/O**/O/O**	POSITION
		(M)	AOI	/C/M/C/C/C/C/C/C/C/C/C/C/C/O	AREA OF INTEREST FILTER
		(M)	ORGIN	/M/M	ORIGIN
		(M)	RLINE	/M/O/O/*M/*M/O/O	RELATIVE LINE
		(O)	XAOI	/M	EXCLUDED AREAS OF INTEREST
		(C)	RLINE	/M/O/O/*M/*M/O/O	RELATIVE LINE
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTES:

1. The spare field is used as a position filler and does not convey any data.

2. The following conditional sets/fields are mandatory:

   POS: Field 6: This field is mandatory if Field 8 is used and is not equal to Field 7.

   AOI:

   Field 1: This field shall be set to blank if Field 2 is CDS or MOTH.

   Fields 3-7: These fields are mandatory if Field 2 is OTH.

   Fields 8-12: These fields are mandatory if Field 2 is CDS unless the line is used for deletion of the filter.

2. SET ORDER MAP (Continued)

F. RELATIVE OTH MASTER AOI FILTER FORMAT (Continued)

RLINE: This set is mandatory following XAOI if XAOI is used.

NOTE: If used, Fields 6 and 7 of the LINE/RLINE will always be the last fields output for the sets, regardless of the number of repetitions of Fields 4 and 5.

3. TABLES AND ENTRY LISTS

The AOI message uses the following tables and entry lists:

TABLE	TITLE
5-1	Force Codes
5-2	Category Codes
5-5	Line Types
5-6	Color Codes
5-7	Area Fill Types
5-12	Message Identifiers
5-19	Alert Code Retention
5-22	**Pleasure Craft Types**

ENTRY LIST	TITLE
59	Country Codes
137	Ship Types
426	Suspicion Codes
513	Aircraft Types
1104	Sensor Codes
1136	Source Codes

4. MESSAGE EXAMPLES

SINGLE RELATIVE CDS FILTER

[MESSAGE HEADER]

```
MSGID/KIDD/AOI/5470/MAY
SEC/UNCLASSIFIED
ADDEE/ATWCS/SDS/OED
AOI//CDS//////2100N3/11900E1/15/15/5
ORGIN/T7001/VINSON
PUFLT/21/07/04
STN/0021/0046/0064/0002/0074
ENDAT
```

[END OF MESSAGE SEQUENCE]

SINGLE FIXED MASTER OTH FILTER

[MESSAGE HEADER]

```
MSGID/NCTSI/AOI/0001/MAY
SEC/SECRET/NOFORN    (classified for example purposes only)
ADDEE/ATWCS/SDS/OED
AOI//MOTH/OTH1///////15/15/5/SURVEILLANCE AREA W254
CAT/07/04/20
XAOI/01
CAT/01/09
ENDAT/OPNAVINST S5513.6D-11/DATE:12JAN03
```

[END OF MESSAGE SEQUENCE]

SINGLE FIXED CDS FILTER

[MESSAGE HEADER]

```
MSGID/NCTSI/AOI/0002/MAY
SEC/UNCLASSIFIED
ADDEE/ATWCS/SDS/OED
AOI//CDS/////2100N3/11900E1/15/15/5
CAT/05/16
TSOI//A123B/BIG BULGE A
PUFLT/21/19/06
STN/0123/0021/7777/0002/0074
ENDAT
```

[END OF MESSAGE SEQUENCE]

FILTER DELETION

[MESSAGE HEADER]

```
MSGID/NCTSI/AOI/0003/MAY
SEC/UNCLASSIFIED
ADDEE/ATWCS/SDS/OED
AOI//CDS//051135Z5/MAY/062122Z3/MAY
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3B

CONTACT REPORT

1. GENERAL

The Contact Report message is used to exchange processed contact data and track management information between computer systems. It contains the identity, location, and movement of surface, subsurface, land, and air contacts. The Contact Report and OPNOTE messages are both identified with an entry of "GOLD" in Field 2 of the MSGID set. The minimum sets used in a Contact Report message vary depending upon how the message is being used. In general the Contact Report message consists of an MSGID set, the body of the Contact Report message, and the ENDAT set. The body of the Contact Report message consists of CTC segment(s) and/or track management sets(s) as described below.

When used solely for track management functions, CTC segments are not reported and one or more of the track management sets listed in Table 3B-1 are used. The use of track management sets is explained in detail in the BGDBM System Specification.

When the Contact Report is used solely to pass contact information it consists of one or more CTC segments. A CTC segment consists of a minimum of a CTC subject set immediately followed by a report set (i.e., POS or LOB). Table 3B-3 consists of sets which are used to amplify the POS and LOB report sets. These sets (ENGAG, EOB, EQPT, MODEG, POW, PRSNL, RAD, RADB, REFUG, RMKS, SIGAM, and SIGNA) should follow the report set which they amplify. When more than one amplifying set is used per report, the order of reporting these sets following the corresponding report set should be RADB (or RAD), EOB, RMKS, SIGNA, SIGAM, MODEG. The maximum number of times each set can be repeated per report set is provided in Table 3B-3. A report (e.g., POS) followed by its amplifying sets (e.g., RADB, RMKS, SIGNA) is called a nested report segment within the CTC segment. Multiple nested report segments may be reported within a single CTC segment to provide historical report data on the contact described in the preceding CTC set. Table 3B-2 consists of sets which are used to provide amplifying information on the CTC subject set. These sets (ARR, DEP, DES, GOB, PAIR, PCRFT, RIG, RMKS, RTD, and UIC) must follow all nested report segments within the CTC segment. Specific ordering of these CTC amplifying sets at the end of the CTC segment is not a requirement, although it is prudent to arrange these sets in order of importance. For example, if a system is operating in a BGDBM role the PAIR set would have great importance

and be the first to be reported among these CTC amplifying sets. This is recommended since older systems may have problems processing sets which are new to the Contact Report message leaving any sets which follow unprocessed. The maximum number of times each of these sets can be repeated per CTC set is provided in Table 3B-2.

Additionally the Contact Report may be used to provide a combined message of contact reports and track management requests. Track management sets can appear interspersed with the CTC segments in any order within the Contact Report message. Note that track management sets are not allowed in a CTC segment.

TABLE 3B-1 TRACK MANAGEMENT SETS

SETS	FUNCTION
DELETE (DEL)	Deletes a track
DELETE LINE OF BEARING (DLOB)	Deletes a line of bearing from a track history
DELETE POSITION (DPOS)	Deletes a position report from a track history
MERGE (MRG)	Merges the track data from two distinct tracks into one track

TABLE 3B-2 MAXIMUM AMPLIFYING SETS PER CTC SET

SETS	MAXIMUM ALLOWED
ARRIVAL (ARR)	1
DEPARTURE (DEP)	1
DESTINATION (DES)	1
GROUND ORDER OF BATTLE (GOB)	1
LINE OF BEARING (LOB)	*
PAIR (PAIR)	1
PLEASURE CRAFT DATA (PCRFT)	1
POSITION (POS)	*
RIGGING (RIG)	1
REMARKS (RMKS)**	4
REAL TIME DATA (RTD)	1
UNIT IDENTIFICATION CODE (UIC)	1

* Sum of POS and LOB sets in any combination shall not exceed 26 per CTC set.

** Sum of RMKS sets in any combination shall not exceed four per CTC.

All POS and LOB sets with amplifying data from Table 3B-3 must be reported at the beginning of a CTC segment; all other amplifying sets from Table 3B-2 must follow.

TABLE 3B-3 MAXIMUM AMPLIFYING SETS PER POS AND LOB SETS

SETS	MAXIMUM ALLOWED
ENGAGEMENT (ENGAG)	4
ELECTRONIC ORDER OF BATTLE (EOB)*	1
EQUIPMENT (EQPT)	20
MODE GOLD (MODEG)	1
PRISONERS OF WAR (POW)	1
PERSONNEL (PRNSL)	1
RADAR DATA (RAD)**	6
EXPANDED RADAR DATA (XRADB)**	6
REFUGEES (REFUG)	5
REMARKS (RMKS)#	4
SIGNA AMPLIFICATION (SIGAM)##	48
EXPANDED SIGNATURE (XSGNA)	12

* The EOB set may also be used to amplify a RAD or RADB set. Thus it may be reported following a POS, LOB, RAD, or RADB set.

** The RAD and RADB sets are optional and mutually exclusive. If RADB is used then RAD shall not be used in the same message. If RAD is used then RADB shall not be used in the same message.

Sum of RMKS sets in any combination shall not exceed four per CTC set.

The SIGAM set is used to amplify the SIGNA set. Up to four SIGAM sets may be used per SIGNA set.

When more than one amplifying set is used per report, i.e., POS or LOB, the following order will be observed in reporting: RADB (or RAD), EOB, RMKS, SIGNA, SIGAM, MODEG.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	**22 OCTOBER 1997**
MSG IDENTIFIER	:	GOLD
MSG NAME	:	CONTACT REPORT
FUNCTION OR PURPOSE	:	AN OTG CONTACT REPORT IS USED FOR THE EXCHANGE OF PROCESSED CONTACT DATA OR TRACK MANAGEMENT INFORMATION BETWEEN COMPUTER SYSTEMS. IT CONTAINS DATA RELATIVE TO THE IDENTITY, LOCATION, AND MOVEMENT OF SURFACE, SUBSURFACE, LAND, AND AIR CONTACTS.
SPONSOR(S)	:	NONE
RELATED DOCUMENT(S)	:	BATTLE GROUP DATA BASE MANAGEMENT FUNCTIONAL REQUIREME NTS

CR FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
The following sets (DEL, DLOB, DPOS, MRG) may be used in any order.					
	*	(O)	DEL	/M/M/O	DELETE
	*	(O)	DLOB	/M/M/M/M/M/M/O/M/O	DELETE LINE OF BEARING
	*	(O)	DPOS	/M/M/M/M/M/O/O/M/O	DELETE POSITION
	*	(O)	MRG	/M/M/M/M/O(See Note 1)/O/O	MERGE
[		(C)	CTC	/M/M/O/O/O/O/O/O/O/O/M/O/M/O/O/O/O/O/O/O	CONTACT
The repeatability constraints shown in Table 3B-2 must be followed for all sets in this segment following the CTC set.					

2. SET ORDER MAP (Continued)

CR FORMAT (Continued)

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
A repeatable segment beginning with POS or LOB must immediately follow the CTC set. RAD or RADB sets, if used, are understood to amplify the preceding POS or LOB set. The EOB set modifies the preceding RAD or RADB set. If a RAD or RADB set is not used, the EOB set is associated with the preceding POS or LOB set. The contents of Fields 1 and 2 of RAD or RADB sets must be the same as Fields 1 and 2 of the preceding POS or LOB set. A maximum of 12 SIGNA sets is allowed per POS or LOB set.					
[[	*	(C)	POS	/M/M/M/M/O/C/O/O/O/O/O/O/O(See Note 1)/O/O/O/O	POSITION
[[	*	(O)	RAD	/M/M/C/C/O/O/O/O/O/O	RADAR DATA
[[	*	(O)	RADB	/M/M/C/C/O/O/O/O/O/O	EXPANDED RADAR DATA
[[		(O)	EOB	/C/C	ELECTRONIC ORDER OF BATTLE
[[	*	(O)	RMKS	/M	REMARKS
[[[	*	(M)	SIGNA	/M/M/M/O/O/M/M/O/O	SIGNATURE
[[[	*	(O)	SIGAM	/M	SIGNA AMPLIFICATION
[[END OF SEGMENT					
[[		(O)	MODEG	/C/C/O/C/C	MODE GOLD
[[		(O)	PRSNL	/M/M/C/C/C/C/C/C/O/O/O	PERSONNEL
[[	*	(O)	EQPT	/M/M/M/C/C/C/C/C	EQUIPMENT
[[		(O)	POW	/M/M/M	PRISONERS OF WAR
[[	*	(O)	REFUG	/M/M/M/O/O	REFUGEES
[[	*	(O)	ENGAG	/M/M/M/O	ENGAGEMENT
[END OF SEGMENT					
[[	*	(C)	LOB	/M/M/M/M/M/O/O/C/O/O(See Note 1)/O	LINE OF BEARING
[[	*	(O)	RAD	/M/M/C/C/O/O/O/O/O/O	RADAR DATA
[[	*	(O)	RADB	/M/M/C/C/O/O/O/O/O/O	EXPANDED RADAR DATA
[[		(O)	EOB	/C/C	ELECTRONIC ORDER OF BATTLE
[[	*	(O)	RMKS	/M	REMARKS
[[[	*	(M)	SIGNA	/M/M/M/O/O/M/M/O/O	SIGNATURE

2. SET ORDER MAP (Continued)

CR FORMAT (Continued)

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
[[[	*	(O)	SIGAM	/M	SIGNA AMPLIFICATION
[[END OF SEGMENT					
[[		(O)	MODEG	/C/C/O/C/C	MODE GOLD
[[		(O)	PRSNL	/M/M/C/C/C/C/C/O/O/O	PERSONNEL
[[	*	(O)	EQPT	/M/M/M/C/C/C/C/C	EQUIPMENT
[[		(O)	POW	/M/M/M	PRISONERS OF WAR
[[	*	(O)	REFUG	/M/M/M/O/O	REFUGEES
[[	*	(O)	ENGAG	/M/M/M/O	ENGAGEMENT
[END OF SEGMENT					

The following sets (GOB,UIC,PAIR,PCRFT,RIG,ARR,DEP,DES,RTD,RMKS) may be used in any order.

[		(O)	GOB	/O/O/O/O	GROUND ORDER OF BATTLE
[		(O)	UIC	/*M	UNIT IDENTIFICATION CODE
[		(O)	PAIR	/C/C/C/C/O/O/O/O/O/O/O/O	PAIR
[		(O)	PCRFT	**/O/O/O**	PLEASURE CRAFT DATA
[		(O)	RIG	/O/O/O/O/O/O/O	RIGGING
[		(O)	ARR	/M/M/O/O/O/O/O/O	ARRIVAL
[		(O)	DEP	/M/M/O/O/O/O/O/O	DEPARTURE
[		(O)	DES	/M/M/O/O/O/O/O/O	DESTINATION
[		(O)	RTD	/C/C	REAL TIME DATA
[	*	(O)	RMKS	/M	REMARKS
END OF SEGMENT					
		(M)	ENDAT	/C/*C/*C	END OF DATA

2. SET ORDER MAP (Continued)

NOTES:

1. The spare field is used as a position filler and does not convey any data.

2. The following conditional sets/fields are mandatory:

CTC: This set is mandatory if any of the following sets are used (ARR, DEP, DES, EOB, GOB, LOB, PAIR, POS, RAD, RADB, RIG, RMKS, RTD, SIGNA, UIC).

POS: This set is mandatory if the CTC set is used and the LOB set is not used.

Field 6: This field is mandatory if Field 8 is used and is not equal to Field 7.

LOB: This set is mandatory if the CTC set is used and the POS set is not used.

Field 8: This field is mandatory if half-width is expressed in NM.

RAD:

Field 3: This field is mandatory if Field 4 is not used.

Field 4: This field is mandatory if Field 3 is not used.

RADB:

Field 3: This field is mandatory if Field 4 is not used.

Field 4: This field is mandatory if Field 3 is not used.

2. SET ORDER MAP (Continued)

NOTES: (Continued)

MODEG:

Field 1:	This field is mandatory if Field 2 is not used.
Field 2:	This field is mandatory if Field 1 is not used.
Fields 4-5:	These fields are mandatory if Field 3 is provided.

PRSNL:

Field 3:	This field is mandatory if Fields 4 through 8 are not reported.
Field 4:	This field is mandatory if Fields 3, 5, 6, 7, and 8 are not reported.
Field 5:	This field is mandatory if Fields 3, 4, 6, 7, and 8 are not reported.
Field 6:	This field is mandatory if Fields 3, 4, 5, 7, and 8 are not reported.
Field 7:	This field is mandatory if Fields 3, 4, 5, 6, and 8 are not reported.
Field 8:	This field is mandatory if Fields 3 through 7 are not reported.

EQPT:

Field 4:	This field is mandatory if Fields 5 through 8 are not reported.
Field 5:	This field is mandatory if Fields 4, 6, 7, and 8 are not reported.
Field 6:	This field is mandatory if Fields 4, 5, 7, and 8 are not reported.
Field 7:	This field is mandatory if Fields 4, 5, 6, and 8 are not reported.
Field 8:	This field is mandatory if Fields 4 through 7 are not reported.

RTD:

Field 1:	This field is mandatory if Field 2 is not used.
Field 2:	This field is mandatory if Field 1 is not used.

3. TABLES AND ENTRY LISTS

The Contact Report message uses the following tables and entry lists:

TABLE	TITLE
5-1	Force Codes
5-2	Category Codes
5-3	Scan Type Codes
5-12	Message Identifiers
5-19	Alert Code Retention
5-20	Detection Status Codes
5-22	**Pleasure Craft Types**

ENTRY LIST	TITLE
59	Country Codes
92	Scan Types
137	Ship Types
426	Suspicion Codes
513	Aircraft Types
1030	Load Types
1053	Appearance Group Codes
1080	Hull Profile Codes
1096	Submarine Propulsion Mode
1104	Sensor Codes
1112	Submarine Operating Mode
1136	Source Codes

4. MESSAGE EXAMPLES

MULTIPLE TRACK CONTACT REPORT

[MESSAGE HEADER]

```
MSGID/CTG 81.0/GOLD/1215/APR/RIMPAC 98
CTC/T7123/UNEQUATED-UNKNOWN//SSGN/SUB//UR///HIT/14///10/10/3442
/F2K000162412/CAOB/03
POS/121410Z9/APR/2540N1/16204W3/VISUAL//10NM//340T/12K
RADB/121410Z9/APR/O923B/FRONT PACE/12.34GHZ/000123.45/8100.446
/123.123/5.0SPC/CIRC
EOB//D18445999
SIGNA/XXX/123.45HZ/6,10,4/88/10.5/121410Z9/APR/VDSACT/STEADY
SIGAM/UNIDENTIFIED SIGNAL IN MAIN MACHINERY SPACE
MODEG/SUBMERGED/OTR/850FT/E/IN-LAYER DECIBELS
CTC/T7164/UNEQUATED-UNKNOWN/TRDMARK/SSN/SUB//////00
LOB/121420Z0/APR/2510N8/16210W0/120T/TACTAS/1.2DEG
RADB/121420Z0/APR/O924Z/TRAP DEER/13.20GHZ/000200.55/4987.531/222.001
RMKS/EVALUATE AS TYPE II NUC
ENDAT
```

[END OF MESSAGE SEQUENCE]

TRACK MANAGEMENT CONTACT REPORT

[MESSAGE HEADER]

```
MSGID/CTE 81.0.1.1/GOLD/1240/APR/MIDLINK
DEL/T7144/CTE 81.0.1.1
DEL/T7182/CTE 81.0.1.1
ENDAT
```

[END OF MESSAGE SEQUENCE]

TRACK DATA AND TRACK MANAGEMENT CONTACT REPORT

[MESSAGE HEADER]

```
MSGID/CTG 81.0/GOLD/1245/APR/PACEX 97
DEL/T7142/CTG 81.0
DPOS/T7123/121410Z9/APR/2540N1/16204W3/VISUAL//CTF 70
CTC/T7189/KRESTA II-UNKNOWN//CG/NAV//UR///HIT/07/4444
POS/130410Z9/APR/2610N9/16415W7/RADAR//10NM//350T/12K
ENDAT
```

[END OF MESSAGE SEQUENCE]

NUMEROUS TRACK MANAGEMENT AND TRACK DATA CONTACT REPORT

[MESSAGE HEADER]

```
MSGID/NCTSI/GOLD/0001/JUN
CTC/T7062/WICHITA-ROANOKE/////////09
POS/130500Z9/JUN/8500S3/00000W0
CTC/T7063/XKRIVAK II-PETERSON///NAV//XX////07
POS/130501Z0/JUN/8600S4/18000E9
CTC/T7064/KIROV-UNKNOWN/////XX////07//2
POS/130502Z1/JUN/8500S3/18000E9
LOB/130502Z1/JUN/8510S4/17800W6/335T
CTC/T7164/CIMARRON-MERRIMACK/////US////09
POS/130501Z0/JUN/8500S3/18000E9
DLOB/T7064/130502Z1/JUN/9000S9/18000E9/335T//NCTSI
CTC/T7066/NIMITZ-EISENHOWER DD/////////09//4
POS/130502Z1/JUN/3300N6/12200W5/////////5250.530HZ
DEL/T1235/CTG168.1
DEL/T12346/COMCRUDESGRU 1
CTC/T7652/NIMITZ-EISENHOWER DD/////////09
POS/130504Z3/JUN/3141N9/12135W2
LOB/0503Z8/JUN/3142N0/12134W1/262T
DLOB/T7652/130510Z0/JUN/3142N0/12134W1/262T//CTF 70
CTC/T7654/NIMITZ-EISENHOWER DD//CV/NAV//US//1225/HIT/09/0025
POS/130515Z5/JUN/3300N6/12000W3/IFF/032T/0010NM/0008NM/140T/12K
CTC/T7657/FORRESTAL-EISENHOWER DD//CV/////////09
POS/130516Z6/JUN/3300N6/12002W5/IRDS////156T/10K
MRG/T7654/T7657/COMCRUDESGRU 1/CTF 70
CTC/T7656/BURKE A-STETHEM//CGN/NAV//US//2334/HIT/09/0017
POS/130517Z7/JUN/3255N5/12004W7/SLAR////179T/14K
CTC/T7656/UNEQUATED-UNKNOWN/////////00
POS/130518Z8/JUN/3254N4/12006W9/LLLTV////185T/12K
MRG/T7656/T7658/CTF 70/COMCRUDESGRU 1
CTC/T4567/NIMITZ-EISENHOWER DD/////////09
POS/130524Z5/JUN/3235N3/12000W3
CTC/T7571/KENNEDY JF-KENNEDY JF/////////09
POS/130527Z8/JUN/3305N1/12300W6
RAD/130528Z9/JUN/12345
CTC/T7573/POWHATAN-MOHAWK/////////09
POS/130530Z2/JUN/3315N2/12300W6
RAD/130531Z3/JUN/A987Z//5250.530HZ
ENDAT
```

[END OF MESSAGE SEQUENCE]

TACTICAL BATTLEFIELD REPORTING CONTACT REPORT

[MESSAGE HEADER]

```
MSGID/COMSECONDFLT/GOLD/1234/DEC
CTC/T7020/NIMITZ-EISENHOWER DD///NAV//US////09
POS/021234Z2/MAY/3141N9/12135W2
PRSNL/021234Z2/MAY/5000/4980/0/0/0/12/11/1
EQPT/021240Z9/MAY/SH-3/4/4
EQPT/021240Z9/MAY/ANUSQ-119BV/17/17
REFUG/021245Z4/MAY/20/HA
CTC/T7021/MIG27-UNKNOWN///AIR/////TGT/01
POS/021444Z5/MAY/2345N4/13245W5///2NM/2NM/120T/570K/ALT062
ENGAG/012305Z1/MAY/BA/CBA876543210
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3C

FOTC SITREP

(FOTC)

1. GENERAL

The FOTC SITREP is used by FOTC to report a collection of standing FOTC-related data and track database summary information to participants. It can be identified upon receipt by the participant and stored for automatic or manual comparison with the participant's database. A processing option, if available, enables the participant to have the contents of the message compared with the participant track database and a summary table of disparity produced. In particular, extra or missing FOTC track numbers and differences in latest report DTGs between the coordinator and participant databases can be detected. The FOTC Command is the Coordinator specified command that is reported in the MSGID set, Field 1 (Command). This differs from the "local command" which is the ownship name reported by Participants in the MSGID set, Field 1 and may be reported by the Coordinator in the FM line.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	8 JULY 1992
MSG IDENTIFIER	:	FOTC
MSG NAME	:	FOTC SITREP
FUNCTION OR PURPOSE	:	USED TO TRANSMIT A SUMMARY OF THE CONTENTS OF THE FOTC TRACK DATABASE.
SPONSOR(S)	:	NONE
RELATED DOCUMENT(S)	:	BATTLE GROUP DATA BASE MANAGEMENT FUNCTIONAL REQUIREMENTS

FOTC FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(M)	NARR	/M	NARRATIVE
		(O)	ARC	/M/O/O/O/M/M/M/O/C/O/C	ARC (See Note 1)
		(O)	LINE	/M/O/O/*M*/M/O/O (Total of 256 Points)	LINE (See Note 1)
		(O)	TRACK	/M/M/M	TRACK (See Note 1)
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTES:

1. If used, only one of the sets (ARC, LINE, or TRACK) will appear in paragraph 9 of the NARR set to describe the FOTC BROADCAST FILTER.
2. The format for the NARR set of the FOTC SITREP is "NARR/OPNOTE:".
3. If used, Fields 6 and 7 of the LINE will always be the last fields output for the set, regardless of the number of repetitions of Fields 4 and 5.

The "_" character is used to indicate a "space" in the following line descriptions. For text shown in **bold** type enter the literal string provided. For text shown in plain text, enter the appropriate data. See Notes below for providing data.

[MESSAGE HEADER]

MSGID/FOTC COMMAND/**FOTC**/Message Serial Number/Month (See Note 1)
NARR/OPNOTE:_FOTC_SITREP/FOTC Command/DTG/**SECTION**_x**OF**y
(See Notes 2,3)
1.FOTC:_FOTC Command, Shipname
2.AFOTC:_Alternate FOTC Command (see Note 3.a.)
3.HIT_BROADCAST_SHIP:_HIT Command (see Note 3.b.)
4.PARTICIPANTS:_List of Participant Commands separated by commas
5.DLRP:_DDMMNC_DDDMMWC (See Note 4)
6.OWNSHIP_POSIT_UPDATE_INTERVAL:_Minutes (The standing interval in minutes within which each Participant should be forwarding its position to FOTC)
7.FOTC_SHIFT_TIME:_DTG, Month, and Year (DDHHMMZC_MON_YY) of planned FOTC shift or "UNPLANNED". (See Note 5)
8.FOTC_TRACKS:_z_**TOTAL_CTCS.**TRKNUM/HHMM,TRKNUM/HHMM,... (See Note 6)
9.FOTC_BCST_OUTPUT_FILTER:_ (See Notes 7,8)
Formatted line describing the geographical inclusion area filter or "NONE" following the colon (:) on the line above.
10.REMARKS:_Free formatted narrative text or "NONE" (See Note 9)
ENDAT/...

[END OF MESSAGE SEQUENCE]

NOTES

1. The MSGID set, Message Serial Number (MSN) Field for FOTC SITREP messages will be four digits in the range 9800 through 9999, inclusive. MSNs will be assigned sequentially to enable tracking of successive FOTC SITREPs. Multiple section FOTC SITREPs will contain different MSNs for each section, e.g., 9800, 9801, 9802, etc. FOTC SITREP MSNs will not be reset at the beginning of each month.

2. The DTG in the NARR/OPNOTE line is specified in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9) and is common between successive sections for multi-section SITREPs, e.g., 012115Z0, 041200Z7.

3. In the NARR/OPNOTE line the "x" is the section number for this message and "y" is the total number of sections. The total number of sections (y) cannot exceed 10.

   a. If there is no AFOTC assigned, enter "NONE" as the default value.
   b. If there is no HIT BROADCAST SHIP assigned, enter "NONE" as the default value.

4. Enter the latitude of the DLRP in degrees (00-90), and minutes (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. Enter the longitude of the DLRP in degrees (000-180), and minutes (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W9, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 18000) degrees. If there is no known value, enter "NONE" as the default value.

5. Enter the planned FOTC shift as DTG followed by month and year (DDHHMMZC MON YY). Enter the DTG as days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9). Enter the first three letters of the month and the last two digits of the year of the planned FOTC shift. DTG, month, and year are separated by spaces, e.g., 052000Z7 NOV 96. If there is no planned FOTC shift, enter "UNPLANNED".

6. In the FOTC TRACKS line, "z" is the total number of FOTC tracks reported in the SITREP. The FOTC track number (TRKNUM) and the hours, minutes (HHMM) of the latest report DTG are reported separated by slashes for each FOTC track reported in the SITREP. FOTC tracks are arranged in increasing order by FOTC track number value and are separated by commas. Only FOTC tracks whose latest reported Latitude/Longitude lies inside the current FOTC output filter are listed with the exception of LOB reports which must pass the following test. If the great circle LOB intersects the output filter area, the FOTC track is included. A TRKNUM/HHMM combination should not be split between the lines.

7. The FOTC broadcast output filter is a geographical inclusion area described as a fixed box, a fixed circle, a fixed closed polygon, or a circle relative to a FOTC track. The fixed box is reported using the OS-OTG BOX set. The fixed circle is reported using the OS-OTG ARC set (with the restriction to full circle only). The fixed closed polygon is reported using the OS-OTG LINE set with the requirement that the position of the first and last points be the same. The circle relative to a FOTC track is reported using the OS-OTG TRACK set.

8. Note that the formatted line describing the filter begins on the next line after the 9. FOTC BCST OUTPUT FILTER line. If no FOTC broadcast filter is used, then "NONE" should be entered following the colon (:) on the 9. FOTC BCST OUTPUT FILTER line.

9. If no remarks are supplied, "NONE" should be entered following the colon (:) on the 10. REMARKS line.

3. TABLES AND ENTRY LISTS

The FOTC SITREP message uses the following tables:

TABLE	TITLE
5-5	Line Types
5-6	Color Codes
5-7	Area Fill Types
5-12	Message Identifiers

4. MESSAGE EXAMPLE

[MESSAGE HEADER]

```
MSGID/TF60 FOTC/FOTC/9811/NOV
NARR/OPNOTE: FOTC SITREP/TF60 FOTC/051645Z1/SECTION 1OF1
1.FOTC: TF60 FOTC, EISENHOWER DD
2.AFOTC: YORKTOWN
3.HIT BROADCAST SHIP: THORN
4.PARTICIPANTS: YORKTOWN,THORN,PREBLE,CARON,CARR,OBRIEN
5.DLRP: 4000N4 00500E5
6.OWNSHIP POSIT UPDATE INTERVAL: 20
7.FOTC SHIFT TIME: 052000Z7 NOV 98
8.FOTC TRACKS: 20 TOTAL CTCS.T7001/1640,T7002/1638,T7003/1641,
T7005/1556,T7006/1613,T7007/1632,T7010/1623,T7012/1641,T7015/1612,
T7025/1445,T7045/1456,T7046/1254,T7047/1345,T7050/1555,T7051/1324,
T7052/1134,T7053/1545,T7054/1546,T7055/1523,T7056/1610
9.FOTC BCST OUTPUT FILTER:NONE
10.REMARKS: PLANNED FOTC SHIFT TO YORKTOWN
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3D

GRIDDED FIELD MESSAGE

(GRIDFLD)

1. GENERAL

This message is used to define a two- or three-dimensional grid on the face of the earth and to transmit a specific parameter for each position in the grid. The parameters may be compacted to increase communication efficiency.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	29 NOVEMBER 1989
MSG IDENTIFIER	:	GRIDFLD
MSG NAME	:	GRIDDED FIELD
FUNCTION OR PURPOSE	:	USED TO TRANSMIT PARAMETERS IN A TWO- OR THREE-DIMENSIONAL GRIDDED FIELD.
SPONSOR(S)	:	FLEET NUMERICAL OCEANOGRAPHY CENTER (FNOC)
RELATED DOCUMENT(S)	:	NONE

GRIDFLD FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
		(M)	PROD	/M/M/M/O/M/O	PRODUCT
		(M)	GRID	/M/M/O/M/M/C/M/M/C/M	GRID DATA
		(O)	CMPCT	/M/*C	DATA COMPACTION
		(M)	NARR	/M	NARRATIVE
	*	(O)	RMKS	/M	REMARKS
		(M)	ENDAT	/C/*C/*C	END OF DATA

2. SET ORDER MAP (Continued)

NOTE: The following conditional set/fields are mandatory:

GRID:

Fields 6,9: These fields are mandatory if Field 3 contains a value.

CMPCT:

Field 2: If EOF1 compaction is used in Field 1, Field 2 is not required.

3. TABLES AND ENTRY LISTS

The GRIDFLD message uses the following tables:

TABLE	TITLE
5-12	Message Identifiers
5-13	Vertical (Z-Axis) Units and Codes
5-14	Grid Spacing Units and Codes
5-15	Compaction Codes
5-16	Grid Data Units and Codes

4. MESSAGE EXAMPLE

GRIDFLD EXAMPLE

[MESSAGE HEADER]

```
MSGID/FNOC/GRIDFLD/0001/AUG
PROD/OCEANMET/091200Z2/AUG/000/1OF1/SEA LEVEL PRESSURE
GRID/4000N4/17000E8//037/013//2.5DEG/2.5DEG//1
CMPCT/BS1/.10080E04/.17056E-01
NARR/ANALYSIS FOR 091200Z AUG99
SHRURESDTDSDO7KWJLKJMDPER2VZ014C6X8M9V998X5M14Z8YYU2MWGPETIRJ21L1L1L
H9GGGJHOKPPOW5V4TWSORHPBLKJUK
RMKS/SHORT EXAMPLE OF COMPACTED DATA
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3E

GROUP TRACK MESSAGE

(GROUP)

1. GENERAL

The GROUP message is used by a system to indicate to another system that a group of tracks can be treated as a single unit. GROUP tracks are defined for display purposes only; data on each track that makes up a group are individually maintained in the track database. Using GROUP messages among similar or dissimilar OTH-T systems allows large numbers of contacts to be displayed as a single graphics symbol. This display grouping is used to provide an uncluttered display for battle groups, raid aircraft, naval ports, etc.

The GROUP message is used to define a group, add tracks to an existing group, delete tracks from an existing group, or to delete an existing group. More than one of these functions may be performed by a single message. Due to the complexity of this message format, there are three set order maps. The Group Definition Format is used to define a group. The Group Track Addition/Deletion Format is used to add or delete tracks from existing groups. The Group Deletion Format is used to delete an existing group. The function of each of these formats may be repeated or combined with the function of the other formats in a single message, as shown in the example messages.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	22 OCTOBER 1997
MSG IDENTIFIER	:	GROUP
MSG NAME	:	GROUP TRACK
FUNCTION OR PURPOSE	:	USED BY A SYSTEM TO INDICATE TO ANOTHER SYSTEM THAT A GROUP OF TRACKS CAN BE DISPLAYED AS A SINGLE UNIT.
SPONSOR(S)	:	NONE
RELATED DOCUMENT(S)	:	NONE

A. GROUP DEFINITION FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
[		(M)	ADGRP	/M/M/M/M/M/M/O/O	ADD OR MODIFY GROUP
[		(M)	ADTRK	/M/M	ADD TRACK TO GROUP
[	*	(O)	RMKS	/M	REMARKS
[		(M)	POS	/M/M/M/M/O/C/O/O/O/O/O/O/O(See Note 5)/O/O/O/O	POSITION
[	*	(M)	ADTRK	/M/M	ADD TRACK TO GROUP
[	*	(O)	RMKS	/M	REMARKS
END OF SEGMENT					
		(M)	ENDAT	/C/*C/*C	END OF DATA

2. SET ORDER MAP (Continued)

A. GROUP DEFINITION FORMAT (Continued)

NOTES:

1. A RMKS set may be used after any ADTRK set. The comments contained therein will be interpreted as applying to the immediately preceding ADTRK set.

2. The first ADTRK set defines the GROUP's key or reference track.

3. The POS set provides the most recent position of the key or reference track.

4. Any additional tracks are added to the GROUP by the use of additional ADTRK sets following the initial ADTRK/POS sets.

5. The spare field is used as a position filler and does not convey any data.

6. The following conditional sets/fields are mandatory:

POS:

Field 6: This field is mandatory if Field 8 is used and is not equal to Field 7.

2. SET ORDER MAP (Continued)

B. GROUP TRACK ADDITION/DELETION FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
[		(M)	ADGRP	/M/M/M/M/M/M/O/O	ADD OR MODIFY GROUP
[	*	(C)	ADTRK	/M/M	ADD TRACK TO GROUP
[	*	(C)	DLTRK	/M/M	DELETE TRACK FROM GROUP
END OF SEGMENT					
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTES:

1. A RMKS set may be used after any ADTRK or DLTRK set, comments contained therein will be interpreted as applying to the immediately preceding ADTRK or DLTRK.

2. The ADGRP set designates the existing GROUP to which tracks will be added or from which tracks will be deleted.

3. The following conditional sets/fields are mandatory:

   ADTRK: This set is mandatory if the DLTRK set is not used.

   DLTRK: This set is mandatory if the ADTRK set is not used.

2. SET ORDER MAP (Continued)

C. GROUP DELETION FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
	*	(M)	DLGRP	/M/M/M	DELETE GROUP
		(M)	ENDAT	/C/*C/*C	END OF DATA

3. TABLES AND ENTRY LISTS

The GROUP message uses the following tables and entry lists:

TABLE	TITLE
5-1	Force Codes
5-2	Category Codes
5-4	Group Category Codes
5-12	Message Identifiers

ENTRY LIST	TITLE
59	Country Codes
137	Ship Types
513	Aircraft Types
1104	Sensor Codes
1136	Source Codes

4. MESSAGE EXAMPLES

GROUP DEFINITION EXAMPLE

[MESSAGE HEADER]

```
MSGID/CTG 81.0/GROUP/0008/APR
SEC/CONFIDENTIAL/NOFORN (classified for example purposes only)
ADDEE/FDDS/TWCS/JOTS
ADGRP/G1234/WASP BG/20NM/NAV/09/T7001/US/WASP BG
ADTRK/T7001/KITTY HAWK
POS/210730Z3/MAY/3300N6/11900W1/OBDF/250T/1NM/1NM/250T/15K
RMKS/GROUP TRANSIT CONUS TO HAWAII
ADTRK/T7004/SPRUANCE
ADTRK/T7007/TICONDEROGA
ADTRK/T7010/CIMARRON
ENDAT/OPNAVINST S5513.6D-11/DATE:12JAN03
```

[END OF MESSAGE SEQUENCE]

GROUP TRACK ADDITION/DELETION EXAMPLE

[MESSAGE HEADER]

```
MSGID/CTG 81.0/GROUP/0009/APR
SEC/CONFIDENTIAL/NOFORN (classified for example purposes only)
ADGRP/G1234/WASP BG/20NM/NAV/09/T7001/US/WASP BG
ADTRK/T7015/CTU 35.2.1
DLTRK/T7003/LINCOLN
RMKS/PORT VISIT HONG KONG
DLTRK/T7005/BURKE A
ENDAT/OPNAVINST S5513.6D-11/DATE:12JAN03
```

[END OF MESSAGE SEQUENCE]

GROUP DELETION EXAMPLE

[MESSAGE HEADER]

```
MSGID/CTG 81.0/GROUP/0010/APR
SEC/CONFIDENTIAL/NOFORN (classified for example purposes only)
DLGRP/G1234/CTG 81.0/WASP BG
ENDAT/OPNAVINST S5513.6D-11/DATE:12JAN03
```

[END OF MESSAGE SEQUENCE]

COMBINED EXAMPLE

[MESSAGE HEADER]

```
MSGID/NCTSI/GROUP/0002/MAY
SEC/UNCLASSIFIED
ADDEE/ATWCS
ADGRP/G1234/WASP BG/20NM/NAV/09/T7001/US/WASP BG
ADTRK/T7001/KITTY HAWK
POS/210730Z3/MAY/2300N5/11900E1/OBDF/150T/1NM/1NM/150T/15K
ADTRK/T7004/SPRUANCE
ADTRK/T7007/TICONDEROGA
ADTRK/T7010/CIMARRON
ADTRK/T7015/PERRY
ADTRK/T7003/WASHINGTON
ADTRK/T7005/RAMAGE
DLGRP/G1234/CTG 81.0/WASP BG
ADGRP/T5678/LINREP1/50NM/SUP/09/S1001/US/MAIL
DLTRK/T1004/CTF 70
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3F

JOINT UNIT REPORT

(JUNIT REPORT)

1. GENERAL

The JUNIT Report message is used to exchange processed unit track data and track management sets between computer systems. It contains the identity, location, movement, type, echelon, and threat of units. The JUNIT Report message is identified with an entry of JUNIT in Field 2 of the MSGID set. The minimum sets used in the JUNIT Report message vary depending upon how the message is being used. In general, the JUNIT Report message consists of the MSGID set, the body of the JUNIT message, and an ENDAT set. The body of the message consists of either track management sets and/or JUNIT sets and their amplifying sets.

When used for unit management functions only, JUNIT sets are not reported and one or more of the unit management sets listed in Table 3F-1 is used. When the JUNIT Report is used solely to pass unit amplifying or locational information it consists of one or more JUNIT segments. A JUNIT segment consists of a minimum of a JUNIT subject set, immediately followed by a location set (JPOS or JLOB). Table 3F-3 consists of sets which are used to modify the JPOS and JLOB report sets. These sets (ENGAG, **EOB,** EQPT, POW, PRSNL, RAD, RADB, REFUG) should follow the location set which they amplify. The maximum number of times each set can be repeated per location set is provided in Table 3F-3. A location (e.g., JPOS) followed by its amplifying sets (e.g., RADB, RMKS) is called a nested segment within the JUNIT segment. Multiple nested segments may be reported within a single JUNIT segment to provide historical position data on the unit described in the preceding JUNIT set. Table 3F-2 consists of sets which are used to provide amplifying information on the JUNIT subject set. The sets ARR, DEP, DES, **GOB,** RIG, RMKS, and UIC must follow the last nested segment within the JUNIT segment. The maximum number of times each set can be repeated per JUNIT set is provided in Table 3F-2.

Additionally, the JUNIT Report may be used to provide a combined message of unit reports and unit management requests. Unit management sets, if included, shall not be inserted between a JUNIT set and its associated amplifying sets, e.g., between a JUNIT and any of the sets from Table 3F-2 used to amplify the JUNIT set.

TABLE 3F-1 UNIT MANAGEMENT SETS

SETS	FUNCTION
DELETE (DEL)	Deletes a unit
JOINT UNIT DELETE LINE OF BEARING (JDLOB)	Deletes a line of bearing from a unit history
JOINT UNIT DELETE POSITION	Deletes a position from a unit history
MERGE (MRG)	Merges the track data from two distinct units into one unit

TABLE 3F-2 MAXIMUM AMPLIFYING SETS PER JUNIT SET

SETS	MAXIMUM ALLOWED
ARRIVAL (ARR)	1
DEPARTURE (DEP)	1
DESTINATION (DES)	1
GROUND ORDER OF BATTLE (GOB)	**1**
JOINT UNIT LINE OF BEARING (JLOB)	*
JOINT UNIT POSITION (JPOS)	*
RIGGING (RIG)	1
REMARKS (RMKS)**	4
UNIT IDENTIFICATION CODE (UIC)	1
JOINT UNIT PAIR (JPAIR)	1

* Sum of JPOS and JLOB sets in any combination shall not exceed 26 per JUNIT set.
** Sum of RMKS sets in any combination shall not exceed four per JUNIT set.

All JPOS and JLOB sets with amplifying data from Table 3F-3 must be reported at the beginning of a JUNIT segment; all other amplifying sets from Table 3F-2 must follow

TABLE 3F-3 MAXIMUM AMPLIFYING SETS PER JPOS AND JLOB SETS

SETS	MAXIMUM ALLOWED
ENGAGEMENT (ENGAG)	4
ELECTRONIC ORDER OF BATTLE (EOB)*	**1**
EQUIPMENT (EQPT)	20
PRISONERS OF WAR (POW)	1
PERSONNEL (PRNSL)	1
RADAR DATA (RAD)**	6
EXPANDED RADAR DATA (RADB)**	6
REFUGEES (REFUG)	5

*** The EOB set may also be used to amplify a RAD or RADB set. Thus it may be reported following a JPOS, JLOB, RAD, or RADB set.**

** The RAD and RADB sets are optional and mutually exclusive. If RADB is used then RAD shall not be used in the same message. If RAD is used then RADB shall not be used in the same message.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	1 OCTOBER 1996
MSG IDENTIFIER	:	JUNIT
MSG NAME	:	JUNIT REPORT
FUNCTION OR PURPOSE	:	AN OTG JUNIT REPORT MESSAGE IS USED FOR THE EXCHANGE OF PROCESSED UNIT TRACK DATA AND UNIT TRACK MANAGEMENT INFORMATION BETWEEN COMPUTER SYSTEMS. IT CONTAINS DATA RELATIVE TO THE IDENTITY, LOCATION, TYPE, ECHELON, THREAT AND MOVEMENT OF UNITS.
SPONSOR(S)	:	NONE
RELATED DOCUMENT(S)	:	NONE

JUNIT REPORT FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
The following sets (DEL, JDLOB, JDPOS, MRG) may be used in any order.					
	*	(O)	DEL	/M/M/O	DELETE
	*	(O)	JDLOB	/M/M/M/M/M/M/O/O/M/O	JOINT UNIT DELETE LINE OF BEARING
	*	(O)	JDPOS	/M/M/M/M/M/O/O/M/O	JOINT UNIT DELETE POSITION
	*	(O)	MRG	/M/M/M/M/O(See Note 1)/O	MERGE
[		(C)	JUNIT	/M/M/O/O/O/O/O/O/O/O/O/M/O/O	JOINT UNITS
The repeatability constraints shown in Table 3F-2 must be followed for all sets in this segment following the JUNIT set.					

2. SET ORDER MAP (Continued)

JUNIT REPORT FORMAT (Continued)

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
The order of the JPOS and JLOB sets is not specified. The RAD and RADB sets, if used, are understood to amplify the preceding JPOS or JLOB set. **The EOB set modifies the preceding RAD or RADB set. If a RAD or RADB set is not used, the EOB set is associated with the preceding POS or LOB set.** The contents of Fields 1 and 2 of RAD or RADB set must be the same as Fields 1 and 2 of the preceding JPOS or JLOB set.					
[	*	(C)	JPOS	/M/M/M/M/O/C/O/O/O/O/O/O	JOINT UNIT POSITION
[		(O)	JPAIR	/M/M/*O/*O	JOINT UNIT PAIR
[[	*	(O)	RAD	/M/M/C/C/O/O/O/O/O/O	RADAR DATA
[[	*	(O)	RADB	/M/M/C/C/O/O/O/O/O/O	EXPANDED RADAR DATA
[[		**(O)**	**EOB**	**/C/C**	**ELECTRONIC ORDER OF BATTLE**
[[		(O)	PRSNL	/M/M/C/C/C/C/C/O/O/O	PERSONNEL
[[	*	(O)	EQPT	/M/M/M/C/C/C/C/C	EQUIPMENT
[[		(O)	POW	/M/M/M	PRISONERS OF WAR
[[	*	(O)	REFUG	/M/M/M/O/O	REFUGEES
[[	*	(O)	ENGAG	/M/M/M/O	ENGAGEMENT
[END OF SEGMENT					
[	*	(C)	JLOB	/M/M/M/M/M/O/O/O/C/O	JOINT UNIT LINE OF BEARING
[[	*	(O)	RAD	/M/M/C/C/O/O/O/O/O/O	RADAR DATA
[[	*	(O)	RADB	/M/M/C/C/O/O/O/O/O/O	EXPANDED RADAR DATA
[[		**(O)**	**EOB**	**/C/C**	**ELECTRONIC ORDER OF BATTLE**
[[		(O)	PRSNL	/M/M/C/C/C/C/C/O/O/O	PERSONNEL
[[	*	(O)	EQPT	/M/M/M/C/C/C/C/C	EQUIPMENT
[[		(O)	POW	/M/M/M	PRISONERS OF WAR
[[	*	(O)	REFUG	/M/M/M/O/O	REFUGEES
[[	*	(O)	ENGAG	/M/M/M/O	ENGAGEMENT
[END OF SEGMENT					

2. SET ORDER MAP (Continued)

JUNIT REPORT FORMAT (Continued)

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
The following sets (**GOB,** UIC, ARR, DEP, DES, RIG, RMKS) may be used in any order.					
[		**(O)**	**GOB**	**/O/O/O/O**	**GROUND ORDER OF BATTLE**
[		(O)	UIC	/*M	UNIT IDENTIFICATION CODE
[		(O)	ARR	/M/M/O/O/O/O/O/O	ARRIVAL
[		(O)	DEP	/M/M/O/O/O/O/O/O	DEPARTURE
[		(O)	DES	/M/M/O/O/O/O/O/O	DESTINATION
[		(O)	RIG	/O/O/O/O/O/O/O	RIGGING
[	*	(O)	RMKS	/M	REMARKS
END OF SEGMENT					
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTES:

1. The spare field is used as a position filler and does not convey any data.

2. The following conditional sets/fields are mandatory:

   JUNIT: This set is mandatory if any of the following sets are used (ARR, DEP, DES, **EOB, GOB,** JLOB, JPOS, RAD, RADB, REMARKS, RIG, UIC).

   JPOS: This set is mandatory if the JUNIT set is used and the JLOB set is not used.

   JLOB: This set is mandatory if the JUNIT set is used and the JPOS set is not used.

   Field 8: This field is mandatory if half-width is expressed in NM.

2. SET ORDER MAP (Continued)

NOTES: (Continued)

RAD:

Field 3: This field is mandatory if Emitter Name is not used.

Field 4: This field is mandatory if ELINT Notation is not used.

RADB:

Field 3: This field is mandatory if Emitter Name is not used.

Field 4: This field is mandatory if ELINT Notation is not used.

PRSNL:

Field 3: This field is mandatory if Fields 4 through 8 are not reported.

Field 4: This field is mandatory if Fields 3, 5, 6, 7, and 8 are not reported.

Field 5: This field is mandatory if Fields 3, 4, 6, 7, and 8 are not reported.

Field 6: This field is mandatory if Fields 3, 4, 5, 7, and 8 are not reported.

Field 7: This field is mandatory if Fields 3, 4, 5, 6, and 8 are not reported.

Field 8: This field is mandatory if Fields 3 through 7 are not reported.

EQPT:

Field 4: This field is mandatory if Fields 5 through 8 are not reported.

Field 5: This field is mandatory if Fields 4, 6, 7, and 8 are not reported.

Field 6: This field is mandatory if Fields 4, 5, 7, and 8 are not reported.

Field 7: This field is mandatory if Fields 4, 5, 6, and 8 are not reported.

Field 8: This field is mandatory if Fields 4 through 7 are not reported.

3. TABLES AND ENTRY LISTS

The JUNIT Report message uses the following tables and entry lists:

TABLE	TITLE
5-12	Message Identifiers
5-18	Service Codes

ENTRY LIST	TITLE
20	Target Type
59	Country Codes
97	Organization Type
98	Echelon Level
1053	Appearance Group Codes
1080	Hull Profile Codes
1104	Sensor Codes
1136	Source Codes

4. MESSAGE EXAMPLE

[MESSAGE HEADER]

```
MSGID/JCS/JUNIT/1234/DEC
JUNIT/T1234/1 INF DIV/MECH INF/DIV/ARM/APC/US/22//WASP BG
/ABC012345678/3
JPOS/021234Z2/DEC/283210.12N9/0432101.23E6/VISUAL////234T/45K
JUNIT/T2345/10 REPUBLICAN GUARD/ARMOR/BDE/ARM/HTK/IZ/24/TGT
//DEF123456789/3
JLOB/012345Z5/DEC/345601.23N4/0450123.45E4/123T/IR/5DEG
ENDAT
```

[END OF MESSAGE SEQUENCE]

[MESSAGE HEADER]

```
MSGID/COMSECONDFLT/JUNIT/1234/DEC
JUNIT/T1234/1 INF DIV/MECHINF/DIV/ARM/APC/US/22//NORFOLK
/ABC012345678/2
JPOS/021234Z2/DEC/283210.12N9/0432101.23E6/VISUAL////234T/45K
PRSNL/021234Z2/DEC/100/95/2/10/1/12/11/1
EQPT/021221Z6/DEC/HUMVEE/15/14/0/1
EQPT/021221Z6/DEC/ANUSQ-119BV/17/17
REFUG/021234Z2/DEC/20/YO/SERB
REFUG/021234Z2/DEC/12/YO/CROAT
POW/021234Z2/DEC/2
JUNIT/T2345/75 INF REG/INF/REGION/ARM//US/22///BCD123456789
JLOB/012345Z5/DEC/345601.23N4/0140123.45E4/123T/ES/5DEG
ENGAG/012345Z5/DEC/EN/CBA876543210
ENDAT
```

[END OF MESSAGE SEQUENCE]

[MESSAGE HEADER]

```
MSGID/JCS/JUNIT/1234/APR
JUNIT/J12045/1 INF DIV/MECHINF/DIV/ARM/APC/US/22//NORFOLK
/ABC012345678/2
JPOS/121234Z3/APR/283210.12N9/0432101.23E6/VISUAL////234T/45K
JPAIR/PLRS/02F3
JUNIT/J12102/10 REPUBLICAN GUARD/ARMOR/BDE/ARM/HTK/IZ/24/TGT
//DEF123456789/3
JLOB/122345Z7/APR/345601.23N4/0450123.45E4/123T/IR/5DEG
JPAIR/PLRS/0EF4
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3G

OPNOTE

1. GENERAL

The OPNOTE and Contact Report messages are both identified with an entry of "GOLD" in Field 2 of the MSGID set. The OPNOTE is used to manually resolve ambiguities and errors between computer databases and/or to exchange operator information. The minimum sets for the OPNOTE message consist of the MSGID set, NARR set, and ENDAT set. With the exception of the WEX set, all sets following the NARR set should be processed as unformatted text information.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	30 JUNE 1989
MSG IDENTIFIER	:	GOLD
MSG NAME	:	OPNOTE
FUNCTION OR PURPOSE	:	THE OTG OPNOTE IS USED TO MANUALLY RESOLVE AMBIGUITIES AND ERRORS BETWEEN COMPUTER DATABASES AND/OR TO EXCHANGE OPERATOR INFORMATION.
SPONSOR(S)	:	NONE
RELATED DOCUMENT(S)	:	NONE

OPNOTE FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(M)	NARR	/M	NARRATIVE
		(O)	WEX	/O/O/O/O/O/O/O/O/O/O/O	WEATHER
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTE: The NARR set of an OPNOTE must begin with "NARR/OPNOTE:".

3. TABLES AND ENTRY LISTS

The OPNOTE message uses the following table and entry list:

TABLE	TITLE
5-12	Message Identifiers

ENTRY LIST	TITLE
175	Most Significant Weather

4. MESSAGE EXAMPLES

OPNOTE EXAMPLE

[MESSAGE HEADER]

```
MSGID/NCTSI/GOLD/0001/APR
NARR/OPNOTE:  SR  DE  T1  IAW  ACOP, REQUEST THAT YOU DELETE
UNAUTHORIZED DATA IN THE TRADEMARK FIELD OF T7410.  LCDR
JOHNSEN SENDS.
ENDAT
```

[END OF MESSAGE SEQUENCE]

OPNOTE WITH WEATHER INFORMATION

[MESSAGE HEADER]

```
MSGID/NCTSI/GOLD/0002/APR
NARR/OPNOTE:  SR DE NT T7479 DETECTED BY LAMPS CREW REPRESENTS 3
CONTACTS. MAY CORRELATE TO T7536, T7537 AND T7538 REPORTED EARLIER BY
DAVID R. RAY RADAR.
WEX/181800Z8/APR/2300N5/11900E1/50NM/230T/10K/RW/5/4/50F
ENDAT
```

[END OF MESSAGE SEQUENCE]

MANUALLY GENERATED FOTC SITREP

[MESSAGE HEADER]

```
MSGID/NCTSI/GOLD/0004/MAR
NARR/OPNOTE:FOTC SITREP/NCTSI/121600Z0/SECTION 1OF1
T07001/03/T07002/00/T07004/05/T07007/00/T07010/01/T07011/00/T07012/02
T07015/00/T07016/04/T07017/03/T07019/02/T07020/06/T07031/01/T07045/01
T07087/00/T07121/04/T07122/01/T07124/00/T07144/00/T07201/01/T07202/02
T07256/00/T07257/00/T07289/01/T07290/00/T07300/01/T07301/04/T07305/00
T07319/02/T07320/00/T07321/01/T07322/00/A00001/A00002/A00004/A0000
A00007/A00008/A00010/A00011/A00012/A00013/A00014/A00015
REMARKS:  DATA SUMMARY:  AIR 01 SURF 30 SUB 01 FRND 10 HOST 04 UNK 18
TRACKS IN DATABASE:  32
FOTC-NT, AFOTC IN   PT: IN,MR,TH   NON PT:ST
HIT BDCST SHIP NT
OWNSHIP UPDT INT: 05   TRK UPDT INT: SURF 15  SUB 15 AIR 05
MSN: 09010 32,09034 36, 09038 44, 09047 62
PLANNED FOTC SHIFT:122000Z IN.  HIT BRDCST DN SINCE 120200Z ETR UNK.
LINCOLN REVIEW PLANNED FOTC SHIFT PROCEDURES.  INTERMITTENT DUAL
INTERROG ON OTCIXS CAUSING OCCAS BACKUP IN QUEUE.  ALL SIDS ACK FOR
SITREP.
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3H

OVERLAY 1 MESSAGE

(OVLY1)

1. GENERAL

The OVLY1 message is used to transmit a single fixed overlay (i.e., graphics information) from one computer to another. An OVLY1 message exceeding the maximum message length specified in paragraph 2.6d may be linked to another OVLY1 message by the chaining information contained in Field 4 of the OVLY set. In this case, receiving systems should process and store any overlay whose definition is split between two or more messages as a single graphics overlay. The individual items which comprise an overlay must be plotted in the order in which they appear in the message to ensure proper layering, especially when filled items are used. Graphic overlay examples are located in paragraph 4.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	30 JUNE 1989
MSG IDENTIFIER	:	OVLY1
MSG NAME	:	OVERLAY 1
FUNCTION OR PURPOSE	:	USED TO TRANSMIT GRAPHICS INFORMATION FROM ONE COMPUTER TO ANOTHER. ONLY A SINGLE FIXED OVERLAY MAY BE DESCRIBED USING THE OVLY1 MESSAGE.
SPONSOR(S)	:	NONE
RELATED DOCUMENT(S)	:	NONE

OVLY1 FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
		(M)	OVLY	/M/M/M/M/M/O/O/O/O/O/	OVERLAY
		(O)	CHART	/M/M/M/O/O	CHART

2. SET ORDER MAP (Continued)

OVLY1 FORMAT (Continued)

One or more of the following (ARC, LINE, SECT, SYMB, TEXT) must be used. These sets may be used in any order. The individual items which comprise an overlay must be plotted in the order in which they appear in the message to ensure proper layering, especially when filled items are used.

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
	*	(C)	ARC	/M/O/O/O/M/M/M/O/C/O/C	ARC
	*	(C)	LINE	/M/O/O/*M/*M/O/O (Total of 99 Points)	LINE
	*	(C)	SECT	/M/O/O/O/M/M/M/M/O/M	SECTOR
	*	(C)	SYMB	/O/O(See Note 1)/O/M/M/M/O/O/O	SYMBOL
	*	(C)	TEXT	/O/O/O/M/M/M/O	TEXT
	*	(O)	RMKS	/M	REMARKS
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTE: The following conditional sets are mandatory:

ARC: This set is mandatory if LINE, SECT, SYMB, or TEXT is not used.

LINE: This set is mandatory if ARC, SECT, SYMB, or TEXT is not used.

SECT: This set is mandatory if ARC, LINE, SYMB, or TEXT is not used.

SYMB: This set is mandatory if ARC, LINE, SECT, or TEXT is not used.

TEXT: This set is mandatory if ARC, LINE, SECT, or SYMB is not used.

NOTES:

1. The spare field is used as a position filler and does not convey any data.

2. If used, Fields 6 and 7 of the LINE will always be the last fields output for the set, regardless of the number of repetitions of Fields 4 and 5.

3. TABLES AND ENTRY LISTS

The OVLY1 message uses the following tables:

TABLE	TITLE
5-5	Line Types
5-6	Color Codes
5-7	Area Fill Types
5-8	Basic Symbol Codes
5-9	Character and Symbol Size Codes
5-10	Symbol Modifier Codes
5-11	Character Font Codes
5-12	Message Identifiers

4. MESSAGE EXAMPLES

SINGLE FIXED OVERLAY (BOX)

[MESSAGE HEADER]

```
MSGID/CTC81.0/OVLY1/0109/MAY
SEC/UNCLASSIFIED
ADDEE/ATWCS
OVLY/NOTACK ONE/220950Z8/MAY/1OF1/NOTACK ONE
CHART/1000N1/12000W3/150NM/01/RL
LINE/2/A/3/G/1000N1/11900E1/1020N3/12000E3
TEXT/2/0/B/1010N2/11920E3/NOTACK ONE/270T
RMKS/NOTACK AREA EFFECTIVE 210800Z1 MAY THROUGH 220800Z2 MAY 98
ENDAT
```

[END OF MESSAGE SEQUENCE]

SINGLE FIXED OVERLAY (SECTOR)

[MESSAGE HEADER]

```
MSGID/CTG81.0/OVLY1/0110/MAY
SEC/UNCLASSIFIED
ADDEE/SDS/ATWCS/OED
OVLY/HOT AREA/012345Z5/MAY/1OF1/SURFACE GUNNERY AREA
SECT/1/A/2/B/3215N1/11720W1/000T0/040T4/15NM6/95NM4
TEXT/2/3/D/3300N6/11600W8/SURFACE GUNNERY AREA/090
RMKS/AREA HOT 020500Z7 TO 040500Z9 MAY 98
ENDAT
```

[END OF MESSAGE SEQUENCE]

SINGLE FIXED OVERLAY (CLOSED POLYGON)

[MESSAGE HEADER]

```
MSGID/NCTSI/OVLY1/0010/JUN
SEC/UNCLASSIFIED
ADDEE/TWCS
OVLY/FLEETEX 2 98/271600Z6/JUN/1OF1/FLEETEX WARNING AREA
TEXT/20//G/000000N0/0000000W0/FLEETEX WARNING AREA
LINE/99/1/C/0040N4/00000E0/000034N7/00008E8/0028N0/00016E7/0022N4
/00024E6/0016N7/00032E5/0011N2/00040E4/0005N5/00049E3/0001S1/000572E
/0007S7/00105E6/0013S4/00113E5/0048S2/00201E3/0058S3/00204E6/0107S8
/00207E9/0117S9/00210E3/0126S9/00213E6/0136S0/00216E9/0145S0/00220E4
/0155S1/00223E7/0204S6/00226E0/0214S7/00229E3/0311S5/00247E3/0321S6
/00244E0/0330S6/00241E7/0340S7/00238E3/0349S6/00235E0/0359S7/00232E7
/0408S2/00228E2/0418S3/00225E9/0427S3/00222E6/0437S4/00219E2/0534S2
/00201E3/0540S9/00153E9/0546S5/00145E9/0552S2/00137E1/0558S8/00128E1
/0603S9/00120E3/0609S5/00112E4/0615S2/00104E5/0621S9/00056E1/0627S5
/00048E2/0702S9/00001W1/0702S9/00011W2/0702S9/00021W3/0702S9/00031W4
/0702S9/00041W5/0702S9/00051W6/0702S9/00101W2/0702S9/00112W4/0702S9
/00122W5/0702S9/00132W6/0702S9/00232W7/0656S7/00240W6/0650S1/00248W4
/0644S4/00256W3/0638S7/00305W8/0633S2/00313W9/0627S5/00321W6/0621S9
/00329W4/0615S2/00337W3/0609S5/00345W2/0534S2/00434W1/0524S1/00437W4
/0515S1/00440W8/0505S0/00443W1/0456S5/00446W4/0446S4/00450W9/0437S4
/00453W2/0427S4/00456W5/0418S3/00459W8/0408S2/00502W7/0311S5/00520W7
/0301S4/00517W3/0252S9/00514W0/0242S8/00511W7/0233S8/00508W3/0223S7
/00505W0/0214S7/00501W6/0204S6/00458W7/0155S1/00455W4/0145S0/00452W1
/0048S2/00434W1/0042S6/00426W2/0036S9/00418W3/0030S3/00410W5/0246S2
/00402W6/0019S0/00354W2/0013S4/00345W2/0007S7/00337W3/0001S1/00329W5
/0005N5/00321W6/0040N4/00233W8/0040N4/00223W7/0040N4/00213W6/0040N4
/00203W5/0040N4/00153W9/0040N3/00143W8/0040N4/00133W7/0040N4/00123W6
/0040N4/00000E0
RMKS/FLEETEX 2 97 WARNING AREA EFFECTIVE 300000Z AUG THROUGH
RMKS/052359Z4 AUG
ENDAT
```

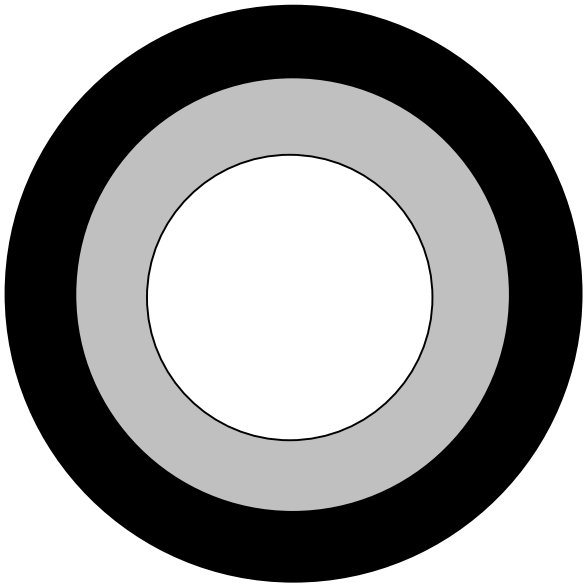
[END OF MESSAGE SEQUENCE]

GRAPHICS OVERLAY EXAMPLE

[MESSAGE HEADER]

```
MSGID/EISENHOWER DD/OVLY1/0002/JUN
OVLY/PLOT ORDER 1/071342Z7/JUN/1OF1/3 CIRCLES-BULLSEYE
/EISENHOWER//071342Z7/JUN/211342Z3/JUN
CHART/050836N2/0365642W6/0.0YD/00
ARC/0/A/1/A/320000N5/0440000W8/1000.0NM1
ARC/0/A/1/E/320000N5/0440000W8/750.0NM2
ARC/0/A/1/B/320000N5/0440000W8/500.0NM5
RMKS/THE INDIVIDUAL ITEMS OF AN OVERLAY SHOULD PLOT IN THE ORDER IN
RMKS/WHICH THEY ARE RECEIVED IN THE MESSAGE.  THUS THE FOLLOWING
RMKS/EXAMPLE OF THREE CONCENTRIC FILLED CIRCLES, RECEIVED IN THE
RMKS/ORDER OF LARGE, MEDIUM, SMALL, WILL APPEAR AS A BULLSEYE.
ENDAT
```

[END OF MESSAGE SEQUENCE]

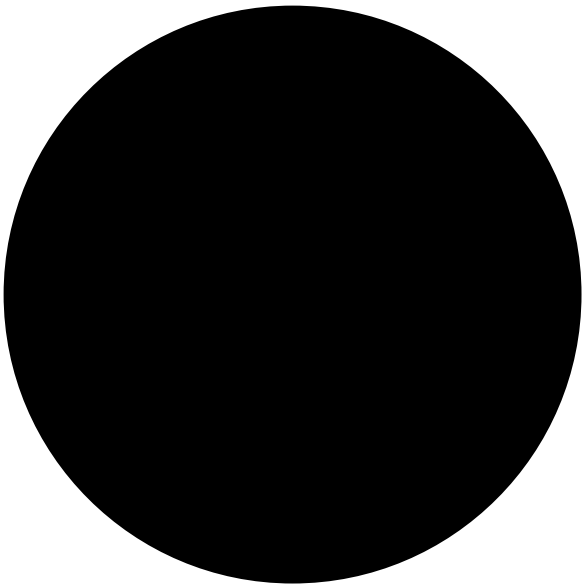


GRAPHICS OVERLAY EXAMPLE

[MESSAGE HEADER]

```
MSGID/EISENHOWER DD/OVLY1/0002/JUN
OVLY/PLOT ORDER 2/071342Z7/JUN/1OF1/3 CIRCLES-ONLY LARGE VISIBLE
/EISENHOWER//071342Z7/JUN/211342Z3/JUN
CHART/065124S8/1475642W9/0.0YD/00/RL
ARC/0/A/1/A/200000N2/1550000W1/500.0NM5
ARC/0/A/1/B/200000N2/1550000W1/750.0NM2
ARC/0/A/1/C/200000N2/1550000W1/1000.0NM1
RMKS/THE INDIVIDUAL ITEMS OF AN OVERLAY SHOULD PLOT IN THE ORDER IN
RMKS/WHICH THEY ARE RECEIVED IN THE MESSAGE.  THUS THE FOLLOWING
RMKS/EXAMPLE OF THREE CONCENTRIC FILLED CIRCLES, RECEIVED IN THE
RMKS/ORDER OF SMALL, MEDIUM, LARGE, APPEARS AS A SINGLE LARGE CIRCLE.
ENDAT
```

[END OF MESSAGE SEQUENCE]



ANNEX 3I

OVERLAY 2 MESSAGE

(OVLY2)

1. GENERAL

The OVLY2 message is used to transmit single or multiple overlays, or to delete a single overlay from one computer to another. These overlays may be fixed or relative. Relative overlays are graphics structures that are slaved to OTH-T tracks. Their location will change when the reference track changes its location. Their orientation may change when the reference track changes its heading. An OVLY2 message exceeding the maximum message length specified in paragraph 2.6d may be linked to another OVLY2 message by the chaining information contained in Field 4 of the OVLY set. In this case, receiving systems should process and store any overlay whose definition is split between two or more messages as a single graphics overlay. The individual items which comprise an overlay must be plotted in the order in which they appear in the message to ensure proper layering, especially when filled items are used. Graphic overlay examples are located in paragraph 4. The individual items which comprise an overlay should be plotted using the Line Projection fields specified in the accompanying AREAM set. If no Line Projection is specified via an AREAM set, the Line Projection field of the CHART set should be used.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	22 OCTOBER 1997
MSG IDENTIFIER	:	OVLY2
MSG NAME	:	OVERLAY 2
FUNCTION OR PURPOSE	:	USED TO TRANSMIT GRAPHICS INFORMATION AND TO DELETE A SINGLE OVERLAY FROM ONE COMPUTER TO ANOTHER. ONE OR MORE FIXED OR RELATIVE OVERLAYS MAY BE DESCRIBED USING THE OVLY2 MESSAGE.
SPONSOR(S)	:	NONE
RELATED DOCUMENT(S)	:	NONE

OVLY2 FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
		(O)	DELOV	/M	DELETE OVERLAY
[		(O)	CTC	/M/M/O/O/O/O/O/O/O/O/M/O/M/O/O/O/O/O/O/O	CONTACT
[		(O)	POS	/M/M/M/M/O/C/O/O/O/O/O/O/O(See Note 5)/O/O/O/O	POSITION
[		(C)	OVLY	/M/M/M/M/M/O/O/O/O/O/O	OVERLAY
[		(O)	CHART	/M/M/M/O/O	CHART
[		(C)	ORGIN	/M/M	ORIGIN

2. SET ORDER MAP (Continued)

OVLY2 FORMAT (Continued)

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
One or more of the following (RARC, RLINE, RSECT, RSYMB, RTEXT) must be used. These sets may be used in any order. The individual items which comprise an overlay must be plotted in the order in which they appear in the message to ensure proper layering, especially when filled items are used. The ARMKS set may be used to provide amplifying textual information to the preceding ARC, LINE, RARC, RLINE, RSECT, RSYMB, RTEXT, SECT, SYMB, and/or TEXT sets.					
[	*	(C)	RARC	/M/O/O/O/O/O/M/O/C/O/C	RELATIVE ARC
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	RLINE	/M/O/O/*M/*M/O/O (Total of 99 Points)	RELATIVE LINE
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	RSECT	/M/O/O/O/M/M/M/M/M/M	RELATIVE SECTOR
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	RSYMB	/O/O(See Note 5)/O/M/M/M/O/O/O	RELATIVE SYMBOL
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	RTEXT	/O/O/O/M/O/M/O	RELATIVE TEXT
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(O)	RMKS	/M	REMARKS
END OF SEGMENT					
[		(C)	OVLY	/M/M/M/M/M/O/O/O/O/O/O	OVERLAY
[		(O)	CHART	/M/M/M/O/O	CHART

2. SET ORDER MAP (Continued)

OVLY2 FORMAT (Continued)

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
One or more of the following (ARC, CLINE, LINE, SECT, SYMB, TEXT) must be used. These sets may be used in any order.					
[	*	(C)	ARC	/M/O/O/O/M/M/M/O/C/O/C	ARC
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	CLINE	/M/M/O/O/*M (Total of 99 Points)	COMPACTED LINE
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	LINE	/M/O/O/*M/M/O/O (Total of 256 Points)	LINE
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	SECT	/M/O/O/O/M/M/M/M/M/M	SECTOR
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	SYMB	/O/O(See Note 5)/O/M/M/M/O/O/O	SYMBOL
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	TEXT	/O/O/O/M/M/M/O	TEXT
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(O)	RMKS	/M	REMARKS
END OF SEGMENT					
		(M)	ENDAT	/C/*C/*C	END OF DATA

2. SET ORDER MAP (Continued)

NOTES:

1. The RMKS set will be interpreted as applying to the immediately preceding overlay, not to the entire message, and is intended for amplification purposes.

2. A CTC set may precede the OVLY set to ensure that the receiving system holds the reference track and that its position is current. This section shows the Contact Report as a CTC and POS set; however, any legal Contact Report containing at least one POS set (see Annex 3B) may be used. Normally the Contact Report would be sent only with the first transmission of a relative overlay to a specified addressee. If Field 1 of ORGIN set is filled, then the CTC set is not required.

3. If Field 1 of ORGIN is filled, then POS is not required.

4. If used, the AREAM set is used only once per overlay item.

5. The spare field is used as a position filler and does not convey any data.

6. If used, Fields 6 and 7 of the LINE/RLINE will always be the last fields output for the sets, regardless of the number of repetitions of Fields 4 and 5.

7. The following conditional sets/fields are mandatory:

   POS:

   Field 6: This field is mandatory if Field 8 is used and is not equal to Field 7.

   OVLY: Following POS; this set is mandatory if the OVLY following RMKS is not used.

   ORGIN: This set is mandatory for a relative overlay.

2. SET ORDER MAP (Continued)

NOTES: (Continued)

RARC: This set is mandatory if RLINE, RSECT, RSYMB, or RTEXT is not used.

Field 9: This field is mandatory if Field 8 is used and contains a lesser value than Field 7.

Field 11: This field is mandatory if Field 10 is used.

RLINE: This set is mandatory if RARC, RSECT, RSYMB, or RTEXT is not used.

RSECT: This set is mandatory if RARC, RLINE, RSYMB, or RTEXT is not used.

RSYMB: This set is mandatory if RARC, RLINE, RSECT, or RTEXT is not used.

RTEXT: This set is mandatory if RARC, RLINE, RSECT, or RSYMB is not used.

OVLY: Following RMKS; this set is mandatory if the OVLY following POS is not used.

ARC: This set is mandatory if LINE, SECT, SYMB, or TEXT is not used.

Field 9: This field is mandatory if Field 8 is used and contains a lesser value than Field 7.

Field 11: This field is mandatory if Field 10 is used.

CLINE: This set is mandatory if ARC, LINE, SECT, SYMB, or TEXT is not used.

LINE: This set is mandatory if ARC, SECT, SYMB, TEXT, or CLINE is not used.

SECT: This set is mandatory if ARC, LINE, SYMB, TEXT, or CLINE is not used.

SYMB: This set is mandatory if ARC, LINE, SECT, TEXT, or CLINE is not used.

TEXT: This set is mandatory if ARC, LINE, SECT, SYMB, or CLINE is not used.

3. TABLES AND ENTRY LISTS

The OVLY2 message uses the following tables and entry lists:

TABLE	TITLE
5-1	Force Codes
5-2	Category Codes
5-5	Line Types
5-6	Color Codes
5-7	Area Fill Types
5-8	Basic Symbol Codes
5-9	Character and Symbol Size Codes
5-10	Symbol Modifier Codes
5-11	Character Font Codes
5-12	Message Identifiers
5-15	Compaction Codes
5-22	**Pleasure Craft Types**

ENTRY LIST	TITLE
59	Country Codes
137	Ship Types
513	Aircraft Types
1104	Sensor Codes
1136	Source Codes

4. MESSAGE EXAMPLES

RELATIVE OVERLAY EXAMPLE

[MESSAGE HEADER]

```
MSGID/CTG 81.0/OVLY2/0110/MAY
SEC/SECRET/NOFORN   (classified for example purposes only)
CTC/T7462/KARA-PETROPAVLOVSK//CG/NAV//UR////07
POS/220605Z5/MAY/1014N6/05632E6/ISAR//5NM/272T/21K
OVLY/KEEPOUT ZONE/220630Z3/MAY/1OF1/KARA KEEPOUT ZONE
RARC/0/B/////50NM5
ENDAT/OPNAVINST S5513.6D-11/DATE:12JAN03
```

[END OF MESSAGE SEQUENCE]

FIXED AND RELATIVE OVERLAY EXAMPLE

[MESSAGE HEADER]

```
MSGID/INDEPENDENCE/OVLY2/0200/AUG
CTC/T7022/NIMITZ-VINSON//CV/NAV/68/US////09
POS/280200Z2/AUG/3240N9/11758W2///5NM//272T/10K////OWN/280201
OVLY/MARSHALL PT/280200Z2/AUG/1OF1/VINSON MARSHALL POINT
RLINE/4/0/C/060T6/20NM2/060T6/22NM4/062T8/21.5NM8
/060T6/20NM2
RTEXT/5//C/055T0/18NM9/VINSON MARSHALL POINT
OVLY/FLIGHT OPS/280200Z2/AUG/1OF1/NIMITZ FLIGHT OPS
AREAM/BRAVO/291430Z9/AUG/292030Z6/AUG
TEXT/10/1/C/3235N3/11845W9/NIMITZ FLIGHT OPS/180T
TEXT/5/1/C/3235N3/11855W0/290000Z1 TO 312359Z3/180T
RMKS/VINSON WILL BE CONDUCTING INTERMITTENT FLIGHT OPERATIONS
RMKS/IN THIS AREA FROM 290000Z1 THROUGH 312359Z3
ENDAT
```

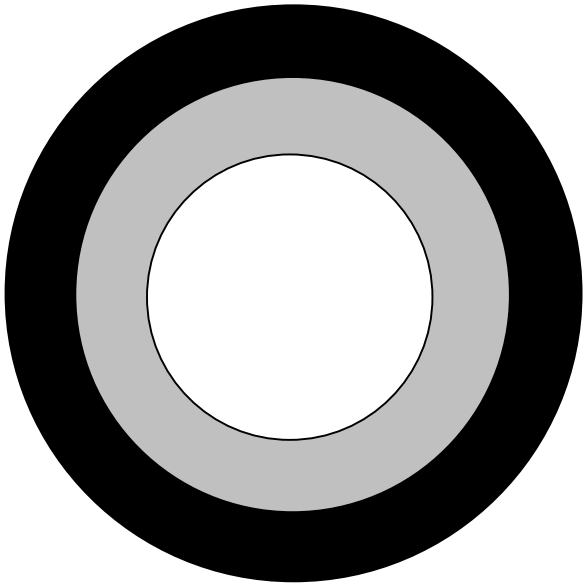
[END OF MESSAGE SEQUENCE]

GRAPHICS OVERLAY EXAMPLE

[MESSAGE HEADER]

```
MSGID/EISENHOWER DD/OVLY2/0002/JUN
OVLY/PLOT ORDER 1/071342Z7/JUN/1OF1/3 CIRCLES-BULLSEYE
/EISENHOWER DD//071342Z7/JUN/211342Z3/JUN
CHART/050836N2/0365642W6/0.0YD/0/0
ARC/0/A/1/A/320000N5/0440000W8/1000.0NM1
AREAM/LARGE CIRCLE
ARMKS/THIS IS THE LARGE FILLED CIRCLE.
ARMKS/IT SHOULD PLOT ON THE BOTTOM.
ARMKS/THE FOLLOWING TWO CIRCLES WILL PLOT ON TOP.
ARC/0/A/1/E/320000N5/0440000W8/750.0NM2
AREAM/MEDIUM CIRCLE
ARMKS/THIS IS THE MEDIUM FILLED CIRCLE.
ARMKS/IT WILL PLOT ON TOP OF THE PRECEDING LARGE CIRCLE BUT UNDER
ARMKS/THE FOLLOWING SMALL CIRCLE.
ARC/0/A/1/B/320000N5/0440000W8/500.0NM5
AREAM/SMALL CIRCLE
ARMKS/THIS IS THE SMALL FILLED CIRCLE.
ARMKS/IT WILL PLOT ON TOP OF THE TWO PRECEDING CIRCLES.
RMKS/THE INDIVIDUAL ITEMS OF AN OVERLAY SHOULD PLOT IN THE ORDER IN
RMKS/WHICH THEY ARE RECEIVED IN THE MESSAGE.  THUS THE FOLLOWING
RMKS/EXAMPLE OF THREE CONCENTRIC FILLED CIRCLES, RECEIVED IN THE
RMKS/ORDER OF LARGE, MEDIUM, SMALL, WILL APPEAR AS A BULLSEYE.
ENDAT
```

[END OF MESSAGE SEQUENCE]

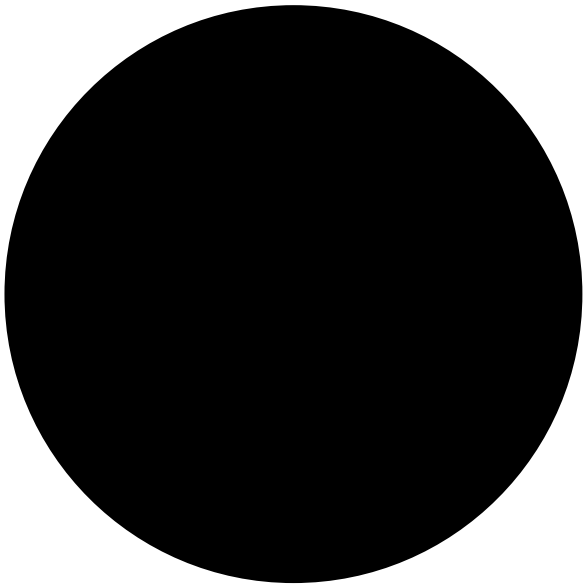


GRAPHICS OVERLAY EXAMPLE

[MESSAGE HEADER]

```
MSGID/EISENHOWER DD/OVLY2/0002/JUN
OVLY/PLOT ORDER 2/071342Z7/JUN/1OF1/3 CIRCLES-ONLY LARGE VISIBLE
/EISENHOWER DD//071342Z7/JUN/211342Z3/JUN
CHART/065124S8/1475642W9/0.0YD/10/0
ARC/0/A/1/A/200000N2/1550000W1/500.0NM5
AREAM/SMALL CIRCLE
ARMKS/THIS IS THE SMALL FILLED CIRCLE.
ARMKS/IT WILL PLOT ON THE BOTTOM.
ARMKS/THE TWO FOLLOWING CIRCLES WILL PLOT ON TOP.
ARC/0/A/1/B/200000N2/1550000W1/750.0NM2
AREAM/MEDIUM CIRCLE
ARMKS/THIS IS THE MEDIUM FILLED CIRCLE.
ARMKS/IT WILL PLOT ON TOP OF THE PRECEDING SMALL CIRCLE BUT
ARMKS/UNDER THE FOLLOWING LARGE CIRCLE.
ARC/0/A/1/C/200000N2/1550000W1/1000.0NM1
AREAM/LARGE CIRCLE
ARMKS/THIS IS THE LARGE FILLED CIRCLE.
ARMKS/IT WILL PLOT ON TOP OF THE TWO PRECEDING CIRCLES.
RMKS/THE INDIVIDUAL ITEMS OF AN OVERLAY SHOULD PLOT IN THE ORDER IN
RMKS/WHICH THEY ARE RECEIVED IN THE MESSAGE.  THUS THE FOLLOWING
RMKS/EXAMPLES OF THREE CONCENTRIC FILLED CIRCLES, RECEIVED IN THE
RMKS/ORDER OF SMALL, MEDIUM, LARGE, APPEARS AS A SINGLE LARGE CIRCLE
ENDAT
```

[END OF MESSAGE SEQUENCE]



ANNEX 3J

OVERLAY 3 MESSAGE

(OVLY3)

1. GENERAL

The OVLY3 message is used to transmit single or multiple overlays, or to delete a single overlay from one computer to another with provisions for enhanced precision and accuracy reporting. These overlays may be fixed or relative. Relative overlays are graphics structures that are slaved to OTH-T tracks. Their location will change when the reference track changes its location. Their orientation may change when the reference track changes its heading. An OVLY3 message exceeding the maximum message length specified in paragraph 2.6d may be linked to another OVLY3 message by the chaining information contained in Field 4 of the OVLY set. In this case, receiving systems should process and store any overlay whose definition is split between two or more messages as a single graphics overlay. The individual items which comprise an overlay must be plotted in the order in which they appear in the message to ensure proper layering, especially when filled items are used (See OVLY2 examples). Graphic overlay examples are located in paragraph 4. The individual items which comprise an overlay should be plotted using the Line Projection fields specified in the accompanying AREAM set. If no Line Projection is specified via an AREAM set, the Line Projection field of the CHART set should be used.

2. SET ORDER MAP

STATUS : AGREED

DATE : **22 OCTOBER 1997**

MSG IDENTIFIER : OVLY3

MSG NAME : OVERLAY 3

FUNCTION OR PURPOSE : USED TO EXCHANGE GRAPHICS INFORMATION FROM ONE COMPUTER TO ANOTHER WITH ENHANCED PRECISION AND ACCURACY. ONE OR MORE FIXED OR RELATIVE OVERLAYS MAY BE DESCRIBED USING THE OVLY3 MESSAGE. DELETE OVERLAY FUNCTION IS ALSO ALLOWED.

SPONSOR(S) : U.S. MARINE CORPS

RELATED DOCUMENT(S) : NONE

OVLY3 FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
		(O)	DELOV	/M	DELETE OVERLAY

One or more of the following (XRARC, XRLIN, XRSEC, XRSYM, XRTXT) must be used within the relative overlay segment. These sets may be used in any order. The individual items that comprise an overlay must be plotted from the bottom up in the order in which they appear in the message to ensure proper layering, especially when filled items are used. The ARMKS set may be used to provide amplifying textual information to the preceding XRARC, XRLIN, XRSEC, XRSYM, and/or XRTXT sets.

2. SET ORDER MAP (Continued)

OVLY3 FORMAT (Continued)

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
[		(O)	CTC	/M/M/O/O/O/O/O/O/O/O/M/O/M/O/O/O/O/O/O/O	CONTACT
[		(O)	XPOS	/M/M/M/O/C/O/O/O/O/O/O/O/O/O/O/**O**	EXPANDED POSITION
[		(C)	OVLY	/M/M/M/M/M/O/O/O/O/O/O	OVERLAY
[		(O)	CHART	/M/M/M/O/O	CHART
[		(C)	ORGIN	/M/M	ORIGIN

One or more of the following (XRARC, XRLIN, XRSEC, XRSYM, XRTXT) must be used within the relative overlay segment. These sets may be used in any order. The individual items which comprise an overlay must be plotted from the bottom up in the order in which they appear in the message to ensure proper layering, especially when filled items are used. The ARMKS set may be used to provide amplifying textual information to the preceding XRARC, XRLIN, XRSEC, XRSYM, and/or XRTXT sets.

[	*	(C)	XRARC	/O/O/M/O/C/O/C/O/O/O/O	EXPANDED RELATIVE ARC
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	XRLIN	/M/*M/*M/O/O/O/O	EXPANDED RELATIVE LINE
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	XRSEC	/M/M/M/M/O/M/O/O/O/O	EXPANDED RELATIVE SECTOR
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	XRSYM	/M/M/M/O/O/O/O/**C**	EXPANDED RELATIVE SYMBOL
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	XRTXT	/O/O/M/O/O/O/O	EXPANDED RELATIVE TEXT
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION

2. SET ORDER MAP (Continued)

OVLY3 FORMAT (Continued)

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(O)	RMKS	/M	REMARKS
END OF SEGMENT					

One or more of the following (AXIS, CLINE, XARC, XLINE, XSECT, XSYMB, XTEXT) must be used within the fixed overlay segment. These sets may be used in any order. The individual items which comprise an overlay must be plotted from the bottom up in the order in which they appear in the message to ensure proper layering, especially when filled items are used. The ARMKS set may be used to provide amplifying textual information to the preceding AXIS, XARC, XLINE, XSECT, XSYMB, or XTEXT sets.

[		(C)	OVLY	/M/M/M/M/M/O/O/O/O/O/O	OVERLAY
[		(O)	CHART	/M/M/M/O/O	CHART
[		(O)	AXIS	/M/M/M/O/O/O/O/O	AXIS
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	CLINE	/M/M/O/O/*M (Total of 99 Points)	COMPACTED LINE
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	XARC	/M/M/O/C/O/C/O/O/O/O	EXPANDED ARC
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	XLINE	/M/*M/O/O/O/O	EXPANDED LINE
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	XSECT	/M/M/M/O/M/O/O/O/O	EXPANDED SECTOR
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS

2. SET ORDER MAP (Continued)

OVLY3 FORMAT (Continued)

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
[	*	(C)	XSYMB	/M/M/O/O/O/O/C	EXPANDED SYMBOL
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(C)	XTEXT	/M/M/O/O/O/O	EXPANDED TEXT
[		(O)	AREAM	/M/O/O/O/O/O/O	AREA AMPLIFICATION
[	*	(O)	ARMKS	/M	AREA REMARKS
[	*	(O)	RMKS	/M	REMARKS
END OF SEGMENT					
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTES:

1. The RMKS set will be interpreted as applying to the immediately preceding overlay, not to the entire message, and is intended for amplification purposes.

2. Multiple fixed and relative overlays, in any combination may be reported in a single OVLY3 message.

3. If used, the AREAM set is used only once per overlay item.

4. The following conditional sets/fields are mandatory within the relative overlay segment:

   XPOS: Field 5: This field is mandatory if Field 7 is used and is not equal to Field 6.

   OVLY: This set is mandatory within the relative overlay segment.

2. SET ORDER MAP (Continued)

NOTES: (Continued)

ORGIN: This set is mandatory for a relative overlay.

XRARC: This set is mandatory if XRLIN, XRSEC, XRSYM, or XRTXT is not used within the relative overlay segment.

Field 5: This field is mandatory if Field 4 is used and contains a lesser value than Field 3

Field 7: This field is mandatory if Field 6 is used.

XRLIN: This set is mandatory if XRARC, XRSEC, XRSYM, or XRTXT is not used within the relative overlay segment.

XRSEC: This set is mandatory if XRARC, XRLIN, XRSYM, or XRTXT is not used within the relative overlay segment.

XRSYM: This set is mandatory if XRARC, XRLIN, XRSEC, or XRTXT is not used within the relative overlay segment.

Field 8: This field is not used if Field 3 is equal to 000-032, 038, 039, 100, or 595-646.

XRTXT: This set is mandatory if XRARC, XRLIN, XRSEC, or XRSYM is not used within the relative overlay segment.

5. The following conditional sets/fields are mandatory within the fixed overlay segment:

OVLY: This set is mandatory within the fixed overlay segment.

AXIS: This set is mandatory if XARC, XLINE, XSECT, XSYMB, XTEXT, or CLINE is not used within the fixed overlay segment.

CLINE: This set is mandatory if AXIS, XARC, XLINE, XSECT, XSYMB, or XTEXT is not used within the fixed overlay segment.

XARC: This set is mandatory if AXIS, XLINE, XSECT, XSYMB, or XTEXT is not used within the fixed overlay segment.

Field 4: This field is mandatory if Field 3 is used and contains a lesser value than Field 2

Field 6: This field is mandatory if Field 5 is used.

2. SET ORDER MAP (Continued)

NOTES: (Continued)

XLINE: This set is mandatory if AXIS, XARC, XSECT, XSYMB, XTEXT, or CLINE is not used within the fixed overlay segment.

XSECT: This set is mandatory if AXIS, XARC, XLINE, XSYMB, XTEXT, or CLINE is not used within the fixed overlay segment.

XSYMB: This set is mandatory if AXIS, XARC, XLINE, XSECT, XTEXT, or CLINE is not used within the fixed overlay segment.

Field 7: This field is not used if Field 2 is equal to 000-032, 038, 039, 100, or 595-646.

XTEXT: This set is mandatory if AXIS, XARC, XLINE, XSECT, XSYMB, or CLINE is not used within the fixed overlay segment.

3. TABLES AND ENTRY LISTS

The OVLY3 message uses the following tables and entry lists:

TABLE	TITLE
5-1	Force Codes
5-2	Category Codes
5-5	Line Types
5-6	Color Codes
5-7	Area Fill Types
5-8	Basic Symbol Codes
5-9	Character and Symbol Size Codes
5-10	Symbol Modifier Codes
5-11	Character Font Codes
5-12	Message Identifiers
5-15	Compaction Codes
5-21	Position Reporting
5-22	**Pleasure Craft Types**

ENTRY LIST	TITLE
59	Country Codes
137	Ship Types
426	Suspicion Codes
513	Aircraft Types
1104	Sensor Codes
1136	Source Codes

4. MESSAGE EXAMPLES

RELATIVE OVERLAY EXAMPLE

[MESSAGE HEADER]

```
MSGID/CTG 81.0/OVLY3/0110/MAY
SEC/UNCLASSIFIED
CTC/T7462/KARA-PETROPAVLOVSK//CG/NAV//UR////07
XPOS/220605Z5/MAY97/LL:1014N6-05632E6/ISAR//5NM//272T/21KTS
OVLY/KEEPOUT ZONE/220630Z3/MAY/1OF1/KARA KEEPOUT ZONE
XRARC///5NM5/////0/B
ENDAT
```

[END OF MESSAGE SEQUENCE]

FIXED AND RELATIVE OVERLAY EXAMPLE

[MESSAGE HEADER]

```
MSGID/REAGAN/OVLY3/0200/MAY
CTC/T7022/NIMITZ-VINSON//CV/NAV/76/US////09
XPOS/280200Z2/MAY97/LL:3240N9-11758W2///5NM//272T/10KTS////OWN
/280201
OVLY/MARSHALL PT/280200Z2/MAY/1OF1/VINSON MARSHALL POINT
XRLIN/4/060T6/20NM2/0650T1/22NM4/062T8/21.5NM8/060T6/20NM2/0/C
XRTXT/055T0/18NM9/VINSON MARSHALL POINT//5//C
OVLY/FLIGHT OPS/280200Z2/MAY/1OF1/NIMITZ FLIGHT OPS
XLINE/5/LL:3150N9-11905W6/LL:3150N9-11825W7/LL:3245N4-11825W7
/LL:3245N4-11905W6/LL:3150N9-11905W6/1/C
AREAM/BRAVO/291430Z9/MAY/292030Z6/MAY
XTEXT/LL:3235N3-11845W9/NIMITZ FLIGHT OPS/180T/10/1/C
XTEXT/LL:3235N3-11855W0/2980000Z9 TO 312359Z3/180T/5/1/C
RMKS/VINSON WILL BE CONDUCTING INTERMITTENT FLIGHT OPERATIONS
RMKS/IN THIS AREA FROM 290000Z1 THROUGH 312359Z3
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3K

PIM TRACK MESSAGE

(PIMTRACK)

1. GENERAL

The PIMTRACK message is used to exchange PIM (Position and Intended Movement) track information. PIM tracks can be used for normal ship/battle group movements, to monitor possible threat movements, and for mission planning for aircraft and submarines.

Only one PIM Track with a maximum of 50 waypoints may be reported per PIMTRACK message.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	30 JANUARY 1992
MSG IDENTIFIER	:	PIMTRACK
MSG NAME	:	PIM TRACK
FUNCTION OR PURPOSE	:	USED TO TRANSMIT PIM (POSITION AND INTENDED MOVEMENT) TRACK INFORMATION FROM ONE COMPUTER TO ANOTHER. ONLY A SINGLE PIM TRACK WITH A MAXIMUM OF 50 WAYPOINTS MAY BE DESCRIBED PER PIM TRACK MESSAGE.
SPONSOR(S)	:	COMSPAWARSYSCOM (PMW 162)
RELATED DOCUMENT(S)	:	NONE

PIMTRACK FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
		(M)	PMTRK	/M/M/O/O/O	PIM TRACK
	*	(M)	LEG	/M/M/M/M/M/O	PIM TRACK LEG
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTE: A maximum of 50 LEG sets are allowed per PIMTRACK message.

3. TABLES AND ENTRY LISTS

The PIMTRACK message uses the following table:

TABLE	TITLE
5-12	Message Identifiers

4. MESSAGE EXAMPLE

PIMTRACK EXAMPLE

[MESSAGE HEADER]

```
MSGID/CTG 81.0/PIMTRACK/0007/JAN
SEC/UNCLASSIFIED
ADDEE/JOTS
PMTRK/TRANSITEX 94-2/GC/75NM/SUR/PHASE 1
LEG/03060000Z9/FEB/94/370000N0/0760000W3
LEG/03172200Z5/FEB/94/360000N9/0720000W9
LEG/04195100Z0/FEB/94/300000N3/0780000W5
LEG/05120000Z8/FEB/94/251500N3/0772000W6
LEG/06120000Z9/FEB/94/251500N3/0772000W6
LEG/07103800Z9/FEB/94/203000N5/0740000W1
LEG/08013800Z0/FEB/94/203000N5/0700000W7
LEG/08170100Z7/FEB/94/183000N2/0663000W5
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3Ka

PING MESSAGE

(PING)

1. GENERAL

The Ping message is used by the Low Frequency Active (LFA) mono-static and bi-static community of Antisubmarine Forces to promulgate the active source ship's location, course, speed, and scheduled ping sequences. It promulgates ping sequence schedules, wavetrain data, configuration, and source levels to be used. The Ping message is generated automatically by an Active LFA Source Ship when a ping schedule is compiled and sent out at least 10 minutes in advance of the first ping on the schedule. Any deviation to the promulgated ping schedule or course/speed changes by the source will result in a corrected Ping message being sent.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	19 JUNE 1997
MSG IDENTIFIER	:	PING
MSG NAME	:	PING
FUNCTION OR PURPOSE	:	USED BY THE ANTISUBMARINE WARFARE (ASW) COMMUNITY TO PROMULGATE LOW FREQUENCY ACTIVE PING DATA INCLUDING SOURCE SHIP LOCATION AND PING DATA.
SPONSOR(S)	:	SPAWAR PD18
RELATED DOCUMENT(S)	:	NONE

The Ping format allows for flexibility in promulgation of the location and ping data necessary for mono-static and bi-static modes of operation of the LFA Antisubmarine Warfare system.

PING FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION

The sets (PING,XPOS,SRC,SEQ,WTN,XRR, and ENDAT) are used in the following order.

		(M)	PING	/M/M/M	PING SERIAL

2. SET ORDER MAP (Continued)

PING FORMAT (Continued)

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
	*	(M)	XPOS	/M/M/M/O/C/O/O/O/O/O/O/O/O/O/O/O	EXPANDED POSITION
		(O)	SRC	/M/M/O/M/*M	SOURCE PARAMETERS
		(O)	SEQ	/M/M/M/M/M/M	SOURCE TRANSMIT SEQUENCE
		(O)	WTN	/M/*M	WAVETRAIN IDENTIFICATION IN SEQUENCE
		(O)	XRR	/M/M/O/*M	TRANSMIT MODE REPETITION RATE
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTE: The following set/field is conditional/mandatory:

XPOS:

Field 5: This field is mandatory if Field 7 is use and is not equal to Field 6.

.

3. TABLES AND ENTRY LISTS

The Ping message uses the following tables and entry lists:

TABLE	TITLE
5-12	Message Identifiers
5-21	Position Reporting

ENTRY LIST	TITLE
1104	Sensor Codes
1136	Source Codes

4. MESSAGE EXAMPLE

PING EXAMPLE

[MESSAGE HEADER]

```
MSGID/CORY CHOUEST/PING/1215/JUL/RIMPAC 98
PING/LFA PING/00012/JUN
XPOS/01211534.5Z2/AUG98/LL:304055.55N7-1304055.55E8
SRC/350/095/01FA/0.0/-35.0/42.3
SEQ/01213000.0Z7/AUG98/JOHN SEQ/2/4/1/1
WTN/4/WT12093 00/WT12093 01/WT12093 03/WT12093 05
XRR/IR/04/004/420/300/560/120
ENDAT/USNS/DATE:31MAR07
```

[END OF MESSAGE SEQUENCE]

ANNEX 3L

QUERY MESSAGE

(QRY)

1. GENERAL

The QRY message is used to query the database or decision aid algorithms of another system. Between the QUERY and ENDAT sets, the transmitting system generates the data needed for the QUERY. This is encoded in the format specified by the software package or system being queried. The body of the QRY message, which follows the QUERY set and precedes the ENDAT set, may be either man or machine readable, formatted or unformatted. There may be multiple QUERY sets followed by query data in a single QRY message.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	30 JUNE 1989
MSG IDENTIFIER	:	QRY
MSG NAME	:	QUERY
FUNCTION OR PURPOSE	:	USED TO QUERY THE DATABASE OR DECISION AID ALGORITHMS OF ANOTHER SYSTEM. THE QUERY IS PROVIDED FOLLOWING THE QUERY SET IN A FORMAT APPROPRIATE TO THE SYSTEM BEING QUERIED.
SPONSOR(S)	:	NONE
RELATED DOCUMENT(S)	:	NONE

QRY FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
	*	(M)	QUERY	/M	QUERY
		(M)	ENDAT	/C/*C/*C	END OF DATA

3. TABLES AND ENTRY LISTS

The QRY message uses the following table:

TABLE	TITLE
5-12	Message Identifiers

4. MESSAGE EXAMPLE

QUERY EXAMPLE

[MESSAGE HEADER]

```
MSGID/CTG 81.0/QRY/0007/JUN
SEC/UNCLASSIFIED
ADDEE/TESS
QUERY/12345
[SYSTEM-SPECIFIC QUERY GOES HERE]
[MULTIPLE LINES PERMITTED UP TO MESSAGE LENGTH]
[LIMIT SPECIFIED IN PARA 2.6d]
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3M

TLAM/TASM RECONSTRUCTION MESSAGE (RECON)

1. GENERAL

The TLAM/TASM Reconstruction Message is transmitted by TWCS-equipped platforms to provide a summary of the engagement planning data necessary to conduct post-strike analysis. This message will be generated by a TWCS platform and transmitted to the appropriate reconstruction analysis system. The Reconstruction Message will be used primarily during regularly scheduled battle group training sessions. In addition, the Reconstruction Message may be used during Operational Test Launches (OTLs) for range safety considerations and any other special exercise where post-strike analysis is needed. There are two subtypes to this message: a Tomahawk Anti-Ship Missile (TASM) engagement reconstruction subtype, and a Tomahawk Land Attack Missile (TLAM) engagement reconstruction subtype.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	19 OCTOBER 1993
MSG IDENTIFIER	:	RECON
MSG NAME	:	TLAM/TASM RECONSTRUCTION MESSAGE
FUNCTION OR PURPOSE	:	PROVIDE TOMAHAWK ENGAGEMENT PLANNING DATA FOR ANALYSIS.
SPONSOR(S)	:	PEOCMPANDUAV (PMA-282)
RELATED DOCUMENT(S)	:	NONE

RECON FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(M)	NARR	/M	NARRATIVE
		(M)	ENDAT	/C/*C/*C	END OF DATA

TLAM RECONSTRUCTION MESSAGE SPECIAL INSTRUCTIONS

1. Line 1 will be included as the initial line of every RECON Message. This line will serve as a unique identifier for the current message. It will consist of "TLAM ENGAGEMENT", Launch Time Earliest, Plan Number, and Message Part Number.

2. Line A contains Launch Platform Name (up to 20 characters).

3. Line B contains Launch Time Earliest (LTE), Ownship Latitude, Longitude, Course, Speed, Launcher Type (ABL or VLS), and Launcher Direction (3, 35, 90, 180, 190, 270, 325, or 357 for ABL; STBD or PORT for VLS).

4. Line C contains Wind Direction ("UNK" if unknown), Speed ("UNK" if unknown), and Air Temperature (in degrees Fahrenheit).

5. Line D contains Number of Over-Water Waypoints (or "NO" if none is entered), Corresponding Waypoint(s) Latitude, Longitude, Altitude (in feet), Time at Waypoint (up to the maximum of five waypoints), and Time of Arrival (TOA) at the First Pre-Planned Waypoint (FPPWP). If "NO" is entered, all other waypoint fields are nonexistent.

6. Line E contains Missile Type (i.e., "TACT", "EXER", and "REM").

The " [2] " annotation is used to indicate the required number of spaces in the following examples. If a number is not used, only one space is required.

TLAM RECONSTRUCTION EXAMPLE

[MESSAGE HEADER]

```
MSGID/JOHN_YOUNG/RECON/1313/JUL
NARR/OPNOTE:_[2]  1. _[1]  TLAM ENGAGEMENT/30140030Z_JUL_97/01/1OF1
A._JOHN_YOUNG
B._30143035Z_JUL_97/05-00N/001-002/040.0/10.0/VLS/PORT
C._045/10/60
D._3/10-00N/001-00W/10000/301435Z_JUL_97/15-00N/002-00W/20000
/301445Z_JUL_97/20-00N/003-00W/10000/301455Z_JUL_/97/30151004Z_JUL_97
E._REM
ENDAT
```

[END OF MESSAGE SEQUENCE]

TASM RECONSTRUCTION MESSAGE SPECIAL INSTRUCTIONS

1. Line 1 will be included as the initial line of every RECON Message. This line will serve as a unique identifier for the current message. It will consist of "TASM ENGAGEMENT", Launch Time Earliest, Plan Number, and Message Part Number.

2. Line A consists of Launch Platform Name (up to 20 characters), Target Name (up to 20 characters) followed by a hyphen T ("-T") and a 4-character Track Number, Ship Class (up to 12 characters), Ship Type (up to 6 characters), Hull (up to 6 characters), the 2-character Flag Code, Ship Control Number (SCONUM), Probability of Acquisition Actual (PACQA), and Probability of Acquisition Isolated (PACQI). If any of the attributes for this target are unknown, the fields are left blank.

3. Line B consists of number of position reports used for the target, followed by:

a. For a position report (Type P): "P", Time of Event (TOE), Latitude, Longitude, Semi-Major Axis Length, Semi-Minor Axis Length, Orientation, "blank", "blank", and MTST Usage Selection; or

b. For a full state report (Type F): "F", Time of Event (TOE), Latitude, Longitude, Semi-Major Axis Length, Semi-Minor Axis Length, Orientation, Course, Speed, and Selection; or

c. For a line of bearing only report (Type L): "L", Time of Event (TOE), Latitude, Longitude, Half-Width, Range, Bearing, "blank", "blank", and MTST Usage Selection; or

d. For a bearing box (Type B): "B", Time of Event (TOE), Latitude, Longitude, Half-Width, Bearing, "blank", "blank", and MTST Usage Selection.

NOTE: Repeat line B beginning with field 2 for all position reports of the target track.

4. Line C contains Single Point Expansion (SPE) indicator use ("YES" or "NO"), Course, Course Uncertainty, Speed, Speed Uncertainty, Average Time on Leg, and Average Speed. If SPE is used (i.e., SPE = "YES" all fields are filled. If SPE is not used (i.e., SPE = "NO"), only Average Time on Leg and Average Speed are filled in.

5. Line D contains Aimpoint Latitude, Aimpoint Longitude, Semi-Major Axis Length, Semi-Minor Axis Length, Orientation, Predicted Course, Predicted Speed, and Time Late (computed as LTE minus Time of Event for last report used for targeting (in hours and minutes [HH:MM]).

6. Line E contains Launch Time Earliest (LTE), Ownship Latitude, Ownship Longitude, Time of Search, Ownship Course, Ownship Speed, Launcher Type (ABL or VLS), and Launcher Direction (3, 35, 90, 180, 190, 270, 325, or 357 for ABL; STBD or PORT for VLS).

7. Line F contains Area of Uncertainty Factor (AOUF), Search Mode, Passive Identification-Detection Emitter (PI-DE) selection (OFF, SEL, or ONLY), Deceptive Maneuver ("YES" or "NO"), Flyout Range, and Salvo size.

8. Line G contains Rain ("YES" or "NO"), Wind Direction (or UNK if unknown), Poisson Density, and Air Temperature (in degrees F).

9. Line H contains Avoidance Used ("YES" or "NO"), Avoidance Track Name (up to 20 characters) followed by a hyphen T ("-T") and a 4-character Track Number, and Avoidance AOUF. If Avoidance is not used, all other fields are nonexistent.

10. Line I contains Number of User Waypoints (or "NO"), Waypoint(s) Latitude and Longitude (repeated for up to five waypoints), and Missile Turn Direction. If "NO" is entered for the number of waypoints used, then all other fields are nonexistent. Missile turn direction is defined as the direction the missile must turn upon reaching the waypoint following the Initial Search (SEARCH) waypoint. For PL1 and PL2 and search modes, turn direction is nonexistent. If only two search waypoints exist, turn direction will be determined at the ISEARCH waypoint. If none of the above conditions apply (for PL3 and PL4 searches), the turn direction will be recorded as none ("N").

11. Line J contains Missile Type (i.e., "TACT", "EXER", or "REM"), Recovery Allowable Indicator, Number of Recovery Waypoints, Waypoint Latitude and Longitude (repeated up to a maximum of two). If Missile Type is not "REM", then all other fields are nonexistent.

12. Line K contains Background Track Name (up to 20 characters) followed by a hyphen T ("-T") and a 4-character Track Number, Ship Class (up to 12 characters), Ship Type (up to 6 characters), Hull Number (up to 6 characters), two letter Flag Designator, SCONUM, and Probability of Acquisition Actual (PACQA) for this background track. On a separate line, list the number of position reports used for the target, followed by:

a. For a position report (Type P): "P", Time of Event (TOE), Latitude, Longitude, Semi-Major Axis Length, Semi-Minor Axis Length, Orientation, "blank", "blank", and MTST Usage Selection; or

b. For a full state report (Type F): "F", Time of Event (TOE), Latitude, Longitude, Semi-Major Axis Length, Semi-Minor Axis Length, Orientation, Course, Speed, and Selection; or

c. For a line of bearing only report (Type L): "L", Time of Event (TOE), Latitude, Longitude, Half-Width, Range, Bearing, "blank", "blank", and MTST Usage Selection; or

d. For a bearing box (Type B): "B", Time of Event (TOE), Latitude, Longitude, Half-Width, Range, Bearing, "blank", "blank", and MTST Usage Selection.

NOTE: Repeat the above information beginning with field 2 for all position reports of the background track.

The remainder of line K consists of (on a separate line) Single Point Expansion (SPE) indicator use ("YES" or "NO"), Course, Course Uncertainty, Speed, Speed Uncertainty, Average Time on Leg, and Average Speed. If SPE is used (i.e., SPE = "NO"), only Average Time on Leg and Average Speed are filled in.

Paragraph K may be repeated for all background tracks (up to eight total). A new paragraph will be started for each background track.

The " [2] " annotation is used to indicate the required number of spaces in the following examples. If a number is not used, only one space is required.

TASM RECONSTRUCTION EXAMPLE

[MESSAGE HEADER]

```
MSGID/TICONDEROGA/RECON/2121/JUN
NARR/OPNOTE:_[2]  1.  [1]  TASM_ENGAGEMENT/22180030Z_JUN_97/10/1OF1
A._TICONDEROGA/UNKNOWN-T7002/VALLEY FORGE/////60/79
B._4/P/221700Z_JUN_97/16-39N/073-52W/35/18/045.5///A
/P/221715Z_JUN_97/16-25N/073-48W/40/25/355.0///A
/P/221730Z_JUN_97/16-15N/073-45W/25/25/000.0///A
/P/221800Z_JUN_97/16-13N/073-43W/14/9/231.0///A
C._NO/////4/18
D._16-42N/073-55W/44/30/045.2/340.1/4.5/01:05
E._22181010Z_JUN_97/18-42N/075-55W/221830Z_JUN_97/180./5.0/ABL/3
F._97/PL3/OFF/YES/0/1
G._NO/UNK/UNK/0/60
H._NO
I._1/17-42N/074-52W/L
J._TACT
K._UNKNOWN-T7003/UNEQUATED/////8
/1/P/221740Z6_JUN_97/16-41N/072-47W/25/25/000.0///A
YES/000.0/026.3/.0/29.6/4/18
ENDAT
```

[END OF MESSAGE SEQUENCE]

3. TABLES AND ENTRY LISTS

The TLAM/TASM Reconstruction message uses the following table:

TABLE	TITLE
5-12	Message Identifiers

4. MESSAGE EXAMPLE

[MESSAGE HEADER]

```
MSGID/JOHN_YOUNG/RECON/1313/JUL
NARR/OPNOTE:_[2]  1. _[1]  TLAM ENGAGEMENT/30140030Z_JUL_97/01/1OF1
A._JOHN_YOUNG
B._30143035Z_JUL_97/05-00N/001-002/040.0/10.0/VLS/PORT
C._045/10/60
D._3/10-00N/001-00W/10000/301435Z_JUL_97/15-00N/002-00W/20000
/301445Z_JUL_97/20-00N/003-00W/10000/301455Z_JUL_/97/30151004Z_JUL_97
E._REM
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3N

REPLY MESSAGE

(REP)

1. GENERAL

The REP message is used to provide the information requested by a QRY message. The number in Field 1 of the REPLY set shall correspond with the number contained in Field 1 of the QUERY set of the QRY message that prompted the reply. The requested data provided between the REPLY and ENDAT sets is encoded in the format specified by the system generating the REP message. There may be multiple REPLY sets in a single REP message.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	30 JUNE 1989
MSG IDENTIFIER	:	REP
MSG NAME	:	REPLY
FUNCTION OR PURPOSE	:	USED TO RESPOND TO PREVIOUSLY TRANSMITTED QUERIES USING THE QRY ACCOUNTING NUMBER. THE REQUESTED DATA IS PROVIDED IN A FORMAT APPROPRIATE TO THE SYSTEM GENERATING THE QUERY.
SPONSOR(S)	:	NONE
RELATED DOCUMENT(S)	:	NONE

REPLY FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
	*	(M)	REPLY	/M	REPLY
		(M)	ENDAT	/C/*C/*C	END OF DATA

3. TABLES AND ENTRY LISTS

The REP message uses the following table:

TABLE	TITLE
5-12	Message Identifiers

4. MESSAGE EXAMPLE

REPLY EXAMPLE

[MESSAGE HEADER]

```
MSGID/KITTY HAWK/REP/0007/JUN
SEC/UNCLASSIFIED
ADDEE/OED/TWCS/JMCIS
REPLY/12345
[SYSTEM-SPECIFIC REPLY GOES HERE]
[MULTIPLE LINES PERMITTED UP TO MESSAGE LENGTH]
[LIMIT SPECIFIED IN PARA 2.6d]
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3O

ROTHR STATUS REQUEST MESSAGE (ROTHRSREQ)

1. GENERAL

The Relocatable Over-The-Horizon Radar (ROTHR) Status Request (ROTHRSREQ) message is used to request specific information concerning a ROTHR system's current status, utilization and tasking. ROTHRSTAT messages are used to respond to ROTHRSREQ messages.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	30 JANUARY 1992
MSG IDENTIFIER	:	ROTHRSREQ
MSG NAME	:	ROTHR STATUS REQUEST
FUNCTION OR PURPOSE	:	USED TO PROVIDE SPECIFIC INFORMATION CONCERNING A ROTHR SYS TEM'S CURRENT STATUS, UTILIZATION AND TASKING.
SPONSOR(S)	:	PROGRAM EXECUTIVE OFFICE, SPACE, COMMUNICATIONS, AND SENSORS (PEO SC&S) PMW 148 RELATED DOCUMENT(S)
RELATED DOCUMENT(S)	:	NONE

ROTHRSREQ FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(M)	STAT	/M/O/O/O/C/O	STATUS REQUEST
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTE: The following conditional set/field is mandatory:

STAT:

Field 5: This field is mandatory if DSTAT is used in Field 6.

3. TABLES AND ENTRY LISTS

The ROTHRSREQ message uses the following table:

TABLE	TITLE
5-12	Message Identifiers

4. MESSAGE EXAMPLE

[MESSAGE HEADER]

```
MSGID/NCTSI/ROTHRSREQ/0001/JUN
STAT/AIR/ECA/ESA//TSTAT/DSTAT
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3P

ROTHR STATUS REPORT MESSAGE

(ROTHRSTAT)

1. GENERAL

The Relocatable Over-The-Horizon Radar (ROTHR) Status Report (ROTHRSTAT) message is used to provide information concerning a ROTHR system's current status, utilization and tasking. ROTHRSTAT messages are used to respond to ROTHRSREQ messages.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	30 JANUARY 1992
MSG IDENTIFIER	:	ROTHRSTAT
MSG NAME	:	ROTHR STATUS REPORT
FUNCTION OR PURPOSE	:	USED TO PROVIDE SPECIFIC INFORMATION CONCERNING A ROTHR SYSTEM'S CURRENT STATUS, UTILIZATION AND TASKING.
SPONSOR(S)	:	PROGRAM EXECUTIVE OFFICE, SPACE, COMMUNICATIONS, AND SENSORS (PEO SC&S) PMW 148
RELATED DOCUMENT(S)	:	NONE

ROTHRSTAT FORMAT

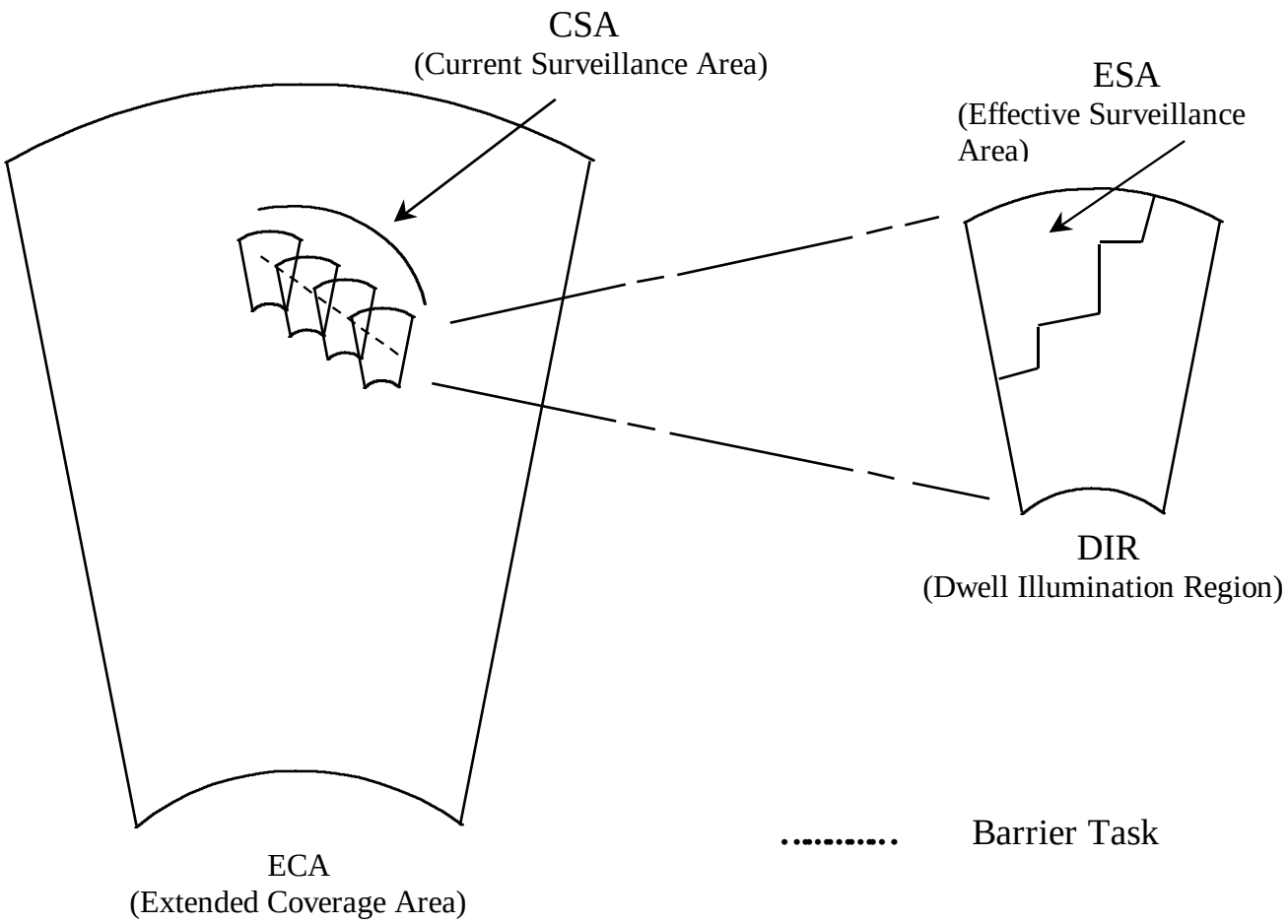
SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
	*	(O)	ECA	/M/M/M/*M	EXTENDED COVERAGE AREA
	*	(O)	ESA	/M/M/M/*M	EFFECTIVE SURVEILLANCE AREA
	*	(C)	TSTAT	/M/M/M/M/M/M	TASK STATUS
	*	(O)	DSTAT	/M/M/M/M/M/M/M	DWELL ILLUMINATION REGION (DIR) STATUS
		(C)	UTIL	/M/M/M	UTILIZATION
		(M)	ENDAT	/C/*C/*C	END OF DATA

2. SET ORDER MAP (Continued)

NOTE: The following conditional sets/fields are mandatory:

TSTAT: This set is mandatory for each task related to Dwell Illumination Regions. (DIRs) if those DIRs are reported in DSTAT sets.

UTIL: This set is mandatory if ECA and/or ESA sets are used.



ROTHR Definitions

3. TABLES AND ENTRY LISTS

The ROTHRSTAT message uses the following tables:

TABLE	TITLE
5-12	Message Identifiers
5-17	ROTHRSTAT Sector Descriptions

4. MESSAGE EXAMPLE

[MESSAGE HEADER]

```
MSGID/FSSC DET ONE/ROTHRSTAT/1492/JUN
ECA/141230Z1/AIR/1/55565567A556666/555555555555555/555555555555555
/555555555555555/555555555555555/555555556555665/555655655565555
/555655AABCBAA65/555655AABCBAA65/55566665AABCCFF
ESA/141230Z1/AIR/1/000000000000000/000000004444000/000000000000000
/000005555505555/000555551144115/000005511441111/00000FFFFFFFFF
/000555550555555/111115544AABBBB/000005511441111/55555111AAAFF55
/6611111155FFFFF/000555551144115/000005511441111/111115555111555
/000005555505555/666611111FFAAAA/110000000000000/00000FFFFFFFFF
/111111111111111/000055555114411/000005511441111/111111111155551
/000555550555555/777666661111411/444445555544445/00000FFFFFFFFF
/111115555444111/000555551144115/000005511441111/000001111123455
/111110101000005/000001111105050/000005555501050/010005555501010
/000050000100015/555550000013125/000001111155555/111111111111111
/050501111155555
TSTAT/2/141225Z5/RPIFOSIFWPAC/BAR/AIR/090T/130T/300K/9999K/ACTIVE/36
/100
DSTAT/2/4/169.1T/8.0/1347NM/500NM/ACTIVE
DSTAT/2/5/162.6T/8.0/1313NM/500NM/ACTIVE
DSTAT/2/6/155.2T/8.0/1280NM/500NM/ACTIVE
TSTAT/3/141225Z5/RPIFOSICPAC/POINT/AIR/000T/359T/450K/900K/ACTIVE/12
/100
DSTAT/3/7/130.7T/8.0/702NM/500NM/ACTIVE
TSTAT/4/141225Z5/RPIFOSICPAC/BAR/AIR/290T/045T/OK/9999K/ACTIVE/24
/100
DSTAT/4/9/192.5T/8.0/653NM/500NM/ACTIVE
DSTAT/4/10/199.4T/8.0/720NM/500NM/ACTIVE
TSTAT/141225Z5/RPIFOSIFWPAC/POINT/AIR/180T/270T/400K/9999K/ACTIVE/12
/100
DSTAT/5/15/220.3T/8.0/1566NM/500NM/ACTIVE
UTIL/84/0/0
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3Q

ROTHR TASK REQUEST MESSAGE

(ROTHRTASK)

1. GENERAL

The Relocatable Over-The-Horizon Radar (ROTHR) Task Request (ROTHRTASK) message is used to request ROTHR surveillance.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	30 JANUARY 1992
MSG IDENTIFIER	:	ROTHRTASK
MSG NAME	:	ROTHR TASK REQUEST
FUNCTION OR PURPOSE	:	USED TO REQUEST ROTHR SURVEILLANCE
SPONSOR(S)	:	PROGRAM EXECUTIVE OFFICE, SPACE, COMMUNICATIONS, AND SENSORS (PEO SC&S) PMW 148
RELATED DOCUMENT(S)	:	NONE

ROTHRTASK FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(M)	TASK	/M/M/M/O/C/O/O/O/O/O	TASK DEFINITION
	*	(C)	ENDPT	/M/M	END POINT
		(O)	ADDR	/*M	ROUTING ADDRESSES
		(O)	DOI	/M/M	DIRECTION OF INTEREST
		(O)	SPDOI	/M/M	SPEED OF INTEREST
	*	(O)	PIM	/M/M/M/M/M	POSITION AND INTENDED MOVEMENT
		(M)	ENDAT	/C/*C/*C	END OF DATA

2. SET ORDER MAP (Continued)

NOTE: The following conditional sets/fields are mandatory:

TASK:

Field 5: This field is mandatory if TOI, CTOI, or CTEL is used in Field 2.

ENDPT: This set must be used once if POINT is used in Field 2 of the TASK set.

This set must be used twice if BAR is used in Field 2 of the TASK set.

This set must be used three to six times if AREA is used in Field 2 of the TASK set.

3. TABLES AND ENTRY LISTS

The ROTHRTASK message uses the following table:

TABLE	TITLE
5-12	Message Identifiers

4. MESSAGE EXAMPLE

[MESSAGE HEADER]

```
MSGID/NCTSI/ROTHRTASK/0004/JUN
TASK/44/BAR/AIR/MED//ROUTINE/061000Z7/062100Z9/10/2
ENDPT/5000N5/17000W8
ENDPT/4820N4/18000W9
ADDR/NCTSI/FOSIC PAC
DOI/090T/180T
SPDOI/300K/1200K
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3R

SATELLITE MESSAGE

(SATELLITE)

1. GENERAL

The SATELLITE message is used to exchange and delete Satellite information. Satellite information is provided by the Naval Space Surveillance Center in Charlie element format.

Satellite information is reported by specifying the database to which the satellite belongs reported in the SATDB set, followed by satellite data information such as type, field of view, etc. reported in the SDATA set, followed by three occurrences of the satellite ephemeris data in Charlie element format reported in the SAT set. When reporting multiple satellites in the same database, it is not necessary to repeat the SATDB set, since each satellite reported in a SDATA, SAT, SAT, SAT set combination is understood to belong to the database specified in the previous SATDB set. Message chaining is not allowed, so before the message length limit is reached, a new message must be started and the SATDB set must be repeated. The break must occur after a complete SDATA, SAT, SAT, SAT set combination.

Satellites are deleted using the DSTAT set. DSTAT sets may be interspersed throughout the Satellite message but must not break a SDATA, SAT, SAT, SAT set combination. Preferably the DSTAT should occur between satellite database reporting segments.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	30 JANUARY 1992
MSG IDENTIFIER	:	SATELLITE
MSG NAME	:	SATELLITE
FUNCTION OR PURPOSE	:	USED TO TRANSMIT SATELLITE CHARLIE ELEMENT INFORMATION FROM ONE COMPUTER TO ANOTHER.
SPONSOR(S)	:	COMSPAWARSYSCOM (PMW 162)
RELATED DOCUMENT(S)	:	NONE

SATELLITE FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
	*	(O)	DSAT	/M/M	DELETE SATELLITE
[	*	(M)	SATDB	/M	SATELLITE DATABASE
[	*	(M)	SDATA	/M/M/O/O/O/O	SATELLITE DATA
[	*	(M)	SAT	/M	SATELLITE ELEMENT
END OF SEGMENT					
		(M)	ENDAT	/C/*C/*C	END OF DATA

2. SET ORDER MAP (Continued)

NOTE: Each satellite reported requires an SDATA set followed by three occurrences of the SAT set which contains the satellite ephemeris data in Charlie element format. The triple reporting of the ephemeral data is required for error checking/resolution. Satellites are to be placed in the satellite database reported in the previous SATDB set. Satellites from more than one database may be reported in a single message. However, message chaining is not allowed, so before the message length limit is reached a new message is started and the SATDB line must be repeated. The break must occur after a complete SDATA, SAT, SAT, SAT set combination.

3. TABLES AND ENTRY LISTS

The SATELLITE message uses the following table:

TABLE	TITLE
5-12	Message Identifiers

4. MESSAGE EXAMPLE

SATELLITE EXAMPLE

[MESSAGE HEADER]

```
MSGID/CTG 81.0/SATELLITE/0007/JAN
SEC/UNCLASSIFIED
ADDEE/GCCS-M
SATDB/BLUE
SDATA/EOR/1250NM///DEOB
SAT/01111.2222222.3333333.44444.5555555.6666666.7777777.8888889210003
SAT/01111.2222222.3333333.44444.5555555.6666666.7777777.8888889210003
SAT/01111.2222222.3333333.44444.5555555.6666666.7777777.8888889210003
SDATA/EL3/D050///ACTIV
SAT/02222.3332222.3443333.44554.5555555.6666666.7777777.8888889211003
SAT/02222.3332222.3443333.44554.5555555.6666666.7777777.8888889211003
SAT/02222.3332222.3443333.44554.5555555.6666666.7777777.8888889211003
DSAT/WHITE/ALL
SATDB/RED
SDATA/SAR/H
SAT/01111.2222222.3333333.44444.5555555.6666666.7777777.8888889211003
SAT/01111.2222222.3333333.44444.5555555.6666666.7777777.8888889211003
SAT/01111.2222222.3333333.44444.5555555.6666666.7777777.8888889211003
DSAT/RED/01112
DSAT/ORANGE/23456
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3S

SCREEN KILO MESSAGE

(SCRNKILO)

1. GENERAL

The SCRNKILO message is used to exchange ship formation data for standard SCREEN KILO (sector) stationing doctrine. Units of the SCRNKILO formation are assigned sectors within which they may move about freely. A SCRNKILO unit assignment sector is defined by two bearings (minimum and maximum) and two ranges (minimum and maximum) measured from the screen center. The screen center is specified by a range and true bearing from PIM (Position and Intended Movement).

Only one SCRNKILO formation with a maximum of 40 unit assignments may be reported per SCRNKILO message.

.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	30 JANUARY 1992
MSG IDENTIFIER	:	SCRNKILO
MSG NAME	:	SCREEN KILO
FUNCTION OR PURPOSE	:	USED TO TRANSMIT SCREEN KILO FORMATION DATA FROM ONE COMPUTER TO ANOTHER. ONLY A SINGLE SCREEN KILO FORMATION WITH A MAXIMUM OF 40 UNIT ASSIGNMENTS MAY BE DESCRIBED PER SCREENKILO MESSAGE.
SPONSOR(S)	:	COMSPAWARSYSCOM (PMW 162)
RELATED DOCUMENT(S)	:	ATP-1 VOL I

SCRNKILO FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
		(M)	SCRNK	/M/M/O/O/O	SCREEN KILO
	*	(M)	SUNIT	/M/M/M/M/M	SCREEN KILO UNIT
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTE: A maximum of 40 SUNIT sets are allowed per SCREEN KILO message.

3. TABLES AND ENTRY LISTS

The SCRNKILO message uses the following table:

TABLE	TITLE
5-12	Message Identifiers

4. MESSAGE EXAMPLE

SCRNKILO EXAMPLE

[MESSAGE HEADER]

```
MSGID/CTG 81.0/SCRNKILO/0007/JAN
SEC/UNCLASSIFIED
ADDEE/GCCS-M
SCRNK/TRANSITEX 97-2/NM/045T/30/PHASE 1 OF TRANSITEX
SUNIT/TICONDEROGA/040T/120T/050/085
SUNIT/VINCENNES/130T/210T/040/080
SUNIT/VALLEY FORGE/220T/300T/035/075
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3T

4-WHISKY MESSAGE

(4WHISKY)

1. GENERAL

The 4-WHISKY message is used to exchange 4-WHISKY ship formation data. The 4-WHISKY formation may be displayed as a square grid consisting of 24 x 24 to 48 x 48 cells which may be overlaid and moved on the geoplot. Units of the 4-WHISKY formation are assigned areas of the grid within which they may move about freely. The horizontal axis begins in the lower left corner of the grid designated by letters of the alphabet labeled "A,B,C ... X,Y,Z, AA,BB,CC ... ZZ." (The letters I,O,II, and OO are not used since they are easily confused with numerals.) The vertical axis also begins in the lower left corner and is labeled with two-digit numerals from 01 to 48. (Note that the leading zero is always required when specifying the vertical component of a grid cell.) These grid coordinate labels are used to define a 4-WHISKY unit assignment. A formation assignment area may be the union (expressed with a "+" as a sum) of one or several ranges of grid cells. One cell of the 4-WHISKY grid is designated as the PIM cell of the formation and is the key to geographic positioning of the formation.

Only one 4-WHISKY formation with a maximum of 40 unit assignments may be reported per 4-WHISKY message.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	30 JANUARY 1992
MSG IDENTIFIER	:	4WHISKY
MSG NAME	:	4-WHISKY
FUNCTION OR PURPOSE	:	USED TO TRANSMIT 4-WHISKY FORMATION DATA FROM ONE COMPUTER TO ANOTHER. ONLY A SINGLE 4-WHISKY FORMATION WITH A MAXIMUM OF 40 UNIT ASSIGNMENTS MAY BE DESCRIBED PER 4-WHISKY MESSAGE.
SPONSOR(S)	:	COMSPAWARSYSCOM (PMW 162)
RELATED DOCUMENT(S)	:	CINCLANTFLT TACMEMO UT 1615-1-91 WHITE (AND OTHER COLORS) SEARCH SURVEILLANCE COORDINATION TACTICS (SSC) (SECRET)

4WHISKY FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
		(M)	WHSKY	/M/M/M/M/O	4-WHISKY
	*	(M)	WUNIT	/M/M	4-WHISKY UNIT
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTE: A maximum of 40 WUNIT sets are allowed per 4-WHISKY message.

3. TABLES AND ENTRY LISTS

The 4-WHISKY message uses the following table:

TABLE	TITLE
5-12	Message Identifiers

4. MESSAGE EXAMPLE

4-WHISKY EXAMPLE

[MESSAGE HEADER]

```
MSGID/CTG 81.0/4WHISKY/0007/JAN
SEC/UNCLASSIFIED
ADDEE/GCCS-M
WHSKY/REAGAN/36/10NM/N13
WUNIT/CV/QT1520
WUNIT/DE/JL0812
WUNIT/AO/XZ0812
WUNIT/FF/JL2428+LM2526
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3U

WEATHER DATA

(WEX)

1. GENERAL

The WEX message is used to transmit meteorological and oceanographic (METOC) observational data in the World Meteorological Organization (WMO) format. This data can be used as input to tactical decision aids (TDAs).

The WEX message is designed to pass bathythermal (BT) observations in the JJXX format, upper air soundings (radiosonde) observations in the UUAA format, and data obtained from drifting METOC buoys. Single observations, or groups of observations may be included in a message. When passing observations of a single type, indicate the type in the PROD line as BTHY, RSND, or BUOY as appropriate. Use OCEANMET in the PROD line if some combination of data types are being transmitted (e.g., a BT and a radiosonde observation).

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	13 JANUARY 1993
MSG IDENTIFIER	:	WEX
MSG NAME	:	WEATHER DATA
FUNCTION OR PURPOSE	:	USED TO TRANSMIT METEOROLOGICAL/OCEANOGRAPHIC DATA.
SPONSOR(S)	:	FLEET NUMERICAL OCEANOGRAPHY CENTER
RELATED DOCUMENT(S)	:	NONE

WEX FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
		(M)	PROD	/M/M/M/O/M/O	PRODUCT
		(M)	NARR	/M	NARRATIVE
	*	(O)	RMKS	/M	REMARKS
		(M)	ENDAT	/C/*C/*C	END OF DATA

NOTES:

1. Field 1 of the PROD set consists of the product type which may be general, i.e., OCEANMET or specific, i.e., SYNOP (synoptic surface observation), RSND (radiosonde), BTHY (bathythermal observation), or BUOY (drifting buoy report).
2. Field 1 of the NARR set contains the observation(s) in WMO format.

3. TABLES AND ENTRY LISTS

The WEX message uses the following table:

TABLE	TITLE
5-12	Message Identifiers

4. MESSAGE EXAMPLE

DRIFTING BUOY EXAMPLE

[MESSAGE HEADER]

```
MSGID/FNOC/WEX/0006/SEP
PROD/BUOY/071200Z0/SEP/000/1OF1/ARGOS BUOY DATA
NARR/AMBTN/12345/4230N/06540W/345T/00.5KTS/5000M/1M/
345T/200M/010.0/5HZ/020.0/10HZ/030.0/32HZ/040.0/50HZ/
050.0/100HZ/060.0/200HZ/070.0/500HZ/080.0/1000HZ/090.0/
2000HZ/100.0/3150HZ/110.0/4000HZ/120.0/5000HZ/130.0/
8000HZ/140.0/14500HZ/150.0/20000HZ/160.0/25000HZ
ZZXX 41501 07093 11024 74230 06540 611// 11119 00221
10152 20100 3018 41804 5//// 22219 00152 10402 20///
21/// 33311 88871 20000 31520 43180 20100 31501 43180
66091 20000 345001 444 1000 200// 74230 06540 8VVVVV
ENDAT
```

[END OF MESSAGE SEQUENCE]

WEX EXAMPLE

[MESSAGE HEADER]

```
MSGID/FNOC/WEX/0006/SEP
PROD/BATHY/071200Z0/SEP/000/1OF1/BATHY REPORT
NARR/JJXX 07092 1215/ 74230 06540 88888 00143 23143 29147 49142
71139 86141 98131 99901 25116 77094 91093 99902 14087 52080 99903
00061 38059 IRCS
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 3V

ENHANCED CONTACT REPORT

(XCTC)

1. GENERAL

The Enhanced Contact Report message is used to exchange processed contact data and track management information with enhanced precision and accuracy between computer systems. It contains the identity, location, and movement of surface, subsurface, land, and air contacts. The Enhanced Contact Report is identified with an entry of "XCTC" in Field 2 of the MSGID set. The minimum sets used in an Enhanced Contact Report message vary depending upon how the message is being used. In general, the Enhanced Contact Report message consists of an MSGID set, the body of the Enhanced Contact Report message, and the ENDAT set. The body of the Enhanced Contact Report message consists of CTC segment(s) and/or track management set(s) as described below.

When used solely for track management functions, CTC segments are not reported as one or more of the track management sets listed in Table 3V-1. The use of track management sets is explained in detail in the BGDBM System Specification.

When the Enhanced Contact Report is used solely to pass contact information it consists of one or more CTC segments. A CTC segment consists of a minimum of a CTC subject set immediately followed by an enhanced report set (i.e., XPOS, or XLOB). Table 3V-3 consists of sets which are used to amplify the XPOS and XLOB report sets. These sets (EOB, ENGAG, EQPT, MODEG, POW, PRSNL, **X**RADB, REFUG, SIGAM, and **XSGNA**) should follow the report set which they amplify. When more than one amplifying set is used per report, the order of reporting these sets following the corresponding report set should be **X**RADB, EOB, **XSGNA**, SIGAM, and MODEG followed by EQPT, ENGAG, PRSNL, REFUG, and POW in any order. The maximum number of times each set can be repeated per report set is provided in Table 3V-3. An enhanced report (e.g., XPOS) followed by its amplifying sets (e.g., **X**RADB, **XSGNA**) is called a nested segment within the CTC segment. Multiple nested report segments may be reported within a single CTC segment to provide historical report data on the contact described in the preceding CTC set. Table 3V-2 consists of sets which are used to provide amplifying information on the CTC subject set. These

sets (ARR, DEP, DES, GOB, PAIR, PCRFT, RIG, RMKS, RTD, and UIC) must follow all nested report segments within the CTC segment. Specific ordering of these CTC amplifying sets at the end of the CTC segment is not a requirement, although it is prudent to arrange these sets in order of importance. For example, if a system is operating in a BGDBM role the PAIR set would have great importance and be the first to be reported among these CTC amplifying sets. This is recommended since older systems may have problems processing sets which are new to the Enhanced Contact Report message leaving any sets which follow unprocessed. The maximum number of times each of these sets can be repeated per CTC set is provided in Table 3V-2.

Additionally the Enhanced Contact Report may be used to provide a combined message of contact reports and track management requests. Track management sets can appear interspersed with the CTC segments in any order within the Enhanced Contact Report message. Note that track management sets are not allowed in a CTC segment.

TABLE 3V-1 TRACK MANAGEMENT SETS

SETS	FUNCTION
DELETE (DEL)	Deletes a track
DELETE EXPANDED LINE OF BEARING (DXLOB)	Deletes an expanded line of bearing report from a track history
DELETE EXPANDED POSITION (DXPOS)	Deletes an expanded position report from a track history
MERGE (MRG)	Merges the track data from two distinct units into one track

TABLE 3V-2 MAXIMUM AMPLIFYING SETS PER CTC SET

SETS	MAXIMUM ALLOWED
ARRIVAL (ARR)	1
DEPARTURE (DEP)	1
DESTINATION (DES)	1
GROUND ORDER OF BATTLE (GOB)	1
PAIR (PAIR	1
PLEASURE CRAFT DATA (PCRFT)	1
RIGGING (RIG)	1
REMARKS (RMKS)	4
REAL TIME DATA (RTD)	1
UNIT IDENTIFICATION CODE (UIC)	1
EXPANDED LINE OF BEARING (XLOB)	*
EXPANDED POSITION (XPOS)	*

* Sum of XPOS and XLOB sets per CTC set, in any combination, shall not be restricted by this specification. Maximum message length, practical needs of application, and capabilities of communications path will prevail.

All XPOS and XLOB sets with amplifying data from Table 3V-3 must be reported at the beginning of a CTC segment; all other amplifying sets from Table 3V-2 must follow.

TABLE 3V-3 MAXIMUM AMPLIFYING SETS PER XPOS AND XLOB SETS

SETS	MAXIMUM ALLOWED
ENGAGEMENT (ENGAG)	4
ELECTRONIC ORDER OF BATTLE (EOB)*	1
EQUIPMENT (EQPT)	20
MODE GOLD (MODEG)	1
PRISONERS OF WAR (POW)	1
PERSONNEL (PRNSL)	1
EXPANDED RADAR DATA (**X**RADB)*	6
REFUGEES (REFUG)	5
SIGNA AMPLIFICATION (SIGAM)#	48
EXPANDED SIGNATURE **(XSGNA)**	12

* The EOB set may also be used to amplify an **X**RADB set. Thus it may be reported following an XPOS, XLOB, or **X**RADB set.

\# The SIGAM set is used to amplify the **XSGNA** set. Up to four SIGAM sets may be used per **XSGNA** set.

In a situation where more than one amplifying set is used per report, the following order should be followed in reporting: **X**RADB, EOB, **XSGNA**, SIGAM, and MODEG followed by EQPT, ENGAG, PRSNL, REFUG, and POW in any order.

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	**22 OCTOBER 1997**
MSG IDENTIFIER	:	XCTC
MSG NAME	:	ENHANCED CONTACT REPORT
FUNCTION OR PURPOSE	:	AN OTG ENHANCED CONTACT REPORT IS USED FOR THE EXCHANGE OF PROCESSED CONTACT DATA OR TRACK MANAGEMENT INFORMATION WITH ENHANCED PRECISION AND ACCURACY BETWEEN COMPUTER SYSTEMS. IT CONTAINS DATA RELATIVE TO THE IDENTITY, LOCATION, AND MOVEMENT OF SURFACE, SUBSURFACE, LAND, AND AIR CONTACTS.
SPONSOR(S)	:	SPAWAR PMW-171
RELATED DOCUMENT(S)	:	NONE

ENHANCED CR FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
The following sets (DEL, DXLOB, DXPOS, MRG) may be used in any order.					
	*	(O)	DEL	/M/M/O	DELETE
	*	(O)	DXLOB	/C/C/C/M/M/M/O/M/O	DELETE EXPANDED LINE OF BEARING
	*	(O)	DXPOS	/C/C/C/M/M/O/O/M/O	DELETE EXPANDED POSITION

2. SET ORDER MAP (Continued)

ENHANCED CR FORMAT (Continued)

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
	*	(O)	MRG	/M/M/M/M/O(See Note 1)/O/O	MERGE
[		(C)	CTC	/M/M/O/O/O/O/O/O/O/O/M/O/M/O/O/O/O/O/O/O	CONTACT

The repeatability constraints shown in Table 3V-2 must be followed for all sets in this segment following the CTC set. A repeatable segment beginning with XPOS or XLOB must immediately follow the CTC set. If used, the **X**RADB set is understood to amplify the preceding XPOS or XLOB set. The EOB set modifies the preceding **X**RADB set. If a**n -X**RADB set is not used, the EOB set is associated with the preceding XPOS or XLOB set. The contents of Fields 1 and 2 of the **X**RADB set must be the same as Fields 1 and 2 of the preceding XPOS or XLOB set. A maximum of 12 **XSGNA** sets is allowed per XPOS or XLOB set.

[[	*	(C)	XPOS	/M/M/M/O/C/O/O/O/O/O/O/O/O/O/**O/O**	EXPANDED POSITION
[[	*****	**(O)**	**XRADB**	**/M/M/C/C/O/O/O/O/O/O**	**EXPANDED RADAR DATA**
[[		(O)	EOB	/C/C	ELECTRONIC ORDER OF BATTLE
[[[	*****	**(M)**	**XSGNA**	**/M/M/MO/O/M/M/O/O**	**EXPANDED SIGNATURE**
[[[	*	(O)	SIGAM	/M	SIGNA AMPLIFICATION
[[END OF SEGMENT					
[[		(O)	MODEG	/C/C/O/C/C	MODE GOLD
[[		(O)	PRSNL	/M/M/C/C/C/C/C/C/O/O/O	PERSONNEL
[[	*	(O)	EQPT	/M/M/M/C/C/C/C/C	EQUIPMENT
[[		(O)	POW	/M/M/M	PRISONERS OF WAR
[[	*	(O)	REFUG	/M/M/M/O/O	REFUGEES
[[	*	(O)	ENGAG	/M/M/M/O	ENGAGEMENT
[END OF SEGMENT					
[[	*	(C)	XLOB	/M/M/M/M/O/O/C/O/O	EXPANDED LINE OF BEARING
[[	*****	**(O)**	**XRADB**	**/M/M/C/C/O/O/O/O/O/O**	**EXPANDED RADAR DATA**
[[		(O)	EOB	/C/C	ELECTRONIC ORDER OF BATTLE

2. SET ORDER MAP (Continued)

ENHANCED CR FORMAT (Continued)

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
[[[	*****	**(M)**	**XSGNA**	**/M/M/M/O/O/M/M/O/O**	**EXPANDED SIGNATURE**
[[[	*	(O)	SIGAM	/M	SIGNA AMPLIFICATION
[[END OF SEGMENT					
[[		(O)	MODEG	/C/C/O/C/C	MODE GOLD
[[		(O)	PRSNL	/M/M/C/C/C/C/C/O/O/O	PERSONNEL
[[	*	(O)	EQPT	/M/M/M/C/C/C/C/C	EQUIPMENT
[[		(O)	POW	/M/M/M	PRISONERS OF WAR
[[	*	(O)	REFUG	/M/M/M/O/O	REFUGEES
[[	*	(O)	ENGAG	/M/M/M/O	ENGAGEMENT
[END OF SEGMENT					

The following sets (GOB,UIC,PAIR,PCRFT,RIG,ARR,DEP,DES,RTD,RMKS) may be used in any order.

[		(O)	GOB	/O/O/O/O	GROUND ORDER OF BATTLE
[		(O)	UIC	/*M	UNIT IDENTIFICATION CODE
[		(O)	PAIR	/C/C/C/C/O/O/O/O/O/O/O/O	PAIR
[		(O)	PCRFT	**/O/O/O**	PLEASURE CRAFT DATA
[		(O)	RIG	/O/O/O/O/O/O/O	RIGGING
[		(O)	ARR	/M/M/O/O/O/O/O/O	ARRIVAL
[		(O)	DEP	/M/M/O/O/O/O/O/O	DEPARTURE
[		(O)	DES	/M/M/O/O/O/O/O/O	DESTINATION
[		(O)	RTD	/C/C	REAL TIME DATA
[	*	(O)	RMKS	/M	REMARKS
END OF SEGMENT					
		(M)	ENDAT	/C/*C/*C	END OF DATA

2. SET ORDER MAP (Continued)

NOTES: (Continued)

1. The spare field is used as a position filler and does not convey any data.

2. The following conditional sets/fields are mandatory:

CTC: This set is mandatory if any of the sets from Tables 3V-2 or 3V-3 are used.

DXLOB:

Fields 1-2: These fields are mandatory if Field 3 is not used.

Field 3: This field is mandatory if Fields 1 and 2 are not used.

DXPOS:

Fields 1-2: These fields are mandatory if Field 3 is not used.

Field 3: This field is mandatory if Fields 1 and 2 are not used.

Field 8: This field is mandatory if Field 10 is used and is not equal to Field 9.

XPOS: This set is mandatory if the CTC set is used and the XLOB set is not used.

Field 5: This field is mandatory if Field 7 is used and is not equal to Field 6.

XLOB: This set is mandatory if the CTC set is used and the XPOS set is not used.

Field 7: This field is mandatory if Field 6 is expressed in NM.

XRADB:

Field 3: This field is mandatory if Field 4 is not used.

Field 4: This field is mandatory if Field 3 is not used.

2. SET ORDER MAP (Continued)

NOTES: (Continued)

MODEG:

Field 1: This field is mandatory if Field 2 is not used.

Field 2: This field is mandatory if Field 1 is not used.

Fields 4-5: These fields are mandatory if Field 3 is provided.

PRSNL:

Field 3: This field is mandatory if Fields 4 through 8 are not reported.

Field 4: This field is mandatory if Fields 3, 5, 6, 7, and 8 are not reported.

Field 5: This field is mandatory if Fields 3, 4, 6, 7, and 8 are not reported.

Field 6: This field is mandatory if Fields 3, 4, 5, 7, and 8 are not reported.

Field 7: This field is mandatory if Fields 3, 4, 5, 6, and 8 are not reported.

Field 8: This field is mandatory if Fields 3 through 7 are not reported.

EQPT:

Field 4: This field is mandatory if Fields 5 through 8 are not reported.

Field 5: This field is mandatory if Fields 4, 6, 7, and 8 are not reported.

Field 6: This field is mandatory if Fields 4, 5, 7, and 8 are not reported.

Field 7: This field is mandatory if Fields 4, 5, 6, and 8 are not reported.

Field 8: This field is mandatory if Fields 4 through 7 are not reported.

RTD:

Field 1: This field is mandatory if Field 2 is not used.

Field 2: This field is mandatory if Field 1 is not used

3. TABLES AND ENTRY LISTS

The Enhanced Contact Report message uses the following tables and entry lists:

TABLE	TITLE
5-1	Force Codes
5-2	Category Codes
5-3	Scan Type Codes
5-12	Message Identifiers
5-19	Alert Code Retention
5-20	Detection Status Codes
5-21	Position Reporting
5-22	**Pleasure Craft Types**

ENTRY LIST	TITLE
59	Country Codes
92	Scan Types
137	Ship Types
426	Suspicion Codes
513	Aircraft Types
1030	Load Types
1053	Appearance Group Codes
1080	Hull Profile Codes
1096	Submarine Propulsion Mode
1104	Sensor Codes
1112	Submarine Operating Mode
1136	Source Codes

4. MESSAGE EXAMPLES

[MESSAGE HEADER]

```
MSGID/CTG144.01.05/XCTC/1234/NOV
CTC/T7177/UNEQUATED-SCUD MISSILE LAUNCHER///LND//IZ////24
XPOS/121234.0Z3/NOV97/UT:38RLV91826660
CTC/T7129/AVENGER-CHAMPION//MCM/NAV/4/US////09
XPOS/121235Z4/NOV97/LL:263513.5N5-0563049.6E3//123.4T/5.6NM/1.2NM
/123.4/4.3KTS
ENDAT/01JAN99
```

[END OF MESSAGE SEQUENCE]

[MESSAGE HEADER]

```
MSGID/CTG81.01/XCTC/1234/NOV
CTC/T7134/NIMITZ-GEORGE WASHINGTON//CVN/NAV/73/US////09
XPOS/121234.0Z3/NOV97/LL:272311.6N2-0505205.8E5/WSN5////234.5T/9.2KTS
CTC/T7156/SPRUANCE-CARON//DD/NAV/970/US////09
XPOS/121235.0Z4/NOV97/LL:272004.4N9-0511038.4E2/WSN5////237.8T
/10.5KTS
CTC/T7145/ABURKE-STOUT//DDG/NAV/55/US////09
XPOS/121240.0Z0/NOV97/LL:271042.7N3-0505434.2E3/WSN5////241.3T
/11.7KTS
CTC/T7130/TICONDEROGA-YORKTOWN//CG/NAV/48/US////09
XPOS/121231.0Z0/NOV97/LL:270735.2N6-0503715.7E8/WSN5////240.2T
/10.8KTS
CTC/T7132/OLIVER-NICHOLAS//FFG/NAV/47/US////09
XPOS/121231.0Z0/NOV97/LL:272720.8N8-0501614.8E5/WSN5////235.6T/9.9KTS
ENDAT/01JAN99
```

[END OF MESSAGE SEQUENCE]

CHAPTER 4

APPROVED SET LIBRARY

4.1 PURPOSE

This chapter contains a detailed description of each formally approved OTG set. Individual set instructions are arranged in alphabetical order by their set identifier. Set libraries are used to provide detailed instructions concerning a set's structure, the data fill for each field, and how the information contained in a set is interpreted.

ADDRESSEES

	1		2		3		4
ADDEE	/ **1-6ANBS**	/	1-6ANBS	/	1-6ANBS	/	1-6ANBS
	ADDRESS		**ADDRESS**		**ADDRESS**		**ADDRESS**

	5		6		7		8		9
/	1-6ANBS	/	1-6ANBS	/	1-6ANBS	/	1-6ANBS	/	1-6ANBS
	ADDRESS		**ADDRESS**		**ADDRESS**		**ADDRESS**		**ADDRESS**

NOTE: SHADED FIELD IS MANDATORY

The ADDEE set lists the addresses of the intended recipients of the message downline of the primary TDP, which has its own Subscriber ID (SID). These recipients may be located at a remote node or within a ship or command center. Subsets of systems may be addressed using this set (e.g., ALL for all systems, DTC for all embedded desktop computers aboard a receiving ship, TESS for the Tactical Environment Support System, etc.). Messages addressed for distribution downline of a primary TDP do not require JANAP 128 headers.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Address	M	Any address of six or fewer characters is permitted, e.g., JOTS, TESS, ALL, DTC. (1-6ANBS)
2	Address	O	Use same format as Field 1.
3	Address	O	Use same format as Field 1.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

ADDRESSEES (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Address	O	Use same format as Field 1.
5	Address	O	Use same format as Field 1.
6	Address	O	Use same format as Field 1.
7	Address	O	Use same format as Field 1.
8	Address	O	Use same format as Field 1.
9	Address	O	Use same format as Field 1.

Set Examples:

```
ADDEE/OED/TWCS

ADDEE/ALL
```

ROUTING ADDRESSES

		1
ADDR	/	**1-68ANB**
		PLAIN LANGUAGE ADDRESSES

NOTE: SHADED FIELD IS MANDATORY

NOTE: FIELD UNDER BRACKET IS REPEATABLE

The ADDR set is used to specify the recipients of Contact Reports generated by the ROTHRTASK.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1-20	Plain Language Addresses	M,R	Addresses are separated by slashes and continuation lines and are allowed to accommodate up to 20 addresses, e.g., COMCARGRU SIX, COMDESRON FOUR. (1-68ANB)

Set Example:

```
ADDR/COMDESRON SIX/FLTDECGRUPAC DET WESTPAC/COMCARGRU SIX
```

ADD OR MODIFY GROUP

		1		2		3		4
ADGRP	/	**5-6AN**	/	**1-26ANBS**	/	**3-6ANS**	/	**3A**
		GROUP NUMBER		**GROUP ID**		**GROUP RADIUS**		**GROUP CATEGORY**

	5		6		7		8
/	**2N**	/	**5-6AN**	/	2A	/	1-10ANBS
	GROUP FORCE CODE		**GROUP KEY TRACK**		**GROUP FLAG**		**GROUP SYMBOL ANNOTATION**

NOTE: SHADED FIELDS ARE MANDATORY

The ADGRP set is used to add or delete a track from a previously defined group or to define a new group. In either case, ADTRK or DLTRK sets must follow the ADGRP set. Although contact groups are normally used only for display purposes, individual tactical data processors may exchange contact groups for other reasons (e.g., mutual defense decision aids, battle group components, etc.).

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Group Number	M	Enter the group number that is to be created, or the group number to which a track is to be added or deleted by subsequent ADTRK or DLTRK sets, e.g., T0003, T0023, G99999. (5-6AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

ADD OR MODIFY GROUP (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Group ID	M	Enter the group ID of the group being created or modified, e.g., STENNIS BATTLE GROUP. This data is used to provide TDP operators with a list of currently defined groups. This data is not shown on the TDP's tactical geographic display. (1-26ANBS)
3	Group Radius	M	Enter the distance (radius) from the group key track at which group members will automatically group or ungroup on TDP tactical geographic displays. When group members are within this distance from the key track they will be displayed as members of their group rather than as individual tracks. Enter the distance (.01-999) without leading zero followed by "NM" (nautical miles), "YD" (yards), or "FT" (feet), e.g., 3.57NM, .09YD, 999FT. (3-6ANS)
4	Group Category	M	Enter the group category code from Table 5-4 (Group Category Codes), e.g., ANK, NAV. (3A)
5	Group Force Code	M	Enter the group force code from Table 5-1 (Force Codes), e.g., 16, 17. (2N)
6	Group Key Track	M	Enter the track number as found in the track database, of the group key track, e.g., T0003, G0023, G99999. When defining a group, the group key track must be described in the immediately following ADTRK and POS sets in order to provide group key track attributes and position. (5-6AN)
7	Group Flag	O	Enter the group flag code from Entry List 59 (Country Codes), e.g., UR, US. (2A)
8	Group Symbol Annotation	O	Enter the group symbol annotation that will appear with the group on the TDP's tactical geographic display, e.g., JF BG, STENNIS SAG. (1-10ANBS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

ADD OR MODIFY GROUP (Continued)

Set Examples:

```
ADGRP/G1234/STENNIS BG/50NM/NAV/09/T7459/US/JFK BG

ADGRP/G00004/STENNIS BG/25NM/NAV/17/T0412/US/STENNIS BG
```

ADD TRACK TO GROUP

		1		2
ADTRK	/	**5-6AN**	/	**1-14ANBS**
		TRACK NUMBER		**COMMAND**

NOTE: SHADED FIELDS ARE MANDATORY

The ADTRK set adds the indicated track to the group designated in the preceding ADGRP set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Track Number	M	Enter the track number, as found in the track database, of the track that is to be added to the group, e.g., T0001, T0023, T99999. (5-6AN)
2	Command	M	Enter the reporting command (platform unique identifier) that assigned the track number of the track to be added, e.g., CTF 70, COMTHIRDFLT, KITTY HAWK. (1-14ANBS)

Set Examples:

```
ADTRK/T7010/CTU 35.2.1

ADTRK/T4233/SPRUANCE
```

AREA OF INTEREST FILTER

		1		2		3		4
AOI	/	1-2N	/	**3-5A**	/	1-5ANBS	/	8AN
		FILTER NUMBER		**FILTER TYPE**		**FILTER NAME**		**START DATE-TIME GROUP**

	5		6		7		8		9
/	3A	/	8AN	/	3A	/	6AN	/	7AN
	START MONTH		**END DATE-TIME GROUP**		**END MONTH**		**DLRP LATITUDE**		**DLRP LONGITUDE**

	10		11		12		13
/	1-2N	/	1-2N	/	1-2N	/	1-36ANBS
	SURFACE UPDATE INTERVAL		**SUBSURFACE UPDATE INTERVAL**		**AIRCRAFT UPDATE INTERVAL**		**COMMENTS**

NOTE: SHADED FIELD IS MANDATORY

The AOI set is used to create, modify or delete an Area of Interest filter. The filter will be effective during the specified time interval. If the start and ending DTGs are the same the AOI is deleted; otherwise, it is created or modified. Different filters may control system inputs through various communication ports or computer-to-computer interfaces.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Filter Number	C	Enter the identifying number (1-99) of the AOI filter, e.g., 1, 30. For filter types of CDS or MOTH this field shall be set to blank. (1-2N)

AREA OF INTEREST FILTER (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Filter Type (See Note 1)	M	Enter the type of filter for the specified AOI filter from the following list (3-5A): MOTH - Master OTH Filter (maximum of 1 MOTH filter per TDP) OTH - OTH Filter (maximum of 20 OTH filters per TDP) CDS - Combat Direction System/Link-11 Filter (maximum of 1 CDS filter per TDP). If Field 2 is CDS, then Fields 8 through 12 are mandatory, unless the line is used for deletion of the filter. OTHER - Other filter types (maximum of 77 OTHER filters per TDP). (See Note 2)
3	Filter Name	C	Enter the name of the AOI filter described in this and subsequent sets, e.g., W357, SOCAL, CAPE1. This field is mandatory if OTH is entered in Field 2. (1-5ANBS)
4	Start Date-Time Group	C	Enter start time of the specified area of interest filter in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. This field is mandatory if OTH is entered in Field 2. (8AN)
5	Start Month	C	Enter the first three letters of the start month of the area of interest filter, e.g., JAN, FEB, MAR. This field is mandatory if OTH is entered in Field 2. (3A)

AREA OF INTEREST FILTER (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
6	End Date-Time Group	C	Enter the ending time for the specified area of interest filter in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. This field is mandatory if OTH is entered in Field 2. (8AN)
7	End Month	C	Enter the ending month of the specified area of interest filter. Enter the first three letters of the desired month, e.g., JAN, FEB, MAR. This field is mandatory if OTH is entered in Field 2. (3A)
8	DLRP Latitude	C	Enter the latitude of the DLRP in degrees (00-90), and minutes (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. This field is mandatory if CDS is entered in Field 2, unless the line is used for deletion of the filter. (6AN)
9	DLRP Longitude	C	Enter the longitude of the DLRP in degrees (000-180), and minutes (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W9, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 18000) degrees. This field is mandatory if CDS is entered in Field 2, unless the line is used for deletion of the filter. (7AN)
10	Surface Update Interval	C	Enter the CDS filter update interval, in minutes(1-59), for surface ships, e.g., 2, 40, 53. This field is mandatory if CDS is entered in Field 2, unless the line is used for deletion of the filter. (1-2N)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

AREA OF INTEREST FILTER (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
11	Subsurface Update Interval	C	Enter the CDS filter update interval, in minutes (1-59), for submarines, e.g., 2, 40, 53. This field is mandatory if CDS is entered in Field 2, unless the line is used for deletion of the filter. (1-2N)
12	Aircraft Update Interval	C	Enter the CDS filter update interval, in minutes (1-59), for aircraft, e.g., 2, 40, 53. This field is mandatory if CDS is entered in Field 2, unless the line is used for deletion of the filter. (1-2N)
13	Comments	O	A brief unformatted description of the AOI filter may be entered in this field, e.g., CURRENT CDS FILTER. (1-36ANBS)

Set Examples:

```
AOI//CDS//210330Z9/JAN/250200Z9/JAN/3405N2/06723W8/15/15/5
/CURRENT OPS CDS FILTER

AOI/15/OTH/SOCAL/200000Z2/APR/260000Z8/APR

AOI//MOTH//300000Z3/MAY/302359Z2/MAY/2030N5/11500W7/15/15/3
```

NOTES:

1. Different filters may be active at the same time.

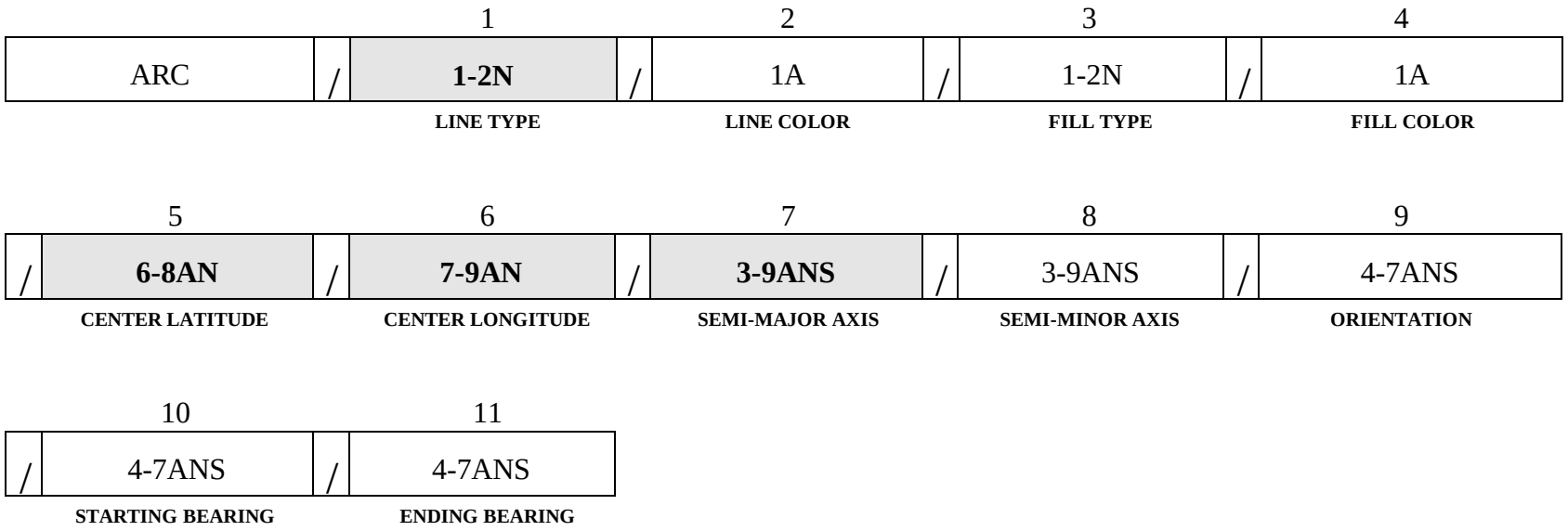
2. One filter may control more than one communications input line, depending on receiving system implementation approach.

AREA OF INTEREST FILTER (Continued)

3. Filter on/off times permit automatic filter activation/deactivation within the receiving system.

4 In order to identify an existing filter for deletion, only Fields 1 through 7 must be transmitted.

ARC



NOTE: SHADED FIELDS ARE MANDATORY

The ARC set is used to define arcs, circles or ellipses at a fixed geographic position.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Line Type	M	Enter the type of line from Table 5-5 (Line Types), e.g., 1, 3. (1-2N)
2	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., A, C. If line color is not provided, a default value of A (white) will be assumed. (1A)

ARC (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Fill Type	O	Enter the area fill type from Table 5-7 (Area Fill Types), e.g., 0, 3, 6. If fill type is not provided, a default value of 0 (no fill) will be assumed. (1-2N)
4	Fill Color	O	Enter the fill color from Table 5-6 (Color Codes), e.g., A, D, I. (1A)
5	Center Latitude	M	Enter the center latitude in degrees (00-90), minutes (00-59), optional seconds (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 900000N9, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6-8AN)
6	Center Longitude	M	Enter the center longitude in degrees (000-180), minutes (00-59), optional seconds (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 1800000W9, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 18000) degrees. (7-9AN)
7	Semi-Major Axis	M	Enter the semi-major axis, in nautical miles, of the arc, circle or ellipse (0-9999.9; use up to 6 characters, with optional floating decimal point and optional leading zeros), followed by "NM" and an optional checksum (0-9), e.g., 0.5NM, .5NM, 0.5NM5, 225.00NM, 256.00NM3. When the semi-major axis and semi-minor axis are equal, the arc is a circle or portion of a circle. Systems implementing a fixed overlay may use this field as a radius. (3-9ANS)
8	Semi-Minor Axis	O	Enter the semi-minor axis in nautical miles of the arc, circle or ellipse using the same format as Field 7, e.g., 7NM, 123.5NM, 1213.9NM6. The default value for this is the same value as Field 7 (i.e., the arc is a circle or portion of a circle, with the radius defined in Field 7). (3-9ANS)

ARC (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
9	Orientation	C	Enter the true bearing of the semi-major axis (000-360 or 000.0-360.0) followed by "T" (true) and an optional checksum (0-9), e.g., 035T, 035T8, 035.5T, 035.5T3. The default value for this field is 000T. This field is mandatory if Field 8 is used and contains a lesser value than Field 7. (4-7ANS)
10	Starting Bearing	O	The arc is drawn clockwise from the starting bearing to the ending bearing. To draw a full circle or full ellipse the starting and ending bearings must be equal or be omitted. Enter the starting bearing of the arc in degrees true (000-360 or 000.0-360.0) followed by "T" (true) and an optional checksum (0-9), e.g., 035T, 035T8, 035.5T, 035.5T3. The default value for this field is 000T. (4-7ANS)
11	Ending Bearing	C	Enter the ending bearing of the arc in degrees true (000-360 or 000.0-360.0) followed by "T" (true) and an optional checksum (0-9), e.g., 035T, 035T8, 035.5T, 035.5T3. The default value for this field is the same as Field 10. This field is mandatory if Field 10 is used. (4-7ANS)

Set Examples:

`ARC/2/C/2/C/3000N3/13000W4/100NM1/50NM5/010T1`	An ellipse
`ARC/0////3000N3/13000W4/100NM1///045T9/090T9`	Portion of a circle
`ARC/1/B/1/C/3000N3/13000W4/100NM1/100NM1`	Full circle
`ARC/1/B/1/A/3000N3/13000W4/1500NM/768NM/027.5T4`	An ellipse

ARC (Continued)

NOTE: The OVLY1 message does not allow ellipses nor portions of circles as graphic overlay elements.

AREA AMPLIFICATION

		1		2		3		4
AREAM	/	**1-15ANBS**	/	8AN	/	3A	/	8AN
		AREA NAME		**START DATE-TIME GROUP**		**START MONTH**		**END DATE-TIME GROUP**

	5		6		7
/	3A	/	1-30ANBS	/	2A
	END MONTH		**DESCRIPTION**		**LINE PROJECTION**

NOTE: SHADED FIELD IS MANDATORY

The AREAM set is used to provide amplifying information for the overlay item contained in the preceding ARC, CLINE, LINE, RARC, RLINE, RSECT, RSYMB, RTEXT, SECT, SYMB, or TEXT set. The individual items which comprise an overlay should be plotted using the Line Projection field specified in the accompanying AREAM set. If no Line Projection is specified via an AREAM set, the Line Projection field of the CHART set should be used.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Area Name	M	Enter the name of the overlay item being amplified, e.g., BRAVO. (1-15ANBS)
2	Start Date-Time Group	O	Enter start time of the overlay item being amplified in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

AREA AMPLIFICATION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Start Month	O	Enter the first three letters of the start month of the overlay item being amplified, e.g., JAN, FEB, MAR. (3A)
4	End Date-Time Group	O	Enter the end time for the overlay item being amplified in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
5	End Month	O	Enter the end month of the overlay item being amplified. Enter the first three letters of the desired month, e.g., JAN, FEB, MAR. (3A)
6	Description	O	Enter the description of the overlay item being amplified, e.g., TOMAHAWK IMPACT AREA. (1-30ANBS)
7	Line Projection	O	Enter "GC" if the lines are to be plotted as Great Circles or "RL" if the lines are to be plotted as Rhumb Lines. (2A)

Set Example:

```
AREAM/BRAVO/201430Z0/AUG/202030Z7/AUG/ORDNANCE DUMP SITE/RL
```

AREA REMARKS

		1
ARMKS	/	**1-63ANBS**
		FREE-TEXT

NOTE: SHADED FIELD IS MANDATORY

The ARMKS set is used in the OVERLAY 2 message to provide amplifying textual information for the overlay item (object) contained in the preceding ARC, LINE, RARC, RLINE, RSECT, RSYMB, RTEXT, SECT, SYMB, and/or TEXT sets.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Free-Text	M	Each line is limited to 63 characters after "ARMKS/" set. (1-63ANBS)

Set Example:

```
ARMKS/MAXIMUM OF FOUR ARMKS LINES PER OVERLAY OBJECT.
ARMKS/A MAXIMUM OF FOUR LINES OF FREE-TEXT INFORMATION MAY BE
ARMKS/ENTERED. A NEW SET IDENTIFIER AND FIELD MARKER MUST
ARMKS/INITIATE EACH LINE.
```

ARRIVAL

	1		2		3		4
ARR	/	**1-18ABS**	/	**2A**	/	8AN	/	3A
		PORT OF ARRIVAL/ LOCATION		**COUNTRY OF PORT**		**TIME OF ARRIVAL (DTG)**		**MONTH**

	5		6		7		8
/	3A	/	3A	/	3A	/	3A
	CARGO INDICATOR		**CARGO INDICATOR**		**CARGO INDICATOR**		**CARGO INDICATOR**

NOTE: SHADED FIELDS ARE MANDATORY

The ARR set is used to report that the ship described in the preceding CTC set has arrived or is continuing in the port or anchorage.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Port of Arrival/Location	M	Enter the name of the port or location of arrival. This name is to be stated in full; if longer than 18 characters, truncate remaining characters, e.g., HO CHI MINH CITY, TANJUNGKARANG-TELU, NEW YORK. (1-18ABS)
2	Country of Port	M	Enter the country code of the port or location of arrival from Entry List 59 (Country Codes), e.g., US, UR. (2A)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

ARRIVAL (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Time of Arrival (DTG)	O	Enter the time of arrival in days (01-31), hours (00-23), minutes (00-59),and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
4	Month	O	Enter the first three letters of the month of arrival, e.g., JAN, FEB, MAR. (3A)
5	Cargo Indicator	O	Enter the cargo indicator code for the track from Entry List 1030 (Load Types), e.g., AGP, MAC, OTR. (3A)
6	Cargo Indicator	O	Enter the cargo indicator code for the track from Entry List 1030 (Load Types), e.g., AGP, MAC, OTR. (3A)
7	Cargo Indicator	O	Enter the cargo indicator code for the track from Entry List 1030 (Load Types), e.g., AGP, MAC, OTR. (3A)
8	Cargo Indicator	O	Enter the cargo indicator code for the track from Entry List 1030 (Load Types), e.g., AGP, MAC, OTR. (3A)

Set Example:

```
ARR/HONG KONG/HK/011234Z1/JAN/GEN/MED/PAX/TEX
```

NOTE: Processing of ARR sets contained in Contact Report messages is optional.

AXIS

	1		2		3		4
AXIS	/	**4-24ANS (7-27ANS)**	/	**4-24ANS (7-27ANS)**	/	**4-24ANS (7-27ANS)**	/	1N
		ARROW TIP		**ARROW BASE**		**ARROW TAIL**		**AIR MOVEMENT**

	5		6		7		8
/	1-2N	/	1A	/	1-2N	/	1A
	LINE TYPE		**LINE COLOR**		**FILL TYPE**		**FILL COLOR**

NOTE: SHADED FIELDS ARE MANDATORY

The AXIS set is used to define direction of movement at a fixed geographic location. The AXIS set allows reporting of data with enhanced precision and flexibility in unit of measure.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Arrow Tip	M	Enter the arrow tip location in its original format and precision if possible. Use one of the alternate field contents provided below. Enter the designated field descriptor followed by the data. Data can be expressed in:

Coordinate System	Field Descriptor
Latitude/Longitude	LL:

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

AXIS (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Arrow Tip (continued)	M	Coordinate System — Field Descriptor GEOREF (World Geographic Reference System) — GR: The precision reported in this field should reflect the original known precision. The only boundary or restriction placed on the reported precision of data in this field is the field length range. An optional floating decimal point is allowed as appropriate. See Table 5-21 (Position Reporting) for more information on data format, e.g., LL:304055.55N7-1304055.55E8, UT:45FDK0474, GR:DIQA. (4-24ANS, 7-27ANS including field descriptor)
2	Arrow Base	M	Enter the arrow base location in its original format and precision if possible. Use one of the alternate field contents provided below. Enter the designated field descriptor followed by the data. Data can be expressed in: Coordinate System — Field Descriptor Latitude/Longitude — LL: UTM (Universal Transverse Mercator) — UT: GEOREF (World Geographic Reference System) — GR:

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

AXIS (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Arrow Base (continued)	M	The precision reported in this field should reflect the original known precision. The only boundary or restriction placed on the reported precision of data in this field is the field length range. An optional floating decimal point is allowed as appropriate. See Table 5-21 (Position Reporting) for more information on data format, e.g., LL:304055.55N7-1304055.55E8, UT:45FDK0474, GR:DIQA. (4-24ANS, 7-27ANS including field descriptor)
3	Arrow Tail	M	Enter the arrow tail location in its original format and precision if possible. Use one of the alternate field contents provided below. Enter the designated field descriptor followed by the data. Data can be expressed in:

Coordinate System	Field Descriptor
Latitude/Longitude	LL:
UTM (Universal Transverse Mercator)	UT:
GEOREF (World Geographic Reference System)	GR:

The precision reported in this field should reflect the original known precision. The only boundary or restriction placed on the reported precision of data in this field is the field length range. An optional floating decimal point is allowed as appropriate. See Table 5-21 (Position Reporting) for more information on data format, e.g., LL:304055.55N7-1304055.55E8, UT:45FDK0474, GR:DIQA. (4-24ANS, 7-27ANS including field descriptor)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

AXIS (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Air Movement	O	Enter 1 for air movement. Enter 0 for ground movement, e.g., 0, 1. The default value is 0 (ground movement). (1N)
5	Line Type	O	Enter the type of the line from Table 5-5 (Line Types), e.g., 1, 3. If line type is not provided, default value 0 (solid) will be assumed. (1-2N)
6	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., B, D. If line color is not provided, default value A (white) will be assumed. (1A)
7	Fill Type	O	Enter the area fill type from Table 5-7 (Area Fill Types), e.g., 0, 3, 6. If fill type is not provided, default value 0 (no fill) will be assumed. (1-2N)
8	Fill Color	O	Enter the fill color from Table 5-6 (Color Codes), e.g., B, D. If fill color is not provided, default value A (white) will be assumed. (1A)

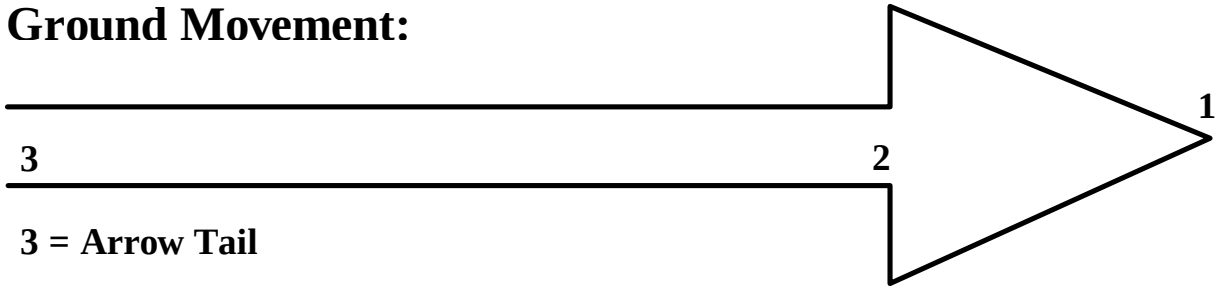
Set Examples:

```
AXIS/LL:410371.76N9-0303315.03W8/LL:393850.95N2-0354415.71W0
/LL:355438.84N0-0464828.68W6/1/3/B

AXIS/UT:18SUU83630143/UT:18SUU67832145/UT:18SUU45612345
```

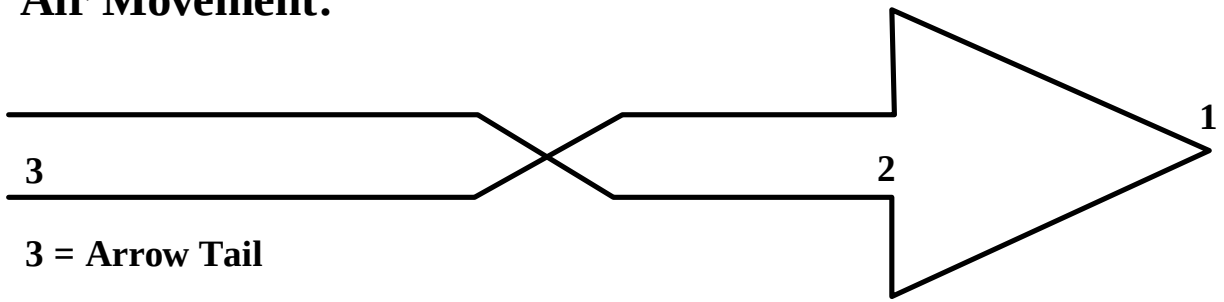
NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

AXIS (Continued)

Ground Movement:



Air Movement:



CATEGORY

	1		2		3		4
CAT	/	**2N**	/	2N	/	2N	/	2N
		FORCE CODE		**FORCE CODE**		**FORCE CODE**		**FORCE CODE**

	5		6
/	2N	/	2N
	FORCE CODE		**FORCE CODE**

NOTE: SHADED FIELD IS MANDATORY

The CAT set is used by the Coordinator to specify the type of tracks that Participants will process.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Force Code	M	Enter the force code of the tracks of interest from Table 5-1 (Force Codes), e.g., 01, 22. (2N**)**
2	Force Code	O	Use same format as Field 1.
3	Force Code	O	Use same format as Field 1.
4	Force Code	O	Use same format as Field 1.
5	Force Code	O	Use same format as Field 1.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

CATEGORY (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
6	Force Code	O	Use same format as Field 1.

Set Example:

```
CAT/01/08
```

CHART

	1		2		3		4
CHART	/	**6-8AN**	/	**7-9AN**	/	**6-7ANS**	/	2N
		CENTER LATITUDE		**CENTER LONGITUDE**		**HALF WIDTH OF MAP**		**PROJECTION**

	5
/	2A
	LINE PROJECTION

NOTE: SHADED FIELDS ARE MANDATORY

The CHART set is used to describe the screen size and other parameters used by TDPs when receiving graphics overlays. The individual items which comprise an overlay should be plotted using the Line Projection field specified in the accompanying AREAM set. If no Line Projection is specified via an AREAM set, the Line Projection field of the CHART set should be used.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Center Latitude	M	Enter the center latitude in degrees (00-90), minutes (00-59), optional seconds (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 900000N9, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6-8AN)
2	Center Longitude	M	Enter the center longitude in degrees (000-180), minutes (00-59), optional seconds (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 1800000W9, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 18000) degrees. (7-9AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

CHART (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Half Width of Map	M	Enter map half width (at maximum width) in "NM", "YD", or "KM", decimal point allowed, provided maximum half width specified does not exceed 9999NM, e.g., 4500YD, 999.9NM, 3300KM. (6-7ANS)
4	Projection	O	Enter the projection code from the following list (2N): 00 - No Projection 01 - Mercator 02 - Oblique Orthographic 03 - Polar Projection
5	Line Projection	O	Enter "GC" if lines are to be plotted as great circles or "RL" if lines are to be plotted as rhumb lines. (2A)

Set Example:

```
CHART/2000N2/12000W3/1000NM/01/RL
```

COMPACTED LINE

		1		2		3		4
CLINE	/	**3-4AN**	/	**1-2N**	/	1-2N	/	1A
		COMPACTION METHOD		**NUMBER OF COMPACTION POINTS**		**LINE TYPE**		**LINE COLOR**

|

	5
/	**4-7AN**
	COMPACTED LATITUDE/ LONGITUDE POINTS

NOTE: SHADED FIELDS ARE MANDATORY

NOTE: FIELD UNDER BRACKET IS REPEATABLE

The CLINE set is used to define a line between fixed geographic points. The latitude/longitude points contained in Field 5 are transmitted in compacted form to reduce communication net loading. Up to 99 points may be used to define 98 line segments per CLINE set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Compaction Method	M	Enter code for the compaction algorithm used to compact the data in Field 5 from Table 5-15 (Compaction Codes), e.g., AR1. (3-4AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

COMPACTED LINE (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Number of Compaction Points	M	Enter the number of points (2-99) that will be used to define the line segments, e.g., 2, 10. If the line is used to draw a closed figure, the position of the first and last points must be the same. (1-2N)
3	Line Type	O	Enter the type of line from Table 5-5 (Line Types), e.g., 1, 3. If line type is not provided, a default value of 0 (solid line) will be assumed. (1-2N)
4	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., A, C. If line color is not provided, a default value of A (white) will be assumed. (1A)
5	Compacted Latitude/Longitude Points	M,R	Enter the latitude/longitude of the points used to define the line segment in compacted form. This field may be repeated to provide up to 99 latitude/longitude pairs, which define up to 98 line segments. (4-7AN)

Set Example:

```
CLINE/AR1/4/0/C/0A3YP/0A7YL/0B6Z9/0B4WX
```

DATA COMPACTION

	1		2
CMPCT	/	**3-4AN**	/ 1-12ANBS
		COMPACTION TYPE	**COMPACTION PARAMETERS**

NOTE: SHADED FIELD IS MANDATORY

NOTE: FIELD UNDER BRACKET IS REPEATABLE

The CMPCT set is used to indicate that a data compaction algorithm was used to compress the data contained in the immediately following NARR set. This set also indicates the data compaction method used and provides the parameters required to expand the data into a usable form.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Compaction Type	M	Enter the compaction type code from Table 5-15 (Compaction Codes) to indicate which compaction algorithm was used on the data in subsequent sets, e.g., AR1, BS1. (3-4AN)
2	Compaction Parameters	C,R	Enter the data compaction parameters used to compact the data in the subsequent fields, e.g., .10058E04, .17678E-01. If EOF1 compaction is used in Field 1, Field 2 is not required. (1-12ANBS)

Set Example:

```
CMPCT/BS1/.10058E04/.17678E-01
```

CONTACT

	1		2		3		4
CTC	/	**5-6AN**	/	**3-38ANBS**	/	1-20ANBS	/	2-6AN
		TRACK NUMBER		**CLASS-NAME**		**TRADEMARK**		**TYPE**

	5		6		7		8		9
/	3A	/	1-6AN	/	2A	/	6AN	/	4N
	CATEGORY		**PENNANT NUMBER**		**FLAG**		**SCONUM**		**SELECTIVE IDENTIFIER**

	10		11		12		13		14
/	3A	/	**2N**	/	4-5AN	/	**1N**	/	1-4N
	ALERT CODE		**FORCE CODE**		**SYSTEM TRACK NUMBER**		**TRACK TYPE**		**AVERAGE SPEED**

	15		16		17		18		19
/	1-4N	/	4N	/	12AN	/	4-8AN	/	2N
	AVERAGE TIME ON LEG		**DISCRETE IDENTIFIER**		**UNIQUE IDENTIFIER (UID)**		**INTERNATIONAL RADIO CALL SIGN**		**SUSPICION CODE**

	20
/	1-12ANBS
	EMITTER VOICE CALL SIGN

NOTE: SHADED FIELDS ARE MANDATORY

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

CONTACT (Continued)

The CTC set is used to identify a platform, emitter or contact, including own ship/station.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Track Number	M	Enter the track number of the contact being reported. If system limitations preclude a unique track number assignment, use T0000, e.g., T0001, T0023, T99999. (5-6AN)
2	Class-Name	M	Enter the class (1-11ANBS) and name (1-26ANBS), as listed in the STAR, of the track being reported, separated by a hyphen, e.g., SPRUANCE-BRISCOE, KITTY HAWK-CONSTELLATION. If class cannot be provided, enter "UNEQUATED" in the class portion of this field. If name cannot be provided, enter "UNKNOWN" in the name portion of this field. If neither class nor name can be provided, enter "UNEQUATED-UNKNOWN". Both class and name shall be provided when available to support autocorrrelation of this data. Hyphens are not allowed in the class or name portion of this field. The only hyphen permitted is the delimiter between class and name. Class-name entries of "XUNEQUATED" and "XUNKNOWN" are to be treated the same as "UNEQUATED" and "UNKNOWN" by TDPs (3-38ANBS)
3	Trademark	O	Enter the trademark of the track being reported. Refer to NWP 1-03.41 (Classified Supplement) for a description of trademarks. (1-20ANBS)
4	Type	O	Enter the track type code from Entry Lists 137 (Ship Types) or 513 (Aircraft Types) or **Table 5-22 (Pleasure Craft Types)** of the track being reported, e.g., CV, P3C. (2-6AN)
5	Category	O	Enter the category code of the track being reported from Table 5-2 (Category Codes), e.g., NAV, MER. (3A)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

CONTACT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
6	Pennant Number	O	Enter the pennant (hull) number of the track being reported. Enter the letters and numbers as they appear on the ship' s hull or refer to the STAR, e.g., 1070, D87, F169. (1-6AN)
7	Flag	O	Enter the flag code of the track being reported from Entry List 59 (Country Codes), e.g., US, UR. (2A)
8	SCONUM	O	Enter the Ship Control Number (SCONUM) of the track being reported, e.g., B45524, A41942. The SCONUM is a unique identification code assigned by ONI and listed in the STAR and DST-2050G-612 (series). (6AN)
9	Selective Identifier	O	Enter the Selective Identifier (SI) of the track reported. Enter the SI as four octal digits (0000-7777), e.g., 0000, 0004, 1034, 7777. (4N)
10	Alert code	O	Enter the alert code of the tracks being reported from the list below. Updating of the alert codes will be in accordance with Table 5-19 (Alert Code Retention). (3A): TGT – Target data available SUS – Suspected carrier HIT – High interest track NSP – Nonsuspected carrier
11	Force Code	M	Enter the force code of the track being reported from Table 5-1 (Force Codes), e.g., 08, 15. Use codes 01-39 in Table 5-1 for display symbology. (2N) (See Note 2)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

CONTACT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
12	System Track Number	O	Enter the system track number (Link-11 or Link-16) of the track being reported. Enter the Link-11 system track number as 4 octal digits (0001-7776), or the Link-16 system track number as an alphanumeric in positions one and two followed by three octal digits. Numbers in positions one and two will also be octal. Letters in positions one and two will exclude "I" and "O", e.g., 0071, A0000, ZZ777, 6B304, 74365. (4-5AN)
13	Track Type	M	Enter the type of track being reported. The default for this field is a null entry (e.g., ..Field 12//Field 14..), which will be interpreted as a tactical track. For nontactical tracks enter one of the following codes (1N): 2 – Live training track; a real-world friendly track that has been designated as a training track. 3 – Simulated training track; a training track manually created or computer generated as part of a training scenario. 4 – Demand entry live nontraining track; a track representing an actual unit. Receiving TDPs should bypass normal filtering.
14	Average Speed	O	Enter the average speed (RSPEED) in nautical miles per hour (KTS) (0-9999) as computed by the maneuvering target statistical tracker. This data is exchanged by TWCS platforms to smooth a contact's speed. When combined with Field 15, it assists in computing the predicted position of a surface or subsurface track. This value will not necessarily correspond to a track's currently reported speed, e.g., 5, 18, 500, 1220. (1-4N).

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

CONTACT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
15	Average Time on Leg	O	Enter the average time (TLEG) in hours (0-9999) as computed by the maneuvering target statistical tracker. This data is exchanged by TWCS platforms to smooth the predicted time that a contact continues on course before altering its course. When combined with Field 14, it assists in computing the predicted position of a surface or subsurface track, e.g., 3, 22, 137, 4733. (1-4N)
16	Discrete Identifier	O	Enter the Discrete Identifier (DI) code of the track being reported. Refer to OPNAVINST C3120.39 (series) for a listing of the DI codes. Enter the DI code as 4 octal digits (0001-7777), e.g., 0001, 0037, 0467, 7670. (4N)
17	Unique Identifier (UID)	O	Enter the identifier uniquely assigned by the site which introduces the contact or unit to the net (3AN), followed by a 9-digit (000000001-999999999, leading zeroes required) sequentially assigned number, the initial value of which is set at system installation to the total number of elapsed seconds since 1 Jan 1990, e.g., FT8001234876. (12AN)
18	International Radio Call Sign	O	Enter the International Radio Call Sign (IRCS) of the track being reported, e.g., VV158993, W4GBP, BXAR. The IRCS is a communications identifier usually unique to a command or unit. (4-8AN)
19	Suspicion Code	O	Enter the two-digit code to indicate the suspicion category of the vessel from Entry List 426 (Suspicion Codes), e.g., 02, 04 (2N)
20	Emitter Voice Call Sign	O	This field is intended to carry data parsed from TACREP messages (MAROP, GNDOP, and AIROP sets, Field 6) originated by the HFDF network carrying an emitter (voice) call sign, e.g., SWITCHBLADE, VV157493. (1-12ANBS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

CONTACT (Continued)

Set Examples:

```
CTC/T4233/KIEV-KIEV//CVHG/NAV/075/UR/A12345/2222/HIT/17///18/2/1234
```

```
CTC/T4233/KIEV-KIEV//CVHG/NAV/075/UR/A12345/2222/HIT/17
```

CTC set with Fields 12-16 omitted. Interpret as a tactical track (see para 2.5a)

```
CTC/T4226/TICONDEROGA-VALLEY FORGE//CG/NAV/50/US/A23456/4444//09
/////2345/LAV052876800
```

Routine contact report

```
CTC/T4227/XKYNDA-VICKSBURG//CG/NAV/69/XX///HIT/17//2
```

Live training track; Vicksburg simulating Kynda class cruiser.

```
CTC/T4288/SOVREMENNY-BURNY//DDG/NAV//XX////07//3
```

Simulated training track; synthetically generated data.

```
CTC/T4362/UNEQUATED-HEATON S//KETCH/UNK//CO//4444/SUS/17//4/18/2
//MHO000041400/08
```

Demand entry track type 4

NOTES:

1. All users of the Contact Report must be able to receive, decode, display, and transmit Fields 1 through 11.

2. MTF systems are not permitted to automatically assign the following Force Codes (except to preserve previously assigned Link-11/16 Threat and Category values received during Link-11/16 operations):

   01 (Air Hostile) , 03 (Air Friend), 04 (Sub Hostile), 06 (Sub Friend), 07 (Surf Hostile), 09 (Surf Friend), 22 (Land Friend), 24 (Land Hostile)

DELETE

		1		2		3
DEL	/	**5-6AN**	/	**1-14ANBS**	/	12AN
		TRACK NUMBER		**COMMAND**		**UNIQUE IDENTIFER (UID)**

NOTE: SHADED FIELDS ARE MANDATORY

The DEL set is used to delete a specified track from the receiving system's database.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Track Number	M	Enter the track number, as found in the track database, of the track that is to be deleted, e.g., T0001, T0023, T99999. (5-6AN)
2	Command	M	Enter the reporting command (platform unique identifier) of the command that assigned the track number of the track to be deleted, e.g., CTF 70, COMTHIRDFLT, KITTY HAWK. (1-14ANBS)
3	Unique Identifier (UID)	O	Enter the identifier uniquely assigned by the site which introduces the contact or unit to the net (3AN), followed by a 9-digit (000000001-999999999, leading zeroes required) sequentially assigned number, the initial value of which is set at system installation to the total number of elapsed seconds since 1 Jan 1990, e.g., FT8001234876. (12AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

DELETE (Continued)

Set Examples:

```
DEL/T4010/CTF 60

DEL/T7044/WASP BG FOTC

DEL/T5345/JTF5/J55123456789
```

NOTES:

1. Processing of DEL sets contained in Contact Report messages is optional.

2. Battle Group Data Base Management (BGDBM) specification subscribers will consult the BGDBM specification for correct procedures for deleting tracks. For tactical systems not subscribing to the BGDBM specification, it is strongly recommended that BGDBM specification procedures be considered for deleting tracks.

DELETE OVERLAY

1		
DELOV	/	**12AN**
		UNIQUE IDENTIFIER (UID)

NOTE: SHADED FIELD IS MANDATORY

The DELOV set is used to request the deletion of a graphics overlay.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Unique Identifier (UID)	M	Enter the unique identifier (UID) of the overlay to be deleted. Enter the identifier uniquely assigned by the site which introduced the overlay to the net (3AN), followed by a 9-digit (000000001-999999999, leading zeroes required) sequentially assigned number, the initial value of which is set at system installation to the total number of elapsed seconds since 1 January 1990, e.g., FT8001234876. (12AN)

Set Example:

```
DELOV/NW0002344555
```

NOTE: The DELOV set may be used interspersed with multiple overlays or standalone.

DEPARTURE

	1		2		3		4
DEP	/	**1-18ABS**	/	**2A**	/	8AN	/	3A
		PORT OF DEPARTURE		**COUNTRY**		**DATE-TIME GROUP (ETD)**		**MONTH**

	5		6		7		8
/	3A	/	3A	/	3A	/	3A
	CARGO INDICATOR		**CARGO INDICATOR**		**CARGO INDICATOR**		**CARGO INDICATOR**

NOTE: SHADED FIELDS ARE MANDATORY

The DEP set is used to report that the ship described in the preceding CTC set has departed this port or anchorage.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Port of Departure	M	Enter the name of the port or location of departure. The port name is to be stated in full; if longer than 18 characters, truncate remaining characters, e.g., HO CHI MINH CITY, TANJUNGKARANG-TELU, NEW YORK. (1-18ABS)
2	Country	M	Enter the country code of the port the track is departing from Entry List 59 (Country Codes), e.g., US, UR. (2A)
3	Date-Time Group (ETD)	O	Enter the date-time group of the estimated time of departure from the port of departure in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)

DEPARTURE (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Month	O	Enter the first three letters of the month of departure, e.g., JAN, FEB, MAR. (3A)
5	Cargo Indicator	O	Enter the cargo indicator for the track from Entry List 1030 (Load Types), e.g., AGP, MAC, OTR. (3A)
6	Cargo Indicator	O	Enter the cargo indicator for the track from Entry List 1030 (Load Types), e.g., AGP, MAC, OTR. (3A)
7	Cargo Indicator	O	Enter the cargo indicator for the track from Entry List 1030 (Load Types), e.g., AGP, MAC, OTR. (3A)
8	Cargo Indicator	O	Enter the cargo indicator for the track from Entry List 1030 (Load Types), e.g., AGP, MAC, OTR. (3A)

Set Example:

```
DEP/TOKYO/JA/101500Z7/JAN/GEN/MAC/PAX/TEX
```

NOTE: Processing of DEP sets contained in Contact Report messages is optional.

DESTINATION

	1		2		3		4
DES	/	**1-18ABS**	/	**2A**	/	8AN	/	3A
		PORT OF DESTINATION		**COUNTRY**		**DATE-TIME GROUP (ETA)**		**MONTH**

	5		6		7		8
/	3A	/	3A	/	3A	/	3A
	CARGO INDICATOR		**CARGO INDICATOR**		**CARGO INDICATOR**		**CARGO INDICATOR**

NOTE: SHADED FIELDS ARE MANDATORY

The DES set is used to report the destination port or anchorage of the ship described in the preceding CTC set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Port of Destination	M	Enter the name of the port or location for which the track is destined. Theport or location name is to be stated in full; if longer than 18 characters, truncate remaining characters, e.g., HO CHI MINH CITY, TANJUNGKARANG-TELU, NEW YORK. (1-18ABS)
2	Country	M	Enter the country code of the port for which the track is destined from Entry List 59 (Country Codes), e.g., US, UR. (2A)
3	Date-Time Group (ETA)	O	Enter date-time group of the estimated time of arrival at the port or location of destination in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)

DESTINATION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Month	O	Enter the first three letters of the month of the estimated time of arrival at the port or location of destination, e.g., JAN, FEB, MAR. (3A)
5	Cargo Indicator	O	Enter the cargo indicator for the track from Entry List 1030 (Load Types), e.g., AGP, MAC, OTR. (3A)
6	Cargo Indicator	O	Enter the cargo indicator for the track from Entry List 1030 (Load Types), e.g., AGP, MAC, OTR. (3A)
7	Cargo Indicator	O	Enter the cargo indicator for the track from Entry List 1030 (Load Types), e.g., AGP, MAC, OTR. (3A)
8	Cargo Indicator	O	Enter the cargo indicator for the track from Entry List 1030 (Load Types), e.g., AGP, MAC, OTR. (3A)

Set Example:

```
DES/SAN FRANCISCO/US/012345Z5/JAN/GEN/TEX/PAX/MAC
```

NOTE: Processing of DES sets contained in Contact Report messages is optional.

DELETE GROUP

		1		2		3
DLGRP	/	**5-6AN**	/	**1-14ANBS**	/	**1-26ANBS**
		GROUP NUMBER		**COMMAND**		**GROUP ID**

NOTE: SHADED FIELDS ARE MANDATORY

The DLGRP set is used to delete a group from the receiving system's database. Individual group members are not effected by this action.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Group Number	M	Enter the group number of the group that is to be deleted, e.g., T0003, T0023, G99999. (5-6AN)
2	Command	M	Enter the reporting command (platform unique identifier) of the command that assigned the group track number of the group being deleted, e.g., CTF 70, VINSON BG FOTC, KITTY HAWK. (1-14ANBS)
3	Group ID	M	Enter the group ID of the group being deleted, e.g., STENNIS BATTLE GROUP. (1-26ANBS)

Set Example:

```
DLGRP/G1234/CTU 75.1.3/KRESTA I SAG
```

DELETE LINE OF BEARING

		1		2		3		4
DLOB	/	**5-6AN**	/	**8AN**	/	**3A**	/	**6AN**
		TRACK NUMBER		**DATE-TIME GROUP**		**MONTH**		**LATITUDE OR ORIGIN**

	5		6		7		8		9
/	**7AN**	/	4-**6ANS**	/	2-6AN	/	**1-14ANBS**	/	12AN
	LONGITUDE OF ORIGIN		**BEARING**		**SENSOR CODE**		**COMMAND**		**UNIQUE IDENTIFIER (UID)**

NOTE: SHADED FIELDS ARE MANDATORY

The DLOB set is used to delete a specified line of bearing from the receiving system's database.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Track Number	M	Enter the track number of the track associated with the LOB that is to be deleted, e.g., T0001, T0023, T99999. (5-6AN)
2	Date-Time Group	M	Enter the date-time group of the LOB to be deleted in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
3	Month	M	Enter the first three letters of the month of the LOB that is to be deleted, e.g., JAN, FEB, MAR. (3A)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

DELETE LINE OF BEARING (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Latitude of Origin	M	Enter the latitude of the origin of the LOB to be deleted in degrees (00-90), and minutes (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6AN)
5	Longitude of Origin	M	Enter the longitude of the LOB to be deleted in degrees (000-180), and minutes (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 18000) degrees. (7AN)
6	Bearing	M	Enter the true bearing (000-360 or 000.0-360.0) of the LOB to be deleted, followed by "T" (true), e.g., 035T, 035.5T, 145T. (4-6ANS)
7	Sensor Code	O	Enter the sensor code reported for the LOB that is to be deleted from Entry List 1104 (Sensor Codes), e.g., ES, SONPAS. (2-6AN)
8	Command	M	Enter the reporting command (platform unique identifier) of the command that assigned the track number to the track associated with the LOB to be deleted, e.g., CTF 70, VINSON BG FOTC, KITTY HAWK. (1-14ANBS)
9	Unique Identifier (UID)	O	Enter the identifier uniquely assigned by the site which introduces the contact or unit to the net (3AN), followed by a 9-digit (000000001-999999999, leading zeroes required) sequentially assigned number, the initial value of which is set at system installation to the total number of elapsed seconds since 1 Jan 1990, e.g., FT8001234876. (12AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

DELETE LINE OF BEARING (Continued)

Set Example:

```
DLOB/T7004/012345Z5/JAN/3040N7/10050W6/265.5T/ES/CTU 81.1.1
```

NOTES:

1. Processing of DLOB sets contained in Contact Report messages is optional.

2. Battle Group Data Base Management (BGDBM) specification subscribers will consult the BGDBM specification for correct procedures for deleting lines of bearing. For tactical systems not subscribing to the BGDBM specification, it is strongly recommended that BGDBM specification procedures be considered for deleting lines of bearing.

DELETE TRACK FROM GROUP

		1		2
DLTRK	/	**5-6AN**	/	**1-14ANBS**
		TRACK NUMBER		**COMMAND**

NOTE: SHADED FIELDS ARE MANDATORY

The DLTRK set is used to delete the indicated track from the group designated by the preceding ADGRP set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Track Number	M	Enter the track number, as found in the track database, of the track that is to be deleted, e.g., T0001, T0023, T99999. (5-6AN)
2	Command	M	Enter the reporting command (platform unique identifier) that assigned the track number of the track in Field 1 to be deleted, e.g., CTF 70, VINSON BG FOTC, KITTY HAWK. (1-14ANBS)

Set Examples:

```
DLTRK/T4233/CTF 60

DLTRK/T7123/VINSON BG FOTC
```

DIRECTION OF INTEREST

		1		2
DOI	/	**4AN**	/	**4AN**
		DIRECTION OF INTEREST 1		**DIRECTION INTEREST 2**

NOTE: SHADED FIELDS ARE MANDATORY

The DOI set is used to define two headings relative to true north. This serves as a filter for the automatic reporting of targets detected by ROTHR. A target meets the criteria of this filter if its heading is between the two headings specified by this set. It is then a candidate for automatic reporting by ROTHR (the Speed of Interest filter criteria may also have to be met).

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Direction of Interest 1	M	Enter the heading (000-359) of the first direction of interest followed by "T" (true), e.g., 005T, 350T. (4AN)
2	Direction of Interest 2	M	Enter the heading (000-359) of the second direction of interest followed by "T" (true), e.g., 005T, 350T. (4AN)

Set Example:

```
DOI/060T/110T
```

DELETE POSITION

		1		2		3		4
DPOS	/	**5-6AN**	/	**8AN**	/	**3A**	/	**6AN**
		TRACK NUMBER		**DATE-TIME GROUP**		**MONTH**		**LATITUDE**

	5			7		8		9
/	**7AN**	/	2-6AN	/	2-6AN	/	**1-14ANBS**	/	12AN
	LONGITUDE		**SENSOR CODE**		**SOURCE CODE**		**COMMAND**		**UNIQUE IDENTIFIER (UID)**

NOTE: SHADED FIELDS ARE MANDATORY

The DPOS set is used to delete a specified track position or track history point from the receiving system's database.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Track Number	M	Enter the track number of the track associated with the POS that is to be deleted, e.g., T0001, T0023, T99999. (5-6AN)
2	Date-Time Group	M	Enter the date-time group of the POS to be deleted in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
3	Month	M	Enter the first three letters of the month of the POS that is to be deleted, e.g., JAN, FEB, MAR. (3A)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

DELETE POSITION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Latitude	M	Enter the latitude of the POS to be deleted in degrees (00-90), and minutes (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6AN)
5	Longitude	M	Enter the longitude of the POS to be deleted in degrees (000-180), and minutes (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W9, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 18000) degrees. (7AN)
6	Sensor Code	O	Enter the sensor code reported for the POS that is to be deleted from Entry List 1104 (Sensor Codes), e.g., ES, SONPAS. (2-6AN)
7	Source Code	O	Enter the source code reported for the POS that is to be deleted from Entry List 1136 (Source Codes), e.g., OSIS, WIZARD. (2-6AN)
8	Command	M	Enter the reporting command (platform unique identifier) of the command that assigned the track number to the track associated with the POS to be deleted, e.g., CTF 70, VINSON BG FOTC, KITTY HAWK. (1-14ANBS)
9	Unique Identifier (UID)	O	Enter the identifier uniquely assigned by the site which introduces the contact or unit to the net (3AN), followed by a 9-digit (000000001-999999999, leading zeroes required) sequentially assigned number, the initial value of which is set at system installation to the total number of elapsed seconds since 1 Jan 1990, e.g., FT8001234876. (12AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

DELETE POSITION (Continued)

Set Example:

```
POS/T7006/251230Z3/JAN/3040N7/08040W2/HFDF/FIX/CTU 81.1.1
```

NOTES:

1. Processing of DPOS sets contained in Contact Report messages is optional.

2. Battle Group Data Base Management (BGDBM) specification subscribers will consult the BGDBM specification for correct procedures for deleting positions. For tactical systems not subscribing to the BGDBM specification, it is strongly recommended that BGDBM specification procedures be considered for deleting positions.

DELETE SATELLITE

		1		2
DSAT	/	**1-10ANBS**	/	**3-5AN**
		DATABASE NAME		**SATELLITE NUMBER**

NOTE: SHADED FIELDS ARE MANDATORY

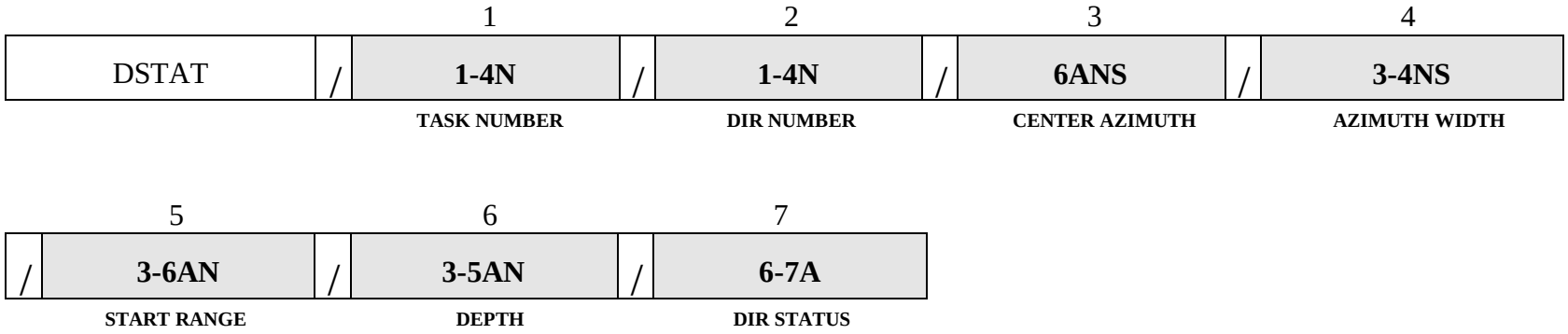
The DSAT set is used to delete a satellite.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Database Name	M	Enter the database name from which to delete the satellite specified in Field 2, e.g., BLUE, RED, WHITE, ORANGE, OTHER. (1-10ANBS)
2	Satellite Number	M	Enter the 5-digit satellite number of the satellite to be deleted or enter "ALL" to delete all satellites from the database specified in Field 1. (3-5AN)

Set Examples:

```
DSAT/BLUE/01111

DSAT/RED/ALL
```

DWELL ILLUMINATION REGION STATUS



NOTE: SHADED FIELDS ARE MANDATORY

The DSTAT set is used whenever a task is planned or whenever there is a change of coverage due to addition or deletion of DIRs, or upon request (see Status Request Message, STAT set). DSTAT sets are also generated upon the periodic recalculation of ECA/ESA grids (nominally every 12 minutes). It provides status (ACTIVE or PLANNED) of the DIR and information which defines the envelope of the DIR for display usage. A maximum of 20 DSTAT sets may be reported following a TSTAT set. One DSTAT set is generated for each DIR of the task.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Task Number	M	Enter the task number (1-9999) assigned by ROTHR, e.g., 1, 44, 9999. (1-4N)
2	DIR Number	M	Enter the DIR number (1-9999) assigned by ROTHR, e.g., 1, 44, 9999. (1-4N)
3	Center Azimuth	M	Enter the bearing (000.0-359.9) in degrees and tenths of degrees from the position of the ROTHR receive site to the center of the DIR followed by "T" (true), e.g., 180.0T, 005.5T. (6ANS)

DWELL ILLUMINATION REGION STATUS (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Azimuth Width	M	Enter the DIR width (0.0-90.9) in degrees and tenths of degrees, e.g., 8.0, 15.5. (3-4NS)
5	Start Range	M	Enter the distance in nautical miles (0-9999) from the ROTHR receive site to the inner (i.e., nearest) edge of the DIR, followed by "NM", e.g., 2500NM, 125NM. (3-6AN)
6	Depth	M	Enter the distance in nautical miles (0-999) from the inner edge of the DIR to the outer edge of the DIR, followed by "NM", e.g., 50NM, 520NM. (3-5AN)
7	DIR Status	M	Enter the status of the DIR using either "ACTIVE" or "PLANNED". This is an indication of whether or not the DIR is currently being scanned. (6-7A)

Set Examples:

```
DSTAT/2/4/169.1T/8.0/1347NM/500NM/ACTIVE

DSTAT/3/5/195.6T/10.0/658NM/250NM/PLANNED
```

DELETE EXPANDED LINE OF BEARING

		1		2		3		4
DXLOB	/	1-14ANBS	/	5-6AN	/	12AN	/	**8-12ANS**
		COMMAND		**TRACK NUMBER**		**UNIQUE IDENTIFIER (UID)**		**DATE-TIME GROUP**

	5		6		7		8		9
/	**5AN**	/	**4-24ANS (7-27ANS)**	/	**4-6ANS**	/	2-6AN	/	2-8ANS
	MONTH-YEAR		**LINE OF BEARING ORIGIN**		**BEARING**		**SENSOR CODE**		**HALF-WIDTH**

	10		11
/	2-7ANS	/	2-6AN
	RANGE		**SOURCE CODE**

NOTE: SHADED FIELDS ARE MANDATORY

The DXLOB set is used to delete a specific expanded line of bearing from the receiving system's database.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

DELETE EXPANDED LINE OF BEARING (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Command	C	Enter the reporting command (platform unique identifier) that assigned the track number to the track associated with the XLOB to be deleted. This field is mandatory if Field 3 is not used, e.g., CTF 70, VINSON BG FOTC, KITTY HAWK. (1-14ANBS)
2	Track Number	C	Enter the track number of the track associated with the XLOB that is to be deleted. This field is mandatory if Field 3 is not used, e.g., T0001, T0023, T7048. (5-6AN)
3	Unique Identifier (UID)	C	Enter the UID of the contact associated with the XLOB to be deleted. This field is mandatory if Fields 1 and 2 are not used, e.g., FT8001234876. (12AN)
4	Date-Time Group	M	Enter the date-time group of the XLOB to be deleted in days (01-31), hours (00-23), minutes (00-59), optional seconds (00-59), optional tenths of seconds (.0-.9) and time zone (Z), followed by a checksum (0-9), e.g., 01211543.5Z2, 212359Z2. (8-12ANS)
5	Month-Year	M	Enter the first three letters of the month and the lasttwo digits of the year of the XLOB to be deleted, e.g., JUN99, JAN01. (5AN)
6	Line of Bearing Origin	M	Enter the line of bearing origin of the XLOB to be deleted in its original format and precision if possible. Use one of the alternate field contents provided below. Enter the designated field descriptor followed by the data. Data can be expressed in:

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

DELETE EXPANDED POSITION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
6	Line of Bearing Origin (continued)	M	Coordinate System — Field Descriptor Latitude/Longitude — LL: UTM (Universal Transverse Mercator) — UT: GEOREF (World Geographic Reference System) — GR: The precision reported in this field should reflect the original known precision. The only boundary or restriction placed on the reported precision of data in this field is the field length range. An optional floating decimal point is allowed as appropriate. See Table 5-21 (Position Reporting) for more information on data format, e.g., LL:304055.55N7-1304055.55E8, UT:45FDK0474, GR:DIQA. (4-24ANS, 7-27ANS including field descriptor)
7	Bearing	M	Enter the true bearing (000-360 or 000.0-360.0) of the XLOB to be deleted followed by "T" (true), e.g., 005T, 135.5T. (4-6ANS)
8	Sensor Code	O	Enter the sensor code reported for the XLOB that is to be deleted from Entry List 1104 (Sensor Codes), e.g., RADAR, VISUAL. (2-6AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

DELETE EXPANDED LINE OF BEARING (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
9	Half-Width	O	Enter the half-width (i.e., bearing error) for the XLOB to be deleted in degrees followed by "DEG", or in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT). When expressed in degrees use a value in range .1-180 with optional tenths precision. When expressed in NM, KM, M, KY, YD, or FT, use up to six characters with an optional floating decimal point, e.g., 3.5DEG, .09KM, 55NM. (2-8ANS)
10	Range	O	Enter the range for the XLOB to be deleted in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT). Use up to five characters with an optional floating decimal point (.0001-99999) followed by the appropriate unit of measure abbreviation, e.g., 12.5NM, 45YD, 3.45KM. (2-7ANS)
11	Source Code	O	Enter the source reported for the XLOB that is to be deleted from Entry List 1136 (Source Codes), e.g., OSIS, SELOR. (2-6AN)

Set Examples:

```
DXLOB/MED FOTC/T7040//021245Z4/AUG99/LL:304055.55N7-1304055.55E8
/056.9T/RADAR/3.5DEG

DXLOB/MED FOTC/T7040/FT8001234876/021245Z4/AUG99
/LL:304055.55N7-1304055.55E8/056.9T/RADAR/3.5DEG
```

DELETE EXPANDED POSITION

		1		2		3		4
DXPOS	/	1-14ANBS	/	5-6AN	/	12AN	/	**8-12ANS**
		COMMAND		**TRACK NUMBER**		**UNIQUE IDENTIFIER (UID)**		**DATE-TIME GROUP**

	5		6		7		8		9
/	**5AN**	/	**4-24ANS (7-27ANS)**	/	2-6AN	/	4-6ANS	/	2-7ANS
	MONTH-YEAR		**POSITION**		**SENSOR CODE**		**BEARING OF MAJOR AXIS**		**LENGTH SEMI-MAJOR AXIS**

	10		11
/	2-7ANS	/	2-6AN
	RANGE		**SOURCE CODE**

NOTE: SHADED FIELDS ARE MANDATORY

The DXPOS set is used to delete an expanded track position or track history point from the receiving system's database.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

DELETE EXPANDED POSITION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Command	C	Enter the reporting command (platform unique identifier) that assigned the track number to the track associated with the XPOS to be deleted. This field is mandatory if Field 3 is not used, e.g., CTF 70, VINSON BG FOTC, KITTY HAWK. (1-14ANBS)
2	Track Number	C	Enter the track number of the track associated with the XPOS that is to be deleted. This field is mandatory if Field 3 is not used, e.g., T0001, T0023, T7048. (5-6AN)
3	Unique Identifier (UID)	C	Enter the UID of the contact associated with the XPOS to be deleted. This field is mandatory if Fields 1 and 2 are not used, e.g., FT8001234876. (12AN)
4	Date-Time Group	M	Enter the date-time group of the XPOS to be deleted in days (01-31), hours (00-23), minutes (00-59), optional seconds (00-59), optional tenths of seconds (.0-.9) and time zone (Z), followed by a checksum (0-9), e.g., 01211543.5Z2, 212359Z2. (8-12ANS)
5	Month-Year	M	Enter the first three letters of the month and the last two digits of the year of the XPOS to be deleted, e.g., JUN99, JAN01. (5AN)
6	Position	M	Enter the position of the XPOS to be deleted in its reported format and precision. Use one of the alternate field contents provided below. Enter the designated field descriptor followed by the data. Data can be expressed in: Coordinate System — Field Descriptor Latitude/Longitude — LL:

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

DELETE EXPANDED POSITION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
6	Position (continued)	M	Coordinate System — Field Descriptor UTM (Universal Transverse Mercator) — UT: GEOREF (World Geographic Reference System) — GR: The precision reported in this field should reflect the original known precision. The only boundary or restriction placed on the reported precision of data in this field is the field length range. An optional floating decimal point is allowed as appropriate. See Table 5-21 (Position Reporting) for more information on data format, e.g., LL:304055.55N7-1304055.55E8, UT:45FDK0474, GR:DIQA. (4-24ANS, 7-27ANS including field descriptor)
7	Sensor Code	O	Enter the sensor code reported for the XPOS that is to be deleted from Entry List 1104 (Sensor Codes), e.g., RADAR, VISUAL. (2-6AN)
8	Bearing of Major Axis	C	Enter the true bearing (000-360 or 000.0-360.0) of the semi-major axis followed by "T" (true), e.g., 005T, 135.5T. This field is mandatory if Field 10 is used and is not equal to Field 9. (4-6ANS)
9	Length of Semi-Major Axis	O	Enter the semi-major axis in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT) for the XPOS to be deleted. Use up to five characters with an optional floating decimal point (.0001-99999) followed by the appropriate unit of measure abbreviation, e.g., 12.5NM, 45YD, 345KM. (2-7ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

DELETE EXPANDED POSITION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
10	Length of Semi-Minor Axis	O	Enter the semi-minor axis in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT) for the XPOS to be deleted. Use up to five characters with an optional floating decimal point (.0001-99999) followed by the appropriate unit of measure, e.g., 12.5NM, 45YD, 345KM. (2-7ANS)
11	Source Code	O	Enter the source reported for the XPOS that is to be deleted from Entry List 1136 (Source Codes), e.g., OSIS, SELOR. (2-6AN)

Set Examples:

```
DXPOS/MED FOTC/T7040//021245Z4/AUG99/LL:304055.55N7-1304055.55E8
/RADAR/150.7T/123.5NM/76.8NM

DXPOS/MED FOTC/T7040/FT8001234876/01211534.5Z2/AUG99
/LL:304055.55N7-1304055.55E8/RADAR/150.7T/123.5NM/76.8NM
```

EXTENDED COVERAGE AREA

		1		2		3		4-13
ECA	/	**8AN**	/	**3-4A**	/	**1N**	/	**15AN**
		DATE-TIME GROUP (DTG)		**SURVEILLANCE TYPE**		**FIRST SECTOR NUMBER**		**SECTOR DESCRIPTION**

NOTE: SHADED FIELDS ARE MANDATORY

The ECA set is used whenever ECA sensitivity data is recalculated at ROTHR or upon request (see Status Request, STAT set). It provides a mapping of availability for 300 cells of the ROTHR Extended Coverage Area, based upon the best operating frequencies for each cell. There can be a maximum of two ECA sets in a Status Report Message; one for type AIR and one for type SHIP.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group (DTG)	M	Enter the date-time group of the ECA data in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
2	Surveillance Type	M	Enter the surveillance type using either "AIR" or "SHIP". (3-4A)
3	First Sector Number	M	This is a fixed field with a value of 1. (1N)
4-13	Sector Description	M	Enter the sector description fields for each of the ten sectors that make up the ECA. The values in these fields are defined in Table 5-17 (ROTHRSTAT Sector Descriptions), e.g., 556677ABBFFBBFF. (15AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

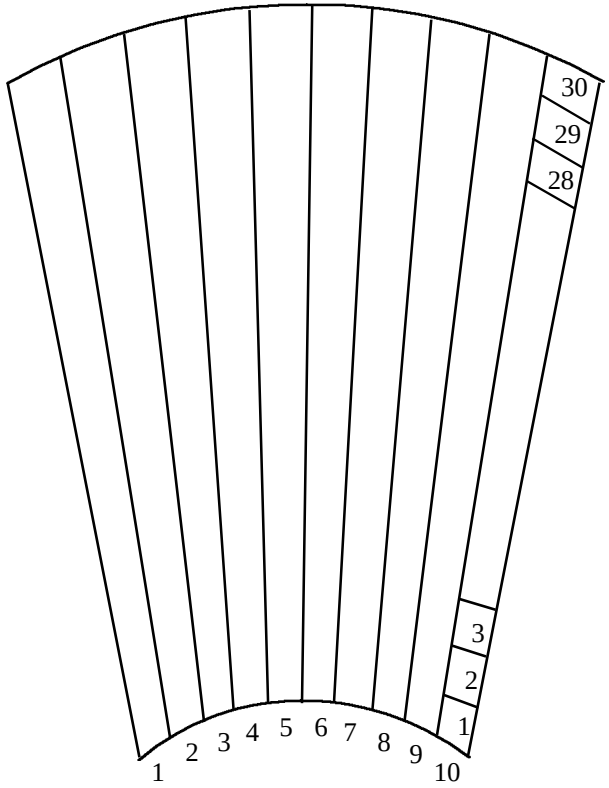
EXTENDED COVERAGE AREA (Continued)

Set Example:

```
ECA/141230Z1/AIR/1/55565567A556666/555555555555555/555555555555555
/555555555555555/555555555555555/555555556555665/555655655565555
/555655AABCBAA65/555655AABCBAA65/55566665AABCCFF
```

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXTENDED COVERAGE AREA (Continued)



ECA Cells

ECA Cell Numbering Scheme

END OF DATA

		1		2		3
ENDAT	/	1-55ANBS	/	1-38ANBS	/	2AN
		DERIVATION SOURCE FOR CLASSIFICATION		DOWNGRADING OR DECLASSIFICATION INSTRUCTIONS		DOWNGRADING OR DECLASSIFICATION EXEMPTION CODE

The ENDAT set is used to provide national security instructions. The use of the OADR is not authorized in any field. The ENDAT set will be the last set of every OTG message body, and will be followed by the End of Message (EOM) sequence.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Derivation Source for Classification	C	Use of this field is mandatory for all classified OTG messages. Enter the source for the classification of the message. (1-55ANBS)
2	Downgrading or Declassification Instructions, or	C,R	If Field 3 is not used, enter the declassification or downgrading schedule. Enter the literal instruction for downgrading or declassification by inserting the following: INST: followed by (LITERAL), e.g., INST: UPON COMPLETION OF PROJECT BIG JUMP. (1-38ANBS)
	Downgrading or Declassification Date		Enter the actual date the message can be downgraded or declassified as follows: DATE: followed by date-alphamonth-year, e.g., DATE: 29JUL01. (7AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

END OF DATA (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Downgrading or Declassification Exemption Code	C,R	If Field 2 is not used, (i.e., for messages exempt from automatic downgrading or declassification), enter downgrading or declassification exemption code from the list, e.g., X1, X5. (2AN)

EXEMPTION CATEGORY	CODE
(1) Source material for message marked Originating Agency Determination Required (OADR) IAW guidelines that were in effect at the time the material was produced.	X0
(2) Intelligence source, method, or activity, or a cryptologic system or activity.	X1
(3) Information that would assist in the development or use of weapons of mass destruction.	X2
(4) Information that would impair the development or use of technology within a United States weapons system.	X3
(5) United States military plans, or national security emergency preparedness plans.	X4
(6) Foreign Government information.	X5

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

END OF DATA (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)	
3	Downgrading or Declassification Exemption Code (continued)	C,R	EXEMPTION CATEGORY	CODE
			7) Information that would damage relations between the United states and a foreign government, reveal a confidential source, or seriously undermine diplomatic activities that are reasonably expected to be ongoing.	X6
			(8) Information that would impair the ability of responsible United States Government officials to protect the President, the Vice President, and other individuals for whom protection services, in the interest of national security, are authorized.	X7
			(9) Information that would violate a statute, treaty, or international agreement.	X8

Set Examples:

```
ENDAT/OPNAVINST S5513.6D-11/DATE:12JAN03

ENDAT/CNO (N10) LTR SER GS123456 OF 20JAN96/INST:UPON COMPLETION
/OF PROJECT BIG JUMP

ENDAT/MULTIPLE SOURCES//X1//X3//X5

ENDAT/DESRON FIFTEEN 021300ZMAY96/INST:DOWNGRADE(S)//DATE:31DEC99

ENDAT  (unclassified message only)
```

END POINT

		1		2
ENDPT	/	**6AN**	/	**7AN**
		LATITUDE		**LONGITUDE**

NOTE: SHADED FIELDS ARE MANDATORY

The ENDPT set is used to define the boundaries of a ROTHR task. It is only used to describe a geographic task, i.e., POINT, BARRIER, or AREA. One ENDPT set defines a POINT task, two ENDPT sets define a BARRIER and three to six ENDPT sets can be used to define an AREA task (points are connected by ROTHR in the order provided in this message).

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Latitude	M	Enter the latitude of the end point in degrees (00-90) and minutes (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6AN)
2	Longitude	M	Enter the longitude of the end point in degrees (000-180), and minutes (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W9, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 18000) degrees. (7AN)

Set Example:

```
ENDPT/1922N4/07835W3
```

ENGAGEMENT

		1		2		3		4
ENGAG	/	**8AN**	/	**3A**	/	**2A**	/	12AN
		DATE-TIME GROUP (DTG)		**MONTH**		**ENGAGEMENT LEVEL**		**UNIQUE IDENTIFIER (UID)**

NOTE: SHADED FIELDS ARE MANDATORY

The ENGAG set is used to report engagement status for the unit reported in the preceding JUNIT set or for the track reported in the preceding CTC set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group (DTG)	M	Enter the date-time group of the reported engagement involving the unit reported in the preceding JUNIT set or the track reported in the preceding CTC set in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
2	Month	M	Enter the first three letters of the month of the reported engagement status, e.g., JAN, FEB, MAR. (3A)
3	Engagement Level	M	Enter the level of engagement being reported from the following list (2A): EN - Engaging BA - Being attacked AL - Alert AQ - Acquired/Tracking

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

ENGAGEMENT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Unique Identifier (UID)	O	Enter the unique identifier (UID) of the other unit or track involved in the engagement, e.g., FT8001234876. (12AN)

Set Example:

```
ENGAG/082315Z9/FEB/EN/CBA876543210
```

ELECTRONIC ORDER OF BATTLE

		1		2
EOB	/	9AN	/	9AN
		PIN NUMBER		DEVELOPMENTAL EOB

The EOB set is used to report a target PIN number and EOB identifier, it modifies a preceding RAD or RADB set. If a RAD or RADB set is not used, the EOB set is associated with the preceding POS or LOB set. Either Field 1 or Field 2 must be used; both fields may be used.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	PIN Number	C	If Field 2 is not used, enter "E" followed by the target electronic site number (00000-99999) and target equipment accession serial number (001-999), e.g., E12345012. (9AN)
2	Developmental EOB	C	If Field 1 is not used, enter the developmental number prefix "D", followed by the identified site number (00000-99999) listed in the EOB, followed by the unidentified equipment number "999". If the site is not listed in the EOB, enter the prefix "D" followed by the unidentified site identifier (ANNNN), followed by the equipment number (001-999), e.g., D12345999, DC1234123. (9AN)

Set Example:

```
EOB/E09544094/D18344290
```

EQUIPMENT

		1		2		3		4
EQPT	/	**8AN**	/	**3A**	/	**1-54ANBS**	/	1-4AN
		DATE-TIME GROUP (DTG)		**MONTH**		**EQUIPMENT NAME**		**NUMBER OF EQUIPMENT ALLOCATED**

	5		6		7		8
/	1-4AN	/	1-4AN	/	1-4AN	/	1-4AN
	NUMBER OF EQUIPMENT ASSIGNED		**NUMBER OF FAILED EQUIPMENT**		**NUMBER OF EQUIPMENT WITH DIMINISHED CAPABILITY**		**NUMBER OF EQUIPMENT ABANDONED/CAPTURED**

NOTE: SHADED FIELDS ARE MANDATORY

The EQPT set is used to report equipment status for the unit reported in the preceding JUNIT set or for the track reported in the preceding CTC set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group (DTG)	M	Enter the date-time group for the reported equipment status for the unit reported in the preceding JUNIT set or for the track reported in the preceding CTC set in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EQUIPMENT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Month	M	Enter the first three letters of the month of the reported equipment status, e.g., JAN, FEB, MAR. (3A)
3	Equipment Name	M	Enter the name of the equipment for which the status is being reported, e.g., HUMVEE, PICKUP. (1-54ANBS)
4	Number of Equipment Allocated	C	Enter the number of equipment specified in Field 3 that is allocated to the unit reported in the preceding JUNIT set or to the track reported in the preceding CTC set, e.g., 20, 5K. This field is mandatory if Fields 5 through 8 are not reported. Allowable entries are (1-9999) or (1K-999K, representing 1,000-999,000 in 1,000 increments). (1-4AN)
5	Number of Equipment Assigned	C	Enter the number of equipment specified in Field 3 assigned to the unit reported in the preceding JUNIT set or to the track reported in the preceding CTC set at the reported time, e.g., 20, 5K. This field is mandatory if Fields 4, 6, 7, and 8 are not reported. Allowable entries are (1-9999) or (1K-999K, representing 1,000-999,000 in 1,000 increments). (1-4AN)
6	Number of Failed Equipment	C	Enter the number of equipment specified in Field 3 that is unusable but in the possession of the unit reported in the preceding JUNIT set or in the possession of the track reported in the preceding CTC set. This field is mandatory if Fields 4, 5, 7, and 8 are not reported. Allowable entries are (1-9999) or (1K-999K, representing 1,000-999,000 in 1,000 increments). (1-4AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EQUIPMENT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
7	Number of Equipment with Diminished Capability	C	Enter the number of equipment specified in Field 3 in the possession of the unit reported in the preceding JUNIT set or in the possession of the track reported in the preceding CTC set requiring repair and/or are usable only in a diminished capability, e.g., 20, 5K. This field is mandatory if Fields 4, 5, 6, and 8 are not reported. Allowable entries are (1-9999) or (1K-999K, representing 1,000-999,000 in 1,000 increments). (1-4AN)
8	Number of Equipment Abandoned/Captured	C	Enter the number of equipment specified in Field 3 abandoned or captured from the unit reported in the preceding JUNIT set or from the track reported in the preceding CTC set, e.g., 20, 5K. This field is mandatory if Fields 4 through 7 are not reported. Allowable entries are (1-9999) or (1K-999K, representing 1,000-999,000 in 1,000 increments). (1-4AN)

Set Examples:

```
EQPT/012115Z0/FEB/HUMVEE/15/14/4//1

EQPT/102345Z5/FEB/MRE/5K
```

EFFECTIVE SURVEILLANCE AREA

		1		2		3		4-43
ESA	/	**8AN**	/	**3-4A**	/	**1N**	/	**15AN**
		DATE-TIME GROUP (DTG)		**SURVEILLANCE TYPE**		**FIRST SECTOR NUMBER**		**SECTOR DESCRIPTION**

NOTE: SHADED FIELDS ARE MANDATORY

The ESA set is used whenever ESA sensitivity data is recalculated at ROTHR or upon request (see Status Request, STAT set). It provides a mapping of availability for 1200 cells of the ROTHR Extended Coverage Area (ECA), based on target detection probability over the Current Surveillance Area (CSA; the area being actively scanned). There can be a maximum of two ESA sets in a Status Report Message; one for type AIR and one for type SHIP.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group (DTG)	M	Enter the date-time group of the ESA data in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
2	Surveillance Type	M	Enter the surveillance type using either "AIR" or "SHIP". (3-4A)
3	First Sector Number	M	This is a fixed field with a value of 1. (1N)
4-43	Sector Description	M	Enter the sector description fields for each of the 40 sectors that make up the ESA. The values for these fields are defined in Table 5-17 (ROTHRSTAT Sector Descriptions). (15AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

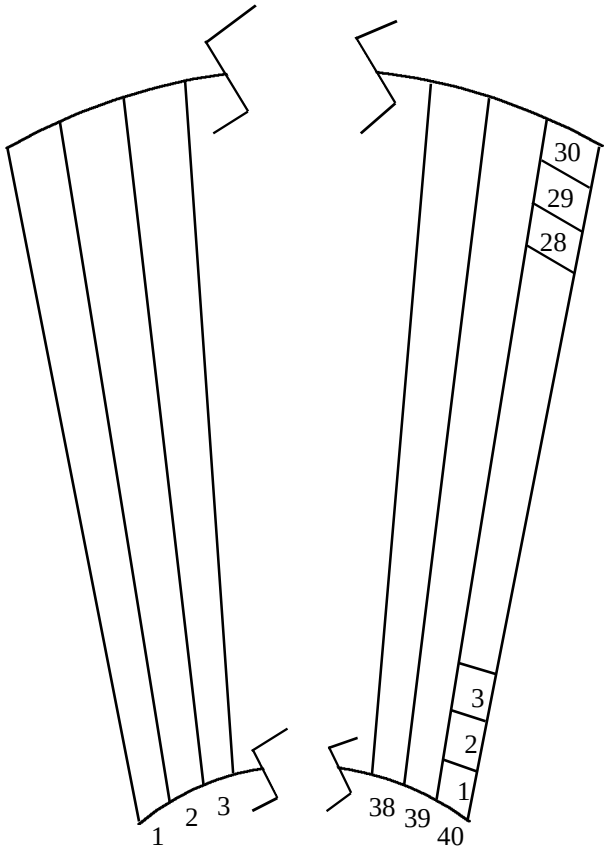
EFFECTIVE SURVEILLANCE AREA (Continued)

Set Example:

```
ESA/232017Z5/AIR/1/000000000000000/000000004444000/000000000000000
/000005555505555/000555551144115/000005511441111/00000FFFFFFFFF
/000555550555555/111115544AABBBB/000005511441111/55555111AAAFF55
/6611111155FFFFF/000555551144115/000005511441111/111115555111555
/000005555505555/666611111FFAAAA/110000000000000/00000FFFFFFFFF
/111111111111111/000055555114411/000005511441111/111111111155551
/000555550555555/777666661111411/444445555544445/00000FFFFFFFFF
/111115555444111/000555551144115/000005511441111/000001111123455
/111110101000005/000001111105050/000005555501050/010005555501010
/000050000100015/555550000013125/000001111155555/111111111111111
/050501111155555
```

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EFFECTIVE SURVEILLANCE AREA (Continued)



ESA Cells

ESA Cell Numbering Scheme

GROUND ORDER OF BATTLE

		1		2		3		4
GOB	/	7ANB	/	10-13ANS	/	1-2N	/	5ANB
		EQUIPMENT CODE		TARGET IDENTIFIER		QUANTITY		ARBITRARY INTERCEPT DESIGNATOR (AID)

The GOB set is used to report the target BE number/quantity and to modify the preceding CTC set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Equipment Code	O	Enter the equipment code as defined/assigned in the Military Intelligence Integrated Data System (MIIDS) and Integrated Data Base (IDB). (7ANB)
2		O	Enter one of the following:
	Target Identifier BE Number		Enter BE Number Identifier "B", followed by the World Area Number (0000-9999), followed by the Program Indicator, BE Number "E,F,-", followed by the Installation Identification Serial Number (ANNNN or NNNNN), e.g., B0123EA1234, B6543F12345. (11ANS)
	Target Identifier BE Number with Suffix		Enter BE Number Suffix Identifier "S", followed by the World Area Number with Suffix (0000-9999), followed by the Program Indicator, BE number "E,F,-", followed by the Installation Identification Serial Number (ANNNN or NNNNN), followed by the BE Suffix (00-99), e.g., S0123EA123499, S6543F1234500. (13ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

GROUND ORDER OF BATTLE (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
	Target Identifier Field Initiated BE Number		Enter FIBE Number Identifier "F", followed by the World Area Number (0000-9999), followed by the Producer Unit Identification (AA), followed by the Installation Number (0000-9999), e.g., F0123AB1234. (11AN)
	Target Identifier BE Number Suspect Installation		Enter the World Area Number (0000-9999), followed by the Program Indicator, Suspect BE Number "X", followed by the Producer Unit Identification (AA), followed by the Suspect Installation Number (001-999), e.g., 0123XAB123. (10AN)
3	Quantity	O	Enter the number (1-99) of target identifiers in Field 1. (1-2N)
4	Arbitrary Intercept Designator (AID)	O	Enter the arbitrary intercept designator assigned by the National Security Agency (NSA) in the USSID 369, e.g., RU231. (5ANB)

Set Examples:

```
GOB/U000001//3

GOB//2123XAE123

GOB///RU231
```

GRID DATA

	1		2		3		4
GRID	/	**6AN**	/	**7AN**	/	2-8ANS	/	**1-3N**
		LATITUDE OF NW CORNER		**LONGITUDE OF NW CORNER**		**ELEVATION OF NW CORNER**		**NUMBER OF POINTS ON X-AXIS**

	5		6		7		8		9
/	**1-3N**	/	1-3N	/	**2-7ANS**	/	**2-7ANS**	/	2-7ANS
	NUMBER OF POINTS ON Y-AXIS		**NUMBER OF POINTS ON Z-AXIS**		**X-AXIS SPACING**		**Y-AXIS SPACING**		**Z-AXIS SPACING**

	10
/	**1-2N**
	PARAMETER UNITS OF MEASURE

NOTE: SHADED FIELDS ARE MANDATORY

The GRID set is used to locate the grid on the face of the earth, to provide the number of points on the x-, y-, and z-axis that make up the grid, provide the distance interval between each point on the x-, y-, and z-axis, and provide the units of measure of the parameter making up the grid.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

GRID DATA (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Latitude of NW Corner	M	Enter the latitude of the northwest corner of the grid in degrees (00-90), and minutes (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6AN)
2	Longitude of NW Corner	M	Enter the longitude of the northwest corner of the grid in degrees (000-180), and minutes (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 18000) degrees. (7AN)
3	Elevation of NW Corner	O	Enter the elevation of the northwest corner of the grid from Table 5-13 (Vertical (Z-Axis) Units and Codes). Decimal point and minus sign (hyphen) permitted. Negative values indicate depth below mean sea level, e.g., -500FT, 0M. If EOF1 compaction is used, enter "1000MB" if Field 9 is MET or "0M" if Field 9 is OCN. (2-8ANS)
4	Number of Points on X-Axis	M	Enter the number of points along the x-axis that make up the grid, e.g., 10, 400. (1-3N)
5	Number of Points on y-axis	M	Enter the number of points along the y-axis that make up the grid, e.g., 10, 400. (1-3N)
6	Number of Points on Z-Axis	C	Enter the number of points along the z-axis that make up the grid, e.g., 10,400. This field is mandatory if Field 3 contains a value. If EOF1 compaction is used, enter "11" if Field 9 is MET or "34" if Field 9 is OCN. (1-3N)

GRID DATA (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
7	X-Axis Spacing	M	Enter 1-4 digits (decimal point allowed) plus the unit of measure from Table 5-14 (Grid Spacing Units and Codes), e.g., 1KM, 0.5DEG. (2-7ANS)
8	Y-Axis Spacing	M	Enter 1-4 digits (decimal point allowed) plus the unit of measure from Table 5-14 (Grid Spacing Units and Codes), e.g., 1KM, 0.5DEG. (2-7ANS)
9	Z-Axis Spacing	C	Enter 1-4 digits (decimal point allowed) plus the unit of measure from Table 5-14 (Grid Spacing Units and Codes), e.g., 1HF, 500M. This field is mandatory if Field 3 contains a value. If EOF1 is entered in Field 1 of the CMPCT set, enter "MET" or "OCN" as appropriate (see Table 5-13, Notes 1 and 2). (2-7ANS)
10	Parameter Units of Measure	M	Enter the units of measure of the grid field data from Table 5-16 (Grid Data Units and Codes), e.g., 1, 6. (1-2N)

Set Examples:

```
GRID/2000N2/12000E3//20/20//2.5DEG/2.5DEG//11

GRID/2000N2/12000E3/0FT/20/20/20/25NM/25NM/1000FT/1
```

JOINT UNIT DELETE LINE OF BEARING

		1		2		3		4
JDLOB	/	**5-6AN**	/	**8AN**	/	**3A**	/	**6-11ANS**
		TRACK NUMBER		**DATE-TIME GROUP**		**MONTH**		**LATITUDE OF ORIGIN**

	5		6		7		8		9
/	**7-12ANS**	/	**4-6ANS**	/	2-6AN	/	2-6AN	/	**1-14ANBS**
	LONGITUDE OF ORIGIN		**BEARING**		**SENSOR CODE**		**SOURCE CODE**		**COMMAND**

	10
/	12AN
	UNIQUE IDENTIFIER (UID)

NOTE: SHADED FIELDS ARE MANDATORY

The JDLOB set is used to recommend or direct the deletion of the specified joint unit line of bearing from the receiving system's database.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Track Number	M	Enter the track number of the unit associated with the LOB to be deleted, e.g., T0001, T0023, T99999. (5-6AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

JOINT UNIT DELETE LINE OF BEARING (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Date-Time Group	M	Enter the date-time group of the LOB to be deleted in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
3	Month	M	Enter the first three letters of the month of the LOB to be deleted, e.g., JAN, FEB, MAR. (3A)
4	Latitude of Origin	M	Enter the latitude of the origin of the LOB to be deleted in degrees (00-90), minutes (00-59), optional seconds (00-59), and optional hundredths of seconds (.00-.99), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3, 304035N5, 324035.56N8, 034056.5S3. The maximum value is 90 (i.e., 9000) degrees. (6-11ANS)
5	Longitude of Origin	M	Enter the longitude of the origin of the LOB to be deleted in degrees (000-180), minutes (00-59), optional seconds (00-59), and optional hundredths of seconds (.00-.99), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W9, 13040E8, 00000E0, 17959E1, 304035N5, 324035.56E8, 034056.5N3. The maximum value is 180 (i.e., 18000) degrees. (7-12ANS)
6	Bearing	M	Enter the true bearing (000-360 or 000.0-360.0) of the LOB to be deleted, followed by "T" (true), e.g., 035T, 035.5T, 145T. (4-6ANS)
7	Sensor Code	O	Enter the sensor code reported for the LOB that is to be deleted from Entry List 1104 (Sensor Codes), e.g., ES, SONPAS. (2-6AN)
8	Source Code	O	Enter the source code reported for the LOB that is to be deleted from Entry List 1136 (Source Codes), e.g., OSIS, WIZARD. (2-6AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

JOINT UNIT DELETE LINE OF BEARING (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
9	Command	M	Enter the reporting command (platform unique identifier) of the command that assigned the track number to the track associated with the LOB to be deleted, e.g., CTF 70, VINSON BG FOTC, KITTY HAWK. (1-14ANBS)
10	Unique Identifier (UID)	O	Enter the identifier uniquely assigned by the site which introduces the contact or unit to the net (3AN), followed by a 9-digit (000000001-999999999, leading zeroes required) sequentially assigned number, the initial value of which is set at system installation to the total number of elapsed seconds since 1 Jan 1990, e.g., FT8001234876. (12AN)

Set Example:

```
JDLOB/T17426/082304Z7/NOV/290436.24NO/1234106.49E0
/341T///COMCRUDESGRU 1
```

JOINT UNIT DELETE POSITION

		1		2		3		4
JDPOS	/	**5-6AN**	/	**8AN**	/	**3A**	/	**6-11ANS**
		TRACK NUMBER		**DATE-TIME GROUP**		**MONTH**		**LATITUDE OF CENTER**

5		6		7		8		9
/ **7-12ANS**	/	2-6AN	/	2-6AN	/	**1-14ANBS**	/	12AN
LONGITUDE OF CENTER		**SENSOR CODE**		**SOURCE CODE**		**COMMAND**		**UNIQUE IDENTIFIER (UID)**

NOTE: SHADED FIELDS ARE MANDATORY

The JDPOS set is used to recommend or direct the deletion of the specified joint unit position or history point from the receiving system's database.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Track Number	M	Enter the track number of the unit associated with the position report to be deleted, e.g., T0001, T0023, T99999. (5-6AN)
2	Date-Time Group	M	Enter the date-time group of the position report that is to be deleted in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

JOINT UNIT DELETE POSITION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Month	M	Enter the first three letters of the month of the position report to be deleted, e.g., JAN, FEB, MAR. (3A)
4	Latitude of Center	M	Enter the latitude of the unit position to be deleted in degrees (00-90), minutes (00-59), optional seconds (00-59), optional tenths of seconds (.0-.9), and optional hundredths of seconds (.00-.99), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3, 450302.47N5, 170435.2S2. The maximum value is 90 (i.e., 9000) degrees. (6-11ANS)
5	Longitude of Center	M	Enter the longitude of the unit position to be deleted in degrees (000-180), minutes (00-59), optional seconds (00-59), optional tenths of seconds (.0-.9), and optional hundredths of seconds (.00-.99), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W9, 13040E8, 00000E0, 17959E1, 1304030E1, 1760435.2W8, 0354428.25E3. The maximum value is 180 (i.e., 18000) degrees. (7-12ANS)
6	Sensor Code	O	Enter the sensor code of the unit position to be deleted from Entry List 1104 (Sensor Codes), e.g., RADAR, VISUAL. (2-6AN)
7	Source Code	O	Enter the source code of the unit position to be deleted from Entry List 1136 (Source Codes), e.g., OSIS, SELOR. (2-6AN)
8	Command	M	Enter the reporting command (platform unique identifier) of the command that assigned the track number to the track associated with the POS to be deleted, e.g., CTF 70, COMTHIRDFLT, KITTY HAWK. (1-14ANBS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

JOINT UNIT DELETE POSITION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
9	Unique Identifier (UID)	O	Enter the identifier uniquely assigned by the site which introduces the contact or unit to the net (3AN), followed by a 9-digit (000000001-999999999, leading zeroes required) sequentially assigned number, the initial value of which is set at system installation to the total number of elapsed seconds since 1 Jan 1990, e.g., FT8001234876. (12AN)

Set Example:

```
JDPOS/T1234/021234Z2/DEC/283210.12N9/0432101.23E6/VISUAL//JCS
/A4C012345678
```

JOINT UNIT LINE OF BEARING

		1		2		3		4
JLOB	/	**8AN**	/	**3A**	/	**6-11ANS**	/	**7-12ANS**
		DATE-TIME GROUP		**MONTH**		**LATITUDE OF ORIGIN**		**LONGITUDE OF ORIGIN**

	5		6		7		8		9
/	**4-6ANS**	/	2-6AN	/	3-6ANS	/	3-6ANS	/	3-10ANS
	BEARING		**SENSOR CODE**		**HALF-WIDTH**		**RANGE**		**RDF RF**

	10
/	2-6AN
	SOURCE CODE

NOTE: SHADED FIELDS ARE MANDATORY

The JLOB set is used to report the time, bearing, and other relevant information in the joint unit described in the JUNIT set. Normally, only one JLOB set is used per JUNIT set, however a maximum of twenty-six JLOB/JPOS sets may be used per JUNIT set to transmit unit track history.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

JOINT UNIT LINE OF BEARING (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group	M	Enter the date-time group of the LOB in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
2	Month	M	Enter the first three letters of the month of the unit LOB to be reported, e.g., JAN, FEB, MAR. (3A)
3	Latitude of Origin	M	Enter the latitude of the LOB origin in degrees (00-90), minutes (00-59), optional seconds (00-59), optional tenths of seconds (.0-.9), or optional hundredths of seconds (.00-.99), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3, 450302.47N5, 170435.2S2. The maximum value is 90 (i.e., 9000) degrees. (6-11ANS)
4	Longitude of Origin	M	Enter the longitude of the LOB origin in degrees (000-180), minutes (00-59), optional seconds (00-59), optional tenths of seconds (.0-.9), or optional hundredths of seconds (.00-.99), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W9, 13040E8, 00000E0, 17959E1, 1304030E1, 1760435.2W8, 0354428.25E3. The maximum value is 180 (i.e., 18000) degrees. (7-12ANS)
5	Bearing	M	Enter the true bearing (000-360 or 000.0-360.0) from LOB origin to the unit reported followed by "T" (true), e.g., 035T, 035.5T, 145T. (4-6ANS)
6	Sensor Code	O	Enter the sensor code for the sensor used to develop the LOB from Entry List 1104 (Sensor Codes), e.g., ES, SONPAS. (2-6AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

JOINT UNIT LINE OF BEARING (Continued)

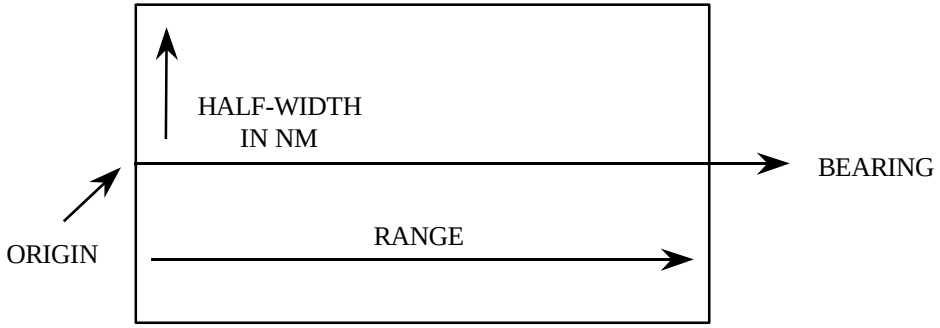
FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
7	Half-Width	O	Enter the half-width (i.e., bearing error) in degrees (.1-180) followed by "DEG", or in nautical miles (1-4NS) followed by "NM". A floating decimal point may be used, e.g., .5NM, 0.5NM, 3.5DEG. See example drawings on last page of this set. If half-width is expressed in NM, then range must be provided and be expressed in NM. If half-width is expressed in DEG, then range field is not required. (3-6ANS)
8	Range	O	Enter the range in nautical miles (0-9999) of the LOB followed by "NM". A floating decimal point is optional, e.g., .50NM, 0.50NM, 20.5NM, 100NM. This field is mandatory if half-width is expressed in NM. (3-6ANS)
9	RDF RF	C	Enter the radio frequency of the intercept used to develop the LOB in hertz (HZ), kilohertz (KHZ), or megahertz (MHZ). An optional floating decimal point is allowed, e.g., 5040.550HZ, 10050.5KHZ, 232.555MHZ. (3-10ANS)
10	Source Code	O	Enter the source code which most recently originated, passed or amplified data on the position being reported from Entry List 1136 (Source Codes) and JIEO Circular 9152, Item 293, e.g., OSIS, WIZARD. (2-6AN)

Set Examples:

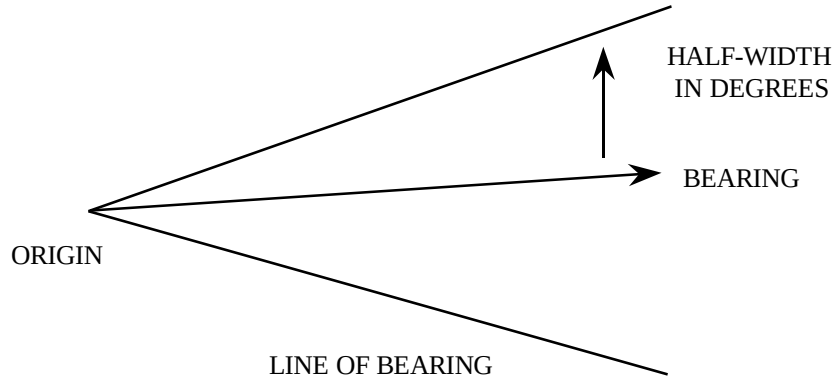
```
JLOB/041825Z0/NOV/312423N5/1240456E2//175T

JLOB/202014Z9/JUL/2020N4/01510E7/005.5T0/ES/1.5DEG
```

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

JOINT UNIT LINE OF BEARING (Continued)



LOB WITH HALF-WIDTH
IN NM AND RANGE IN NM



LINE OF BEARING
HALF-WIDTH IN DEGREES

JOINT UNIT PAIR

		1		2		3		4
JPAIR	/	**1-14ANBS**	/	**4-6AN**	/	1-14ANBS	/	4-6AN
		SYSTEM OR COMMAND		**IDENTIFIER**		**SYSTEM OR COMMAND**		**IDENTIFIER**

NOTE: SHADED FIELDS ARE MANDATORY

NOTE: FIELDS UNDER BRACKET ARE REPEATABLE AS A GROUP

The JPAIR set is used to report unique indices into other systems' or commands' track management schemes which identify the unit reported in the preceding JUNIT set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	System or Command	M	Enter the system name or command designation, e.g., PLRS for the Position Location Reporting System. Linking of this field with the following identifier field shall uniquely identify the unit reported in the preceding JUNIT set. (1-14ANBS)
2	Identifier	M	Enter the identifier used by the system or command specified in the previous field that identifies the unit reported in the preceding JUNIT set, e.g., 02F3. (4-6AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

JOINT UNIT PAIR (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	System or Command	O,R	Enter the system name or command designation, e.g., PLRS for the Position Location Reporting System. Linking of this field with the following identifier field shall uniquely identify the unit reported in the preceding JUNIT set. (1-14ANBS)
4	Identifier	O,R	Enter the identifier used by the system or command specified in the previous field that identifies the unit reported in the preceding JUNIT set, e.g., 02F3. (4-6AN)

Set Example:

```
JPAIR/PLRS/02F3
```

JOINT UNIT PAIR

		1		2		3		4
JPAIR	/	**1-14ANBS**	/	**4-6AN**	/	1-14ANBS	/	4-6AN
		SYSTEM OR COMMAND		**IDENTIFIER**		**SYSTEM OR COMMAND**		**IDENTIFIER**

NOTE: SHADED FIELDS ARE MANDATORY

NOTE: FIELDS UNDER BRACKET ARE REPEATABLE AS A GROUP

The JPAIR set is used to report unique indices into other systems' or commands' track management schemes which identify the unit reported in the preceding JUNIT set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	System or Command	M	Enter the system name or command designation, e.g., PLRS for the Position Location Reporting System. Linking of this field with the following identifier field shall uniquely identify the unit reported in the preceding JUNIT set. (1-14ANBS)
2	Identifier	M	Enter the identifier used by the system or command specified in the previous field that identifies the unit reported in the preceding JUNIT set, e.g., 02F3. (4-6AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

JOINT UNIT PAIR (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	System or Command	O,R	Enter the system name or command designation, e.g., PLRS for the Position Location Reporting System. Linking of this field with the following identifier field shall uniquely identify the unit reported in the preceding JUNIT set. (1-14ANBS)
4	Identifier	O,R	Enter the identifier used by the system or command specified in the previous field that identifies the unit reported in the preceding JUNIT set, e.g., 02F3. (4-6AN)

Set Example:

```
JPAIR/PLRS/02F3
```

JOINT UNIT POSITION

	1		2		3		4
JPOS	/	**8AN**	/	**3A**	/	**6-11ANS**	/	**7-12ANS**
		DATE-TIME GROUP		**MONTH**		**LATITUDE OF CENTER**		**LONGITUDE OF CENTER**

	5		6		7		8		9
/	2-6AN	/	4-6ANS	/	3-6AN	/	3-6AN	/	4-6ANS
	SENSOR CODE		**BEARING OF MAJOR AXIS**		**LENGTH OF SEMI-MAJOR AXIS**		**LENGTH OF SEMI-MINOR AXIS**		**COURSE**

	10		11		12
/	2-7ANS	/	3-10ANS	/	2-6AN
	SPEED		**RDF RF**		**SOURCE CODE**

NOTE: SHADED FIELDS ARE MANDATORY

The JPOS set is used to report the time, position, and other relevant information on the joint unit described in the JUNIT set. Normally, only one JPOS set is used per JUNIT set, however a maximum of twenty-six JPOS/JLOB sets may be used per JUNIT set to transmit unit history.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

JOINT UNIT POSITION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group	M	Enter the date-time group of the JPOS in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
2	Month	M	Enter the first three letters of the month of the unitposition report, e.g., JAN, FEB, MAR. (3A)
3	Latitude of Center	M	Enter the latitude of the position center in degrees (00-90), minutes (00-59), optional seconds (00-59), optional tenths of seconds (.0-.9), and optional hundredths of seconds (.00-.99), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3, 450302.47N5, 170435.2S2. The maximum value is 90 (i.e., 9000) degrees. (6-11ANS)
4	Longitude of Center	M	Enter the longitude of the position center in degrees (000-180), minutes (00-59), optional seconds (00-59), optional tenths of seconds (.0-.9), and optional hundredths of seconds (.00-.99), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W9, 13040E8, 00000E0, 17959E1, 1304030E1, 1760435.2W8, 0354428.25E3. The maximum value is 180 (i.e., 18000) degrees. (7-12ANS)
5	Sensor Code	O	Enter the sensor code of the detecting sensor from Entry List 1104 (Sensor Codes), e.g., RADAR, VISUAL. (2-6AN)
6	Bearing of Major Axis	C	Enter the true bearing (000-360 or 000.0-360.0) of the semi-major axis followed by "T" (true), e.g., 005T, 035T, 135.5T. This field is mandatory if Field 8 is used and is not equal to Field 7. (4-6ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

JOINT UNIT POSITION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
7	Length of Semi-Major Axis	O	Enter the semi-major axis, in nautical miles, of the area of uncertainty. Enter as 1-4 digits (0-9999) followed by "NM", e.g., 5NM, 13NM, 126NM, 2259NM. When the semi-major axis and semi-minor axis are equal, the area of uncertainty is a circle with the semi-major axis as its radius. (3-6AN)
8	Length of Semi-Minor Axis	O	Enter the semi-minor axis, in nautical miles, of the area of uncertainty using the same format as Field 7, e.g., 5NM, 13NM, 126NM, 2259NM. If this field is left blank the value in Field 7 will be interpreted as a radius. (3-6AN)
9	Course	O	Enter the true course (000-360 or 000.0-360.0) of the unit followed by "T" (true), e.g., 005T, 005.5T, 010T, 010.5T, 311T, 311.5T. (4-6ANS)
10	Speed	O	Enter the speed of the unit in knots (0-9999) followed by "K" or kilometers per hour (0-9999) followed by "KPH", and an optional floating decimal point, e.g., .5K, 1.5K, 170K, 15.5K, 1200K, 12.5KPH, 22KPH, 120KPH, .5KPH. (2-7ANS)
11	RDF RF	O	Enter the radio frequency of the intercept used to develop the position report in hertz (HZ), kilohertz (KHZ), or megahertz (MHZ). An optional floating decimal point is allowed, e.g., 5040.550HZ, 10050.5KHZ, 232.555MHZ. (3-10ANS)
12	Source Code	O	Enter the source which most recently originated, passed or amplified data on the position being reported from Entry List 1136 (Source Codes), e.g., OSIS, SELOR. (2-6AN)

Set Example:

```
JPOS/012345Z5/JAN/3040N7/08040W2/HFDF/155.5T/15NM/10NM/245T/14.5K
/1050KHZ/BEDF
```

JOINT UNIT

	1		2		3		4
JUNIT	/	**5-6AN**	/	**1-30ANBS**	/	2-8A	/	1-7A
		TRACK NUMBER		**NAME**		**ORGANIZATION TYPE**		**ECHELON**

	5		6		7		8		9
/	3A	/	2-6A	/	2A	/	**2N**	/	3A
	SERVICE		**PLATFORM**		**FLAG**		**FORCE CODE**		**ALERT CODE**

	10		11		12		13		14
/	1-30ANBS	/	12AN	/	**1N**	/	2N	/	1-12ANBS
	EMBARK		**UNIQUE IDENTIFIER (UID)**		**TRACK TYPE**		**SUSPICION CODE**		**EMITTER VOICE CALL SIGN**

NOTE: SHADED FIELDS ARE MANDATORY

The JUNIT set is used by systems to identify and amplify units (Army, Air Force, Marine, Coast Guard, and Navy). The primary means used to correlate two unique reports of a joint unit is by comparing selected elements from the JUNIT set.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

JOINT UNIT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Track Number	M	Enter the track number of the unit being reported. If the system limitations preclude a unique track number assignment, use T0000, e.g., T0001, T0023, T99999. (5-6AN)
2	Name	M	The name of the unit is its military label. If unknown, then enter as "UNKNOWN". (1-30ANBS)
3	Organization Type	O	Enter the organization type of a unit from Entry List 97 (Organization Type), e.g., CAV, CHEM, MED. (2-8A)
4	Echelon	O	Enter the organization level of a unit from Entry List 98 (Echelon Level), e.g., ARMY, CORPS, DIV. (1-7A)
5	Service	O	Enter the service equivalent to U.S. Forces from Table 5-18 (Service Codes), e.g., AFC, NVY, JNT. (3A)
6	Platform	O	Enter the type platform characteristic for a unit from Entry List 20 (Target Type), e.g., ATG, FTR. (2-6A)
7	Flag	O	Enter the flag code of the unit being reported from Entry List 59 (Country Codes), e.g., US, UR. (2A)
8	Force Code	M	Enter the force code of the unit being reported from Table 5-1 (Force Codes), e.g., 08, 15. (2N) (See Note)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

JOINT UNIT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
9	Alert Code	O	Enter the alert code of the units being reported from the following list (3A): TGT - Target data available SUS - Suspected carrier HIT - High interest track NSP - Nonsuspect platform
10	Embark	O	Enter the name of the platform on which a unit is embarked, e.g., SAIPAN, LANGLEY AIR FORCE BASE. (1-30ANBS)
11	Unique Identifier (UID)	O	Enter the identifier uniquely assigned by the site which introduces the contact or unit to the net (3AN), followed by a 9-digit (000000001-999999999, leading zeroes required) sequentially assigned number, the initial value of which is set at system installation to the total number of elapsed seconds since 1 Jan 1990, e.g., FT8001234876. (12AN)
12	Track Type	M	Enter the type of track being reported. The default for this field is a null entry which will be interpreted as a tactical track. For nontactical tracks enter one of the following codes (1N): 2 - Live training track; a real-world friendly track that has been designated as a training track.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

JOINT UNIT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
12	Track Type (continued)	M	3 - Simulated training track; a training track manually created or computer generated as part of a training scenario. 4 - Demand entry live nontraining track; a track representing an actual unit. Receiving TDPs should bypass normal filtering and correlation and update their database with this information.
13	Suspicion Code	O	Enter the two-number code to indicate the suspicion category of the vessel from Entry List 426 (Suspicion Codes), e.g., 02, 04. (2N)
14	Emitter Voice Call Sign	O	This field is intended to carry data parsed from TACREP messages (MAROP, GNDOP, and AIROP sets, Field 6) originated by the HFDF network carrying an emitter (voice) call sign, e.g., SWITCHBLADE, VV157493. (1-12ANBS)

Set Example:

```
JUNIT/T1234/1 INF DIV/MECHINF/DIV/ARM/APC/US/22//NORFOLK
/ABC012345678
```

NOTE: MTF systems are not permitted to automatically assign the following Force Codes (except to preserve previously assigned Link-11 Threat and Category values received during Link-11 passive tap operation):

01 (Air Hostile)	04 (Sub Hostile)	07 (Surf Hostile)	22 (Land Friend)
03 (Air Friend)	06 (Sub Friend)	09 (Surf Friend)	24 (Land Hostile)

PIM TRACK LEG

		1		2		3		4
LEG	/	**8-10AN**	/	**3A**	/	**2N**	/	**6-10ANS**
		DATE-TIME GROUP		**MONTH**		**YEAR**		**LATITUDE OF LEG**

	5		6
/	**7-11ANS**	/	3-6AN
	LONGITUDE OF LEG		**ALTITUDE/DEPTH**

NOTE: SHADED FIELDS ARE MANDATORY

The LEG set is used to provide a leg of the PIM track described in the PMTRK set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group	M	Enter the date-time group of the PIM track leg in days (01-31), hours (00-23), minutes (00-59), optional seconds (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 021235Z3, 02010110Z5. (8-10AN)
2	Month	M	Enter the first three letters of the month of the PIM track leg, e.g., JAN, FEB, MAR. (3A)
3	Year	M	Enter the year of the PIM track leg, e.g., 98, 99. (2N)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

PIM TRACK LEG (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Latitude of Leg	M	Enter the latitude of the PIM track leg in degrees (00-90), minutes (00-59), optional seconds (00-59), optional tenths of a second followed by the hemisphere (N/S), and checksum (0-9), e.g., 9000N9, 304055.5N2, 8959S1, 323545S2. The maximum value is 90 (i.e., 9000) degrees. (6-10ANS)
5	Longitude of Leg	M	Enter the longitude of the PIM track leg in degrees (000-180), minutes (00-59), optional seconds (00-59), optional tenths of a second (1-9) followed by the hemisphere (E/W), and checksum (0-9), e.g., 18000W9, 1304055.5E3, 00000E0, 1795900E1. The maximum value is 180 (i.e., 18000) degrees. (7-11ANS)
6	Altitude/Depth	O	Enter the altitude (hundreds of feet) or depth (feet) of the contact. Enter altitude as "ALT" followed by 3 digits (000-999). ALT999 will be used to report altitudes equal to or above 99,900 feet. Enter depth as 1-4 digits (1-9999 or 0001-9999, leading zeroes permitted) followed by "FT", e.g., ALT035, ALT120, 0035FT, 1200FT. (3-6AN)

Set Examples:

```
LEG/181648Z8/JAN/99/6700N3/00430E7

LEG/01001235Z2/FEB/99/070055N7/1800055W9/1200FT

LEG/020102Z5/FEB/99/304055.5N2/1760045.3W6/ALT035
```

LINE

		1		2		3		4
LINE	/	**1-3N**	/	1-2N	/	1A	/	**6-8AN**
		NUMBER OF POINTS		**LINE TYPE**		**LINE COLOR**		**LATITUDE**

	5		2N+4		2N+5
/	**7-9AN**	/	1-2N	/	1A
	LONGITUDE		**FILL TYPE**		**FILL COLOR**

NOTE: SHADED FIELDS ARE MANDATORY

NOTE: FIELDS UNDER BRACKET ARE REPEATABLE AS A GROUP

The LINE set is used to define a line between fixed geographic points. Closed figures can be reported by ensuring that the first and last latitude/longitude pairs are equal. Up to 256 points may be used to define 255 line segments per LINE set in the OVLY2 message. The OVLY1 message is restricted to the use of 2-99 points.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Number of Points	M	Enter the number of points (2-99 for OVLY1; 2-256 for OVLY2) that will be used to define the line segments, e.g., 2, 10. If the line is used to draw a closed figure, the position of the first and last points must be the same. (1-3N)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

LINE (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Line Type	O	Enter the type of line from Table 5-5 (Line Types), e.g., 1, 3. If line type is not provided, a default value of 0 (solid line) will be assumed. (1-2N)
3	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., A, C. If line color is not provided, a default value of A (white) will be assumed. (1A)
4	Latitude	M,R	Enter the latitude of the point in degrees (00-90), minutes (00-59), optional seconds (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 900000N9, 304030N0, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6-8AN)
5	Longitude	M,R	Enter the longitude of the point in degrees (000-180), minutes (00-59), optional seconds (00-59), followed by the hemisphere (E/W) and checksum (0-9). The maximum value is 180 (i.e., 18000) degrees. (7-9AN)
2N+4 (See Note 2)	Fill Type	O	Enter the area fill type from Table 5-7 (Area Fill Types), e.g., 0, 3, 6. If fill type is not provided, a default value of 0 (no fill) will be assumed. The fill type and fill color fields, if used, will immediately follow the last latitude/longitude pair for the LINE. (1-2N)
2N+5 (See Note 2)	Fill Color	O	Enter the fill color from Table 5-6 (Color Codes), e.g., A, D, I. (1A)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

LINE (Continued)

Set Examples:

```
LINE/3/2/B/3000N3/15000W6/4000N4/14000W5/3105N9/15100W7

LINE/5/0/A/3000N3/15000W6/3500N8/15000W6/3500N8/17500E3/3000N3
/17500E3/3000N3/15000W/1/A
```

NOTES:

1. The total number of repeatable latitude/longitude pairs must equal the number of points in Field 1.

2. N = number of points in Field 1.

LINE OF BEARING

		1		2		3		4
LOB	/	**8AN**	/	**3A**	/	**6AN**	/	**7AN**
		DATE-TIME GROUP		**MONTH**		**LATITUDE OF ORIGIN**		**LONGITUDE OF ORIGIN**

	5		6		7		8		9
/	**4-6ANS**	/	2-6AN	/	3-6ANS	/	3-6ANS	/	3-10ANS
	BEARING		**SENSOR CODE**		**HALF-WIDTH**		**RANGE**		**RDF RF**

	10		11
/		/	2-6AN
	SPARE		**SOURCE CODE**

NOTE: SHADED FIELDS ARE MANDATORY

The LOB set is used to provide a line of bearing report on the track described in the preceding CTC set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group	M	Enter date-time group of the LOB in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

LINE OF BEARING (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Month	M	Enter the first three letters of the month of the LOB, e.g., JAN, FEB, MAR. (3A)
3	Latitude of Origin	M	Enter the latitude of the LOB origin in degrees (00-90), and minutes (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6AN)
4	Longitude of Origin	M	Enter the longitude of the LOB origin in degrees (000-180), and minutes (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 18000) degrees. (7AN)
5	Bearing	M	Enter the true bearing (000-360 or 000.0-360.0) from the LOB origin to the contact followed by "T" (true), e.g., 035T, 035.5T, 145T. (4-6ANS)
6	Sensor Code	O	Enter the sensor code for the sensor used to develop the LOB from Entry List 1104 (Sensor Codes), e.g., ES, SONPAS. (2-6AN)
7	Half-Width	O	Enter the half-width (i.e., bearing error) in degrees (.1-180) followed by "DEG", or in nautical miles (1-4NS) followed by "NM". A floating decimal point may be used, e.g., .5NM, 0.5NM, 3.5DEG. See example drawings below. If half-width is expressed in NM, then range field must be provided and expressed in NM. If half-width is expressed in DEG, then range field is not required. (3-6ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

LINE OF BEARING (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
8	Range	C	Enter the range, in nautical miles (0-9999), of the LOB followed by "NM". A floating decimal point is optional, e.g., .50NM, 0.50NM, 20.5NM, 100NM. This field is mandatory if half-width is expressed in NM. (3-6ANS)
9	RDF RF	O	Enter the radio frequency of the intercept used to develop the LOB in hertz (HZ), kilohertz (KHZ), or megahertz (MHZ). An optional floating decimal point is allowed, e.g., 5040.550HZ, 10050.5KHZ, 232.555MHZ. (3-10ANS)
10	Spare	O	The spare field, previously defined as International Radio Call Sign (IRCS), no longer conveys any data. This field is now used as a position filler.
11	Source Code	O	Enter the source which most recently originated, passed or amplified data on the LOB from Entry List 1136 (Source Codes), e.g., OSIS, SELOR. (2-6AN)

Set Examples:

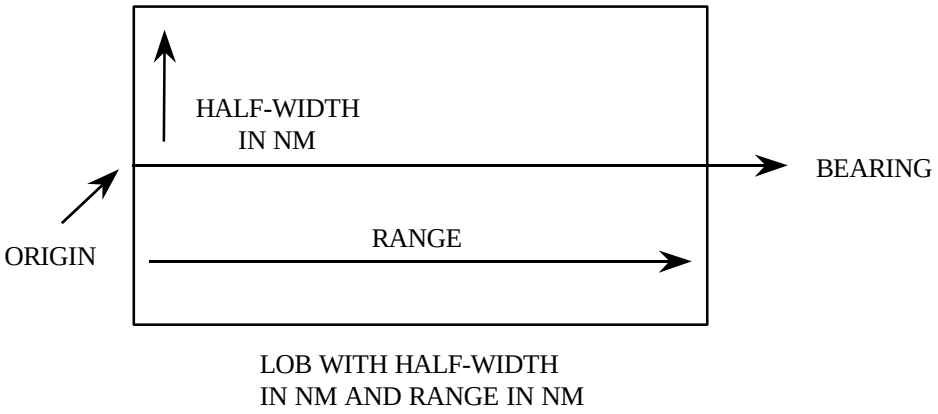
```
LOB/012345Z5/JAN/3040N7/10050W6/265.5T/ES/1.7DEG//5040.2KHZ

LOB/012350Z1/JAN/4060S0/11040E6/225T//50NM/200NM/283.5MHZ//LOB
```

NOTES:

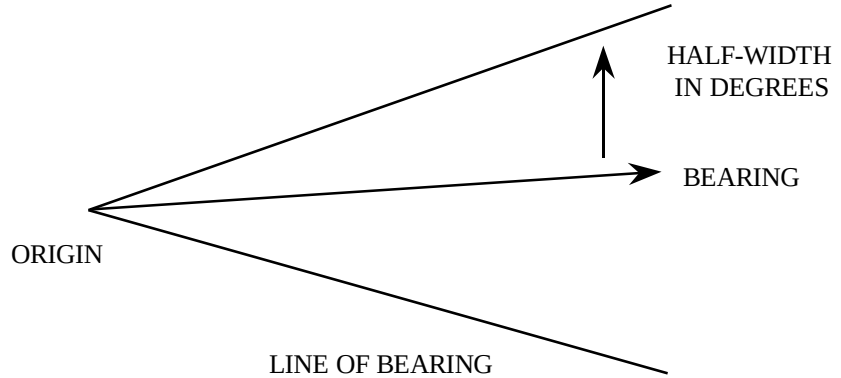
1. All users of the Contact Report message must be able to receive, decode, display, and transmit Fields 1 through 8 of the LOB set.

2. The spare field in the POS and LOB sets is available for reassignment upon removal or replacement of all baseline TWCS from Operational Service.

LINE OF BEARING (Continued)



LOB WITH HALF-WIDTH
IN NM AND RANGE IN NM



LINE OF BEARING
HALF-WIDTH IN DEGREES

MODE GOLD

		1		2		3		4
MODEG	/	3-13AB	/	3-17ABS	/	3-7AN	/	1A
		SUBMARINE OPERATING MODE		SUBMARINE PROPULSION MODE		DEPTH		MEASURED/ESTIMATED

	5
/	1-19ANBS
	DEPTH DETERMINATION MEANS

The MODEG set is used to report operating mode, propulsion mode, and depth determination methods concerning submarine contact covered by the preceding POS/LOB set.

FIELD NO	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Submarine Operating Mode	C	Enter the code for the submarine operating mode (at the time indicated in the preceding POS or LOB set) from Entry List 1112 (Submarine Operating Mode), e.g., ADDS, SPEED CHG. This field is mandatory if submarine propulsion mode is not provided. (3-13AB)
2	Submarine Propulsion Mode	C	Enter the code for the submarine propulsion mode (at the time indicated in the preceding POS or LOB set) from Entry List 1096 (Submarine Propulsion Mode), e.g., BATTERY, DIESEL-DIRECT. This field is mandatory if submarine operating mode is not provided. (3-17ABS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

MODE GOLD (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Depth	O	Enter the measured or estimated depth as 1-5 digits followed by "FT", e.g., 1200FT, 35FT. (3-7AN)
4	Depth Measured/Estimated	C	Enter "M" or "E" to signify measured or estimated degrees of accuracy, respectively. This field is mandatory if Field 3 is provided. (1A)
5	Depth Determination Means	C	Enter the plain language designation of the device, procedure, or method used to determine the depth of an underwater contact, e.g., LLOYDS MIRROR. This field is mandatory if Field 3 is provided. (1-19ANBS)

Set Example:

```
MODEG/SUBMERGED/TURBINE-REDUCTION/300FT/M/LLOYDS MIRROR
```

MERGE

		1		2		3		4
MRG	/	**5-6AN**	/	**5-6AN**	/	**1-14ANBS**	/	**1-14ANBS**
		SOURCE TRACK NUMBER		**DESTINATION TRACK NUMBER**		**SOURCE COMMAND**		**DESTINATION COMMAND**

	5		6		7
/		/	12AN	/	12AN
	SPARE		**SOURCE TRACK UNIQUE IDENTIFIER (UID)**		**DESTINATION TRACK UNIQUE IDENTIFIER (UID)**

NOTE: SHADED FIELDS ARE MANDATORY

The MRG set is used for merging of data points associated with the source track number into the track history file of the destination track number. The result of this operation will be a single track identified by the destination track number.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Source Track Number	M	Enter the track number of the track that will be merged into the destination track data as a result of the merge operation, e.g., T0001, T0023, T99999. (5-6AN)
2	Destination Track Number	M	Enter the track number that will contain the merged data obtained from the source track as a result of the merge operation, e.g., T0001, T0023, T99999. (5-6AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

MERGE (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Source Command	M	Enter the reporting command (platform unique identifier) of the command that assigned the source track number of the group being deleted, e.g., CTF 70, VINSON BG FOTC, KITTY HAWK. (1-14ANBS)
4	Destination Command	M	Enter the destination command (platform unique identifier) of the command that assigned the track number in Field 2, e.g., CTF 70, VINSON BG FOTC, KITTY HAWK. (1-14ANBS)
5	Spare	O	The spare field does not convey any data. This field is now used as a position filler.
6	Source Track Unique Identifier (UID)	O	Enter the unique identifier of the track that will be merged into the destination track as a result of the merge operation, e.g., FT8001234876. (12AN)
7	Destination Track Unique Identifier (UID)	O	Enter the unique identifier of the track that will contain the merged data obtained from the source track as a result of the merge operation. This UID is in the same format as Field 6. (12AN)

Set Example:

```
MRG/T1234/T7321/HILL HS/VINSON BG FOTC//DES052876800
```

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

MERGE (Continued)

NOTES:

1. In this example HILL's track T1234 will be merged into VINSON BG FOTC'S track T7321.

2. Battle Group Data Base Management (BGDBM) specification subscribers will consult the BGDBM specification for correct procedures for merging tracks. For tactical systems not subscribing to the BGDBM specification, it is strongly recommended that BGDBM specification procedures be considered for merging tracks.

3. Processing of MRG sets contained in Contact Report messages is optional.

MESSAGE IDENTIFICATION

		1		2		3		4
MSGID	/	**1-14ANBS**	/	**3-9AN**	/	**4-5N**	/	**3A**
		COMMAND (MESSAGE ORIGINATOR)		**MESSAGE IDENTIFIER**		**MESSAGE SERIAL NUMBER**		**MONTH**

	5		6		7
/	1-20ANBS	/	3A	/	3N
	OPERATION/ EXERCISE NAME		**QUALIFIER**		**QUALIFIER SERIAL NUMBER**

NOTE: SHADED FIELDS ARE MANDATORY

The MSGID set is the first formatted line of every OTG message.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Command (Message Originator)	M	Enter the command originating the message, e.g., CTF 70, COMTHIRDFLT, KITTY HAWK. (1-14ANBS)
2	Message Identifier	M	Enter the message identifier from Table 5-12 (Message Identifiers), e.g., AOI, REP, GROUP. (3-9AN)
3	Message Serial Number	M	Enter the message serial number (MSN) (0001-9999), e.g., 0001, 0445, 9999. The MSN will reinitialize to 0001 (or the initial number of an assigned number

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

MESSAGE IDENTIFICATION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Message Serial Number (continued)	M	block) on the first day of each month. The MSN will always consist of 4 digits; the fifth digit is reserved for future use. (4-5N)
4	Month	M	Enter the first three letters of the month, e.g., JAN, FEB, MAR. (3A)
5	Operation/Exercise Name	O	Enter the operation or exercise name, or a brief description of the objective of the mission, as directed, e.g., PACEX 99. (1-20ANBS)
6	Qualifier	O	Enter the qualifier which further defines this message from the following list (3A): AMP - Amplifies a previously sent message. DEV - Used to indicate a deviation from a previously sent message. PER - Signifies a message that is standing order for a lengthy period. REQ - Used to request a particular message, such as a tasking message, from another commander.
7	Qualifier Serial Number	O	Enter the serial number of the qualifier in Field 6. This number is used to uniquely identify qualifiers of a basic message, e.g., 001, 005, 999. (3N)

Set Examples:

```
MSGID/CTG 81.0/GOLD/0001/MAY/RIMPAC 98

MSGID/CTG 81.0/FOTC/0002/MAY
```

MESSAGE IDENTIFICATION (Continued)

NOTE: All OTG users must be able to receive, decode, store, and transmit the data in Fields 1 through 4 for all implemented messages.

NARRATIVE

		1
NARR	/	**1-64ANBS**
		FREE-TEXT

NOTE: SHADED FIELD IS MANDATORY

The NARR set is used to provide free-text or other unformatted data within the body of an OTG message. This set may only be used where indicated by the individual message formats found in Chapters 3 and 7.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Free-Text	M	Enter free-text data as desired. The first line is limited to 64 characters after "NARR"/; which is needed only at the beginning of the first line of the NARR set. Subsequent lines can contain up to 69 characters. (1-64ANBS)

Set Example:

```
NARR/OPNOTE: NZ DE G7 THIS IS AN EXAMPLE OF USING THE NARR SET.
MULTIPLE LINES OF FREE-TEXT INFORMATION MAY BE ENTERED WITH A
MAXIMUM OF 69 CHARACTERS PER LINE ALLOWED.
```

NOTES:

1. All OTG users must be able to receive, decode, and display a minimum of 20 lines of free-text information contained in a NARR line where permitted in any MTF implemented by the user.

ORIGIN

		1		2
ORGIN	/	**5-6AN**	/	**1-14ANBS**
		TRACK NUMBER		**COMMAND**

NOTE: SHADED FIELDS ARE MANDATORY

The ORGIN set is used to specify the reference track which will serve as the origin for a relative overlay or relative AOI filter.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Track Number	M	Enter the track number of the track that will serve as the origin, e.g., T0001, T0023, T99999. (5-6AN)
2	Command	M	Enter the reporting command (platform unique identifier) of the command that assigned the track number of the track that will serve as the origin, e.g., CTF 70, VINSON BG FOTC, KITTY HAWK. (1-14ANBS)

Set Examples:

```
ORGIN/T4230/ENTERPRISE

ORGIN/T7142/WASP BG FOTC
```

OVERLAY

	1		2		3		4
OVLY	/	**1-14ANBS**	/	**8AN**	/	**3A**	/	**4-6AN**
		TITLE		**DATE-TIME GROUP**		**MONTH**		**CHAINING INFORMATION**

	5		6		7		8		9
/	**1-33ANBS**	/	1-14ANBS	/	12AN	/	8AN	/	3A
	DESCRIPTION		**SOURCE COMMAND**		**UNIQUE IDENTIFIER (UID)**		**START DATE-TIME GROUP**		**START MONTH**

	10		11
/	8AN	/	3A
	END DATE-TIME GROUP		**END MONTH**

NOTE: SHADED FIELDS ARE MANDATORY

The OVLY set is used to initiate a graphics overlay.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Title	M	Enter the title of the overlay. This information is used to inform the TDP operator of the overlays available. This title does not appear on the TDP's tactical geographic display, e.g., CAP STATIONS. (1-14ANBS)

OVERLAY (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Date-Time Group	M	Enter the date-time group that the overlay was created in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
3	Month	M	Enter the first three letters of the month in which the overlay was created, e.g., JAN, FEB, MAR. (3A)
4	Chaining Information	M	Enter the number of this message (1-99) and the total number of messages required to define this overlay (1-99) separated by OF. If only one message is required enter "1OF1", e.g., 1OF1, 3OF22. (4-6AN)
5	Description	M	Enter an unformatted description of the overlay, e.g., PIM FOR TRANSITEX 4-91. This information is used to inform the TDP operator of the overlays available. This title does not appear on the TDP's tactical geographic display. (1-33ANBS)
6	Source Command	O	Enter the command which originated the overlay, e.g., CTF 70, VINSON BG FOTC, KITTY HAWK. (1-14ANBS)
7	Unique Identifier (UID)	O	Enter the identifier uniquely assigned by the site which introduces the overlay to the net (3AN), followed by a 9-digit (000000001-999999999, leading zeroes required) sequentially assigned number, the initial value of which is set at system installation to the total number of elapsed seconds since 1 Jan 1990, e.g., FT8001234876. (12AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

OVERLAY (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
8	Start Date-Time Group	O	Enter the start time of the overlay in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
9	Start Month	O	Enter the first three letters of the start month of the overlay, e.g., JAN, FEB, MAR. (3A)
10	End Date-Time Group	O	Enter the end time of the overlay in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
11	End Month	O	Enter the first three letters of the end month of the overlay, e.g., JAN, FEB, MAR. (3A)

Set Examples:

```
OVLY/CHAINSAW PLAN/012345Z5/MAR/5OF15/CHAINSAW PLAN AXIS 270

OVLY/PAC WIND 1/080900Z7/NOV/1OF1/EAST PACIFIC WIND WARNING/NWOC
/NW0001234454/081100Z9/NOV/090000Z9/NOV
```

PAIR

		1		2		3		4
PAIR	/	1-14ANBS	/	5-6AN	/	1-14ANBS	/	5-6AN
		FOTCCMD		FOTC TRACK NUMBER		COMMAND 1		TRACK NUMBER

	5		6		7		8		9
/	1-14ANBS	/	5-6AN	/	1-14ANBS	/	5-6AN	/	1-14ANBS
	COMMAND 2		TRACK NUMBER		COMMAND 3		TRACK NUMBER		COMMAND 4

	10		11		12
/	5-6AN	/	1-14ANBS	/	5-6AN
	TRACK NUMBER		COMMAND 5		TRACK NUMBER

The PAIR set is used by the coordinator to associate a FOTC track number (FOTCTN) with up to five participant received track numbers (RTNs). The PAIR set amplifies the previous CTC set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	FOTCCMD	C	Enter the Coordinator's command designation or other unique identifier, e.g., VINSON BG FOTC, CTU 75.2.4. If Fields 3 and 4 are not used, Fields 1 and 2 are mandatory. (1-14ANBS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

PAIR (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	FOTC Track Number	C	Enter the Coordinator's track number, e.g., T7044, T77777. If Fields 3 and 4 are not used, Fields 1 and 2 are mandatory. (5-6AN)
3	Command 1	C	Enter the command designator of the command reporting the track number in Field 4 being paired with the TDP system's command (MSGID set Field No. 1) and track number (CTC set Field No. 1), e.g., CTU 75.4.3, TRUETT. If Fields 1 and 2 are not used, Fields 3 and 4 are mandatory. (1-14ANBS)
4	Track Number	C	Enter the Command 1 track number which is to be paired with the TDP system's command (MSGID set Field No. 1) and track number (CTC set Field No. 1), e.g., T0001, T0023, T99999. (5-6AN)
5	Command 2	O	Enter the command designator of the command reporting the track number in Field 6 being paired with the TDP system's command (MSGID set Field No. 1) and track number (CTC set Field No. 1), e.g., CTU 75.4.3, TRUETT. (1-14ANBS)
6	Track Number	O	Enter the Command 2 track number which is to be paired with the TDP system's command (MSGID set Field No. 1) and track number (CTC set Field No. 1). Enter the track number as a letter (A-Z) followed by 4 or 5 digits (0001-99999), e.g., T0001, T0023, T99999. (5-6AN)
7	Command 3	O	Enter the command designator of the command reporting the track number in Field 8 being paired with the TDP system's command (MSGID set Field No. 1) and track number (CTC set Field No. 1), e.g., CTU 75.4.3, TRUETT. (1-14ANBS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

PAIR (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
8	Track Number	O	Enter the Command 3 track number which is to be paired with the TDP system's command (MSGID set Field No. 1) and track number (CTC set Field No. 1). Enter the track number as a letter (A-Z) followed by 4 or 5 digits (0001-99999), e.g., T0001, T0023, T99999. (5-6AN)
9	Command 4	O	Enter the command designator of the command reporting the track number in Field 10 being paired with the TDP system's command (MSGID set Field No. 1) and track number (CTC set Field No. 1), e.g., CTU 75.4.3, TRUETT. (1-14ANBS)
10	Track Number	O	Enter the Command 4 track number which is to be paired with the TDP system's command (MSGID set Field No. 1) and track number (CTC set Field No. 1). Enter the track number as a letter (A-Z) followed by 4 or 5 digits (0001-99999), e.g., T0001, T0023, T99999. (5-6AN)
11	Command 5	O	Enter the command designator of the command reporting the track number in Field 12 being paired with the TDP system's command (MSGID set Field No. 1) and track number (CTC set Field No. 1), e.g., CTU 75.4.3, TRUETT. (1-14ANBS)
12	Track Number	O	Enter the Command 5 track number which is to be paired with the TDP system's command (MSGID set Field No. 1) and track number (CTC set Field No. 1). Enter the track number as a letter (A-Z) followed by 4 or 5 digits (0001-99999), e.g., T0001, T0023, T99999. (5-6AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

PAIR (Continued)

Set Example:

```
PAIR/CTF 60.1/T7432/CTG 60.3.2/T4716/FOSIF ROTA/T7530/CTG 60.3.3
/T0213
```

NOTE: Processing PAIR sets contained in Contact Report messages is optional.

PLEASURE CRAFT DATA

		1		2		3
PCRFT	/	3-6A	/	1-20ANBS	/	2-9ANS
		HULL COLOR		BRAND		HULL LENGTH

The PCRFT set is used to report **amplifying information when the contact in the preceding CTC set is a** pleasure craft, particularly those of interest to narcotics interdiction efforts.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Hull Color	**O**	Enter the color of the hull from the following list (3-6A): BLACK, BLUE, BROWN, GRAY, GREEN, ORANGE, PURPLE, RED, SILVER, TAN, WHITE, YELLOW
2	Brand	O	Enter the manufacturer of the vessel, e.g., CHRIS CRAFT, BAYLINER. (1-20ANBS)
3	Hull Length	O	Enter the length of the hull of the vessel (1-9999.99, decimal point allowed) followed by "FT" (feet) or "M" (meters), e.g., 32FT, 25M. (2-9ANS)

Set Examples:

```
PCRFT/WHITE/BAYLINER/35FT

PCRFT/GREEN//25FT
```

POSITION AND INTENDED MOVEMENT

		1		2		3		4
PIM	/	**6AN**	/	**7AN**	/	**8AN**	/	**4AN**
		LATITUDE		**LONGITUDE**		**DATE-TIME GROUP**		**COURSE**

	5
/	**2-5AN**
	SPEED

NOTE: SHADED FIELDS ARE MANDATORY

The PIM set is used to inform ROTHR of planned paths of movement for known targets. Up to six PIM sets can be sent with each Task Request Message.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Latitude	M	Enter the latitude of the path of intended movement in degrees (00-90) and minutes (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6AN)
2	Longitude	M	Enter the longitude in degrees (000-180), and minutes (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W9, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 18000) degrees. (7AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

POSITION AND INTENDED MOVEMENT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Date-Time Group	M	Enter the date-time group of the PIM in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
4	Course	M	Enter the planned heading from the point defined in Fields 1 and 2 in degrees (000-359) followed by "T" (true), e.g., 005T, 311T. (4AN)
5	Speed	M	Enter the planned speed from the point defined in Fields 1 and 2 in knots (0-9999) followed by "K", e.g., 15K, 450K. (2-5AN)

Set Example:

```
PIM/2208N2/07834E2/021425Z4/085T/520K
```

PING SERIAL

		1		2		3
PING	/	**1-12ANBS**	/	**5N**	/	**3A**
		SOURCE IDENTIFICATION		**PING SERIAL NUMBER**		**MONTH**

NOTE: SHADED FIELDS ARE MANDATORY

The PING set is used to report the ping transmission serial number. The ping serial number is sequential for each month and source. It starts at 0001Z at the beginning of each month. All ping users must be able to receive, decode, store, and transmit the data in Fields 1 through 3.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Source Identification	M	Identify the active source generating the ping schedule, e.g., LFA PING, AA FIXED. (1-12ANBS)
2	Ping Serial Number	M	Enter the sequential serial number of the next ping message to be promulgated. The serial is sequential and reverts to 00001 at the beginning of the month (00001-99999), e.g., 00001, 08975. (5N)
3	Month	M	Enter the first three letters of the month, e.g., JAN, FEB, MAR. (3A)

Set Examples:

```
PING/LFA PING/00045/JAN

PING/AA FIXED/00090/FEB
```

PIM TRACK

		1		2		3		4
PMTRK	/	**1-40ANBS**	/	**2A**	/	3-5AN	/	3A
		NAME		**LINE PROJECTION**		**TASK FORCE RADIUS**		**TYPE**

	5
/	1-30ANBS
	REMARKS

NOTE: SHADED FIELDS ARE MANDATORY

The PMTRK set is used to identify a PIM track.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Name	M	Enter the PIM track name, e.g., MED TRANSIT, FLIGHT PLAN. (1-40ANBS)
2	Line Projection	M	Enter "GC" if lines are to be plotted as great circle or "RL" if lines are to be plotted as rhumb line. (2A)
3	Task Force Radius	O	Enter the task force radius in nautical miles (0-999) followed by "NM", e.g., 75NM, 250NM. (3-5AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

PIM TRACK (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Type	O	Enter the PIM track type from the following list (3A): AIR - Air LND - Land SUB - Submarine SUR - Surface UNK - Unknown
5	Remarks	O	Enter unformatted text pertaining to the PIM track. (1-30ANBS)

Set Examples:

```
PMTRK/MED TRANSIT/GC/75NM/SUR/SOA 12 KNOTS

PMTRK/FLIGHT PLAN/GC//AIR
```

POSITION

	1		2		3		4
POS	/	**8AN**	/	**3A**	/	**6AN**	/	**7AN**
		DATE-TIME GROUP		**MONTH**		**LATITUDE OF CENTER**		**LONGITUDE OF CENTER**

	5		6		7		8		9
/	2-6AN	/	4-6ANS	/	3-6AN	/	3-6AN	/	4-6ANS
	SENSOR CODE		**BEARING OF MAJOR AXIS**		**LENGTH OF SEMI-MAJOR AXIS**		**LENGTH OF SEMI-MINOR AXIS**		**COURSE**

	10		11		12		13		14
/	2-5ANS	/	3-6AN	/	3-10ANS	/		/	2-6AN
	SPEED		**ALTITUDE/DEPTH**		**RDF RF**		**SPARE**		**SOURCE CODE**

	15		16		17
/	1-7N	/	3A	/	1-3N
	SEQUENTIAL CONTACT IDENTIFIER		**PHOTOS**		**TOTAL NUMBER OF CONTACTS/UNITS**

NOTE: SHADED FIELDS ARE MANDATORY

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

POSITION (Continued)

The POS set is used to report a position, time of position, and other relevant information about the track described in the preceding CTC or ADTRK set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group	M	Enter the date-time group of the position report in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
2	Month	M	Enter the first three letters of the month of the position report, e.g., JAN, FEB, MAR. (3A)
3	Latitude of Center	M	Enter the latitude of the position center in degrees (00-90), and minutes (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6AN)
4	Longitude of Center	M	Enter the longitude of the position center in degrees (000-180), and minutes (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 18000) degrees. (7AN)
5	Sensor Code	O	Enter the sensor code of the detecting sensor from Entry List 1104 (Sensor Codes), e.g., RADAR, VISUAL. (2-6AN)
6	Bearing of Major Axis	C	Enter the true bearing (000-360 or 000.0-360.0) of the semi-major axis followed by "T" (true), e.g., 005T, 035T, 135.5T. This field is mandatory if Field 8 is used and is not equal to Field 7. (4-6ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

POSITION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
7	Length of Semi-Major Axis	O	Enter the semi-major axis, in nautical miles, of the area of uncertainty. Enter as 1-4 digits (0-9999) followed by "NM", e.g., 5NM, 13NM, 126NM, 2259NM. When the semi-major axis and semi-minor axis are equal, the area of uncertainty is a circle with the semi-major axis as its radius. (3-6AN)
8	Length of Semi-Minor Axis	O	Enter the semi-minor axis in nautical miles of the area of uncertainty using the same format as Field 7, e.g., 7NM, 123NM, 1213NM. If this field is left blank the value in Field 7 will be interpreted as a radius. (3-6AN)
9	Course	O	Enter the true course (000-360 or 000.0-360.0) of the track followed by "T" (true), e.g., 005T, 005.5T, 010T, 010.5T, 311T, 311.5T. (4-6ANS)
10	Speed	O	Enter the speed of the track in knots (0-9999) followed by "K". An optional floating decimal point may be used, e.g., .5K, 1.5K, 170K, 15.5K, 1200K. (2-5ANS)
11	Altitude/Depth	O	Enter the altitude (hundreds of feet) or depth (feet) of the contact. Enter altitude as "ALT" followed by 3 digits (000-999). ALT999 will be used to report altitudes equal to or above 99,900 feet. Enter depth as 1-4 digits (1-9999 or 0001-9999, leading zeroes permitted) followed by "FT", e.g., ALT035, ALT120, 0035FT, 1200FT. (3-6AN)
12	RDF RF	O	Enter the radio frequency of the intercept used to develop the POS in hertz (HZ), kilohertz (KHZ), or megahertz (MHZ). An optional floating decimal point is allowed, e.g., 5040.550HZ, 10050.5KHZ, 232.555MHZ. (3-10ANS)
13	Spare	O	The spare field, previously defined as International Radio Call Sign (IRCS), no longer conveys any data. This field is now used as a position filler.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

POSITION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
14	Source Code	O	Enter the source which most recently originated, passed or amplified data on the position being reported from Entry List 1136 (Source Codes), e.g., OSIS, SELOR. (2-6AN)
15	Sequential Contact Identifier	O	Enter the unique identifier assigned by the collector to identify each specific report, e.g., 1273845. This field provides traceability to the contact data. (1-7N)
16	Photos	O	Enter "PHT" if photos were taken and "NPH" if no photos were taken. (3A)
17	Total Number of Contacts/Units	O	Enter the total number of contacts/units (0-999) in the area of the contact reported in the preceding CTC set, e.g., 5, 12 (this could be the total number of ships, total number of aircraft/missiles in formation, or the total number of pleasure craft). (1-3N)

Set Examples:

```
POS/012345Z5/JAN/3040N7/08040W2/HFDF/155.5T/15NM/10NM/245T
/14.5K//1050.5KHZ///1234564/NPH

POS/012030Z6/JAN/8030N1/14010W6/RADAR//10NM//170T/10K////OWN
```

NOTES:

1. All users of the AOI filter, Contact Report, Group Track and Overlay 2 messages must be able to receive, decode, display, and transmit Fields 1 through 11 of the POS.

2. The spare field in the POS and LOB sets is available for reassignment upon removal or replacement of all baseline TWCS from Operational Service.

PRISONERS OF WAR

		1		2		3
POW	/	**8AN**	/	**3A**	/	**1-4N**
		DATE-TIME GROUP (DTG)		**MONTH**		**NUMBER OF CAPTIVES/POWS**

NOTE: SHADED FIELDS ARE MANDATORY

The POW set is used to report the number of captives/POWs held by the unit reported in the preceding JUNIT set or by the track reported in the preceding CTC set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group (DTG)	M	Enter the date-time group of the reported POW status for the unit reported in the preceding JUNIT set or for the track reported in the preceding CTC set in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
2	Month	M	Enter the first three letters of the month of the current POW status, e.g., JAN, FEB, MAR. (3A)
3	Number of Captives/POWs	M	Enter the number of captives/POWs held by the unit reported in the preceding JUNIT set or by the track reported in the preceding CTC set, e.g., 5, 20. (1-4N)

Set Example:

```
POW/082315Z9/FEB/6
```

PRODUCT

		1		2		3		4
PROD	/	**1-14ANBS**	/	**8AN**	/	**3A**	/	3N
		PRODUCT TYPE		**EFFECTIVE DATE-TIME GROUP**		**EFFECTIVE MONTH**		**FORECAST PERIOD**

	5		6
/	**4-6AN**	/	1-33ANBS
	CHAINING INFORMATION		**PRODUCT DESC/ UNIQUE DESC**

NOTE: SHADED FIELDS ARE MANDATORY

The PROD set is used to identify the type of product being provided. It is also used to provide chaining information and a unique identifier that may be used for automatic database management.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Product Type	M	Enter the general product type, e.g., OCEANMET. Data in this field may be used by automated systems to determine if the information provided in the message will be processed. (1-14ANBS)
2	Effective Date-Time Group	M	Enter **the beginning or starting** date-time group for which the **associated** data is effective **/valid** in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

PRODUCT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Effective Month	M	Enter the first three letters of the month that the data becomes effective, e.g., JAN, FEB, MAR. (3A)
4	Forecast Period	O	For use when effective time is synoptic time only. Enter the time in hours after synoptic time for which data is effective, e.g., 000, 012, 024. A value of 000 indicates an analysis is effective at synoptic time. A value of 024 indicates a 24 hour forecast. (3N)
5	Chaining Information	M	Enter the number of this message (1-99) and the total number of messages required to define this overlay (1-99) separated by OF. If only one message is required enter "1OF1", e.g., 1OF1, 3OF22. (4-6AN)
6	Product Desc/Unique Desc	O	Enter an unformatted description of the product (e.g., SURFACE PRESSURE) or a unique identifier which can be used for automatic database management (e.g., SOCAL W257). (1-33ANBS)

Set Examples:

```
PROD/OCEANMET/091200Z2/SEP/024/1OF1/SURFACE PRESSURE A01

PROD/OCEANMET/091200Z2/OCT/000/1OF12/SEA SURFACE TEMP
```

PERSONNEL

		1		2		3		4
PRSNL	/	**8AN**	/	**3A**	/	1-4N	/	1-4N
		DATE-TIME GROUP (DTG)		**MONTH**		**NUMBER PERSONS ALLOCATED**		**NUMBER PERSONS ASSIGNED**

	5		6		7		8		9
/	1-4N	/	1-4N	/	1-4N	/	1-4N	/	1-4N
	NUMER KILLED		**NUMBER MISSING IN ACTION**		**NUMBER CAPTURED**		**NUMBER WOUNDED**		**NUMBER WOUNDED AMBULATORY**

	10		11
/	1-4N	/	1-4N
	NUMBER WOUNDED TRANSPORTABLE BUT NOT AMBULATORY		**NUMBER WOUNDED NON-TRANSPORTABLE**

NOTE: SHADED FIELDS ARE MANDATORY

The PRSNL set is used to report personnel status for the unit reported in the preceding JUNIT set or the track reported in the preceding CTC set.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

PERSONNEL (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group (DTG)	M	Enter the date-time group for the reported personnel status for the unit reported in the preceding JUNIT set or the track reported in the preceding CTC set. Enter the date-time group in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
2	Month	M	Enter the first three letters of the month for the reported personnel status, e.g., JAN, FEB, MAR. (3A)
3	Number Persons Allocated	C	Enter the number of persons allocated to the unit reported in the preceding JUNIT set or to the track reported in the preceding CTC set, e.g., 67, 102. This field is mandatory if Fields 4 through 8 are not reported. (1-4N)
4	Number Persons Assigned	C	Enter the number of persons assigned to the unit reported in the preceding JUNIT set or to the track reported in the preceding CTC set at the reported time, e.g., 65, 92. This field is mandatory if Fields 3, 5, 6, 7, and 8 are not reported. (1-4N)
5	Number Killed	C	Enter the number of persons reported killed from the unit reported in the preceding JUNIT set or from the track reported in the preceding CTC set at the reported time, e.g., 5, 15. This field is mandatory if Fields 3, 4, 6, 7, and 8 are not reported. (1-4N)
6	Number Missing in Action	C	Enter the number of missing in action from the unit reported inthe preceding JUNIT set or from the track reported in the preceding CTC set at the reported time, e.g., 3, 7. This field is mandatory if Fields 3, 4, 5, 7, and 8 are not reported. (1-4N)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

PERSONNEL (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
7	Number Captured	C	Enter the number of persons captured from the unit reported in the preceding JUNIT set or from the track reported in the preceding CTC set at the reported time, e.g., 0, 3. This field is mandatory if Fields 3, 4, 5, 6, and 8 are not reported. (1-4N)
8	Number Wounded	C	Enter the number of wounded for the unit reported in the preceding JUNIT set or for the track reported in the preceding CTC set at the reported time, e.g., 12, 34. This field is mandatory if Fields 3 through 7 are not reported. (1-4N)
9	Number Wounded Ambulatory	O	Enter the number of wounded who are ambulatory for the unit reported in the preceding JUNIT set or for the track reported in the preceding CTC set at the reported time, e.g., 10, 5. (1-4N)
10	Number Wounded Transportable but not Ambulatory	O	Enter the number of wounded who are transportable but not ambulatory for the unit reported in the preceding JUNIT set or for the track reported in the preceding CTC set at the reported time, e.g., 12, 34. (1-4N)
11	Number Wounded Non-Transportable	O	Enter the number of wounded who are non-transportable for the unit reported in the preceding JUNIT set or for the track reported in the preceding CTC set at the reported time, e.g., 10, 5. (1-4N)

Set Example:

```
PRSNL/101645Z7/FEB/67/56/1/3/0/22/20/1/1
```

PU FILTER

	1	2	3	4
PUFLT /	**2N** /	**2N** /	2N /	2N
	PARTICIPATING UNIT NUMBER	**FORCE CODE**	**FORCE CODE**	**FORCE CODE**

	5	6
/	2N /	2N
	FORCE CODE	**FORCE CODE**

NOTE: SHADED FIELDS ARE MANDATORY

The PUFLT set is used by the Coordinator to specify the type and source of NTDS tracks that the participants will process.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Participating Unit Number	M	Enter the NTDS Participating Unit (PU) number (01-76, octal), e.g., 14, 57. (2N)
2	Force Code	M	Enter the force code of the tracks of interest from Table 5-1 (Force Codes) e.g., 01, 22. (2N)
3	Force Code	O	Use same format as Field 2.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

PUFLT

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Force Code	O	Use same format as Field 2.
5	Force Code	O	Use same format as Field 2.
6	Force Code	O	Use same format as Field 2.

Set Examples:

```
PUFLT/60/01

PUFLT/61/01/08
```

QUERY

	1	
QUERY	/	**5-6N**
		REQUEST NUMBER

NOTE: SHADED FIELD IS MANDATORY

The QUERY set is used to initiate and identify a query of one system by another. Subsequent sets contain system-specific data required by the receiving system in order to respond to the query.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Request Number	M	Enter the query number (00000-99999 or 000000-999999). This number will identify the query. The reply generated in response to this query will be identified with the same number, e.g., 00011, 98999, 989999. (5-6N)

Set Example:

```
QUERY/12345
```

NOTE: Processing of the QUERY set is optional for all OTG users.

RADAR DATA

	1		2		3		4
RAD	/	**8AN**	/	**3A**	/	5AN	/	1-12ANBS
		DATE-TIME GROUP		**MONTH**		**ELINT NOTATION**		**EMITTER NAME**

	5		6		7		8		9
/	3-10ANS	/	4-11ANS	/	4-11ANS	/	3-5ANS	/	3-7ANS
	RADIO FREQUENCY		**PULSE REPETITION INTERVAL**		**PULSE REPETITION FREQUENCY**		**PULSE WIDTH**		**SCAN RATE**

	10
/	1A
	SCAN TYPE

NOTE: SHADED FIELDS ARE MANDATORY

The RAD set is used to provide radar parametric data associated with the track described in the preceding CTC. RAD and RADB sets shall not be used in the same message.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group	M	Enter the date-time group of the ES intercept in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

RADAR DATA (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Month	M	Enter the first three letters of the month of the ES intercept, e.g., JAN, FEB, MAR. (3A)
3	ELINT Notation	C	Enter the ELINT notation designation of the emitter being reported from the NSA ELINT Parameter Limits (EPL) List, e.g., A123B. This field is mandatory if Emitter Name is not provided. (5AN)
4	Emitter Name	C	Enter the emitter name of the emitter being reported. Use the code name contained in the NSA ELINT Parameter Limits (EPL) List, e.g., FAN SONG. This field is mandatory if ELINT Notation is not provided. (1-12ANBS)
5	Radio Frequency	O	Enter the radio frequency of the emitter being reported in hertz (1-8NS + HZ), kilohertz (1-7NS + KHZ), or megahertz (1-7NS + MHZ). An optional floating decimal point is allowed, e.g., 4050KHZ, 4050.05KHZ, 4.05005MHZ. (3-10ANS)
6	Pulse Repetition Interval	O	Enter PRI followed by the pulse repetition interval in microseconds (1-8NS). An optional floating decimal point is allowed, e.g., PRI2200.505. If available, this value shall be measured rather than computed from the PRF reported in Field 7. (4-11ANS)
7	Pulse Repetition Frequency	O	Enter PRF followed by the pulse repetition frequency in pulses per second (1-8NS). An optional floating decimal point is allowed, e.g., PRF4115.505. If available, this value shall be measured rather than computed from the PRI reported in Field 6. (4-11ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

RADAR DATA (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
8	Pulse Width	O	Enter PW followed by the pulse width in microseconds (1-3NS). An optional floating decimal point is allowed, e.g., PW0.9, PW2.5, PW.9, PW2. (3-5ANS)
9	Scan Rate	O	Enter the scan rate in seconds per rotation (1-4NS + SPR) or hertz (1-5NS + HZ). An optional floating decimal point is allowed, e.g., .5SPR, 0.5SPR, 55.50HZ. (3-7ANS)
10	Scan Type	O	Enter the scan type from Table 5-3 (Scan Type Codes), e.g., A, C. (1A)

Set Examples:

```
RAD/201030Z6/JAN/A123B/FAN SONG/100KHZ/PRI200.55/PRF4987.531/PW8.5
/13.5SPR/E

RAD/241230Z2/JAN/A234B/TOP DOME/5050.2MHZ////Z
```

NOTES:

1. All users of the Contact Report message must be able to receive, decode, display, and transmit all fields of either the RAD or RADB set. The RAD set is available for those systems that have not upgraded to the RADB capability format.

2. The ELINT parameters contained in Fields 5 through 9 may not be truncated or rounded when retransmitted, except that data may be rounded in order to accommodate shorter field lengths found in other reporting formats. Data may also be rounded or truncated in order to sanitize the information being reported.

3. If the DTG field is different from its associated POS or LOB set, systems using an ELINT correlator will discard the RAD or RADB set.

EXPANDED RADAR DATA

	1		2		3		4
RADB	/	**8AN**	/	**3A**	/	5AN	/	1-15ANBS
		DATE-TIME GROUP		**MONTH**		**ELINT NOTATION**		**EMITTER NAME**

	5		6		7		8		9
/	3-10ANS	/	8-11NS	/	3-11NS	/	5-7NS	/	3-8ANS
	RADIO FREQUENCY		**PULSE REPETITION INTERVAL**		**PULSE REPETITION FREQUENCY**		**PULSE WIDTH**		**SCAN RATE**

	10
/	1-4A
	SCAN TYPE

NOTE: SHADED FIELDS ARE MANDATORY

The RADB set is used to provide radar parametric data associated with the track described in the preceding CTC set. RAD and RADB sets shall not be used in the same message.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group	M	Enter the date-time group of the ESM intercept in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)

EXPANDED RADAR DATA (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Month	M	Enter the first three letters of the month of the ES intercept, e.g., JAN, FEB, MAR. (3A)
3	ELINT Notation	C	Enter the ELINT notation designation of the emitter being reported from the NSA ELINT Parameter Limits (EPL) List, e.g., A123B. This field is mandatory if Emitter Name is not provided. (5AN)
4	Emitter Name	C	Enter the emitter name of the emitter being reported. Use the code name contained in the NSA ELINT Parameter Limits (EPL) List, e.g., FAN SONG. This field is mandatory if ELINT Notation is not provided. (1-15ANBS)
5	Radio Frequency	O	Enter the radio frequency of the emitter being reported in hertz (1-8NS + HZ), kilohertz (1-7NS + KHZ), or megahertz (1-7NS + MHZ), or gigahertz (1-7NS + GHZ). An optional floating decimal point is allowed, e.g., 4050KHZ, 4050.05KHZ, 4.05005MHZ. (3-10ANS)
6	Pulse Repetition Interval	O	Enter pulse repetition interval in microseconds. This entry must contain a decimal point, six numerals to the left of the decimal point, and at least one character to the right of the decimal point, e.g., 000209.1, 000209.0005. If available, this value shall be measured rather than computed from the pulse repetition frequency reported in Field 7. (8-11NS)
7	Pulse Repetition Frequency	O	Enter the pulse repetition frequency in pulses per second. An optional floating decimal point is allowed, e.g., 1200.505. If available, this value shall be measured rather than computed from the pulse repetition interval reported in Field 6. (3-11NS)

EXPANDED RADAR DATA (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
8	Pulse Width	O	Enter the pulse width in microseconds. This entry must contain a decimal point, one to three numerals to the left of the decimal point, and three numerals to the right of the decimal point, e.g., 22.005, 222.550. (5-7NS)
9	Scan Rate	O	Enter the scan rate in seconds per cycle (1-5NS + SPC) or hertz (1-6NS + HZ). An optional floating decimal point is allowed, e.g., .5SPC, 0.5SPC, 55.055HZ. (3-9ANS)
10	Scan Type	O	Enter the scan type from Entry List 92 (Scan Types), e.g., CIRC. (1-4A)

Set Examples:

```
RADB/201030Z6/JAN/A123B/FAN SONG/100KHZ/000200.55/4987.531/222.001
/13.5SPC/CCON

RADB/251230Z3/JAN/A123B/FAN SONG/100KHZ///13.5SPC/CCON
```

NOTES:

1. All users of the Contact Report message must be able to receive, decode, display, and transmit all fields of either the RAD or RADB set. The RADB set permits greater precision when reporting ELINT parameters.

2. The ELINT parameters contained in Fields 5 through 9 may not be truncated or rounded when retransmitted, except that data may be rounded in order to accommodate shorter field lengths found in other reporting formats. Data may also be rounded or truncated in order to sanitize the information being reported.

EXPANDED RADAR DATA (Continued)

3. If the DTG field is different from its associated POS or LOB set, systems using an ELINT correlator will discard the RAD or RADB set.

RELATIVE ARC

	1		2		3		4
RARC	/	**1-2N**	/	1A	/	1-2N	/	1A
		LINE TYPE		**LINE COLOR**		**FILL TYPE**		**FILL COLOR**

	5		6		7		8		9
/	4-7ANS	/	3-9ANS	/	**3-9ANS**	/	3-9ANS	/	4-7ANS
	BEARING		**RANGE**		**SEMI-MAJOR AXIS**		**SEMI-MINOR AXIS**		**ORIENTATION**

	10		11
/	4-7ANS	/	4-7ANS
	STARTING BEARING		**ENDING BEARING**

NOTE: SHADED FIELDS ARE MANDATORY

The RARC set is used to define arcs, circles or ellipses at a position relative to the track described in the preceding ORGIN set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Line Type	M	Enter the type of line from Table 5-5 (Line Types), e.g., 1, 3. (1-2N)
2	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., A, C. If line color is not provided, a default value of A (white) will be assumed. (1A)

RELATIVE ARC (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Fill Type	O	Enter the area fill type from Table 5-7 (Area Fill Types), e.g., 0, 3, 6. If fill type is not provided, a default value of 0 (no fill) will be assumed. (1-2N)
4	Fill Color	O	Enter the fill color from Table 5-6 (Color Codes), e.g., A, D, I. (1A)
5	Bearing	O	Enter the bearing from the origin to the center of the arc segment (000-360 or 000.0-360.0) in degrees true (T) or relative (R). An optional checksum (0-9) may be used, e.g., 035T, 035R8, 035.5T, 035.5T3. A relative bearing indicates that the overlay is slaved to the track' s current heading, causing the overlay to reorient relative to the origin with any heading change. The default value for this field is 000T. (4-7ANS)
6	Range	O	Enter the range, in nautical miles (0-999999), of the center of the arc, circle or ellipse from the track specified in the ORGIN set. Use up to 6 characters, with optional floating decimal point, followed by "NM" and an optional checksum (0-9), e.g., 00005NM, 0.0005NM5, 45NM9, 1000.5NM. (3-9ANS)
7	Semi-Major Axis	M	Enter the semi-major axis, in nautical miles, of the arc, circle or ellipse (0-9999.9; use up to 6 characters, with optional floating decimal point and optional leading zeros), followed by "NM" and an optional checksum (0-9), e.g., 0.5NM, .5NM, 0.5NM5, 225.00NM, 256.00NM3. When the semi-major axis and semi-minor axis are equal, the arc is a circle or portion of a circle. Systems implementing a fixed overlay may use this field as a radius. (3-9ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

RELATIVE ARC (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
8	Semi-Minor Axis	O	Enter the semi-minor axis in nautical miles of the arc, circle or ellipse using the same format as Field 7, e.g., 7NM, 123.5NM, 1213.9NM6. The default value for this is the same value as Field 7 (i.e., the arc is a circle or portion of a circle, with the radius defined in Field 7). (3-9ANS)
9	Orientation	C	Enter the true bearing of the semi-major axis (000-360 or 000.0-360.0) followed by "T" (true) and an optional checksum (0-9), e.g., 035T, 035T8, 035.5T, 035.5T3. The default value for this field is 000T. This field is mandatory if Field 8 is used and contains a lesser value than Field 7. (4-7ANS)
10	Starting Bearing	O	The arc is drawn clockwise from the starting bearing to the ending bearing. To draw a full circle or full ellipse the starting and ending bearings must be equal or be omitted. Enter the starting bearing of the arc in degrees true (000-360 or 000.0-360.0) followed by "T" (true) and an optional checksum (0-9), e.g., 035T, 035T8, 035.5T, 035.5T3. The default value for this field is 000T. (4-7ANS)
11	Ending Bearing	C	Enter the ending bearing of the arc in degrees true (000-360 or 0000-360.0) followed by "T" (true) and an optional checksum (0-9), e.g., 035T, 035T8, 035.5T, 035.5T3. The default value for this field is the same as Field 10. This field is mandatory if Field 10 is used. (4-7ANS)

Set Examples:

```
RARC/1/B/2/C/045T9/100NM1/50NM5/45NM9/023.5T0
```
Ellipse

RELATIVE ARC (Continued)

`RARC/2/I/3/G/045T9/100NM1/50.5NM0///010T1/032T5`	Portion of a circle
`RARC/3/C/2/C/045T9/100NM1/50.5NM0`	Full circle

REFUGEES

	1	2	3	4
REFUG	/ **8AN**	/ **3A**	/ **1-4N**	/ 2A
	DATE-TIME GROUP (DTG)	**MONTH**	**NUMBER OF REFUGEES**	**COUNTRY CODE**

	5
/	1-20ANBS
	SUBGROUP

NOTE: SHADED FIELDS ARE MANDATORY

The REFUG set is used to report the number of refugees in the care of the unit reported in the preceding JUNIT set or in the care of the track reported in the preceding CTC set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group (DTG)	M	Enter the date-time group of the reported refugee status for the unit reported in the preceding JUNIT set or for the track reported in the preceding CTC set in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
2	Month	M	Enter the first three letters of the month of the reported refugee status, e.g., JAN, FEB, MAR. (3A)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

REFUGEES (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Number of Refugees	M	Enter the number of refugees held by the unit reported in the preceding JUNIT set or by the track reported in the preceding CTC set, e.g., 5, 20. (1-4N)
4	Country Code	O	Enter the country code of origin for the refugees reported from Entry List 59 (Country Codes), e.g., RW, YO. (2A)
5	Subgroup	O	When necessary, enter distinguishing terminology to identify the subgroup of the refugees within the country specified in Field 4, e.g., SERB, CROAT. (1-20ANBS)

Set Examples:

```
REFUG/012115Z0/FEB/38/YO/SERB

REFUG/082315Z9/FEB/20/YO/CROAT
```

REPLY

	1
REPLY /	**5-6N**
	REQUEST NUMBER

NOTE: SHADED FIELD IS MANDATORY

The REPLY set is used to initiate and identify the response to a specific QUERY message. The response consists of the subsequent lines of data in a system-specific format.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Request Number	M	Enter the request number (00000-99999 or 000000-999999), e.g., 00011, 98999, 989999. This number will identify the query that initiated this response. (5-6N)

Set Example:

```
REPLY/12345
```

RIGGING

		1		2		3		4
RIG	/	3AN	/	5-13ANBS	/	7A	/	1-11A
		APPEARANCE GROUP		HULL PROFILE		STERN TYPE		UPRIGHT SEQUENCE

	5		6		7
/	1-6N	/	3-6AN	/	1-13ANBS
	TONNAGE		LENGTH		COMMENTS

The RIG set is used to describe merchant ships when unique attributes are not known.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Appearance Group	O	Enter the appearance group code of the specified vessel from Entry List 1053 (Appearance Group Codes), e.g., GP1, GP2, GP3. (3AN)
2	Hull Profile	O	Enter the hull profile code from Entry List 1080 (Hull Profile Codes), e.g., FLUSH, RAISED 1-L2-3. (5-13ANBS)
3	Stern Type	O	Enter the stern type, either "COUNTER" or "CRUISER". (7A)
4	Upright Sequence	O	Enter the upright sequence using "M" for Mast, "F" for Funnel, "K" for Kingpost, "C" for Cranes, and "G" for Gantry, e.g., MKCGMFK. (1-11A)
5	Tonnage	O	Enter the estimated gross tonnage (0-999999), e.g., 2500. (1-6N)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

RIGGING (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
6	Length	O	Enter the estimated length in feet (1-9999) followed by "FT", e.g., 1200FT. (3-6AN)
7	Comments	O	Enter unformatted comments to provide information not covered in previous fields. (1-13ANBS)

Set Example:

```
RIG/GP2/RAISED 1/CRUISER/MKKGMFK/45000/480FT
```

NOTE: Processing RIG sets contained in Contact Report messages is optional.

RELATIVE LINE

		1		2		3		4
RLINE	/	**1-2N**	/	1N	/	1A	/	**4-7ANS**
		NUMBER OF POINTS		**LINE TYPE**		**LINE COLOR**		**BEARING**

	5		2N+4		2N+5
/	**3-9ANS**	/	1N	/	1A
	RANGE		**FILL TYPE**		**FILL COLOR**

NOTE: SHADED FIELDS ARE MANDATORY

NOTE: FIELDS UNDER BRACKET ARE REPEATABLE AS A GROUP

The RLINE set is used to define line segment(s) between points located relative to the track described in the preceding ORGIN set. Closed figures can be reported by ensuring that the first and last points are equal. Up to 99 points may be used to define 98 line segments per RLINE set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Number of Points	M	Enter the number of points (2-99) utilized to draw a line, e.g., 2,10. If graphics structure is a closed figure, the position of the first and last points must be the same. (1-2N)
2	Line Type	O	Enter the type of line from Table 5-5 (Line Types), e.g., 1, 3. If line type is not provided, a default value of 0 (solid line) will be assumed. (1N)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

RELATIVE LINE (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., B, C. If line color is not provided, a default value of A (white) will be assumed. (1A)
4	Bearing	M,R	Enter the bearing (000-360 or 000.0-360.0) from the track in the ORGIN set to the first point followed by "T" (true) or "R" (relative) and an optional checksum (0-9), e.g., 002T, 032.5R, 109.5T5. A relative bearing indicates that the overlay is slaved to the contact's current heading, causing the overlay to reorient relative to the origin. (4-7ANS)
5	Range	M,R	Enter the range, in nautical miles (0-999999), from the track in the ORGIN set to the first point. Use up to 6 characters, with optional floating decimal point, followed by NM and an optional checksum (0-9), e.g., 12.5NM, 12.5NM8. (3-9ANS)
2N+4 (See Note 2)	Fill Type	O	Enter the area fill type from Table 5-7 (Area Fill Types), e.g., 0, 3, 6. If fill type is not provided, a default value of 0 (no fill) will be assumed. The fill type and fill color fields, if used, will immediately follow the last bearing/range pair for the RLINE. (1N)
2N+5 (See Note 2)	Fill Color	O	Enter the fill color from Table 5-6 (Color Codes), e.g., A, D, I. (1A)

Set Example:

```
RLINE/2/1/A/270R9/50NM5/005R5/40.5NM9/0/A
```

NOTES:

1. The total number of repeatable bearing/range pairs must equal the number of points in Field 1.
2. N = number of points in Field 1.

REMARKS

	1
RMKS	/ **1-64ANBS**
	FREE-TEXT

NOTE: SHADED FIELD IS MANDATORY

The RMKS set is used to provide free-text remarks which amplify the information contained in preceding sets. The RMKS set may only be used where indicated by the individual message structures in Chapters 3 and 7. In messages where the RMKS set is repeatable, a maximum of four RMKS sets may be used.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Free-Text	M	Maximum field length is 64 characters. If more than one line of remarks is required, the set identifier (RMKS) and field marker (/) is needed at the beginning of each line. (1-64ANBS)

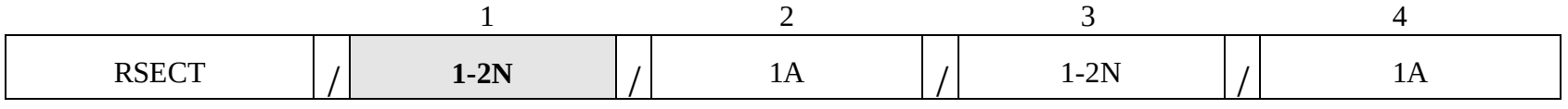
Set Examples:

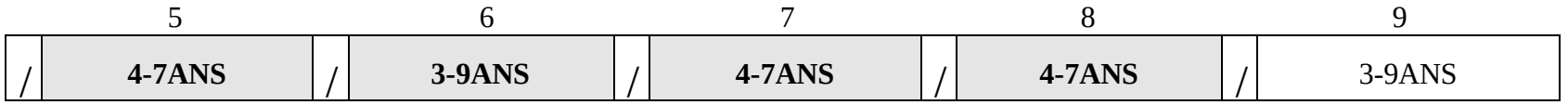
```
RMKS/CONTACT SIGHTED WHILE CONDUCTING FLIGHT OPS IN SOCAL OPAREA.

RMKS/UP TO FOUR LINES OF FREE-TEXT INFORMATION MAY BE ENTERED.

RMKS/A NEW SET IDENTIFIER AND FIELD MARKER MUST INITIATE

RMKS/EACH LINE.
```

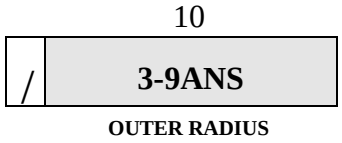
REMARKS (Continued)

NOTE: All users of the AOI Filter, Contact Report, Gridded Field, Group Track, Overlay 1 & 2, and JUNIT Report messages must be able to receive, display, and transmit up to four RMKS sets.

RELATIVE SECTOR







NOTE: SHADED FIELDS ARE MANDATORY

The RSECT set is used to define a sector at a position relative to the track described in the preceding ORGIN set. A sector is the area between an outer circle (or circle segment) and an inner circle (or circle segment) or point.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Line Type	M	Enter the type of line from Table 5-5 (Line Types), e.g., 1,3. (1-2N)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

RELATIVE SECTOR (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., B,C. If line color is not provided, a default value of A (white) will be assumed. (1A)
3	Fill Type	O	Enter the area fill type from Table 5-7 (Area Fill Types), e.g., 0, 3, 6. If fill type is not provided, a default value of 0 (no fill) will be assumed. (1-2N)
4	Fill Color	O	Enter the fill color from Table 5-6 (Color Codes), e.g., A, D, I. (1A)
5	Bearing from Origin to Sector Center	M	Enter the bearing (000-360 or 000.0-360.0) from the origin to the center of the sector, followed by "T" (true) or "R" (relative) and an optional checksum (0-9), e.g., 002T, 032.5R, 109.5T5. A relative bearing indicates that the overlay is slaved to the contact's current heading, causing the overlay to reorient relative to the origin sector center with any heading change. (4-7ANS)
6	Range from Origin to Sector Center	M	Enter the range in nautical miles (0-999999) from the origin to the center of the sector. Use up to 6 characters, with optional floating decimal point, followed by "NM" and an optional checksum (0-9), e.g., .00005NM, .0005NM5, 45NM9, 1000.5NM. (3-9ANS)
7	Starting Bearing	M	The sector is drawn clockwise from the starting bearing to the ending bearing. If the starting and ending bearings are the same the sector will be drawn as a full circle. Enter the starting bearing of the sector using the same format as Field 5. A relative bearing indicates that the overlay is slaved to the contacts' current heading, causing the overlay to rotate with any heading changes. (4-7ANS)
8	Ending Bearing	M	Enter the ending bearing of the sector using the format as Field 5. (4-7ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

RELATIVE SECTOR (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
9	Inner Radius	O	Enter the minimum distance in nautical miles to starting point. The default value for this field is 0NM. Use the same format as Field 6. (3-9ANS)
10	Outer Radius	M	Enter the maximum distance in nautical miles to starting point. Entry must be larger than the value in Field 9. Use the same format as Field 6. (3-9ANS)

Set Example:

```
RSECT/1/B/1/D/270R9/150NM6/000R0/045R9/100NM1/200NM2
```

RELATIVE SYMBOL

	1		2		3		4
RSYMB	/ 1-2N	/		/	1A	/	**4-7ANS**
	SYMBOL SIZE		**SPARE**		**LINE COLOR**		**BEARING**

	5		6		7		8		9
/	**3-9ANS**	/	**3N**	/	2N	/	4-7ANS	/	1-21ANBS
	RANGE		**SYMBOL**		**MODIFIER**		**ORIENTATION**		**LABEL**

NOTE: SHADED FIELDS ARE MANDATORY

The RSYMB set is used to place a symbol at a position relative to the track described in the preceding ORGIN set. These symbols are defined in Table 5-8.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Symbol Size	O	Enter the character/symbol size from Table 5-9 (Character and Symbol Size Codes), e.g., 5,10,50. If character/symbol size is not provided, a default value of 5 (5 vertical pixels) will be assumed. (1-2N)
2	Spare	O	The spare field does not convey any data. This field is now used as a position filler.
3	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., B, C. If line color is not provided, a default value of A (white) will be assumed (See Note). (1A)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

RELATIVE SYMBOL (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Bearing	M	Enter the bearing in degrees (000-360 or 000.0-360.0) from the origin to the symbol location followed by "T" (true) or "R" (relative) and an optional checksum (0-9), e.g., 002T, 032.5R, 109.5T5. A relative bearing indicates that the overlay is slaved to the contact's current heading, causing the overlay to reorient relative to the origin with any heading change. (4-7ANS)
5	Range	M	Enter the range in nautical miles (0-9999.9) from the point of origin that the symbol is to be located. Use up to 6 characters, with optional floating decimal point, followed by "NM" and an optional checksum (0-9), e.g., 3NM, 3.5NM8, 125NM, 127.3NM, 1335NM2, 1335.5NM6. (3-9ANS)
6	Symbol	M	Enter the basic symbol code from Table 5-8 (Basic Symbol Codes), e.g., 006, 120. (3N)
7	Modifier	O	Enter the symbol modifier code from Table 5-10 (Symbol Modifier Codes), e.g., 02, 08. (2N)
8	Orientation	O	Enter the bearing of the symbol orientation using the same format as Field 4. A relative bearing indicates that the overlay is slaved to the contact's current heading, causing the overlay to rotate with any heading change. The default value for this field is 000T. (4-7ANS)
9	Label	O	Enter the free-text label that is to be displayed by receiving TDPs. Slants (/) are not allowed, e.g., INBOUND POINT, SKUNK BRAVO. (1-21 ANBS)

Set Example:

```
RSYMB/10///265T/225NM/029///TYPHOON MONA
```

NOTE: Field 3 is not used if Field 6 is equal to 000-032, 038, 039, 100, or 595-646.

REAL TIME DATA

		1		2
RTD	/	1A	/	3-4AN
		TACTICAL SIGNIFICANCE INDICATOR		REPORTING RESPONSIBILITY

The RTD set is used to inform a Coordinator of the reporting responsibility or tactical significance of a track reported by AEGIS C&D. This set is used primarily for coordination between AEGIS C&D and TWCS platforms or between a non-AEGIS C&D Coordinator and its AEGIS/TWCS participants.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Tactical Significance Indicator	C	Enter the Tactical Significance Indicator (TSI) of the CDS track from the following list. This field is mandatory if Field 2 is not used. (1A): Y - Track is tactically significant N - Delete tactical significance Null (no entry, e.g., RTD//Field 2) - Track is not tactically significant
2	Reporting Responsibility	C	Enter the system which has responsibility for reporting and correlation from the following list. This field is mandatory if Field 1 is not used (i.e., does not contain a Y or N). (3-4AN): CDS - Organic track held by an OTH system L11 - Link-11 track passively received by an OTH system OTH - OTH track OTHM - OTH track held by an organic system, e.g., C&D

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

REAL TIME DATA (Continued)

Set Examples:

```
RTD/Y/CDS

RTD//OTH
```

NOTE: Processing of RTD sets contained in Contact Report messages is optional.

RELATIVE TEXT

	1		2		3		4
RTEXT	/	1-2N	/	1N	/	1A	/	4-7ANS
		CHARACTER SIZE		FONT		COLOR		BEARING

	5		6		7
/	3-9ANS	/	**1-30ANBS**	/	4-7ANS
	RANGE		TEXT		ORIENTATION

NOTE: SHADED FIELD IS MANDATORY

The RTEXT set is used to place a line of text at a position relative to the track described in the preceding ORGIN set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Character Size	O	Enter the character/symbol size from Table 5-9 (Character and Symbol Size Codes), e.g., 5, 10, 50. If character/symbol size is not provided, a default value of 5 (vertical pixels) will be assumed. (1-2N)
2	Font	O	Enter the character font from Table 5-11 (Character Font Codes), e.g., 2, 3. If character font is not provided, a default value of 1 (standard font, upper case) will be assumed. (1N)
3	Color	O	Enter the color code of the specified text from Table 5-6 (Color Codes), e.g., A, B, K. If color code is not provided, a default value of A (white) will be assumed. (1A)

RELATIVE TEXT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Bearing	O	Enter the bearing (000-360 or 000.0-360.0) from the origin to the start of text in degrees true (T) or relative (R). An optional checksum (0-9) may be used, e.g., 002T, 032.5R, 109.5T5. The default value for this field is 090T. A relative bearing indicates that the overlay is slaved to the contact's current heading, causing the overlay to reorient relative to the origin with any heading change. (4-7ANS)
5	Range	O	Enter the range in nautical miles (0-999999) from the origin to the text location. Use up to six characters, with optional floating decimal point, followed by "NM" and an optional checksum, e.g., .00005NM, .0005NM5, 45NM9, 1000.5NM. The default value for this field is 0NM. (3-9ANS)
6	Text	M	Enter the free-text that is to be displayed by receiving TDPs. Slants (/) are not allowed, e.g., AWACS STA.1. (1-30ANBS)
7	Orientation	O	Enter the bearing (000-360 or 000.0-360.0) of text orientation in degrees true (T) or relative (R), or enter an optional tenths of a degree followed by "T" or "R". An optional checksum may be used (0-9), e.g., 002T, 032.5R, 109.5T5. The default value for this field is 090T. A relative bearing indicates that the overlay is slaved to the contact's current heading, causing the overlay to rotate with any heading change. (4-7ANS)

Set Example:

```
RTEXT/20/1/C/150T6/75NM2/CAP STATIONING PLAN/050R5
```

SATELLITE ELEMENT

	1	
SAT	/	**65NS**
		EPHEMERIS DATA

NOTE: SHADED FIELD IS MANDATORY

The SAT set is used to report satellite ephemeris data and is repeated three times for each satellite reported.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Ephemeris Data	M	Enter the ephemeris data is provided by the Naval Space Surveillance Center in Charlie element format. (65NS)

Set Example:

```
SAT/02222.3332222.3443333.44554.5555555.6666666.7777777.888888920103
```

SATELLITE DATABASE

		1
SATDB	/	**1-10ANBS**
		DATABASE NAME

NOTE: SHADED FIELD IS MANDATORY

The SATDB set is used to identify the satellite database to which the satellite Charlie elements belong.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Database Name	M	Enter the satellite database name, e.g., BLUE, RED, WHITE, ORANGE, OTHER. (1-10ANBS)

Set Examples:

```
SATDB/BLUE

SATDB/WHITE
```

SCREEN KILO

		1		2		3		4
SCRNK	/	**1-40ANBS**	/	**2-3A**	/	4AN	/	1-3N
		NAME		**UNITS**		**OFFSET BEARING**		**OFFSET RANGE**

	5
/	1-30ANBS
	REMARKS

NOTE: SHADED FIELDS ARE MANDATORY

The SCRNK set is used to identify a SCREEN KILO formation.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Name	M	Enter the SCREEN KILO formation name, e.g., ASW SURVEILLANCE, SINGAPORE TRANSIT. (1-40ANBS)
2	Units	M	Enter the units to be used when reporting distances associated with the SCREEN KILO formation, e.g., Offset Range (Field 3 SCRNKILO), Inner Radius (Field 4 SKUNIT), and Outer Radius (Field 5 SKUNIT). Enter "NM" for nautical miles, "KYD" for kiloyards, or "KM" for kilometers. (2-3A)
3	Offset Bearing	O	Enter the true bearing with leading zeroes (000-360) of the SCREEN KILO offset bearing from PIM followed by "T" (true), e.g., 005T, 120T. (4AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

SCREEN KILO (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Offset Range	O	Enter the SCREEN KILO offset range from PIM. The units are determined by Field 2. Enter 1-3 digits (0-999), e.g., 5, 120. (1-3N)
5	Remarks	O	Enter unformatted text pertaining to the SCREEN KILO formation. (1-30ANBS)

Set Examples:

```
SCRNK/PR OPS/NM/020T/10

SCRNK/SINGAPORE TRANSIT/KYD
```

SATELLITE DATA

	1		2		3		4
SDATA	/	**3AN**	/	**1-8ANS**	/	3-8ANS	/	1A
		TYPE		**FIELD OF VIEW**		**INNER RANGE**		**SENSOR VIEW**

	5		6
/	1-12ANBS	/	1-30ANBS
	STATUS		**REMARKS**

NOTE: SHADED FIELDS ARE MANDATORY

The SDATA set is used to provide data on the satellite described in the following SAT line set triplet.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Type	M	Enter the satellite type assigned by the Naval Space Surveillance Center. (3AN)
2	Field of View	M	Enter the satellite field of view in nautical miles up to 4 digits with optional tenths decimal place followed by "NM" or angular field of view as "D" followed by the angle with leading zeroes with optional tenths decimal place (D000-D360 or D000.0-D360.0) or enter "H" for horizon-to-horizon, e.g., 1250.8NM, 45NM, D045, D078.9, H. (1-8ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

SATELLITE DATA (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Inner Range	O	Enter the inner range of field of view in Field 2 in nautical miles (0-9999) with optional tenths decimal place followed by "NM", e.g., 23.5NM, 1234.6NM. (3-8ANS)
4	Sensor View	O	Enter "R" for right, "L" for left, and "B" for both. (1A)
5	Status	O	Enter the status of the satellite, e.g., ACTIVE, DEORBIT, STANDBY, DEAD. (1-12ANBS)
6	Remarks	O	Enter unformatted text pertaining to the satellite. (1-30ANBS)

Set Examples:

```
SDATA/EL3/123NM

SDATA/SAR/D030.5

SDATA/COS/H
```

SECURITY

		1		2
SEC	/	**6-12AB**	/	1-52ANBS
		CLASSIFICATION		**AMPLIFYING INFORMATION**

NOTE: SHADED FIELD IS MANDATORY

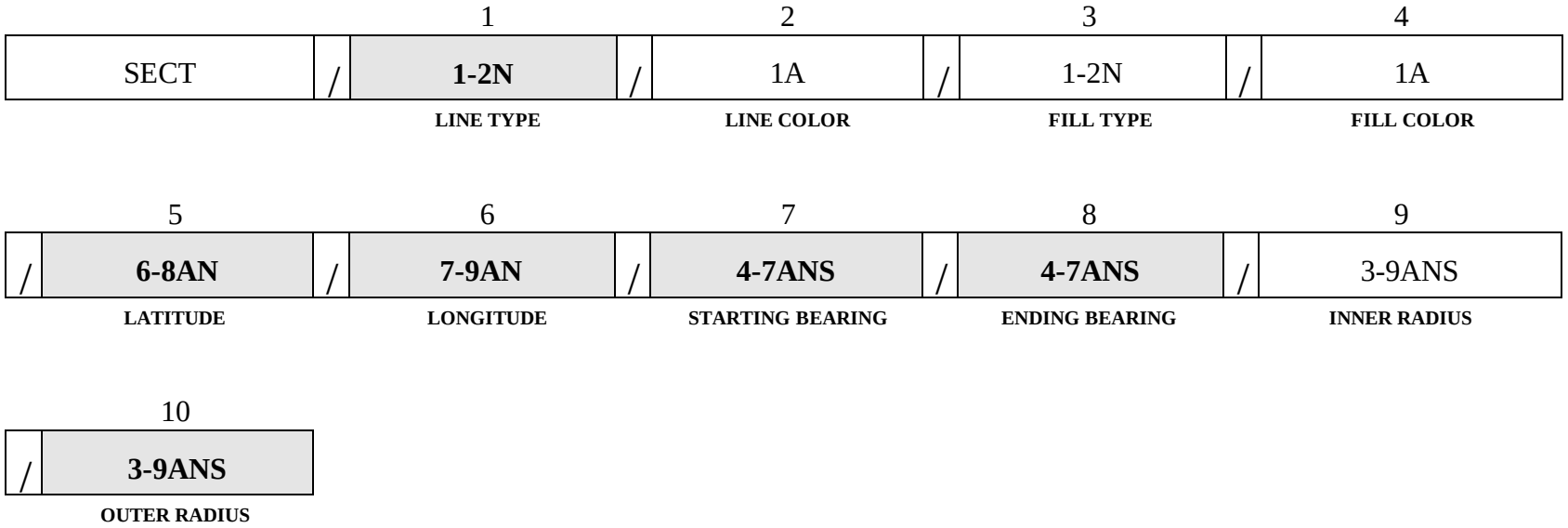
The SEC set is used to indicate the security classification of messages that are sent point to point and thus do not contain the security classification markings required by JANAP 128.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Classification	M	Enter the security classification assigned to this message, e.g., UNCLASSIFIED, CONFIDENTIAL, SECRET, TOP SECRET. (6-12AB)
2	Amplifying Information	O	Used to amplify or supplement the Classification field, e.g., NOFORN. (1-52ANBS)

Set Examples:

```
SEC/UNCLASSIFIED

SEC/CONFIDENTIAL/NOFORN
```

SECTOR



NOTE: SHADED FIELDS ARE MANDATORY

The SECT set is used to define a sector at a fixed geographic position. A sector is the area between an outer circle (or circle segment), and an inner circle (or circle segment) or point.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Line Type	M	Enter the type of line from Table 5-5 (Line Types), e.g., 2, 4. (1-2N)
2	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., B, C, I. If line color is not provided, a default value of A (white) will be assumed. (1A)

SECTOR (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Fill Type	O	Enter the area fill type from Table 5-7 (Area Fill Types), e.g., 0, 3, 6. If fill type is not provided, a default value of 0 (no fill) will be assumed. (1-2N)
4	Fill Color	O	Enter the fill color from Table 5-6 (Color Codes), e.g., A, D, I. (1A)
5	Latitude	M	Enter the latitude of the center of the sector in degrees (00-90), and minutes (00-59), optional seconds (00-59), followed by the hemisphere (N/S) and checksum (0-9). The maximum value is 90 (i.e., 9000) degrees, e.g., 9000N9, 853000N6, 3040N7, 8959S1, 3235S3. (6-8AN)
6	Longitude	M	Enter the longitude of the center of the sector in degrees (000-180), minutes (00-59), optional seconds (00-59), followed by the hemisphere (E/W) and checksum (0-9). The maximum value is 180 (i.e., 18000) degrees, e.g., 18000W9, 1800000W9, 13040E8, 00000E0, 17959E1. (7-9AN)
7	Starting Bearing	M	The sector is drawn clockwise from the starting bearing to the ending bearing. If the starting and ending bearings are the same, the sector will be drawn as a full circle. Enter the starting bearing (000-360 or 000.0-360.0) of the sector from the point specified in Fields 5 and 6 in degrees true (T), an optional tenths of a degree, and an optional checksum (0-9), e.g., 035T, 035T8, 035.5T, 035.5T3. (4-7ANS)
8	Ending Bearing	M	Enter the ending bearing using the same format as Field 7. (4-7ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

SECTOR (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
9	Inner Radius	O	Enter the distance in nautical miles (0-999999) from the point specified in Fields 5 and 6 to the inner edge of the sector. Use up to 6 characters, with optional floating decimal point, followed by "NM" and an optional checksum (0-9), e.g., .00005NM, 0.0005NM5, 45NM9, 1000.5NM. The default value for this field is 0NM. (3-9ANS)
10	Outer Radius	M	Ending range from origin point. Use the same format as Field 9. This value must be larger than Field 9. (3-9ANS)

Set Examples:

```
SECT/1/C/1/D/3000N3/12000W3/000T0/045T9/20NM2/100NM1

SECT/1/C/1/D/2000N2/15000W6/000T0/050T5//100NM1
```

SOURCE TRANSMIT SEQUENCE

	1	2	3	4
SEQ /	**8-12ANS** /	**4-24ANB** /	**2N** /	**2N**
	DATE-TIME GROUP	**SEQUENCE NAME**	**STARTING WAVETRAIN NUMBER**	**NUMBER OF WAVETRAINS**

	5	6
/	**1N** /	**1N**
	ABORT FLAG	**ACOUSTIC COMMUNICATIONS**

NOTE: SHADED FIELDS ARE MANDATORY

The SEQ set is used to report transmit sequence being scheduled. Additional information about the transmission sequence is described in this set. All ping users must be able to receive, decode, store, and transmit the data in Fields 1 through 6.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group	M	Enter the date-time group of ping sequence start in days (01-31), hours (00-23), minutes (00-59), optional seconds (00-59) and tenths of seconds (.1-.9), followed by the time zone (Z) and checksum (0-9), e.g., 01211534.5Z2. (8-12ANS)
2	Sequence Name	M	Enter the sequence name of the ping sequence being reported, e.g., JOHN SEG, SHALLOW WATER 1. (4-24ANB)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

SOURCE TRANSMIT SEQUENCE (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Starting Wavetrain Number	M	Enter the starting number of the wavetrain in the wavetrain sequence which will be the first transmitted (01-99), e.g., 05, 22. (2N)
4	Number of Wavetrains	M	Enter the number of wavetrains and stored order being transmitted in sequence. The number reflects the number of identifiers that follow in the wavetrain identification in sequence (WTN) (01-99), e.g., 02, 76, 88. (2N)
5	Abort Flag	M	Enter the status indicator for the Low Frequency Active (LFA) transmission indicating if correct transmission is a normal transmission sequence or if it was manually or automatically aborted (0-5). (1N) 0 = Null 1 = Transmit Normal 2 = Low Frequency Transmit Sequence Abort 3 = Manual Abort 4 = Unassigned 5 = Unassigned
6	Acoustic Communications	M	Enter the flag indicating whether acoustic communications is ON or OFF (0-1). (1N) 0 = Off 1 = On

Set Examples:

```
SEQ/01211534.5Z2/JOHN SEQ/21/45/1/1

SEQ/02145656.5Z4/SHALLOW WATER/02/12/2
```

SIGNA AMPLIFICATION

		1
SIGAM	/	**1-63ANBS**
		FREE-TEXT

NOTE: SHADED FIELD IS MANDATORY

The SIGAM set is used to provide amplifying free-text information for the acoustic data contained in the preceding SIGNA set. Up to four SIGAM sets are allowed per SIGNA set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Free-Text	M	Maximum field length is 63 characters. If more than one SIGAM line is required, the set identifier (SIGAM) and field marker (/) is needed at the beginning of each line. (1-63ANBS)

Set Examples:

```
SIGAM/SIGNAL SOURCE CAME FROM DOPPLER CHANGES.

SIGAM/SIGNAL HARMONICS CHANGE WITH DEPTH. DOES NOT HAVE

SIGAM/A STABLE TPK. CONTACT MAY BE INVOLVED IN AN EXERCISE

SIGAM/WHICH AFFECTS TONALS.
```

SIGNATURE

	1		2		3		4
SIGNA	/	**1-15ANBS**	/	**3-10ANS**	/	**1-22NS**	/	1-4NS
		SOURCE		**FUNDAMENTAL FREQUENCY**		**HARMONICS**		**RPM**

	5		6		7		8		9
/	1-5NS	/	**8AN**	/	**3A**	/	2-6AN	/	4-13AB
	TURNS PER KNOT		**DATE-TIME GROUP**		**MONTH**		**ACOUSTIC SENSOR CODE**		**DETECTION STATUS**

NOTE: SHADED FIELDS ARE MANDATORY

The SIGNA set is used to report significant acoustic data observed on the track described in the preceding CTC set at the time noted in Fields 6 and 7.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Source	M	Source codes are promulgated separately in OPNAVINST S3431.3 (series). The purpose of the S3431.3 is to promulgate source codes for use with ASW reports submitted in the Maritime Reporting System, NWP 1-03.40. Messages containing source code information shall not be classified lower than SECRET. (1-15ANBS)
2	Fundamental Frequency	M	Enter the fundamental frequency (1-8NS, floating decimal point permitted) of the source being reported followed by "HZ" (hertz), e.g., 1HZ, 123456.5HZ, 1234.5HZ, 123.45HZ. (3-10ANS)

SIGNATURE (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Harmonics	M	Enter a list of harmonics in descending order of predominance using 1-2 digit combinations separated by commas, e.g., 8,12,4. (1-22NS)
4	RPM	O	Enter the revolutions (1-4 digits, decimal point permitted) per minute (RPM) of the source being reported, e.g., 40, 60.8, 105. (1-4NS)
5	Turns Per Knot	O	Enter the turns per knot (1-5 digits, decimal point permitted) of the source being reported, e.g., 8, 10, 10.2, 8.5, 999.5. (1-5NS)
6	Date-Time Group	M	Enter the date-time group of the current signature data and/or the end of the summary period. Enter the date-time group in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
7	Month	M	Enter the month of the current signature data and/or the end of the summary period. Enter the first three letters of the month, e.g., JAN, FEB, MAR. (3A)
8	Acoustic Sensor Code	O	Enter the sensor code of the detecting acoustic sensor from Entry List 1104 (Sensor Codes), e.g., VDSACT, SONACT. (2-6AN)
9	Detection Status	O	Enter the detection status of the acoustic signature from Table 5-20 (Detection Status Codes), e.g., GAIN, LOSS, ABRUPT. (4-13AB)

Set Example:

```
SIGNA/XXX/123.45HZ/8,10,4/88.5/10.2/121000Z4/OCT/YYY/GAIN
```

SPEED OF INTEREST

		1		2
SPDOI	/	**2-5AN**	/	**2-5AN**
		SPEED OF INTEREST 1		**SPEED OF INTEREST 2**

NOTE: SHADED FIELDS ARE MANDATORY

The SPDOI set is used to define speeds of interest. This serves as a filter for the automatic reporting of targets detected by ROTHR. A target meets the criteria of this filter if its speed is between the two speeds specified by this set. It is then a candidate for automatic reporting by ROTHR (the Direction of Interest filter criteria may also have to be met).

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Speed of Interest 1	M	Enter the first speed of interest in knots (0-9999) followed by K, e.g., 400K, 1800K. (2-5AN)
2	Speed of Interest 2	M	Enter the second speed of interest in knots (0-9999) followed by K, e.g., 400K, 1800K. (2-5AN)

Set Example:

```
SPDOI/450K/600K
```

SOURCE PARAMETERS

	1		2		3		4
SRC	/	**3N**	/	**3N**	/	4AN	/	**2N**
		SOURCE DEPTH		**SOURCE LEVEL**		**ELEMENT OUTAGE**	**NUMBER OF STEERING ANGLES**

	5
/	**3-5ANS**
	STEERING ANGLES

NOTE: SHADED FIELDS ARE MANDATORY

NOTE: FIELD UNDER BRACKET IS REPEATABLE

The SRC set is used to transfer information concerning the active source used by the environmental community. All ping users must be able to receive, decode, store, and transmit the data in Fields 1 through 5.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Source Depth	M	Enter the active source depth as determined by the source ship deployment of the source in feet (000-999), e.g., 050, 100, 200. (3N)
2	Source Level	M	Enter the source level being radiated by the source in decibels (000-127). (3N)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

SOURCE PARAMETERS (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Element Outage	O	Enter the identification and number of source elements experiencing outages encoded in hexadecimal (0000-FFFF, each character is 0-9 or A-F), e.g., 01FA. (4AN)
4	Number of Steering Angles	M	Enter the number of steering angles the source sequence will follow. A minimum of one and a maximum of 20 steering angles can be in a sequence (01-20). (2N)
5	Steering Angles	M,R	Enter the number of steering angles the sourœ elements are being steered and presented in order of execution in sequence. Minimum of one and a maximum of 20 steering angles can be in a sequence. 00 = No steering angles and all elements are at 0 degrees (horizontal); (-) indicates steer below horizontal. No hyphen indicates steer above horizontal (-45.0 to 0.0 to 45.0), e.g., 0.0, 43.5, -21.4. (3-5ANS)

Set Examples:

```
SRC/350/054/01FA/01/42.3

SRC/295/113/04EB/03/-40.4/23.1/15.7
```

STATUS REQUEST

	1		2		3		4
STAT	/	**3-4A**	/	3A	/	3A	/	4A
		SURVEILLANCE TYPE		**EXTENDED COVERAGE AREA**		**EFFECTIVE SURVEILLANCE AREA**		**UTILIZATION**

	5		6
/	5A	/	5A
	TASK STATUS		**DIR STATUS**

NOTE: SHADED FIELD IS MANDATORY

The STAT set is used to request the status of ROTHR for the data indicated. ECA, ESA, UTIL, TSTAT, and DSTAT fields are switches, the presence of which shall cause a minimum of one Status Report of corresponding information to be returned to the requester.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Surveillance Type	M	Enter the surveillance type using either "AIR", "SHIP", or "BOTH". (3-4A)
2	Extended Coverage Area	O	Enter "ECA" or leave blank. If used, a status of availability over the ROTHR extended coverage area is being requested (see Status Report, ECA set). (3A)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

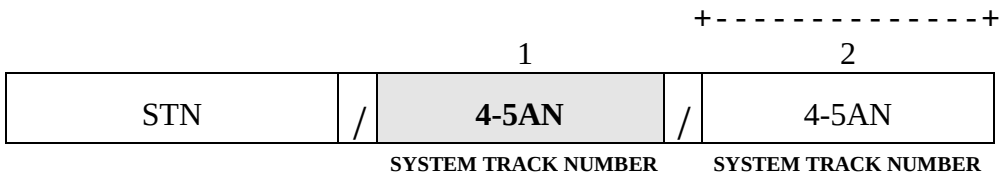
STATUS REQUEST (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Effective Surveillance Area	O	Enter "ESA" or leave blank. If used, a status of radar effectiveness based on target detection probability over the current surveillance area (area being actively scanned) is being requested (see Status Report, ESA set). (3A)
4	Utilization	O	Enter "UTIL" or leave blank. If used, the percentages of total radar resources currently being employed for air surveillance and ship surveillance are being requested (see Status Report, UTIL set). (4A)
5	Task Status	C	Enter "TSTAT" or leave blank. If used, the status of all active and planned tasks in the ROTHR system is being requested (see Status Report, TSTAT set). This field is mandatory if Field 6 is used. (5A)
6	DIR Status	O	Enter "DSTAT" or leave blank. If used, the status (including positional information) of all active and planned DIRs is being requested (see Status Report, DSTAT set). (5A)

Set Examples:

```
STAT/AIR/ECA/ESA/UTIL/TSTAT/DSTAT

STAT/SHIP///TSTAT

STAT/BOTH//ESA
```

SYSTEM TRACK NUMBER



NOTE: SHADED FIELD IS MANDATORY

NOTE: FIELD UNDER BRACKET IS REPEATABLE

The STN set is used to specify a logical filter based on NTDS track numbers. For STN sets following an AOI set, any NTDS track number that matches one of the system track numbers will pass through the filter and be displayed by the TDP. For STN sets following an XAOI set, an NTDS track number that matches one of the system track numbers will not pass through the filter and will not be displayed by the TDP.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	System Track Number	M	Enter the system track number (Link-11 or Link-16) of the track being reported. Enter the Link-11 system track number as 4 octal digits (0001-7776), or the Link-16 system track number as an alphanumeric in positions one and two followed by three octal digits. Numbers in positions one and two will also be octal. Letters in positions one and two will exclude I and O, e.g., 0071, A0000, ZZ777, 6B304, 74365. (4-5AN)
2	System Track Number	O,R	Enter additional system track numbers using the same format as Field 1. This field may be repeated up to 28 times (a total of 30 fields are permitted in the STN set) to provide additional system track numbers. (4-5AN)

Set Example:

```
STN/6774/7723/6123/4316
```

SCREEN KILO UNIT

				2		3		4
SUNIT	/	**1-26ANBS**	/	**4AN**	/	**4AN**	/	**1-5NS**
		UNIT NAME		**STARTING BEARING**		**ENDING BEARING**		**INNER RADIUS**

5	
/	**1-5NS**
	OUTER RADIUS

NOTE: SHADED FIELDS ARE MANDATORY

The SUNIT set is used to report a unit assignment of a SCREEN KILO formation described in the preceding SCRNK set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Unit Name	M	Enter the SCREEN KILO formation unit name, e.g., TRANSIT, FORRESTAL. (1-26ANBS)
2	Starting Bearing	M	The unit assignment is drawn clockwise from the starting bearing to the ending bearing. If the starting and ending bearings are the same, the unit assignment will be drawn as a full circle. Enter the starting bearing (000-360) of the unit assignment from the SCREEN KILO center in degrees true (T) with leading zeroes, e.g., 035T, 120T. (4AN)
3	Ending Bearing	M	Enter the ending bearing using the same format as Field 2. (4N)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

SCREEN KILO UNIT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Inner Radius	M	Enter the distance (0-999.9) from the SCREEN KILO center to the inner edge of the unit assignment. The units are determined by the units specified in the UNITS field of the preceding SCRNK line set. Use up to 3 digits with optional tenths, e.g., 12, 134.5, 5.5. (1-5NS)
5	Outer Radius	M	Enter the distance (0-999.9) from the SCREEN KILO center to the outer edge of the unit assignment. The units are determined by the units specified in the UNITS field of the preceding SCRNK line set. Use up to 3 digits with optional tenths, e.g., 12, 134.5, 5.5. (1-5NS)

Set Examples:

```
SUNIT/HOWARD/005T/050T/12/24.5

SUNIT/TORTUGA/050T/100T/10/28
```

SYMBOL

	1	2	3	4
SYMB /	1-2N /	/	1A /	**6-8AN**
	SYMBOL SIZE	**SPARE**	**LINE COLOR**	**LATITUDE**

	5	6	7	8	9
/	**7-9AN** /	**3N** /	2N /	4-7ANS /	1-21ANBS
	LONGITUDE	**SYMBOL**	**MODIFIER**	**ORIENTATION**	**LABEL**

NOTE: SHADED FIELDS ARE MANDATORY

The SYMB set is used to place a symbol at a fixed geographic position. These symbols are defined in Table 5-8.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Symbol Size	O	Enter the character/symbol size from Table 5-9 (Character and Symbol Size Codes), e.g., 5, 10, 50. If character/symbol size is not provided, a default value of 5 (vertical pixels) will be assumed. (1-2N)
2	Spare	O	The spare field does not contain any data. This field is now used as a position filler.
3	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., A, C. If line color is not provided, a default value of A (white) will be assumed (See Note). (1A)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

SYMBOL (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Latitude	M	Enter the latitude of the symbol location in degrees (00-90), minutes (00-59), optional seconds (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 900000N9, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6-8AN)
5	Longitude	M	Enter the longitude of the symbol location in degrees (000-180), minutes (00-59), optional seconds (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W9, 1800000W9, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 18000) degrees. (7-9AN)
6	Symbol	M	Enter the basic symbol code from Table 5-8 (Basic Symbol Codes), e.g., 060. (3N)
7	Modifier	O	Enter the symbol modifier from Table 5-10 (Symbol Modifier Codes), e.g., 04. (2N)
8	Orientation	O	Enter the true bearing (000-360 or 000.0-360.0) of the symbol orientation followed by "T" (true) and an optional checksum (0-9), e.g., 002T, 032.5T, 109.5T5 . The default entry for the field is 000T. (4-7ANS)
9	Label	O	Enter the free-text label that is to be displayed by receiving TDPs. Slants (/) are not allowed, e.g., MARSHALL, PT ALFA. (1-21ANBS)

Set Example:

```
SYMB/10///2005N7/02007E9/030/04/090T/12TH MOTORIZED BATT
```

NOTE: Field 3 is not used if Field 6 is equal to 000-032, 038, 039, 100, or 595-646.

TASK

	1		2		3		4
TASK	/	**1-4N**	/	**3-5A**	/	**3-4A**	/	2-3A
		TASK NUMBER		**TASK TYPE**		**SURVEILLANCE TYPE**		**PRIORITY**

	5		6		7		8		9
/	6AN	/	3-9A	/	8AN	/	8AN	/	1-2N
	TRACK NUMBER		**RESOURCE ALLOCATION**		**START DATE-TIME GROUP**		**STOP DATE-TIME GROUP**		**REPORT RATE**

	10
/	1N
	TOI REPORT RATE

NOTE: SHADED FIELDS ARE MANDATORY

The TASK set is used to establish parameters for future utilization of ROTHR radar resources. This set indicates if sets that follow are used to create a new task, edit or delete an existing task, or identify a target of interest that should be followed with additional tasking. It also establishes or changes task priority, start and stop times, and rates at which TOIs and other contacts are to be reported.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Task Number	M	Enter the task number (1-9999), e.g., 4, 9414. If the task type is EDIT or DROP, then task number shall equal a previously sent task number. (1-4N)

TASK (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Task Type	M	Enter the task type using either "BAR", "AREA", "EDIT", "TOI", "CTOI", "CTEL", "POINT", or "DROP" (see Note for definitions). If resource allocation is SPOTLIGHT, then task type must be POINT. Task type of EDIT shall not edit the task number, surveillance type, or track number of the task set. (3-5A)
3	Surveillance Type	M	Enter the surveillance type using either "SHIP" or "AIR". (3-4A)
4	Priority	O	Enter the priority using either "HI", "MED", or "LO". (2-3A)
5	Track Number	C	Enter the ROTHR track number previously reported. This field is mandatory if TOI, CTOI, or CTEL is used in Field 2. (6AN)
6	Resource Allocation	O	Enter the resource allocation using either "HIGH", "LOW", "ROUTINE", or "SPOTLIGHT". (3-9A)
7	Start Date-Time Group	O	Enter the start date-time group in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. Entries in this field are only valid for task types of AREA, BAR, POINT, and EDIT. (8AN)
8	Stop Date-Time Group	O	Enter the stop date-time group using the same format as Field 7. (8AN)
9	Report Rate	O	Enter the report rate in minutes (1-60), e.g., 1, 15. The report rate is not applicable for ship tasking. (1-2N)

TASK (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
10	TOI Report Rate	O	Enter the TOI report rate in minutes (1-5), e.g., 1, 5. The TOI report rate is not applicable for ship tasking. (1N)

Set Examples:

```
TASK/96/AREA/AIR/MED//ROUTINE/281145Z1/282300Z5/5/2

TASK/100/TOI/AIR//R10100

TASK/96/EDIT/AIR/HI//HIGH//290100Z2/4/1

TASK/96/DROP/AIR

TASK/102/POINT/SHIP////291200Z4/300100Z4
```

NOTE: The definitions for the task types used in Field 2 follow:

AREA, POINT - Search pattern defined by geographic coordinates
BAR - Barrier (search pattern defined by geographic coordinates)
CTEL - Cease Tell
CTOI - Cancel Target of Interest
TOI - Target of Interest

TEXT

		1		2		3		4
TEXT	/	1-2N	/	1N	/	1A	/	**6-8AN**
		CHARACTER SIZE		**FONT**		**COLOR**		**LATITUDE**

	5		6		7
/	**7-9AN**	/	**1-30ANBS**	/	4-7ANS
	LONGITUDE		**TEXT**		**ORIENTATION**

NOTE: SHADED FIELDS ARE MANDATORY

The TEXT set is used to place a line of text at a fixed geographic position.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Character Size	O	Enter the character/symbol size of the specified text from Table 5-9 (Character and Symbol Size Codes), e.g., 5, 10, 50. If a character/symbol size is not provided, a default value of 5 (vertical pixels) will be assumed. (1-2N)
2	Font	O	Enter the character font from Table 5-11 (Character Font Codes), e.g., 2, 3. If character font is not provided, a default value of 1 (standard font, upper case) will be assumed. (1N)
3	Color	O	Enter the color code of the specified text from Table 5-6 (Color Codes), e.g., A, B, K. If color code is not provided, a default value of A (white) will be assumed. (1A)

TEXT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
4	Latitude	M	Enter the latitude of the text location in degrees (00-90), minutes (00-59), optional seconds (00-59) followed by the hemisphere (N/S) and checksum (0-9), e.g., 304015N3, 895959S5, 3235S3, 900000N9, 9000S9. The maximum value is 90 (i.e., 9000) degrees. (6-8AN)
5	Longitude	M	Enter the longitude for the text location in degrees (000-180), minutes (00-59), optional seconds (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W9, 1800000W9, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 18000) degrees. (7-9AN)
6	Text	M	Enter the text that is to be displayed by receiving TDPs. Slants (/) are not allowed, e.g., MINEFIELD, SWEPT AREA. (1-30ANBS)
7	Orientation	O	Enter the true bearing (000-360 or 000.0-360.0) of the text orientation followed by "T" (true) and an optional checksum (0-9), e.g., 002T, 109.5T5. The default value for this field is 090T. (4-7ANS)

Set Example:

```
TEXT/30/1/D/3000N3/12000W3/ACM AREA/060T
```

TRACK

		1		2		3
TRACK	/	**5-6AN**	/	**1-26ANBS**	/	**3-7AN**
		FOTC TN		**NAME**		**RANGE**

NOTE: SHADED FIELDS ARE MANDATORY

The TRACK set is used to specify a circular FOTC broadcast output filter which moves relative to a specified FOTC track.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	FOTC TN	M	Enter the FOTC track number of the FOTC track to which the circular FOTC broadcast output filter is slaved, e.g., T7001, T7023, T79999. (5-6AN)
2	Name	M	Enter the name, as listed in the STAR, of the FOTC track to which thecircular FOTC broadcast output filter is slaved, e.g., NIMITZ. (1-26ANBS)
3	Range	M	Enter the radius of the relative circular FOTC broadcast output filter, in nautical miles (0-99999), followed by NM, e.g., 10NM, 250NM. (3-7AN)

Set Example:

```
TRACK/T7023/PRINCETON/200NM
```

TACTICAL SIGNALS OF INTEREST

		1		2		3		4
TSOI	/	3A	/	5AN	/	1-12ANBS	/	5AN
		ALERT CODE		ELINT NOTATION 1		EMITTER NAME 1		ELINT NOTATION 2

	5		6		7
/	1-12ANBS	/	5AN	/	1-12ANBS
	EMITTER NAME 2		ELINT NOTATION 3		EMITTER NAME 3

The TSOI set is used to define a logical filter for emitters of interest.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Alert Code	O	Enter the alert code of the emitters of interest using one of the following codes (3A): TGT - Target data available HIT - High interest track
2	ELINT Notation 1	C	Enter the ELINT notation of the emitter of interest from the NSA ELINT Parameter Limits (EPL) List, e.g., A123B. This field is mandatory if Emitter Name is not provided in Field 3. (5AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

TACTICAL SIGNALS OF INTEREST (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Emitter Name 1	C	Enter the emitter name of the emitter of interest using the code name contained in the NSA ELINT Parameter Limits (EPL) List or the code "ALL", indicating that all emitters are of interest, e.g., FAN SONG, ALL. This field is mandatory if ELINT Notation is not provided in Field 2. (1-12ANBS)
4	ELINT Notation 2	O	Enter the ELINT notation of an additional emitter of interest from the NSA ELINT Parameter Limits (EPL) List, e.g., A123B. (5AN)
5	Emitter Name 2	O	Enter the emitter name of an additional emitter of interest using the code name contained in the NSA ELINT Parameter Limits (EPL) List, e.g., TOP SAIL. (1-12ANBS)
6	ELINT Notation 3	O	Enter the ELINT notation of an additional emitter of interestfrom the NSA ELINT Parameter Limits (EPL) List, e.g., A123B. (5AN)
7	Emitter Name 3	O	Enter the emitter name of an additional emitter of interest using the code name contained in the NSA ELINT Parameter Limits (EPL) List, e.g., TOP SAIL. (1-12ANBS)

Set Examples:

```
TSOI/HIT/A123B/TOP DOME/A124B/TOP SAIL//TOP STEER

TSOI///ALL
```

TASK STATUS

	1		2		3		4
TSTAT	/	**1-4N**	/	**8AN**	/	**1-14ANBS**	/	**3-5A**
		TASK NUMBER		**DATE-TIME GROUP**		**TASK SOURCE**		**TASK TYPE**

	5		6		7		8		9
/	**3-4A**	/	**4AN**	/	**4AN**	/	**2-5AN**	/	**2-5AN**
	SURVEILLANCE TYPE		**DIRECTION OF INTEREST 1**		**DIRECTION OF INTEREST 2**		**SPEED OF INTEREST 1**		**SPEED OF INTEREST 2**

	10		11		12
/	**6-11A**	/	**1-3N**	/	**1-3N**
	TASK STATUS		**% REQUIRED**		**ACTUAL TO REQUIRED %**

NOTE: SHADED FIELDS ARE MANDATORY

The TSTAT set is used whenever the status of a task changes or upon request (see Status Request, STAT set). It is also required if a DSTAT set related to a task is implemented. It provides status (ACTIVE, PLANNED, or DEACTIVATED) of the task and information related to the ability of ROTHR to allocate its resources to each task.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

TASK STATUS (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Task Number	M	Enter the task number (1-9999) assigned by ROTHR, e.g., 1, 44, 9999. (1-4N)
2	Date-Time Group	M	Enter the date-time group of the task status in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
3	Task Source	M	Enter the Command that originally defined the task through a task request message, e.g., JICPAC. (1-14ANBS)
4	Task Type	M	Enter the task type using one of the geographic task types of "BAR", "AREA", or "POINT". (3-5A)
5	Surveillance Type	M	Enter the surveillance type using either "SHIP" or "AIR". (3-4A)
6	Direction of Interest 1	M	Enter the heading (000-359) of the first direction of interest followed by "T" (true), e.g., 005T, 350T. (4AN) (See Note 1)
7	Direction of Interest 2	M	Enter the heading (000-359) of the second direction of interest followed by "T" (true), e.g., 005T, 350T. (4AN) (See Note 1)
8	Speed of Interest 1	M	Enter the first speed of interest in knots (0-9999) followed by "K", e.g., 400K, 1800K. (2-5AN) (See Note 2)
9	Speed of Interest 2	M	Enter the second speed of interest in knots (0-9999) followed by "K", e.g., 400K, 1800K. (2-5AN) (See Note 2)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

TASK STATUS (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
10	Task Status	M	Enter the task status using "ACTIVE", "PLANNED", or "DEACTIVATED". This is an indication of whether or not the area defined by the task is being illuminated by the radar or not (these statuses indicate that action was taken by ROTHR operators, i.e., the Plan Task, Activate Task, or Deactivate Task button was pressed). (6-11A)
11	% Required	M	Enter the percentage of the total ROTHR radar resources that would be needed to implement the task as it was defined (0-300), e.g., 50, 300. (1-3N)
12	Actual to Required %	M	Enter the percentage (0-100) of the resources that had been requested that can actually be supplied at this time, e.g., 50, 100. For example, if a given task definition would require 50% of the total resources but the system was already operating at 75% total occupancy, the figure provided in this field would be 50% (only half of what was required could actually be provided). (1-3N)

Set Example:

```
TSTAT/12/232220Z1/JICPAC/AREA/AIR/040T/180T/250K/1400K/ACTIVE
```

NOTES:

1. Direction of Interest 1 and 2 defines the heading of contacts of interest, beginning and ending, e.g., all contacts on a course between 010T-240T will be reported if moving at a speed between Speed of Interest 1 and 2.

2. Speed of Interest 1 and 2 define two speeds within which contacts will be reported if they are on the course defined by Direction of Interest 1 and 2.

UNIT IDENTIFICATION CODE

	1
UIC /	**6AN**
	UNIT IDENTIFICATION CODE

NOTE: SHADED FIELD IS MANDATORY

NOTE: FIELD UNDER BRACKET IS REPEATABLE

The UIC set is used to report the Unit Identification Code of the command and embarked units specified in the previous CTC or JUNIT set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Unit Identification Code	M,R	Enter the UIC from Joint Pub 1-03.3 to uniquely identify the command or force element reported in the preceding JUNIT or CTC set, followed by the UICs of embarked units. Up to a total of 21 UICs may be reported per UIC set. (6AN)

Set Examples:

```
UIC/A64183

UIC/N12345/N12235/N60035
```

UTILIZATION

		1		2		3
UTIL	/	**1-2N**	/	**1-2N**	/	**1-2N**
		% UTILIZATION AIR		**% UTILIZATION SHIP**		**% UTILIZATION OTHER**

NOTE: SHADED FIELDS ARE MANDATORY

The UTIL set is implemented whenever the ECA or the ESA set is implemented or upon request. It provides an indication of percentages of total radar resources that are being applied to AIR, SHIP, and OTHER types of tasking. OTHER could possibly include tasking such as Terrain Correlation.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	% Utilization Air	M	Enter the percentage (0-99) of total ROTHR radar resources that are being applied to AIR type tasking, e.g., 5, 99. (1-2N)
2	% Utilization Ship	M	Enter the percentage (0-99) of total ROTHR radar resources that are being applied to SHIP type tasking, e.g., 5, 99. (1-2N)
3	% Utilization Other	M	Enter the percentage (0-99) of total ROTHR radar resources that are being applied to tasking for purposes other than air or ship surveillance, e.g., 5, 99. (1-2N)

Set Example:

```
UTIL/68/27/5
```

WEATHER

		1		2		3		4
WEX	/	8AN	/	3A	/	6AN	/	7AN
		DTG OF OBSERVATION OR BEGINNING OF FORECAST PERIOD		MONTH		LATITUDE		LONGITUDE

	5		6		7		8		9
/	3-6ANS	/	4AN	/	2-3AN	/	1-3A	/	1N
	RADIUS		WIND DIRECTION (SURFACE)		WIND SPEED (SURFACE)		MOST SIGNIFICANT WEATHER		SEA STATE

	10		11
/	1N	/	2-6ANS
	DURATION OF FORECAST FROM DTG		AIR TEMPERATURE

The WEX set is used to report predicted or observed weather at the time and position indicated.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group of Observation or Beginning of Forecast Period	O	Enter the date-time group of the weather observation or beginning of forecast period in days (01-31), hours (00-23), minutes (00-59), and time zone (Z) followed by a checksum (0-9), e.g., 012115A0, 312359Z3. (8AN)

WEATHER (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Month	O	Enter the first three letters of the month of the weather observation or beginning of forecast period, e.g., JAN, FEB, MAR. (3A)
3	Latitude	O	Enter the latitude of the reported weather in degrees (00-90), and minutes (00-59), followed by the hemisphere (N/S) and checksum (0-9). The maximum value is 90 (i.e., 9000) degrees, e.g., 9000N9, 3040N7, 8959S1, 3235S3. (6AN)
4	Longitude	O	Enter the longitude of the forecast/observation in degrees (000-180), and minutes (00-59), followed by the hemisphere (E/W) and checksum (0-9). The maximum value is 180 (i.e., 18000) degrees, e.g., 18000W9, 13040E8, 00000E0, 17959E1. (7AN)
5	Radius	O	Enter the radius of the forecast/observation area in nautical miles (1-9999) followed by "NM". A floating decimal point is optional, e.g., .50NM, 0.50NM, 20.5NM, 100NM. (3-6ANS)
6	Wind Direction (Surface)	O	Enter the true bearing of the wind direction in degrees (000-360) followed by "T" (true), e.g., 005T, 012T, 270T. (4AN)
7	Wind Speed (Surface)	O	Enter the measured/forecast wind speed to the nearest knot (0-99) followed by "K" (knots), e.g., 9K, 69K. (2-3AN)
8	Most Significant Weather	O	Enter the weather code from Entry List 175 (Most Significant Weather), e.g., SP. (1-3A)
9	Sea State	O	Enter the ocean (sea) conditions in the operating area (0-9), e.g., 2, 5, 9. (1N)

WEATHER (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
10	Duration of Forecast from DTG	O	If reporting predicted weather, enter the duration of the forecast from the time reported in Fields 1 and 2. Enter one of the following (1N): 1 - 0-4 hours 2 - 4-8 hours 3 - 8-16 hours 4 - 16-24 hours.
11	Air Temperature	O	Enter the air temperature in degrees with an optional decimal point, followed by "F" (Fahrenheit) or "C" (Celsius). A negative sign (hyphen) is valid for temperatures below zero, e.g., 3.0C, 20F, -15.5F. (2-6ANS)

Set Example:

```
WEX/101200Z4/JAN/2020N4/01010W2/20NM/270T/10K/RW/3/1/-15.5F
```

4-WHISKY

		1		2		3		4
WHSKY	/	**1-40ANBS**	/	**2N**	/	**3-4AN**	/	**3-4AN**
		NAME		**NUMBER OF GRID CELLS**		**GRID CELL SIZE**		**PIM CELL**

	5
/	1-30ANBS
	REMARKS

NOTE: SHADED FIELDS ARE MANDATORY

The WHSKY set is used to identify a 4-WHISKY formation.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Name	M	Enter the 4-WHISKY name, e.g., TRANSIT, AAW. (1-40ANBS)
2	Number of Grid Cells	M	Enter the number of cells on each axis of the square 4-WHISKY grid. The valid range for this field is 24-48, e.g., 28, 36, 45. (2N)
3	Grid Cell Size	M	Enter the grid cell size in nautical miles (1-50) followed by NM, e.g., 5NM, 45NM. (3-4AN)
4	PIM Cell	M	Enter the cell assignment for PIM. Leading zeroes are required when specifying the vertical component of the PIM cell, e.g., D07, AA05. (3-4AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

4-WHISKY (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
5	Remarks	O	Enter unformatted text pertaining to the 4-WHISKY formation. (1-30ANBS)

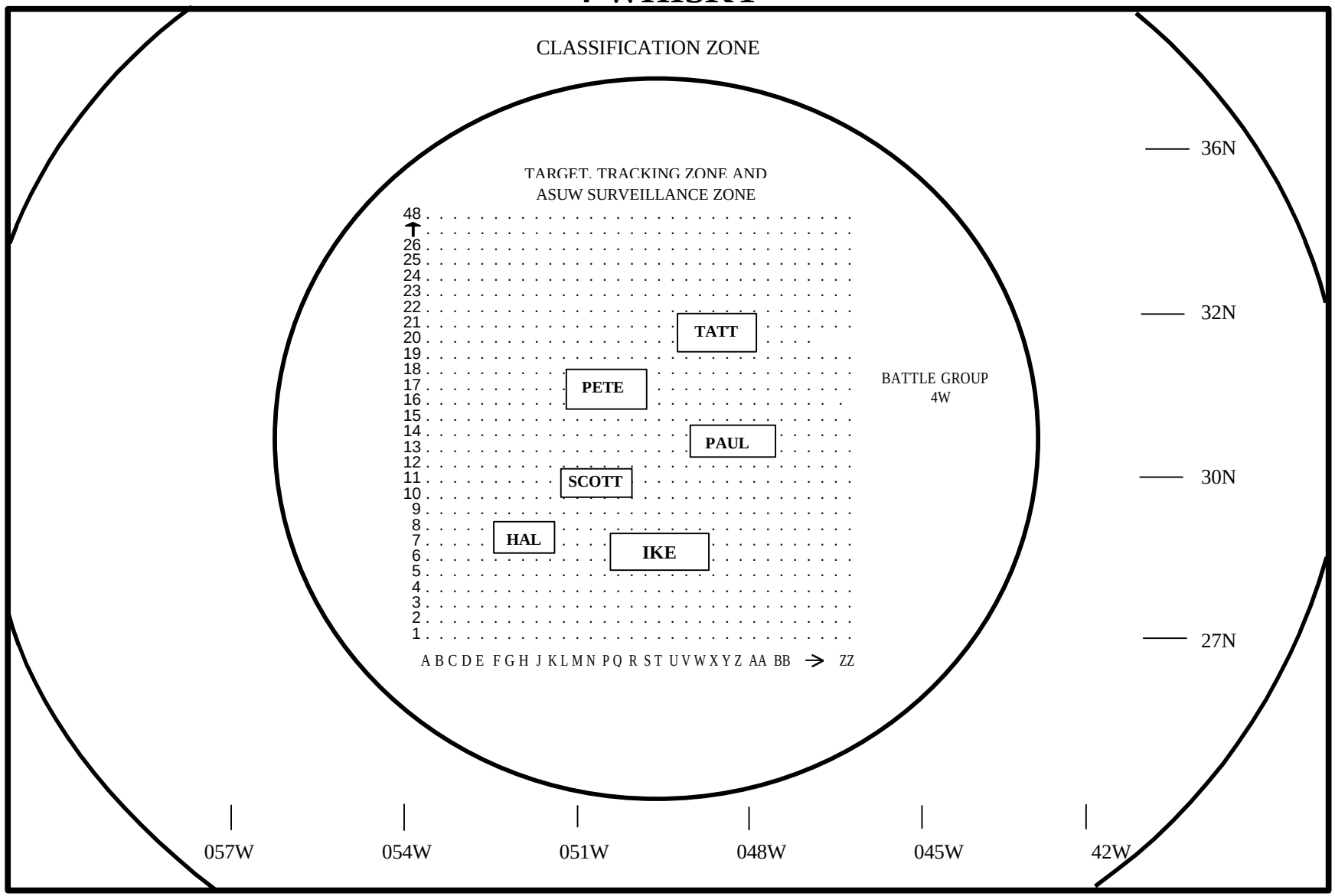
Set Examples:

```
WHSKY/RP TRANSIT/24/10NM/C10/

WHSKY/HAWAII TRANSIT/34/5NM/AA09
```

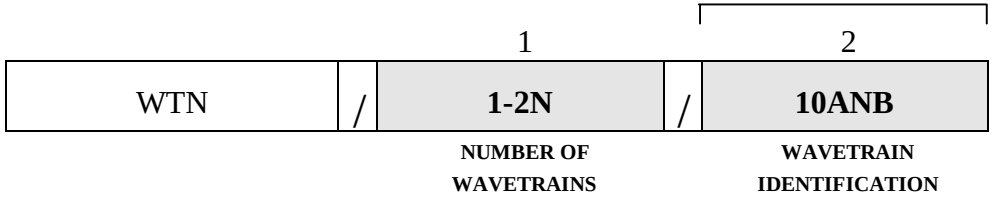
NOTE: The horizontal axis begins in the lower left corner of the grid designated by letters of the alphabet labeled "A,B,C ... X,Y,Z, AA,BB,CC ... ZZ." (The letters I,O,II, and OO are not used since they are easily confused with numerals.) The vertical axis also begins in the lower left corner and is labeled with two-digit numerals from 01 to 48. (Note that the leading zero is always required when specifying the vertical component of a grid cell.)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

4-WHISKY


CLASSIFICATION ZONE
TARGET, TRACKING ZONE AND
ASUW SURVEILLANCE ZONE
48
26
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
A B C D E F G H J K L M N P Q R S T U V W X Y Z AA BB ZZ
TATT
PETE
PAUL
SCOTT
HAL
IKE
BATTLE GROUP
4W
36N
32N
30N
27N
057W
054W
051W
048W
045W
42W

WAVETRAIN IDENTIFICATION SEQUENCE



NOTE: SHADED FIELDS ARE MANDATORY

NOTE: FIELD UNDER BRACKET IS REPEATABLE

The WTN set is used to report transmit sequence identifiers of the wavetrains being scheduled in the next active source transmission. The wavetrain identifier will appear in the sequence of transmission to a maximum of 99 wavetrains. All Ping users must be able to receive, decode, store, and transmit the data in Fields 1 and 2.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Number of Wavetrains	M	Enter the number of wavetrains within the sequence being reported (1-99), e.g., 10, 16, 75. (1-2N)
2	Wavetrain Identification	M,R	Enter the wavetrain identification of the first wavetrain in sequence being reported. The wavetrain identifier has alphanumeric characters or spaces used as an identification number. At least one wavetrain identifier must be stipulated. This field may be repeated a maximum of 99 times, e.g., WT12093 00, WT12093 05, WT35945 00. (10ANB)

Set Example:

```
WTN/9/WT12093 05/WT12093 03/WT12093 00/WT12093 02/WT12093 09
/WT12093 02/WT12093 04/WT12093 01/WT12093 02
```

4-WHISKY UNIT

		1		2
WUNIT	/	**1-26ANBS**	/	**3-68ANS**
		UNIT NAME		**UNIT ASSIGNMENT**

NOTE: SHADED FIELDS ARE MANDATORY

The WUNIT set is used to report a unit assignment within a 4-WHISKY formation.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Unit Name	M	Enter the 4-WHISKY formation unit name, e.g., ENTERPRISE, TRUMAN HS. (1-26ANBS)
2	Unit Assignment	M	Enter the 4-WHISKY unit assignment. Leading zeroes are required when specifying the vertical component of a cell, e.g., A02, CF04+C0506+F0506, AA12. (3-68ANS)

Set Examples:

```
WUNIT/ENTERPRISE/DM1219

WUNIT/EISENHOWER DD/CF04+C0506+F0506
```

EXCLUDED AREAS OF INTEREST

		1
XAOI	/	**1-2N**
		FILTER NUMBER

NOTE: SHADED FIELD IS MANDATORY

The XAOI set is used to denote that the sets that follow define certain regions or information that is to be excluded from the area of interest defined in the preceding AOI set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Filter Number	M	Enter the filter number (1-99) used in the preceding AOI set, e.g., 1, 15, 58, 99. (1-2N)

Set Example:

```
XAOI/35
```

EXPANDED ARC

		1		2		3		4
XARC	/	**4-24ANS (7-27ANS)**	/	**2-9ANS**	/	2-9ANS	/	4-7ANS
		CENTER		**SEMI-MAJOR AXIS**		**SEMI-MINOR AXIS**		**ORIENTATION**

5		6		7		8		9
4-7ANS	/	4-7ANS	/	1-2N	/	1A	/	1-2N
START BEARING		**END BEARING**		**LINE TYPE**		**LINE COLOR**		**FILL TYPE**

	10
/	1A
	FILL COLOR

NOTE: SHADED FIELDS ARE MANDATORY

The XARC set is used to define an arc, circle, or ellipse at a fixed geographic position. The XARC set allows reporting of data with enhanced precision and flexibility in units of measure.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Center	M	Enter the center position of the arc, ellipse, or circle in its original format and precision if possible. Use one of the alternate field contents provided below.

EXPANDED ARC (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Center (continued)	M	Enter the designated field descriptor followed by the data. Data can be expressed in: Coordinate System — Field Descriptor Latitude/Longitude — LL: UTM (Universal Transverse Mercator) — UT: GEOREF (World Geographic Reference System) — GR: The precision reported in this field should reflect the original known precision. The only boundary or restriction placed on the reported precision of data in this field is the field length range. An optional floating decimal point is allowed as appropriate. See Table 5-21 (Position Reporting) for more information on data format, e.g., LL:304055.55N7-1304055.55E8, UT:45FDK0474, GR:DIQA. (4-24ANS, 7-27ANS including field descriptor)
2	Semi-Major Axis	M	Enter the length of the semi-major axis, in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT). Use up to six characters with optional floating decimal point (.00001-999999), followed by the appropriate unit of measure abbreviation, and optional checksum (0-9), e.g., 12.5NM, .045YD, 345KM2. (2-9ANS)

EXPANDED ARC (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Semi-Minor Axis	O	Enter the length of the semi-minor axis, in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT). Use up to six characters with optional floating decimal point (.00001-999999), followed by the appropriate unit of measure abbreviation, and optional checksum (0-9), e.g., 12.5NM, .045YD, 345KM2. The default value is the same value as Field 2 (i.e., the arc is a circle or portion of a circle with radius defined in Field 2). (2-9ANS)
4	Orientation	C	Enter the true bearing of the semi-major axis (000-360 or 000.0-360.0) followed by "T" (true) and an optional checksum (0-9), e.g., 005T, 135.5T4. The default value is 000T. This field is mandatory if Field 3 is used and contains a lesser value than Field 2. (4-7ANS)
5	Start Bearing	O	The arc is drawn clockwise from the start bearing to the end bearing. To draw a full circle or full ellipse the start and end bearings must be equal or be omitted. Enter the start bearing of the arc in degrees true (000-360 or 000.0-360.0) followed by "T" (true) and an optional checksum (0-9), e.g., 005T, 135.5T4. The default value is 000T. (4-7ANS)
6	End Bearing	C	Enter the end bearing in degrees true (000-360 or 000.0-360.0) followed by "T" (true) and an optional checksum (0-9), e.g., 005T, 135.3T. The default value is the same as Field 5. This field is mandatory if Field 5 is used. (4-7ANS)
7	Line Type	O	Enter the type of line from Table 5-5 (Line Types), e.g., 5, 14. If line type is not provided, a default value of 0 (solid) will be assumed. (1-2N)

EXPANDED ARC (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
8	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., B, D. If line color is not provided, a default value of A (white) will be assumed. (1A)
9	Fill Type	O	Enter the area fill type from Table 5-7 (Area Fill Types), e.g., 3, 11. If fill type is not provided, a default value of 0 (no fill) will be assumed. (1-2N)
10	Fill Color	O	Enter the fill color from Table 5-6 (Color Codes), e.g., B, D. (1A)

Set Examples:

```
XARC/LL:304055.55N7-1304055.55E8/100NM/20NM/125.5T3/045T9/220T4/2/C

XARC/UT:18SUU83630143/35KM/15KM/045T
```

EXPANDED LINE

		1		2		N+2		N+3
XLINE	/	**1-3N**	/	**4-24ANS (7-27ANS)**	/	1-2N	/	1A
		NUMBER OF POINTS		**POSITION**		**LINE TYPE**		**LINE COLOR**

N+4		N+5
1-2N	/	1A
FILL TYPE		**FILL COLOR**

NOTE: SHADED FIELDS ARE MANDATORY

NOTE: FIELD UNDER BRACKET IS REPEATABLE AS A GROUP

The XLINE set is used to define a line between fixed geographic points. Closed figures can be reported by ensuring that the first and last positions are equal. Up to 256 points may be used to define 255 line segments per XLINE set. The XLINE set allows reporting of data with enhanced precision and flexibility in unit of measure.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Number of Points	M	Enter the number of points (2-256) that will be used to define the line segments, e.g., 2, 10. If the line is used to draw a closed figure, the position of the first and last points must be the same. (1-3N)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED LINE (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Position	M,R	Enter the position in its original format and precision if possible. Use one of the alternate field contents provided below. Enter the designated field descriptor followed by the data. Data can be expressed in: Coordinate System — Field Descriptor Latitude/Longitude — LL: UTM (Universal Transverse Mercator) — UT: GEOREF (World Geographic Reference System) — GR: The precision reported in this field should reflect the original known precision. The only boundary or restriction placed on the reported precision of data in this field is the field length range. An optional floating decimal point is allowed as appropriate. See Table 5-21 (Position Reporting) for more information on data format, e.g., LL:304055.55N7-1304055.55E8, UT:45FDK0474, GR:DIQA. (4-24ANS, 7-27ANS including field descriptor)
N+2 (See Note)	Line Type	O	Enter the type of line from Table 5-5 (Line Types), e.g., 5, 14. If line type is not provided, default value 0 (solid line) will be assumed. (1-2N)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED LINE (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
N+3 (See Note)	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., B, D. If line color is not provided, default value A (white) will be assumed. (1A)
N+4 (See Note)	Fill Type	O	Enter the area fill type from Table 5-7 (Area Fill Types), e.g., 3, 11. If fill type is not provided, default value 0 (no fill) will be assumed. (1-2N)
N+5 (See Note)	Fill Color	O	Enter the fill color from Table 5-6 (Color Codes), e.g., B, D. (1A)

Set Example:

```
XLINE/5/LL:3040.555N2-13040.555E3/LL:3040.555N2-14040.555E4
/LL:2040.555N1-14040.555E4/LL:2040.555N1-13040.555E3
/LL:3040.555N2-13040.555E3/1/B/3/D
```

NOTE: N = number of points reported in Field 1.

EXPANDED LINE OF BEARING

		1		2		3		4
XLOB	/	**8-12ANS**	/	**5AN**	/	**4-24ANS (7-27ANS)**	/	**4-6ANS**
		DATE-TIME GROUP		**MONTH-YEAR**		**LINE OF BEARING ORIGIN**		**BEARING**

5		6		7		8		9
2-6AN	/	2-8ANS	/	2-7ANS	/	3-10ANS	/	2-6AN
SENSOR CODE		**HALF-WIDTH**		**RANGE**		**RDF RF**		**SOURCE CODE**

NOTE: SHADED FIELDS ARE MANDATORY

The XLOB set is used to provide a line of bearing report on the track described in the preceding CTC. The XLOB set allows reporting of data with enhanced precision and flexibility in the unit of measure.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group	M	Enter the date-time group of the line of bearing report in days (01-31), hours (00-23), minutes (00-59), optional seconds (00-59), optional tenths of seconds (.0-.9), and time zone (Z) followed by a checksum (0-9), e.g., 01211534.5Z2, 212359Z2. (8-12ANS)
2	Month-Year	M	Enter the first three letters of the month and the last two digits of the year of the line of bearing report, e.g., JUN99, JAN01. (5AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED LINE OF BEARING (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Line of Bearing Origin	M	Enter the origin of the line of bearing in its original format and precision if possible. Use one of the alternate field contents provided below. Enter the designated field descriptor followed by the data. Data can be expressed in: Coordinate System — Field Descriptor Latitude/Longitude — LL: UTM (Universal Transverse Mercator) — UT: GEOREF (World Geographic Reference System) — GR: The precision reported in this field should reflect the original known precision. The only boundary or restriction placed on the reported precision of data in this field is the field length range. An optional floating decimal point is allowed as appropriate. See Table 5-21 (Position Reporting) for more information on data format, e.g., LL:304055.55N7-1304055.55E8, UT:45FDK0474, GR:DIQA. (4-24ANS, 7-27ANS including field descriptor)
4	Bearing	M	Enter the true (000-360 or 000.0-360.0) from the line of bearing origin to the contact followed by "T" (true), e.g., 005T, 135.5T. (4-6ANS)
5	Sensor Code	O	Enter the sensor code of the detecting sensor from Entry List 1104 (Sensor Codes), e.g., RADAR, VISUAL. (2-6AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED LINE OF BEARING (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
6	Half-Width	O	Enter the half-width (i.e., bearing error) in degrees followed by DEG, or in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT) followed by the appropriate unit of measure abbreviation. When expressed in degrees use a value in a range .1-180 with optional tenths precision. When expressed in NM, KM, M, KY, YD, or FT, use up to five characters with optional floating decimal point, e.g., 3.5DEG, .09KM, 55NM. (2-8ANS)
7	Range	C	Enter the range in nautical miles (NM), kilometers (KM), meters (M), kilometers (KY), yards (YD) or feet (FT). Use up to five characters with optional floating decimal point (.0001-99999) followed by the appropriate unit of measure abbreviation, e.g., 12.5NM, 45YD, 3.45KM. This field is mandatory if Field 6 is expressed in NM. (2-7ANS)
8	RDF RF	O	Enter the radio frequency of the intercept used to develop the XLOB in hertz (HZ), kilohertz (KHZ), or megahertz (MHZ). An optional floating decimal point is allowed, e.g., 5040.550HZ, 10050.5KHZ, 232.555MHZ. (3-10ANS)
9	Source Code	O	Enter the source which most recently originated, passed, or amplified data on the line of bearing being reported from Entry List 1136 (Source Codes), e.g., OSIS, SELOR. (2-6AN)

Set Examples:

```
XLOB/021245Z4/AUG99/LL:304055.55N7-1304055.55E8/056.9T/RADAR/3.5DEG

XLOB/032345Z7/AUG99/UT:32WDL12341234/045T/VISUAL/10DEG
```

EXPANDED POSITION

	1	2	3	4
XPOS /	**8-12ANS** /	**5AN** /	**4-24ANS (7-27ANS)** /	2-6AN
	DATE-TIME GROUP	**MONTH-YEAR**	**POSITION**	**SENSOR CODE**

	5	6	7	8	9
/	4-6ANS /	2-7ANS /	2-7ANS /	4-6ANS /	4-8ANS
	BEARING OF MAJOR AXIS	**LENGTH OF SEMI-MAJOR AXIS**	**LENGTH OF SEMI-MINOR AXIS**	**COURSE**	**SPEED**

	10	11	12	13	14
/	3-8ANS /	2-7ANS /	3-10ANS /	2-6AN /	1-7N
	ALTITUDE	**DEPTH**	**RDF RF**	**SOURCE CODE**	**SEQUENTIAL CONTACT IDENTIFIER**

	15	16
/	3A /	1-3N
	PHOTOS	**TOTAL NUMBER OF CONTACTS/UNITS**

NOTE: SHADED FIELDS ARE MANDATORY

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED POSITION (Continued)

The XPOS set is used to report a position, time of position, and other relevant report information about the track described in the preceding CTC. The XPOS set allows reporting of data with enhanced precision and flexibility in unit of measure.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group	M	Enter the date-time group of the position report in days (01-31), hours (00-23), minutes (00-59), optional seconds (00-59), optional tenths of seconds (.0-.9) and time zone (Z), followed by a checksum (0-9), e.g., 01211534.5Z2, 212359Z2. (8-12ANS)
2	Month-Year	M	Enter the first three letters of the month and the last two digits of the year of the position report, e.g., JUN99, JAN01. (5AN)
3	Position	M	Enter the position of the report in its original format and precision if possible. Use one of the alternate field contents provided below. Enter the designated field descriptor followed by the data. Data can be expressed in:

Coordinate System	Field Descriptor
Latitude/Longitude	LL:
UTM (Universal Transverse Mercator)	UT:
GEOREF (World Geographic Reference System)	GR:

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED POSITION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Position (continued)	M	The precision reported in this field should reflect the original known precision. The only boundary or restriction placed on the reported precision of the data in this field is the field length range. An optional floating decimal point is allowed as appropriate. See Table 5-21 (Position Reporting) for more information on data format, e.g., LL:304055.55N7-1304055.55E8, UT:45FDK0474, GR:DIQA. (4-24ANS, 7-27ANS including field descriptor)
4	Sensor Code	O	Enter the sensor code of the detecting sensor from Entry List 1104 (Sensor Codes), e.g., RADAR, VISUAL. (2-6AN)
5	Bearing of Major Axis	C	Enter the true bearing (000-360 or 000.0-360.0) of the semi-major axis followed by "T" (true), e.g., 005T, 135.5T. This field is mandatory if Field 7 is used and is not equal to Field 6. (4-6ANS)
6	Length of Semi-Major Axis	O	Enter the semi-major axis in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT). Use up to five characters with optional floating decimal point (.0001-99999) followed by the appropriate unit of measure abbreviation, e.g., 12.5NM, 45YD, 345KM. (2-7ANS)
7	Length of Semi-Minor Axis	O	Enter the semi-minor axis in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT). Use up to five characters with optional floating decimal point (.0001-99999) followed by the appropriate unit of measure abbreviation, e.g., 12.5NM, 45YD, 345KM. (2-7ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED POSITION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
8	Course	O	Enter the true course (000-360 or 000.0-360.0) of the track followed by "T" (true), e.g., 005T, 010.3T. (4-6ANS)
9	Speed	O	Enter the speed of the track in knots (KTS) or kilometers per hour (KPH). Use up to five characters with optional floating decimal point (.0001-99999) followed by the appropriate unit of measure abbreviation, e.g., 15KTS, 2.3KPH. (4-8ANS)
10	Altitude	O	Enter the altitude in hundredths of feet (ALT prefix), feet (FT suffix), kilometers (KM), or meters (M suffix). Use up to five characters with optional floating decimal point preceded or followed by the appropriate unit of measure abbreviation, e.g., ALT99 (for 9900 feet), 45.6M, 87FT. (3-8ANS)
11	Depth	O	Enter the depth in feet (FT), meters (M), kilometers (KM), or fathoms (FH). Use up to five characters with optional floating decimal point followed by the appropriate unit of measure abbreviation, e.g., 45FT, 12KM, 23FH. (2-7ANS)
12	RDF RF	O	Enter the radio frequency of the intercept used to develop the XPOS in hertz (HZ), kilohertz (KHZ), or megahertz (MHZ). An optional floating decimal point is allowed, e.g., 5040.550HZ, 10050.5KHZ, 232.555MHZ. (3-10ANS)
13	Source Code	O	Enter the source which most recently originated, passed or amplified data on the position being reported from Entry List 1136 (Source Codes), e.g., OSIS, SELOR. (2-6AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED POSITION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
14	Sequential Contact Identifier	O	Enter the unique identifier assigned by the collector to identify each specific report, e.g., 1273854. This field provides traceability to the contact data. (1-7N)
15	Photos	O	Enter "PHT" if photos were taken and "NPH" if no photos were taken. (3A)
16	Total Number of Contacts/Units	O	Enter the total number of contacts/units (0-999) in the area of the contact/unit reported in the preceding CTC set, e.g., 5, 12 (this could be the total number of ships, total number of aircraft/missiles in formation, or the total number of pleasure craft). (1-3N)

Set Examples:

```
XPOS/01211534.5Z2/AUG99/LL:304055.5N2-1304055.5E3/RADAR/150.7T
/123.5NM/76.8NM/120.6T/23.5KTS//23FH

XPOS/021456Z8/AUG99/UT:45FDK04567486/////135.9T/30KPH////PLRS//NPH
```

EXPANDED RADAR DATA

	1		2		3		4
XRADB	/	**8-12ANS**	/	**5AN**	/	5AN	/	1-15ANBS
		DATE-TIME GROUP		**MONTH-YEAR**		**ELINT NOTATION**		**EMITTER NAME**

	5		6		7		8		9
/	3-10ANS	/	1-11NS	/	1-11NS	/	1-7NS	/	3-8ANS
	RADIO FREQUENCY		**PULSE REPETITION INTERVAL**		**PULSE REPETITION FREQUENCY**		**PULSE WIDTH**		**SCAN RATE**

	10
/	1-4A
	SCAN TYPE

NOTE: SHADED FIELDS ARE MANDATORY

The XRADB set is used to provide radar parametric data associated with the track described in the preceding CTC set. The XRADB set allows reporting of data with enhanced precision.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group	M	Enter the date-time group of the position report in days (01-31), hours (00-23), minutes (00-59), optional seconds (00-59), optional tenths of seconds (.0-.9), and time zone (Z), followed by a checksum (0-9), e.g., 01211534.5Z2, 212359Z2. (8-12ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED RADAR DATA (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Month-Year	M	Enter the first three letters of the month and last two digits ofthe year of the position report, e.g., JUN99, JAN01. (5AN)
3	ELINT Notation	C	Enter the ELINT notation designation of the emitter being reported from the NSA ELINT Parameter Limits (EPL) List, e.g., A123B. This field is mandatory if Field 4 is not used. (5AN)
4	Emitter Name	C	Enter the emitter name of the emitter being reported. Use the code name contained in the NSA ELINT Parameter Limits (EPL) List, e.g., FAN SONG. This field is mandatory if Field 3 is not used. (1-15ANBS)
5	Radio Frequency	O	Enter the radio frequency of the emitter being reported in hertz (1-8NS + HZ), kilohertz (1-7NS + KHZ), megahertz (1-7NS + MHZ), or gigahertz (1-7NS + GHZ). An optional floating decimal point is allowed, e.g., 4050KHZ, 4050.05KHZ, 4.05005MHZ. (3-10ANS)
6	Pulse Repetition Interval	O	Enter the pulse repetition interval in microseconds. An optional floating decimal point is allowed, e.g., 209.1, 209.005. If available, this value shall be measured rather than computed from the PRF reported in Field 7. (1-11NS)
7	Pulse Repetition Frequency	O	Enter the pulse repetition frequency in pulses per second. An optional floating decimal point is allowed, e.g., 1200.505. If available, this value shall be measured rather than computed from the PRI reported in Field 6. (1-11NS)
8	Pulse Width	O	Enter the pulse width in microseconds. An optional floating decimal point is allowed, e.g., 22.005, 222.55. (1-7NS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED RADAR DATA (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
9	Scan Rate	O	Enter the scan rate in seconds per cycle (1-5NS + SPC) or hertz (1-6NS + HZ). An optional floating decimal point is allowed, e.g., .5SPC, 55.055HZ. (3-8ANS)
10	Scan Type	O	Enter the scan type from Entry List 92 (Scan Types), e.g., CIRC. (1-4A)

Set Examples:

```
XRADB/01211534.5Z2/MAR99/A123B/FAN SONG/100KHZ/200.55/4987.531
/222.001/13.5SPC/CCON

XRADB/021456Z8/MAR99//TOP DOME/1.2GHZ///55.005HZ/HELI
```

NOTES:

1. The ELINT parameters contained in Fields 5 through 9 may not be truncated or rounded when retransmitted, except that data may be rounded in order to accommodate shorter field lengths found in other reporting formats. Data may also be rounded or truncated in order to sanitize the information being reported.

2. If the DTG field is different from its associated XPOS or XLOB set, systems using an ELINT correlator will discard the XRADB set.

EXPANDED RELATIVE ARC

	1		2		3		4
XRARC	/ 4-7ANS	/	2-9ANS	/	**2-9ANS**	/	2-9ANS
	BEARING		**RANGE**		**SEMI-MAJOR AXIS**		**SEMI-MINOR AXIS**

	5		6		7		8		9
/	4-7ANS	/	4-7ANS	/	4-7ANS	/	1-2N	/	1A
	ORIENTATION		**START BEARING**		**END BEARING**		**LINE TYPE**		**LINE COLOR**

	10		11
/	1-2N	/	1A
	FILL TYPE		**FILL COLOR**

NOTE: SHADED FIELD IS MANDATORY

The XRARC set is used to define an arc, circle, or ellipse at a position relative to the track described in the preceding ORGIN set. The XRARC sets allows reporting of data with enhanced precision and flexibility in units of measure.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Bearing	O	Enter the bearing (000-360 or 000.0-360.0) from the track in the ORGIN set to the first point followed by "T" (true) or "R" (relative) and an optional checksum (0-9), e.g., 035T, 035R8, 035.5T, 035.5T3. A relative bearing indicates that the overlay is slaved to the track's current heading, causing the overlay to reorient

EXPANDED RELATIVE ARC (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Bearing (continued)	O	relative to the origin with any heading change. The default value is 000T. (4-7ANS)
2	Range	O	Enter the range in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT) of point from the track specified in the ORGIN set. Use up to six characters with an optional floating decimal point (.00001-999999), followed by the appropriate unit of measure abbreviation, and optional checksum (0-9), e.g., 12.5NM, .045YD, 345KM2. (2-9ANS)
3	Semi-Major Axis	M	Enter the length of the semi-major axis in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT). Use up to six characters with optional floating decimal point (.00001-999999) followed by the appropriate unit of measure abbreviation, and optional checksum (0-9), e.g., 12.5NM, .045YD, 345KM2. (2-9ANS)
4	Semi-Minor Axis	O	Enter the length of the semi-minor axis in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT). Use up to six characters with optional floating decimal point (.00001-999999) followed by the appropriate unit of measure abbreviation, and optional checksum (0-9), e.g., 12.5NM, .045YD, 345KM2. The default value is the same value as Field 2 (i.e., the arc is a circle or portion of a circle, with radius defined in Field 2) (2-9ANS)
5	Orientation	C	Enter the bearing of the semi-major axis (000-360 or 000.0-360.0) in degrees true (T) or relative (R). An optional checksum (0-9) may be used, e.g., 035T, 035T8, 035.5R, 035.5T3. A relative bearing indicates that the overlay is slaved

EXPANDED RELATIVE ARC (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
5	Orientation (continued)	C	to the track's current heading, causing the overlay to reorient relative to the origin with any heading change. The default value for this field is the value in Field 1. This field is mandatory if Field 4 is used and contains a lesser value than Field 3. (4-7ANS)
6	Start Bearing	O	The arc is drawn clockwise from the starting bearing to the end bearing. To draw a full circle or full ellipse the start and end bearings must be equal or be omitted. Enter the start bearing of the arc segment (000-360 or 000.0-360.0) in degrees true (T) or degrees relative (R). An optional checksum (0-9) may be used, e.g., 035T, 035R8, 035.5T, 035.5T3. A relative bearing indicates that the overlay is slaved to the track's current course. The default value is 000T. (4-7ANS)
7	End Bearing	C	Enter the end bearing of the arc segment using the same format as Field 6. A relative bearing indicates that the overlay is slaved to the track's current heading. The default value is 000T. This field is mandatory if Field 6 is used. (4-7ANS)
8	Line Type	O	Enter the type of line from Table 5-5 (Line Types), e.g., 5, 14. If line type is not provided, a default value of 0 (solid) will be assumed. (1-2N)
9	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., A, C. If line color is not provided, default value A (white) will be assumed. (1A)
10	Fill Type	O	Enter the area fill type from Table 5-7 (Area Fill Types), e.g., 3, 11. If fill type is not provided, default value 0 (no fill) will be assumed. (1-2N)

EXPANDED RELATIVE ARC (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
11	Fill Color	O	Enter the fill color from Table 5-6 (Color Codes), e.g., A, C. (1A)

Set Examples:

```
XRARC/035.5R3/10KY/100KY/30KY/045R9/020R2/065R1

XRARC/045T/50NM/200NM/125NM/045T
```

EXPANDED RELATIVE LINE

		1		2		3		2N+2
XRLIN	/	**1-3N**	/	**4-7ANS**	/	**2-9ANS**	/	1-2N
		NUMBER OF POINTS		**BEARING**		**RANGE**		**LINE TYPE**

	2N+3		2N+4		2N+5
/	1A	/	1-2N	/	1A
	LINE COLOR		**FILL TYPE**		**FILL COLOR**

NOTE: SHADED FIELDS ARE MANDATORY

NOTE: FIELDS UNDER BRACKET ARE REPEATABLE AS A GROUP

The XRLIN set is used to define line segment(s) between points located relative to the track described in the preceding ORGIN set. Closed figures can be reported by ensuring that the first and last positions are equal. Up to 256 points may be used to define 255 line segments per XRLIN set. The XRLIN set allows reporting of data with enhanced precision and flexibility in unit of measure.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Number of Points	M	Enter the number of points (2-256) that will be used to define the line segments, e.g., 2, 10. If the line is used to draw a closed figure, the position of the first and last points must be the same. (1-3N)
2	Bearing	M,R	Enter the bearing (000-360 or 000.0-360.0) from the track in the ORGIN set to the first point followed by "T" (true) or "R" (relative) and an optional checksum

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED RELATIVE LINE (Continued)

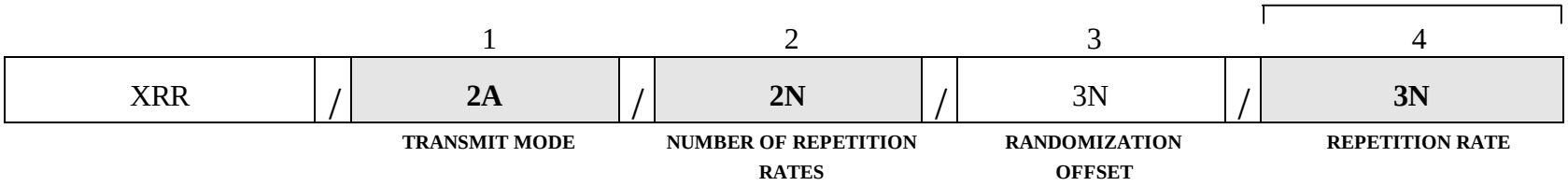
FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Bearing (continued)	M,R	(0-9), e.g., 035T, 035R8, 035.5T, 035.5T3. A relative bearing indicates that the overlay is slaved to the track's current heading, causing the overlay to reorient relative to the origin with any heading change. The default value is 000T. (4-7ANS)
3	Range	M,R	Enter the range in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD) or feet (FT), of point from the track specified in the ORGIN set. Use up to six characters with an optional floating decimal point (.00001-999999), followed by the appropriate unit of measure abbreviation, and optional checksum (0-9), e.g., 12.5NM, .045YD, 345KM2. (2-9ANS)
2N+2 (See Note)	Line Type	O	Enter the type of line from Table 5-5 (Line Types), e.g., 5, 14. If line type is not provided, default value 0 (solid line) will be assumed. (1-2N)
2N+3 (See Note)	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., B, D. If line color is not provided, default value A (white) will be assumed. (1A)
2N+4 (See Note)	Fill Type	O	Enter the area fill type from Table 5-7 (Area Fill Types), e.g., 3, 11. If fill type is not provided, default value 0 (no fill) will be assumed. (1-2N)
2N+5 (See Note)	Fill Color	O	Enter the fill color from Table 5-6 (Color Codes), e.g., B, D. (1A)

Set Examples:

```
XRLIN/3/035R/125KY/040R/150KY/050R/175KY/3/B/2/D
XRLIN/2/045T9/100NM/090T9/200NM
```

NOTE: N = number of points reported in Field 1.

TRANSMIT MODE REPETITION RATE



NOTE: SHADED FIELDS ARE MANDATORY

NOTE: FIELD UNDER BRACKET IS REPEATABLE

The XRR set is used to report transmission mode and random offset being used and the repetition rates of the wavetrains in the sequence being reported. All Ping users must be able to receive, decode, store, and transmit the data in Fields 1, 2, and 4.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Transmit Mode	M	Enter the mode of transmission being transmitted in this sequence. Coded characters for different modes of transmission (AA to ZZ), e.g., AA, AR, BP. (2A)
2	Number of Repetition Rates	M	Enter the number of repetition rates being transmitted in this sequence. The total number of rates in Field 4 will equal this number. At least one repetition rate must be given (01-99), e.g., 01, 03, 10, 89. (2N)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

TRANSMIT MODE REPETITION RATE (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Randomization Offset	O	Enter the randomization offset being used during transmission of this sequence. This offset is used to alert the bi-static receive ships of the possible time (in seconds) this sequence may be offset from a normal sequence. A value of 0 can be used in this field for NO-OFFSET (000-999), e.g., 000, 010, 070, 600. (3N)
4	Repetition Rate	M,R	Enter the repetition rate being used during transmission of each wavetrain identifier identified in the WTN set. The number of rate fields will equal the number in Field 2 and be the same as the number of wavetrains in the sequence listed in Field 1 of the WTN set. At least one repetition rate field must be indicated. This field may be repeated 99 times (000 = NO repetition rate (000-999)), e.g., 000, 010, 070, 600. (3N)

Set Examples:

```
XRR/AA/04/600/100/000/050/075

XRR/BP/02/700/050/075
```

EXPANDED RELATIVE SECTOR

	1		2		3		4
XRSEC	/	**4-7ANS**	/	**2-9ANS**	/	**4-7ANS**	/	**4-7ANS**
		BEARING FROM ORIGIN TO SECTOR CENTER		**RANGE FROM ORIGIN TO SECTOR CENTER**		**START BEARING**		**END BEARING**

	5		6		7		8		9
/	2-9ANS	/	**2-9ANS**	/	1-2N	/	1A	/	1-2N
	INNER RADIUS		**OUTER RADIUS**		**LINE TYPE**		**LINE COLOR**		**FILL TYPE**

	10
/	1A
	FILL COLOR

NOTE: SHADED FIELDS ARE MANDATORY

The XRSEC set is used to define a sector at a position relative to the track described in the preceding ORGIN set. A sector is the area between an outer circle (or circle segment) and an inner circle (or circle segment) or point. The XRSEC set allows reporting of data with enhanced precision and flexibility in unit of measure.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Bearing from Origin to Sector Center	M	Enter the bearing (000-360 or 000.0-360.0) from the origin to the center of the sector in degrees true (T) or relative (R). An optional checksum (0-9),

EXPANDED RELATIVE SECTOR (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Bearing from Origin to Sector Center (continued)	M	e.g., 035T, 035R8, 035.5T, 035.5T3. A relative bearing indicates that the overlay is slaved to the track's current heading, causing the overlay to reorient relative to the origin with any heading change. (4-7ANS)
2	Range from Origin to Sector Center	M	Enter the range in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT) from the origin to the center of the sector. Use up to six characters with optional floating decimal point (.00001-999999), followed by the appropriate unit of measure abbreviation, and optional checksum (0-9), e.g., 12.5NM, .045YD, 345KM2. (2-9ANS)
3	Start Bearing	M	The sector is drawn clockwise from the start bearing to the end bearing. If the start and end bearings are equal, the sector will be drawn as a full circle. Enter the start bearing of the sector in degrees (000-360 or 000.0-360.0) followed by "T" (true) or "R" (relative) and optional checksum (0-9), e.g., 005T, 135.5T4, 032.5R. A relative bearing indicates that the overlay is slaved to the track's current heading, causing the overlay to rotate with any heading changes. (4-7ANS)
4	End Bearing	M	Enter the end bearing of the sector using the same format as Field 3. (4-7ANS)
5	Inner Radius	O	Enter the distance from the sector center to the inner edge of the sector in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT). Use up to six characters with optional floating decimal point (.00001-999999), followed by the appropriate unit of measure abbreviation, and optional checksum (0-9), e.g., 12.5NM, .045YD, 345KM2. The default value is 0. (2-9ANS)

EXPANDED RELATIVE SECTOR (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
6	Outer Radius	M	Enter the distance from the sector center to the outer edge of the sector in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT). Use up to six characters with optional floating decimal point (.00001-999999), followed by the appropriate unit of measure abbreviation, and optional checksum (0-9), e.g., 12.5NM, .045YD, 345KM2. This value must be larger than Field 5. (2-9ANS)
7	Line Type	O	Enter the type of line from Table 5-5 (Line Types), e.g., 5, 14. If line type is not provided, default value 0 (solid) is assumed. (1-2N)
8	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., B, D. If line color is not provided, default value A (white) will be assumed. (1A)
9	Fill Type	O	Enter the area fill type from Table 5-7 (Area Fill Types), e.g., 3, 11. If fill type is not provided, default value 0 (no fill) will be assumed. (1-2N)
10	Fill Color	O	Enter the fill color from Table 5-6 (Color Codes), e.g., B, D. (1A)

Set Examples:

```
XRSEC/050T5/100NM/010T1/200T2/20NM/50NM

XRSEC/200T/40KY/090T/270T//80KY/2/B
```

EXPANDED RELATIVE SYMBOL

		1		2		3		4
XRSYM	/	**4-7ANS**	/	**2-9ANS**	/	**3N**	/	2N
		BEARING		**RANGE**		**SYMBOL**		**MODIFIER**

5		6		7		**8**
/	4-7ANS	/	1-21ANBS	/	1-2N	/	**1A**
	ORIENTATION		**LABEL**		**SYMBOL SIZE**	**LINE COLOR**

NOTE: SHADED FIELDS ARE MANDATORY

The XRSYM set is used to place a symbol at a position relative to the track described in the preceding ORGIN set. These symbols are defined in Table 5-8. The XRSYM set allows reporting of data with enhanced precision and flexibility in unit of measure.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Bearing	M	Enter the bearing (000-360 or 000.0-360.0) from the origin to the symbol location in degrees true (T) or relative (R). An optional checksum (0-9) may be used, e.g., 035T, 035R8, 035.5T, 035.5T3. A relative bearing indicates that the overlay is slaved to the track's current heading, causing the overlay to reorient relative to the origin with any heading change. (4-7ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED RELATIVE SYMBOL (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Range	M	Enter the range in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet (FT), of the symbol location from the track specified in the ORGIN set. Use up to six characters with optional floating decimal point (.00001-999999), followed by the appropriate unit of measure abbreviation, and optional checksum (0-9), e.g., 12.5NM, .045YD, 345KM2. (2-9ANS)
3	Symbol	M	Enter the basic symbol code from Table 5-8 (Basic Symbol Codes), e.g., 006, 120. (3N)
4	Modifier	O	Enter the symbol modifier code from Table 5-10 (Symbol Modifier Codes), e.g., 02, 08. (2N)
5	Orientation	O	Enter the bearing of the symbol orientation (000-360 or 000.0-360.0) in degrees true (T) or relative (R). An optional checksum (0-9) may be used, e.g., 035T, 035R8, 035.5T, 035.5T3. A relative bearing indicates that the overlay is slaved to the track's current heading, causing the overlay to reorient relative to the origin with any heading change. The default value is 000T. (4-7ANS)
6	Label	O	Enter the free-text label that is to be displayed by receiving TDPs. Slants (/) are not allowed, e.g., INBOUND POINT, SKUNK BRAVO. (1-21ANBS)
7	Symbol Size	O	Enter the character/symbol size from Table 5-9 (Character and Symbol Size Codes), e.g., 5,10,50. If character/symbol size is not provided, default value 5 (5 vertical pixels) will be assumed. (1-2N)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED RELATIVE SYMBOL (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
8	Line Color	C.	**Enter the line color from** Table 5-6 (Color Codes), **e.g., B, C. If line color is not specified, use the color from** Table 5-8 (Basic Symbol Codes), **if provided,** otherwise **default value A (white) will be assumed. This field is not used if Field 3 is equal to 000-032, 038, 039, 100, or 595-646. (1A)**

Set Examples:

```
XRSYM/265T/225NM/029///TYPHOON MONA

XRSYM/101T/15KY/060/04/100T/PT XRAY/5/1
```

EXPANDED RELATIVE TEXT

		1		2		3		4
XRTXT	/	4-7ANS	/	2-9ANS	/	**1-30ANBS**	/	4-7ANS
		BEARING		**RANGE**		**TEXT**		**ORIENTATION**

	5		6		7
/	1-2N	/	1N	/	1A
	CHARACTER SIZE		**FONT**		**COLOR**

NOTE: SHADED FIELD IS MANDATORY

The XRTXT set is used to place a line of text at a position relative to the track described in the preceding ORGIN set. The XRTXT set allows reporting of data with enhanced precision and flexibility in unit of measure.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Bearing	O	Enter the bearing from the origin to thestart of the text (000-360 or 000.0-360.0) in degrees true (T) or relative (R). An optional checksum (0-9) may be used, e.g., 035T, 035R8, 035.5T, 035.5T3. A relative bearing indicates that the overlay is slaved to the track's current heading, causing the overlay to reorient relative to the origin with any heading change. The default value is 090T. (4-7ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED RELATIVE TEXT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Range	O	Enter the range in nautical miles (NM), kilometers (KM), meters (M), kiloyards (YD), or feet (FT) of the text location from the track specified in the ORGIN set. Use up to six characters with optional floating decimal point (.00001-999999), followed by the appropriate unit of measure abbreviation, and optional checksum (0-9), e.g., 12NM, .045YD, 345KM2. The default value is 0. (2-9ANS)
3	Text	M	Enter the text that is to be displayed by receiving TDPs. Slants (/) are not allowed, e.g., MINEFIELD, SWEPT AREA. (1-30ANBS)
4	Orientation	O	Enter the bearing of text orientation (000-360 or 000.0-360.00) in degrees true (T) or relative (R). An optional checksum (0-9) may be used, e.g., 035T, 035R8, 035.5T, 035.5T3. A relative bearing indicates that the overlay is slaved to the track's current heading, causing the overlay to reorient relative to the origin with any heading change. The default value is 090T. (4-7ANS)
5	Character Size	O	Enter the character/symbol size from Table 5-9 (Character and Symbol Size Codes), e.g., 5, 10, 50. If character/symbol size is not provided, default value 5 (vertical pixels) will be assumed. (1-2N)
6	Font	O	Enter the character font from Table 5-11 (Character Font Codes), e.g., 2, 3. If character font is not provided, default value 1 (standard font, upper case) will be assumed. (1N)
7	Color	O	Enter the color code of the specified text from Table 5-6 (Color Codes), e.g., A, B, K. If color code is not provided, default value A (white) will be assumed. (1A)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED RELATIVE TEXT (Continued)

Set Examples:

```
XRTXT/045T9/5NM/CAP STATIONING PLAN

XRTXT/080T/15KY/CAP STATIONING PLAN/045T/10
```

EXPANDED SECTOR

		1		2		3		4
XSECT	/	**4-24ANS (7-27ANS)**	/	**4-7ANS**	/	**4-7ANS**	/	2-9ANS
		CENTER		**START BEARING**		**END BEARING**		**INNER RADIUS**

5		6		7		8		9
2-9ANS	/	1-2N	/	1A	/	1-2N	/	1A
OUTER RADIUS		**LINE TYPE**		**LINE COLOR**		**FILL TYPE**		**FILL COLOR**

NOTE: SHADED FIELDS ARE MANDATORY

The XSECT set is used to define a sector at a fixed geographic position. A sector is the area between an outer circle (or circle segment), and an inner circle (or circle segment) or point. The XSECT set allows reporting of data with enhanced precision and flexibility in unit of measure.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Center	M	Enter the center position of the arc, ellipse, or circle in its original format and precision if possible. Use one of the alternate field contents provided below. Enter the designated field descriptor followed by the data. Data can be expressed in:

Coordinate System	Field Descriptor
Latitude/Longitude	LL:

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED SECTOR (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)	
1	Center (continued)	M	Coordinate System	Field Descriptor
			UTM (Universal Transverse Mercator)	UT:
			GEOREF (World Geographic Reference System)	GR:
			The precision reported in this field should reflect the original known precision. The only boundary or restriction placed on the reported precision of data in this field is the field length range. An optional floating decimal point is allowed as appropriate. See Table 5-21 (Position Reporting) for more information on data format, e.g., LL:304055.55N7-1304055.55E8, UT:45FDK0474, GR:DIQA. (4-24ANS, 7-27ANS including field descriptor)	
2	Start Bearing	M	The sector is drawn clockwise from the start bearing to the end bearing. If the start and end bearings are the same, the sector will be drawn as a full circle. Enter the start bearing (000-360 or 000.0-360.0) of the sector from the point e.g., 005T, 135.5T4. The default value is 000T. (4-7ANS)	
3	End Bearing	M	Enter the end bearing using the same format as Field 2. (4-7ANS)	
4	Inner Radius	O	Enter the distance from the point specified in Field 1 to the inner edge of the sector, in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet. Use up to six characters with optional floating decimal point (.00001-999999), followed by the appropriate unit of measure abbreviation, and optional checksum (0-9), e.g., 12.5NM, .045YD, 345KM2. The default value is 0. (2-9ANS)	

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED SECTOR (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
5	Outer Radius	M	Enter the distance from the point specified in Field 1 to the outer edge of the sector, in nautical miles (NM), kilometers (KM), meters (M), kiloyards (KY), yards (YD), or feet. Use up to six characters with optional floating decimal point (.00001-999999), followed by the appropriate unit of measure abbreviation, and optional checksum (0-9), e.g., 12.5NM, .045YD, 345KM2. This value must be larger than Field 4. (2-9ANS)
6	Line Type	O	Enter the type of line from Table 5-5 (Line Types), e.g., 5, 14. If line type is not provided, a default value of 0 (solid) will be assumed. (1-2N)
7	Line Color	O	Enter the line color from Table 5-6 (Color Codes), e.g., B, C, I. If line color is not provided, a default value of A (white) will be assumed. (1A)
8	Fill Type	O	Enter the area fill type from Table 5-7 (Area Fill Types), e.g., 3, 11. If fill type is not provided, a default value of 0 (no fill) will be assumed. (1-2N)
9	Fill Color	O	Enter the fill color from Table 5-6 (Color Codes), e.g., A, D, I. (1A)

Set Examples:

```
XSECT/LL:304055.55N7-1304055.55E8/010T1/160T7/100NM/150NM

XSECT/UT:18SUU83630143/220T/090T/50KY/100KY/0/D
```

EXPANDED SIGNATURE

		1		2		3		4
XSGNA	/	**1-15ANBS**	/	**3-10ANS**	/	**1-22NS**	/	1-4NS
		SOURCE		**FUNDAMENTAL FREQUENCY**		**HARMONICS**		**RPM**

	5		6		7		8		9
/	1-5NS	/	**8-12ANS**	/	**5AN**	/	2-6AN	/	4-13AB
	TURNS PER KNOT		**DATE-TIME GROUP**		**MONTH-YEAR**		**ACOUSTIC SENSOR CODE**		**DETECTION STATUS**

NOTE: SHADED FIELDS ARE MANDATORY

The XSGNA set is used to report significant acoustic data associated with the track described in the preceding CTC set at the time noted in Fields 6 and 7. The XSGNA set allows reporting of data with enhanced precision.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Source	M	Source codes are promulgated separately in OPNAVINST S3431.3 (series). The purpose of the S3431.3 is to promulgate source codes for use with ASW reports submitted in the Maritime Reporting System, NWP 1-03.40. Messages containing source code information shall not be classified lower than SECRET. (1-15ANBS)
2	Fundamental Frequency	M	Enter the fundamental frequency (1-8NS, floating decimal point allowed) of the source being reported followed by "HZ" (hertz), e.g., 1HZ, 123456.5HZ, 1234.5HZ, 123.45HZ. (3-10ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED SIGNATURE (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
3	Harmonics	M	Enter a list of harmonics in descending order of predominance using 1-2 digit combinations separated by commas, e.g., 8,12,4. (1-22NS)
4	RPM	O	Enter the revolutions (1-4 digits, decimal point allowed) per minute (RPM) of the source being reported, e.g., 40, 60.8, 105. (1-4NS)
5	Turns Per Knot	O	Enter the turns per knot (1-5 digits, decimal point allowed) of the source being reported, e.g., 8, 10, 10.2, 8.5, 999.5. (1-5NS)
6	Date-Time Group	M	Enter the date-time group of the position report in days (01-31), hours (00-23), minutes (00-59), optional seconds (00-59) and optional tenths of seconds (.0-.9), and time zone (Z), followed by a checksum (0-9), e.g., 01211534.5Z2, 212359Z2. (8-12ANS)
7	Month-Year	M	Enter the first three letters of the month and last two digits of the year of the position report, e.g., JUN99, JAN01. (5AN)
8	Acoustic Sensor Code	O	Enter the sensor code of the detecting acoustic sensor from Entry List 1104 (Sensor Codes), e.g., VDSACT, SONACT. (2-6AN)
9	Detection Status	O	Enter the detection status of the acoustic signature from Table 5-20 (Detection Status Codes), e.g., GAIN, LOSS, ABRUPT. (4-13AB)

Set Examples:

```
XSGNA/XXX/123.45HZ/8,10,4/88.5/10.2/121000Z4/MAR99/SONACT/GAIN

XSGNA/XXX/123.05HZ/4,8,14/95.3/12.8/01120156.6Z2/APR99/SONACT/ABRUPT
```

EXPANDED SYMBOL

		1		2		3		4
XSYMB	/	**4-24ANS (7-27ANS)**	/	**3N**	/	2N	/	4-7ANS
		SYMBOL LOCATION		**SYMBOL**		**MODIFIER**		**ORIENTATION**

	5		6		7
/	1-21ANBS	/	1-2N	/	**1A**
	LABEL		**SYMBOL SIZE**		**LINE COLOR**

NOTE: SHADED FIELDS ARE MANDATORY

The XSYMB set is used to place a symbol at a fixed geographic position. These symbols are defined in Table 5-8. The XSYMB set allows reporting of data with enhanced precision and flexibility in units of measure.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Symbol Location	M	Enter the symbol location in its original format and precision if possible. Use one of the alternate field contents provided below. Enter the designated field descriptor followed by the data. Data can be expressed in:

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED SYMBOL (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)	
1	Symbol Location (continued)	M	Coordinate System	Field Descriptor
			UTM (Universal Transverse Mercator)	UT:
			GEOREF (World Geographic Reference System)	GR:
			The precision reported in this field should reflect the original known precision. The only boundary or restriction placed on the reported precision of data in this field is the field length range. An optional floating decimal point is allowed as appropriate. See Table 5-21 (Position Reporting) for more information on data format, e.g., LL:304055.55N7-1304055.55E8, UT:45FDK0474, GR:DIQA. (4-24ANS, 7-27ANS including field descriptor)	
2	Symbol	M	Enter the basic symbol code from Table 5-8 (Basic Symbol Codes), e.g., 060. (3N)	
3	Modifier	O	Enter the symbol modifier from Table 5-10 (Symbol Modifier Codes), e.g., 04. (2N)	
4	Orientation	O	Enter the true bearing of the symbol orientation (000-360 or 000.0-360.0) followed by "T" (true) and an optional checksum (0-9), e.g., 005T, 135.5T4. The default value is 000T. (4-7ANS)	

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED SYMBOL (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
5	Label	O	Enter the free-text label that is to be displayed by receiving TDPs. Slants (/) are not allowed, e.g., MARSHALL, PT ALFA. (1-21ANBS)
6	Symbol Size	O	Enter the character/symbol size from Table 5-9 (Character and Symbol Size Codes), e.g., 5, 10, 50. If character/symbol size is not provided, default value 5 (vertical pixels) will be assumed. (1-2N)
7	Line Color	**C**	**Enter the line color from** Table 5-6 (Color Codes)~~,~~**, e.g., A, C. If line color is not specified, use the color from Table 5-8 (Basic Symbol Codes), if provided, otherwise default value A (white) will be assumed. This field is not used if Field 2 is equal to 000-032, 038, 039, 100, or 595-646. (1A)**

Set Example:

```
XSYMB/UT:18SUU83630143/030/04/090T/12TH MOTORIZED BATT/10
```

EXPANDED TEXT

	1		2		3		4
XTEXT	/	**4-24ANS (7-27ANS)**	/	**1-30ANBS**	/	4-7ANS	/	1-2N
		TEXT LOCATION		**TEXT**		**ORIENTATION**		**CHARACTER SIZE**

5		6
1N	/	1A
FONT		**COLOR**

NOTE: SHADED FIELDS ARE MANDATORY

The XTEXT set is used to place a line of text at a fixed geographic position. The XTEXT set allows reporting of data with enhanced precision and flexibility in unit of measure.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Text Location	M	Enter the text location in its original format and precision if possible. Use one of the alternate field contents provided below. Enter the designated field descriptor followed by the data. Data can be expressed in:

Coordinate System	Field Descriptor
Latitude/Longitude	LL:

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED TEXT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)	
1	Text Location (continued)	M	Coordinate System	Field Descriptor
			UTM (Universal Transverse Mercator)	UT:
			GEOREF (World Geographic Reference System)	GR:
			The precision reported in this field should reflect the original known precision. The only boundary or restriction placed on the reported precision of data in this field is the field length range. An optional floating decimal is allowed as appropriate. See Table 5-21 (Position Reporting) for more information on data format, e.g., LL:304055.55N7-1304055.55E8, UT:45FDK0474, GR:DIQA. (4-24ANS, 7-27ANS including field descriptor)	
2	Text	M	Enter the text that is to be displayed by receiving TDPs. Slants (/) are not allowed, e.g., MINEFIELD, SWEPT AREA. (1-30ANBS)	
3	Orientation	O	Enter the true bearing of the text orientation (000-360 or 000.0-360.0) followed by "T" (true) and an optional checksum (0-9), e.g., 035T, 135.5T4. The default value is 090T. (4-7ANS)	
4	Character Size	O	Enter the character/symbol size of the specified text from Table 5-9 (Character and Symbol Size Codes), e.g., 5, 10, 50. If a character/symbol size is not provided, default value 5 (vertical pixels) will be assumed. (1-2N)	

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

EXPANDED TEXT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
5	Font	O	Enter the character font from Table 5-11 (Character Font Codes), e.g., 2, 3. If character font is not provided, default value 1 (standard font, upper case) will be assumed. (1N)
6	Color	O	Enter the color code of the specified text from Table 5-6 (Color Codes), e.g., A, B, K. If color code is not provided, default value A (white) will be assumed. (1A)

Set Examples:

```
XTEXT/LL:304055.55N7-1304055.55E8/MINEFIELDS

XTEXT/UT:18SUU83630143/SWEPT AREA/045T9/10/3/B
```

CHAPTER 5

APPROVED TABLES AND ENTRY LISTS

5.1 PURPOSE

This chapter contains approved tables and entry lists to be used with the Set Library.

The approved sets contained in Chapter 4 refer to the approved tables and entry lists contained in this chapter. The developmental sets contained in Chapter 8 may refer to approved tables and entry lists (Chapter 5) or developmental tables and entry lists (Chapter 9). Entry lists are derived from United States Message Text Format (USMTF) Field Format Index Reference Numbers (FFIRNs). These numbers are retained in order to document the origin of these entry lists, and to enable OTG users to cross-reference to USMTF documentation when applicable.

The following tables and entry lists are contained in this chapter:

TABLE 5-1 FORCE CODES

FORCE CODE	POSITION	THREAT ID	SYMBOL	COLOR	DESCRIPTION
00	UNK	PND		Yellow	Unknown Pending
01	AIR	HOS		Red	Air Hostile
02	AIR	PND		Yellow	Air Pending
03	AIR	FRD		Cyan	Air Friend
04	SUB	HOS		Red	Sub Hostile
05	SUB	PND		Yellow	Sub Pending
06	SUB	FRD		Cyan	Sub Friend
07	SUR	HOS		Red	Surf Hostile
08	SUR	PND		Yellow	Surf Pending
09	SUR	FRD		Cyan	Surf Friend
10	AIR	AFD		Cyan	Air Assumed Friend
11	AIR	SUS		Red	Air Suspect
12	AIR	NEU		Green	Air Neutral

TABLE 5-1 FORCE CODES (Continued)

FORCE CODE	POSITION	THREAT ID	SYMBOL	COLOR	DESCRIPTION
13	SUB	AFD		Cyan	Sub Assumed Friend
14	SUB	SUS		Red	Sub Suspect
15	SUB	NEU		Green	Sub Neutral
16	SUR	AFD		Cyan	Surf Assumed Friend
17	SUR	SUS		Red	Surf Suspect
18	SUR	NEU		Green	Surf Neutral
19	UNK	SUS		Red	Unknown Suspect
20	UNK	AFD		Cyan	Unknown Assumed Friend
21	UNK	NEU		Green	Unknown Neutral
22	LND	FRD		Cyan	Land Friend
23	LND	AFD		Cyan	Land Assumed Friend
24	LND	HOS		Red	Land Hostile
25	LND	SUS		Red	Land Suspect

TABLE 5-1 FORCE CODES (Continued)

FORCE CODE	POSITION	THREAT ID	SYMBOL	COLOR	DESCRIPTION
26	LND	PND		Yellow	Land Pending
27	LND	NEU		Green	Land Neutral
28	AIR	UNK		Yellow	Air Unknown
29	SUB	UNK		Yellow	Sub Unknown
30	SUR	UNK		Yellow	Surf Unknown
31	LND	UNK		Yellow	Land Unknown
32	UNK	UNK		Yellow	Unknown Unknown
33-37					Unused
38	UNK	HOS		Red	Unknown Hostile
39	UNK	FRD		Cyan	Unknown Friend
40-85					Reserved for future use
86					All Air
87					All Sub

TABLE 5-1 FORCE CODES (Continued)

FORCE CODE	POSITION	THREAT ID	SYMBOL	COLOR	DESCRIPTION
88					All Surf
89					All Land
90					All Unknown
91					All Hostile
92					All Pending
93					All Friend
94					All Assumed Friend
95					All Suspect
96					All Neutral
97					Unused
98					Unused
99					All All

Threat ID is determined by Force Code only.

Entries 86 through 99 are reserved for use in the AOI Filter Message only (i.e., not for contact reporting).

Symbology displayed in this table is recommended because of compatibility with current TADIL and STANAG ID requirements.

TABLE 5-1 FORCE CODES (Continued)

KEY TO CATEGORY AND THREAT ID ENTRIES	
CATEGORY ENTRY	THREAT ID ENTRY
AIR: Air	UNK: Unknown
LND: Land	FRD: Friend
SUB: Subsurface	HOS: Hostile
SUR: Surface	NEU: Neutral
UNK: Unknown	PND: Pending
	AFD: Assumed Friend
	SUS: Suspect

Category and Threat ID values are recommend values for OTH-T system users based Link 11, Link 16, STANAG 1241, and MIL-STD-2525B requirements. Former ID entry EVALUATED UNKNOWN "EVU" changed to UNKNOWN "UNK" where the evaluation is implied.

TABLE 5-2 CATEGORY CODES

FIELD ENTRY	DESCRIPTION
NAV	Surface Naval Vessel
MER	Merchant Vessel
FSH	Fishing Vessel
AIR	Aircraft
SUB	Submarine Naval Vessel
UNK	Unknown
LND	Land-based Installation/Facility

TABLE 5-3 SCAN TYPE CODES

FIELD ENTRY	DESCRIPTION
A	Circular
B	Horizontal Sector (bidirectional)
C	Vertical Sector (bidirectional)
D	Non-scanning (e.g., omnidirectional or fixed directional) relative to platform
E	Irregular or Unsteady (e.g., directional, slewable in azimuth and/or elevation, manual or semiautomatic tracker)
F	Conical
G	Lobe Switching
H	Track (other than F or G)
I	Palmer Raster and Conical
J	Raster
K	Spiral
L	Helical
M	Circular and Vertical Sector
N	Circular and Conical
O	Sector and Conical
P	Agile Beam (unpatterned electronic scans)
Q	Helical and Conical
R	Other combinations/patterns
S	Vertical Sector (unidirectional)
T	Horizontal Sector (unidirectional)
U	Unidirectional Sector (plane undetermined)
V	Bidirectional Sector (plane undetermined)
Z	Undetermined

TABLE 5-4 GROUP CATEGORY CODES

FIELD ENTRY	DESCRIPTION
AIR	Air
ANK	Anchorage
ATK	Attack
BMB	Bomber
FTR	Fighter
FSH	Fishing
GUN	Gun
HEL	Helicopter
MER	Merchant
MIN	Mine
MSL	Missile
NAV	Naval
PLT	Platoon
PRT	Port
SQD	Squad
STM	Storm
SUB	Submarine
SUP	Supply
TNK	Tank
UNK	Unknown

TABLE 5-5 LINE TYPES

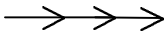
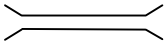
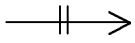
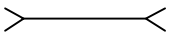
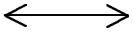
SYMBOL	FIELD ENTRY	COLOR	DESCRIPTION
	0		Solid
	1		Dashed
	2		Dotted
	3		Alternating Dashes and Dots
	4		Bold Solid Line
	5		Not Assigned
	6	Red	Warm Front[1]
	7	Light Blue	Cold Front[2]
	8	Light Blue/Red	Stationary Front[3]
	9	Magenta	Occluded Front[4]
	10		Front Line of Own Troops
	11		Obstacle
	12		Fortified Line
	13		Reconnaissance
	14		Route
	15		Bridge or Gap
	16		Delaying Action
	17		Lane
	18		Ferry
	19		Antitank Ditch
	20		Antipersonnel Mine

TABLE 5-5 LINE TYPES (Continued)

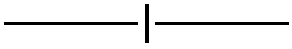
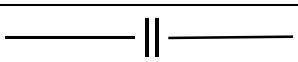
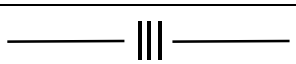
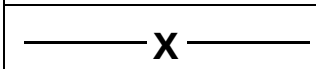
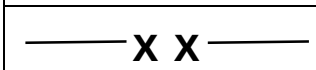
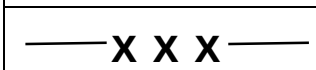
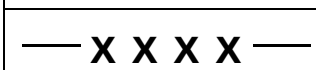
SYMBOL	FIELD ENTRY	COLOR	DESCRIPTION
	21		Antitank Mine
	22		Antitank Mine with Antihandling Device
	23		Unspecified Mine
	24		Boundary (Squad)
	25		Boundary (Section)
	26		Boundary (Platoon or Detachment)
	27		Boundary (Company, Battery, or Troop)
	28		Boundary (Battalion or Squadron)
	29		Boundary (Group or Regiment)
	30		Boundary (Brigade)
	31		Boundary (Division or Wing)
	32		Boundary (Corps or Force)
	33		Boundary (Army)

TABLE 5-5 LINE TYPES (Continued)

NOTES:

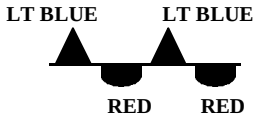
The ◗ and▲ marks are plotted on the side indicated in the table above as the line is drawn from left to right. The user controls on which side of the line the marks will appear by the order in which the points are connected to form the line.

Color - The following standard color conventions are used to indicate warm, cold, stationary, and occluded fronts. For monochrome displays, the line and "marks" of the pattern depict the type of front.

1 Warm Front - Both lines and "marks" are red

2 Cold Front - Both lines and "marks" are light blue

3 Stationary Front - Alternating light blue/red lines and "marks"



4 Occluded Front - Both lines and "marks" are magenta; "marks" are evenly spaced

TABLE 5-6 COLOR CODES

FIELD ENTRY	DESCRIPTION
A	White
B	Red
C	Yellow
D	Green
E	Dark Blue
F	Light Blue
G	Magenta
H	Black
I	Orange
J-Z	TBD

TABLE 5-7 AREA FILL TYPES

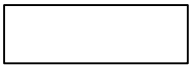
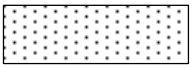
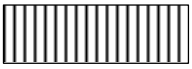
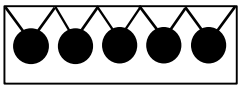
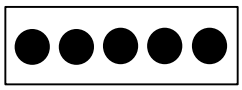
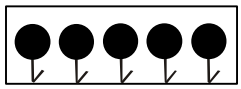
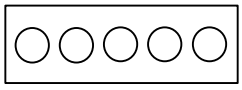
FIELD ENTRY	SYMBOL	DESCRIPTION
	0	No Fill
	1	Solid
	2	Dotted
	3	Horizontal Stripes
	4	Vertical Stripes
	5	Negative Slope Slants
	6	Positive Slope Slants
	7	Cross-hatch
	8	Antipersonnel Mine
	9	Antitank Mine
	10	Antitank Mine with Antihandling Device
	11	Unspecified Mine

TABLE 5-8 BASIC SYMBOL CODES

SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	Yellow	000	Unknown Pending
	Red	001	Air Hostile
	Yellow	002	Air Pending
	Cyan	003	Air Friend
	Red	004	Sub Hostile
	Yellow	005	Sub Pending
	Cyan	006	Sub Friend
	Red	007	Surf Hostile
	Yellow	008	Surf Pending
	Cyan	009	Surf Friend
	Cyan	010	Air Assumed Friend
	Red	011	Air Suspect
	Green	012	Air Neutral

TABLE 5-8 BASIC SYMBOL CODES (Continued)

SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	Cyan	013	Sub Assumed Friend
	Red	014	Sub Suspect
	Green	015	Sub Neutral
	Cyan	016	Surf Assumed Friend
	Red	017	Surf Suspect
	Green	018	Surf Neutral
	Red	019	Unknown Suspect
	Cyan	020	Unknown Assumed Friend
	Green	021	Unknown Neutral
	Cyan	022	Land Friend
	Cyan	023	Land Assumed Friend
	Red	024	Land Hostile
	Red	025	Land Suspect

TABLE 5-8 BASIC SYMBOL CODES (Continued)

SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	Yellow	026	Land Pending
	Green	027	Land Neutral
	Yellow	028	Air Unknown
	Yellow	029	Sub Unknown
	Yellow	030	Surf Unknown
	Yellow	031	Land Unknown
	Yellow	032	Unknown Unknown
		033 - 037	Unused
	Red	038	Unknown Hostile
	Cyan	039	Unknown Friend
	Cyan	100	Ownship Symbol
		101	DLRP
	*	120	Airborne

TABLE 5-8 BASIC SYMBOL CODES (Continued)

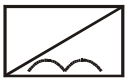
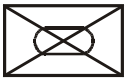
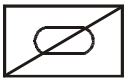
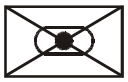
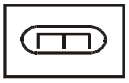
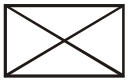
SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	*	121	Airborne Reconnaissance
	*	122	Airborne Armor
	*	123	Airborne Artillery
	*	124	Airborne Infantry
	*	125	Airborne Signal
	*	130	Armored
	*	131	Mechanized Infantry
	*	132	Armored Cavalry
	*	133	Armored Artillery
	*	134	Armored Infantry Artillery
	*	135	Mechanized Engineer
	*	140	Infantry
	*	141	Marine Expeditionary

TABLE 5-8 BASIC SYMBOL CODES (Continued)

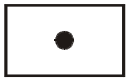
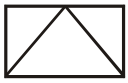
SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	*	142	Mountain Infantry
	*	143	Parachute Qualified Infantry
	*	150	Amphibious
	*	151	Air Ground Task Force, Amphibious
	*	152	Ground Forces, Amphibious Capable
	*	153	Assault Amphibious
	*	160	Artillery
	*	161	Rocket Artillery
	*	162	Air Defense
	*	163	Anti-Tank
	*	164	Infantry Artillery
	*	170	Rocket and Guided Missile
	*	171	Surface to Surface Missile (SSM)

TABLE 5-8 BASIC SYMBOL CODES (Continued)

SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	*	172	Surface to Air Missile (SAM)
	*	180	Air Force, General Aviation
	*	181	Marine Aircraft, Attack
	*	182	Marine Aircraft, All-Weather Attack
	*	183	Marine Aircraft, Fighter
	*	184	Marine Aircraft, Transport/Refueler
	*	185	Marine Aircraft, Observation
	*	186	Marine Helicopter
	*	187	Marine Helicopter, Light Attack
	*	188	Marine Helicopter, Medium
	*	189	Marine Helicopter, Heavy
	*	190	Army, Helicopter
	*	191	Army, Fixed Wing

TABLE 5-8 BASIC SYMBOL CODES (Continued)

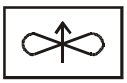
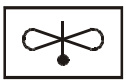
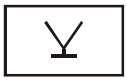
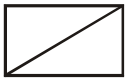
SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	*	193	Army, General Aviation
	*	194	Air Force, Fighter
	*	195	Air Force, Bomber
	*	196	Air Force, Transport
	*	198	Unmanned Air Reconnaissance
	*	199	Marines
	*	200	Airmobile
	*	201	Airmobile (w/sufficient organic aircraft)
	*	203	Reconnaissance or Cavalry
	*	205	Signal/Communications
	*	207	Electronic Warfare
	*	210	Nuclear, Biological, Chemical (NBC)
	*	215	Shore Party Unit

TABLE 5-8 BASIC SYMBOL CODES (Continued)

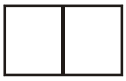
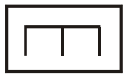
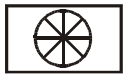
SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	*	216	Air Naval Gunfire Liaison Company Unit
	*	217	Battalion Landing Team
	*	218	Special Forces
	*	219	Replacement
	*	220	Irregular Forces
	*	221	Motorized (temporary)
	*	222	Motorized (cross-country)
	*	225	Joint Forces
	*	226	Allied Forces
	*	230	Engineering
	*	231	Transportation
	*	232	Ordnance
	*	233	Supply

TABLE 5-8 BASIC SYMBOL CODES (Continued)

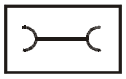
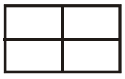
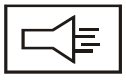
SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	*	234	Repair and Maintenance
	*	235	Topographic
	*	236	Meteorological and Oceanographic
	*	240	Service Support Group
	*	241	Brigade Service Support Group
	*	242	Force Service Support Group
	*	245	Medical
	*	246	Dental
	*	250	Military Intelligence
	*	251	Data Processing Unit
	*	255	Psychological Warfare
	*	256	Army Security Agency
	*	257	Civil Affairs

TABLE 5-8 BASIC SYMBOL CODES (Continued)

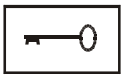
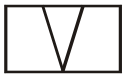
SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	*	258	Military Police
	*	260	Service
	*	261	Finance
	*	262	Personnel Service and Admin
	*	263	Postal
	*	264	Quartermaster
	*	265	Veterinary
	*	280	Air Defense Radar
	*	281	Artillery Locating Radar
	*	282	Ground Sensor/Ground Surveillance Radar
	*	285	Automatic Data Processing Central
	*	287	Direction Finding
	*	288	Intercept

TABLE 5-8 BASIC SYMBOL CODES (Continued)

SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	*	290	Electronic Warfare
	*	292	Jamming
	*	295	Target Designator
	*	296	Coordinating Point
	*	297	NAV Reference
	*	300	Signal Communications Center
	*	301	Radio Relay Station
	*	302	Radio Wireless Station
	*	303	Radio Wireless Station (dummy)
	*	305	Telephone or Telephone Switching Center not at HQ
	*	306	Teleprinter Center
	*	308	Air Traffic Control
	*	309	Navigational Aids

TABLE 5-8 BASIC SYMBOL CODES (Continued)

SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	*	312	Special Electronic Devices
	*	315	Non-Communication Electronics, Space
	*	320	Unknown
	*	325	Listening or Observation Post
	*	326	Artillery LP/OP
	*	327	Infantry LP/OP
	*	328	Recon LP/OP
	*	335	Airfield
	*	336	Landing Strip
	*	337	Helicopter Landing Area
	*	350	Supply Point
	*	351	Ammunition Supply Point
	*	352	Ammunition Supply Point, Artillery

TABLE 5-8 BASIC SYMBOL CODES (Continued)

SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	*	353	Ammunition Supply Point, Rocket/ Guided Missile
	*	354	Ammunition Supply Point, Small Arms
	*	355	Ammunition Supply Point, Special
	*	356	Ammunition Supply Point, Conventional
	*	357	Ammunition Supply Point, Air Defense
	*	358	Ammunition Supply Point, Nuclear
	*	360	POL
	*	375	Military Installation Facility
	*	376	Naval Installation
	*	377	Fort, Strongpoint, Bunker
	*	378	Fortified Area, Defense System
	*	379	CBR Facility
	*	381	Prisoner of War Camp, Military Prison

TABLE 5-8 BASIC SYMBOL CODES (Continued)

SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	*	384	Terrorist Facility
	*	387	Suspected Narcotics Trafficking Facility
	*	390	Bridge
	*	391	Railway Bridge
	*	392	Chokepoint
	*	393	Tunnel
	*	394	Railway Tunnel
	*	395	Ferry
	*	396	Ford
	*	400	Beach, suitable for landing
	*	401	Beach, NOT suitable for landing
	*	405	Medical Installation Facility
	*	410	Civilian Installation Facility

TABLE 5-8 BASIC SYMBOL CODES (Continued)

SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	*	411	Dam
	*	412	Power Plant
	*	413	Nuclear Power Plant
	*	415	Transportation
	*	420	Urban Area
	*	430	Production Facility (Manufacture/Assembly/Storage)
	*	431	Ammunition/Explosives Production
	*	432	CBR Production/Storage
		450	Expired Sonobuoy
		451	Sonobuoy, Active
		452	Sonobuoy, LOFAR
		453	Sonobuoy, DICASS
	*	565	Terrorist Incident

TABLE 5-8 BASIC SYMBOL CODES (Continued)

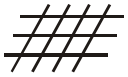
SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	*	570	Barrier
	*	571	Tank Obstacle
	*	575	Hazard
	*	576	Hazard, Mine
	*	577	Hazard, Navigational
	*	580	Bombing Range
	*	582	Destroyed/Demolished Area
	*	585	Man in Water
	*	586	Ditched Aircraft
	*	587	Distressed Vessel
	Red	595	Hurricane Typhoon - Northern Hemisphere
	Red	596	Hurricane Typhoon - Southern Hemisphere
	Red	597	Tropical Storm - Northern Hemisphere

TABLE 5-8 BASIC SYMBOL CODES (Continued)

SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	Red	598	Tropical Storm - Southern Hemisphere
	Red	599	Tropical Depression
	Brown (Orange)	600	Smoke
	Brown (Orange)	601	Haze
	Brown (Orange)	602	Dust or Sand
	Brown (Orange)	603	Blowing Dust Sand
	Brown (Orange)	604	Dust or Sand Storm
	Yellow	605	Ground Fog
	Yellow	606	Fog
	Green	607	Drizzle, Intermittent
	Green	608	Drizzle, Light
	Green	609	Drizzle, Moderate
	Green	610	Drizzle, Heavy

TABLE 5-8 BASIC SYMBOL CODES (Continued)

SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	Red	611	Freezing Drizzle
	Green	612	Rain, Intermittent
	Green	613	Rain, Light
	Green	614	Rain, Moderate
	Green	615	Rain, Heavy
	Red	616	Freezing Rain
	Green	617	Rain & Snow Mixed
	Green	618	Snow, Light
	Green	619	Snow, Moderate
	Green	620	Snow, Heavy
	Green	621	Rain Showers, Light
	Green	622	Rain Showers, Moderate
	Green	623	Rain Showers, Heavy

TABLE 5-8 BASIC SYMBOL CODES (Continued)

SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	Green	624	Showers of Rain & Snow Mixed
	Green	625	Snow Showers
	Green	626	Snow Showers, Heavy
	Red	627	Thunderstorm
	Red	628	Thunderstorm with Rain Showers
	Orange	629	Clear Icing, Light
	Orange	630	Clear Icing, Moderate
	Orange	631	Clear Icing, Severe
	Orange	632	Mixed Icing, Light
	Orange	633	Mixed Icing, Moderate
	Orange	634	Mixed Icing, Severe
	Orange	635	Rime Icing, Light
	Orange	636	Rime Icing, Moderate

TABLE 5-8 BASIC SYMBOL CODES (Continued)

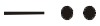
SYMBOL	COLOR	FIELD ENTRY	DESCRIPTION
	Orange	637	Rime Icing, Severe
	Blue	638	Clear Air Turbulence, Light
	Blue	639	Clear Air Turbulence, Moderate
	Blue	640	Clear Air Turbulence, Severe
	Lt Blue	641	Shear/Instability Line
	Black	642	Trough Axis
	Blue	643	Clear Air Turbulence Area Outline
	Orange	644	Icing Area Outline
	Red	645	Thunderstorm Convective Area Outline
	Black	646	Vector
		700-799	Reserved for SPAWAR use
		800-899	Reserved for NAVAIR use
		900-999	Reserved for NAVSEA use

TABLE 5-8 BASIC SYMBOL CODES (Continued)

* Color based on threat

Symbols 000-099 correspond with the entries in Table 5-1 (Force Codes).

Symbols 700-999 to be managed by the appropriate SYSCOM for rapid development of system specific symbols.

Symbology requirements from this table should also be used to generate system track display symbology.

Field 3 is not used if Field 6 in the RSYMB and SYMB sets is equal to 000-032, 038, 039, 100, or 595-646.

Field 7 is not used if **Field 2 in the XSYMB set is equal to 000-032, 038, 039, 100, or 595-646.**

Field 8 is not used if Field 3 in the XRSYM set is equal to 000-032, 038, 039, 100, or 595-646.

TABLE 5-9 CHARACTER AND SYMBOL SIZE CODES

Examples: NUMBER	FIELD ENTRY	DESCRIPTION
5	5	Vertical Pixels
20	20	Vertical Pixels
50	50	Vertical Pixels

Character and symbol sizes are specified by 1-2 digit numbers which refer to the desired number of vertical picture elements (pixels). For example, 20 indicates that the character or symbol should be displayed within a vertical cell height of 20 pixels; 40 indicates 40 pixels, etc. For reference purposes, modern high resolution raster scan 19" (diagonal) CRTs are 1024 addressable pixels in the vertical dimension by 1280 pixels in the horizontal dimension. Typical vertical cell sizes on these high resolution CRTs are 20, 30, 40 and 60 pixels. Since 1000 vertical pixels are normally viewable on the CRT, a 20 pixel size would result in 50 rows of viewable characters or symbols. Smaller CRTs, calligraphic displays or low/medium resolution displays character/symbol cell sizes should be scaled appropriately. Horizontal cell size should be made proportional using system specific definitions.

TABLE 5-10 SYMBOL MODIFIER CODES

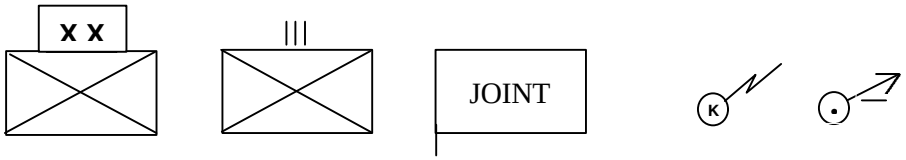
MODIFIER	FIELD ENTRY	DESCRIPTION
● or +	00	Squad
●● or ++	01	Section, unit larger than a squad, but smaller than a platoon
●●● or +++	02	Platoon or Detachment
|	03	Company, Battery, or Troop
||	04	Battalion or Squadron
|||	05	Group or Regiment
X	06	Brigade
X X	07	Division or Wing
X X X	08	Corp or Force
[●] or [+]	09	Task Force (squad)
[●●] or [++]	10	Task Force (section)
[●●●] or [+++]	11	Task Force (platoon)
[|]	12	Task Force (company)
[||]	13	Task Force (battalion)
[|||]	14	Task Force (group)
[X]	15	Task Force (brigade)
[X X]	16	Task Force (division)
[X X X]	17	Task Force (corps)

TABLE 5-10 SYMBOL MODIFIER CODES (Continued)

MODIFIER	FIELD ENTRY	DESCRIPTION
|	18	Headquarters or Command Post
K	21	Kingpin (sonobuoy)
—	22	Pattern Center (sonobuoy)
M	23	Drifting Meteorological and Oceanographic (METOC) Buoy
X X X X	30	Army
X X X X X	31	Army Group/Front
X X X X X X	32	Region
X X X X	33	Task Force (Army)
X X X X X	34	Task Force (Army Group/Front)
X X X X X X	35	Task Force (Region)

Modifiers # 00 through # 17 may be attached to symbols 120 through 265 and are placed above the symbol (centered). # 18 may be attached to the same symbols but is placed below the lower left hand corner. # 21 may be attached to symbols 451 through 453 and is placed inside the circle of the sonobuoy symbol while # 22 is placed to the right of the arrow shaft of the sonobuoy symbol. Modifier # 23 may be attached to symbols 451 through 453 and is placed inside the circle of the sonobuoy symbol.

EXAMPLES:



Modifier codes are listed by field entry number with no other specified ordering or grouping of the items. Logical sequencing of land unit echelon designations are not adhered to due to the late addition of Army, Army Group/Front, and Region.

TABLE 5-11 CHARACTER FONT CODES

FIELD ENTRY	DESCRIPTION
0	Standard Font
1	Standard Font (all upper case)*
2	Italics
3	Bold Font
* Other fonts may be defined as needed by users; they will be incorporated in this document. At any time, if an unknown font type is received, receiving system should use a system default font (e.g., 1).	

TABLE 5-12 MESSAGE IDENTIFIERS

FIELD ENTRY	DESCRIPTION
AOI	Area of Interest Filter
FOTC	FOTC SITREP
GOLD	Contact Report and OPNOTE
GRIDFLD	Gridded Field
GROUP	Group Track Information
JUNIT	Joint Unit Report
OVLY1	Overlay 1
OVLY2	Overlay 2
OVLY3	Overlay 3
PIMTRACK	PIM Track
PING	**Ping**
QRY	Query
RECON	TLAM/TASM Reconstruction
REP	Reply
ROTHRSREQ	ROTHR Status Request
ROTHRSTAT	ROTHR Status Report
ROTHRTASK	ROTHR Task Request
SATELLITE	Satellite Charlie Elements
SCRNKILO	Screen Kilo
4WHISKY	4-Whisky
WEX	Weather Data
XCTC	Enhanced Contact Report

TABLE 5-13 VERTICAL (Z-AXIS) UNITS AND CODES

FIELD ENTRY	DESCRIPTION
FT	Feet
HF	Hundreds of Feet
KF	Thousands of Feet
M	Meters
KM	Kilometers
MB	Millibars
MET	EOF1 intervals for meteorological grid. See Note 1
OCN	EOF1 intervals for oceanographic grid. See Note 2.

NOTES:

1. MET levels are: (lowest) 1000MB, 925MB, 850MB, 700MB, 500MB, 400MB, 300MB, 250MB, 200MB, 150MB, 100MB (highest).

2. OCN levels are: 0M, -2.5M, -7.5M, -12.5M, -17.5M, -25M, -32.5M, -40M, -50M, -62.5M, -75M, -100M, -125M, -150M, -200M, -300M, -400M, -500M, -600M, -700M, -800M, -900M, -1000M, -1100M, -1200M, -1300M, -1400M, -1500M, -1750M, -2000M, -2500M, -3000M, -4000M, -5000M.

TABLE 5-14 GRID SPACING UNITS AND CODES

FIELD ENTRY	DESCRIPTION
FT	Feet
HF	Hundreds of Feet
KF	Thousands of Feet
M	Meters
KM	Kilometers
YD	Yards
KYD	Kiloyards
NM	Nautical Miles
DEG	Degrees (of Lat, Long)
DGC	Degrees Celsius
FPS	Feet Per Second
MPS	Meters Per Second
DSP	Direction (DEG T) and Speed (KT)
PPT	Parts Per Thousand (Salinity)

TABLE 5-15 COMPACTION CODES

FIELD ENTRY	DESCRIPTION
AR1	Arithmetic Encoding/Decoding
BS1	Band Indexing, Alphanumeric Substitution, Version 1
BS2	Band Indexing, Alphanumeric Substitution (Delta Packing), Version 2
FFT1	Fast Fourier Transform, Version 1
CS1	Cosine Transform, Version 1
EOF1	Empirical Orthogonal Function, Version 1
RLE1	Run Length Encoding, Version 1
RLE2	Run Length Encoding, Version 2

TABLE 5-16 GRID DATA UNITS AND CODES

FIELD ENTRY	DESCRIPTION
1	Degrees Fahrenheit
2	Degrees Absolute (Kelvin)
3	Degrees Celsius
4	Meters
5	Meters/Second
6	Knots
7	Miles Per Hour
8	Millibars
9	Centimeters
10	$Meters^2/Second^2$
11	Feet
12	Tenths of Degrees (Compass Direction)
13	Seconds
14	Gram-Calories Per $Centimeter^2$ Per Day
15	Nautical Miles Per Day
16	Centimeters Per Second
17	Probability
18	(Not Used)
19	Degrees (Compass Direction)
20	Non Dimensional
21	Percent
22	$Centimeters^2$ Per Second
23	Degrees C Per 100 Feet (Gradient)
24	Degrees C Per $(100\ Feet)^2$

TABLE 5-16 GRID DATA UNITS AND CODES (Continued)

FIELD ENTRY	DESCRIPTION
25	Gram-Calories Per Centimeter2 Per Hour
26	Refractive N Units
27	(Not Used)
28	(Not Used)
29	Microbars/Second
30	Degrees C Per 12.5 Meters
31	Degrees C Per 25 Meters
32	Degrees C Per 50 Meters
33	Degrees C Per 100 Meters
34	Per Second
35	Newtons Per Meter
36	Meters Per Day
37	Dynes Per Centimeter^2
38	Grams Per Kilogram
39	M Units Per Kilometer
40	Hertz
41	Feet Per Second
42	Degrees Fahrenheit Per 100 Feet
43	Nautical Miles
44	Decibels
45	Millimeters Per Hour
46	Parts Per 1000
47	Newtons Per Meter^2

TABLE 5-17 ROTHRSTAT SECTOR DESCRIPTIONS

4-BIT CODES	CHARACTER
0000	0
0001	1
0010	2
0011	3
0100	4
0101	5
0110	6
0111	7
1000	8
1001	9
1010	A
1011	B
1100	C
1101	D
1110	E
1111	F

NOTES:

1. This table defines the 4-bit codes for each binary character in the sector description field.

2. Availability in each ECA and ESA sector is defined for each of 30 cells as follows:

   A. Each cell within an ECA sector shall be defined by one of the following availability codes:

      00 (No coverage)
      01 (Available)
      10 (Marginal)
      11 (Not available)

TABLE 5-17 ROTHRSTAT SECTOR DESCRIPTIONS (Continued)

NOTES (continued):

B. Each cell within an ESA sector shall be defined by one of the following availability codes:

00 (No surveillance)
01 (Effective surveillance)
10 (Marginal surveillance)
11 (Not in coverage)

C. Two 2-bit cell availability codes shall be used to form the 4-bit codes as shown in the table. Each 4-bit code represents two cells within a sector.

D. The 4-bit codes shall be converted to characters as specified.

E. The first character in a sector description shall describe the first two cells in the related sectors (cell numbers 1, 2). The next character shall describe the next two cells, and so forth, until the tenth character describes the last two cells (cell numbers 29 and 30).

TABLE 5-18 SERVICE CODES

FIELD ENTRY	DESCRIPTION
AFC	Air Force
ARM	Army
CGD	Coast Guard
NVY	Navy
MRN	Marines
JNT	Joint
COM	Composite
UNK	Unknown

TABLE 5-19 ALERT CODE RETENTION

NEW REPORT / EXISTING	**TGT**	**SUS**	**HIT**	**NSP**	**BLANK**
TGT	TGT	TGT	TGT	TGT	TGT
SUS	TGT	SUS	SUS	NSP	SUS
HIT	TGT	SUS	HIT	HIT	HIT
NSP	TGT	SUS	HIT	NSP	NSP
BLANK	TGT	SUS	HIT	NSP	BLANK

TABLE 5-20 DETECTION STATUS CODES

FIELD ENTRY
GAIN
LOSS
STEADY
UPSHIFT
DOWNSHIFT
LOSS FADE
REGAIN FADE
LOSS ABRUPT
REGAIN ABRUPT
LOSS KNEE
REGAIN KNEE

TABLE 5-21 POSITION REPORTING

(Latitude/Longitude, UTM, and GEOREF)

A position should be reported in its original precision and format when feasible. The flexibility provided in the alternate field contents is not intended to present potentially confusing choices, but rather to permit the natural conveyance of data in its original format. There shall be no explicit restrictions concerning the level of precision used within the specified coordinate systems (Lat/Long, UTM, and GEOREF). Instead full range of freedom regarding precision reporting is allowed as feasible within the character length range of the field. An optional floating decimal is permitted as appropriate. For example a position field reported in Lat/Long may be expressed in Lat/Long to 1/10ths of seconds or 1/1000ths of minutes as appropriate to accurately provide the information in its native format.

The following is a sampling of the alternative coordinate systems allowed in OS-OTG reporting with varying levels of precision. These examples do not represent all possible entries. Note that the reporting format for each coordinate system follows the standardized format associated with each and is only bound by the character field length for reporting in this field format.

LOCATION, VERIFIED LAT/LONG, MINUTES

Description/Explanation	Structure
Location, Verified Lat/Long, Minutes	14 ANS
Expressed as follows:	
Latitude, Degrees	2 N
Allowable entries: (00 through 90)	
Latitude Minute (Angular)	2 N
Allowable entries: (00 through 59)	
Latitudinal Hemisphere	1 A
Allowable entries: (N or S, for North or South Hemisphere)	
Checksum	1 N
Allowable entries: (0 through 9)	
Hyphen	1 S
Allowable entries: "-" separates data elements)	
Longitude, Degrees	3 N
Allowable entries: (000 through 180)	
Longitude Minute (Angular)	2 N
Allowable entries: (00 through 59)	
Longitudinal Hemisphere	1 A
Allowable entries: (W or E, for West or East Hemisphere)	
Checksum	1 N
Allowable entries: (0 through 9)	

Example: 3510N9-07901W7

* Based on FFIRN 323, Location, Verified Lat/Long, Minutes

TABLE 5-21 POSITION REPORTING (Continued)

GEOGRAPHIC LOCATION, VERIFIED LAT/LONG, SECONDS

Description/Explanation	Structure
Geographic Location, Verified Lat/Long, Seconds	18 ANS
Expressed as follows:	
Latitude, Degrees	2 N
Allowable entries: (00 through 90)	
Latitude Minute (Angular)	2 N
Allowable entries: (00 through 59)	
Latitude Second (Angular)	2 N
Allowable entries: (00 through 59)	
Latitudinal Hemisphere	1 A
Allowable entries: (N or S, for North or South Hemisphere)	
Checksum	1 N
Allowable entries: (0 through 9)	
Hyphen	1 S
Allowable entries: "-" separates data elements)	
Longitude, Degrees	3 N
Allowable entries: (000 through 180)	
Longitude Minute (Angular)	2 N
Allowable entries: (00 through 59)	
Longitude Second (Angular)	2 N
Allowable entries: (00 through 59)	
Longitudinal Hemisphere	1 A
Allowable entries: (W or E, for West or East Hemisphere)	
Checksum	1 N
Allowable entries: (0 through 9)	

Example: 351025N6-0790125W4

* Based on FFIRN 331, Geographic Location, Verified Lat/Long, Seconds

TABLE 5-21 POSITION REPORTING (Continued)

LOCATION, VERIFIED LAT/LONG, DECISECONDS

Description/Explanation	Structure
Location, Verified Lat/Long, Deciseconds	22 ANS
Expressed as follows:	
Latitude, Degrees	2 N
Allowable entries: (00 through 90)	
Latitude Minute (Angular)	2 N
Allowable entries: (00 through 59)	
Latitude Second (Angular)	2 N
Allowable entries: (00 through 59)	
Decimal	1 S
Tenth of Second of Latitude	1 N
Allowable entries: (0 through 9)	
Latitudinal Hemisphere	1 A
Allowable entries: (N or S, for North or South Hemisphere)	
Checksum	1 N
Allowable entries: (0 through 9)	
Hyphen	1 S
Allowable entries: "-" separates data elements)	
Longitude, Degrees	3 N
Allowable entries: (000 through 180)	
Longitude Minute (Angular)	2 N
Allowable entries: (00 through 59)	
Longitude Second (Angular)	2 N
Allowable entries: (00 through 59)	
Decimal	1 S
Tenth of Second of Longitude	1 N
Allowable entries: (0 through 9)	
Longitudinal Hemisphere	1 A
Allowable entries: (W or E, for West or East Hemisphere)	
Checksum	1 N
Allowable entries: (0 through 9)	

Example: 351025.3N9-0790125.7W1

* Based on FFIRN 2226, Location, Verified Lat/Long, Deciseconds

TABLE 5-21 POSITION REPORTING (Continued)

LOCATION, VERIFIED LAT/LONG, HUNDREDTHS OF SECONDS

Description/Explanation	Structure
Location, Verified Lat/Long, Hundredths of Seconds	24 ANS
Expressed as follows:	
Latitude, Degrees	2 N
Allowable entries: (00 through 90)	
Latitude Minute (Angular)	2 N
Allowable entries: (00 through 59)	
Latitude Second (Angular)	2 N
Allowable entries: (00 through 59)	
Decimal	1 S
Hundredth of Second of Latitude	2 N
Allowable entries: (00 through 99)	
Latitudinal Hemisphere	1 A
Allowable entries: (N or S, for North or South Hemisphere)	
Checksum	1 N
Allowable entries: (0 through 9)	
Hyphen	1 S
Allowable entries: "-" separates data elements)	
Longitude, Degrees	3 N
Allowable entries: (000 through 180)	
Longitude Minute (Angular)	2 N
Allowable entries: (00 through 59)	
Longitude Second (Angular)	2 N
Allowable entries: (00 through 59)	
Decimal	1 S
Hundredth of Second of Longitude	2 N
Allowable entries: (00 through 99)	
Longitudinal Hemisphere	1 A
Allowable entries: (W or E, for West or East Hemisphere)	
Checksum	1 N
Allowable entries: (0 through 9)	

Example: 351025.31N0-0790125.75W6

TABLE 5-21 POSITION REPORTING (Continued)

LOCATION, VERIFIED LAT/LONG, THOUSANDTHS OF MINUTE

Description/Explanation	Structure
Location, Verified Lat/Long, Thousandths of Minute	22 ANS
Expressed as follows:	
Latitude, Degrees	2 N
Allowable entries: (00 through 90)	
Latitude Minute (Angular)	2 N
Allowable entries: (00 through 59)	
Decimal	1 S
Thousandth of Minute of Latitude	3 N
Allowable entries: (000 through 999)	
Latitudinal Hemisphere	1 A
Allowable entries: (N or S, for North or South Hemisphere)	
Checksum	1 N
Allowable entries: (0 through 9)	
Hyphen	1 S
Allowable entries: "-" separates data elements)	
Longitude, Degrees	3 N
Allowable entries: (000 through 180)	
Longitude Minute (Angular)	2 N
Allowable entries: (00 through 59)	
Decimal	1 S
Thousandth of Minute of Longitude	3 N
Allowable entries: (000 through 999)	
Longitudinal Hemisphere	1 A
Allowable entries: (W or E, for West or East Hemisphere)	
Checksum	1 N
Allowable entries: (0 through 9)	

Example: 3510.234N8-07901.123W3

* Based on FFIRN 2229, Location, Verified Lat/Long, Thousandths of Minute

TABLE 5-21 POSITION REPORTING (Continued)

LOCATION, UTM 1-METER

Description/Explanation	Structure
Location, UTM 1-Meter	15 AN
Expressed as follows:	
UTM Grid Zone Column Allowable entries: (01 through 60)	2 N
UTM Grid Zone Row Allowable entries: (C, D through X) (Omit I, O). Neither I nor O occurs.	1 A
UTM 100,000-Meter Square Column Allowable entries: (A, B through Z)	1 A
UTM 100,000-Meter Square Row Allowable entries: (A, B through Z)	1 A
UTM 1-Meter Easting Allowable entries: (00000 through 99999)	5 N
UTM 1-Meter Northing Allowable entries: (00000 through 99999)	5 N

Example: 32WDL1234512345
* Based on FFIRN 330, Location, UTM 1-Meter

GEOGRAPHIC LOCATION, UTM 10-METER

Description/Explanation	Structure
Geographic Location, UTM 10-Meter	13 AN
Expressed as follows:	
UTM Grid Zone Column Allowable entries: (01 through 60)	2 N
UTM Grid Zone Row Allowable entries: (C, D through X) (Omit I, O). Neither I nor O occurs.	1 A
UTM 100,000-Meter Square Column Allowable entries: (A, B through Z)	1 A
UTM 100,000-Meter Square Row Allowable entries: (A, B through Z)	1 A
UTM 10-Meter Easting Allowable entries: (0000 through 9999)	4 N
UTM 10-Meter Northing Allowable entries: (0000 through 9999)	4 N

Example: 32WDL12341234
* Based on FFIRN 12, Geographic Location, UTM 10-Meter

TABLE 5-21 POSITION REPORTING (Continued)

GEOGRAPHIC LOCATION, UTM 100-METER

Description/Explanation	Structure
Geographic Location, UTM 100-Meter	11 AN
Expressed as follows:	
UTM Grid Zone Column Allowable entries: (01 through 60)	2 N
UTM Grid Zone Row Allowable entries: (C, D through X) (Omit I, O). Neither I nor O occurs.	1 A
UTM 100,000-Meter Square Column Allowable entries: (A, B through Z)	1 A
UTM 100,000-Meter Square Row Allowable entries: (A, B through Z)	1 A
UTM 100-Meter Easting Allowable entries: (000 through 999)	3 N
UTM 100-Meter Northing Allowable entries: (000 through 999)	3 N

Example: 32WDL123123

* Based on FFIRN 542, Geographic Location, UTM 100-Meter

LOCATION, UTM 1000-METER

Description/Explanation	Structure
Location, UTM 1000-Meter	9 AN
Expressed as follows:	
UTM Grid Zone Column Allowable entries: (01 through 60)	2 N
UTM Grid Zone Row Allowable entries: (C, D through X) (Omit I, O). Neither I nor O occurs.	1 A
UTM 100,000-Meter Square Column Allowable entries: (A, B through Z)	1 A
UTM 100,000-Meter Square Row Allowable entries: (A, B through Z)	1 A
UTM 1000-Meter Easting Allowable entries: (00 through 99)	2 N
UTM 1000-Meter Northing Allowable entries: (00 through 99)	2 N

Example: 32WDL1212

* Based on FFIRN 462, Location, UTM 1000-Meter

TABLE 5-21 POSITION REPORTING (Continued)

LOCATION, UTM 10,000-METER

Description/Explanation	Structure
Location, UTM 10,000-Meter	7 AN
Expressed as follows:	
UTM Grid Zone Column Allowable entries: (01 through 60)	2 N
UTM Grid Zone Row Allowable entries: (C, D through X) (Omit I, O). Neither I nor O occurs.	1 A
UTM 100,000-Meter Square Column Allowable entries: (A, B through Z)	1 A
UTM 100,000-Meter Square Row Allowable entries: (A, B through Z)	1 A
UTM 10,000-Meter Easting Allowable entries: (0 through 9)	1 N
UTM 10,000-Meter Northing Allowable entries: (0 through 9)	1 N

Example: 32WDL12

* Based on FFIRN 713, Location, UTM 10,000-Meter

TABLE 5-21 POSITION REPORTING (Continued)

GEOREF LOCATION, CENTIMINUTE

Description/Explanation	Structure
GEOREF Location, Centiminute	12 AN
Expressed as follows:	
Fifteen Degree Quadrilateral, GEOREF Allowable entries: (AA, AB through ZM) (Omit I, O). Neither I nor O occurs in either character position. M is the last alphabetic character to appear in the second position.	2 A
One Degree Quadrilateral, GEOREF Allowable entries: (AA, AB through QQ) (Omit I, O). Neither I nor O occurs in either character position.	2 A
Minute Easting, GEOREF Allowable entries: (00 through 59)	2 N
Centiminute (Angular) Allowable entries: (00 through 99)	2 N
Minute Northing, GEOREF Allowable entries: (00 through 59)	2 N
Centiminute (Angular) Allowable entries: (00 through 99)	2 N

Example: AABB15233527

* Based on FFIRN 683, GEOREF Location, Centiminute

TABLE 5-21 POSITION REPORTING (Continued)

LOCATION, GEOREF, MINUTE

Description/Explanation	Structure
Location, GEOREF, Minute	8 AN
Expressed as follows:	
Fifteen Degree Quadrilateral, GEOREF Allowable entries: (AA, AB through ZM) (Omit I, O). Neither I nor O occurs in either character position. M is the last alphabetic character to appear in the second position.	2 A
One Degree Quadrilateral, GEOREF Allowable entries: (AA, AB through QQ) (Omit I, O). Neither I nor O occurs in either character position.	2 A
Minute Easting, GEOREF Allowable entries: (00 through 59)	2 N
Minute Northing, GEOREF Allowable entries: (00 through 59)	2 N

Example: AABB1535

* Based on FFIRN 497, Location, GEOREF, Minute

LOCATION, GEOREF, DEGREES

Description/Explanation	Structure
Location, GEOREF, Degrees	4 A
Expressed as follows:	
Fifteen Degree Quadrilateral, GEOREF Allowable entries: (AA, AB through ZM) (Omit I, O). Neither I nor O occurs in either character position. M is the last alphabetic character to appear in the second position.	2 A
One Degree Quadrilateral, GEOREF Allowable entries: (AA, AB through QQ) (Omit I, O). Neither I nor O occurs in either character position.	2 A

Example: AABB

* Based on FFIRN 558, Location, GEOREF, Degrees

TABLE 5-22 PLEASURE CRAFT TYPES

FIELD ENTRY	DESCRIPTION
CAT	Catamaran
CATBOA	Catboat
CUTTER	Cutter
HOUSBO	Houseboat
KETCH	Ketch
MTRYAC	Motor Yacht
RACCRU	Racing Cruiser
RUNABO	Runabout
SCHOON	Schooner
SLOOP	Sloop
TRIHUL	Trimaran
YAWL	Yawl

ENTRY LIST 20 TARGET TYPE

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
AIRCRAFT	ACFT
EQUIPMENT	EQMT
THREAT WARNINGS	THREAT
AIRFIELD	AFLD
BASE	BASE
COMMAND POST	CP
HEADQUARTERS COMPLEX	HQ
INDUSTRIAL COMPLEX	INCPLX
INSTALLATION	INSTAL
MAINTENANCE FACILITY	MFAC
NAVAID SITE	NAVAID
PORT/HARBOR	PORT
POWER FACILITY	PWRFAC
RAILROAD TRANSPORT FACILITY	RRFAC
SUPPLY DUMP	SUPPLY
TACTICAL POSITION/ SITE	TACPOS
TOWER	TOWER
ASSEMBLY AREA	ASSY
BRIDGE	BRIDGE
BUILDING	BLDG
DAM	DAM
FORD	FORD
DROP ZONE	DZ
FORTIFICATION/ STRUCTURE	FRTSTR
LANDING ZONE	LZ
LINE OF COMMUNICATIONS	LNCOMM
SUBMARINE	SUB
NAVAL SURFACES VESSELS	FCRFT
CIVILIAN PERSONNEL	CIVPER
MILITARY PERSONNEL	MILPER
PARAMILITARY PERSONNEL	PARMIL
UNIT	UNIT
COMBAT ARMORED VEHICLE	ARMOR
COMBAT SUPPORT VEHICLE	CBSPVH
ENGINEER/ CONSTRUCTION VEHICLE	ENGRVH
OTHER TYPE VEHICLE	VHOTH
AIR DEFENSE ARTILLERY	ADA
ARTILLERY	ARTY
CREW-SERVED WEAPON	WPNCRW
INDIVIDUAL WEAPON	WPNIND
MORTAR	MORT
ROCKET/MISSILE	RKTMSL
SPACE TARGET	SPCTAR
HEAVY	HV
UNKNOWN	UNK

ACTIVITY OR OPERATION

CONVOY	CONVOY
DECOY	DECOY

AIR TARGETS

AIRCRAFT	ACFT
ASW PATROL	ASW
AIRBORNE WARNING AND CONTROL SYSTEM	AWACS
BOMBER	BMBR
CLOSE AIR SUPPORT	CAS
DRONE	DRONE
FIGHTER	FTR
FIGHTER-BOMBER	FTRBMR
GLIDER	GLIDER
HELICOPTER	HELO
HELICOPTER, AMBULANCE	HAMB
HELICOPTER, ASSAULT (MOVABLE)	HASLT
HELICOPTER, ATTACK	HATK
HELICOPTER, CARGO	CH
HELICOPTER, HEAVY-LIFT	HLH
HELICOPTER, OBSERVATION	OH
INTERCEPTOR	INTRCP
LIGHTER-THAN-AIR AIRCRAFT	LTA
METEOROLOGICAL BALLOON	METBAL
PATROL AIRCRAFT	PATROL
RECONNAISSANCE AIRCRAFT	RECCE

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
REMOTELY-PILOTED-VEHICLE	RPV
SHORT-TAKEOFF/LANDING AIRCRAFT	STOL
TANKER AIRCRAFT	TNKR
TRANSPORT AIRCRAFT	TNSP
VERTICAL-TAKEOFF/LANDING AIRCRAFT	VTOL
VERTICAL-SHORT-TAKEOFF/LANDING AIRCRAFT	VSTOL
EW AND COMMUNICATIONS TARGETS	
EW AND COMMUNICATIONS TARGETS	BLDSP
EQUIPMENT	EQMT
OPTICAL EQUIPMENT	EQOP
INFRARED	EQIR
OPTICAL DATA LINK	EQOPDL
PHOTOGRAPHIC	EQPH
RANGEFINDER LASER	EQLSR
SEARCHLIGHT	SLT
SIGNAL LIGHT	EQSIG
TELEVISION	TV
RADAR EQUIPMENT	RADAR
AIRBORNE RADAR	RDRABN
AIR-SURVEILLANCE RADAR	RDRAS
COUNTER-MORTAR RANGING ELECTRONICS	RDRCMR
COUNTER-BATTERY RANGING RADAR	RDRCBR
DIRECTION-FINDING RADAR	RDRDF
FIRE-CONTROL RADAR	RDRFC
GROUND-SURVEILLANCE RADAR	RDRGS
GUIDANCE RADAR	RDRGDN
RANGING RADAR	RDRRNG
SIDE-LOOKING RADAR	RDRSLR
RADIO EQUIPMENT	RADIO
RADIO GUIDANCE	RGDN
MICROWAVE	MWAVE
RADIO DATA LINK	RDL
RADIO TELEPHONE	RT
TROPOSCATTER	TROPO
RADIO DIRECTION-FINDING	RDF
RADIO TELETYPE	RATT
TELEPHONE/TELEGRAPH/TELETYPE EQUIPMENT	TTTEQ
DATA LINK	DATLNK
FACSIMILE	FAX
SWITCHBOARD	SWBD
TELEGRAPH	TEL
TELEPHONE	TELE
TELETYPE	TTY
MISCELLANEOUS C/E EQUIPMENT	CEOTHR
ANTENNA	ANT
BATTERY, DRYCELL OR WETCELL	BTRY
CATHODE RAY TUBE	CRT
COMPUTER	COMPTR
ELECTRONIC ATTACK	EA
ELECTRONIC PROTECTION	EP
ELECTRONIC WARFARE	EW
GENERATOR	GENR
GUIDANCE	GDNC
RADOME	RADOME
SOUND RANGING	SONAR
WIRE	CEWIRE
LOUDSPEAKER	LS
THREAT WARNINGS	THREAT
ANTIRADIATION MISSILE	ARM
EA AIRCRAFT JAMMER	EAAIR
EA SURFACE	EASUR
ES AIRCRAFT PERFORMING EA DECEPTION	ESAIR
ES DETECTION, LOCATION, TRACKING AND TARGETING	ESDLT
ES SURFACE JAMMER INSTALLATIONS	ESSUR

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
FACILITIES AND INSTALLATIONS	
AIRFIELD	AFLD
AIR TRANSPORT	TRAFLD
BOMBER AIRFIELD	BMAFLD
FIGHTER AIRFIELD	FTAFLD
HELICOPTER AIRFIELD	HAFLD
RECONNAISSANCE AIRFIELD	REAFLD
MULTIPURPOSE	MUAFLD
BASE	BASE
AIR FORCE BASE	AFBASE
ARMY BASE	ARBASE
MARINE BASE	MCBASE
NAVAL AIR STATION	NAS
NAVY BASE	NABASE
COMMAND POST	CP
BATTALION COMMAND POST	BNCP
DIVISION COMMAND POST	DIVCP
FORWARD COMMAND POST	FWDCP
REGIMENT COMMAND POST	REGTCP
SMALL COMMAND POST	SCP
MEDIUM COMMAND POST	MDMCP
LARGE COMMAND POST	LGCP
HEADQUARTERS COMPLEX	HQ
AIR DEFENSE HEADQUARTERS	ADHQ
AIR LOGISTICS HEADQUARTERS	ALOGHQ
AIR TRANSPORT HEADQUARTERS	ATRNHQ
FLEET HEADQUARTERS	FLTHQ
FLOTILLA HEADQUARTERS	FLOTHQ
GROUND FORCE HEADQUARTERS	GNDHQ
JOINT COMMAND HEADQUARTERS	JHQ
LONG-RANGE AVIATION HEADQUARTERS	LRAVHQ
NATIONAL AVIATION HEADQUARTERS	CAVNHQ
NATIONAL NAVAL HEADQUARTERS	NNAVHQ
NAVAL AVIATION HEADQUARTERS	NAVNHQ
SURFACE-TO-AIR MISSILE HEADQUARTERS	SAMHQ
SURFACE-TO-SURFACE MISSILE HEADQUARTERS	SSMHQ
TACTICAL AVIATION HEADQUARTERS	TAVNHQ
INDUSTRIAL COMPLEX	INCPLX
AIRCRAFT PRODUCTION COMPLEX	INACFT
CHEMICAL PRODUCTS COMPLEX	INCHEM
GUIDED-MISSILE PRODUCTION COMPLEX	INGM
HIGH-TECHNOLOGY COMPLEX	INHTEC
MOTOR-VEHICLE PRODUCTION COMPLEX	INMV
MUNITIONS COMPLEX	INMUN
PETROLEUM-PRODUCTS COMPLEX	INPOL
SHIPYARD	INSHYD
INSTALLATION	INSTAL
INDUSTRIAL	IIND
PORT/HARBOR INSTALLATION	IPORT
COMMAND CENTER	ICDCTR
INSTALLATION COMMAND POST	ICDPST
COMMUNICATIONS	ICOMM
JAMMING	IJAM
NAVIGATION	INAVIG
OPTICAL	IOPTIC
RADAR INSTALLATION	IRADAR
ELECTRONIC WARFARE INSTALLATION	IEW
SUPPLY DUMP INSTALLATION	ISUPLY
AIR FIELD/AIR OPERATIONS	IAFLD

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
STORAGE	ISTOR
MILITARY BASE	IBASE
RAILROAD INSTALLATION	IRAIL
SUBMARINE INSTALLATION	ISUB
MAINTENANCE FACILITY	MFAC
MAINTENANCE FACILITY AIRCRAFT	MFACFT
MAINTENANCE FACILITY ARMOR/ARTILLERY	MFAR
MAINTENANCE FACILITY MOTOR VEHICLE	MFMV
NAVAID SITE	NAVAID
AERONAUTICAL LIGHT BEACON	LTBCN
AIR-OBSTRUCTION LIGHTING	AOBSLT
BUOY	BUOY
HAZARD LIGHT	HZDLT
INSTRUMENT-LANDING-SYSTEM LOCALIZER	ILS
LIGHTHOUSE	LTHOUS
LORAN STATION	LORAN
MARKER BEACON	MKRBCN
OMNIRANGE STATION	OMNI
PATHFINDER BEACON	BEACON
SHORAN STATION	SHORAN
TACAN STATION	TACAN
PORT/HARBOR	PORT
MAJOR PORT	MAPORT
MINOR PORT	MIPORT
SECONDARY PORT	SCPORT
PIER	PIER
POWER FACILITY	PWRFAC
FOSSIL-FUEL POWER PLANT	PWRFF
HYDROELECTRIC-POWER PLANT	PWRHYD
NUCLEAR-POWER PLANT	PWRNUC
POWER LINE	PWRLN
POWER SUBSTATION	PWRSTA
THERMAL-POWER PLANT	PWRTRM
RAILROAD TRANSPORT FACILITY	RRFAC
CLASSIFICATION FACILITY	RRCLAS
FREIGHT TERMINAL	RRFRT
MILITARY LOADING PLATFORM	RRLDPL
PASSENGER TERMINAL	RRPAS
RAILROAD CROSSING	RRX
RAILROAD EQUIPMENT REPAIR FACILITY	RREQRP
RAILROAD JUNCTION	RRJCT
RELAY FACILITY	RRRLY
STORAGE OR HOLDING FACILITY	RRSTOR
TRANSLOADING FACILITY	RRTRLD
SUPPLY DUMP	SUPPLY
AMMUNITION DUMP	AMMODP
CLASS I SUPPLY DUMP	CLI
CLASS II SUPPLY DUMP	CLII
CLASS III SUPPLY DUMP	CLIII
CLASS IV SUPPLY DUMP	CLIV
CLASS V SUPPLY DUMP	CLV
CLASS VII SUPPLY DUMP	CLVII
CONSTRUCTION MATERIALS	CNSTDP
INDIVIDUAL EQUIPMENT	EQTDP
MULTIPLE-PURPOSE SUPPLY DUMP	MULDP
PETROLEUM PRODUCTS	POLDP
SUBSISTENCE ITEMS	RTNDP
TACTICAL POSITION/SITE	TACPOS
AIRHEAD/BRIDGEHEAD	AHDBHD
ASSEMBLY AREA, TROOP/VEHICLE	ASSYTV
BLOCKING POSITION	BLKPOS
CENTER OF MASS	CNTRM
CENTER OF MASS, PLANNED	PCNTRM
CHECKPOINT	CHECPT
ELECTRONIC, FUNCTION UNKNOWN	ELEUNK
ELECTRONIC SURVEILLANCE	ESURV
INTELLIGENCE CENTER, TACTICAL	TACIC

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
LEAD ELEMENT LOCATION	LELEM
LINK-UP POINT OR POSITION	LINK
OBSERVATION/LISTENING	OPLP
OPERATIONS CENTER, TACTICAL	TACOC
OUTPOST, COMBAT	CBTOP
PASSAGE	PAS
REARMING AND REFUELING POINT, FORWARD AREA	FARRP
RELEASE	REL
START-INITIAL	START
STRONGPOINT	STRGPT
TOWER	TOWER
AIRFIELD OPERATIONS TOWER	AIRTWR
FLAK TOWER	FLKTWR
OBSERVATION TOWER	OBVTWR
RADIO-TRANSMITTER TOWER	RADTWR
TELEVISION-TRANSMITTER TOWER	TVTWR
WATER-STORAGE TOWER	WTRTWR
GEOGRAPHICAL AND STRUCTURAL FEATURES	
ASSEMBLY AREA	ASSY
MECHANIZED TROOPS TROOPSTRP	TRPMEC
TROOPS AND ARMOR	TRPARM
TROOPS AND VEHICLES	TRPVEH
BRIDGE	BRIDGE
FIXED BRIDGE	BRFXD
FOOTBRIDGE, CONCRETE	BRFTCR
FOOTBRIDGE, STEEL	BRFTST
FOOTBRIDGE, WOOD	BRFTWD
PANEL BRIDGE	BRPNL
RAILROAD BRIDGE	BRRR
ROADWAY OR HIGHWAY BRIDGE	BRRD
VEHICLE BRIDGE, CONCRETE	BRVHCR
VEHICLE BRIDGE, STEEL	BRVHST
VEHICLE BRIDGE, WOOD	BRVHWD
PORTABLE OR MOVABLE BRIDGE	BRMOV
ARMORED VEHICLE-LAUNCHED BRIDGE	BRARVH
FLOATING BRIDGE	BRFLT
FLOATING FERRY BRIDGE	BRFRY
FLOATING FOOTBRIDGE, BOAT	BRFTBT
FLOATING FOOTBRIDGE, PONTOON	BRFTPT
FLOATING FOOTBRIDGE, RAFT	BRFTRF
FLOATING VEHICLE BRIDGE, BOAT	BRVHBT
FLOATING VEHICLE BRIDGE, PONTOON	BRVHPT
MOBILE-ASSAULT BRIDGE	BRMLAS
VEHICLE-LAUNCHED BRIDGE	BRVHLH
MISCELLANEOUS BRIDGE	BRMISC
CONCRETE BRIDGE	BRCR
SITE	BRSITE
STEEL BRIDGE	BRST
WOOD BRIDGE	BRWD
BUILDING	BLDG
CHURCH OR CHAPEL	CHURCH
CONCRETE BUILDING TYPE	BLCR
GOVERNMENT BUILDING	BLGOVT
HOSPITAL	HOSP
MASONRY BUILDING	BLMS
METAL BUILDING	BLMT
POLICE STATION	POLICE
SCHOOLSCHOOL	
SPECIAL-PURPOSE BUILDING	BLSPL
WOOD BUILDING	BLWD
DAM	DAM
EARTHEN DAM	DAMETH
MASONRY DAM	DAMMSR
REINFORCED CONCRETE	DAMCR
RIPRAP DAM	DAMRPP
DAM	

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
STONE DAM	DAMST
FORD	FORD
CONCRETE-LINED FORD BED	CNCBED
IMPROVED BED, TYPE UNKNOWN	IMPBED
STONE-LINED FORD BED	STONE
UNIMPROVED NATURAL FORD BED	NATURL
DROP ZONE	DZ
EQUIPMENT DROP ZONE	DZEQP
SUPPLY DROP ZONE	DZSUP
TROOP DROP ZONE	DZTR
FORTIFICATION/ STRUCTURE	FRTSTR
BUNKER	BUNKER
EMPLACEMENT	EMPL
FOXHOLE	FHOLE
HELIPAD	HELPAD
MINEFIELD	MFLD
PERSONNEL BARRIER	PERBAR
PILLBOX	PILBOX
PRISONER-OF-WAR CAMP	PRISON
REVETMENT	REVET
TRENCH	TRENCH
TUNNEL	TUNNEL
VEHICULAR BARRIER	VEHBAR
LANDING ZONE	LZ
FIXED-WING LANDING ZONE	FWLZ
HELICOPTER LANDING ZONE	HLZ
LINE OF COMMUNICATIONS	LNCOMM
PIPELINE SEGMENTS	PIPE
RAILROAD SEGMENTS	RAIL
ROAD SEGMENTS	ROAD
TRAIL	TRAIL
WATERWAY SEGMENTS	WATER
MARITIME TARGETS	
SHIP	SHIP
SUBMARINE	
NON NUCLEAR POWERED	
SUBMARINE, GUIDED/ CRUISE MISSILE	SG
SUBMARINE HUNTER/ KILLER	SK
SUBMARINE, RESEARCH, MANNED OR UNMANNED	SR
SUBMARINE, GENERAL	SS
SUBMARINE, AUXILIARY	SSA
SUBMARINE, BALLISTIC MISSILE	SSB
SUBMARINE, COASTAL	SSC
SUBMARINE, ATTACK, SURFACE MISSILE	SSG
SUBMARINE, PATROL	SSK
SUBMARINE, TRANSPORT	SSLP
SUBMARINE, MIDGET	SSW
SUBMARINE, AUXILIARY, COMMUNICATIONS	SSQ
SUBMARINE, RADAR PICKET	SSR
SUBMARINE, TRAINING	SST
SUBMARINE, MILCAP UNKNOWN	SSU
NUCLEAR POWERED	
SUBMARINE, AUXILIARY NUCLEAR POWERED	SSAN
SUBMARINE, BALLISTIC MISSILE, NUCLEAR	SSBN
SUBMARINE, ATTACK, SURFACE MISSILE, NUCLEAR	SSGN
SUBMARINE, ATTACK, NUCLEAR	SSN
SUBMARINE, AUXILIARY, COMMUNICATIONS, NUCLEAR POWERED	SSQN
SUBMARINE, MILCAP UNKNOWN, NUCLEAR POWERED	SSUN

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
NAVAL SURFACE VESSELS	
PRINCIPAL SURFACE COMBATANTS	
BATTLESHIP, GENERAL	BB
HEAVY CRUISER, GUN	CA
CRUISER, GENERAL	CC
GUIDED MISSILE CRUISER	CG
CRUISER, GUIDED MISSILE NUCLEAR POWERED	CGN
CRUISER, HELICOPTER	CHH
CRUISER, AVIATION, GUIDED MISSILE	CHG
CRUISER, AVIATION, GUIDED MISSILE, NUCLEAR	CHGN
CRUISER, AVIATION, NUCLEAR POWERED	CHN
CRUISER, LIGHT	CL
CRUISER, LIGHT, ANTI-AIRCRAFT	CLAA
TACTICAL COMMAND SHIP	CLC
CRUISER, LIGHT, AVIATION	CLH
CRUISER, SMALL	CS
CRUISER, TRAINING	CT
CRUISER, AVIATION, TRAINING	CTH
AIRCRAFT CARRIER, GENERAL	CV
AIRCRAFT CARRIER, ATTACK	CVA
AIRCRAFT CARRIER, GUIDED MISSILE	CVG
AIRCRAFT CARRIER, GUIDED MISSILE NUCLEAR POWERED	CVGN
HELICOPTER/VSTOL CARRIER	CVH
AIRCRAFT CARRIER, VSTOL GUIDED MISSILE	CVHG
AIRCRAFT CARRIER, VSTOL, GUIDED MISSILE, NUCLEAR POWERED	CVHGN
AIRCRAFT CARRIER, VSTOL, NUCLEAR POWERED	CVHN
AIRCRAFT CARRIER, LIGHT	CVL
AIRCRAFT CARRIER, LIGHT, GUIDED MISSILE	CVLG
AIRCRAFT CARRIER, LIGHT, GUIDED MISSILE, NUCLEAR POWERED	CVLGN
AIRCRAFT CARRIER, LIGHT, NUCLEAR POWERED	CVLN
AIRCRAFT CARRIER, NUCLEAR POWERED	CVN
AIRCRAFT CARRIER, SUPPORT	ASWCVS
AIRCRAFT CARRIER, TRAINING	CVT
DESTROYER, GENERAL	DD
DESTROYER, GUIDED MISSILE	DDG
DESTROYER, GUIDED MISSILE, NUCLEAR POWERED	DDGN
DESTROYER, AVIATION	DDH
DESTROYER, AVIATION, GUIDED MISSILE	DDHG
DESTROYER, AVIATION, GUIDED MISSILE, NUCLEAR POWERED	DDHGN
DESTROYER, AVIATION, NUCLEAR POWERED	DDHN
DESTROYER, RADAR PICKET	DDR
DESTROYER, TRAINING	DDT
DESTROYER ESCORT	DDE
DESTROYER ESCORT, RADAR PICKET	DER
DESTROYER, MINELAYING	DDM
FRIGATE	FF
FRIGATE, GUIDED MISSILE	FFG
FRIGATE, AVIATION, GUIDED MISSILE	FFGH

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
FRIGATE, GUIDED MISSILE, NUCLEAR POWERED	FFGN
FRIGATE, AVIATION	FFH
FRIGATE, GUIDED MISSILE, AVIATION, NUCLEAR POWERED	FFHGN
FRIGATE, AVIATION, NUCLEAR POWERED	FFHN
CORVETTE	FFL
CORVETTE, GUIDED MISSILE	FFLG
FRIGATE, RADAR PICKET	FFR
FRIGATE, TRAINING	FFT
FRIGATE, SMALL, CORVETTE	FFS
DESTROYER, COAST GUARD	WDD
FRIGATE, COAST GUARD	WFF
CORVETTE, COAST GUARD	WFFL
COASTAL PATROL TYPES	
PATROL BOAT	PB
PATROL BOAT, AIR CUSHION	PBA
PATROL BOAT, DRONE	PBD
PATROL BOAT, FAST	PBF
PATROL BOAT, RIVER/ROADSTEAD	PBR
PATROL BOAT, FIRE SUPPORT	PBS
SUBMARINE CHASER/ ESCORT CRAFT, GENERAL	PC
PATROL, COASTAL, ESCORT	PCE
PATROL SUBCHASER, FAST	PCF
PATROL CRAFT, AIR CUSHION, FAST	PCFA
PATROL CRAFT, HYDROFOIL, FAST	PCFH
PATROL CRAFT, FIRE SUPPORT	PCFS
PATROL CRAFT, HYDROFOIL	PCH
SUBMARINE CHASER	PCS
SUBMARINE CHASER, AIR CUSHION	PCSA
SUBMARINE CHASER, HYDROFOIL	PCSH
PATROL CRAFT, TRAINING	PCT
PATROL FRIGATE	PF
PATROL FRIGATE, RADAR PICKET	PFR
PATROL CRAFT, GUN EQUIPPED, GENERAL	PG
PATROL COMBATANT, AIR CUSHION	PGA
PATROL SHIP, ICEBREAKER	PGB
PATROL SHIP, FAST	PGF
PATROL COMBATANT, GUIDED MISSILE	PGG
PATROL COMBATANT, GUIDED MISSILE, AIR CUSHION	PGGA
PATROL COMBATANT, GUIDED MISSILE, HYDROFOIL	PGGH
PATROL COMBATANT, HYDROFOIL	PGH
MOTOR GUNBOAT	PGM
PATROL COMBATANT, RECONNAISSANCE	PGR
PATROL SHIP, ASW	PGS
RIVER MONITOR	PM
MOTOR/PATROL CRAFT, FAST, GENERAL	PP
PATROL CRAFT, RESCUE	PR
LARGE PATROL SHIP	PS
PATROL CRAFT, MOTOR TORPEDO	PT
TORPEDO BOAT, AIR CUSHION	PTA
ATTACK BOAT, GUIDED MISSILE	PTG
ATTACK BOAT, GUIDED MISSILE, AIR CUSHION	PTGA
ATTACK BOAT, GUIDED MISSILE HYDROFOIL	PTGH
ATTACK BOAT, GUIDED MISSILE, TRAINING	PTGT

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
TORPEDO BOAT, MOTOR, HYDROFOIL	PTH
TORPEDO BOAT, SMALL	PTL
TORPEDO BOAT, SMALL, HYDROFOIL	PTLH
TORPEDO BOAT, TRAINING	PTT
PATROL BOAT, COAST GUARD	WPB
PATROL BOAT, RIVER/ ROADSTEAD, COAST GUARD	WPBR
PATROL BOAT, AIR CUSHION, COAST GUARD	WPBA
PATROL BOAT, HYDROFOIL COAST GUARD	WPBH
PATROL CRAFT, COAST GUARD	WPC
PATROL CRAFT, FAST, COAST GUARD	WPCF
FAST PATROL CRAFT, AIR CUSHIONED, COAST GUARD	WPCFA
SUBMARINE CHASER, COAST GUARD	WPCS
SUBMARINE CHASER, HYDROFOIL, COAST GUARD	WPCSH
PATROL CRAFT, TRAINING, COAST GUARD	WPCT
PATROL COMBATANT, COAST GUARD	WPG
PATROL SHIP, COAST GUARD	WPGF
RIVER MONITOR, COAST GUARD	WPM
PATROL BOAT, HARBOR, COAST GUARD	WPSB
TORPEDO BOAT, COAST GUARD	WPT
ATTACK BOAT, GUIDED MISSILE, COAST GUARD	WPTG
TORPEDO BOAT, SMALL, COAST GUARD	WPTL
RIVER PATROL TYPES	
MONITOR	BM
MONITOR, RIVER	BMR
RIVER MONITOR, ASSAULT	MON
MINE WARFARE TYPES	
MINE COUNTERMEASURES COMMAND AND SUPPORT SHIP	MCCS
MINE COUNTERMEASURES VESSEL, DIVING	MCD
MINE COUNTERMEASURES VESSEL, HOVERCRAFT	MCJ
MINE COUNTERMEASURES SHIP, GENERAL	MCM
MINE COUNTERMEASURES VESSEL, GENERAL	MCMV
MINE COUNTERMEASURES SUPPORT SHIP	MCS
MINE COUNTERMEASURES SHIP, SMALL, GENERAL	MCSL
MINE COUNTERMEASURES CRAFT, TRAINING	MCT
MINESWEEPER, FAST	MF
MINEHUNTER, GENERAL	MH
MINEHUNTER, AUXILIARY	MHA
MINEHUNTER, COASTAL	MHC
MINEHUNTER, INSHORE	MHI
MINEHUNTER, OCEAN	MHO
MINEHUNTER/SWEEPER, GENERAL	MHS
MINEHUNTER/SWEEPER, COASTAL	MHSC
MINEHUNTER/SWEEPER, WITH DRONE	MHSD
MINEHUNTER/SWEEPER, OCEAN	MHSO
MISCELLANEOUS	MIS
MINELAYER, GENERAL	ML
MINELAYER, AUXILIARY	MLA
MINELAYER, COASTAL	MLC
MINELAYER, INSHORE	MLI
MINELAYER, OCEAN	MLO
MINELAYER, RIVER	MLR
MINELAYER, SUPPORT SHIP	MLS
MINE WARFARE VESSEL	MM

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
MINELAYER, FAST	MLD
MINELAYER, FLEET	MMF
MINESWEEPER, SMALL, GENERAL	MS
MINESWEEPER, AUXILIARY	MSA
MINESWEEPER, BOAT	MSB
MINESWEEPER, COASTAL	MSC
MINESWEEPER, COASTAL, AIR CUSHION	MSCA
MINESWEEPER, COASTAL, WITH DRONE	MSCD
MINESWEEPER, COASTAL, HYDROFOIL	MSCH
MINESWEEPER, COASTAL, TRAINING	MSCT
MINESWEEPER, DRONE	MSD
MINESWEEPER, FLEET	MSF
MINESWEEPER, FLEET, AIR CUSHION	MSFA
MINESWEEPER, FLEET, HYDROFOIL	MSFH
MINEHUNTER	MSH
MINESWEEPER, INSHORE	MSI
MINESWEEPER, INSHORE, AIR CUSHION	MSIA
MINESWEEPING LAUNCH	MSL
MINESWEEPER, OCEAN	MSO
MINESWEEPER, RIVER	MSR
MINESWEEPER, SPECIAL DEVICE	MSS
MINESWEEPER, COASTAL, SPECIAL	MSSC
MINELAYER, COAST GUARD	WMM
MINESWEEPING BOAT, COAST GUARD	WMSB
MINESWEEPER, FLEET, COAST GUARD	WMSF
MINESWEEPER, INSHORE, COAST GUARD	WMSI

AMPHIBIOUS WARFARE SHIPS

AMPHIBIOUS COMMAND SHIP	LCC
AMPHIBIOUS FIRE SUPPORT SHIP	LFS
AMPHIBIOUS ASSAULT SHIP, GENERAL	LHA
AMPHIBIOUS ASSAULT SHIP, MULTI-PURPOSE	LHD
AMPHIBIOUS CARGO SHIP	LKA
AMPHIBIOUS ASSAULT, GENERAL	LL
ASSAULT SHIP, NON BEACHING	LO
ASSAULT SHIP, PERSONNEL	LP
AMPHIBIOUS TRANSPORT, PERSONNEL	LPA
AMPHIBIOUS TRANSPORT, DOCK	LPD
AMPHIBIOUS ASSAULT SHIP, HELICOPTER	LPH
ASSAULT SHIP, ROCKET-FIRING	LR
LANDING SHIP, DOCK	LSD
SWIMMER DELIVERY VEHICLE	LSDV
LANDING SHIP, LOGISTICS	LSL
LANDING SHIP, MEDIUM	LSM
LIGHT SEAL SUPPORT CRAFT	LSSC
LANDING SHIP, TANK	LST
LANDING SHIP, VEHICLE	LSV
ASSAULT SHIP, TANK	LT
ASSAULT VEHICLE	LV
SPECIAL WARFARE CRAFT, LIGHT	SWCL
SPECIAL WARFARE CRAFT, MEDIUM	SWCM
LANDING SHIP, MEDIUM, COAST GUARD	WLSM
LANDING SHIP TANK, COAST GUARD	WLST

LANDING CRAFT

ASSAULT VESSEL, BEACHING	LB
ASSAULT CRAFT	LC
LANDING CRAFT, CUSHION	AIRLCAC

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
LANDING CRAFT, FIRE SUPPORT	LCFS
LANDING CRAFT, MECHANIZED	LCM
LANDING CRAFT, MEDIUM, AIR CUSHION	LCMA
LANDING CRAFT, PERSONNEL	LCP
LANDING CRAFT, PERSONNEL, ARMORED	LCPA
LANDING CRAFT, PERSONNEL, LARGE	LCPL
LANDING CRAFT, UTILITY	LCU
LANDING CRAFT, UTILITY, AIR CUSHION	LCUA
LANDING CRAFT, VEHICLE/PERSONNEL	LCVP
LANDING CRAFT, SWIMMER SUPPORT	LCW
ASSAULT CRAFT, GUN-EQUIPPED	LG
ASSAULT CRAFT, MISSILE EQUIPPED	LM
LANDING CRAFT, MEDIUM PERSONNEL, COAST GUARD	WLCM
LANDING CRAFT, PERSONNEL, COAST GUARD	WLCP
PERSONNEL LANDING CRAFT ARMORED, COAST GUARD	WLCPA
LANDING CRAFT, UTILITY, COAST GUARD	WLCU
VEHICLE/PASSENGER LANDING CRAFT, COAST GUARD	WLCVP
AUXILIARY SHIPS	
AUXILIARY TYPE SHIP, GENERAL	AA
DEPOT SHIP/TENDER	AB
BUOY TENDER	ABU
BUOY TENDER, HEAVY LIFT	ABUD
AUXILIARY MINE WARFARE SUPPORT SHIP	ACM
DESTROYER TENDER	AD
DEPERMING SHIP	ADG
AMMUNITION SHIP	AE
AMMUNITION SHIP, SMALL	AEL
MISSILE SUPPORT SHIP	AEM
AMMUNITION TRANSPORT	AET
AMMUNITION TRANSPORT, SMALL	AETL
STORES SHIP	AF
LARGE AUXILIARY FLOATING DRYDOCK	AFDB
SMALL AUXILIARY FLOATING DRYDOCK	AFDL
MEDIUM AUXILIARY FLOATING DRYDOCK	AFDM
STORES SHIP, SMALL	AFL
COMBAT STORES SHIP	AFS
STORES SHIP, TRANSPORT	AFT
MISCELLANEOUS AUXILIARY	AG
ICEBREAKER	AGB
ICEBREAKER, SMALL	AGBL
ICEBREAKER, NUCLEAR POWERED	AGBN
COMMUNICATIONS SHIP, SMALL	AGCL
DEEP SUBMERGENCE SUPPORT SHIP	AGDS
RESEARCH SHIP	AGE
RESEARCH SHIP, HYDROFOIL	AGEH
AUXILIARY FLAG OR COMMAND SHIP	AGF
RESEARCH SHIP, FRIGATE	AGFF
INSTRUMENTATION SHIP, HYDROACOUSTIC RANGE	AGH
INTELLIGENCE COLLECTOR	AGI
MISSILE RANGE INSTRUMENTATION SHIP	AGM
SUPPORT SHIP, MISSILE RANGE	AGMS

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
OCEANOGRAPHIC RESEARCH SHIP, POLAR	AGOB
OCEANOGRAPHIC RESEARCH SHIP	AGOR
SURVEILLANCE SHIP, OCEAN	AGOS
PATROL/TORPEDO BOAT SUPPORT SHIP, TENDER	AGP
RADAR PICKET SHIP, UNARMED	AGR
SURVEY SHIP	AGS
SURVEY SHIP, POLAR	AGSA
SURVEY SHIP, COASTAL	AGSC
LAUNCHING SHIP, SATELLITE	AGSL
AUXILIARY RESEARCH SUBMARINE	AGSS
SERVICE SHIP, TARGET	AGT
SERVICE SHIP, TORPEDO/ TARGET	AGTT
HOSPITAL SHIP	AH
CARGO SHIP, NAVAL	AK
CARGO SHIP, LIGHT, NAVAL	AKL
CARGO SHIP, RO/RO, NAVAL	AKR
STORES SHIP, ISSUE, NAVAL	AKS
STORES SHIP, ISSUE, SMALL, NAVAL	AKSL
AIRCRAFT FERRY/CARGO SHIP	AKV
LIGHT SHIP	ALS
NET TENDER	AN
CABLE/NET LAYING SHIP	ANL
OILER/TANKER, GENERAL	AO
COMBAT SUPPORT SHIP, FAST	AOE
GASOLINE TANKER	AOG
OILER, SMALL, NAVAL	AOL
OILER REPLENISHMENT	AOR
OILER, REPLENISHMENT, SMALL, NAVAL	AORL
SPECIAL LIQUID SHIP	AOS
RADIOLOGICAL LIQUID SHIP	AOSR
OILER-TRANSPORT	AOT
OILER, TRANSPORT, SMALL	AOTL
PERSONNEL TRANSPORT	AP
BARRACKS SHIP	APB
PRIMARY CASUALTY RECEIVING SHIP	APCR
CASUALTY TRANSPORT SHIP	APCT
BARRACKS CRAFT	APL
MERCHANT CRUISE/ RAIDER, ARMED	AQ
REPAIR SHIP	AR
REPAIR SHIP, BATTLE DAMAGE	ARB
CABLE SHIP	ARC
AUXILIARY REPAIR DOCK	ARD
DRYDOCK, AUXILIARY, REPAIR, MEDIUM	ARDM
REPAIR SHIP, HEAVY HULL	ARH
REPAIR SHIP, SMALL	ARL
REPAIR SHIP, RADIOLOGICAL	ARR
SALVAGE SHIP	ARS
SALVAGE SHIP, LIFTING	ARSD
AIRCRAFT REPAIR SHIP	ARV
SUBMARINE TENDER	AS
SUBMARINE TENDER, SMALL	ASL
SUBMARINE RESCUE SHIP	ASR
SPACE VEHICLE RECOVERY SHIP	ASVR
TUG, OCEAN GOING	AT
TUG, OCEANGOING, AUXILIARY	ATA
MINI-ARMORED TROOP CARRIER	ATC
TUG, OCEANGOING, FLEET	ATF
TUG, OCEANGOING, RESCUE	ATR
TUG, OCEANGOING, OR SHIP SALVAGE/RESCUE	ATS
SEAPLANE TENDER	AV
AVIATION LOGISTIC SUPPORT SHIP	AVB
GUIDED MISSILE SHIP	AVM

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
AIRCRAFT RESCUE VESSEL	AVR
AVIATION SUPPLY SHIP	AVS
AUXILIARY AIRCRAFT LANDING TRAINING SHIP	AVT
WATER TENDER, NAVAL	AWT
DISTILLING SHIP, NAVAL	AWW
TRAINING SHIP, NAVAL	AX
TRAINING SHIP, SMALL, NAVAL	AXL
TRAINING SHIP, SAIL, NAVAL	AXS
TRAINING SHIP	AXT
HYDROGRAPHIC/ OCEANOGRAPHIC VESSEL	AY
DEEP SUBMERGENCE RESCUED VEHICLE, COMMERCIAL	SRV
DEEP SUBMERGENCE VEHICLE, COMMERCIAL	DSV
MISCELLANEOUS AUXILIARY, COAST GUARD	WAG
ICEBREAKER, COAST GUARD	WAGB
RESEARCH SHIP, EXPERIMENTAL, COAST GUARD	WAGE
BUOY TENDER, COAST GUARD	WAGL
OCEANOGRAPHIC RESEARCH SHIP, COAST GUARD	WAGOR
RESEARCH SHIP, HYDROGRAPHIC, COAST GUARD	WAGS
CARGO SHIP, COAST GUARD	WAK
OILER, COAST GUARD	WAO
OILER, TRANSPORT, COAST GUARD	WAOT
CABLE REPAIR SHIP, COAST GUARD	WARC
SALVAGE AND RESCUE SHIP, COAST GUARD	WARS
OCEAN TUG, COAST GUARD	WATA
SHIP, TRAINING, COAST GUARD	WAXT

SERVICE CRAFT

TARGET TYPE	CODE
WARPING TUG	YLWT
SIDE LOADING WARPING TUG	YSLWT
SERVICE CRAFT	SVC
SUBMERSIBLE, GENERAL, COMMERCIAL	TS
SUBMERSIBLE, RESEARCH, COMMERCIAL	TSG
TUG	TUG
SERVICE CRAFT, MISCELLANEOUS, COAST GUARD	WYAG
EXPERIMENTAL SERVICE CRAFT, COAST GUARD	WYAGE
BARGE, OPEN, COAST GUARD	WYC
DIVING TENDER, COAST GUARD	WYDT
LIGHTER, COVERED, COAST GUARD	WYF
FERRY, COAST GUARD	WYFB
FLOATING DRYDOCK, SMALL, COAST GUARD	WYFDL
LAUNCH, COAST GUARD	WYFL
LAUNCH, HYDROFOIL, COAST GUARD	WYFLH
TRANSPORT, UTILITY, HARBOR, COAST GUARD	WYFU
CRAFT, SURVEY, COAST GUARD	WYGS
CRAFT, AMBULANCE, COAST GUARD	WYH
LIGHTER, FUEL, COAST GUARD	WYO
BARGE, FUEL, COAST GUARD	WYON
BARGE, BARRACKS, COAST GUARD	WYPL
BARGE, FLOATING, WORKSHOP, COAST GUARD	WYR

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
TUG, HARBOR, LARGE, COAST GUARD	WYTB
TUG, HARBOR, SMALL, COAST GUARD	WYTL
TUG, HARBOR, MEDIUM, COAST GUARD	WYTM
CRAFT, SAIL, TRAINING, COAST GUARD	WYTS
LIGHTER, WATER, COAST GUARD	WYW
CRAFT, TRAINING, COAST GUARD	WYXT
YACHT	YAC
SERVICE CRAFT, MISCELLANEOUS	YAG
SERVICE CRAFT, SURFACE EFFECT, EXPERIMENTAL	YAGA
SERVICE CRAFT, EXPERIMENTAL	YAGE
EXPERIMENTAL WEAPON TESTING BARGE	YAGEN
COMMAND CRAFT, MISCELLANEOUS	YAGF
TARGET SERVICE CRAFT	YAGT
SUPPORT BARGE, MISSILE	YAMM
BARGE, NON-SELF-PROPELLED	YB
DOCK, BOW	YBD
LIGHTER, OPEN	YC
BARGE, CARGO	YCF
LIGHTER, OPEN, CARGO	YCK
LIGHTER, AIRCRAFT	YCV
FLOATING CRANE	YD
VESSEL, DEGAUSSING	YDG
DIVING TENDER	YDT
LIGHTER, AMMUNITION	YE
BARGE, AMMUNITION	YEN
FERRY, LIGHTER, COVERED	YF
FERRY BOAT	YFB
LIGHTER, COVERED DRY DOCK COMPANION	YFC
YARD FLOATING DRYDOCK	YFD
DRY DOCK FLOATING, OPEN, LARGE	YFDB
DRY DOCK FLOATING, OPEN, SMALL	YFDL
DRY DOCK FLOATING, OPEN, MEDIUM	YFDM
LAUNCH	YFL
LAUNCH, HYDROFOIL	YFLH
LAUNCH, COVERED	YFN
LAUNCH, COVERED, LARGE	YFNB
DRYDOCK COMPANION CRAFT	YFND
BARGE, SPECIAL PURPOSE, NON-SELF PROPELLED	YFNX
FLOATING POWER BARGE	YFP
LIGHTER, COVERED, REFRIGERATED	YFR
BARGE, REFRIGERATED	YFRN
RANGE TENDER	YFRT
LIGHTER, TORPEDO TRANSPORT	YFT
HARBOR UTILITY CRAFT	YFU
LIGHTER, GARBAGE	YG
BARGE, GARBAGE	YGN
SURVEY CRAFT	YGS
FLOATING TARGET	YGT
BARGE, TARGET	YGTN
AMBULANCE BOAT	YH
BARGE, HEATING	YHT
LIGHTER	YL
SALVAGE LIFT CRAFT	YLC
BARGE, SALVAGE LIFT	YLCN
FLOATING DREDGE	YM
DREDGE, NON-SELF PROPELLED	YMN
NET CARGO CRAFT	YNC
GATE CRAFT	YNG
RESEARCH VEHICLE, NUCLEAR POWERED	YNR
NET TENDER, BOOM	YNT
BARGE, FUEL OIL	YO
BARGE, GASOLINE	YOG
BARGE, SPECIAL LIQUID	YOM
BARGE, FUEL	YON
BARGE, OIL STORAGE	YOS
BARGE, DISPOSAL, NUCLEAR WASTE	YOSR
BARGE, SUBMERSIBLE OIL STORAGE	YOSS
HARBOR PATROL CRAFT	YP

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
FLOATING BARRACKS	YPB
FLOATING PILE DRIVER	YPD
BARGE, PONTOON STORAGE	YPK
BARGE, BARRACKS	YPL
TORPEDO RETRIEVER CRAFT	YPT
REPAIR, FLOATING WORKSHOP	YR
BARGE, REPAIR AND BERTHING	YRB
REPAIR, BERTHING AND MESSING BARGE	YRBM
CABLE TENDER YARD CRAFT	YRC
BARGE, CABLE	YRCN
DRY DOCK FLOATING WORKSHOP	YRD
DRY DOCK FLOATING, CLOSED, LARGE	YRDB
FLOATING DRYDOCK WORKSHOP, HULL	YRDH
DRY DOCK FLOATING, CLOSED, SMALL	YRDL
DRY DOCK FLOATING, CLOSED, MEDIUM	YRDM
TANK CLEANING CRAFT	YRG
BARGE, NUCLEAR SHIP SUPPORT	YRNS
BARGE, RADIOLOGICAL REPAIR	YRR
REPAIR BARGE, NUCLEAR PROPULSION	YRRN
BARGE, SALVAGE	YRST
BARGE, SELF-PROPELLED	YS
SUBMERSIBLE, RESEARCH, MILITARY	YSG
SUBMERSIBLE, RESCUE, MILITARY	YSR
DEEP SUBMERSIBLE RESCUE VEHICLE, MILITARY	YSRV
SUBMERSIBLE, SERVICE, MILITARY	YSS
DEEP SUBMERGENCE VEHICLE, MILITARY	YSV
HARBOR TUG	YT
TUG, HARBOR, LARGE	YTB
TUG, HARBOR, SMALL	YTL
TUG, HARBOR, MEDIUM	YTM
FIRE/RESCUE BOAT, SMALL	YTR
TRAINING CRAFT, SAIL	YTS
TORPEDO TRIALS CRAFT	YTT
DRONE AIRCRAFT, CATAPULT CONTROL CRAFT	YV
SEAPLANE SERVICE CRAFT	YVS
BARGE, WATER	YW
HULK OR RELIC	YXR
TRAINING CRAFT	YXT
SERVICE CRAFT, YARD	YY
HOVERCRAFT	
HOVERCRAFT, AIR CUSHION/GROUND EFFECT MACHINE, GENERAL	HH
HOVERCRAFT, LARGE	HL
HOVERCRAFT, PERSONNEL	HP
HOVERCRAFT, SMALL	HS
HOVERCRAFT, GENERAL	TJ
HOVERCRAFT, TRANSPORT/CARGO	TJC
HOVERCRAFT, FERRY	TJF
HOVERCRAFT, ICEBREAKER	TJGB
HOVERCRAFT, SCIENTIFIC RESEARCH/SURVEY	TJGS
MERCHANT SHIP TYPES	
CARGO, BULK	BLK
CARGO, DRY, BREAK BULK	CGO
UNCLASSIFIED MISCELLANEOUS UNIT	IX
SUBMERSIBLE RESEARCH VEHICLE	NR
PASSENGER	PAX
MOTOR BOAT, LAUNCH	QM
BOAT, GENERAL	QQ
ROWBOAT	QR

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
SAILBOAT	QW
REFRIGERATOR	REF
RIVER/SEA	RIV
SPACE EVENT SUPPORT	SPA
LIQUID CARGO	TKR
MERCHANT SHIP, GENERAL	TM
MERCHANT SHIP, DRY CARGO, BREAK BULK	TMA
MERCHANT SHIP, BULK	TMB
MERCHANT SHIP, CONTAINER, NON-SELF-SUSTAINED	TMC
MERCHANT SHIP, CONTAINER, SELF-CONTAINED	TMCS
MERCHANT SHIP, DREDGER	TMD
MERCHANT SHIP, RO/RO	TME
MERCHANT SHIP, CAR/PASSENGER FERRY	TMF
MERCHANT SHIP, RAILROAD, CAR FERRY	TMFR
MERCHANT SHIP, ICEBREAKER	TMGB
MERCHANT SHIP, SCIENTIFIC RESEARCH/SURVEY	TMGS
MERCHANT SHIP, HEAVY LIFT	TMH
MERCHANT SHIP, INLAND WATERWAY	TMI
MERCHANT SHIP, CABLE LAYER	TMK
MERCHANT SHIP, LASH	TML
MERCHANT SHIP, SEABEE	TMLS
MERCHANT SHIP, METEOROLOGICAL	TMM
MERCHANT SHIP, TANKER	TMO
MERCHANT SHIP, REPLENISHMENT, OILER, SMALL	TMOL
MERCHANT SHIP, REPLENISHMENT, OILER	TMOR
MERCHANT SHIP, SPECIAL LIQUIDS	TMOS
MERCHANT SHIP, LIQUID	TMOT
MERCHANT SHIP, PASSENGER	TMP
MERCHANT SHIP, REFRIGERATED	TMR
MERCHANT SHIP, SPACE/MISSILE ASSOCIATED	TMS
MERCHANT TUG	TMT
MERCHANT TUG, OCEANGOING RESCUE	TMTR
MERCHANT TUG, OCEANGOING SALVAGE	TMTS
MERCHANT SHIP, WATER TENDER	TMWT
MERCHANT SHIP, DISTILLING	TMWW
MERCHANT SHIP, TRAINING	TMX
SUBMERSIBLE, RESCUE, COMMERCIAL	TSR
FISHING VESSELS	
FISHING VESSEL, TRAWLER OR JUNK GENERAL	AU
FISHING SHIP, CARGO	CGF
FISHING SHIP, FISH	FSH
FISHING VESSEL, GENERAL	TU
FISHING BASE SHIP	TUB
FISHING VESSEL, WHALE CATCHER	TUC
FISHING FACTORY SHIP	TUF
FISHING VESSEL, INSPECTION	TUI
FISHING VESSEL, REFRIGERATED	TUR
FISHERIES RESEARCH SHIP	TUS
FISHING VESSEL, TRAINING	TUT
WHALE FACTORY SHIP	TUW
PERSONNEL	
PERSONNEL	PERS

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
CIVILIAN PERSONNEL	CIVPER
LINE CROSSER	LINCRS
LOCAL INHABITANT	LOCAL
CIVILIAN MEDICAL PERSON	CMEDIC
MISSIONARY	MSNRY
REFUGEE	REFUG
REPATRIATE	REPAT
MILITARY PERSONNEL	MILPER
BIVOUAC	BIV
DESERTER	DESER
ENLISTED	EM
FORWARD OBSERVER	FO
GUNNER	GUNNER
INFANTRY	INF
INTELLIGENCE	INTEL
MEDICAL PERSON	MEDIC
MESSENGER	MSGR
MILITARY POLICEMAN	MP
MINELAYER	MINLR
NONCOM	NCO
OBSERVATION POST	OP
OFFICER	OFF
OFFICER, GENERAL	GENOFF
OFFICER, WARRANT	WO
PATROL	PTRL
PILOT	PILOT
PRISONER	POW
RIFLEMAN	RFLMN
SCOUT	SCOUT
WORK PARTY	WKPTY
PARAMILITARY PERSONNEL	PARMIL
AGENT	AGENT
DEFECTOR	DEFEC
GUERRIL	LAGUER
HOSTAGE	HOSTG
PARTISAN	PARTSN
REMOTE OBSERVER	OBSR
SABOTEUR	SABOT
SAPPER	SAPPER
SNIPER	SNIPER
STAY-BEHIND	STYBH
WORK PARTY	WKPTY

TARGET TYPE	CODE
TERRAIN FEATURES	
TERRAIN FEATURE	TER
DEFILED	EFILE
HILL	HILL
ROAD JUNCTION	JCT
LANDING STRIP	LDSTRP
ROAD SEGMENTS	ROAD
RAILROAD	RR
RUNWAY	RNWY
UNIT OR ORGANIZATION	
UNIT	UNIT
AIRBORNE UNIT	UABN
AMPHIBIOUS UNIT	UAMPHB
ARMOR UNIT	UARMOR
ARTILLERY UNIT	UARTY
ASSAULT UNIT	UASLT
BOMBER AIRCRAFT UNIT	UBMBR
CHEMICAL UNIT	UCHEM
COMBAT SERVICE SUPPORT UNIT	UCBTSP
CONSTRUCTION UNIT	UCONST
ENGINEER UNIT	UENGR
FIGHTER AIRCRAFT UNIT	UFTR
FIGHTER-BOMBER AIRCRAFT UNIT	UFTBMR
HELICOPTER UNIT	UHELO
INFANTRY UNIT	UINF
INTELLIGENCE UNIT	UINTEL
LOGISTIC UNIT	ULOG
MAINTENANCE UNIT	UMAINT
MECHANIZED INFANTRY UNIT	UMECH
MOTORIZED RIFLE UNIT	UMTRFL
PIPELINE UNIT	UPPL
PONTOON UNIT	UPTOON
RECONNAISSANCE UNIT	URECCE
ROCKET UNIT	URKT
SECURITY UNIT	USCTY
SIGNAL UNIT	USIG
SUPPLY UNIT	USUPLY
SURFACE-TO-AIR MISSILE UNIT	USAM
SURFACE-TO-SURFACE MISSILE UNIT	USSM

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
TANK UNIT	UTK
TANK UNIT, INDEPENDENT	UTKI
TRANSPORT UNIT	UTRANS
VEHICLES	
VEHICLE	VEH
COMBAT ARMORED VEHICLE	ARMOR
ARMORED PERSONNEL CARRIER	APC
COMBAT ENGINEER VEHICLE	CEV
COMBAT RECONNAISSANCE	RECO
TANK	TK
TANK, AMPHIBIOUS	AMPHTK
TANK, HEAVY	HTK
TANK, LIGHT	LTK
TANK, MEDIUM	MDMTK
TANK DESTROYER	TKDSTR
TANK-RECOVERY VEHICLE	TKRCVY
TRACKED LANDING-VEHICLE	LVT
COMBAT SUPPORT VEHICLE	CBSPVH
AMPHIBIOUS VEHICLE	AMPHVH
ARMORED VEHICLE	ARSPVH
HALF-TRACK	HTRKVH
RECONNAISSANCE VEHICLE	RECNVH
TRANSPORTER	TRNSVH
TRACKED VEHICLE	TRKDVH
UTILITY VEHICLE	UTILVH
WHEELED VEHICLE, HEAVY	HVWHL
WHEELED VEHICLE, LIGHT	LTWHL
WHEELED VEHICLE, MEDIUM	MDMWH
WRECKER	WRKVH
ENGINEER/CONSTRUCTION VEHICLE	ENGRVH
AIR COMPRESSOR	CMPRSR
BULLDOZER	DOZER
CRANE	CRANE
DITCHER	DITCH
DUMP TRUCK	DMPTRK
GRADER	GRADER
PILE DRIVER	PILEDR
POWER SHOVEL	PRSHVL
ROCK CRUSHER	ROCK
SNOWPLOW	SNPLOW
TRACTOR	TRCTR
OTHER TYPE VEHICLE	VHOTH
AMBULANCE	AMBL
BICYCLE	BIKE
BOAT	BOAT
BUS	BUS
CAR	CAR
CART	CART
FIRE TRUCK	FIRE
FORKLIFT	FLFT
MOTORCYCLE	CYCLE
RAILROAD TRAIN	TRAIN
SEMITRAILER	TRLR
TANKER	TANKER
TRUCK	TRUCK
WEAPONS	
WEAPONS	WPN
AIR DEFENSE ARTILLERY	ADA
AAA, LIGHT	AAAL
AAA, LIGHT AUTO	AAALA
AAA, HEAVY	AAAH
AAA, MEDIUM	AAAMDM
AAA, SELF-PROPELLED	AAASP
AAA, TOWED	AAATOW
ADA, HEAVY	ADAH
ADA, LIGHT	ADAL
ADA, MEDIUM	ADAMDM
ADA, MISSILE	ADAMSL
ADA POSITION AREA	ADAPOS

ENTRY LIST 20 TARGET TYPE (Continued)

TARGET TYPE	CODE
ARTILLERY	ARTY
ARTILLERY, HEAVY	ARTYH
ARTILLERY, LIGHT	ARTYL
ARTILLERY, MEDIUM	ARTYM
ARTILLERY, VERY HEAVY	ARTYVH
ARTILLERY, TOWED	ARTYTW
SELF-PROPELLED ARTILLERY	ARTYSP
SELF-PROPELLED HEAVY ARTILLERY	ARTYSH
SELF-PROPELLED ARTILLERY LIGHT	ARTYSL
SELF-PROPELLED ARTILLERY MEDIUM	ARTYSM
ARTILLERY POSITION AREA	ARTPOS
CREW-SERVED WEAPON	WPNCRW
ANTIAIRCRAFT GUN	AAA
ANTITANK GUN	ATG
ASSAULT GUN	ASLT
FIELD GUNFLD	GUN
HOWITZER	HOWTZ
MACHINE GUN	MG
MACHINE GUN, HEAVY	HVMG
MACHINE GUN, LIGHT	LTMG
RECOILLESS RIFLE	RCLR
TANK GUN, HEAVY	TKGUNH
TANK GUN, LIGHT	TKGUNL
TANK GUN, MEDIUM	TKGUNM
INDIVIDUAL WEAPON	WPNIND
ASSAULT RIFLE	ASLTR
CARBINE	CARBN
GRENADE	GREN
LIGHT ANTITANK	GUNATGL
MACHINE PISTOL	MACHP
PISTOL OR OTHER HANDGUN	PISTOL
PORTABLE FLAMETHROWER	FLAME
RIFLE	RIFLE
SHOTGUN	SHOTG
SUBMACHINE GUN	SUBMG
MORTAR	MORT
LIGHT MORTAR	MRTRL
MEDIUM MORTAR	MRTRM
HEAVY MORTAR	MRTRH
VERY HEAVY MORTAR	MRTRVH
ROCKET/MISSILE	RKTMSL
LAUNCHER, MISSILE	LCHMSL
LAUNCHER, ROCKET	LCHRKT
MISSILE, GUIDED	MSLG
MISSILE, HEAVY	MSLH
MISSILE, LIGHT	MSLL
MISSILE, MEDIUM	MSLMDM
ROCKET/MISSILE, AIR DEFENSE	ADM
ROCKET/MISSILE, AIR-TO-AIR	AAM
ROCKET/MISSILE, AIR-TO-SURFACE	ASM
ROCKET/MISSILE, ANTI-PERSONNEL	APERS
ROCKET/MISSILE, ANTITANK	ATANK
ROCKET/MISSILE, SURFACE-TO-AIR	SAM
ROCKET/MISSILE, SURFACE-TO-SURFACE	SSM
ROCKET/MISSILE POSITION AREA	MSLPOS
SPACE TARGET	SPCTAR
SPACE VEHICLE	SPCVEH
LINE OF COMMUNICATION	LOC
DIRECTED SEARCH AREA	DSA

ENTRY LIST 59 COUNTRY CODES

ENCODE

COUNTRY	CODE	COUNTRY	CODE
Afghanistan	AF	Cameroon	CM
Albania	AL	Canada	CA
Algeria	AG	Cape Verde	CV
American Samoa	AQ	Cayman Islands	CJ
Andorra	AN	Central African Republic	CT
Angola	AO	Chad	CD
Anguilla	AV	Chile	CI
Antarctica	AY	China	CH
Antigua and Barbuda	AC	Christmas Island	KT
Argentina	AR	Clipperton Island	IP
Armenia	AM	Cocos (Keeling) Islands	CK
Aruba	AA	Colombia	CO
Ashmore and Cartier Islands	AT	Comoros	CN
Australia	AS	Congo	CF
Austria	AU	Cook Islands	CW
Azerbaijan	AJ	Coral Sea Islands	CR
		Costa Rica	CS
Bahamas, The	BF	Cote D'Ivoire	IV
Bahrain	BA	Croatia	HR
Baker Island	FQ	Cuba	CU
Bangladesh	BG	Cyprus	CY
Barbados	BB	Czech Republic	EZ
Bassas Da India	BS	Czechoslovakia	CZ
Belarus	BO		
Belgium	BE	Denmark	DA
Belize	BH	Djibouti	DJ
Benin	BN	Dominica	DO
Bermuda	BD	Dominican Republic	DR
Bhutan	BT		
Bolivia	BL	Ecuador	EC
Bosnia and Herzegovina	BK	Egypt	EG
Botswana	BC	El Salvador	ES
Bouvet Island	BV	Equatorial Guinea	EK
Brazil	BR	Estonia	EN
British Indian Ocean Territory	IO	Ethiopia	ET
British Virgin Islands	VI	Europa Island	EU
Brunei	BX	Exercise Black Country	OA
Bulgaria	BU	Exercise Black Forces	OB
Burkina (formerly Upper Volta)	UV	Exercise Blue Country	OC
Burma	BM	Exercise Blue Force	OD
Burundi	BY	Exercise Former Warsaw Pact Force	OW
		Exercise Friendly Country	YC
Cambodia (formerly Kampuchia)	CB	Exercise Friendly Force	YY

ENTRY LIST 59 COUNTRY CODES (Continued)

COUNTRY	CODE
Exercise Hostile Country	XC
Exercise Hostile Force	XX
Exercise Neutral Country	ZC
Exercise Neutral Force	ZZ
Exercise Orange Country	OJ
Exercise Orange Force	OK
Exercise Red Country	OR
Exercise Red Force	OE
Exercise White Country	ON
Exercise NATO Force	OT
Exercise Purple Force	OL
Exercise Spare Number One	XA
Exercise Spare Number Two	XB
Exercise United Nations Force	UU
Falkland Islands (Islas Malvinas) (formerly included South Georgia and the South Sandwich Islands)	FK
Faroe Islands	FO
Fiji	FJ
Finland	FI
Former Yugoslavian Republic of Macedonia	MK
France	FR
French Guiana	FG
French Polynesia	FP
French Southern and Antarctic Islands	FS
Gabon	GB
Gambia, The	GA
Gaza Strip	GZ
Georgia	GG
German Democratic Republic (used prior to the reunification of Germany)	GC
Germany	GM
Germany, Berlin (used prior to the reunification of Germany)	BZ
Germany, Federal Republic of (used prior to the reunification of Germany)	GE
Ghana	GH
Gibraltar	GI
Glorioso Islands	GO
Greece	GR
Greenland	GL
Grenada	GJ
Guadeloupe	GP
Guam	GQ
Guatemala	GT
Guernsey	GK
Guinea	GV
Guinea-Bissau	PU
Guyana	GY
Haiti	HA
Heard Island and McDonald Islands	HM
Honduras	HO
Hong Kong	HK
Howland Island	HQ
Hungary	HU
Iceland	IC
India	IN
Indonesia	ID
Iran	IR
Iraq	IZ
Iraq-Saudia Arabia Neutral Zone	IY
Ireland	EI
Israel	IS
Italy	IT
Jamaica	JM
Jan Mayen	JN
Japan	JA
Jarvis Island	DQ
Jersey	JE
Johnston Atoll	JQ
Jordan	JO
Juan De Nova Island	JU
Kazakhstan	KZ
Kenya	KE
Kingman Reef - US Territory	KQ
Kiribati	KR
Republic of Korea, Republic of	KS
Kuwait	KU
Kyrgyzstan	KG

ENTRY LIST 59 COUNTRY CODES (Continued)

COUNTRY	CODE	COUNTRY	CODE
Laos	LA	Norfolk Island	NF
Latvia	LG	Northern Mariana Islands	CQ
Lebanon	LE	Norway	NO
Lesotho	LT		
Liberia	LI	Oman	MU
Libya	LY		
Liechtenstein	LS	Other Country	OO
Lithuania	LH		
Luxembourg	LU	Pakistan	PK
		Palmyra Atoll	LQ
Macau	MC	Palau, Republic of	PS
Madagascar	MA	Panama	PM
Malawi	MI	Papua New Guinea	PP
Malaysia	MY	Paracel Islands	PF
Maldives	MV	Paraguay	PA
Mali	ML	Peru	PE
Malta	MT	Philippines	RP
Man, Isle of	IM	Pitcairn Islands	PC
Marshall Islands	RM	Poland	PL
Martinique	MB	Portugal	PO
Mauritania	MR	Puerto Rico	RQ
Mauritius	MP		
Mayotte	MF	Qatar	QA
Mexico	MX		
Micronesia, Federated States of	FM	Red Cross	OX
Midway Islands	MQ	Reunion	RE
Moldova	MD	Romania	RO
Monaco	MN	Russia	RS
Mongolia	MG	Rwanda	RW
Montserrat	MH		
Morocco	MO	St. Helena	SH
Mozambique	MZ	St. Kitts and Nevis (formerly St. Christopher and Nevis)	SC
Montenegro	MW		
		St. Lucia	ST
Namibia	WA	St. Pierre and Miquelon	SB
Nauru	NR	St. Vincent and the Grenadines	VC
Navassa Island	BQ	San Marino	SM
Nepal	NP	Sao Tome and Principe	TP
Netherlands	NL	Saudia Arabia	SA
Netherlands Antilles	NT	Senegal	SG
New Caledonia	NC	Serbia	SR
New Zealand	NZ	Seychelles	SE
Nicaragua	NU	Sierra Leone	SL
Niger	NG	Singapore	SN
Nigeria	NI	Slovakia	LO
Niue	NE	Slovenia	SI

ENTRY LIST 59 COUNTRY CODES (Continued)

COUNTRY	CODE	COUNTRY	CODE
Solomon Islands	BP	Virgin Islands	VQ
Somalia	SO		
South Africa	SF	Wake Island	WQ
South Georgia and the South Sandwich Islands Spain	SX SP	Wallis and Futuna	WF
Spratly Islands	PG	West Bank	WE
Sri Lanka	CE	Western Sahara	WI
Sudan	SU	Western Samoa	WS
Suriname	NS	Yemen	YM
Svalbard	SV	Yemen (Aden) (used prior to the reunification of Yemen)	YS
Swaziland	WZ		
Sweden	SW	Yemen (Sanaa) (used prior to the reunification of Yemen)	YE
Switzerland	SZ		
Syria	SY	Yugoslavia	YO
Taiwan	TW	Zaire	CG
Tajikistan	TI	Zambia	ZA
Tanzania, United Republic of	TZ	Zimbabwe	ZI
Thailand	TH		
Togo	TO		
Tokelau	TL		
Tonga	TN		
Trinidad and Tobago	TD		
Tromelin Island	TE		
Trust Territory of the Pacific Islands (formerly Republic of Palau)	PS		
Tunisia	TS		
Turkey	TU		
Turkmenistan	TX		
Turks and Caicos Islands	TK		
Tuvalu	TV		
Uganda	UG		
Union of Soviet Socialist Republics	UR		
United Arab Emirates	TC		
United Kingdom	UK		
United States	US		
Ukraine	UP		
Uruguay	UY		
Uzbekistan	UZ		
Vanuatu	NH		
Vatican City	VT		
Venezuela	VE		
Vietnam	VM		

ENTRY LIST 59 COUNTRY CODES (Continued)

DECODE

CODE	COUNTRY
AA	Aruba
AC	Antigua and Barbuda
AF	Afghanistan
AG	Algeria
AJ	Azerbaijan
AL	Albania
AM	Armenia
AN	Andorra
AO	Angola
AQ	American Samoa
AR	Argentina
AS	Australia
AT	Ashmore and Cartier Islands
AU	Austria
AV	Anguilla
AY	Antarctica
BA	Bahrain
BB	Barbados
BC	Botswana
BD	Bermuda
BE	Belgium
BF	Bahamas, The
BG	Bangladesh
BH	Belize
BK	Bosnia and Herzegovina
BL	Bolivia
BM	Burma
BN	Benin
BO	Belarus
BP	Solomon Island
BQ	Navassa Island
BR	Brazil
BS	Bassas Da India
BT	Bhutan
BU	Bulgaria
BV	Bouvet Island
BX	Brunei
BY	Burundi
BZ	Germany, Berlin (used prior to the reunification of Germany)
CA	Canada
CB	Cambodia (formerly Kampuchia)
CD	Chad
CE	Sri Lanka
CF	Congo
CG	Zaire
CH	China
CI	Chile
CJ	Cayman Islands
CK	Cocos (Keeling) Islands
CM	Cameroon
CN	Comoros
CO	Colombia
CQ	Northern Mariana Islands
CR	Coral Sea Islands
CS	Costa Rica
CT	Central African Republic
CU	Cuba
CV	Cape Verde
CW	Cook Islands
CY	Cyprus
CZ	Czechoslovakia
DA	Denmark
DJ	Djibouti
DO	Dominica
DQ	Jarvis Island
DR	Dominican Republic
EC	Ecuador
EG	Egypt
EI	Ireland
EK	Equatorial Guinea
EN	Estonia
ES	El Salvador
ET	Ethiopia
EU	Europa Island
EZ	Czech Republic
FG	French Guiana
FI	Finland
FJ	Fiji
FK	Falkland Islands (Islas Malvinas) (formerly included South Georgia and the South Sandwich Islands)

ENTRY LIST 59 COUNTRY CODES (Continued)

CODE	COUNTRY
FM	Micronesia, Federated States of
FO	Faroe Islands
FP	French Polynesia
FQ	Baker Island
FR	France
FS	French Southern and Antarctic Islands
GA	Gambia, The
GB	Gabon
GC	German Democratic Republic (used prior to the reunification of Germany)
GE	Germany, Federal Republic of (used prior to the reunification of Germany)
GG	Georgia
GH	Ghana
GI	Gibraltar
GJ	Grenada
GK	Guernsey
GL	Greenland
GM	Germany
GO	Glorioso Islands
GP	Guadeloupe
GQ	Guam
GR	Greece
GT	Guatemala
GV	Guinea
GY	Guyana
GZ	Gaza Strip
HA	Haiti
HK	Hong Kong
HM	Heard Island and McDonald Islands
HO	Honduras
HQ	Howland Island
HR	Croatia
HU	Hungary
IC	Iceland
ID	Indonesia
IM	Man, Isle of
IN	India
IO	British Indian Ocean Territory
IP	Clipperton Island
IR	Iran
IS	Israel
IT	Italy
IV	Cote D'Ivoire
IY	Iraq-Saudi Arabia Neutral Zone
IZ	Iraq
JA	Japan
JE	Jersey
JM	Jamaica
JN	Jan Mayen
JO	Jordan
JQ	Johnston Atoll
JU	Juan De Nova Island
KE	Kenya
KG	Kyrgyzstan
KN	Korea, Democratic Peoples Republic
KQ	Kingman Reef
KR	Kiribati
KS	Korea, Republic of
KT	Christmas Island
KU	Kuwait
KZ	Kazakhstan
LA	Laos
LE	Lebanon
LG	Latvia
LH	Lithuania
LI	Liberia
LO	Slovakia
LQ	Palmyra Atoll
LS	Liechtenstein
LT	Lesotho
LU	Luxembourg
LY	Libya
MA	Madagascar
MB	Martinique
MC	Macau
MD	Moldova
MF	Mayotte
MG	Mongolia
MH	Montserrat
MI	Malawi
MK	Former Yugoslavian Republic of Macedonia
ML	Mali
MN	Monaco
MO	Morocco
MP	Mauritius

ENTRY LIST 59 COUNTRY CODES (Continued)

CODE	COUNTRY
MQ	Midway Islands
MR	Mauritania
MT	Malta
MU	Oman
MV	Maldives
MW	Montenegro
MX	Mexico
MY	Malaysia
MZ	Mozambique
NC	New Caledonia
NE	Niue
NF	Norfolk Island
NG	Niger
NH	Vanuatu
NI	Nigeria
NL	Netherlands
NO	Norway
NP	Nepal
NR	Nauru
NS	Suriname
NT	Netherlands Antilles
NU	Nicaragua
NZ	New Zealand
OA	Exercise Black Country
OB	Exercise Black Forces
OC	Exercise Blue Country
OD	Exercise Blue Force
OE	Exercise Red Force
OJ	Exercise Orange Country
OK	Exercise Orange Force
OL	Exercise Purple Force
ON	Exercise White Country
OO	Other Country
OR	Exercise Red Country
OT	Exercise NATO Force
OW	Exercise Former Warsaw Pact Force
OX	Red Cross
PA	Paraguay
PC	Pitcairn Island
PE	Peru
PF	Paracel Islands
PG	Spratly Islands
PK	Pakistan
PL	Poland
PM	Panama
PO	Portugal
PP	Papua New Guinea
PS	Trust Territory of the Pacific Islands (formerly Republic of Palau)
PU	Guinea-Bissau
QA	Qatar
RE	Reunion
RM	Marshall Islands
RO	Romania
RP	Philippines
RQ	Puerto Rico
RS	Russia
RW	Rwanda
SA	Saudia Arabia
SB	St. Pierre and Miquelon
SC	St. Kitts and Nevis (formerly St. Christopher and Nevis)
SE	Seychelles
SF	South Africa
SG	Senegal
SH	St. Helena
SI	Slovenia
SL	Sierra Leone
SM	San Marino
SN	Singapore
SO	Somalia
SP	Spain
SR	Serbia
ST	St. Lucia
SU	Sudan
SV	Svalbard
SW	Sweden
SX	Sandwich Islands
SY	Syria
SZ	Switzerland
TC	United Arab Emirates
TD	Trinidad and Tobago
TE	Tromelin Island
TH	Thailand
TI	Tajikistan

ENTRY LIST 59 COUNTRY CODES (Continued)

CODE	COUNTRY
TK	Turks and Caicos Islands
TL	Tokelau
TN	Tonga
TO	Togo
TP	Sao Tome and Principe
TS	Tunisia
TU	Turkey
TV	Tuvalu
TW	Taiwan
TX	Turkmenistan
TZ	Tanzania, United Republic of
UG	Uganda
UK	United Kingdom
UP	Ukraine
UR	Union of Soviet Socialist Republics
US	United States
UU	Exercise United NationsForce
UV	Burkina (formerly Upper Volta)
UY	Uruguay
UZ	Uzbekistan
VC	St. Vincent and the Grenadines
VE	Venezuela
VI	British Virgin Islands
VM	Vietnam
VQ	Virgin Islands
VT	Vatican City
WA	Namibia
WE	West Bank
WF	Wallis and Futuna
WI	Western Sahara
WQ	Wake Island
WS	Western Samoa
WZ	Swaziland
XA	Exercise Spare Number One
XB	Exercise Spare Number Two
XC	Exercise Hostile Country
XX	Exercise Hostile Force
YC	Exercise Friendly Country
YE	Yemen (Sanaa) (used prior to the reunification of Yemen)
YM	Yemen
YO	Yugoslavia
YS	Yemen (Aden) (used prior to the reunification of Yemen)
YY	Exercise Friendly Force
ZA	Zambia
ZC	Exercise Neutral Country
ZI	Zimbabwe
ZZ	Exercise Neutral Force

ENTRY LIST 92 SCAN TYPES

SCAN TYPE	CODE
Bi-directional (Plane undetermined)	BI
Circular and Conical	CCON
Circular or Rotating	CIRC
Circular and Nodding	CNOD
Conical	CONC
Helical	HELI
Helical and Conical	HLCN
Horizontal Sector (Bi-directional)	HBI
Horizontal Sector (Uni-directional)	HUNI
Irregular, Unsteady or Manual	IRR
Lobe Switching	LOBE
Raster	RAST
Palmer Raster and Conical	PCON
Sector and Conical	SCON
Spiral	SPIR
Spiral and Conical	SPCN
Steady	STDY
Tracking (Other than conical or lobe switching)	TRCK
Undetermined	UNK
Uni-Directional (Plane Undetermined)	UNI
Vertical Sector (Bi-directional)	VBI
Vertical Sector (Uni-directional)	VUNI
With Director	WDIR
Other Combinations*	OTR
Other (Unspecified)*	O

*Explain in free-text set

ENTRY LIST 97 ORGANIZATION TYPE

ORGANIZATION TYPE	CODE
Administrative	ADMIN
Airborne	ABN
Airborne Commando	ABNCMDO
Airborne Infantry	ABNINF
Air Cavalry	AIRCAV
Air Defense	AD
Air Defense Artillery	AAA
Airmobile	AMOB
Airmobile Infantry	AMBLINF
Air-to-Air Missile	AAM
Air-to-Surface Missile	ASM
Amphibious Assault	AMPHASLT
Amphibious Engineers	AMPHENG
Amphibious Tank	AMPHTK
Antiair Warfare	AAW
Antiarmor Missile	AARMMSL
Antisubmarine Warfare	ASW
Anti-tank	AT
Armor	ARMOR
Armored Artillery	ARMDARTY
Armored Cavalry	ARMDCAV
Army Aviation	ARMYAVN
Artillery	ARTY
Artillery Unit	ARTY
Assault Engineers	ASLTENG
Assault Landing	ASLTLAND
Biological Ordnance Capable Unit	BIO
Bomber	BMBR
Cavalry	CAV
Chemical	CHEM
Combat Engineers	CMBTENG
Combat Service Support	**CSS**
Combat Type Unknown	CMBT
Combined Arms	CMBARM
Commando	CMDO
Composite Warfare Commander	CWC
Dismounted Cavalry	DMTDCAV
Electronic Attack	EA
Electronic Warfare	EW
Electronic Warfare Support	ES
Engineer	ENG
EW Coordinator	EWC
Field Artillery	FLDARTY
Fighter	FTR
Fighter Bomber	FTRBMBR
Fixed Wing	FW
Frog SSM Unit	FROG
Gun Howitzer	HOWTZR
Helicopter	HELO
Infantry	INF
Infantry on Foot	INFONFT
Intelligence	INTEL
Maintenance	MAINT
Marine Expeditionary **Force Forward**	ME**FFWD**
Marine Expeditionary Force	MEF
Marine Expeditionary Unit	MEU
Mechanized Engineer	MECHENG
Mechanized Infantry	MECHINF
Medical	MED
Meteorological and Oceanographic	METOC
Military Police	MP
Military School or Academy	SCH
Mining	MINE
Mortar	MORT
Motorized Rifle Troops	MRFLTRP
Mountain Infantry	MTINF
Navy Infantry/Marines	MARN
Nuclear, Biological, Chemical	NBC
Nuclear Ordnance Capable Unit	NUC
Ordnance	ORD
Paramilitary	PARAMIL
Picket	PKT

ENTRY LIST 97 ORGANIZATION TYPE (Continued)

ORGANIZATION TYPE	CODE
Pontoon	PONT
Railroad Troops	RRTRPS
Ranger	RNGR
Rear Command Post	**RCP**
Reconnaissance	ECON
Reconnaissance, Armor	RCNARM
Rocket Artillery	RCKTARTY
Sapper (Mine)	SAP
Scud SSM Unit	SCUD
Service	SVC
Signal/Communications	SIGCOMM
Signal/Electronic	SIGELECT
Special Forces	SPFORCE
Supply	SUPLY
Surface-to-Air Missile	SAM
Surface-to-Surface Missile	SSM
Surveillance	SUR
Tactical Air Control	TACAIRC
Tactical Missiles	TACMSLS
Tank	TK
Light Tank	LTK
Medium Tank	MTK
Heavy Tank	HTK
Tank Destroyer	TKDSTR
Tank Recovery	TKRCVY
Training	TNG
Transport	TRNSP
Transportation	TRANSP
Unknown	UNK
Weather	WX

ENTRY LIST 98 ECHELON LEVEL

ECHELON TYPE	CODE
Administration, Autonomous Republic	**ASSR**
Administration, Colonial	**COLA**
Administration, District	**DADM**
Administration, Municipal	**MADM**
Administration, National OKRUG	**NOAD**
Administration, Oblast	**OADM**
Administration, Prefecture	**PREA**
Administration, Provincial	**PROA**
Administration, Regional	**RADM**
Administration, Republic	**SSRA**
Administration, State	**SARM**
Administration, Territorial	**TADM**
Air Army	AIRARMY
Air Command	AIRCMD
Air Control Party	AIRCONP
Air Corps	AIRCRPS
Air Detachment	AIRDET
Air Division	AIRDIV
Air Element	AIRELMT
Air Flight	AIRFLT
Air Group	AIRGP
Air Regiment	AIRRGT
Air Squadron	AIRSQ
Air Wing	AIRWG
Army	ARMY
Army Group	ARMYGP
Army, Independent	**AI**
Authority	**AUTH**
Base	**BASE**
Battalion	BN
Battalion, Independent	**BNI**
Battery, Independent	**BTYI**
Battery	BTY
Binh Tram	**BT**
Border District Headquarters	BRDHQ
Brigade	BDE
Brigade, Independent	**BDEI**
Center	**CTR**
Chief of Staff	**CS**
Chief of Staff, Vice or Deputy	**VCS**
Chief or Head of State	**HOS**
Combat Command	CMBTCMD
Command	CMD
Command, Air Force Base	**ABC**
Command, Communications Zone	**CZ**
Command, Joint	**JOIN**
Command, National Army	**NAC**
Command, National High	**NHC**
Command, NATO Air Defense	**NADC**
Command, Naval	**NCMD**
Command, Naval Base	**NBC**
Command, Paramilitary Aviation	**PAC**
Command, Provincial	**PROV**
Command, Research or Experimental Base	**RES**
Command, Sector	**SC**
Command, Sub-Region	**SR**
Command, Supreme Allied	**SAL**
Command, Supreme High	**SHC**
Command, Unified	**UCMD**
Command, Unified Army	**UAC**
Commander in Chief	**CINC**
Committee	**COM**
Committee, Central	**CC**
Company	CO
Company, Independent	**COI**
Corps	CORPS
Department	**DEPT**
Detachment	DET
Detachment, Independent	**DETI**
Directorate	**DIR**
District	**DIST**
District Air Defense	**ADD**
District, Military	**MD**
District, Naval	**ND**
Division	DIV
Division, Independent	**DIVI**
Divisional Artillery Group	DAG

ENTRY LIST 98 ECHELON LEVEL (Continued)

ECHELON TYPE	CODE
Element	**ELEM**
Element, Detached Staff	**DSE**
Element, Forward	**FELM**
Element, Rear	**RELM**
Federal/Government Office	**OFF**
Fleet	F
Fleet, Numbered	**NFLT**
Flight	**FLT**
Flotilla	**FLOT**
Force	**FORC**
Force, High Command of (Theater Command)	**HCF**
Front	FRNT
Garrison	**GAR**
General Staff	**GHS**
Group	GP
Group of Forces	GPFRCS
Group of Fronts	GPFRNT
Headquarters, Air Defense	**ADHQ**
Headquarters, Air Defense Zone	**ADZ**
Headquarters, Air Force	**AFHQ**
Headquarters, Army	**ARHQ**
Headquarters, Aviation	**AH**
Headquarters, Border District	**BDHQ**
Headquarters, Civil Defense	**CDHQ**
Headquarters, Coast Guard	**CGHQ**
Headquarters, General	**GHQ**
Headquarters, Major Service	**MSHQ**
Headquarters, Maritime	**MTHQ**
Headquarters, Military District	**MDHQ**
Headquarters, National Air Defense	**ADNH**
Headquarters, National Air Force	**NAF**
Headquarters, National Army	**ADNA**
Headquarters, National Defense	**NDHQ**
Headquarters, National Naval	**NNC**
Headquarters, Naval Air	**NAHQ**
Headquarters, Numbered Fleet	**NFHQ**
Headquarters, Paramilitary Command	**PMHQ**
Headquarters, Police/ Customs	**PHQ**
Headquarters, Region	**RHQ**
Headquarters, Sector	**SCHQ**
Headquarters, Tactical Aviation	**TAC**
Hospital/Medical Facility	**MED**
Inspector General	**IG**
Junta, National Military Governing Body	**JUN**
Komendatura	KMDTR
Major Fleet	MFLEET
Military Branch	**MB**
Military, Defense Council	**DC**
Military, Cabinet Level	**CBNT**
Military, Defense	**MOD**
Military, Government	**MIN**
Military, Interior	**MOI**
National Agency	**NA**
National Bureau	**NB**
National Political or Party Chairman	**NPC**
National Defense Headquarters	NDHQ
Naval Detachment	NAVDET
Naval Division	NAVDIV
Naval Force	NAVFOR
Naval Group	NAVGP
Naval Section	NAVSEC
Naval Squadron	NAVSQ
Numbered Fleet	NFLT
Otryad	OTRYD
Patrol	PTRL
Platoon	PLT
Politburo	**POL**

ENTRY LIST 98 ECHELON LEVEL (Continued)

ECHELON TYPE	CODE
Port Captaincy, Military and/or Civilian	**PC**
Post	**POST**
Regiment	RGT
Regimental Artillery Group	RAG
Region	REGION
Regiment, Independent	**RGTI**
Regimental Combat Team	**RCT**
Region, Military	**MR**
Region, Naval/Maritime	**NR**
Section	SEC
School/Military Academy/ Training Center	**SCL**
Scientific/Research Academy/Institution (Not Military School)	**SCI**
Secretariat	**SCT**
Service (National Military Force)	**NMF**
Ship/Vessel	**SHIP**
Squad	SQD
Squadron	SQ
Squadron, Independent	**SQI**
Station	**STA**
Subsecretariat	**SSCT**
Task Element	TSKELMT
Task Element, Abbreviated	TE
Task Force	TSKFOR
Task Force, Abbreviated	TF
Task Group	TSKGP
Task Group, Abbreviated	TG
Task Unit	TSKUNIT
Task Unit, Abbreviated	TU
Theater Army	THTA
Troop	TROOP
Unit	**UNIT**
Unit, Civil Defense	**CDU**
Unit, Foreign Service	**FSU**
Unit, Liaison	**LU**
Unit, Military Services	**MU**
Unit, Political	**POLU**
Unit, Provincial	**PU**
Unit, Station	**STN**
Youth Organization	**YO**
Zastrova	ZASTRV
Zone, Naval	**NZ**
Other*	**O**
Not Applicable	**X**
Inconclusive Analysis	**Z**
Unknown	UNK

*** Explain in free-text set**

ENTRY LIST 137 SHIP TYPES

SHIP TYPE	CODE
SHIP	SHIP
SUBMARINE	SUB
UNKNOWN	UNK
SUBMARINES	
NON NUCLEAR POWERED	
SUBMARINE, ATTACK SURFACE MISSILE	SSG
SUBMARINE, AUXILIARY	SSA
SUBMARINE, GUIDED/ CRUISE MISSILE	SG
SUBMARINE HUNTER/ KILLER	SK
SUBMARINE, RESEARCH, MANNED OR UNMANNED	SR
SUBMARINE, GENERAL	SS
SUBMARINE, BALLISTIC MISSILE	SSB
SUBMARINE, COASTAL	SSC
SUBMARINE, PATROL	SSK
SUBMARINE, TRANSPORT	SSLP
SUBMARINE, MIDGET	SSW
SUBMARINE, AUXILIARY, COMMUNICATIONS	SSQ
SUBMARINE, RADAR PICKET	SSR
SUBMARINE, TRAINING	SST
SUBMARINE, MILCAP UNKNOWN	SSU
NUCLEAR POWERED	
SUBMARINE, AUXILIARY NUCLEAR POWERED	SSAN
SUBMARINE, BALLISTIC MISSILE, NUCLEAR	SSBN
SUBMARINE, ATTACK, SURFACE MISSILE, NUCLEAR	SSGN
SUBMARINE, ATTACK, NUCLEAR	SSN
SUBMARINE, AUXILIARY, COMMUNICATIONS, NUCLEAR POWERED	SSQN
SUBMARINE, MILCAP UNKNOWN, NUCLEAR POWERED	SSUN
SURFACE COMBATANTS	
BATTLESHIP, GENERAL	BB
HEAVY CRUISER, GUN	CA
CRUISER, GENERAL	CC
GUIDED MISSILE CRUISER	CG
CRUISER, GUIDED, MISSILE NUCLEAR POWERED	CGN
CRUISER, HELICOPTER	CHH
CRUISER, AVIATION, GUIDED MISSILE	CHG
CRUISER, AVIATION, GUIDED MISSILE, NUCLEAR POWERED	CHGN
CRUISER, AVIATION, NUCLEAR POWERED	CHN
CRUISER, LIGHT	CL
CRUISER, LIGHT, ANTI-AIRCRAFT	CLAA
TACTICAL COMMAND SHIP	CLC
CRUISER, LIGHT, AVIATION	CLH
CRUISER, SMALL	CS
CRUISER, TRAINING	CT
CRUISER, AVIATION, TRAINING	CTH
AIRCRAFT CARRIER, GENERAL	CV
AIRCRAFT CARRIER, ATTACK	CVA
AIRCRAFT CARRIER, GUIDED MISSILE	CVG

ENTRY LIST 137 SHIP TYPES (Continued)

SHIP TYPE	CODE
AIRCRAFT CARRIER, GUIDED MISSILE, NUCLEAR POWERED	CVGN
HELICOPTER/VSTOL CARRIER	CVH
AIRCRAFT CARRIER, VSTOL, GUIDED MISSILE	CVHG
AIRCRAFT CARRIER, VSTOL, GUIDED MISSILE, NUCLEAR POWERED	CVHGN
AIRCRAFT CARRIER, VSTOL, NUCLEAR POWERED	CVHN
AIRCRAFT CARRIER, LIGHT	CVL
AIRCRAFT CARRIER, LIGHT, GUIDED MISSILE	CVLG
AIRCRAFT CARRIER, LIGHT, GUIDED MISSILE, NUCLEAR POWERED	CVLGN
AIRCRAFT CARRIER, LIGHT, NUCLEAR POWERED	CVLN
AIRCRAFT CARRIER, NUCLEAR POWERED	CVN
AIRCRAFT CARRIER, ASW SUPPORT	CVS
AIRCRAFT CARRIER, TRAINING	CVT
DESTROYER, GENERAL	DD
DESTROYER, GUIDED MISSILE	DDG
DESTROYER, GUIDED MISSILE, NUCLEAR POWERED	DDGN
DESTROYER, AVIATION	DDH
DESTROYER, AVIATION, GUIDED MISSILE	DDHG
DESTROYER, AVIATION, GUIDED MISSILE, NUCLEAR POWERED	DDHGN
DESTROYER, AVIATION, NUCLEAR POWERED	DDHN
DESTROYER, RADAR PICKET	DDR
DESTROYER, TRAINING	DDT
DESTROYER ESCORTDDE	
DESTROYER ESCORT, RADAR PICKET	DER
DESTROYER, MINELAYING	DDM
FRIGATE	FF
FRIGATE, GUIDED MISSILE	FFG
FRIGATE, AVIATION, GUIDED MISSILE	FFGH
FRIGATE, GUIDED MISSILE, NUCLEAR POWERED	FFGN
FRIGATE, AVIATION	FFH
FRIGATE, GUIDED MISSILE, AVIATION, NUCLEAR POWERED	FFHGN
FRIGATE, AVIATION, NUCLEAR POWERED	FFHN
CORVETTE FFL	
CORVETTE, GUIDED MISSILE	FFLG
FRIGATE, RADAR PICKET	FFR
FRIGATE, TRAINING	FFT
FRIGATE, SMALL, CROVETTE	FFS
DESTROYER, COAST GUARD	WDD
FRIGATE, COAST GUARD	WFF
CORVETTE, COAST GUARD	WFFL

COASTAL PATROL TYPES

PATROL BOAT	PB

ENTRY LIST 137 SHIP TYPES (Continued)

SHIP TYPE	CODE
PATROL BOAT, AIR CUSHION	PBA
PATROL BOAT, DRONE	PBD
PATROL BOAT, FAST	PBF
PATROL BOAT, RIVER/ ROADSTEAD	PBR
PATROL BOAT, FIRE SUPPORT	PBS
SUBMARINE CHASER/ ESCORT CRAFT, GENERAL	PC
PATROL, COASTAL, ESCORT	PCE
PATROL SUBCHASER, FAST	PCF
PATROL CRAFT, AIR CUSHION, FAST	PCFA
PATROL CRAFT, HYDROFOIL, FAST	PCFH
PATROL CRAFT, FIRE SUPPORT	PCFS
PATROL CRAFT, HYDROFOIL	PCH
SUBMARINE CHASER	PCS
SUBMARINE CHASER, AIR CUSHION	PCSA
SUBMARINE CHASER, HYDROFOIL	PCSH
PATROL CRAFT, TRAINING	PCT
PATROL FRIGATE	PF
PATROL FRIGATE, RADAR PICKET	PFR
PATROL CRAFT, GUN EQUIPPED, GENERAL	PG
PATROL COMBATANT, AIR CUSHION	PGA
PATROL SHIP, ICEBREAKER	PGB
PATROL SHIP, FAST	PGF
PATROL COMBATANT, GUIDED MISSILE	PGG
PATROL COMBATANT, GUIDED MISSLE AIR CUSHION	PGGA
PATROL COMBATANT, GUIDED MISSILE, HYDROFOIL	PGGH
PATROL COMBATANT, HYDROFOIL	PGH
MOTOR GUNBOAT	PGM
PATROL COMBATANT, RECONNAISSANCE	PGR
PATROL SHIP, RIVER MONITOR	ASWPGS
MOTOR/PATROL CRAFT, FAST, GENERAL	PM
PATROL CRAFT, RESCUE	PP
LARGE PATROL SHIP	PR
PATROL CRAFT, MOTOR TORPEDO	PS
TORPEDO BOAT, AIR CUSHION	PT
ATTACK BOAT, GUIDED MISSILE	PTA
ATTACK BOAT, GUIDED MISSILE, AIR CUSHION	PTG
ATTACK BOAT, GUIDED MISSILE HYDROFOIL	PTGA
ATTACK BOAT, GUIDED MISSILE, TRAINING	PTGH
TORPEDO BOAT, MOTOR, HYDROFOIL	PTGT
TORPEDO BOAT, SMALL	PTH
TORPEDO BOAT, SMALL, HYDROFOIL	PTL
TORPEDO BOAT, TRAINING	PTLH
PATROL BOAT, COAST GUARD	PTT
PATROL BOAT, RIVER/ ROADSTEAD, COAST GUARD	WPB
PATROL BOAT, AIR CUSHION, COAST GUARD	WPBR
PATROL BOAT, HYDROFOIL COAST GUARD	WPBA
	WPBH

ENTRY LIST 137 SHIP TYPES (Continued)

SHIP TYPE	CODE
PATROL CRAFT, COAST GUARD	WPC
PATROL CRAFT, FAST, COAST GUARD	WPCF
FAST PATROL CRAFT, AIR CUSHIONED, COAST GUARD	WPCFA
SUBMARINE CHASER, COAST GUARD	WPCS
SUBMARINE CHASER, HYDROFOIL, COAST GUARD	WPCSH
PATROL CRAFT, TRAINING COAST GUARD	WPCT
PATROL COMBATANT, COAST GUARD	WPG
PATROL SHIP, COAST GUARD	WPGF
RIVER MONITOR, COAST GUARD	WPM
PATROL BOAT, HARBOR, COAST GUARD	WPSB
TORPEDO BOAT, COAST GUARD	WPT
ATTACK BOAT, GUIDED MISSILE, COAST GUARD	WPTG
TORPEDO BOAT, SMALL, COAST GUARD	WPTL
RIVER PATROL TYPES	
MONITOR	BM
MONITOR, RIVER	BMR
RIVER MONITOR, ASSAULT	MON
MINE WARFARE TYPES	
MINE COUNTER-MEASURES COMMAND AND SUPPORT SHIP	MCCS
MINE COUNTER-MEASURES VESSEL, DIVING	MCD
MINE COUNTER-MEASURES VESSEL, HOVERCRAFT	MCJ
MINE COUNTER-MEASURES SHIP, GENERAL	MCM
MINE COUNTER-MEASURES VESSEL, GENERAL	MCMV
MINE COUNTER-MEASURES SUPPORT SHIP	MCS
MINE COUNTER-MEASURES SHIP, SMALL, GENERAL	MCSL
MINE COUNTER-MEASURES CRAFT, TRAINING	MCT
MINESWEEPER, FAST	MF
MINEHUNTER, GENERAL	MH
MINEHUNTER, AUXILIARY	MHA
MINEHUNTER, COASTAL	MHC
MINEHUNTER, INSHORE	MHI
MINEHUNTER, OCEAN	MHO
MINEHUNTER/SWEEPER, GENERAL	MHS
MINEHUNTER/SWEEPER, COASTAL	MHSC
MINEHUNTER/SWEEPER, WITH DRONE	MHSD
MINEHUNTER/SWEEPER, OCEAN	MHSO
MISCELLANEOUS	MIS
MINELAYER, GENERAL	ML
MINELAYER, AUXILIARY	MLA
MINELAYER, COASTAL	MLC
MINELAYER, INSHORE	MLI
MINELAYER, OCEAN	MLO
MINELAYER, RIVER	MLR
MINELAYER, SUPPORT SHIP	MLS

ENTRY LIST 137 SHIP TYPES (Continued)

SHIP TYPE	CODE
MINE WARFARE VESSEL	MM
MINELAYER, FAST	MLD
MINELAYER, FLEET	MMF
MINESWEEPER, SMALL, GENERAL	MS
MINESWEEPER, AUXILIARY	MSA
MINESWEEPER, BOAT	MSB
MINESWEEPER, COASTAL	MSC
MINESWEEPER, COASTAL, AIR CUSHION	MSCA
MINESWEEPER, COASTAL, WITH DRONE	MSCD
MINESWEEPER, COASTAL, HYDROFOIL	MSCH
MINESWEEPER, COASTAL, TRAINING	MSCT
MINESWEEPER, DRONE	MSD
MINESWEEPER, FLEET	MSF
MINESWEEPER, FLEET, AIR CUSHION	MSFA
MINESWEEPER, FLEET, HYDROFOIL	MSFH
MINEHUNTER	MSH
MINESWEEPER, INSHORE	MSI
MINESWEEPER, INSHORE, AIR CUSHION	MSIA
MINESWEEPING LAUNCH	MSL
MINESWEEPER, OCEAN	MSO
MINESWEEPER, RIVERMSR	
MINESWEEPER, SPECIAL DEVICE	MSS
MINESWEEPER, COASTAL, SPECIAL	MSSC
MINELAYER, COAST GUARD	WMM
MINESWEEPING BOAT, COAST GUARD	WMSB
MINESWEEPER, FLEET, COAST GUARD	WMSF
MINESWEEPER, INSHORE, COAST GUARD	WMSI

SHIP TYPE	CODE
AMPHIBIOUS WARFARE SHIPS	
AMPHIBIOUS COMMAND SHIP	LCC
AMPHIBIOUS FIRE SUPPORT SHIP	LFS
AMPHIBIOUS ASSAULT SHIP, GENERAL	LHA
AMPHIBIOUS ASSAULT SHIP, MULTI-PURPOSE	LHD
AMPHIBIOUS CARGO SHIP	LKA
AMPHIBIOUS ASSAULT, GENERAL	LL
ASSAULT SHIP, NON BEACHING	LO
ASSAULT SHIP, PERSONNEL	LP
AMPHIBIOUS TRANSPORT, PERSONNEL	LPA
AMPHIBIOUS TRANSPORT, DOCK	LPD
AMPHIBIOUS ASSAULT SHIP, HELICOPTER	LPH
ASSAULT SHIP, ROCKET-FIRING	LR
LANDING SHIP, DOCK	LSD
SWIMMER DELIVERY VEHICLE	LSDV
LANDING SHIP, LOGISTICS	LSL
LANDING SHIP, MEDIUM	LSM
LIGHT SEAL SUPPORT CRAFT	LSSC
LANDING SHIP, TANK	LST
LANDING SHIP, VEHICLE	LSV
ASSAULT SHIP, TANK	LT
ASSAULT VEHICLE LV	
SPECIAL WARFARE CRAFT, LIGHT	SWCL
SPECIAL WARFARE CRAFT, MEDIUM	SWCM
TRAINING SHIP, COAST GUARD	WAXT

ENTRY LIST 137 SHIP TYPES (Continued)

SHIP TYPE	CODE
LANDING SHIP, MEDIUM, COAST GUARD	WLSM
LANDING SHIP TANK, COAST GUARD	WLST
LANDING CRAFT	
ASSAULT VESSEL, BEACHING	LB
ASSAULT CRAFT	LC
LANDING CRAFT, AIR CUSHION	LCAC
LANDING CRAFT, FIRE SUPPORT	LCFS
LANDING CRAFT, MECHANIZED	LCM
LANDING CRAFT, MEDIUM, AIR CUSHION	LCMA
LANDING CRAFT, PERSONNEL	LCP
LANDING CRAFT, PERSONNEL, ARMORED	LCPA
LANDING CRAFT, PERSONNEL, LARGE	LCPL
LANDING CRAFT, UTILITY	LCU
LANDING CRAFT, UTILITY, AIR CUSHION	LCUA
LANDING CRAFT, VEHICLE/PERSONNEL	LCVP
LANDING CRAFT, SWIMMER SUPPORT	LCW
ASSAULT CRAFT, GUN-EQUIPPED	LG
ASSAULT CRFT, MISSILE EQUIPPED	LM
LANDING CRAFT, MEDIUM, COAST GUARD	WLCM
LANDING CRAFT, PERSONNEL, COAST GUARD	WLCP
PERSONNEL LANDING CRAFT-ARMORED, COAST GUARD	WLCPA
LANDING CRAFT, UTILITY, COAST GUARD	WLCU
VEHICLE/PASSENGER LANDING CRAFT, COAST GUARD	WLCVP
AUXILIARY SHIPS	
AUXILIARY TYPE SHIP, GENERAL	AA
DEPOT SHIP/TENDER	AB
BUOY TENDER	ABU
BUOY TENDER, HEAVY LIFT	ABUD
AUXILIARY-MINE WARFARE SUPPORT SHIP	ACM
DESTROYER TENDER	AD
DEPERMING SHIP	ADG
AMMUNITION SHIP	AE
AMMUNITION SHIP, SMALL	AEL
MISSILE SUPPORT SHIP	AEM
AMMUNITION TRANSPORT	AET
AMMUNITION TRANSPORT, SMALL	AETL
STORES SHIP	AF
LARGE AUXILIARY FLOATING DRYDOCK	AFDB
SMALL AUXILIARY FLOATING DRYDOCK	AFDL
MEDIUM AUXILIARY FLOATING DRYDOCK	AFDM
STORES SHIP, SMALL	AFL
COMBAT STORES SHIP	AFS
STORES SHIP, TRANSPORT	AFT
MISCELLANEOUS AUXILIARY	AG
ICEBREAKER	AGB
ICEBREAKER, SMALL	AGBL

ENTRY LIST 137 SHIP TYPES (Continued)

SHIP TYPE	CODE
ICEBREAKER, NUCLEAR POWERED	AGBN
COMMUNICATIONS SHIP, SMALL	AGCL
DEEP SUBMERGENCE SUPPORT SHIP	AGDS
RESEARCH SHIP	AGE
RESEARCH SHIP, HYDROFIL	AGEH
AUXILIARY FLAG OR COMMAND SHIP	AGF
RESEARCH SHIP, FRIGATE	AGFF
INSTRUMENTATION SHIP, HYDROACOUSTIC RANGE	AGH
INTELLIGENCE COLLECTOR	AGI
MISSILE RANGE INSTRU-MENTATION SHIP	AGM
SUPPORT SHIP, MISSILE RANGE	AGMS
OCEANOGRAPHIC RESEARCH SHIP, POLAR	AGOB
OCEANOGRAPHIC RESEARCH SHIP	AGOR
SURVEILLANCE SHIP, OCEAN	AGOS
PATROL/TORPEDO BOAT SUPPORT SHIP, TENDER	AGP
RADAR PICKET SHIP, UNARMED	AGR
SURVEY SHIP	AGS
SURVEY SHIP, POLAR	AGSA
SURVEY SHIP, COASTAL	AGSC
LAUNCHING SHIP, SATELLITE	AGSL
AUXILIARY RESEARCH SUBMARINE	AGSS
SERVICE SHIP, TARGET	AGT
SERVICE SHIP, TORPEDO-TARGET	AGTT
HOSPITAL SHIP	AH
CARGO SHIP, NAVAL	AK
CARGO SHIP, LIGHT, NAVAL	AKL
CARGO SHIP, RO/RO, NAVAL	AKR
STORES SHIP, ISSUE, NAVAL	AKS
STORES SHIP, ISSUE, SMALL, NAVAL	AKSL
AIRCRAFT FERRY/CARGO SHIP	AKV
LIGHT SHIP	ALS
NET TENDER	AN
CABLE/NET LAYING SHIP	ANL
OILER/TANKER, GENERAL	AO
COMBAT SUPPORT SHIP, FAST	AOE
GASOLINE TANKER	AOG
OILER, SMALL, NAVAL	AOL
OILER REPLENISHMENT	AOR
OILER, REPLENISHMENT, SMALL, NAVAL	AORL
SPECIAL LIQUID SHIP	AOS
RADIOLOGICAL LIQUID SHIP	AOSR
OILER-TRANSPORT	AOT
OILER, TRANSPORT, SMALL	AOTL
PERSONNEL TRANSPORT	AP
BARRACKS SHIP	APB
PRIMARY CASUALTY RECEIVING SHIP	APCR
CASUALTY TRANSPORT SHIP	APCT
BARRACKS CRAFT	APL
MERCHANT CRUISE/ RAIDER, ARMED	AQ
REPAIR SHIP	AR
REPAIR SHIP, BATTLE DAMAGE	ARB
CABLE SHIP	ARC
AUXILIARY REPAIR DOCK	ARD
DRYDOCK, AUXILIARY, REPAIR, MEDIUM	ARDM

ENTRY LIST 137 SHIP TYPES (Continued)

SHIP TYPE	CODE
REPAIR SHIP, HEAVY HULL	ARH
REPAIR SHIP, SMALL	ARL
REPAIR SHIP, RADIOLOGICAL	ARR
SALVAGE SHIP	ARS
SALVAGE SHIP, LIFTING	ARSD
AIRCRAFT REPAIR SHIP	ARV
SUBMARINE TENDER	AS
SUBMARINE TENDER, SMALL	ASL
SUBMARINE RESCUE SHIP	ASR
SPACE VEHICLE RECOVERY SHIP	ASVR
TUG, OCEAN GOING	AT
TUG, OCEANGOING, AUXILIARY	ATA
MINI-ARMORED TROOP CARRIER	ATC
TUG, OCEANGOING, FLEET	ATF
TUG, OCEANGOING, RESCUE	ATR
TUG, OCEANGOING, OR SHIP SALVAGE/RESCUE	ATS
SEAPLANE TENDER	AV
AVIATION LOGISTIC SUPPORT SHIP	AVB
GUIDED MISSILE SHIP	AVM
AIRCRAFT RESCUE VESSEL	AVR
AVIATION SUPPLY SHIP	AVS
AUXILIARY AIRCRAFT LANDING TRAINING SHIP	AVT
WATER TENDER, NAVAL	AWT
DISTILLING SHIP, NAVAL	AWW
TRAINING SHIP, NAVAL	AX
TRAINING SHIP, SMALL, NAVAL	AXL
TRAINING SHIP, SAIL, NAVAL	AXS
TRAINING SHIP	AXT
HYDROGRAPHIC/ OCEANOGRAPHIC VESSEL	AY
DEEP SUBMERGENCE RESCUED VEHICLE, COMMERCIAL	SRV
DEEP SUBMERGENCED VEHICLE, COMMERCIAL	SV
MISCELLANEOUS AUXILIARY, COAST GUARD	WAG
ICEBREAKER, COAST GUARD	WAGB
RESEARCH SHIP, EXPERI-MENTAL, COAST GUARD	WAGE
BUOY TENDER, COAST GUARD	WAGL
OCEANOGRAPHIC RESEARCH SHIP, COAST GUARD	WAGOR
RESEARCH SHIP, HYDRO-GRAPHIC, COAST GUARD	WAGS
CARGO SHIP, COAST GUARD	WAK
OILER, COAST GUARD	WAO
OILER, TRANSPORT, COAST GUARD	WAOT
CABLE REPAIR SHIP, COAST GUARD	WARC
SALVAGE AND RESCUE SHIP, COAST GUARD	WARS
OCEAN TUG, COAST GUARD	WATA

SERVICE CRAFT

WARPING TUG	YLWT
SIDE LOADING WARPING TUG	YSLWT
SERVICE CRAFT	SVC
SUBMERSIBLE, GENERAL, COMMERCIAL	TS

ENTRY LIST 137 SHIP TYPES (Continued)

SHIP TYPE	CODE
SUBMERSIBLE, RESEARCH, COMMERCIAL	TSG
TUG	TUG
SERVICE CRAFT, MISCELLANEOUS, COAST GUARD	WYAG
EXPERIMENTAL SERVICE CRAFT, COAST GUARD	WYAGE
BARGE, OPEN, COAST GUARD	WYC
DIVING TENDER, COAST GUARD	WYDT
LIGHTER, COVERED, COAST GUARD	WYF
FERRY, COAST GUARD	WYFB
BOATING DRYDOCK, SMALL COAST GUARD	WYFDL
LAUNCH, COAST GUARD	WYFL
LAUNCH, HYDROFOIL, COAST GUARD	WYFLH
TRANSPORT, UTILITY, HARBOR, COAST GUARD	WYFU
CRAFT, SURVEY, COAST GUARD	WYGS
CRAFT, AMBULANCE, COAST GUARD	WYH
LIGHTER, FUEL, COAST GUARD	WYO
BARGE, FUEL, COAST GUARD	WYON
BARGE, BARRACKS, COAST GUARD	WYPL
BARGE, FLOATING, WORKSHOP, COAST GUARD	WYR
TUG, HARBOR, LARGE, COAST GUARD	WYTB
TUG, HARBOR, SMALL, COAST GUARD	WYTL
TUG, HARBOR, MEDIUM, COAST GUARD	WYTM
CRAFT, SAIL, TRAINING, COAST GUARD	WYTS
LIGHTER, WATER, COAST GUARD	WYW
CRAFT, TRAINING, COAST GUARD	WYXT
YACHT	YAC
SERVICE CRAFT, MISCELLANEOUS	YAG
SERVICE CRAFT, SURFACE EFFECT, EXPERIMENTAL	YAGA
SERVICE CRAFT, EXPERIMENTAL	YAGE
EXPERIMENTAL WEAPON TESTING BARGE	YAGEN
COMMAND CRAFT, MISCELLANEOUS	YAGF
TARGET SERVICE CRAFT	YAGT
SUPPORT BARGE, MISSILE	YAMM
BARGE, NON-SELF-PROPELLED	YB
DOCK, BOW	YBD
LIGHTER, OPEN	YC
BARGE, CARGO	YCF
LIGHTER, OPEN, CARGO	YCK
LIGHTER, AIRCRAFT	YCV
FLOATING CRANE	YD
VESSEL, DEGAUSSING	YDG
DIVING TENDER	YDT
LIGHTER, AMMUNITION	YE
BARGE, AMMUNITION	YEN
FERRY, LIGHTER, COVERED	YF
FERRY BOAT	YFB
YARD FLOATING DRYDOCK	YFD
DRY DOCK FLOATING, OPEN, LARGE	YFDB
DRY DOCK FLOATING, OPEN, SMALL	YFDL
DRY DOCK FLOATING, OPEN, MEDIUM	YFDM
LAUNCH	YFL
LAUNCH, HYDROFOIL	YFLH

ENTRY LIST 137 SHIP TYPES (Continued)

SHIP TYPE	CODE
LAUNCH, COVERED	YFN
LAUNCH, COVERED, LARGE	YFNB
DRYDOCK COMPANION CRAFT	YFND
BARGE, SPECIAL PURPOSE, NON-SELF PROPELLED	YFNX
FLOATING POWER BARGE	YFP
LIGHTER, COVERED, REFRIGERATED	YFR
BARGE, REFRIGERATED	YFRN
RANGE TENDER	YFRT
LIGHTER, TORPEDO TRANSPORT	YFT
HARBOR UTILITY CRAFT	YFU
LIGHTER, GARBAGE	YG
BARGE, GARBAGE	YGN
SURVEY CRAFT	YGS
FLOATING TARGET	YGT
BARGE, TARGET	YGTN
AMBULANCE BOAT	YH
BARGE, HEATING	YHT
LIGHTER	YL
SALVAGE LIFT CRAFT	YLC
BARGE, SALVAGE LIFT	YLCN
FLOATING DREDGE	YM
DREDGE, NON-SELF PROPELLED	YMN
NET CARGO CRAFT	YNC
GATE CRAFT	YNG
RESEARCH VEHICLE, NUCLEAR POWERED	YNR
NET TENDER, BOOM	YNT
BARGE, FUEL OIL	YO
BARGE, GASOLINE	YOG
BARGE, SPECIAL LIQUID	YOM
BARGE, FUEL	YON
BARGE, OIL STORAGE	YOS
BARGE, DISPOSAL, NUCLEAR WASTE	YOSR
BARGE, SUBMERSIBLE OIL STORAGE	YOSS
HARBOR PATROL CRAFT	YP
FLOATING BARRACKS	YPB
FLOATING PILE DRIVER	YPD
BARGE, PONTOON STORAGE	YPK
BARGE, BARRACKS	YPL
TORPEDO RETRIEVER CRAFT	YPT
REPAIR, FLOATING WORKSHOP	YR
BARGE, REPAIR AND BERTHING	YRB
REPAIR, BERTHING AND MESSING BARGE	YRBM
CABLE TENDER YARD CRAFT	YRC
BARGE, CABLE	YRCN
DRYDOCK, FLOATING WORKSHOP	YRD
DRY DOCK FLOATING, CLOSED, LARGE	YRDB
FLOATING DRYDOCKY WORKSHOP, HULL	RDH
DRY DOCK FLOATING, CLOSED, SMALL	YRDL
DRY DOCK FLOATING, CLOSED, MEDIUM	YRDM
TANK CLEANING CRAFT	YRG
BARGE, NUCLEAR SHIP SUPPORT	YRNS
BARGE, RADIOLOGICAL REPAIR	YRR
REPAIR BARGE, NUCLEAR PROPULSION	YRRN
BARGE, SALVAGE	YRST
BARGE, SELF-PROPELLED	YS
SUBMERSIBLE, RESEARCH, MILITARY	YSG
SUBMERSIBLE, RESCUE, MILITARY	YSR
DEEP SUBMERSIBLE RESCUE VEHICLE, MILITARY	YSRV
SUBMERSIBLE, SERVICE, MILITARY	YSS

ENTRY LIST 137 SHIP TYPES (Continued)

SHIP TYPE	CODE
DEEP SUBMERGENCE VEHICLE, MILITARY	YSV
HARBOR TUG	YT
TUG, HARBOR, LARGE	YTB
TUG, HARBOR, SMALL	YTL
TUG, HARBOR, MEDIUM	YTM
FIRE/RESCUE BOAT, SMALL	YTR
TRAINING CRAFT, SAIL	YTS
TORPEDO TRIALS CRAFT	YTT
DRONE AIRCRAFT, CATAPULT CONTROL CRAFT	YV
SEAPLANE SERVICE CRAFT	YVS
BARGE, WATER	YW
HULK OR RELIC	YXR
TRAINING CRAFT	YXT
SERVICE CRAFT, YARD	YY

HOVERCRAFT

HOVERCRAFT, AIR CUSHION/ GROUND EFFECT MACHINE, GENERAL	HH
HOVERCRAFT, LARGE	HL
HOVERCRAFT, PERSONNEL	HP
HOVERCRAFT, SMALL	HS
HOVERCRAFT, GENERAL	TJ
HOVERCRAFT, TRANSPORT/CARGO	TJC
HOVERCRAFT, FERRY	TJF
HOVERCRAFT, ICEBREAKER	TJGB
HOVERCRAFT, SCIENTIFIC RESEARCH/SURVEY	TJGS

MERCHANT SHIP TYPES

CARGO, BULK	BLK
CARGO, DRY, BREAK BULK	CGO
UNCLASSIFIED MISCELLANEOUS UNIT	IX
SUBMERSIBLE RESEARCH VEHICLE	NR
PASSENGER	PAX
MOTOR BOAT, LAUNCH	QM
BOAT, GENERAL	QQ
ROWBOAT	QR
SAILBOAT	QW
REFRIGERATOR	REF
RIVER/SEA	RIV
SPACE EVENT SUPPORT	SPA
LIQUID CARGO	TKR
MERCHANT SHIP, GENERAL	TM
MERCHANT SHIP, DRY CARGO, BREAK BULK	TMA
MERCHANT SHIP, BULK	TMB
MERCHANT SHIP, CONTAINER, NON-SELF-SUSTAINED	TMC
MERCHANT SHIP, CONTAINER, SELF-CONTAINED	TMCS
MERCHANT SHIP, DREDGER	TMD
MERCHANT SHIP, RO/RO	TME
MERCHANT SHIP, CAR/ PASSENGER FERRY	TMF
MERCHANT SHIP, RAILROAD, CAR FERRY	TMFR
MERCHANT SHIP, ICEBREAKER	TMGB
MERCHANT SHIP, SCIENTIFIC RESEARCH/SURVEY	TMGS

ENTRY LIST 137 SHIP TYPES (Continued)

SHIP TYPE	CODE
MERCHANT SHIP, HEAVY LIFT	TMH
MERCHANT SHIP, INLAND WATERWAY	TMI
MERCHANT SHIP, CABLE LAYER	TMK
MERCHANT SHIP, LASH	TML
MERCHANT SHIP, SEABEE	TMLS
MERCHANT SHIP, METEOROLOGICAL	TMM
MERCHANT SHIP, TANKER	TMO
MERCHANT SHIP, REPLENISHMENT, OILER, SMALL	TMOL
MERCHANT SHIP, REPLENISHMENT, OILER	TMOR
MERCHANT SHIP, SPECIAL LIQUIDS	TMOS
MERCHANT SHIP, LIQUID	TMOT
MERCHANT SHIP, PASSENGER	TMP
MERCHANT SHIP, REFRIGERATED	TMR
MERCHANT SHIP, SPACE/ MISSILE ASSOCIATED	TMS
MERCHANT TUG	TMT
MERCHANT TUG, OCEANGOING RESCUE	TMTR
MERCHANT TUG, OCEANGOING SALVAGE	TMTS
MERCHANT SHIP, WATER TENDER	TMWT
MERCHANT SHIP, DISTILLING	TMWW
MERCHANT SHIP, TRAINING	TMX
SUBMERSIBLE, RESCUE, COMMERCIAL	TSR

SHIP TYPE	CODE
FISHING VESSELS	
FISHING VESSEL, TRAWLER OR JUNK, GENERAL	AU
FISHING SHIP, CARGO	CGF
FISHING SHIP, FISH	FSH
FISHING VESSEL, GENERAL	TU
FISHING BASE SHIP	TUB
FISHING VESSEL, WHALE CATCHER	TUC
FISHING FACTORY SHIP	TUF
FISHING VESSEL, INSPECTION	TUI
FISHING VESSEL, REFRIGERATED	TUR
FISHERIES RESEARCH SHIP	TUS
FISHING VESSEL, TRAINING	TUT
WHALE FACTORY SHIP	TUW

Note: If ship type cannot be found in this listing, refer to Glossary of Naval Ship Types (GNST) DDB-1200-47 series or STANAG 1166.

ENTRY LIST 175 MOST SIGNIFICANT WEATHER

MOST SIGNIFICANT WEATHER	CODE
Clear	CLR
Drizzle	L
Dust	D
Fog	F
Freezing Drizzle	ZL
Freezing Rain	ZR
Ground Fog	GF
Hail	A
Haze	H
Ice Fog	IF
Rain	R
Rain Shower	RW
Smoke	K
Snow	S
Snow Shower	SW
Thunderstorm	TS
Small Hail	AP
Snow Pellets	SP

TURBULENCE	CODE
Extreme Turbulence	EXT
Light Turbulence	LGT
Moderate Turbulence	MOD
No Turbulence	NON
Severe Turbulence	SEV

ENTRY LIST 426 SUSPICION CODES

CODE	EXPLANATION
01	U.S. Government vessel
02	Any vessel which by its configuration or activity has a very low probability of being involved in any detectable violation of U.S. law.
03	Vessels engaged to offshore facilities.
04	Vessels obviously not engaged in some legitimate trade or traffic.
05	Vessels in transit outside normal traffic schemes.
06	Loitering vessels of any size or shape.
07	Vessels fitting mothership profile.
08	Vessels with a great amount of communications equipment.
09	Vessels not constructed for the prevailing sea state.
10	Vessels not fitting other codes but warranting special attention.

ENTRY LIST 513 AIRCRAFT TYPES

AIRCRAFT TYPE	CODE
UNKNOWN	UNK
OTHER*	OTR

*EXPLAIN IN A FREE-TEXT SET

FIXED WING

ATTACK AIRCRAFT

AIRCRAFT TYPE	CODE
A-10 THUNDERBOLT II	A10
A-10B THUNDERBOLT	A10B
A-10A THUNDERBOLT II	A10A
A-3 SKYWARRIOR	A3
A-37 DRAGONFLY	A37
A-37A DRAGONFLY	A37A
A-37B DRAGONFLY	A37B
A-3A SKYWARRIOR	A3A
A-3B SKYWARRIOR	A3B
A-4 SKYHAWK	A4
A-4A SKYHAWK	A4A
A-4B SKYHAWK	A4B
A-4C SKYHAWK	A4C
A-4D SKYHAWK	A4D
A-4E SKYHAWK	A4E
A-4F SKYHAWK	A4F
A-4G SKYHAWK	A4G
A-4H SKYHAWK	A4H
A-4K SKYHAWK	A4K
A-4KU SKYHAWK	A4KU
A-4L SKYHAWK	A4L
A-4M SKYHAWK	A4M
A-4N SKYHAWK	A4N
A-4P SKYHAWK	A4P
A-4Q SKYHAWK	A4Q
A-4S SKYHAWK	A4S
A-5 FANTAN	A5
A-6 INTRUDER	A6
A-6A INTRUDER	A6A
A-6B INTRUDER	A6B
A-6C INTRUDER	A6C
A-6E INTRUDER	A6E
A-7 CORSAIR II	A7
A-7A CORSAIR II	A7A
A-7B CORSAIR II	A7B
A-7C CORSAIR II	A7C

AIRCRAFT TYPE	CODE
ATTACK AIRCRAFT	
A-7D CORSAIR II	A7D
A-7E CORSAIR II	A7E
A-7G CORSAIR II	A7G
A-7H CORSAIR II	A7H
A-7K CORSAIR II	A7K
A-7P CORSAIR II	A7P
AJ-37 VIGGEN	AJ37
ALPHA JET	ALPHA
ALPHA JET MS-2	ALPH2
AT-26 XAVANTE	AT26
AT-28 TROJAN	AT28
AV-8A HARRIER	AV8A
AV-8A SEA HARRIER	AV8AA
AV-8B HARRIER II	AV8B
AV-8C HARRIER	AV8C
AV-8S MATADOR (SPAIN)	AV8S
BAE-125 HARRIER	BAE125
BUCCANEER S HAWKER SIDLEY	BUC
E-25 AVIOJET	E25
F-6 SEA HARRIER	SHF6
FRS-MK1 SEA HARRIER	SHM1
FRS-MK51 SEA HARRIER	SHM51
G-91	G91
G-91 SUPER MYSTERE	G91SM
GR MK3 HARRIER	HARM3
GR MK4 HARRIER	HARM4
GR-1 HARRIER	GR1
GR-5 HARRIER	GR5
HSPNO HA-200 SAETA	HA200
IA-58 PUCARA	IA58
IA-58B PUCARA BRAVO	IA58B
IA-66 PUCARA	IA66
IAI KFIR	IAI
IAR-93 EAGLE	IAR93
IV-M5 SUPER ETENARD	ETEND
J-1 HAWK	J1
J-1 JASTREB	J1J
J-32D LANSEN	J32D
J-39 GRIPEN	J39
JUROM 200 ORAO	JU200
KA-18 HOG	K18
KIRAN MK II	KIRM11
L-39D ALBATROSS	L39D

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
L-39Z ALBATROSS	L39Z
MARTU HAL HF-24 1T	HF241T
MB-326K AERMACCHI	MB326A
MB-339A AERMACCHI	MB339A
MIG-25 FOXBAT F	FOXF
P-51 MUSTANG	P51
PIRANA-2C	PIR2C
RJ-1 HAWK	RJ1HK
S-2 BUCCANEER	S2BUC
S-32C LANSEN	S32C
SU-25	SU25
SU-25 FROGFOOT	FRF
SU-25 FROGFOOT A	FRFA
SU-25 FROGFOOT B	FRFB
SU-7B FITTER-A	S7B
SU-7BM FITTER-A	S7BM
SUPER SEATA	SEATA
T-610 CALL	T610
T-CH-1 CHUNG CHENG	TCH1
T-MK6 HARRIER	HARTM6
TMK-4 SEA HARRIER	SHTM4
TU-16 BADGER D	BGRD
YAK-38	YAK38
YAK-38 FORGER	FOR
YAK-38 FORGER A	FORA
YAK-38 FORGER B	FORB
YT-25B	YT25B
BOMBER	
B-1	B1
B-1B	B1B
B-5	B5
B-47	B47
B-2 **SPIRIT**	B2
B-2A SPIRIT	**B2A**
B-52 STRATOFORTRESS	B52
B-52G STRATOFORTRESS	B52G
B-52H STRATOFORTRESS	B52H
CANBERRA	CANBER
EB-66 DESTROYER	EB66
F-1 MITSUBISHI	F1MSI
IL-28	IL28
IL-28B BEAGLE	IL28R
IL-28 B-5 BEAGLE (PRC)	B5BGL
IL-28 MASCOT	MAS
IL-28T BEAGLE	BGL
KFIR-C2 LION CUB	KFIRLC
M-4	M4
M-4 BISON	BSN
M-4 BISON B	BSNB
M-4 BISON C	BSNC
MBB-223 FLAMINGO	MBB223
SU-24 FENCER D	FEND
T-4 SHACKLETON	T4
TB-30 EPSILON	TB30
TU-16	TU16
TU-16 BADGER	BGR
TU-16 BADGER A	BGRA
TU-16 BADGER B	BGRB
TU-16 BADGER C	BGRC
TU-16 BADGER G	BGRG
TU-134A CRUSTY	TU134A
TU-160 BLACKJACK	BLK
TU-22	TU22
TU-22 BLINDER	BLN
TU-22 BLINDER B	BLNB
TU-26M	TU26
TU-26M BACKFIRE	BKF
TU-26M BACKFIRE A	BKFA
TU-26M BACKFIRE B	BKFB
TU-26M BACKFIRE C	BKFC
TU-95	TU95
TU-95 BEAR	BER
TU-95 BEAR A	BERA
TU-95 BEAR B	BERB
TU-95 BEAR C	BERC
TU-95 BEAR G	BERG
TU-95 BEAR H	BERH
VICTOR	VICTOR
YAK-27	Y27
YAK-28	YAK28
YAK-28 BREWER	BRE
YAK-28 BREWER A	BREA
YAK-28 BREWER B	BREB
YAK-28 BREWER C	BREC
YAK-28 BREWER E	BREE
698-MK2 VULCAN	698V

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
FIGHTER	
A-32 LANSEN	A32
A-32A LANSEN	A32A
ALPHA JET MS-1	ALPHA1
B-2 SUPER MYSTERE	B2SM
CF-101 VOODOO	CF101
CF-104 STARFIGHTER	CF104
CF-18 HORNET	CF18
CF-18A HORNET	CF18A
CF-18B HORNET	CF18B
CF-5A FREEDOM FTR	CF5A
CF-5D FREEDOM FTR	CF5D
DORNIER ALPHA JET	DOAJ
EF-18A HORNET (SPANISH)	EF18A
EMB-121 XINGU	EMB121
ETENDARD IV	ETEN4
ETENDARD IVM	ETEN4M
ETENDARD IVP	ETEN4P
ETENDARD, SUPER	ETENSU
F-100 SUPERSABRE	F100
F-100D SUPERSABRE	F100D
F-100F SUPERSABRE	F100F
F-101G VOODOO	F101G
F-102 DELTA DAGGER	F102
F-104 STARFIGHTER	F104
F-104A STARFIGHTER	F104A
F-104B STARFIGHTER	F104B
F-104C STARFIGHTER	F104C
F-104D STARFIGHTER	F104D
F-104DJ STARFIGHTER	F104DJ
F-104F STARFIGHTER	F104F
F-104G STARFIGHTER	F104G
F-104J STARFIGHTER	F104J
F-104S STARFIGHTER	F104S
F-106 DELTA DART	F106
F-111	F111
F-111A	F111A
F-111C	F111C
F-111D	F111D
F-111E	F111E
F-111F	F111F
F-111G	F111G
F-117	F117
F-117A	F117A
F-12	F12
F-14 TOMCAT	F14
F-14A (PLUS) TOMCAT	F14AP
F-14A MOD TOMCAT	F14MOD
F-14A TOMCAT	F14A
F-14D TOMCAT	F14D
F-15 EAGLE	F15
F-15A EAGLE	F15A
F-15B EAGLE	F15B
F-15C EAGLE	F15C
F-15D EAGLE	F15D
F-15DJ EAGLE	F15DJ
F-15J EAGLE	F15J
F-16 FIGHTING FALCON	F16
F-16A FIGHTING FALCON	F16A
F-16B FIGHTING FALCON	F16B
F-16C FIGHTING FALCON	F16C
F-16D FIGHTING FALCON	F16D
F-16N FIGHTING FALCON	F16N
F-35 DRAKEN	F35
F-4 PHANTOM II	F4
F-4A PHANTOM II	F4A
F-4B PHANTOM II	F4B
F-4C PHANTOM II	F4C
F-4D PHANTOM II	F4D
F-4E PHANTOM II	F4E
F-4EJ PHANTOM II	F4EJ
F-4F PHANTOM II	F4F
F-4G PHANTOM II	F4G
F-4J PHANTOM II	F4J
F-4K PHANTOM II	F4K
F-4M PHANTOM II	F4M
F-4N PHANTOM II	F4N
F-4S PHANTOM II	F4S
F-5 FREEDOM FIGHTER	F5
F-5A FREEDOM FIGHTER	F5A
F-5B FREEDOM FIGHTER	F5B
F-5C FREEDOM FIGHTER	F5C
F-5D FREEDOM FIGHTER	F5D
F-7	F-7
F-8 CRUSADER	F8CRUS
F-8 FISHBED	F8FISH
F-8 METEOR	F8
F-8A FINBACK	F8A
F-8E CRUSADER	F8E
F-8H CRUSADER	F8H
F-9 COUGAR	F9A
F-9 FANTAN	F9
F-MK2 TORNADO ADV	TOAF2

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE	AIRCRAFT TYPE	CODE
FALCON GUARDIAN	FG1A	MIG-21 21R FISHBED-H	M21R
FGA-5 SEA HAWK	FGA5	MIG-21 FISHBED	FBD
FGA-6 SEA HAWK	FGA6	MIG-21 FISHBED A	FBDA
G-91R/1	G91R1	MIG-21 FISHBED B	FBDB
G-91R/3	G91R3	MIG-21 FISHBED C	FBDC
G-91R/4	G91R4	MIG-21 FISHBED E	FBDE
G-91T/1	G91T1	MIG-21 MONGOL C	MOGC
G-91T/3	G91T3	MIG-23	MIG23
G-91Y	G91Y	MIG-23 FLOGGER-A	FLOA
G-91Y ENTENDARD HUNTER	G91YEH	MIG-23 FLOGGER	FLO
GNAT T-1	GATT1	MIG-23 FLOGGER	FLOA
GNAT T-1DB	GATT1D	MIG-23 FLOGGER C	FLOC
GR-1 SPE CAT JAGUAR	GR1J	MIG-25	MIG25
GR-1A HARRIER	GR1A	MIG-25 FOXBAT	FOX
GR-3 HARRIER	GR3	MIG-25 FOXBAT A	FOXA
HF-24 MK1 WIND SPIRIT	MARUT	MIG-25 FOXBAT E	FOXE
IAR-93 ORAO	1AR93O	MIG-27	MIG27
J-32 LANSEN	J32	MIG-29	MIG29
JA-37 VIGGEN	J37	MIG-29 FULCRUM	FCM
JAGUAR A	JAGA	MIG-29 FULCRUM C	FCMC
JAGUAR E	JAGE	MIG-31	MIG31
JAGUAR T-2	JAGT2	MIG-31 FOXHOUND	FXH
LIGHTNING F-2	F2	MIG-31 FOXHOUND A	FXHA
LIGHTNING F-2A	F2A	MIRAGE III-D	MIR3D
LIGHTNING F-3	F3	MIRAGE 4000	M4000
LIGHTNING F-6	F6	MIRAGE 5000	M5000
MB-326 AERMACCHI	MB326	MIRAGE F1R	MF1R
MB-339 AERMACCHI	MB339	MIRAGE 2000C	M2000C
MIG-15	MIG15	MIRAGE 2000N	M2000N
MIG-15U	MIG15U	MIRAGE 5-BA	MIR5BA
MIG-17	MIG17	MIRAGE 5-BD	MIR5BD
MIG-17 FRESCO A	FREA	MIRAGE 5-F	MIR5F
MIG-17 FRESCO B	FREB	MIRAGE F-1	MIRF1
MIG-17 FRESCO C	FREC	MIRAGE F-1A	MIRF1A
MIG-17 FRESCO D	FRED	MIRAGE F-1E	MIRF1E
MIG-17 FRESCO E	FREE	MIRAGE III-C	MIR3C
MIG-19	MIG19	MIRAGE III-D	MIR3D
MIG-19 FARMER	FMR	MIRAGE III-E	MIR3E
MIG-19 FARMER A	FMRA	FOKER NPA ENFORCER MK-2	FOKER
MIG-19 FARMER B	FMRB	MRCA TORNADO F MK-2	FMK2
MIG-19 FARMER C	FMRC	MRCA TORNADO	TORNAD
MIG-19 FARMER D	FMRD	MRCA TORNADO F MK-3	FMK3
MIG-19 FARMER E	FMRE	MRCA TORNADO GR MK-1	GRMK1
MIG-19 FARMER F	FMRF	MRCA TORNADO NAVAL	MRCAN
MIG-21	MIG21	NESHER DAGGER	NESHD
MIG-21 BIS FISHBED-L	M21B1	NF-4J PHANTOM II	NF4J
MIG-21 BIS FISHBED-N	M21B1S		

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
NF-5 FREEDOM FIGHTER (NORWAY)	NF5
NF-5A FREEDOM FIGHTER	NF5A
NF-5B FREEDOM FIGHTER	NF5B
PHANTOM II FG-1	FG1
PHANTOM II FGR-2	FGR2
PIRANHA-2D	PIR2D
PIRANHA-4	PIR4
PIRANHA-5	PIR5
RF-104G STARFIGHTER	RF104G
RF-35 DRAKEN	RF35
RF-84F THUNDERFLASH	RF84F
S-35 DRAKEN	S35
SU-11 FISHPOT-C	S11
SU-15	SU15
SU-15 FLAGON	FLG
SU-15 FLAGON A	FLGA
SU-15 FLAGON C	FLGC
SU-15 FLAGON D	FLGD
SU-15 FLAGON E	FLGE
SU-15 FLAGON F	FLGF
SU-15 FLAGON G	FLGG
SU-17	SU17
SU-17 FITTER B	FITB
SU-17 FITTER G	FITG
SU-17/SU-22 FITTER K	FITK
SU-17/SU-22U FITTER E	FITE
SU-19	SU19
SU-20	SU20
SU-22 FITTER-C	S22C
SU-22M	SU22M
SU-22U	SU22U
SU-27	SU27
SU-27 FLANKER	FLK
SU-27 FLANKER A	FLKA
SU-27 FLANKER C	FLKC
SU-7 FITTER A	FITA
SU-7/SU-17/SU-20/SU-22 FITTERFIT	FIT
SU-9 FISHPOT-B	S9
TF-102A DELTA DAGGER	TF102A
TF-104G STARFIGHTER	TF104G
TU-128	TU128
TU-128 FIDDLER	FDL
TU-128 FIDDLER B	FDLB
TU-128 FIDDLER C	FDLC
TU-28P FIDDLER	TU28
VTOUR2N VATOUR IIN	VTOUR2
YAK-18 MAX	YAK18
YAK-28P	YAK28P
YAK-28P FIREBAR	FBR
YAK-28P FIREBAR A	FBRA
YAK-28P FIREBAR B	FBRB
YAK-36MP FORGER	Y36MP
YAK-36MP FORGER-A	Y36MPA
YAK-36MP FORGER	Y36MPB

FIGHTER BOMBER

AIRCRAFT TYPE	CODE
CF-5 FREEDOM FTR	CF5
CF-5F FREEDOM FTR	CF5F
F-1 HUNTER	F1HNTR
F-100A SUPERSABRE	F100A
F-5E TIGER II	F5E
F-5F TIGER II	F5F
F-6 FARMER D PRC	F6FARM
F-86 SABRE AVON MK-32	F86M32
FB-111	FB111
FGA-7A HUNTER	FGA7A
FR-74S HUNTER	FR74S
HUNTER	HUNTER
J-35 DRAKEN	J35
J-35A DRAKEN	J35A
J-35B DRAKEN	J35B
J-35D DRAKEN	J35D
J-35F DRAKEN	J35F
J-35F1 DRAKEN	J35F1
J-35F2 DRAKEN	J35F2
J-35S DRAKEN	J35S
J-35X DRAKEN	J35X
JAGUAR	JAG
JAGUAR B	JAGB
JAGUAR INTERNATL	JAGINT
JAGUAR M	JAGM
JAGUAR S	JAGS
KFIR	KFIR
KFIR C-2	KFIRC2
KFIR C-7	KFIRC7
KFIR RC-2	KFIRR2
KFIR TC-2	KFIRT2
MIG-15 FAGOT	FAG
MIG-15U MIDGET	MID
MIG-17 FRESCO	FRE
MIG-21 FISHBED D	FBDD

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
MIG-21 FISHBED F	FBDF
MIG-21 FISHBED H	FBDH
MIG-21 FISHBED J	FBDJ
MIG-21 FISHBED K	FBDK
MIG-21 FISHBED L	FBDL
MIG-21 FISHBED N	FBDN
MIG-23 FLOGGER B	FLOB
MIG-23 FLOGGER E	FLOE
MIG-23 FLOGGER F	FLOF
MIG-23 FLOGGER G	FLOG
MIG-23 FLOGGER H	FLOH
MIG-23 FLOGGER K	FLOK
MIG-27 FLOGGER D	FLOD
MIG-27 FLOGGER J	FLOJ
MIG-29 FULCRUM A	FCMA
MIRAGE 5	MIR5
MIRAGE 5-COA	MIR5CA
MIRAGE 5-COD	MIR5CD
MIRAGE 5-COR	MIR5CR
MIRAGE 5-DAD	MIR5DA
MIRAGE 5-DD	MIR5DD
MIRAGE 5-DE	MIR5DE
MIRAGE 5-DG	MIR5DG
MIRAGE 5-DM	MIR5DM
MIRAGE 5-DR	MIR5DR
MIRAGE 5-DV	MIR5DV
MIRAGE 5-EAD	MIREAD
MIRAGE 5-M	MIR5M
MIRAGE 5-P	MIR5P
MIRAGE 5-PA	MIR5PA
MIRAGE 5-SDE	MIR5SD
MIRAGE 5-V	MIR5V
MIRAGE III-AD	MIR3AD
MIRAGE III-BS	MIR3BS
MIRAGE III-BZ	MIR3BZ
MIRAGE III-CJR	MIR3CJ
MIRAGE III-CZ	MIR3CZ
MIRAGE III-D2Z	MIR3D2
MIRAGE III-DO	MIR3DO
MIRAGE III-DZ	MIR3DZ
MIRAGE III-EA	MIR3EA
MIRAGE III-EBR	MIR3EB
MIRAGE III-EE	MIR3EE
MIRAGE III-EL	MIR3EL
MIRAGE III-EP	MIR3EP
MIRAGE III-EV	MIR3EV
MIRAGE III-EZ	MIR3EZ
MIRAGE III-O	MIR3O
MIRAGE III-R2Z	MIR3R2
MIRAGE IV-P	MIR4P
S-35E DRAKEN	S35E
SF-5 FREEDOM FIGHTER (SWISS)	SF5
SF-5A FREEDOM FIGHTER	SF5A
SF-5B FREEDOM FIGHTER	SF5B
SK-35C DRAKEN	SK35C
SOKO GALEB	SOKOG
SOKO JASTREB	SOKOJ
SOKO KRAGUJ	SOKOK
SU-17 FITTER D	FITD
SU-17/SU-20 FITTER C	FITC
SU-17/SU-22 FITTER H	FITH
SU-17/SU-22M FITTER J	FITJ
SU-22 FITTER	SU22
SU-22 FITTER F	FITF
SU-24	SU24
SU-24 FENCER	FEN
SU-24 FENCER A	FENA
SU-24 FENCER B	FENB
SU-24 FENCER C	FENC
SU-24 FENCER E	FENE
SU-27 FLANKER B	FLKB
SU-7	SU7
SUPER MYSTERE B2	MYSTB2
T-27 EMB/TUCANO	T27
T-35 PILLAN	T35
VICKERS VANGUARD	VKVNGD
FIGHTER ATTACK	
F-15E EAGLE	F15E
FA-18 HORNET	FA18
FA-18A HORNET	FA18A
FA-18B HORNET	FA18B
FA-18C HORNET	FA18C
FA-18D HORNET	FA18D
FA-18L HORNET	FA18L
J-39 GRIPEN	J39
COMMAND AND CONTROL	
E-8D JOINT STAR	E8D
TU-142 BEAR J	BERJ

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
GUNSHIP	
AC-119 STINGER	AC119
AC-130 SPECTRE	AC130
AC-130A SPECTRE	AC130A
AC-130H SPECTRE	AC130H
AC-130U SPECTRE	AC130U
AC-47 SPOOKY	AC47
ANTI-SUBMARINE	
1124 SEA SCAN	1124SS
1150 ATLANTIQUE	1150AT
ATLANTIC ANG	ATLANG
ATLANTIC ATL-2	ATL2
BE-12	BE12
BE-12 MAIL	MAI
BN-2 DEFENDER B2-320	BN2
BR-1050 ALIZE	BR1050
CP-107 ARGUS	CP107
CP-121 TRACKER	CP121
CP-140 AURORA	CP140
CS-2F TRACKER MK-A	CS2FA
HS-801 MK1 NIMROD	NIM1
HS-801 MK2 NIMROD	NIM2
IL-38	IL38
IL-38 MAY	MAY
LYNX HAS MK2 COMMANDO	LHM2
P-2 NEPTUNE	P2
P-2E NEPTUNE	P2E
P-2F NEPTUNE	P2F
P-2H NEPTUNE	P2H
P-2J NEPTUNE	P2J
P-3 ORION	P3
P-3A ORION	P3A
P-3B ORION	P3B
P-3C ORION	P3C
P-3C1 ORION	P3C1
P-3C2 ORION	P3C2
P-3C3 ORION	P3C3
P-3F ORION	P3F
PS-1 SHIN MEIWA	PS1
R-1 NIMROD	R1
S-2 TRACKER	S2TRK
S-2A TRACKER	S2A
S-2C TRACKER	S2C
S-2E TRACKER	S2E
S-2G TRACKER	S2G
S-2N TRACKER	S2N
S-3 VIKING	S3
S-3A VIKING	S3A
S-3B VIKING	S3B
TU-142 BEAR-C	TU142C
TU-142 BEAR-D	TU142D
TU-142 BEAR-E	TU142E
TU-142 BEAR F	BERF
VFW F-27 FRIENDSHIP	F27AV
YAK-30 MAGNUM	YAK30
EARLY WARNING/ELECTRONIC AIRCRAFT	
AEW-2 SHACKLETON	AEW2
E-1 TRACER	E1
E-2 HAWKEYE	E2
E-2A HAWKEYE	E2A
E-2B HAWKEYE	E2B
E-2C HAWKEYE	E2C
E-3 AWACS	E3
E-3 SENTRY	E3SEN
E-3A SENTRY	E3A
E-3B SENTRY	E3B
E-3C SENTRY	E3C
E-3F SENTRY	**E3F**
E-4 AABNCP	E4
E-4 TACAMO/NEACP	E4TN
E-4A NEACP	E4AN
E-4B NEACP	E4BN
E-4A AABNCP	E4A
E-4B AABNCP	E4B
E-6 TACAMO	E6
E-6A	E6A
E-8 JSTARS	E8
EA-3B	EA3B
EA-4F	EA4F
EA-4J	EA4J
EA-6 INTRUDER	EA6I
EA-6 PROWLER	EA6
EA-6A PROWLER	EA6A
EA-6B PROWLER	EA6B
EA-7L	EA7L
EC-130 HERCULES	EC130
EC-130B HERCULES	EC130B

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
EC-130E HERCULES	EC130E
EC-135 STRATOLIFTER	EC135
EC-135A STRATOLIFTER	EC135A
EC-135C STRATOLIFTER	EC135C
EC-135E STRATOLIFTER	EC135E
EC-135G STRATOLIFTER	EC135G
EC-135H STRATOLIFTER	EC135H
EC-135J STRATOLIFTER	EC135J
EC-135K STRATOLIFTER	EC135K
EC-135L STRATOLIFTER	EC135L
EC-135P STRATOLIFTER	EC135P
EC-13OV HERCULES	EC130V
EF-111 RAVEN	EF111
EF-111A RAVEN	EF111A
EF-4B	EF4B
EF-4J	EF4J
EP-3 ORION	EP3
EP-3A ORION	EP3A
EP-3B ORION	EP3B
EP-3E ORION	EP3E
ERA-3B	ERA3B
ES-2D TRACKER	ES2D
HS-801 NIMROD	NIM
IL-18 COOT-A	IL18A
IL-76 MAINSTAY	MX2
PD-808 VESPA EA	PD808E
TU-126 MOSS	TU126
TU-16 BADGER E	BGRE
TU-16 BADGER H	BGRH
TU-16 BADGER J	BGRJ
TU-16 BADGER K	BGRK
TU-16 BADGER L	BGRL
TU-22 BLINDER A	BLNA

RECONNAISSANCE

AIRCRAFT TYPE	CODE
35XD DRAKEN	35XD
AERITALIA G-222	G222
AERITALIA G-222EC	G222EC
ALPHA JET MS-1	ALPHA1
AN-12 CUB B	CUBB
AN-12 CUB C	CUBC
AN-30A CLANK	CLKA
ARL-24	ARL24
ATLANTIC 1150	AT1150
BE-12	BE12
BE-12 MAIL	MAI
BE-6	BE6
BE-6 MADGE	MDG
BOEING RC-707	RC707
EC-121K WARNING STAR	EC121K
F-27 FRIENDSHIP	F27
HS-650 ARGOSY	HS650
HS-801 NIMROD MK-3 AEW	HS801M
IL-20	IL20
IL-20 COOT A	COTA
IL-28R	IL28R
IL-38	IL38
IL-38 MAY	MAY
IL-76 CANDID A	CNDA
KFIR RC-2	KFIRR2
MIG-25 FOXBAT B	FXHB
MIG-25 FOXBAT D	FOXD
MIG-25 FOXBAT F	FOXF
MIRAGE 5-BR	MIR5BR
MIRAGE 5-COR	MIR5CR
MIRAGE 5-DR	MIR5DR
MIRAGE 5-RAD	MIR5RA
MIRAGE F-1R	MIRF1R
MIRAGE III-CJR	MIR3CJ
MIRAGE III-R2Z	MIR3R2
MIRAGE III-RP	MIR3RP
MIRAGE III-RS	MIR3RS
MIRAGE III-S	MIR3S
MR-1 NIMROD	MR1A
MR-1 SHACKLETON	MR1
MR-2 SHACKLETON	MR2
MR-3 SHACKLETON	MR3
NP-3A ORION	NP3A
NU-1B OTTER	NU1B
O-1 BIRD DOG	O1
O-1A BIRD DOG	O1A
O-1B BIRD DOG	O1B
O-1C BIRD DOG	O1C
O-1G BIRD DOG	O1G
OA-4	OA4
OV-1 MOHAWK	OV1
OV-10 BRONCO	OV10
OV-10A BRONCO	OV10A
OV-10B BRONCO	OV10B
OV-10C BRONCO	OV10C
OV-10D BRONCO	OV10D
OV-10E BRONCO	OV10E

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
OV-10F BRONCO	OV10F
OV-1A MOHAWK	OV1A
OV-1B MOHAWK	OV1B
OV-1C MOHAWK	OV1C
OV-1D MOHAWK	OV1D
P-166-DL3-MA	P166D
P-166-M	P166M
P-95 EMBRACER	P95
R-95	R95
RA-5 VIGILANTE	RA5
RA-7E INTRUDER	RA7E
RC-12 GUARDRAIL	RC12
RC-12D GUARDRAIL	RC12D
RC-12H GUARDRAIL	RC12H
RC-12K GUARDRAIL	RC12K
RC-130 HERCULES	RC130
RC-130A HERCULES	RC130A
RC-130E HERCULES	RC130E
RC-130H HERCULES	RC130H
RC-130S HERCULES	RE130S
RC-135 STRATOLIFTER	RC135
RC-135A STRATOLIFTER	RC135A
RC-135C STRATOLIFTER	RC135C
RC-135D STRATOLIFTER	RC135D
RC-135M STRATOLIFTER	RC135M
RC-135S STRATOLIFTER	RC135S
RC-135T STRATOLIFTER	RC135T
RC-135U STRATOLIFTER	RC135U
RC-135V STRATOLIFTER	RC135V
RF-18 HORNET	RF18
RF-4 PHANTOM II	RF4
RF-4B PHANTOM II	RF4B
RF-4C PHANTOM II	RF4C
RF-4E PHANTOM II	RF4E
RF-4K PHANTOM II	RF4K
RF-5 FREEDOM FIGHTER	RF5
RF-5 TIGER	RF5T
RF-5A FREEDOM FIGHTER	RF5A
RF-5E TIGER EYE	RF5E
RF-8 CRUSADER	RF8
RF-8A CRUSADER	RF8A
RF-8G CRUSADER	RF8G
RH-53	RH53
RJ-1 JASTREB	RJ1
RP-3A ORION	RP3A
RP-3D ORION	RP3D
RU-21 UTE	RU21
RU-21J	RU21J
RV-1	RV1
S-35E DRAKEN	S35E
SASS	SASS
SF-37 VIGGEN	SF37
SH-37 VIGGEN	SH37
SK-37 VIGGEN	SK37
SP-2 NEPTUNE	SP2
SP-2H NEPTUNE	SP2H
SR-71 BLACKBIRD	SR71
SR-71B BLACKBIRD	SR71B
SU-17/SU-22 FITTER H	FITH
SU-24 FENCER E	FENE
T-AGM-23	TAGM23
TR-1	TR1REC
TR-1 LOCKHEED	TR1
TR-1A LOCKHEED	TR1A
TR-1B LOCKHEED	TR1B
TU-142 BEAR F	BERF
TU-16 BADGER D	BGRD
TU-16 BADGER F	BGRF
TU-20 BEAR	TU20
TU-22 BLINDER C	BLNC
TU-26 BACKFIRE	TU26
TU-95 BEAR D	BERD
TU-95 BEAR E	BERE
U-2	U2
U-2R	U2R
U-6A BEAVER	U6A
UV-20	UV20
VA-3B	VA3B
VC-11	VC11
VC-11A	VC11A
VP-3A ORION	VP3A
YAK-27 MANGROVE	YAK27
YAK-28 BREWER D	BRED
RECONNAISSANCE/BOMBER	
RF-111C	RF111C
FORWARD AIR CONTROL	
OA-10 THUNDERBOLT II	OA10
OA-37 DRAGONFLY	OA37
OV-10 BRONCO	OV10
OV-10A BRONCO	OV10A

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
OV-10B BRONCO	OV10B
OV-10C BRONCO	OV10C
OV-10D BRONCO	OV10D
OV-10E BRONCO	OV10E
OV-10F BRONCO	OV10F
SEARCH AND RESCUE	
CC-115 BUFFALO	CC115
HS-748 2B	H74B
HS-748 COAST GUARDIAN	HS748C
MU-2S MITSUBISHI	MU2S
PS-1 SHIN MEIWA	PS1
US-1	US1SAR
US-1 SHIN MEIWA	US1
TRANSPORT/LOGISTICS	
1049 SUPER CONSTELLATION	1049
201 ARAVA	201A
500MD DEFENDER	500MD
AB-47 SIOUX	AB47SX
AERITALIA ATR-42	ATR42
AERITALIA ATR-42 100	ATR421
AERITALIA ATR-42 200	ATR422
AERITALIA ATR-42 300	ATR423
AERITALIA G-222-28	G22228
AERITALIA G-222RM	G222R
AIRBUS A-300	A300
AIRBUS A-310	A310
AIRBUS A-310/200	A31020
AIRBUS A-310/300	A31030
AIRBUS A-320	A320
AIRBUS A-330	A330
AIRBUS A-340	A340
AN-10	AN10
AN-10 CAT	CAT
AN-114	AN114
AN-114 CLOD	CLD
AN-12	AN12
AN-12 CUB	CUB
AN-12 CUB A	CUBA
AN-12 CUB D	CUBD
AN-124	AN124
AN-124 CONDOR	CDR
AN-124 CONDOR A	CDRA
AN-2	AN2
AN-2 COLT	CLT
AN-22	AN22
AN-22 COCK	COC
AN-22 COCK A	COCA
AN-22 COCK B	COCB
AN-225	AN225
AN-24	AN24
AN-24 COKE	COK
AN-26	AN26
AN-26 CURL	CUR
AN-26B	AN26B
AN-26B CURL	CURB
AN-28	AN28
AN-28 CASH	CSH
AN-28 CASH A	CSHA
AN-30	AN30
AN-30 CLANK	CLK
AN-32 CLINE	CLN
AN-40 VERY LARGE TURBO PROP	AN40
AN-70 COALER	AN70
AN-32 CLINE A	CLNA
AN-72	AN72
AN-72 COALER	CLR
AN-72 COALER A	CLRA
AN-72 COALER C	CLRC
AN-74	AN74
AN-74 COALER B	CLRB
AN-8	AN8
AN-8 CAMP	CMP
ANDOVER C-1	ANC1
ANDOVER C-2	ANC2
ANDOVER CC-2	ANCC2
ANDOVER E-3	ANE3
ARGOSY	ARGOSY
ARGOSY E-1	AGSYE1
AU-23 PEACEMAKER	AU23
AU-23A PEACEMAKER	AU23A
IAI 1125 ASTRA	IAI125
B-726	B726
AU-24 STALLION	AU24
AU-24A STALLION	AU24A
BAC-III 2400	BA2400
BAC-III 2500	BA2500
BAC-145 JETPROVOST	BAC145
BAC-167 STRIKEMASTER	BAC167

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
BELL SUPER TRANSPORT	BELL
BELL SUPER TRANSPORT 214ST	BHST
B214ST BELL SUPER TRANSPORT	B214ST
BAC-145 JETPROVOST	BAC145
BAC-167 STRIKEMASTER	BAC167
BAE-146 SERIES 200	BA1462
BAE (HS) TRIDENT	BAETRI
BAC ONE-ELEVEN SERIES	B111
BE-30 CUFF	BE30
BE-30 CUFF	BE30A
BOEING 707	707
BOEING 707-131B	707131
BOEING 707-320C	707320
BOEING 720B	720B
BOEING 727	727
BOEING 727-100	727100
BOEING 727-200	727200
BOEING 737	737
BOEING 737-100	737100
BOEING 737-123	737123
BOEING 747-200	747200
BOEING 737-200	737200
BOEING 747-300	747300
BOEING 737-300	737300
BOEING 747-400	747400
BOEING 737-400	737400
BOEING 747-SP	747SP
BOEING 747	747
BOEING 757	757
BOEING 747-100	747100
BOEING 757-200	757200
BOEING 767	767
BOEING 767-100	767100
BOEING 767-200	767200
BOEING 767-200TC	767TC
BOEING 767-300	767300
BOEING RC-707	RC707
C-1 KAWASAKI	C101
C-1 TRADER	C1K
C-101 AVIOJET	C1T
C-118 LIFTMASTER	C118
C-118A LIFTMASTER	C118A
C-118B LIFTMASTER	C118B
C-119 FLYING BOXCAR	C119
C-119G FLYING BOXCAR	C119G
C-119J PACKET	C119J
C-12 BEECH SUPER KING AIR	C12
C-121	C121
C-121G SUPER CONNIE	C121G
C-123 PROVIDER	C123
C-123B PROVIDER	C123B
C-123H PROVIDER	C123H
C-123J PROVIDER	C123J
C-123K PROVIDER	C123K
C-123L PROVIDER	C123L
C-123T PROVIDER	C123T
C-12A BEECH SUPER KING AIR	C12A
C-124	C124
C-12F BEECH SUPER KING AIR	C12F
C-130 H-30 HERCULES	C130H3
C-130 HERCULES	C130
C-130A HERCULES	C130A
C-130B HERCULES	C130B
C-130C HERCULES	C130C
C-130D HERCULES	C130D
C-130E HERCULES	C130E
C-130F HERCULES	C130F
C-130G HERCULES	C130G
BE-30 CUFF	BE30
BE-30 CUFF	BE30A
C-130H HERCULES	C130H
C-130J HERCULES	**C130J**
C-130K HERCULES	C130K
C-130M HERCULES	C130M
C-131 SAMARITAN	C131
C-133	C133
C-133A	C133A
C-131F SAMARITAN	C131F
C-131H SAMARITAN	C131H
C-135 STRATOLIFTER	C135
C-139A	C139A
C-135A STRATOLIFTER	C135A
C-135B STRATOLIFTER	C135B
C-135C STRATOLIFTER	C135C
C-135E STRATOLIFTER	C135E
C-135F STRATOLIFTER	C135F
C-1A TRADER	C1A
C-140 JETSTAR	C140
C-140A JET STAR	C140A

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE	AIRCRAFT TYPE	CODE
C-141 STARLIFTER	C141	CT-39F	CT39F
C-141B STARLIFTER	C141B	CT-39G	CT39G
C-160 TRANSALL BASIC	C160	CVAIR-440	
C-17	C17	CONVAIR-MTPLTN	CV440
C-17A GLOBMASTER 3	C17A	CVAIR-580	CV580
C-19	C19	CVAIR-880	
C-19A	C19A	CONVAIR-MTPLTN	CV880
C-1PR PEMBROKE	C1PR	DC-10 DOUGLAS	DC10
C-2 GREYHOUND	C2	DC-10/10 DOUGLAS	DC1010
C-2A GREYHOUND	C2A	DC-10/15 DOUGLAS	DC1015
C-20 GULFSTREAM III	C20	DC-10/30 DOUGLAS	DC1030
C-20A GULFSTREAM	C20A	DC-10/40 DOUGLAS	DC1040
C-20B GULFSTREAM III	C20B	DC-10CF DOUGLAS	DC10CF
C-20C GULFSTREAM III	C20C	DC-3 DOUGLAS	DC3
C-20D GULFSTREAM III	C20D	DC-4 DOUGLAS	DC4
C-207 AZOR	C207	DC-6 DOUGLAS	DC6
C-207 AZPR	C207A	DC-6B DOUGLAS	DC6B
C-21	C21	DC-6C DOUGLAS	DC6C
C-212 CASA AVIOCAR	C212	DC-7 DOUGLAS	DC7
C-21A	C21A	DC-8 DOUGLAS	DC8
C-23 SHERPA	C23	DC-8/10 DOUGLAS	DC810
C-23A SHERPA	C23A	DC-8/20 DOUGLAS	DC820
C-4M KUDU	C4M	DC-8/30 DOUGLAS	DC830
C-42 AVIOCAN	C42	DC-8/50 DOUGLAS	DC850
C-45 EXPEDITOR	C45	DC-8/54 DOUGLAS	DC854
C-46 COMMANDO	C46	DC-8/55 DOUGLAS	DC855
C-46A COMMANDO	C46A	DC-8/60 DOUGLAS	DC860
C-47 DAKOTA/SKYTRAIN	C47	DC-8/61 DOUGLAS	DC861
C-47A SKYTRAIN R4D	C47A	DC-8/62 DOUGLAS	DC862
C-5 GALAXY	C5	DC-8/63 DOUGLAS	DC863
C-54 SKYMASTER	C54	DC-8/70 DOUGLAS	DC870
C-5A GALAXY	C5A	DC-8/71 DOUGLAS	DC871
C-5B GALAXY	C5B	DC-8/73 DOUGLAS	DC873
C-5C GALAXY	C5C	DC-8F DOUGLAS	DC8F
C-7 CARIBOU	C7	DC-9 DOUGLAS	DC9
C-7A CARIBOU	C7A	DC-9/10 DOUGLAS	DC910
C-9 NIGHTINGALE/SKYTRAIN	C9	DC-9/10 M15 DOUGLAS	DC910M
C-9B SKYTRAIN	C9B	DC-9/20 DOUGLAS	DC920
C-95A	C95A	DC-9/30 DOUGLAS	DC930
CC-138 TWIN OTTER	CC138	DC-9/32 DOUGLAS	DC932
CL-44 CANADAIR 400	CL44	DC-9/40 DOUGLAS	DC940
CL-600 CHALLENGER	CL600	DC-9/51 DOUGLAS	DC951
CL-601 CHALLENGER	CL601	DC-9F/30 DOUGLAS	DC9F30
CM-AU MAGLITR	CMAU	DH-114 HERON C-2	DH114A
C MK3 HERCULES	HCM3	DH-114 HERON HS	DC114
CONCORDE SST	SST	DH-114B HERON HS	DH114B
CT-39E	CT39E	DHC-3 U-1A OTTER	DHC3U1

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE	AIRCRAFT TYPE	CODE
DHC-5 BUFFALO	DHC5	HU-16 ALBATROSS	HU16
DHC-6 100 TWIN OTTER	DHC6	HU-16B ALBATROSS	HU16B
DHC-7 DASH 7	DHC7	HU-16C ALBATROSS	HU16C
DHC-8 COMMUTER	DHC8	HU-16E ALBATROSS	HU16E
DO-128-2 DORNIER	DO1282	HU-25 GUARDIAN	HU25
DO-228 DORNIER	DO228	HU-25A GUARDIAN	HU25A
DO-228 DORNIER 100	DO228D	IAI-101 ARAVA	IA101
DO-228 DORNIER 100A	DO228C	IAR-330 PUMA	IA330
DO-228A DORNIER	DO228A	IAI-1123 WESTWIND	IA1123
DO-228B DORNIER	DO228B	IAI-202 ARAVA	IAI202
DO-28 DORNIER	DO28	IL-12	IL12
E-3INT	**E3INT**	IL-12 COACH	CCH
E-3NTC	**E3NTC**	IL-14	IL14
EC-95	EC95	IL-14 CRATE	CRT
EC-137D	**EC137D**	IL-18	IL18
EMB-100 BANDEIRANTE	EMB100	IL-18 COOT	COT
EMB-110 BANDEIRANTE	EMB110	IL-22	IL22
EMB-120 BRASILA	EMB120	IL-22 COOT B	COTB
F-27 FRIENDSHIP	F27	IL-62 CLASSIC	CXX1
F-27 FRIENDSHIP 100	F27100	IL-76	IL76
F-27 FRIENDSHIP 200	F27200	IL-76T CANDID	IL76T
F-27 MK 400M FRIENDSHIP	F27M4M	IL-76 CANDID	CND
F-28 FELLOWSHIP	F28	IL-76 CANDID B	CNDB
F-45A	**F45A**	IL-86	CXX2
F-45B	**F45B**	L-100 HERCULES	L100
FALCON	FALCN	L-100-20 HERCULES	L10020
FALCON 10	FALCN1	L-1011 TRISTAR	L1011
FALCON 20	FALCN2	L-1011/50 TRISTAR	101150
FALCON 20-50	FA2050	L-1011/100 TRISTAR 100	L10111
FALCON 50	FALCN5	L-1011 TRISTAR 500	L10115
GATES LEAR JET	GAT	L-1011 TRISTAR K MK-1	L1011K
GATES LEAR JET 24A	GAT24A	L-1011-250	L10112
GATES LEAR JET 25	GAT25	L-188 LOCKHEED ELECTRA	L188
GATES LEAR JET 35	GAT35	L-188C LOCKHEED ELECTRA	L188C
GATES LEAR JET 35A	GAT35A	L-29 DELPHIN	L29DEL
GATES LEAR JET 55	GAT55	L-382G LOCKHEED ELECTRA	L382G
HANSA JET HFP320	HANSA3	L-39 ALBATROSS	L39
HERCULES CMK-3	CMK3	L1049 SUPER CONNIE	L1049
HERCULES CWMK-1	CMK1	LC-130 HERCULES	LC130
HS TRIDENT 2E	TRDT2E	LC-130F HERCULES	LC130F
HS TRIDENT 3B	TRDT3B	LC-130R HERCULES	LC130R
HS-146	HS146	L-450	L450
HS-146-200	HS1462	LI-2 CAB	LI2
HS-748 AVRO	HS748	MD-11 DOUGLAS	MD11
HS-748 SERIES 1	HS7481	LYNX AN MK53	
HS-748 SERIES 2A	HS7482	COMMANDO	LHM53
HS-748 SERIES 2B	HS7483	MD-80 DOUGLAS	MD80

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE	AIRCRAFT TYPE	CODE
MD-81 DOUGLAS	MD81	TU-104	TU104
MD-82 DOUGLAS	MD82	TU-104 CAMEL	TU104A
MD-83 DOUGLAS	MD83	TU-114 CLEAT	TU114
MD-87 DOUGLAS	MD87	TU-124	TU124
MD-88 DOUGLAS	MD88	TU-124 COOKPOT	CKP
MERLIN II SWEARINGEN	MER2	TU-134	TU134
MERLIN IIIB	MER3B	TU-134 CRUSTY	CRU
METRO II SWEARINGEN	MET2	TU-144	TU144
METRO IIA SWEARINGEN	MET2A	TU-144 CHARGER	CX3
METRO III SWEARINGEN	MET3	TU-144 CHARGER B	CX3B
MU-2 MITSUBISHI	MU2	TU-144D CHARGER C	CX3C
MU-2J MITSUBISHI	MU2J	TU-154	TU154
N-22 NOMAD	N22	TU-154 CARELESS	CAL
N-22B NOMAD	N22B	TU-154 CRUSTY	TU154DT
N-24A NOMAD	N22A	TU-154A CARELESS	CALA
NC-212 AVIOLAR	NC212	TU-154 CARELESS	TU154B
NORD-2501	ND2501	U-1 OTTER	U1
NORD-262	NORD	UC-12B HURON	UC12BH
NORD-262C	ND262C	UC-45J NAVIGATOR	UC45J
NORD-3202	ND3202	UV-18 TWIN OTTER	UV18
NORD-3400	ND3400	UV-18A TWIN OTTER	UV18A
PD-808 VESPA	PD808	UV-18B TWIN OTTER	UV18B
MADGE	MDG	VC-10C1 BAC	VC10C1
MD-530F CAYUSE	MD530F	VC-10K2 BAC	VC10K2
MFI-15 SAFARI	MFI15	VC-10K3 BAC	VC10K3
MFI-17 SUPPORTER	MFI17	VC-11A GULFSTREAM II	VC11AG
MIDAS	MDS	VC-118 LIFTMASTER	VC118
MIDGET FAGOT	MIDFAG	VC-118A LIFTMASTER	VC118A
MIG-15 UTI FAGOT	M15UTI	VC-118B LIFTMASTER	VC118B
PD-808 VESPA RADIO	PD808R	VC-130H HERCULES	VC130H
PD-808 VESPA TF	PD808F	VC-131 SAMARITAN	VC131
S-208 MARCHETTI	S208	VC-131A SAMARITAN	VC131A
SA-330L PUMA	SA330L	VC-131H SAMARITAN	VC131H
SC-7 SHORTSKYVAN	SC7	VC-135B STRATOLIFTER	VC135B
SE-210 CARAVELLE	SE210	VC-140B JETSTAR	VC140B
SF-340 SAAB FAIRCHILD	SF340	VC-11 SKYTRAIN II	VC11II
T-12 AVIOCAR	T12	VC-6 KING AIR	VC6
SK-60 SAAB-105	SK60	VC-6B KING AIR	VC6B
SRS-3M SKYVAN	SKY3M	VC-9 NIGHTINGALE	VC9
SSC CONCORDE	SSCA	**VC-26**	**VC26**
T-39 SABERLINER	T39	VFW-614	VFW614
T-39A SABERLINER	T39A	VICKERS VISCOUNT	VCONT
T-39B SABERLINER	T39B	VC-140 JETSTAR	VC140
T-39F SABERLINER	T39F	VU-9 EMBRACER	VU9
T-42B COCHISE	T42B	XC-2 AIDC	XC2
T-44 KINGAIR	T44K	Y-11 (YUN-11) CHAN	Y11
TT-300 WESTLAND	TT300	Y-11T (YUN-11T) CHAN	Y11T

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
Y-12 (YUN-12) TURBO-PANDA	Y12
Y-5 COLT	Y5
Y-8 (YUN-8)	Y8
YAK-40	YAK40
YAK-40 CODLING	COD
YAK-42	YAK42
YAK-42 CLOBBER	CLO
TANKER	
BAE VICTOR	BAEVIC
IL-76 MIDAS	MX1
KA-3B	KA3B
KA-6 INTRUDER	KA6
KA-6D INTRUDER	KA6D
KA-6H INTRUDER	KA6H
KC-10 EXTENDER	KC10
KC-10A EXTENDER	KC10A
KC-130 HERCULES	KC130
KC-130F HERCULES	KC130F
KC-130H HERCULES	KC130H
KC-130R HERCULES	KC130R
KC-130T HERCULES	KC130T
KC-135 STRATOTANKER	KC135
KC-135A STRATOTANKER	KC135A
KC-135E STRATOTANKER	KC135E
KC-135Q STRATOTANKER	KC135Q
KC-135R STRATOTANKER	KC135R
KC-135T STRATOTANKER	**KC135T**
KC-707	KC707
KC-747	KC747
KC-97 STRATOFREIGHTER	KC97
KS-3A VIKING	KS3A
M-4	M4
M-4 BISON	BSN
M-4 BISON A	BSNA
TU-16 BADGER A	BGRA
VC-10K2 BAC	VC10K2
VC-10K3 BAC	VC10K3
VC-137 GULFSTREAM	VC137G
VC-137C GULFSTREAM	VC137C
UTILITY/MEDICAL EVACUATION	
C-9 NIGHTINGALE/ SKYTRAIN	C9
C-9A NIGHTINGALE	C9A
C-9C NIGHTINGALE	C9C
CL-214 CANADAIR	CL214
CL-215 CANADAIR	CL215
DHC-2 BEAVER	DHC2
DHC-2 BEAVER AL-2	DCHAL2
DHC-3 OTTER	DHC3
DHC-4 CARIBOU	DHC4
DHC-E OTTER CSR 1-2-3	DHCCSR
DO-27 DORNIER	DO27
FH-1100 FAIRCHILD	FH1100
NORD-2504	ND2504
O-1E BIRDDOG	O1E
O-2 SKYMASTER	O2
O-2A SKYMASTER	O2A
PA-31 NAVAJO	PA31
PA-31/310 NAVAJO	PA3131
PA-31T CHEYENNE	PA31T
PA-32	PA32
PC-6 PORTER	PC6
PC-6A TURBO PORTER	PC6A
PC-8 TWIN PORTER	PC8
PC-9 PILATUS	PC9
U-11A AZTEC	U11A
U-17 SKYWAGON	U17
U-17A SKYWAGON	U17A
U-17B SKYWAGON	U17B
U-4AERO COMMANDER	U4
U-7 SENECA II	U7
U-7A SENECA	U7A
U-7B SENECA	U7B
U-8 SEMINOLE	U8
U-9 AERO	U9
U21 UTE	U21
US-2A TRACKER	US2A
US-2 TRACKER	US2
US-2B TRACKER	US2B
US-2C TRACKER	US2C
US-2C TRACKER	US2D
US-3A VIKING	US3A
SPECIAL PURPOSE/MULTIROLE	
EC-130G HERCULES	EC130G
EC-130H HERCULES	EC130H
EC-130L HERCULES	EC130L
EC-130Q HERCULES	EC130Q

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
HC-130 HERCULES	HC130
HC-130B HERCULES	HC130B
HC-130E HERCULES	HC130E
HC-130H HERCULES	HC130H
HC-130N HERCULES	HC130N
HC-130P HERCULES	HC130P
HC-131A SAMARITAN	HC131A
HU-25B GUARDIAN	HU25B
HU-25C NIGHT STALKER	HU25C
MC-130 HERCULES	MC130
MC-130E HERCULES	MC130E
MC-130H HERCULES	MC130H
MIRAGE 2000	M2000
MIRAGE 2000B	M2000B
MIRAGE 2000RDI	M2000R
MIRAGE F-1C	MIRF1C
TRAINER	
A-132 TANGARA	A132
ALPHA JET TRAINER	ALPHAT
AT-28 TROJAN	AT28
AV-8 T-4 HARRIER	AV8T4
AW-1 FAN TRAINER	AW1
AW-2 FAN TRAINER	AW2B
3LA (SAAB)	B3LA
CM-170 FOUGA MAGISTER	CM170
CT-114	CT114
CT-39	CT39
CT-39A	CT39A
DHC-1 CHIPMUNK	DHC1
DHC-1 CHIPMUNK T-10	DCHT10
DHC-1 CHIPMUNK T-30	DCHT30
EMB-212 TUCANO	EMB212
F-1 MITSUBISHI	F1MSI
F-21 KFIR (AGGRESSOR)	F21
F-5F TIGER II	F5F
G-2A GALEB	G2A
IA-63	IA63
IL-28 MASCOT	MAS
IL-28U MASCOT	IL28U
IMPALA MK2 ATLAS	IMPM2
KA-840	KA840
L-29	L29
L-29 MAYA	MAA
L-39 ALBATROSS	L39T
L-70 MILTRAINER	L70
MIG-15U MIDGET	MID
MIG-21 MONGOL	MOG
MIG-21 MONGOL A	MOGA
MIG-21 MONGOL B	MOGB
MIG-21U MONGOL	M21U
MIG-21UM MONGOL-B	M21UM
MIG-21US MONGOL-B	M21US
MIG-23 FLOGGER C	FLOC
MIG-25 FOXBAT C	FOXC
MIG-29 FULCRUM B	FCMB
MIRAGE 5-COD	MIR5CD
MIRAGE 5-DAD	MIR5DA
MIRAGE 5-DD	MIR5DD
MIRAGE 5-DE	MIR5DE
MIRAGE 5-DM	MIR5DM
MIRAGE 5-DV	MIR5DV
MIRAGE 5-SDE	MIR5SD
MIRAGE F-1B	MIRF1B
MIRAGE F-1D	MIRF1D
MIRAGE III-BS	MIR3BS
MIRAGE III-BZ	MIR3BZ
MIRAGE III-DO	MIR3DO
MIRAGE III-DZ	MIR3DZ
P-148 PIAGGIO	P148
P-149 PIAGGIO	P149
P-166 PIAGGIO	P166
PC-7 PILATUS TURBO TRAINER	PC7
PD-808 VESPA TA	PD808A
PO-2 MULE	PO2A
RFB-400 FANTRAINER	FR400
RFB-600 FANTRAINER	FR600
S-211 MARCHETTI	S211
SF-260 MARCHETTI	SF260
SK-35C DRAKEN	SK35C
SU-11U MAIDEN	S11M
SU-27 FLANKER C	FLKC
SU-7U	SU7U
SU-7U MOUJIK	MOU
T-1 HAWK	T1
T-11 VAMPIRE	T11
T-1A SEASTAR	T1A
T-2 BUCKEYE	T2
T-2 MITSUBISHI	T2MIT
T-25A NIEVA UNIVERSAL	T25A
T-27	T27T
T-28 TROJAN	T28

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
T-28A TROJAN	T28A
T-28B TROJAN	T28B
T-28C TROJAN	T28C
T-28D TROJAN	T28D
T-29 FLYING CLASSROOM	T29A
T-2A BUCKEYE	T2A
T-2B BUCKEYE	T2B
T-2C BUCKEYE	T2C
T-2D BUCKEYE	T2D
T-2E BUCKEYE	T2E
T-33 SHOOTING STAR	T33
T-33A SHOOTING STAR/ SILVERSTAR	T33A
T-33B SHOOTING STAR/ SILVERSTAR	T33B
T-33N SHOOTING STAR	T33N
T-34 MENTOR	T34
T-34A MENTOR	T34A
T-34B MENTOR	T34B
T-34C MENTOR	T34C
T-35 PILLAN	T35
T-37	T37
T-37B	T37B
T-37C	T37C
T-37 TWEET	T37T
T-38 TALON	T38
T-38A TALON	T38A
T-38B TALON	T38B
T-38D TALON	T38D
T-39D SABERLINER	T39D
T-41 MESCALERO	T41
T-41A MESCALERO	T41A
T-41B MESCALERO	T41B
T-41D MESCALERO	T41D
T-42 COCHISE	T42
T-42A COCHISE	T42A
T-43	T43
T-44 BEECH KING	T44
T-45 GOSHAWK	T45
T-45A GOSHAWK	T45A
T-45B GOSHAWK	T45B
T-47 CITATION	T47
T-47A CITATION II	T47A
T-6 TEXAN/HARVARDSN	T6
T-66 HUNTER	T66
T-67M FIREFLY	T67M
T-134 MUSKETEER	T134
T-MK1 BULLDOG	BULMK2
T-MK1 HAWK	HHM1
TA-3B	TA3B
TA-4 SKYHAWK	TA4
TA-4B SKYHAWK	TA4B
TA-4F SKYHAWK	TA4F
TA-4G SKYHAWK	TA4G
TA-4H SKYHAWK	TA4H
TA-4J SKYHAWK	TA4J
TA-4K SKYHAWK	TA4K
TA-4KU SKYHAWK	TA4KU
TA-4M SKYHAWK	TA4M
TA-7 CORSAIR II	TA7
TA-7C CORSAIR II	TA7C
TA-7H CORSAIR II	TA7H
TA-7P CORSAIR II	TA7P
TAV-8 HARRIER	TAV8
TAV-8A HARRIER	TAV8A
TAV-8B HARRIER	TAV8B
TAV-8S HARRIER	TAV8S
TC-130G HERCULES	TC130G
TC-130Q HERCULES	TC130Q
TC-3 TSE CHANG	TC3
TC-130 HERCULES	TC130
TC-4B GULFSTREAM	TC4B
TC-4C GULFSTREAM	TC4C
TC-4C ACADEME	TC4CA
TC-18F	**TC18F**
TE-2 HAWKEYE	TE2
TE-2A HAWKEYE	TE2A
TE-2C HAWKEYE	TE2C
TF-15 EAGLE	**TF15**
TF-104G STARFIGHTER	TF104G
TF-18 HORNET	TF18
TF-18A HORNET	TF18A
TF-35 DRAKEN	TF35
TMK-4 SEA HARRIER	SHTM4
PC-7 PILATUS TURBO TRAINER	PC7
TS-2A TRACKER	TS2A
TU-22 BLINDER-D	TU22D
YAK-11	YAK11
YAK-11 MOOSE	MOO
YAK-18 MOOSE	Y18MOO
YAK-27U MAESTRO	YA27U
YAK-32 MANTIS	YAK32

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
WEATHER	
EC-135N STRATOLIFTER	EC135N
WC-130 HERCULES	WC130
WC-130B HERCULES	WC130B
WC-130E HERCULES	WC130E
WC-135	**WC135**
WC-135B STRATOLIFTER	WC135B
WC-130H HERCULES	WC130H
MISCELLANEOUS	
200C SUPER KING AIR	200C
200D SUPER KING AIR	200D
200E SUPER KING AIR	200E
200F SUPER KING AIR	200F
200 SUPER KING AIR MOD 1990C	200
200B SUPER KING AIR	200B
326 ZLIN	Z326
A-1 AMX	A1
A-122 UIRAPURU	A122
A-18 HORNET	A18
A-1D SKYRIDER	A1D
A-36 BONANZA	A36
A-36 HALCON	A36H
A200	A200
A200 BEECH SIERRA	A200BS
A-4J SKYHAWK	A4J
AB-209 HUEY COBRA	AB209
AB-212 ASW AGUSTA BELL	A212A
AB-406 COMBAT SCOUT	AB406
AC-130U **SPECTRE**	AC1301
AERO COMMANDER	ACMD
AIRFOX ALOUETTE III	AFX
AL-1 BEAVER	AL1
AL-60 AERMACCHI	AL60
AL-60B AERMACCHI	AL60B
ALIZM MOD	ALIZM
ALOUETTE II	ALSOA
ALOUETTE III	ALSOEI
AM-3C KUDU	AM3C
AN-14 CLOD	AN14
AN-26 CURL A	AN26A
AN-72S COALER C	AN72S
AN-74 COALER C	AN74C
200 H SUPER KING	200H
200 K SUPER KING	200K
200 M SUPER KING	200M
AN-74 COALER MADCAP	AN74MC
AN-74A COALER B	AN74AB
AN-74A COALER C	AN74AC
AN-74AT COALER B	AN74TB
AN-74AT COALER C	AN74TC
AN-74S COALER B	AN74SB
AT-33 SHOOTING STAR	AT33
AT-38B TALON	AT38B
AT-6G TEXAN	AT6G
AT-TC-3 TROJAN	ATTC3
AT-TC-3 TSE CHANG	ATTC3C
ATLANTIC NG	ATLNG
AURORA ARCTURUS	AUR
B111 BAC111	BAC111
B-100 KING AIR A100	B100
B-57 CANBERRA	B57
BADGER C MOD (TU-16)	BGRCMO
BAE-125 SEA HARRIER	BA125S
BAE-125/700	BA1257
BAE-146 QUIET TRADER	BAE146
BAE-146-QT	BA146Q
BAE-748 ANDOVER	BAE748
BANDEIRANTE MAR	BAND
BE-42 BERIEV ALBATROSS	BE42
BE-45 MENTOR	BE45
BE-58 BARON 58	BE58
BE-65 BEECH SEMINOLE	BE65
BE-80 BEECH SEMINOLE	BE80
BE-9 BEECH 1900	BE9
BE-99 AIRLINER	BE99
BELL SUPER TRANSPORT	BELL
BN2A PIL BN ISLANDER	BN2A
BN-2A-3	BN2A3
BN-2B DEFENDER	BN2B
BN-2B ISLANDER	BN2BI
BN-2B MAR DEFENDER	BN2BM
BN-2T AEW DEFENDER	BN2AEW
BN-2T ASTOR DEFEND	BN2T
BN-2T ASW MAR DEFENDER	BN2ASW
BN-2T DEFENDER 4000	BN4000
BN-2T ELINT DEFENDER	BN2TED
BN-2T INT SEC DEFENDER	BN2TIS
BN-2T ISLANDER AL.MK1	BN2TAL
BN-2T TURB ISLANDER	BN2TI
BN-3 TRISLANDER	BN3

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE	AIRCRAFT TYPE	CODE
BN2A PIL BN ISLANDER	BN2A	C-26A METRO III	C26A
BR-1140 BREGUET ATLANTIC	ATLA	C-29A BAE-125-800	C29A
BR-1150 ATLANTIC	BR1150	C3 HERCULES	C3
BR-1150 ATLANTIC NG	BRNG	C-337 SUPER SKYMASTER	C337
BUCCANEER S MK2	BUCMK2	C-337G SUPER SKYMASTER	C337G
BULLDOG AC	BULLAC	C-3605 SWISS FDRATE	C3605
BULLDOG T MK2	BULMK1	C-404 TITAN	C404
BV-234 CHINOOK	BV234	C-42 REGENTE	C42R
C-1	C1	C-46 COMMANDO 1	C461
C1K HERCULES	C1K	C-46 COMMANDO F/W	C46FW
C-1 SEAHURON	C1S	C-47 DAKOTA DC-3	C47DC3
C-101BB	C101BB	C-501 CITATION	C501
C-101BB HALCON	CHAL	C-54B SKYMASTER	C54B
C-101CC	C101CC	C-54D SKYMASTER	C54D
C-101DD	C101DD	C-550 CITATION	C550
C-101EB	C101EB	C-7 DASH-7	C7DASH
C-12 HURON	C12HUR	C-7 KFIR C7	C7KFIR
C-12A HURON	C12AHU	C-8 BUFFALO	C8
C-12C HURON	C12C	C-91 ANDOVER	C91
C-12F	C12F	C-95 BANDEIRANTE	C95
C-12J MODEL 1900C	C12J	C-95 BANDEIRANTE MAR	C95MAR
C-130H HERCULES JC130	C130JC	C-97 STRATOCRUISER	C97
C-130H HERCULES NC130	C130NC	C-99 AIRLINER	C99
C-130H HERCULES TC130	C130TC	C1	C1
C-130H HERCULES VC130	C130VC	C1K HERCULES	C1K
C-130H-MP	C130MP	C3 HERCULES	C3
C-131 COSMOPOLITAIN	C131CO	CA-25 WINJEEL	CA25
C-131G SAMARITAN	C131G	CAMBER	CAM
C-14 MIRAGE F1	C12J	CANADAIR 215 AMPHIBIAN	CAN215
C-160 ALIZE	ALIZE	CANBERRA B2	CANB2
C-160 ASTARTE	ASTART	CANBERRA E13	CANE13
C-160/NG LICORNE	C160NG	CANBERRA PR7	CANPR7
C-18 BOEING 707	C18	CANBERRA PR9	CANPR9
C-180 SKYWAGON	C180	CANBERRA T4	CANT4
C-20 SEADEVON	C20S	CANBERRA T17	CANT17
C-208 CARAVAN	C208	CANBERRA TT1B	CANT18
C-212 AVIOCAR B	C212AC	CAP-10 MUDRY	CAP10
C-212 CASA	C212C	CAP-10B CAP	CAP10B
C-212-300M CASA	C212M	CASH A	CASHA
C-212P CASA	C212P	CC-108	CC108
C-22 BOEING 727	C22	CC-108 CARIBOU	CC108C
C-23 SUNDOWNER	C23SUN	CC-109 COSMOPOLITAN	CC109
C-233 CASA	C233	CC-117 FALCON 20	CC117
C-233 CASA FLAMINGO	C233FL	CC-130	CC130
C-23A SUNDOWNER	C23ASU	CC-132	CC132
CA-25 WINJEEL	CA25	CC-132 DASH 7	CC132D
C-26 METRO	C26	CC-142 DASH 8	CC142

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
CC-144 CHALLENGER	CC144
CC-2	ANDCC2
CC-3 SEAHERON	CC3
CE-144A CHALLENGER	CE144A
CESSNA 414A	414A
CHALLENGER	CHAL
CHIPMUNK	CHIP
CJ-5 MAX	CJ5
CL-41 TUTOR	CL41
CL-41G TUTOR	CL41G
CL-600 CANADAIR 600	CL600C
CL-601 CANADAIR 601	CL601C
CM-175 ZEPHER	CM175
CN-235 AIRTECH	CN235
COASTGUARDIAN ANDOVER	CG
COCHISE BARON 55	COCH
COCK A ANTHEUS	ACOCKA
COCK ANTHEUS	ACOCK
COCK B ANTHEUS	ACOCKB
COMANCHE TWIN	COMAN
COMM1 COMMANDO	COMM1
COMM2A COMMANDO	COMM2A
COMM3 COMMANDO	COMM3
COMMANDER 500 AERO COMMANDER	COM500
COMMANDER 560 XINGU	COM560
COMMANDER 600 AERO COMMANDER	COM600
CP-107 ARGUS	CP107
CT-133 SHOOTING STAR	CT133
CT-134 MUSKETEER	CT134
CT-33 SHOOTING STAR	CT33
CT-4A AIRTRAINER	CT4A
CURL A	CURLA
CV-34 COSMOPOLITAN	CV34
DA-10 FALCON 10	DA10
DA-20 FALCON 20	DA20
DA-21 MYSTERE FALCON	DA21
DA-50 FALCON 50	DA50
DAKOTA	DAK
DASH-7	DSH
DC-130A HERCULES	DC130A
DC-130H HERCULES	DC130H
DC-7B SPEEDFREIGHTER	DC7B
DC-8 SARIGUE	DC8SAR
DC-9/50 MCDONNELL DC-9	DC9M
DC-9/50 MCDONNELL DC-9/50	DC950
DELFIN MAYA	DELFIN
DHC-4A CARIBOU	DHC4A
DHC-5D BUFFALO	DHC5D
DO-128 DORNIER	DO128
DO-128-6 TURBO-SKY	DO1286
DO-228 MARPATROL	DO228M
DO-228 MARPOLCON	DO2281
DO-228 PHOTOGEO	DO228P
DO-28 D-2T DORNIER	DO28DT
DO-328 DORNIER	DO328
DO128-2	D1282
DO280-2	D28O2
DOMINIE	DOM
DOMINIE MERCURIUS	DOMIN
DONIER	DOR
DONIER DO-28 A-1	DO28A1
DONIER DO-28 D-2	DO28D2
DONIER DO-28 OU	DO280U
DPN DAUPHIN	DPN
E-3A ANDOVER	ANDE3A
E-3D AEW MK1	E3DMK1
E-3D SENTRY	E3D
E-8 JOINT STAR	E8C
E-8A JOINT STAR	E8A
E-9A DASH 8	E9A
EC-130 HERCULES	EC130
EC-130C HERCULES COMPASS CALL	EC130C
EC-18 ARIA	EC18
EC-18B ARIA	EC18B
EC1	EC1
ECUREUIL	ECURE
EF-111A GD RAVEN	EF111G
EF-4 WILD WEASEL	EF4
EH-101	EH101
EH-101 MERLIN	MERLIN
EKA-3B	EKA3B
EMB-110C BANDEIRANTE	EM110C
EMB-111A BANDEIRANTE MAR	EM111A
EMB-121A XINGU I	EM121A
EMB-312 TUCANO	EMB312
EMB-326 XAVANTE	EMB326
EMB-326GB XAVANTE	E326GB

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
EMB-810 SENECA III	EMB810
EMB-810C SENECA	EM810C
EMB-810D SENECA III	EM810D
EMBRACER BANDEIRANTE	EMBRAC
EP-2J NEPTUNE	EP2J
EP3J	EP3J
ES-3A VIKING SIGINT	ES3A
ESQUILO ECUREUIL	ESQ
ETENDARD HUNTER	ETENDH
F-104CF STARFIGHTER	F104CF
F-105G THUDERCHIEF	F105G
F-106A DELTA DART	F106A
F-111B GD	F111B
F-111K GD	F111K
F-15F EAGLE	F15F
F-15S EAGLE	F15S
F-18 HORNET	F18
F-18A HORNET	F18A
F-18L	F18L
F-2 FAGOT	F2
F-27/300 FRIENDSHIP	F27300
F-27/400 FRIENDSHIP	F27400
F-27/500 FRIENDSHIP	F27500
F-27/600 FRIENDSHIP	F27600
F-27A FRIENDSHIP	F27A
F-33 BONANZA	F33
F-337 SUPER SKYMASTER	F337
F-337F SUPER SKYMASTER	F337F
F-33A BONANZA A	F33A
F-33C BONANZA C	F-33C
F4X20 PHANTOM 2000	F4X20
F-50 FOKKER	F50
F-7 FISHBED A	F7A
F-7 FISHBED C	F7C
F-7M AIRGUARD	F7M
F-86F SABRE	F86F
F-8F CRUSADER	F8F
FALCON 10MER	FAL10M
FALCON 100	FAL100
FALCON 200	FAL200
FALCON MYSTERE 200	FALMYS
FB-111A	FB111A
FB-111A GD AARDVARKEN	FB111G
FELLOWSHIP 1000	FS1000
FELLOWSHIP 3000	FS3000
FELLOWSHIP 4000	FS4000
FENCER F	FENCER
FH-227 FRIENDSHIP	FH227
FICR	FICR
FIREBAR B	FIREB
FISHBED JX	FISHJX
FISHPOT	FPT
FLANKER K	FLANKK
FLASHLIGHT	FLT
FLOATMASTER MISSION-MASTER	FLTMAS
FLOGGER A	FLOGA
FLOGGER D BAHADUR	FLOGD
FLOGGER J BAHADUR	FLOGJ
FLOGGER J2	FLOGJ2
FOXHOUND B	FOXB
FREEDOM FIGHTER	FREEFI
FREESTYLE	FREEST
FT-337 SUPER SKYMASTER	FT337
FTB-337 SUPER SKYMASTER	FTB337
FUJI KM 2	FUJI
FULCRUM BAAZ	FCMBAZ
FULCRUM D	FCMD
G222 ALENIA	F222
G222GE ALENIA	G222GE
G222RM ALENIA	G222RM
G222SAA ALENIA	G222SA
G222T ALENIA	G222T
G222VS ALENIA	G222VA
GABRIEL TRANSALL	GABR
GAJARAJ CANDID	GAJ
GALEB	GLB
GARDIAN 2 FALCON 200	GARD2
GAVIO LAMA	GAV
GENET WARRIOR	GEN
GOMOURIA	GOM
GR-7 HARRIER	GR7
GULFSTREAM I	GULI
GULFSTREAM II	GULII
GULFSTREAM III	GULIII
HARBIN H-5 BEAGLE	HARBH5
HARBIN Z-5 HOUND	HARBZ5
HARRIER II	HARII
HARRIER II PLUS	HARIIP
HARVARD TEXAN	HARV
HEBB 320 ECM-TRAINER	HEB320
HF-24 WINDSPIRIT	HF24
HFB-320 HANSAJET	HFB320
HJT-16 KIRAN 1	HJT161

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE	AIRCRAFT TYPE	CODE
HJT-16 KIRAN 2	HJT162	KA-6A INTRUDER	KA6A
HPT-32 DEEPAK H	HPT32	KC-130Q	KC130Q
HS-1182 HAWK	HS1182	KC-137 STRATOLINER	KC137
HS-125 DOMINIE	HS125	KC-8 SARIGUE	KC8
HS-125-400B DOMINIE	HS1254	KING AIR A100	A100
HS-125-700B DOMINIE	HS1257	KING BIRD MK2 FOKKER 50	KBMK2
HUGES 269 OSAGE	HUG269	KUDU BOSBOK	KUDU
HUGES 300 OSAGE	HUG300	L-100-30 HERCULES	L10030
HUGES 369 CAYUSE	HUG369	L-100-30HS HERCULES	L100HS
HUGES 500 CAYUSE	HUG500	L-188A ELECTRA	L188A
I-1123 WESTWIND	I1123	L-19 BIRD DOG	L19
I-1124 SEASCAN	I1124	L-20 MORAVA	L20
I-22 IRYD	I22	L-21 SUPER CUB	L21
IA-35 HUANQUERO	IA35	L-29CZ MAYA	L29CZ
IA-50 GUARANI	IA50	L-410 TURBOJET	L410
IA-58A PUCARA	IA58A	L-70 VINKA	L70VIN
IAI-1124 SEASCAN	IA1124	LC-130H HERCULES	LC130H
IAI-201 ARAVA	IAI201	LEARJET	LAR
IAR-317 ALOUETTE III	IAR317	LIGHTNING T5	LGTT5
IAR-823	IAR823	LIM-1 FAGOT	LIM1
IAR-99 SOIM	IAR99	LIM-6BIS FRESCO E	LIM6
IL-14	IL14	LONGRANGER JETRANGER	LONGRG
IL-14P CRATE	IL14P	LR-1 MITSUBISHI MU-2	LR1
IL-62M CLASSIC	IL62M	M262	M262
IL-62MK CLASSIC	IL62MK	MADCAP COALER	MADCAP
IL-78 ADNAN 1	IL781	MAIDEN	MDN
IL-78 MIDAS	IL78	MAINSTAY	MAIN
IL-A50 MAINSTAY	ILA50	MANGROVE	MNG
IMPALA XAVANTE	IMPX	MARITIME ENFORCER FRIENDSHIP	MAR
IPD-6201	IPD6201	MARITIME ENFORCE MK FOKKER 50	MARMK
ISKRA	ISK	MARITIME FOKKER 50	MARMK2
J-1E JASTREB	JIEJ	MARUT WINDSPIRIT	MARWND
J-2 SHENYANG FAGOT	J2	MASCOT BEAGLE	MASCOT
J-4 SHENYANG FRESCO	J4	MASHSHAQ SUPPORTER	MASH
J-5 SHENYANG FRESCO	J5	MATADOR HARRIER	MATAD
J-6 FARMER A	J6	MAX	MAX
J-6 SHENYANG FARMER A	J6SHEN	MB-312 TUCANO	MB312
J-7 FISHBED A	J7	MB-326B XAVANTE	MB326B
JAGUAR GR1/1A	JAGGR1	MB-326GB XAVANTE	MB326G
JAGUAR SPE CAT	JAGSC	MB-326H XAVANTE	MB326H
JAS-39 GRIPEN	JAS39	MB-326K	MB326K
JASTREB	JSB	MB-339A VELTRO II	MB339V
JC-130 HERCULES	JC130	MD-530F CAYUSE	MD530F
JC-130H HERCULES	JC130H	MB-326KD XAVANTE	MD326D
JETSTREAM 31	JET31	MFI-15 SAFARI	MFI15
JOINT STAR	JSTARS		
K-2 VICTOR	K2		

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE	AIRCRAFT TYPE	CODE
MFI-17 SUPPORTER	MFI17	NC-130H HERCULES	NC130H
MIDAS	MDS	NEACP TACOMA/NEACP	NEACP
MIDGET FAGOT	MIDFAG	NEIVA REGENTE	NEIVAR
MIG-15UTI FAGOT	M15UTI	NEIVA UNIVERSAL	NEIVAU
MIG-23S FLOGGER A	MIG23S	NIMROD AEW MK2	NIMA3
MILLIROLE SUPER SKYMASTER	MILL	NIMROD MK1	NIMR1
MILTRAINER VINKA	MILTR	NIMROD MR MK1	NIMMR1
MIRAGE 2000E	M2000E	NIMROD MR MK2	NIMMR2
MIRAGE 5-D	MIR5D	NKC-135 STRATOTANKER	NKC135
MIRAGE 5-E	MIR5E	NORD 626 FREGATE	NRD626
MIRAGE 5-R	MIR5R	O-14 AVIA	O14
MIRAGE 50	M50	O-29 MAYA	O29
MIRAGE F1CR	MF1CR	ORAO 1	ORAO1
MIRAGE F1C200	F1C200	OTHER NATO	OTHER
MIRAGE III	MIR3	OURAGAN	OUR
MIRAGE III-A	MIR3A	P-149D PIAGGIO	P149D
MIRAGE III-B	M3B	P-95 BANDEIRANTE	P95BAN
MIRAGE III BE	M3BE	P-95 BANDEIRANTE MAR	P95MAR
MIRAGE III R	MIIIR	P/A-18 SUPER CUB	PA18
MIRAGE III RD	M3RD	P3CJ	P3CJ
MIRAGE III R RD	M3R	PA-200 TORNADO ADV	PA200A
MIRAGE IV	MIV	PA-200 TORNADO ECR	PA200E
MIRAGE V F	M5F	PA-200 TORNADO IDS	PA200I
MISSIONMASTER	MISSM	PA-22 PIPER CUB	PA22
MONGOL FISHBED	MONGOL	PA-23 AZTEC	PA23
MONGOOSE MANGUSTA	MONGOS	PA-24 COMANCHE	PA24
MOSS	MOSS	PA-28 CHEROKEE	PA28
MOUJIK FITTER A	MOUJIK	PA-30 TWIN COMANCHE	PA30
MS-1 ALPHA JET	MS1	PA-31-350 NAVAJO	PA3135
MS-2 ALPHA JET	MS2	PA-34 220T	PA3422
MS-760 PARIS	MS760	PA-34 SENECA	PA34
MU-2J MARQUISE	MU2JMQ	PA-34 SENECA II	PA34II
MUSHAK SUPPORTER	MUSH	PA-38 TOMAHAWK	PA38
MYSTERE 10	MIST10	PACKET FLYING BOXCAR	PACK
MYSTERE 20	MIST20	PAN-200 TORNADO ADV	PN200A
MYSTERE 50	MIST50	PAN-200 TORNADO ECR	PN200E
MYSTERE F FALCON	MYSTF	PAN-200 TORNADO IDS	PN200I
MYSTERE S SUPER MYSTERE	MYSTS	PC-6 CHIRICAHUA	PC6CHR
N-22 MISSIONMASTER	N22MIS	PC-6B PEACEMAKER	PC6B
N-22B MISSIONMASTER	N22BMI	PCHELKA CLOD	PCHEL
N-24 SEARCHMASTER	N24	PD-808 PIAGGIO	PD808P
N-2501F NORATLAS	N2501F	PHANTOM GF1	GF1
N-262 FREGATE	N262	PILLAN AUCAN	PILL
N-621 UNIVERSAL	N621	PIPER SENECA	PIPER
NAS-332 SUPER PUMA	NAS332	PT-6 CHUJIAO	PT6
NC-130 HERCULES	NC130	PZL-104 WILGA	PZL104
		Q-5 FANTAN	Q5

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE	AIRCRAFT TYPE	CODE
QU-22 BONANZA	QU22	SEMINOLE BEECH	SEMIN
QUEEN AIR 80 BEECH SEMINOLE	QU80	SENTIEL ORION	SEN
RALLYE-235 GUERRIER	RAL235	SENTINEL MK2 FOKKER 50	SENMK2
RANGER DASH 7	RANGER	SF-260C WARRIOR	SF260C
RC-12D GUARDRAIL	RC12DG	SF-260M WARRIOR	SF260M
RC-12D SUPER KING AIR 200D	RC12DS	SF-260MZ WARRIOR	SF260Z
RC-12F SUPER KING AIR 200F	RC12F	SF-260WE	SF260E
RC-12H GUARDRAIL	RC12HG	SF-600TP CANGURO	SF600
RC-12H SUPER KING AIR 200H	RC12HS	SFA HARRIER FRS MK1	SHARF
RC-12K GUARDRAIL	RC12KG	SHERPA SUNDOWNER	SHERPA
RC-12K SUPER KING AIR 200K	RC12KS	SHOOTING STAR	SHTSTR
RC-12M SUPER KING AIR 200M	RC12M	SHOOTING STAR SILVER STAR	SLVSTR
RC-135S COBRA BALL	RCOBRA	SHORTS 330 SHERPA	SHT330
RF-111A	RF111A	SK-50 SAFIR	SK50
RF-35XD DRAKEN	RF35XD	SK-55 CHIKASAW	SK55
RF-5 TIGER	RF5T	SK-56 MOJAVE	SK56
RQ4-1 FLYING BOXCAR	RQ41	SK-58 CHOCTAW	SK58
RQ4-2 FLYING BOXCAR	RQ42	SKY SERVANT DONIER 28	SKY28
RT-26 XAVANTE	RT26	SKYMASTER S	SKYS
RT-33A SHOOTING STAR	RT33A	SN-601 CORVETTE	SN601
S-210 CARAVELLE	S210	SOLITAIRE MARQUISE	SOLMRQ
S-235 GUERRIER	S235	SOLOY BELL 47 SIOUX	SOL47
S-235E GUERRIER	S235E	SPARK ISKRA	SPK
S-2T TRACKER	S2T	SPARKA MAYA	SPKA
S-312 TUCANO	S312	SPEEDFREIGHTER	SPDFRT
S-51 CHIKASAW	S51	SRA-1 GULFSTREAM III	SRA1
S-70B SEAHAWK	S70BS	SRA-4 GULFSTREAM IV	SRA4
S-70C(M) SEAHAWK	S70C	ST-1700 EVADER	ST1700
S-80E SEADRAGON	S80E	ST1700MD EVADER	ST17MD
S-80M SEADRAGON	S80M	STEALTHFIGHT	STLTH
S-880 RALLYE	S880	STRATOFORTRESS	STFORT
S-890 RALLYE	S890	SU-15U FLAGON G	SU15U
SA 2-37A SCHWIEZER	SA2	SU-17M FITTER D	SU17M
SA-3 BULLDOG	SA3BUL	SU-17M1 FITTER H	SU17M1
SA-37 VIGGEN JA	SA37	SU-17M2 FITTER H	SU17M2
SAAB 32 LANSEN	SAAB32	SU-17M3 FITTER H	SU17M3
SAAB 35 DRAKEN	SAAB35	SU-17M4 FITTER K	SU17M4
SAAB-37 VIGGEN	SAAB37	SU-17U FITTER E	SU17U
SAAB-91 SSAFIR	SAAB91	SU-17UM FITTER G	SU17UM
SC-3 BULLDOG	SC3	SU-20M	SU20M
SE-3130 ALOUETTE	SE3130	SU-22 FITTER G	SU22G
SEABAT CHOCTAW	SEABAT	SU22M4 FITTER K	SU22M4
SEAGULL GALEB G4	SEAGUL	SU-24MK FENCER D	SU24MK
SEAKING ASSAULT	SKA	SU-24MP FENCER F	SU24MP
SEAKING JEZEBEL	SKJ	SU-24MR FENCER	SU24MR
SEAKING AEW	SKW	SU-25BM FROGFOOT B	SU25BM

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
SU-25K FROGFOOT A	SU25K
SU-25T FROGFOOT B	SU25T
SU25UB FROGFOOT B	SU25UB
SU-25UTG FROGFOOT B	SU25UG
SU-27K FLANKER K	SU27K
SU-27UB FLANKER C	SU27UB
SU-28 FROGFOOT B	SU28
SU-7BMK FITTER A	SU7BMK
SU-7UM FITTER A	SU7UM
SU-7UMK FITTER A	SU7UMK
SU-22M2 FITTER H	SU22H2
SU-22M2 FITTER J	SU22J2
SU-25UBK FROGFOOT B	SU25UK
SU-25UT FROGFOOT B	SU25UT
SUMMIT SENTRY SUPER SKYMASTER	SUMSEN
SUPER GALEB G4	SGAL4
SW-3 MERLIN III	SW3
SW-3 MERLIN IV	SW3IV
SWISS FEDERATE	SWSFED
T-1 BULLDOG	T1B
T-1 MITSUBISHI	TIMIT
T-134 MUSKETEER	T134
T-17 SUPPORTER	T17
T-1A JAYHAWK	T1AJAY
T-1/A1 HAWK	T11A
T-23 UIRAPURU	T23
T-25 UNIVERSAL	T25
T-3 FUJI	T3
T-35C PILLAN	T35C
T-36 HALCON C-101BB	T36
T-4 KAWASAKI	T4KAWA
T-47 CITATION	T47
T-5 FUJI KM2	T5
T-66 HUNTER	T66
T-67M FIREFLY	T67M
T-6G TEXAN	T6G
T-9 CARIBOU	T9
T1/1A HAWK	T11A
TC-130 HERCULES	TC130
TC-2 TSE CHANG	TC3
TCHAIKA MAIL	TCHAI
TF-16N FIGHTING FALCON	TF16N
TF-35XD DRAKEN	TF35XD
THUNDERBOLT II	THBOLT
TORNADO	TOR
TORNADO F1 MK2	TORF2
TORNADO F3	TORF3
TORNADO GR MK1	**TORG1**
TORNADO PA200	MRC
TOUCAN TUCANO	TOUCAN
TP-88 METRO	TP88
TP-88 METRO III	TP883
TP-89 CASA	TP89
TR-1 DRAGONLADY	TR1DRA
TR-1 TRIGULL	TR1TRI
TR-1A TRIGULL	TR1ATR
TRANSALL ALIZE	TRAN
TRIDENT	TRID
TRISTAR 500	TRI500
TRISTAR K1	TRIK1
TROOPER SIOUX	TROOP
TS-8 BIES	TS8
TU-142 BEAR	TU142
TU-142K BEAR H	TU142H
TU-154M CARELESS	TU154M
TU-154S CARELESS	TU154S
TU-16K-10 BADGER C	TU1610
TU-16K-10 BADGER C MOD	BGCMOD
TU-16KORVET BADGER A	KORVET
TU-16KS-1	TU16KS
TU-16N BADGER A	TU16N
TU-16PPH BADGER H	TU16PH
TU-16PPJ BADGER J	TU16PJ
TU-16RD BADGER D	TU16RD
TU-16RF BADGER F	TU16RF
TU-16RK BADGER K	TU16RK
TU-16T BADGER A	TU16T
TU-204 TUPOLEV	TU204
TU-204/100 TUPOLEV	TU2041
TU-204/200 TUPOLEV	TU2042
TU-22E BLINDER E	BLNE
TU-22U BLINDER D	BLND
TURBOBEAVER	TURBVR
TURBOPORTER PEACEMAKER	TURPOR
TWIN OTTER CANADIAN	TWINOT
TWIN SQUIRREL ECUREUIL 2	TWINSQ
TWIN STAR	TWINST
TZUGIT MAGISTER	TZUG
U-10 COURIER	U10
U-11 AZTEC	U11
U-27A CARAVAN	U27A

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
U-3 CESSNA	U3
U-36 LEARJET	U36
U-42 REGENTE	U42
U-6 BEAVER	U6
U-7 SUPER CUB	U7SC
U-8 TWIN BONANZA	U8TB
U-8D TWIN BONANZA	U8D
U-9 XINGU	U9X
U-9 XINGU I	U9XI
U-93 DOMINIE	U93
UC-12B SUPER KING AIR 200B	UC12B2
UC-12M SUPER KING AIR 200F	UC12F
UC-12F SUPER KING AIR 200M	UC12M
UTVA	UTV
UV-20A CHIRICAHUA	UV20A
V-22 OSPREY	V22
VARJA MIRAGE 2000	VAR
VC-10 VISCOUNT	VC10
VC-25 BOEING 747	VC25
VC-7 VISCOUNT	VC7
VC-97 BRASILIA	VC97
VC9C MCDONNELL DC-9	VC9C
VH-4 JETRANGER	VH4
VICTOR K2	VICTK2
VOYAGEUR LABRADOR	VOY
VU-9 EMBRACER	VU9
WESSEX CHOCTAW	WSX
WHIRLWIND CHIKASAW	WW
WIND SPIRIT	WSPRT
XIAN F7 FISHBED C	XIANF7
Y-11 MOOSE	Y11M
Y7-100 COKE	Y7100
Y7H-500 CURL	Y7H500
YAK-28 FIREBAR A	YAKFBA
YAK-28P BREWER E	28PBRE
YAK-28R BREWER D	28RBRD
YAK-28U BREWER D	28UBRD
YAK-28U BREWER E	28UBRE
YAK-41 FREESTYLE	YAK41
YAK-42D CLOBBER	YAK42D
YAK-42E-LL CLOBBER	YAK42E
YAK-42M CLOBBER	YAK42M
YF11	YF11
YS-11 NAMC	YS11
YUN-12 YUNSHUJI-12	YUN12
Z-236 ZLIN	2326
ZLN AEROSTAT	ZLNAER
ZLN AIRTOURER	ZLNAIR
ZLN ATLANTIC I	ZLNATL
ZLN BALLON LASS	ZLNBAL
ZLN BARON	ZLNBAR
ZLN CHIEFTAIN	ZLNCHI
ZLN CONCORDE	ZLNCON
ZLN COOKPOT	ZLNCOO
ZLN DASH 5	ZLNDAS
ZLN DOLPHIN (SH)	ZLNDOL
ZLN HARKE A	ZLNHAR
ZLN HIP D	ZLNHPD
ZLN HIP F	ZLNHPF
ZLN HIP H EW	ZLNHPH
ZLN HOOK B	ZLNHKB
ZLN HOOK C	ZLNHKC
ZLN HOUND C	ZLNHDC
ZLN IDF	ZLNIDF
ZLN QUEEN AIR 65	ZLNQUE
ZLN SOKOL	ZLNSOK
SMALL AIRCRAFT	
AZTEC APACHE PIPER	AZTEC
A-1D SKYRAIDER	A1D
AERO SPACELINES MINI GUPPY	AP3M
AERO SPACELINES PREGNANT GUPPY	AP1P
AERO SPACELINES SUPER GUPPY	AP2S
AERO SPACELINES SUPER TUBINE GUPPY	AP4S
AEROSPATIALE CORVETTE SN600	S600
AEROSPATIALE RALLYE COMMODORE SERIES MS892	S892
AEROSPATIALE RALLYE MINERVA SERIES MS894	S894
AEROSPATIALE TABAGO	TB10
AEROSPATIALE TAMPICO	TB9
AEROSPATIALE TRINIDAD	TB20
AEROSPATIALE TRINIDAD TC	TB21

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
AEROSPATIALE TWIN STAR	HR55
ALON AIRCOUPE A2	FO2
AU-24A STALLION	AU24A
AU-24 STALLION	AU24
AVRO ANSON/FEDERAL	AV52
AVRO CF-100	CF00
AVRO LANCASTER	LANC
B-720	B720
BAE ADVANCED TURBO PROP (ATP)	BATP
BAE JETSTREAM 31	BA14
BAE SUPER VC10	BA15
BE-58 BARON 58	BE58
BE-65 BEECH SEMINOLE	BE65
BE-80 BEECH SEMINOLE	BE80
BE-99 AIRLINER	BE99
BEAGLE B.121 PUP SERIES	BT10
BEAGLE B.206 BEAGLE SERIES MODEL 206S	BT6S
BEECH 1900	BE02
BEECH 1990 AIRLINER 1990C, 1900 EXECUTIVE	BE9
BEECH BONANZA/ DEBONAIR 33	BE33
BEECH BONANZA 35 (V-TAIL)	BE35
BEECH BONANA 36	BE36
BEECH DUCHESS 76	BE76
BEECH DUKE 60	BE60
BEECH F90	BE9F
BEECH JET 400	BE40
BEECH KING AIR 200	B200
BEECH KING AIR 90	E90
BEECH KING AIR C90, B90	BE90
BEECH QUEEN AIR 88	BE88
BEECH SIERRA 24	BE24
BEECH SKIPPER 77	BE77
BEECH SPORT 19	BE19
BEECH STAGGER WING 17	BE17
BEECH SUNDOWNER 23/ MUSKETEER 23	BE23
BEECH SUPER H18	BE8S
BEECH SUPER KING AIR 300	BE300
BEECH TRAVELAIR 95	BE95
BEECH TWIN BEECH	SNB
BEECH TWIN BONANZA 50	BE50
BELLANCA AERONCA CHAMPION	AR58
BELLANCA AERONCA CHIEF/SUPER CHIEF	AR11
BELLANCA AERONCA SEDAN	AR15
BELLANCA CHAMPION	CH5
BELLANCA CHAMPION CHALLENGER	CH8
BELLANCA CHAMPION CITABRIA	CH10
BELLANCA CHAMPION CITABRIA 7ECA	CH9
BELLANCA CHAMPION TRAVELER 7EC	CH7
BELLANCA CHAMPION LANCER 402	CH40
BELLANCA CRUISAIR CRUISMASTER 14-19	BL14
BELLANCA DECATHALON	BL30
BELLANCA MODEL 17-30A, SUPER VIKING 300A	BL26
BELLANCA MODEL 8GCBC SCOUT	BL28
BELLANCA TURBO VIKING	BL31
BELL BIGLIFTER	BH14
BELL MODEL 222	BH22
BELL SUPER TRANSPORT 214ST	BHST
BN-3 TRISLANDER	BN3
BOEING STEARMAN	B75
BOEING VERTOL MODEL 105	B105
BRANTLEY MODEL 305	HB43
BRANTLEY MODEL B-2/B-2B	HB42
BRISTOL BRITANNIA 310	BR31
BRISTOL FREIGHTER	BRFT
BRITTEN NORMAN BN2-A/B ISLANDER	BN2
BUSHMASTER 2000	BU20
C-121	C121
C-124	C124
C-133	C133
C-133A	C133A
C-180 SKYWAGON	C180
C-404 TITAN	C404
C-97 STRATOCRUISER	C97

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
CAMIR MODEL 480, TWIN NAVION/CTN-A, THRU D	CM48
CANADAIR COSMOPOLITAN	CL28
CANADAIR NORTH STAR	NSTR
CANADAIR STARFIGHTER	CF04
CESSNA 120	C120
CESSNA 150	C150
CESSNA 152	C152
CESSNA 170	C170
CESSNA 190	C190
CESSNA 195	C195
CESSNA 335	C335
CESSNA 340	C340
CESSNA 401	C401
CESSNA 402	C402
CESSNA 411	C411
CESSNA AGWAGON/ AGTRUCK/AGHUSKEY 188	C188
CESSNA CARAVAN I 208A	C208
CESSNA CARDINAL 177	C177
CESSNA CENTURION/II 210	C210
CESSNA CHANCELLOR 414	C414
CESSNA CITATION I	C500
CESSNA CITATION I/SP	C501
CESSNA CITATION III	C553
CESSNA CONQUEST/ CONQUEST II 441	C441
CESSNA CORSAIR/ CONQUEST I 425	C425
CESSNA CRANE/BOBCAT	CT50
CESSNA CRUSADER 303	C303
CESSNA GOLDEN EAGLE 421	C421
CESSNA III	C650
CESSNA SKYLINE 182/RG, TURBO SKYLINE/RG	C182
CESSNA SKYLARK 175	C175
CESSNA SKYMASTER 336	C336
CESSNA SKYNIGHT 320	C320
CESSNA STATIONAIR 6/TURBO STATIONAIR 6	C206
CESSNA SUPER SKYWAGON/ SUPER SKYLINE	C205
CESSNA V	C560
CHRISTEN MODEL A-1 HUSKEY	CA1
COMANCHE TWIN	COMAN
DASSAULT MERCURE	DA01
DEHAVILLAND COMET 2	DH62
DEHAVILLAND COMET 4	DH64
DEHAVILLAND DOVE (DEVON)M DH-104	DH10
DEHAVILLAND DRAGON RAPTIDE	DH89
DEHAVILLAND FOX MOTH	DH83
DEHAVILLAND GYPSY MOTH	DH60
DEHAVILLAND HORNET MOTH	DH87
DEHAVILLAND MOSQUITO	DH98
DEHAVILLAND PUSS MOTH	DH80
DEHAVILLAND TIGER MOTH	DH82
DEHAVILLAND TURBO BEAVER DHC-2T	DH2T
E-1 TRACER	E1
F-101G VOODOO	F101G
FAIRCHILD CORNELL	FA62
FAIRCHILD HELIPORTER	FA25
FAIRCHILD L4/SL4	HH4
FAIRCHILD METRO	FA3
FAIRCHILD MODEL 71	FA71
FAIRCHILD THUNDERCHIEF	F105
FAIRCHILD THUNDERSTREAK	F84
GATES LEARJET 23	GAT23
GATES LEARJET 28	GAT28
GATES LEARJET 29	GAT29
GATES LEARJET 36	GAT36
GATES LEARJET 54	GAT54
GENERAL DYNAMICS CORONADO 990	CV99
GENERAL DYNAMICS PRIVATEER	P4
GENERAL DYNAMICS CANSO/CATALINA	CV14
GENERAL DYNAMICS CONVAIR 240	CV24
GENERAL DYNAMICS CONVAIR 600	CV60
GENERAL DYNAMICS CONVAIR 640	CV64
GENERAL DYNAMICS FLYING CLASSROOM	T29

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
GENERAL DYNAMICS VALIANT 34	CV13
GOVERNMENT AIRCRAFT N24A NOMAD	N24A
GRUMMAN CHEETAH	G28
GRUMMAN COUGAR AA7	GA7
GRUMMAN COUGAR G-93	F9
GRUMMAN GOOSE/SUPER GOOSE	G21
GRUMMAN MALLARD	G73
GRUMMAN MODEL G-164/ TURBO AG-CAT	G164
GRUMMAN TRAVELER	AA5
GRUMMAN WIDGEON/ SUPER WIDGEON	G44
GRUMMAN YANKEE AA-1B/C	AA1
GULFSTREAM COMMANDER JETPROP 840/900/980	GA84
GULFSTREAM IV	G4
HANDLEY PAGE JETSTREAM HP-137	HP13
HAWKER SIDDLELEY AVRO VULCAN 698	VLCN
HAWKER SIDDLELEY MODEL HS/KDH/BH125 (BAE)	HS25
HELIO COURIER	HE1
HELIO MODEL 500	HE4
HOWARD MODEL 500 (WARO)	HW5
ISREAL AIRCRAFT 1124 WESTWIND	WW24
KC-97 STRATOFIGHTER	KC97
LAKE LA-250 RENEGADE/ SEAFURY	LA25
LOCKHEED CONSTELLATION 649	L649
LOCKHEED CONSTELLATION 749	L749
LOCKHEED HUDSON	L14
LOCKHEED LODESTAR	L18
LOCKHEED STARLINER	L164
MARTIN MODEL 202	M202
MARTIN MODEL 404	M404
MCDONNELL-DOUGLAS DESTROYER	B66
MCDONNELL-DOUGLAS SKYNIGHT	F10
MCDONNELL-DOUGLAS MD-90	MD90
MESSERSCHMITT BO 209 MONSUN	M329
MEYERS 200	MY20
MITSUBISHI DIAMOND I/MU-300	MU3
MOONEY 201/M20J	MO2J
MOONEY MARK 10 CADET	MO10
MOONEY MARK 20	MO20
MOONEY MARK 21/	MO21
MOONEY RANGER 22	MO22
MOONEY TURBO MOONEY 231/M20K	MO2K
NAVION RANGEMASTER	NA1
NAVION TWIN NAVION	NA16
NOORDYUN NORSEMAN MK IV	NY4
NOORDYUN NORSEMAN MK V	NY5
NORD MARTINET NC701/02	MART
ON MARK MARKSMAN	A26
ON MARK MARKSMAN	B26
PA-22 PIPER CUB	PA22
PA-24 COMANCHE	PA24
PA-30 TWIN COMANCHE	PA30
PA-38 TOMAHAWK	PA38
PIAGGIO P.136 ROYAL GULL	P136
PIPER AERO STAR 600-700	PA60
PIPER ARCHER	PA29
PIPER CHEROKEE ARROW IV	PARO
PIPER CHEYENNE 400	PA41
PIPER CHEYENNE I/II	PAYE
PIPER CHEYENNE III/IV	PA42
PIPER CLIPPER	PA16
PIPER CRUISER	PA5
PIPER CUB SPECIAL	PA11
PIPER CUB TRAINER	PA2
PIPER FAMILY CRUISER	PA14
PIPER MALIBU	PA46
PIPER PACER	PA20
PIPER PAWNEE	PA25
PIPER PAWNEE BRAVE	PA36
PIPER SEMINOLE	PA44

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
PIPER SUPER CRUISER	PA12
PIPER T-1040	PAT1
PIPER VAGABOND	PA17
PIPER VAGABOND TRAINER	PA15
RILEY EAGLE 21	RY21
RILEY M65/ROCKET	RY65
RILEY TURBO-EXECUTIVE	RY40
ROBINSON R22	RH22
ROCKWELL AERO COMMANDER 112	AC12
ROCKWELL AIR CRUISER	AC72
ROCKWELL COMMANDER 112A	AC2A
ROCKWELL COMMANDER 112TC	AC2T
ROCKWELL COMMANDER 114	AC14
ROCKWELL COMMANDER 200	AC20
ROCKWELL COMMANDER 500	AC50
ROCKWELL COMMANDER 520	AC52
ROCKWELL COMMANDER JET PROP 800/900/1000	AC90
ROCKWELL DARTER 100/150	AC10
ROCKWELL GRAND COMMANDER 680	AC60
ROCKWELL JET COMMANDER	AC21
ROCKWELL JET PROP COMMANDER	AC69
ROCKWELL LARK	LARK
ROCKWELL MITCHELL	B25
ROCKWELL NAVION	N145
ROCKWELL TURBO COMMANDER	AC6T
S-51 SIKORSKY	SK51
S-52 SIKORSKY	SK52
S-56 SIKORSKY MOJAVE	SK56
S-59 SIKORSKY	SK59
S-880 RALLYE	S880
SCOTTISH AVIATION PIONEER	SCP
SCOTTISH AVIATION TWIN PIONEER	SCTP
SHORT	SHD3
SHORT MODEL 360	SHD6
SILVAIR OBSERVER/ LUSCOMBE	SLB
STINSON RELIANT (VULTEE)	ST77
STINSON VOYAGER/ STATION WAGON (105/108)	ST75
TAYLORCRAFT F-15A TOURIST	TC15
TAYLORCRAFT F-19 SPORTSMAN 100	TC19
TAYLORCRAFT F-20A TOPPER	TC20
TED SMITH AERO STAR	TS60
U-10 COURIER	U10
U-3 CESSNA	U3
VARGA KACHINA 2150A	VG21
VC-11A GULFSTREAM-II	VC11AG
VC-4A GULFSTREAM	VC4A
YS-11 NAMC	YS11

SUPPORT

DC-130 HERCULES	DC130
E-1 TRACER	E1S
EB-57 CANBERRA	EB57B
EC-121 CONSTELLATION	EC121
GR MKI TORNADO IDS	TORG1
IAR-316B ALOUETTA III	IA316B
KA-15 HEN	KA15
NBO-105	NBO105
P-55 (PARTEAVIA)	P55A
RB-57 CANBERRA	RB57
RC-121 CONSTELLATION	RC121
SA-315 LAMB	SA315
SA-319 ALOUETTE	SA319
SA-350 ASTAR	SA350
SA-361 DAUPHIN	SA361
SF-260 WARRIOR	SF260W
TS-11 ISKRA	TS11
U-5 AERO COMMANDER	U5
U-8F SEMINOLE	U8F
U-21F UTE	U21F
U-25 HURON	U25
UV-18A CANADIAN	UV18AC
VC-137	VC137
YAK-12 CREEK	YAK12

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
ROTARY WING	
ATTACK	
500-MD HUGHES SCOUT	H500MD
A-129-19 MANGUSTA	A12919
AB-212 MARTE AGUSTA BELL	AB212M
AB-212C SKUA AGUSTA BELL	AB212C
AH MK-5 LYNX	AHMK5
AH MK-7 LYNX	AHMK7
AH-1 (BASIC) HUEY COBRAA	AH1
AH-1E HUEY COBRA	AH1E
AH-1F HUEY COBRA	AH1F
AH-1G HUEY COBRA	AH1G
AH-1J HUEY COBRA/SEA COBRA	AH1J
AH-1Q HUEY COBRA	AH1Q
AH-1R HUEY COBRA	AH1R
AH-1S HUEY COBRA	AH1S
AH-1T HUEY COBRA	AH1T
AH-1T SEA COBRA	AH1TSC
AH-1W HUEY COBRA	AH1W
AH-1W SEA COBRA	AH1WSC
AH-64 APACHE	AH64
AH-64A APACHE	AH64A
AH-64C-APACHE	AH64C
AH-70 BLACKHAWK	AH70
AH-MK-1 LYNX	AHMK1
AH-MK-9 BATTLEFIELD LYNX	AHMK9
AS-565AA PANTHER	AS565A
AS-565CA PANTHER	AS565C
AUH-76 AGUSTA-BELL	AUH76
BO-105P	BOP
BO-105PAH1	BO105P
BO-115	BO115
COMMANDO MK-3	CMMK3
JAH-1T	JAH1T
HH-60J JAYHAWK	HH60JA
KA-27 HELIX B	HLXB
KA-XX HOKUM A	HKMA
AH-MK9 BATTLEFIELD LYNX	AHMK9
MI-17	MI17
MI-17 HIP H	HIPH
MI-24	MI24
MI-24 HIND	HIN
MI-24 HIND A	HINA
MI-24 HIND B	HINB
MI-24 HIND C	HINC
MI-24 HIND D	HIND
MI-24 HIND E	HINE
MI-24 P HIND F	HINF
MI-28	MI28
MI-28 HAVOC	HVC
MI-28 HAVOC A	HVCA
MI-8 HIP E	HIPE
MI-8 HIP F	HIPF
MK-2 COMMAND	MK2
MK-ADV SEA KING	MKADV
S-70 A-1L DESERT HAWK	S70A1L
SA-341F GAZELLE	SA341F
SA-341G GAZELLE	SA341G
SA-341H GAZELLE	SA341H
SA-342 GAZELLE	SA342
SA-342J GAZELLE	SA342J
SA-342K GAZELLE	SA342K
SA-342L GAZELLE	SA342L
SA-342M GAZELLE	SA342M
SA-365F DAUPHIN II	SA365F
SA-365M PANTHER	SA365M
SH-14 LYNX	SH14
SH-14B LYNX	SH14B
SH-14C LYNX	SH14C
SH-14D LYNX	SH14D
SH-2 SEASPRITE	SH2
UH-1C IROQUOIS	UH1C
UH-1M IROQUOIS	UH1M
WG-13 LYNX MK2FR	WG13
WG-30 WESTLAND (CIVIL)	WG30
WG-34 WESTLAND LYNX	WG34
FIGHTER	
MK II GNAT	GNAT
MK-53 LIGHTNING	LIGHT
ANTI-SUBMARINE	
A-109 AGUSTA	A109A
AB-212 OTOMAT MK-2	AB212O

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
AB-212A AGUSTA BELL	AB212A
CH-124 SEA KING	CH124
CH-3E SEA KING	CH3E
EH-60 QUICK FOX	EH60QF
EH-101	EH101
HAS MK1 SEA KING	SKHSM1
HAS MK-3 LYNX	HASMK3
HAS MK-4 LYNX	HASMK4
HAS MK-6 LYNX	HASMK6
HAS MK-8 LYNX	HASMK8
HAS-1 WASP	HAS1
HAS-2 LYNX	HAS2
HAS-2/5 SEA KING	HAS25
HAS-3 WESSEX	HAS3
HAS-31B WESSEX	HAS31B
HAS-MK2 SEA KING	HASMK2
HAS-MK5 SEA KING	HASMK5
HH-60J JAYHAWK	HH60JA
KA-25	KA25
KA-25 HORMONE	HOR
KA-25 HORMONE A	HORA
KA-25 HORMONE-B	K25B
KA-27 HELIX A	HLXA
KA-32 HELIX	MK43B
MI-14	MI14
MI-14 HAZE	HAZ
MI-14 HAZE A	HAZA
MK-42 SEA KING	MK42
MK-42A SEA KING	MK42A
MK-42B SEA KING	MK42B
MK-43B SEA KING	MK43B
MK-45 SEA KING	MK45
MK-47 SEA KING	MK47
MK-50 SEA KING	MK50
MK-80 SEA KING	MK80
MK-88 SEA KING	MK88
RH-53D SEASTALLION	RH53D
S-70B-2 SEAHAWK RAWS	S70B2
SA-319 ALOUETTE III	SA319
SA-319A ALOUETTE III	SA319A
SA-319B ALOUETTE III	SA319B
SA-321G SUPER FRELON	SA321G
SH-14 LYNX	SH14
SH-14B LYNX	SH14B
SH-14C LYNX	SH14C
SH-14D LYNX	SH14D
SH-2 SEASPRITE	SH2
SH-2D SEASPRITE	SH2D
SH-2F SEASPRITE	SH2F
SH-3 SEA KING	SH3
SH-34 SEABAT	SH34
SH-34G SEABAT	SH34G
SH-34J SEABAT	SH34J
SH-3A SEA KING	SH3A
SH-3D SEA KING	SH3D
SH-3DTS SEA KING	SH3DTS
SH-3G SEA KING	SH3G
SH-3H SEA KING	SH3H
SH-60 SEA HAWK	SH60
SH-60B SEA HAWK	SH60B
SH-60D SEA HAWK	SH60D
SH-60F SEA HAWK	SH60F
UH-14A LYNX	UH14A
AMPHIBIOUS	
CH-53E SUPER STALLION	CH53ES
COAST GUARD	
AS-366G DOLPHIN II	AS366G
HH-65A DOLPHIN II	HH65II
COMBAT	
KA-136 HOODLUM-B	HODB
MINE WARFARE	
MI-14	MI14
MI-14 HAZE	HAZ
MI-14 HAZE B	HAZB
MULTIROLE	
BO-108	BO108
COMMANDO MK-1	CMMK1
COMMANDO MK-2	CMMK2
CV-22A OSPREY	CV22A
H-76N AGUSTA BELL	ABH76N
H-76N EAGLE	H76N
HD-21 SUPER PUMA	HD21
HKP-2 ALOUETTE II	HKP2II

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
HKP-10 SUPER PUMA	HKP10
MI-38	MI38
SPECIAL OPS	
MH-60K PAVE HAWK	MA60R
EARLY WARNING/ELECTRONIC COUNTERMEASURES	
COMMANDO MK-2E	CMMK2E
MI-4 HOUND C	HNDC
SHAEW2	SHAEW2
UP-2J NEPTUNE	UP2J
RECONNAISSANCE	
EH-1 IROQUOIS	EH1
EH-1H IROQUOIS	EH1H
EH-1X IROQUOIS	EH1X
EH-60 BLACK HAWK	EH60
EH-60A BLACK HAWK	EH60A
EH-60C BLACKHAWK	EH60C
KA-25 HORMONE B	HORB
MI-10	MI10
MI-10 HARKE	HRK
MI-24 K HIND G2	HING2
MI-4 HOUND B	HNDB
MI-8 HIP D	HIPD
MI-8 HIP J	HIPJ
MI-8 HIP K	HIPK
OH-13 SIOUX	OH13
OH-13G SIOUX	OH13G
OH-13H SIOUX	OH13H
OH-13J SIOUX	OH13J
OH-13K SIOUX	OH13K
OH-13S SIOUX	OH13S
OH-58 KIOWA	OH58
OH-58A KIOWA	OH58A
OH-58B KIOWA	OH58B
OH-58C KIOWA	OH58C
OH-58D KIOWA	OH58D
OH-6 CAYUSE	OH6
OH-6A CAYUSE	OH6A
OH-6B CAYUSE	OH6B
OH-6D-CAYUSE	OH6D
OH-6J CAYUSE	OH6J
RAH-66 COMANCHE	RAH66
SH-5	SH5
SH-5 HARB A	SH5
SEARCH AND RESCUE	
HAR MK3 SEA KING	SKHRM3
HH-1	HH1SAR
HH-1K IROQUOIS	HH1K
HH-2 SEA SPRITE	HH2
HH-2D SEA SPRITE	HH2D
HH-3 SEA SPRITE	HH3
HH-3	HH3SAR
HH-3A SEA KING	HH3A
HH3A	HH3ASR
HH-3E JOLLY GREEN GIANT	HH3E
HH-3F SEA KING PELICAN	HH3F
HH-3F PELICAN	HH3APL
HH-25A GUARDIAN	HH25A
HH-46 SEA KNIGHT	HH46
HH-46A SEA KNIGHT	HH46A
HH-53 SUPER JOLLY GREEN GIANT	HH53
HH-53B SUPER JOLLY GREEN GIANT	HH53B
HH-53C SUPER JOLLY GREEN GIANT	HH53C
HH-60 NIGHTHAWK	HH-60
HH-60A NIGHTHAWK	HH60A
HH-60J NIGHTHAWK	HH60J
HH-65A	HH65A
KV-107 KAWASAKI SM-2 I	KV107S
MK-41 SEA KING	MK41
MK-86 SEA KING	MK86
VH-34D SEAHORSE	VH34D
TRANSPORT	
201 ARAVA	201A
500MD DEFENDER	500MD
A-103 ALOUETTE III	A103
AIRBUS A-310/200	A31020
AIRBUS A-310/300	A31030

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE	AIRCRAFT TYPE	CODE
AN-40 VERY LARGE TURBO PROP	AN40	CH-53B SEA STALLION	CH53B
AN-70 COALER	AN70	CH-53C SEA STALLION	CH53C
AS-532 COUGAR	AS532	CH-53DG SEA STALLION	CH53DG
AS-532 MK II SUPER PUMA	AS5322	CH-53E SEA STALLION	CH53E
AU-23 PEACEMAKER	AU23	CH-54 TARHE	CH54
AU-23A PEACEMAKER	AU23A	CH-54A TARHE	CH54A
AU-24A STALLION	AU24A	CH-54B TARHE	CH54B
AU24 STALLION	AU24	CM-AU MAGLIGHTER	CMAU
B-214ST BELL SUPER TRANSPORT	B214ST	COMMANDO MK-4	CMMK4
B-720	B720	DC-10/40 DOUGLAS	DC1040
BAC-111-2400	BA2400	DC-8/50 DOUGLAS	DC850
BAC-111-2500	BAL500	DC-8/54 DOUGLAS	DC854
BAC-145 JETPROVOST	BAC145	DC-8/55 DOUGLAS	DC855
BAC-147 STRIKEMASTER	BAC147	DC-8/60 DOUGLAS	DC860
BAE (HS) TRIDENT	BAETRI	DC-8/61 DOUGLAS	DC861
BAE-146 SERIES 200	BA1462	DC-8/62 DOUGLAS	DC862
BE-30 CUFF	BE30	DC-8/63 DOUGLAS	DC863
BE-30A CUFF	BE30A	DC-8/70 DOUGLAS	DC870
C MK3 HERCULES	HCM3	DO-128/2 DORNIER	DO1282
C-1 KAWASAKI	C1K	EC-95	EC95
C-1 TRADER	C1T	F-222 SAMA	G222
C-101 AVIOJET	C101	F-27 MK400M FRIENDSHIP	F27M4M
C-124	C124	G-121	C121
C-133	C133	HC MK 1 PUMA	PS1
C-133A	C133A	HC MK1 CHINOOK	CHM1
C-139A	C139A	HH-1 IROQUOIS	HH1
C-17A GLOBEMASTER 3	C17A	HH-1H IROQUOIS	HH1H
C-19	C19	HH-52 SEA GUARD	HH52
C-19A	C19A	HH-52A SEA GUARD	HH52A
C-207 AZOR	C207	HIP Z-6	Z6
C-207 AZPR	C207A	IAR-330 PUMA	IA330
C-42 AVIOCAN	C42	IL-76T CANDID	IL76T
C-4M KUDU	C4M	JH-46E	JH46E
C-95A	C95A	KA-27 HELIX	HLX
CH-46 SEA KNIGHT	CH46	KA-7 HELIX	KA7
CH-46A SEA KNIGHT	CH46A	KANIA MI-2	KANMI2
CH-46D SEA KNIGHT	CH46D	KV-107 II A SERIES	KV107T
CH-46E SEA KNIGHT	CH46E	L-1011/100 TRISTAR 100	L10111
CH-46F SEA KNIGHT	CH46F	L-1011/50 TRISTAR 50	101150
CH-47A CHINOOK	CH47A	L-29 DELFIN	L29DEL
CH-47C CHINOOK	CH47C	L-450	L450
CH-47D CHINOOK	CH47D	LYNX AN MK53 COMMANDO	LHM53
CH-47J CHINOOK (JAPAN)	CH47J	MD-11 DOUGLAS	MD11
CH-53 SEA STALLION	CH53	MI-1	MI1
CH-53A SEA STALLION	CH53A	MI-1 HARE	HAR
		MI-10	MI10

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
MI-10 HARKE A	HRKA
MI-10 HARKE B	HRKB
MI-2	MI2
MI-2 HOPLITE	HOP
MI-26	MI26
MI-26 HALO	HLO
MI-4 HOUND A	HNDA
MI-4/Z5 HOUND	Z5
MI-6	MI6
MI-6 HOOK	HOK
MI-6 HOOK A	HOKA
MI-6 HOOK B	HOKB
MI-6A HOOK	MI6A
MI-8 HIP A	HIPA
MI-8 HIP B	HIPB
MI-8 HIP C	HIPC
NC-212 AVIOCAR	NC212
NCH-46 SEA KNIGHT	NCH46
PAH-2 TIGER	PAH2
S-55	S55
S-64E SIKORSKY	S64E
S-64E SKY CRANE	S64ESY
S-65	S65
SA-321F SUPER FRELON	SA321F
SA-330 PUMA	SA330
SA-330J PUMA	SA330J
SA-332 SUPER PUMA	SA332
SK-60 SAAB-105	SK60
SRS-3M SKYVAN	SKY3M
SSC CONCORDE	SSCA
T-12 AVIOCAR	T12
T-44 KING AIR	T44K
TU-104	TU104
TU-104 CAMEL	TU104A
TU-114 CLEAT	TU114
TU-154 CRUSTY	TU154T
TU-154B CARELESS	TU154B
UH-12E HILLER	UH12E
UH-46 SEA KNIGHT	UH46
UH-46A SEA KNIGHT	UH46A
UH-46D SEA KNIGHT	UH46D
VC-11 SKYTRAIN-II	VC11II
VC-140 JETSTAR	VC140
VC-6 KING AIR	VC6
VC-6B KING AIR	VC6B
VC-9 NIGHTINGALE	VC9
VG-11A GULFSTREAM-II	VG11AG
VU-9 EMBRACER	VU9
XC-2 AIDC	XC2

LOGISTIC SUPPORT

500-E HUGHES	H500E
AB-204 AGUSTA-BELL	AB204
AB-204A AGUSTA BELL	AB204A
AB-204B AGUSTA BELL	AB204B
AB-205 AGUSTA BELL	AB205
AB-205A AGUSTA BELL	AB205A
AB-206 AGUSTA BELL	AB206
AB-206A JETRANGER	AB206A
AB-206B JETRANGER	AB206B
AB-212 AGUSTA BELL	AB212
AB-214 AGUSTA-BELL	AB214
AB-214A AGUSTA-BELL	AB214A
AB-214B AGUSTA-BELL	AB214B
AB-214C AGUSTA-BELL	AB214C
AB-214ST AGUSTA-BELL	AB214S
AB-222 AGUSTA-BELL	AB222
AB-412 AGUSTA-BELL	AB412
AB-47 SIOUX	AB47SX
AS-332 SUPER PUMA	AS332
AS-332B SUPER FRELON	AS332B
AS-332C SUPER FRELON	AS332C
AS-332F SUPER FRELON	AS332F
AS-332L SUPER FRELON	AS332L
AS-332M SUPER FRELON	AS332M
AS-565UA PANTHER	AS565U
AS-61 SEA KING	AS61SK
AS-61 SIKORSKY	AS61
AS-61N1 SIKORSKY	AS61N1
BK-117M	BK117M
BO-105D	BO105D
CH-113 LABRADOR	CH113
CH-113A VOYAGEUR	CH113A
CH-135 IROQUOIS III	CHIII
CH-135 TWIN HUEY	CH135
CH-136 KIOWA	CH136
CH-34 CHOCTAW	CH34
CH-34A CHOCTAW	CH34A
CH-34D CHOCTAW	CH34D
CH-47 CHINOOK	CH47
CH-53D SEA STALLION	CH53D
CH-53G SEA STALLION	CH53G
DAUPHIN Z-9	Z9

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE	AIRCRAFT TYPE	CODE
DC-130 HERCULES	DC130	VC-137	VC137
E-1 TRACER	E1S	VH-3 SEA KING	VH3
EB-57 CANBERRA	EB57B	VH-3A SEA KING	VH3A
EC-121 CONSTELLATION	EC121	VH-3D SEA KING	VH3D369
GR MK1 TORNADO IDS	TORG1	YAK-12 CREEK	YAK12
H-118 IROQUOIS	CH118	HH-42 HUSKIE	HH42
H-5	H5	HH-42B HUSKIE	HH42B
HAR-10 WHIRLWIND	HAR10	HU-5 WESSEX	HU5
HAR-MK3 SEA KING	HARMK3	MI-4 HOUND	HND
HB-315B GAVIAO	HB315B	MI-4PRC HOUND	HNDP
HC-1 PUMA	HC1	MK-1 WSTLD COMMANDO	MK1
HC-MK4 SEA KING	HCMK4	OH-23 RAVEN	OH23
HKP-4 VERTOL I	HKP4	OH-23A RAVEN	OH23A
HT MK-3 GAZELLE	HTMK3	OH-23B RAVEN	OH23B
IAR 316B ALOUETTE III	IA316B	OH-23C RAVEN	OH23C
KA-15 HEN	KA15	OH-23D RAVEN	OH23D
KA-26 HOODLUM A	HODA	OH-23F RAVEN	OH23F
NBO-105	NBO105	OH-23G RAVEN	OH23G
369 OHJ HUGHES	369OHJ	S-58 SIKORSKY	S58
P-55 (PARTEAVIA)	P55A	S-58T SIKORSKY	S58T
RB-57 CANBERRA	RB57	S-61 SIKORSKY	S61
RC-121 CONSTELLATION	RC121	S-61A SIKORSKY	S61A
S-58	S58LOG	S-61N SIKORSKY	S61N
S-58T	S58TLG	S-61R SIKORSKY	S61R
S-61	S61LDG	S-62 SIKORSKY	S62
S-61A NURI	S61AN	S-62B SIKORSKY	S62B
S-61N	S61NLG	S-70 SIKORSKY	S70
S-61R	S61RLG	S-76 SIKORSKY SPIRIT	S76
S-70	S70LOG	S-76MK2 SIKORSKY	S76MK2
S-76	S76LS	SA-315B LAMA/CHEETAH/ GAVIAO	SA315B
S061	S61LOG	SA-316 ALOUETTE III	SA316
S61A NURI	S61AN	SA-316B CHEETAH III	SA316B
SA-315 LAMB	SA315	SA-321 SUPER FRELON	SA321
SA-319 ALOUETTE	SA319	SA-321H SUPER FRELON	SA321H
SA-350 ASTAR	SA350	SA-321K SUPER FRELON	SA321K
SA-361 DAUPHIN	SA361	SA-321L SUPER FRELON	SA321L
SF-260 WARRIOR	SF260W	SA-321M SUPER FRELON	SA321M
SUPER FRELON Z-8	Z8	SA-341B GAZELLE	SA341B
TS-11 ISKRA	TS11	SA-341C GAZELLE	SA341C
U-21F UTE	U21F	SA-341M GAZELLE	SA341M
U-25 HURON	U25	SA-360 DAUPHIN	SA360
U-5 AERO COMMANDER	U5	SA-360C DAUPHIN	SA360C
U-8F SEMINOLE	U8F	SA-365 DAUPHIN II	SA365
UH-60B BLACKHAWK	UH60B	SA-365C DAUPHIN II	SA365C
UH-60C BLACKHAWK	UH60C	SA-365N DAUPHIN II	SA365N
UH-60L BLACKHAWK	UH60L	SA-366G DAUPHIN II	SA366G
UV-18A CANADIAN	UV18AC		

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
UH-12 HILLER	UH12
UH-19 CHICKASAW	UH19
UH-19A CHICKASAW	UH19A
UH-19B CHICKASAW	UH19B
UTILITY/MEDICAL EVACUATION	
UH-19C CHICKASAW	UH19C
UH-19D CHICKASAW	UH19D
UH-19F CHICKASAW	UH19F
UH-2 SEASPRITE	UH2
UH-2A SEASPRITE	UH2A
UH-2B SEASPRITE	UH2B
VERTOL MODEL 44A	VRT44A
VERTOL MODEL 44B	VRT44B
VERTOL V-234	V234
269A HUGHES	269A
280L (HAWK) ENSTROM	280L
300-C HUGHES	300C
500 HUGHES	H500
500-C HUGHES	H500C
500-D HUGHES	H500D
500-M HUGHES	H500M
500-ME HUGHES	H500ME
AB-47 AGUSTA BELL	AB47
AB-47G AGUSTA-BELL	AB47G
AB-47J AGUSTA BELL	AB47J
AS-350 ECUREUIL	AS350
AS-350B ECUREUIL	AS350B
AS-350C ASTAR	AS350C
AS-355 ECUREUIL	AS355
AS-355B ECUREUIL	AS355B
AS-355F ECUREUIL	AS355F
AS-355M ECUREUIL	AS355M
BK-117 MBB	BK117
BO-105 MBB/NURTANIO	BO105
BO-105C	BO105C
BO-105M	BO105M
BO-106	BO106
HB-350B ESQUILLO	HB350B
HB-350 ESQUILLO	HB350
HC-2 WESSEX	HC2
HCC-412 WHIRLWIND	HCC412
HT-MK-2 GAZELLE	HTMK2
KA-25	KA25
KA-25 HORMONE C	HORC
KA-26 HOODLUM	HOD
KA-32 HELIX C	HLXC
KA-XX	KAXX
KA-XX HOKUM	HKM
KH-4 KAWASAKI	KH4
KV-107 KAWASAKI II	KV107
KV-107 KAWASAKI II ASMI	KV107A
MI-17	MI17
MI-17 HIP H	HIPH
MI-8	MI8
MI-8 HIP	HIP
NUH-1E IROQUOIS	NUH1E
OH-13 SIOUX	OH13
OH-13G SIOUX	OH13G
OH-13H SIOUX	OH13H
OH-13J SIOUX	OH13J
OH-13K SIOUX	OH13K
OH-13S SIOUX	OH13S
OH-5 HILLER	OH5
OH-5A HILLER	OH5A
SA-316A ALOUETTE III	SA316A
SA-318 ALOUETTE II	SA318
SA-318C ALOUETTE II	SA318C
SA-341 GAZELLE	SA341
SA-350E ECUREUIL	SA350E
SE-313B ALOUETTE II	SE313B
U-3A	U3A
U-3B	U3B
U-9D AERO	U9D
UC-12B	UC12B
UC-12M	UC12M
UH MK-88 LYNX	UHMK88
UH-1 IROQUOIS	UH1
UH-1B IROQUOIS	UH1B
UH-1D IROQUOIS	UH1D
UH-1E IROQUOIS	UH1E
UH-1F IROQUOIS	UH1F
UH-1H IROQUOIS	UH1H
UH-1L IROQUOIS	UH1L
UH-1N IROQUIOS	UH1N
UH-1P IROQUOIS	UH1P
UH-1T IROQUOIS	UH1T
UH-1V IROQUOIS	UH1V
UH-60 BLACKHAWK	UH60
UH-60A BLACKHAWK	UH60A
W-3 SOKOL	W3

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
SPECIAL PURPOSE/MULTIROLE	
CV-22 OSPREY	CV22
HH-53E SEA STALLION	HH53E
MH-53 PAVELOW III	MH53
MH-53E PAVELOW III	MH53E
MH-53H PAVELOW III	MH53H
MH-53J PAVELOW III	MH53J
MI-6 HOOK C CMD VARIANT	HOKC
MI-8 HIP G	HIPG
MI-24 R HIND G1	HINR
MV-22 OSPREY	MV22
NHH-2D SEASPRITE	NHH2D
TH-1F IROQUOIS	TH1F
TH-1L IROQUIOS	TH1L
UH-3A SEA KING	UH3A
TRAINER	
HJT-16 MK1	H16M1
MI-34 HERMET	MI34
MK-8M HUNTER SIDDELEY	HUNT8M
SA-341D GAZELLE	SA341D
TH-1 IROQUOIS	TH1
TH-13 SIOUX	TH13
TH-13M SIOUX	TH13M
TH-13S SIOUX	TH13S
TH-13T SIOUX	TH13T
TH-55 OSAGE	TH55
TH-55A OSAGE	TH55A
TH-55J OSAGE	TH55J
TH-57 SEA RANGER	TH57
TH-57A SEA RANGER	TH57A
TH-57B SEA RANGER	TH57B
TH-57C SEA RANGER	TH57C
ASW	
S-70B-2 SEAHAWK RAWS	S70B2
AS-532 CS SUPER PUMA	AS532C
EH-60 QUICK FOX	EH60QF
HAS MK1 SEA KING	SKHSM1
HAS MK6 SEA KING	HASMK6
HAS MK8 SUPER LYNX	HASMK8
HH-60J JAYHAWK	HH60JA
KA-25 HORMAONE-B	K25B
KA-32 HELIX	KA32
MK-42B SEA KING	MK42B
MK-43B SEA KING	MK43B
SH-14D LYNX	SH14D
UH-14A LYNX	UH14A
FIGHTER	
MK II GNAT	GNAT
MK-53 LIGHTNING	LIGHT
SUPPORT	
CH-3	CH3
CH-37 MOHAVE	CH37
CH-54 LARKE/SKYTRAIN	CH54LS
CH-135 IROQUOIS	CH-135I
CH-147 CHINOOK	CH147
H-13 SIOUX	H13
H-23 RAVEN	H23A
HCC MK4 GAZELLE	GHMC4
HH-43F HUSKIE	HH43F
HH-53H	HH53H
HH-65 DOLPHIN	HH65
HT MK3 GAZELLE	HTMK3
MI-8T HIP	MI8T
MI-10K HARKE	MI10K
MI-12 HOMER	MI12
MK-43 SEA KING	SKM43
UH-1N TWIN HUEY	UH1NTH
UH-46 CHINOOK	UH46C
SEARCH AND RESCUE	
HH-3A SEA KING	HH3ASR
HH-52 SIKORSKY	HH52S
HH-52A SIKORSKY	HH52AS
HH-53A NAVY SEA STALLION	HH53A
HH-60G NIGHTHAWK	HH60G
MH-60G PAVE HAWK	MH60G
MI-14 PS HAZE C	HAZCPS
HH-60J	HH60JA
MCM	
MH-53E SEA DRAGON	MH53ED

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
EA	
MI-17 HIP K	HIPK17
4P-2J NEPTUNE	UP2J
EW	
COMMANDO MK2	CMMK2
COMMANDO MK2E	CMMK2E
UP-2J NEPTUNE	UP2J
AEW	
MK-2A SEA KING AEW	MK2A
NBC	
MI-24 R HIND G1	HINR
SPECIAL OPS	
MH-60K PAVE HAWK	MH60K
MISCELLANEOUS	
A-109K AGUSTA	A109K
A-109KN AGUSTA	A109KNA
AB-209 HUEY COBRA	AB209
AB-212 ASW AGUSTA-BELL	A212A
AB-406 COMBAT SCOUT	AB406
AH-1 LYNX	AH1LX
AH-6 CAYUSE	AH6
AH-7 LYNX	AH7
AH-12 WASP	AH12
AH-12A WASP	AH12A
AH-58D COMBAT SCOUT	AH58D
AS-61A SEA KING	AS61A
AS-61TS SEA KING	AS61TS
AS-202 BRAVO	AS202
AS332F SUPER PUMA	AS332S
AS-350D ASTAR	AS350D
AS-350E ECUREUIL	AS350E
AS-350L ECUREUIL	AS350L
AS-555 FENNEC	AS555
AS-565 PANTHER	AS565
BO-105P	BOP
BO-105PAH	BOPAH
BO-108	BO108
CAYUSE BLACK TIGER	CAYU
CAYUSE DEFENDER	CAYDEF
CH-34 SUPER PUMA	CH34SP
CH-47B CHINOOK	CH47B
CH-50 ECUREUIL	CH50
CH-54 SKYCRANE	CH54SC
CH-55 ECUREUIL 1	CH55
CH-135 AUGUSTA BELL 212	CH135A
CH-136 JETRANGER	CH136J
CHANGHE Z-8 SUPER FRELON	CHGZ8
CHEETAH LAMA	CHETA
CHEROKEE PILLAN	CHEROK
CHETAK ALOUETTE II	CHKII
CHETAK ALOUETTE III	CHKIII
CHEYNNE NAVAJO	CHEY
CHIEFTAIN NAVAJO	CHIEF
DAUPHIN FRENCH TWIN	DAUPH
H-3 SEA KING	H3
H-5 BEAGLE	H5BGL
H-5/MI-8 HARBEN	H5HAR
H-6 BADGER A	H6
H-19 CHIKASAW	H19
H-34 CHOCTAW	H34
H-36 DIMONA	H36
H-37 MOJAVE	H37
H-76 SIKORSKY	H76SIK
H-76 EAGLE	H76
HAR-3 SEA KING	HAR3
HARKE B	HARKEB
HAS-3 LYNX	HAS3L
HAS-4 LYNX	HAS4L
HB-315 GAVIO	HB315G
HB-315 LAMA	HB315L
HCC-2 CHOCTAW	HCC2
HELICOPTER PEACEMAKER	HP
HERON	HERON
HIND F	HINF
HIP J1	HIPJ1
HIP K1	HIPK1
HKP-2 ALOUETTE	HKP2
HKP-3 IROQUOISE	HKP3
HKP-5 OSAGE	HKP5
HN-32 ALOUETTE III	HN32
KA-27 HELIX D	HLXD
KA-27 PS HELIX A	KA27PS

ENTRY LIST 513 AIRCRAFT TYPES (Continued)

AIRCRAFT TYPE	CODE
KA-29 HELIX A	KA29A
KA-29 HELIX B	KA29B
KA-126 HOODLUM B	KA126B
KIOWA JETRANGER	KIOWA
LAMPS II SEASPRITE	LAMII
LAMPS III SEAHAWK	LAMIII
LARKE SKYCRANE	SKYCR
MH-6 CAYUSE	MH6
MH-53E SUPER SEASPRITE	MH53EP
MH-53E SUPER STALLION	MH53ES
MH-60 PAVE HAWK	MH60
MH-1521 BOROUSSARD	MH1521
MI-9 HIP G	HIP9G
MI-10K HARKE B	HRKKB
MI-14 PL HAZE A	HAZAPL
MI-14 BT HAZE B	HAZBBT
MI-24 W HIND G1	HINW
MI-25 HIND	HIN25
MK-1 NIMROD	MK1NIM
MK-2 GNAT	MK2GNT
MK-2A COMMANDO	MK2ACM
MK-2C COMMANDO	MK2C
MK-3 COMMANDO	MK3
MK-4 LYNX	MK4
MK-8 HUNTER	MK8
MK-21 LYNX	MK21
MK-23 LYNX	MK23
MK-25 LYNX A	MK25
MK-27 LYNX B	MK27
MK-48 SEA KING	MK48
MK-80 LYNX	MK80LX
MK-81 LYNX C	MK81
MK-86 LYNX	MK86LX
MK-88 LYNX	MK88LX
MK-89 LYNX	MK89
OH-23 HILLER	OH23HL
OH-58 JETRANGER	OH58JT
OH-58D COMBAT SCOUT	OH58DC
S-55 CHIKASAW	S55CHK
S-65 STALLION	S65SEA
S-76 MK2	S76K2
SCOUT HUEY COBRA	SCOUT
SE-313 ALOUETTE III	SE313
SEA COBRA HUEY COBRA	SEACOB
SEARANGER JETRANGER	SEARNG
SEASPRITE S	SEASPT
SEALYNX MK88	SEALYX
SK-61 SEA KING	SK61
SK-70 SEA HAWK	SK70
SK-76 SIKORSKY	SK71
STALLION S SUPER STALLION	STLNS
SUPER FRELON	FRELON
TWIN HUEY AGUSTA BELL 205	HAB205
TH-57 JETRANGER	H57
UH-1 AGUSTA BELL 205	UH1AB
UH-1N AGUSTA BELL 212	UH1NAB
UH-14 LYNX	UH14
UH-34D CHOCTAW	UH34D
UH-60P BLACKHAWK	UH60P
ZLN SEA COBRA	ZLNSEA

ENTRY LIST 1030 LOAD TYPES

LOAD TYPE	CODE
Agricultural Products	AGP
Agricultural/Industrial Material and Equipment	MCH
Amphetamines	AMP
Barbiturates	BAR
Cash	CAS
Chemicals	CHE
Coal	COL
Cocaine Base	COB
Coca Leaf	C**CL**
Coca Paste	COP
Cocaine	COA
Colombian Heroin	COH
Construction Materials	CON
Containers	CTR
Crack Cocaine	COK
Crystal Methamphetamines	ICE
Dangerous Drugs	DDO
Forestry Products	FOP
General Cargo	GEN
Hashish	HSH
Hashish Oil	HHO
Heroin-Unknown Type	HUK
Illicit Drugs	DRG
LSD	LSD
Marijuana	MAR
Medical Supplies	MED
Methamphetamine	MEP
Methaqualone	MEQ
Mexican Brown/Black Tar Heroin	MBH
Military Associated Cargo	MAC
Minerals/Metal	MIM
Morphine Base	MOB
No Cargo	NOC

ENTRY LIST 1030 LOAD TYPES (Continued)

LOAD TYPE	CODE
Opium	OPI
Opium Gum	OPG
Opium Poppies	OPP
PCP	PCP
Precious Metals/Minerals	PMM
Passenger	PAX
Petroleum, Oils, and Lubricants	POL
Southeast Asian Heroin	HSE
Southwest Asian Heroin	HSW
Steroids	STR
Sugar	SUG
Thai Sticks	TIS
Textiles and Textile Apparels	TEX
Valium	VAL
Vehicles	VEH
Weapons	WEA
Other*	OTR
Unknown	**UNK**

*Explain OTR in a free-text set

ENTRY LIST 1053 APPEARANCE GROUP CODES

APPEARANCE GROUP	CODE	EXPLANATION
Group 1	GP1	Superstructure exceeds 1/3 of ship length.
Group 2	GP2	Superstructure less than 1/3 of ship length.
Group 3	GP3	Stack aft.

ENTRY LIST 1080 HULL PROFILE CODES

HULL PROFILE	CODE
Flush Deck No breaks in Hull Profile.	FLUSH
Raised 1 Hull Profile shows distinct raised area at bow. Remainder of deck is flush.	RAISED 1
Raised 2 Hull Profile shows distinct raised area amidships. Bow and stern are flush.	RAISED 2
Raised 3 Hull Profile shows distinct raised area at stern. Remainder of deck is flush.	RAISED 3
Raised 1-2-3 Distinct raised areas at bow, amidships, and stern with breaks between each raise.	RAISED 1-2-3
Raised 1-2 Raised area at bow and amidships with break between.	RAISED 1-2
Raised 1-3 Raised area at bow and stern with break between.	RAISED 1-3
Raised 12 Continuous raised area encompassing both bow and amidships.	RAISED 12
Raised 23 Continuous raised area encompassing amidships and stern.	RAISED 23
Raised 12-3 Raised areas at bow, amidships and stern. Bow and amidships raises are continuous. Break between amidships and stern raises.	RAISED 12-3
Raised 1-23 Raised areas at bow, amidships, and stern. Amidships and stern raises are continuous with break between bow and amidships raises.	RAISED 1-23
Raised 1-Long 2-3 Raised areas at bow, amidships, and stern with break between each raise. Midship raise is longer than that associated with raised 1-2-3.	RAISED 1-L2-3

ENTRY LIST 1096 SUBMARINE PROPULSION MODE

PROPULSION MODE	CODE
Battery	BATTERY
Diesel-Electric	DIESEL-ELECTRIC
Diesel-Direct	DIESEL-DIRECT
Diesel-Reduction	DIESEL-REDUCTION
Split Plant	SPLIT PLANT
Turbine-Reduction	TURBINE-REDUCTION
Turbine-Electric	TURBINE-ELECTRIC
Other	OTR

ENTRY LIST 1104 SENSOR CODES

SENSOR TYPE	CODE
A-6 FLIR	TRAM
Active Sonar	SONACT
Active Sonobuoy	ACSONO
Active Variable Depth Sonar	VDSACT
Advanced Deployable System	**ADS**
ASQ-10 MAD	ASQ10
ASQ-81 MAD	ASQ81
AQS-13	AQS13
Bathythermograph	BATHY
Bullseye HFDF Data	BEDF
Calibration Buoy	CABUOY
Classic Wizard	WIZARD
Combat Direction Finding	CDF
Command ActivatedSonobuoy System	CASS
Critical Angle Towed Array Sonar	CATAS
Depressed Angle Towed Array Sonar	DATAS
Dipping Sonar, Active	DPSONA
Dipping Sonar, Passive	DPSONP
Direction Command ActivatedSonobuoy System	DICASS
Directional Frequency Analysis and Recording	DIFAR
Electronic Warfare Support	ES
Expendable Bathythermograph	XBT
Fixed Distribution System	**FDS**
Forward Looking Infrared	FLIR
Global Positioning System (Commercial) Receiver	SRN25
Global Positioning System Military Receiver	WRN6
High Frequency Direction Finding	HFDF
Identification Friend or Foe/Selective Identification Feature	IFF
Infrared	IR
Infrared Detection System	IRDS
Integrated Underwater Surveillance System	**IUSS**
Integrated Undersea Surveillance System, Single Sensor Contact	IUSS1
Integrated Undersea Surveillance System, Multiple Sensor Contact (2 or more) of any combination	IUSS2
Inverse Synthetic Aperture Radar	ISAR
Low Frequency Active System	**LFA**

ENTRY LIST 1104 SENSOR CODES (Continued)

SENSOR TYPE	CODE
Low Light Level Television	LLLTV
Magnetic Anomaly Detector	MAD
Night Observation Device	NOD
Outboard HFDF	OBDF
Passive Sonar	SONPAS
Passive Sonobuoy	PASONO
Passive Variable Depth Sonar	VDSPAS
Photograph	PHOTO
Radar	RADAR
Radio Direction Finding	RDF
Relocatable Over-The-Horizon Radar	ROTHR
Shipboard Emitter Locator Report	SELOR
Ship Sonar	SONAR
Shipboard Inertial System	WSN5
Side Looking Airborne Radar	SLAR
Sound Surveillance System	SOSUS
Submarine Towed Array	SUBTA
Submarine Towed Array Surveillance System	STASS
Surveillance Towed Array System	SURTAS
Tactical Air Reconnaissance Photo System	TARPS
Tactical Towed Array System	TACTAS
Towed Array Surveillance System	TASS
Transit Receiver	SRN19
Unknown	UNK
Vertical Line Array DIFAR	VLAD
Visual	VISUAL
Other*	OTR

*Explain OTR in a free-text set

ENTRY LIST 1112 SUBMARINE OPERATING MODE

PROPULSION MODE	CODE
Surfaced	SURFACED
Broached	BROACHED
Periscope Depth	PERISCOPE
Snorkeling	SNORKEL
Submerged	SUBMERGED
Depth Change	DEPTH CHANGE
Speed Change	SPEED CHG
Course Change	COURSE CHG
Clearing Turns	CLRNG TURNS
Active Sonar Search	SONAR ACT
Auxiliary Diesel Drive System	ADDS
Evading	EVADING
Missile Launch	MISLAUNCH
Torpedo Launch	TORPLAUNCH
Underwater Communications	UWC
Single Shaft	SINGLE SHAFT
Dual Shaft	DUAL SHAFT
Other	OTR
Either Surfaced or Submerged	SURFSUBMERGED

ENTRY LIST 1136 SOURCE CODES

SOURCE	CODE
Active Fix	ACTFIX
AEGIS C&D/ACDS	CD
Broad Band	BB
Bottom Bounce	BTMB
Casualty Report	CASREP
Classic Wizard	WIZARD
Closest Point of Approach	CPA
Convergence Zone	CZ
Dead Reckoning Position	DR
Direct Path	DP
Electronic Intelligence	ELINT
Estimate	EST
Explosive Echo Range	EER
Fast Time Analysis	FTA
Fleet Numeric Oceanography Center	FNOC
Global Command and Control System	GCCS
Line of Bearing	LOB
Maritime Report	LOCATR
Merchant Control and Protection of Shipping	MERCO
Military Sealift Command Movement Report	MSCMR
Mission Analysis Summary Message	PURPLE
Movement Report	MOVREP
Multi-Channel DIFAR Relay	MCDR
Multi-Channel JEZEBEL Relay	MCJR
Navy Tactical Data System	NTDS
Ocean Surveillance Information System	OSIS
Own Ship Report	OWN
Own Ship Weather	OSWEX
Other*	OTR
Passive Fix	PASFIX
Position Location Reporting System	PLRS
Positive Fix	FIX
Post Flight Analysis	PFA
Project Cook Reporting System	COOK

ENTRY LIST 1136 SOURCE CODES (Continued)

SOURCE	CODE
Schedule	SKED
SELOR	SELOR
Ship Position Report	PR
Subnote	SUBN
Tactical Signals Exploitation System	TSES
Theater/National ES	TACE
Two Bearing Cross	TBC
Unknown	UNK
US Merchant Ship	USMER
Weather Report	WXRPT
World Meteorological Organization	WMO

* Explain Other in a free-text set

For further U.S. implementation guidance, see USSID-505 (US Signal Intelligence Directive).

CHAPTER 6

CROSS REFERENCE TABLES

6.1 PURPOSE

This chapter contains cross reference tables for approved OTG MTFs. Information on developmental MTFs and sets is not included in this chapter. The following cross reference tables are contained in this chapter:

Table	Title
6-1	Set Usage by Entry List
6-2	Set Usage by Table
6-3	Set Usage by Message
6-4	Message Usage by Set
6-5	Field Identifiers by Set (Shaded Mandatory)

TABLE 6-1 SET USAGE BY ENTRY LIST

20	59	92	97	98	137	175	426
JUNIT	ADGRP ARR CTC DEP DES JUNIT REFUG	RADB **XRADB**	JUNIT	JUNIT	CTC	WEX	CTC JUNIT

TABLE 6-1 SET USAGE BY ENTRY LIST (Continued)

513	1030	1053	1080	1096	1104	1112	1136
CTC	ARR DEP DES	RIG	RIG	MODEG	DLOB DPOS DXLOB DXPOS JPOS JDLOB JDPOS JLOB LOB POS SIGNA XLOB XPOS **XSGNA**	MODEG	DPOS DXLOB DXPOS JDLOB JDPOS JLOB JPOS LOB POS XLOB XPOS

TABLE 6-2 SET USAGE BY TABLE

5-1	5-2	5-3	5-4	5-5	5-6	5-7
ADGRP	CTC	RAD	ADGRP	ARC	ARC	ARC
CAT				AXIS	AXIS	AXIS
CTC				CLINE	CLINE	LINE
JUNIT				LINE	LINE	RARC
PUFLT				RARC	RARC	RLINE
				RLINE	RLINE	RSECT
				RSECT	RSECT	SECT
				SECT	RSYMB	XARC
				XARC	RTEXT	XLINE
				XLINE	SECT	XRARC
				XRARC	SYMB	XRLIN
				XRLIN	TEXT	XRSEC
				XRSEC	XARC	XSECT
				XSECT	XLINE	
					XRARC	
					XRLIN	
					XRSEC	
					XRSYM	
					XRTXT	
					XSECT	
					XSYMB	
					XTEXT	

TABLE 6-2 SET USAGE BY TABLE (Continued)

5-8	5-9	5-10	5-11	5-12	5-13	5-14
RSYMB SYMB XRSYM XSYMB	RSYMB RTEXT SYMB TEXT XRSYM XRTXT XSYMB XTEXT	RSYMB SYMB XRSYM XSYMB	RTEXT TEXT	MSGID	GRID	GRID

TABLE 6-2 SET USAGE BY TABLE (Continued)

5-15	5-16	5-17	5-18	5-19	5-20	5-21	5-22
CLINE CMPCT	GRID	ECA ESA	JUNIT	CTC	SIGNA XSGNA	AXIS DXLOB DXPOS XARC XLINE XLOB XPOS XRTXT XRSYM XSECT XSYMB XTEXT XTXT	CTC

TABLE 6-3 SET USAGE BY MESSAGE

AOI	CONTACT REPORT	FOTC	GRIDFLD	GROUP	JUNIT REPORT
ADDEE	ARR	ARC	ADDEE	ADDEE	ARR
AOI	CTC	ENDAT	CMPCT	ADGRP	DEL
ARC	DEL	LINE	ENDAT	ADTRK	DEP
CAT	DEP	MSGID	GRID	DLGRP	DES
CTC	DES	NARR	MSGID	DLTRK	ENDAT
ENDAT	DLOB	TRACK	NARR	ENDAT	ENGAG
LINE	DPOS		PROD	MSGID	**EOB**
MSGID	ENDAT		RMKS	POS	EQPT
ORGIN	ENGAG		SEC	RMKS	**GOB**
POS	EOB			SEC	JDLOB
PUFLT	EQPT				JDPOS
RARC	GOB				JLOB
RLINE	LOB				JPAIR
RSECT	MODEG				JPOS
SEC	MRG				JUNIT
SECT	MSGID				MRG
STN	PAIR				MSGID
TSOI	PCRFT				POW
XAOI	POS				PRSNL
	POW				RAD
	PRSNL				RADB
	RAD				REFUG
	RADB				RIG
	REFUG				RMKS
	RIG				UIC
	RMKS				
	RTD				
	SIGAM				
	SIGNA				
	UIC				

TABLE 6-3 SET USAGE BY MESSAGE (Continued)

OPNOTE	OVLY 1	OVLY 2	OVLY 3	PIMTRACK	**PING**
ENDAT	ADDEE	ADDEE	ADDEE	ADDEE	**ENDAT**
MSGID	ARC	ARC	AREAM	ENDAT	**MSGID**
NARR	CHART	AREAM	ARMKS	LEG	**PING**
WEX	ENDAT	ARMKS	AXIS	MSGID	**SEQ**
	LINE	CHART	CHART	PMTRK	**SRC**
	MSGID	CLINE	CLINE	SEC	**WTN**
	OVLY	CTC	CTC		**XPOS**
	RMKS	DELOV	DELOV		**XRR**
	SEC	ENDAT	ENDAT		
	SECT	LINE	MSGID		
	SYMB	MSGID	ORGIN		
	TEXT	ORGIN	OVLY		
		OVLY	RMKS		
		POS	SEC		
		RARC	XARC		
		RLINE	XLINE		
		RMKS	XPOS		
		RSECT	XRARC		
		RSYMB	XRLIN		
		RTEXT	XRSEC		
		SEC	XRSYM		
		SECT	XRTXT		
		SYMB	XSECT		
		TEXT	XSYMB		
			XTEXT		

TABLE 6-3 SET USAGE BY MESSAGE (Continued)

QRY	RECON	REP	ROTHRSREQ	ROTHRSTAT	ROTHRTASK
ADDEE	ENDAT	ADDEE	ENDAT	DSTAT	ADDR
ENDAT	MSGID	ENDAT	MSGID	ECA	DOI
MSGID	NARR	MSGID	STAT	ENDAT	ENDAT
QUERY		REPLY		ESA	ENDPT
SEC		SEC		MSGID	MSGID
				TSTAT	PIM
				UTIL	SPDOI
					TASK

TABLE 6-3 SET USAGE BY MESSAGE (Continued)

SATELLITE	SCRNKILO	4WHISKY	WEX
ADDEE	ADDEE	ADDEE	ADDEE
DSAT	ENDAT	ENDAT	ENDAT
ENDAT	MSGID	MSGID	MSGID
MSGID	SCRNK	SEC	NARR
SAT	SEC	WHSKY	PROD
SATDB	SUNIT	WUNIT	RMKS
SDATA			SEC
SEC			

TABLE 6-3 SET USAGE BY MESSAGE (Continued)

XCTC	
ARR	PAIR
CTC	PCRFT
DEL	POW
DEP	PRSNL
DES	REFUG
DXLOB	RIG
DXPOS	RMKS
ENDAT	RTD
ENGAG	SIGAM
EOB	UIC
EQPT	XLOB
GOB	XPOS
MODEG	**XSGNA**
MRG	**XRADB**
MSGID	

TABLE 6-4 MESSAGE USAGE BY SET

SET	MESSAGE TYPE
ADDEE	AREA OF INTEREST FILTER GRIDDED FIELD GROUP TRACK OVERLAY 1, 2 & 3 PIM TRACK QUERY REPLY SATELLITE SCREEN KILO 4-WHISKY WEATHER DATA
ADDR	ROTHR TASK REQUEST
ADGRP	GROUP TRACK
ADTRK	GROUP TRACK
AOI	AREA OF INTEREST FILTER
ARC	AREA OF INTEREST FILTER FOTC SITREP OVERLAY 1 & 2
AREAM	OVERLAY 2 & 3
ARMKS	OVERLAY 2 & 3
ARR	CONTACT REPORT ENHANCED CONTACT REPORT JOINT UNIT REPORT
AXIS	OVERLAY 3
CAT	AREA OF INTEREST FILTER
CHART	OVERLAY 1, 2 & 3
CLINE	OVERLAY 2 & 3
CMPCT	GRIDDED FIELD
CTC	AREA OF INTEREST FILTER CONTACT REPORT ENHANCED CONTACT REPORT OVERLAY 2 & 3

TABLE 6-4 MESSAGE USAGE BY SET (Continued)

SET	MESSAGE TYPE
DEL	CONTACT REPORT ENHANCED CONTACT REPORT JOINT JUNIT REPORT
DELOV	OVERLAY 2 & 3
DEP	CONTACT REPORT ENHANCED CONTACT REPORT JOINT UNIT REPORT
DES	CONTACT REPORT ENHANCED CONTACT REPORT JOINT UNIT REPORT
DLGRP	GROUP TRACK
DLOB	CONTACT REPORT
DLTRK	GROUP TRACK
DOI	ROTHR TASK REQUEST
DPOS	CONTACT REPORT
DSAT	SATELLITE
DSTAT	ROTHR STATUS REPORT
DXLOB	ENHANCED CONTACT REPORT
DXPOS	ENHANCED CONTACT REPORT
ECA	ROTHR STATUS REPORT
ENDAT	ALL MESSAGE TYPES
ENDPT	ROTHR TASK REQUEST
ENGAG	CONTACT REPORT ENHANCED CONTACT REPORT JOINT UNIT REPORT
EOB	CONTACT REPORT ENHANCED CONTACT REPORT **JOINT UNIT REPORT**
EQPT	CONTACT REPORT ENHANCED CONTACT REPORT JOINT UNIT REPORT
ESA	ROTHR STATUS REPORT

TABLE 6-4 MESSAGE USAGE BY SET (Continued)

SET	MESSAGE TYPE
GOB	CONTACT REPORT ENHANCED CONTACT REPORT **JOINT UNIT REPORT**
GRID	GRIDDED FIELD
JDLOB	JOINT UNIT REPORT
JDPOS	JOINT UNIT REPORT
JLOB	JOINT UNIT REPORT
JPAIR	JOINT UNIT REPORT
JPOS	JOINT UNIT REPORT
JUNIT	JOINT UNIT REPORT
LEG	PIM TRACK
LINE	AREA OF INTEREST FILTER FOTC SITREP OVERLAY 1 & 2
LOB	CONTACT REPORT
MODEG	CONTACT REPORT ENHANCED CONTACT REPORT
MRG	CONTACT REPORT ENHANCED CONTACT REPORT JOINT UNIT REPORT
MSGID	ALL MESSAGE TYPES
NARR	FOTC SITREP GRIDDED FIELD OPNOTE TLAM/TASM RECONSTRUCTION WEATHER DATA
ORGIN	AREA OF INTEREST FILTER OVERLAY 2 & 3
OVLY	OVERLAY 1, 2 & 3
PAIR	CONTACT REPORT ENHANCED CONTACT REPORT

TABLE 6-4 MESSAGE USAGE BY SET (Continued)

SET	MESSAGE TYPE
PCRFT	CONTACT REPORT ENHANCED CONTACT REPORT
PIM	ROTHR TASK REQUEST
PING	**PING**
PMTRK	PIM TRACK
POS	AREA OF INTEREST FILTER CONTACT REPORT GROUP TRACK OVERLAY 2
POW	CONTACT REPORT ENHANCED CONTACT REPORT JOINT UNIT REPORT
PROD	GRIDDED FIELD WEATHER DATA
PRSNL	CONTACT REPORT ENHANCED CONTACT REPORT JOINT UNIT REPORT
PUFLT	AREA OF INTEREST FILTER
QUERY	QUERY
RAD	CONTACT REPORT JOINT UNIT REPORT
RADB	CONTACT REPORT JOINT UNIT REPORT
RARC	AREA OF INTERST FILTER OVERLAY 2
REFUG	CONTACT REPORT ENHANCED CONTACT REPORT JOINT UNIT REPORT
REPLY	REPLY
RIG	CONTACT REPORT ENHANCED CONTACT REPORT JOINT UNIT REPORT
RLINE	AREA OF INTEREST FILTER OVERLAY 2

TABLE 6-4 MESSAGE USAGE BY SET (Continued)

SET	MESSAGE TYPE
RMKS	CONTACT REPORT ENHANCED CONTACT REPORT GRIDDED FIELD GROUP TRACK JOINT UNIT REPORT OVERLAY 1, 2 & 3 WEATHER DATA
RSECT	AREA OF INTEREST FILTER OVERLAY 2
RSYMB	OVERLAY 2
RTD	CONTACT REPORT ENHANCED CONTACT REPORT
RTEXT	OVERLAY 2
SAT	SATELLITE
SATDB	SATELLITE
SCRNK	SCREEN KILO
SDATA	SATELLITE
SEC	AREA OF INTEREST FILTER GRIDDED FIELD GROUP TRACK OVERLAY 1, 2 & 3 PIM TRACK QUERY REPLY SATELLITE SCREEN KILO 4-WHISKY WEATHER DATA
SECT	AREA OF INTEREST FILTER OVERLAY 1 & 2
SEQ	**PING**
SIGAM	CONTACT REPORT ENHANCED CONTACT REPORT
SIGNA	CONTACT REPORT
SPDOI	ROTHR TASK REQUEST

TABLE 6-4 MESSAGE USAGE BY SET (Continued)

SET	MESSAGE TYPE
SRC	**PING**
STAT	ROTHR STATUS REQUEST
STN	AREA OF INTEREST FILTER
SUNIT	SCREEN KILO
SYMB	OVERLAY 1 & 2
TASK	ROTHR TASK REQUEST
TEXT	OVERLAY 1 & 2
TRACK	FOTC SITREP
TSOI	AREA OF INTEREST FILTER
TSTAT	ROTHR STATUS REPORT
UIC	CONTACT REPORT ENHANCED CONTACT REPORT JOINT UNIT REPORT
UTIL	ROTHR STATUS REPORT
WEX	OPNOTE
WHSKY	4-WHISKY
WTN	**PING**
WUNIT	4-WHISKY
XAOI	AREA OF INTEREST FILTER
XARC	OVERLAY 3
XLINE	OVERLAY 3
XLOB	ENHANCED CONTACT REPORT
XPOS	ENHANCED CONTACT REPORT OVERLAY 3 PING
XRADB	XCTC
XRARC	OVERLAY 3
XRLIN	OVERLAY 3
XRR	**PING**

TABLE 6-4 MESSAGE USAGE BY SET (Continued)

SET	MESSAGE TYPE
XRSEC	OVERLAY 3
XRSYM	OVERLAY 3
XRTXT	OVERLAY 3
XSECT	OVERLAY 3
XSGNA	**XCTC**
XSYMB	OVERLAY 3
XTEXT	OVERLAY 3

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY)

FLD	ADDEE	ADDR	ADGRP	ADTRK	AOI
1	**ADDRESS (1-6 ANBS)**	**PLAIN LANGUAGE ADDRS (1-68 ANB)**	**GROUP NUMBER (5-6 AN)**	**TRACK NUMBER (5-6 AN)**	FILTER NUMBER (1-2 N)
2	ADDRESS (1-6 ANBS)		**GROUP ID (1-26 ANBS)**	**COMMAND (1-14 ANBS)**	**FILTER TYPE (3-5 A)**
3	ADDRESS (1-6 ANBS)		**GROUP RADIUS (3-6 ANS)**		FILTER NAME (1-15 ANBS)
4	ADDRESS (1-6 ANBS)		**GROUP CATEGORY (3 A)**		START DATE-TIME GROUP (8 AN)
5	ADDRESS (1-6 ANBS)		**GROUP FORCE CODE (2 N)**		START MONTH (3 A)
6	ADDRESS (1-6 ANBS)		**GROUP KEY TRACK (5-6 AN)**		END DATE-TIME GROUP (8 AN)
7	ADDRESS (1-6 ANBS)		GROUP FLAG (2 A)		END MONTH (3 A)
8	ADDRESS (1-6 ANBS)		GRP SYM ANNOTATION (1-10 ANBS)		DLRP LATITUDE (6 AN)
9	ADDRESS (1-6 ANBS)				DLRP LONGITUDE (7 AN)
10					SURF UPDATE INTERVAL (1-2 N)
11					SUBSURF UPDATE INTERVAL (1-2 N)
12					AIRCRAFT UPDATE INTERVAL (1-2 N)
13					COMMENTS (1-36 ANBS)

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	ARC	AREAM	ARMKS	ARR	AXIS
1	**LINE TYPE (1-2 N)**	**AREA NAME (1-15 ANBS)**	**FREE-TEXT (1-63 ANBS)**	**PORT OF ARR/LOC (1-18 ABS)**	**ARROW TIP (4-24 ANS, 7-27 ANS)**
2	LINE COLOR (1 A)	START DTG (8 AN)		**COUNTRY OF PORT (2 A)**	**ARROW BASE (4-24 ANS, 7-27 ANS)**
3	FILL TYPE (1-2 N)	START MONTH (3 A)		TIME OF ARR (DTG) (8 AN)	**ARROW TAIL (4-24 ANS, 7-27 ANS)**
4	FILL COLOR (1 A)	END DTG (8 AN)		MONTH (3 A)	AIR MOVEMENT (1 N)
5	**CENTER LATITUDE (6-8 AN)**	END MONTH (3 A)		CARGO INDICATOR (3 A)	LINE TYPE (1-2 N)
6	**CENTER LONGITUDE (7-9 AN)**	DESCRIPTION (1-30 ANBS)		CARGO INDICATOR (3 A)	LINE COLOR (1 A)
7	**SEMI-MAJOR AXIS (3-9 ANS)**	LINE PROJECTION (2 A)		CARGO INDICATOR (3 A)	FILL TYPE (1-2 N)
8	SEMI-MINOR AXIS (3-9 ANS)			CARGO INDICATOR (3 A)	FILL COLOR (1 A)
9	ORIENTATION (4-7 ANS)				
10	STARTING BEARING (4-7 ANS)				
11	ENDING BEARING (4-7 ANS)				

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	CAT	CHART	CLINE	CMPCT	CTC
1	**FORCE CODE (2 N)**	**CENTER LATITUDE (6-8 AN)**	**COMPACTION METHOD (3-4 AN)**	**COMPACTION TYPE (3-4 AN)**	**TRACK NUMBER (5-6 AN)**
2	FORCE CODE (2 N)	**CENTER LONGITUDE (7-9 AN)**	**NO OF COMPACTION POINTS (1-2 N)**	COMPACT PARAMTRS (1-12 ANBS)	**CLASS-NAME (3-38 ANBS)**
3	FORCE CODE (2 N)	**HALF WIDTH MAP (6-7 ANS)**	LINE TYPE (1-2 N)		TRADEMARK (1-20 ANBS)
4	FORCE CODE (2 N)	PROJECTION (2 N)	LINE COLOR (1 A)		TYPE (2-6 AN)
5	FORCE CODE (2 N)	LINE PROJECTION (2 A)	**COMPACTED LAT/LONG POINTS (4-7 AN)**		CATEGORY (3 A)
6	FORCE CODE (2 N)				PENNANT NUMBER (1-6 AN)
7					FLAG (2 A)
8					SCONUM (6 AN)
9					SELECTIVE IDENTIFIER (4 N)
10					ALERT CODE (2 A)
11					FORCE CODE (2 N)
12					SYSTEM TRACK NUMBER (4-5 AN)
13					**TRACK TYPE (1 N)**
14					AVERAGE SPEED (1-4 N)
15					AVG TIME ON LEG (1-4 N)
16					DISCRETE IDENTIFIER (4 N)
17					UNIQUE IDENTIFIER (UID) (12 AN)
18					IRCS (4-8 AN)
19					SUSPICION CODE (2 N)
20					EMITTER VOICE CALL SIGN (1-12 ANBS)

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	DEL	DELOV	DEP	DES	DLGRP
1	**TRACK NUMBER (5-6 AN)**	**UNIQUE IDENTIFIER (UID) (12 AN)**	**PORT OF DEPARTURE (1-18 ABS)**	**PORT OF DESTINATION (1-18 ABS)**	**GROUP NUMBER (5-6 AN)**
2	**COMMAND (1-14 ANBS)**		**COUNTRY (2 A)**	**COUNTRY (2 A)**	**COMMAND (1-14 ANBS)**
3	UNIQUE IDENTIFIER (UID) (12 AN)		DATE-TIME GROUP (ETD) (8 AN)	DATE-TIME GROUP (ETA) (8 AN)	**GROUP ID (1-26 ANBS)**
4			MONTH (3 A)	MONTH (3 A)	
5			CARGO INDICATOR (3 A)	CARGO INDICATOR (3 A)	
6			CARGO INDICATOR (3 A)	CARGO INDICATOR (3 A)	
7			CARGO INDICATOR (3 A)	CARGO INDICATOR (3 A)	
8			CARGO INDICATOR (3 A)	CARGO INDICATOR (3 A)	

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	DLOB	DLTRK	DOI	DPOS	DSAT
1	**TRACK NUMBER (5-6 AN)**	**TRACK NUMBER (5-6 AN)**	**DIRECTION OF INTEREST 1 (4 AN)**	**TRACK NUMBER (5-6 AN)**	**DATABASE NAME (1-10 ANBS)**
2	**DATE-TIME GROUP (8 AN)**	**COMMAND (1-14 ANBS)**	**DIRECTION OF INTEREST 2 (4 AN)**	**DATE-TIME GROUP (8 AN)**	**SATELLITE NUMBER (3-5 AN)**
3	**MONTH (3 A)**			**MONTH (3 A)**	
4	**LATITUDE OF ORIGIN (6 AN)**			**LATITUDE (6 AN)**	
5	**LONGITUDE OF ORIGIN (7 AN)**			**LONGITUDE (7 AN)**	
6	**BEARING (4-6 ANS)**			SENSOR CODE (2-6 AN)	
7	SENSOR CODE (2-6 AN)			SOURCE CODE (2-6 AN)	
8	**COMMAND (1-14 ANBS)**			**COMMAND (1-14 ANBS)**	
9	UNIQUE IDENTIFIER (UID) (12 AN)			UNIQUE IDENTIFIER (UID) (12 AN)	

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	DSTAT	DXLOB	DXPOS	ECA	ENDAT
1	**TASK NUMBER (1-4 N)**	COMMAND (1-14 ANBS)	COMMAND (1-14 ANBS)	**DATE-TIME GROUP (DTG) (8 AN)**	DERIVATION SOURCE FOR CLSIF (1-55 ANBS)
2	**DIR NUMBER (1-4 N)**	TRACK NUMBER (5-6 AN)	TRACK NUMBER (5-6 AN)	**SURVEILLANCE TYPE (3-4 A)**	DWNGRD OR DECLASS INST (1-38 ANBS)
3	**CENTER AZIMUTH (6 ANS)**	UNIQUE IDENTIFIER (UID) (12 AN)	UNIQUE IDENTIFIER (UID) (12 AN)	**FIRST SECTOR NUMBER (1 N)**	DWNGRD OR DECLASS EXEMPT CODE (2 AN)
4	**AZIMUTH WIDTH (3-4 NS)**	**DATE-TIME GROUP (8-12 ANBS)**	**DATE-TIME GROUP (8-12 ANBS)**	**SECTOR DESCRIPTION (15 AN)**	
5	**START RANGE (3-6 AN)**	**MONTH-YEAR (5 AN)**	**MONTH-YEAR (5 AN)**		
6	**DEPTH (3-5 AN)**	**LINE OF BRNG ORIGIN (4-24 ANS, 7-27 ANS)**	**POSITION (4-24 ANS, 7-27 ANS)**		
7	**DIR STATUS (6-7 A)**	**BEARING (4-6 ANS)**	SENSOR CODE (2-6 AN)		
8		SENSOR CODE (2-6 AN)	BEARING OF MAJOR AXIS (4-6 ANS)		
9		HALF-WIDTH (2-8 ANS)	LENGTH OF SEMI-MAJOR AXIS (2-7 ANS)		
10		RANGE (2-7 ANS)	LENGTH OF SEMI-MINOR AXIS (2-7 ANS)		
11		SOURCE CODE (2-6 AN)	SOURCE CODE (2-6 AN)		

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	ENDPT	ENGAG	EOB	EQPT	ESA
1	**LATITUDE (6 AN)**	**DATE-TIME GROUP (DTG) (8 AN)**	PIN NUMBER (9 AN)	DATE-TIME GROUP (DTG) (8 AN)	**DATE-TIME GROUP (DTG) (8 AN)**
2	**LONGITUDE (7 AN)**	**MONTH (3 A)**	DEVELOPMENTAL EOB (9 AN)	MONTH (3 A)	**SURVEILLANCE TYPE (3-4 A)**
3		**ENGAGEMENT LEVEL (2 A)**		EQUIPMENT NAME (1-54 ANBS)	**FIRST SECTOR NUMBER (1 N)**
4		UNIQUE IDENTIFIER (12 AN)		NO OF EQUIPMENT ALLOCATED (1-4 AN)	**SECTOR DESCRIPTION (15 AN)**
5				NO OF EQUIPMENT ASSIGNED (1-4 AN)	
6				NO OF FAILED EQUIPMENT (1-4 AN)	
7				NO EQUIP DIMINISHED CAPABILITY (1-4 AN)	
8				NO EQUIP ABANDONED/ CAPTURED (1-4 AN)	

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	GOB	GRID	JDLOB	JDPOS	JLOB
1	EQUIPMENT CODE (7 ANB)	**LATITUDE OF NW CORNER (6 AN)**	**TRACK NUMBER (5-6 AN)**	**TRACK NUMBER (5-6 AN)**	**DATE-TIME GROUP (8 AN)**
2	TARGET IDENTIFIER (10-13 ANS)	**LONGITUDE OF NW CORNER (7 AN)**	**DATE-TIME GROUP (8 AN)**	**DATE-TIME GROUP (8 AN)**	**MONTH (3 A)**
3	QUANTITY (1-2 N)	ELEVATION OF NW CORNER (2-8 ANS)	**MONTH (3 A)**	**MONTH (3 A)**	**LATITUDE OF ORIGIN (6-11 ANS)**
4	ARBITRARY INTERCEPT DESIGNATOR (5 ANB)	**NUMBER OF POINTS ON X-AXIS (1-3 N)**	**LATITUDE OF ORIGIN (6-11 ANS)**	**LATITUDE OF CENTER (6-11 ANS)**	**LONGITUDE OF ORIGIN (7-12 ANS)**
5		**NUMBER OF POINTS ON Y-AXIS (1-3 N)**	**LONGITUDE OF ORIGIN (7-12 ANS)**	**LONGITUDE OF CENTER (7-12 ANS)**	**BEARING (4-6 ANS)**
6		NUMBER OF POINTS ON Z-AXIS (1-3 N)	**BEARING (4-6 ANS)**	SENSOR CODE (2-6 AN)	SENSOR CODE (2-6 AN)
7		**X-AXIS SPACING (2-7 ANS)**	SENSOR CODE (2-6 AN)	SOURCE CODE (2-6 AN)	HALF-WIDTH (3-6 ANS)
8		**Y-AXIS SPACING (2-7 ANS)**	SOURCE CODE (2-6 AN)	**COMMAND (1-14 ANBS)**	RANGE (3-6 ANS)
9		Z-AXIS SPACING (2-7 ANS)	COMMAND (1-14 ANBS)	UNIQUE IDENTIFIER (UID) (12 AN)	RDF RF (3-10 ANS)
10		**PARAMETER UNITS OF MEASURE (1-2 N)**	UNIQUE IDENTIFIER (UID) (12 AN)		SOURCE CODE (2-6 AN)

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	JPAIR	JPOS	JUNIT	LEG	LINE
1	**SYSTEM OR COMMAND (1-14 ANBS)**	**DATE-TIME GROUP (8 AN)**	**TRACK NUMBER (5-6 AN)**	**DATE-TIME GROUP (8 AN)**	**NUMBER OF POINTS (1-3 N)**
2	**IDENTIFIER (4-6 AN)**	**MONTH (3 A)**	**NAME (1-30 ANBS)**	**MONTH (3 A)**	LINE TYPE (1-2 N)
3	SYSTEM OR COMMAND (1-14 ANBS)	**LATITUDE OF CENTER (6-11 ANS)**	ORGANIZATION TYPE (2-8 A)	**YEAR (2 N)**	LINE COLOR (1 A)
4	IDENTIFIER (4-6 AN)	**LONGITUDE OF CENTER (7-12 ANS)**	ECHELON (1-7 A)	**LATITUDE OF LEG (6-10 ANS)**	**LATITUDE (6-8 AN)**
5		SENSOR CODE (2-6 AN)	SERVICE (3 A)	**LONGITUDE OF LEG (7-11 ANS)**	**LONGITUDE (7-9 AN)**
6		BEARING OF MAJOR AXIS (4-6 ANS)	PLATFORM (2-6 A)	ALTITUDE/DEPTH (3-6 AN)	FILL TYPE (1-2 N)
7		LENGTH OF SEMI-MAJOR AXIS (3-6 AN)	FLAG (2 A)		FILL COLOR (1 A)
8		LENGTH OF SEMI-MINOR AXIS (3-6 AN)	**FORCE CODE (2 N)**		
9		COURSE (4-6 ANS)	ALERT CODE (3 A)		
10		SPEED (2-7 ANS)	EMBARK (1-30 ANBS)		
11		RDF RF (3-10 ANS)	UNIQUE IDENTIFIER (UID) (12 AN)		
12		SOURCE CODE (2-6 AN)	**TRACK TYPE (1 N)**		
13			SUSPICION CODE (2 N)		
14			EMITTER VOICE CALL SIGN (1-12 ANBS)		

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	LOB	MODEG	MRG	MSGID	NARR
1	**DATE-TIME GROUP (8 AN)**	SUBMARINE OPERATING MODE (3-13 AB)	**SOURCE TRACK NUMBER (5-6 AN)**	**COMMAND (MSG ORG) (1-14 ANBS)**	**FREE-TEXT (1-64 ANBS)**
2	**MONTH (3 A)**	SUBMARINE PROPULSION MODE (3-17 ABS)	**DESTINATION TRACK NO (5-6 AN)**	**MESSAGE IDENTIFIER (3-9 AN)**	
3	**LATITUDE OF ORIGIN (6 AN)**	DEPTH (3-7 AN)	**SOURCE COMMAND (1-14 ANBS)**	**MESSAGE SERIAL NO (4-5 N)**	
4	**LONGITUDE OF ORIGIN (7 AN)**	DEPTH MEASURED/ ESTIMATED (1 A)	**DESTINATION COMMAND (1-14 ANBS)**	**MONTH (3 A)**	
5	**BEARING (4-6 ANS)**	DEPTH DETERMINATION MEANS (1-19 ANBS)	SPARE	OPER/EXER NAME (1-20 ANBS)	
6	SENSOR CODE (2-6 AN)		SOURCE TRACK UNIQUE ID (UID) (12 AN)	QUALIFIER (3 A)	
7	HALF-WIDTH (3-6 ANS)		DESTINATION TRACK UNIQUE ID (UID) (12 AN)	QUALIFIER SERIAL NO (3 N)	
8	RANGE (3-6 ANS)				
9	RDF RF (3-10 ANS)				
10	SPARE				
11	SOURCE CODE (2-6 AN)				

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	ORGIN	OVLY	PAIR	PCRFT	PIM
1	**TRACK NUMBER (5-6 AN)**	**TITLE (1-14 ANBS)**	FOTCCMD (1-14 ANBS)	**HULL COLOR (3-6 A)**	**LATITUDE (6 AN)**
2	**COMMAND (1-14 ANBS)**	**DATE-TIME GROUP (8 AN)**	FOTC TRACK NO (5-6 AN)	**BRAND (1-20 ANBS)**	**LONGITUDE (7 AN)**
3		**MONTH (3 A)**	COMMAND I (1-14 ANBS)	**HULL LENGTH (2-9 ANS)**	**DATE-TIME GROUP (8 AN)**
4		**CHAINING INFO (4-6 AN)**	TRACK NUMBER (5-6 AN)		**COURSE (4 AN)**
5		**DESCRIPTION (1-33 ANBS)**	COMMAND 2 (1-14 ANBS)		**SPEED (2-5 AN)**
6		SOURCE COMMAND (1-14 ANBS)	TRACK NUMBER (5-6 AN)		
7		UNIQUE IDENTIFIER (UID) (12 AN)	COMMAND 3 (1-14 ANBS)		
8		START DTG (8 AN)	TRACK NUMBER (5-6 AN)		
9		START MONTH (3 A)	COMMAND 4 (1-14 ANBS)		
10		END DTG (8 AN)	TRACK NUMBER (5-6 AN)		
11		END MONTH (3 A)	COMMAND 5 (1-14 ANBS)		
12			TRACK NUMBER (5-6 AN)		

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	PING	PMTRK	POS	POW	PROD
1	**SOURCE ID (1-12 ANBS)**	**NAME (1-40 ANBS)**	**DATE-TIME GROUP (8 AN)**	**DATE-TIME GROUP (DTG) (8 AN)**	**PRODUCT TYPE (1-14 ANBS)**
2	**PING SERIAL NO (5 N)**	**LINE PROJECTION (2 A)**	**MONTH (3 A)**	**MONTH (3 A)**	**EFFECTIVE DATE-TIME GROUP (8 AN)**
3	**MONTH (3 A)**	TASK FORCE RADIUS (3-5 AN)	**LATITUDE OF CENTER (6 AN)**	**NO OF CAPTIVES/POWS (1-4 N)**	**EFFECTIVE MONTH (3 A)**
4		TYPE (3 A)	**LONGITUDE OF CENTER (7 AN)**		FORECAST PERIOD (3 N)
5		REMARKS (1-30 ANBS)	SENSOR CODE (2-6 AN)		**CHAINING INFO (4-6 AN)**
6			BEARING OF MAJOR AXIS (4-6 ANS)		PROD DESC/UNIQ DESC (1-33 ANBS)
7			LENGTH OF SEMI-MAJOR AXIS (3-6 AN)		
8			LENGTH OF SEMI-MINOR AXIS (3-6 AN)		
9			COURSE (4-6 ANS)		
10			SPEED (2-5 ANS)		
11			ALTITUDE/DEPTH (3-6 AN)		
12			RDF RF (3-10 ANS)		
13			SPARE		
14			SOURCE CODE (2-6 AN)		
15			SEQUENTIAL CONTACT IDENTIFIER (1 –7 N)		
16			PHOTOS (3 A)		
17			TOTAL NO OF CONTACTS/ UNITS (1-3 N)		

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	PRSNL	PUFLT	QUERY	RAD	RADB
1	**DATE-TIME GROUP (DTG) (8 AN)**	**PARTICIPATING UNIT NO (2 N)**	**REQUEST NUMBER (5-6 N)**	**DATE-TIME GROUP (8 AN)**	**DATE-TIME GROUP (8 AN)**
2	**MONTH (3 A)**	**FORCE CODE (2 N)**		**MONTH (3 A)**	**MONTH (3 A)**
3	NUMBER PERSONS ALLOCATED (1-4 N)	FORCE CODE (2 N)		ELINT NOTATION (5 AN)	ELINT NOTATION (5 AN)
4	NUMBER PERSONS ASSIGNED (1-4 N)	FORCE CODE (2 N)		EMITTER NAME (1-12 ANBS)	EMITTER NAME (1-15 ANBS)
5	NUMBER KILLED (1-4 N)	FORCE CODE (2 N)		RADIO FREQUENCY (3-10 ANS)	RADIO FREQUENCY (3-10 ANS)
6	NO MISSING IN ACTION (1-4 N)	FORCE CODE (2 N)		PULSE REP INTERVAL (4-11 ANS)	PULSE REP INTERVAL (8-11 ANS)
7	NUMBER CAPTURED (1-4 N)			PULSE REP FREQUENCY (4-11 ANS)	PULSE REP FREQUENCY (3-11 ANS)
8	NUMBER WOUNDED (1-4 N)			PULSE WIDTH (3-5 ANS)	PULSE WIDTH (5-7 NS)
9	NO WOUNDED AMBULATORY (1-4 N)			SCAN RATE (3-7 ANS)	SCAN RATE (3-8 ANS)
10	NO WNDED TRANSPORT NOT AMBLATORY (1-4 N)			SCAN TYPE (1 A)	SCAN TYPE (1-4 A)
11	NO WNDED NONTRANS-PORTABLE (1-4 N)				

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	RARC	REFUG	REPLY	RIG	RLINE
1	LINE TYPE (1-2 N)	**DATE-TIME GROUP (DTG) (8 AN)**	**REQUEST NUMBER (5-6 N)**	APPEARANCE GROUP (3 AN)	**NUMBER OF POINTS (1-2 N)**
2	LINE COLOR (1 A)	**MONTH (3 A)**		HULL PROFILE (5-13 ANBS)	LINE TYPE (1-2 N)
3	FILL TYPE (1-2 N)	**NO OF REFUGEES (1-4 N)**		STERN TYPE (7 A)	LINE COLOR (1 N)
4	FILL COLOR (1 A)	COUNTRY CODE (2 A)		UPRIGHT SEQUENCE (1-11 A)	**BEARING (4-7 ANS)**
5	BEARING (4-7 ANS)	SUBGROUP (1-20 ANBS)		TONNAGE (1-6 N)	**RANGE (3-9 ANS)**
6	RANGE (3-9 ANS)			LENGTH (3-6 AN)	FILL TYPE (1-2 N)
7	**SEMI-MAJOR AXIS (3-9 ANS)**			COMMENTS (1-13 ANBS)	FILL COLOR (1 A)
8	SEMI-MINOR AXIS (3-9 ANS)				
9	ORIENTATION (4-7 ANS)				
10	STARTING BEARING (4-7 ANS)				
11	ENDING BEARING (4-7 ANS)				

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	RMKS	RSECT	RSYMB	RTD	RTEXT
1	**FREE-TEXT (1-64 ANBS)**	**LINE TYPE (1-2 N)**	SYMBOL SIZE (1-2 N)	TACT SIGNIF INDCTR (1 A)	CHARACTER SIZE (1-2 N)
2		LINE COLOR (1 A)	SPARE	RPTING RESPONSIBILITY (3-4 AN)	FONT (1 N)
3		FILL TYPE (1-2 N)	LINE COLOR (1 A)		COLOR (1 A)
4		FILL COLOR (1 A)	**BEARING (4-7 ANS)**		BEARING (4-7 ANS)
5		**BRG FRM ORIGIN TO SECTOR CTR (4-7 ANS)**	**RANGE (3-9 ANS)**		RANGE (3-9 ANS)
6		**RANGE FRM ORIGIN SECTOR CTR (3-9 ANS)**	**SYMBOL (3 N)**		**TEXT (1-30 ANBS)**
7		**STARTING BEARING (4-7 ANS)**	MODIFIER (2 N)		ORIENTATION (4-7 ANS)
8		**ENDING BEARING (4-7 ANS)**	ORIENTATION (4-7 ANS)		
9		INNER RADIUS (3-9 ANS)	LABEL (1-21 ANBS)		
10		**OUTER RADIUS (3-9 ANS)**			

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	SAT	SATDB	SCRNK	SDATA	SEC
1	**EPHEMERIS DATA (65 NS)**	**DATABASE NAME (1-10 ANBS)**	**NAME (1-40 ANBS)**	**TYPE (3 AN)**	**CLASSIFICATION (6-12 AB)**
2			**UNITS (2-3 A)**	**FIELD OF VIEW (1-8 ANS)**	AMPLIFYING INFO (1-52 ANBS)
3			OFFSET BEARING (4 AN)	INNER RANGE (3-8 ANS)	
4			OFFSET RANGE (1-3 N)	SENSOR VIEW (1 A)	
5			REMARKS (1-30 ANBS)	STATUS (1-12 ANBS)	
6				REMARKS (1-30 ANBS)	

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	SECT	SEQ	SIGAM	SIGNA	SPDOI
1	**LINE TYPE (1-2 N)**	**DATE-TIME GROUP (8-12 ANS)**	**FREE-TEXT (1-63 ANBS)**	**SOURCE (1-15 ANBS)**	**SPEED OF INTEREST 1 (2-5 AN)**
2	LINE COLOR (1 A)	**SEQUENCE NAME (4-24 ANB)**		**FUNDAMENTAL FREQ (3-10 ANS)**	**SPEED OF INTEREST 2 (2-5 AN)**
3	FILL TYPE (1-2 N)	**STARTING WAVETRAIN NO (2 N)**		**HARMONICS (1-22 NS)**	
4	FILL COLOR (1 A)	**NO OF WAVETRAINS (2 N)**		RPM (1-4 NS)	
5	**LATITUDE (6-8 AN)**	**ABORT FLAG (1 N)**		TURNS PER KNOT (1-5 NS)	
6	**LONGITUDE (7-9 AN)**	**ACOUSTIC COMMS (1 N)**		**DATE-TIME GROUP (8 AN)**	
7	**STARTING BEARING (4-7 ANS)**			**MONTH (3 A)**	
8	**ENDING BEARING (4-7 ANS)**			ACOUSTIC SENSOR CODE (2-6 AN)	
9	INNER RADIUS (3-9 ANS)			DETECTION STATUS (4-13 AB)	
10	**OUTER RADIUS (3-9 ANS)**				

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	SRC	STAT	STN	SUNIT	SYMB
1	**SOURCE DEPTH (3 N)**	**SURVEILLANCE TYPE (3-4 A)**	**SYS TRACK NO (4-5 AN)**	**UNIT NAME (1-26 ANBS)**	SYMBOL SIZE (1-2 N)
2	**SOURCE LEVEL (3 N)**	EXTENDED COVERAGE AREA (3 A)	SYS TRACK NO (4-5 AN)	**STARTING BEARING (4 AN)**	SPARE
3	**ELEMENT OUTAGE (4 AN)**	EFF SURV AREA (3 A)		**ENDING BEARING (4 AN)**	LINE COLOR (1 A)
4	**NO OF STEERING ANGLES (2 N)**	UTILIZATION (4 A)		**INNER RADIUS (1-5 NS)**	**LATITUDE (6-8 AN)**
5	**STEERING ANGLES (3-5 NS)**	TASK STATUS (5 A)		**OUTER RADIUS (1-5 NS)**	**LONGITUDE (7-9 AN)**
6		DIR STATUS (5 A)			**SYMBOL (3 N)**
7					MODIFIER (2 N)
8					ORIENTATION (4-7 ANS)
9					LABEL (1-21 ANBS)

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	TASK	TEXT	TRACK	TSOI	TSTAT
1	**TASK NUMBER (1-4 N)**	CHARACTER SIZE (1-2 N)	**FOTC TN (5-6 AN)**	ALERT CODE (3 A)	**TASK NUMBER (1-4 N)**
2	**TASK TYPE (3-5 A)**	FONT (1 N)	**NAME (1-26 ANBS)**	ELINT NOTATION 1 (5 AN)	**DATE-TIME GROUP (8 AN)**
3	**SURVEILLANCE TYPE (3-4 A)**	COLOR (1 A)	**RANGE (3-7 AN)**	EMITTER NAME 1 (1-12 ANBS)	**TASK SOURCE (1-14 ANBS)**
4	PRIORITY (2-3 A)	**LATITUDE (6-8 AN)**		ELINT NOTATION 2 (5 AN)	**TASK TYPE (3-5 A)**
5	TRACK NUMBER (6 AN)	**LONGITUDE (7-9 AN)**		EMITTER NAME 2 (1-12 ANBS)	**SURVEILLANCE TYPE (3-4 A)**
6	RESOURCE ALLOCATION (3-9 A)	**TEXT (1-30 ANBS)**		ELINT NOTATION 3 (5 AN)	**DIR OF INTEREST 1 (4 AN)**
7	START DTG (8 AN)	ORIENTATION (4-7 ANS)		EMITTER NAME 3 (1-12 ANBS)	**DIR OF INTEREST 2 (4 AN)**
8	STOP DTG (8 AN)				**SPEED OF INTEREST 1 (2-5 AN)**
9	REPORT RATE (1-2 N)				**SPEED OF INTEREST 2 (2-5 AN)**
10	TOI REPORT RATE (1 N)				**TASK STATUS (6-11 A)**
11					**% REQUIRED (1-3 N)**
12					**ACTUAL TO REQD % (1-3 N)**

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	UIC	UTIL	WEX	WHSKY	WTN
1	**UNIT ID CODE (6 AN)**	**% UTILIZATION AIR (1-2 N)**	DTG OBSRV OR BEG FORECAST PER (8 AN)	**NAME (1-40 ANBS)**	**NO OF WAVETRAINS (1-2 N)**
2		**% UTILIZATION SHIP (1-2 N)**	MONTH (3 A)	**NO OF GRID CELLS (2 N)**	**WAVETRAIN ID (10 ANB)**
3		**% UTILIZATION OTHER (1-2 N)**	LATITUDE (6 AN)	**GRID CELL SIZE (3-4 AN)**	
4			LONGITUDE (7 AN)	**PIM CELL (3-4 AN)**	
5			RADIUS (3-6 ANS)	REMARKS (1-30 ANBS)	
6			WIND DIRECTION (SURF) (4 AN)		
7			WIND SPEED (SURF) (2-3 AN)		
8			MOST SIGNF WEATHER (1-3 A)		
9			SEA STATE (1 N)		
10			DURATION OF FORECAST FROM DTG (1 N)		
11			AIR TEMPERATURE (2-6 ANS)		

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	WUNIT	XAOI	XARC	XLINE	XLOB
1	**UNIT NAME (1-26 ANBS)**	**FILTER NUMBER (1-2 N)**	**CENTER (4-24 ANS, 7-27 ANS)**	**NO OF POINTS (1-3 N)**	**DATE-TIME GROUP (8-12 ANS)**
2	**UNIT ASSIGNMENT (3-68 ANS)**		**SEMI-MAJOR AXIS (2-9 ANS)**	**POSITION (4-24 ANS, 7-27 ANS)**	**MONTH-YEAR (5 AN)**
3			SEMI-MINOR AXIS (2-9 ANS)	LINE TYPE (1-2 N)	**LINE OF BEARING ORIGIN (4-24 ANS, 7-27 ANS)**
4			ORIENTATION (4-7 ANS)	LINE COLOR (1 A)	**BEARING (4-6 ANS)**
5			START BEARING (4-7 ANS)	FILL TYPE (1-2 N)	SENSOR CODE (2-6 AN)
6			END BEARING (4-7 ANS)	FILL COLOR (1 A)	HALF-WIDTH (2-8 ANS)
7			LINE TYPE (1-2 N)		RANGE (2-7 ANS)
8			LINE COLOR (1 A)		RDF RF (3-10 ANS)
9			FILL TYPE (1-2 N)		SOURCE CODE (2-6 AN)
10			FILL COLOR (1 A)		

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	XPOS	XRADB	XRARC	XRLIN	XRR
1	**DATE-TIME GROUP (8-12 ANS)**	**DATE-TIME GROUP (8-12 ANS)**	BEARING (4-7 ANS)	**NO OF POINTS (1-3 N)**	**TRANSMIT MODE (2 A)**
2	**MONTH-YEAR (5 AN)**	**MONTH-YEAR (5 AN)**	RANGE (2-9 ANS)	**BEARING (4-7 ANS)**	**NO OF REPETITION RATES (2 N)**
3	**POSITION (4-24 ANS, 7-27 ANS)**	ELINT NOTATION (5 AN)	**SEMI-MAJOR AXIS (2-9 ANS)**	**RANGE (2-9 ANS)**	RANDOMIZATION OFFSET (3 N)
4	SENSOR CODE (2-6 AN)	EMITTER NAME (1-15 ANBS)	SEMI-MINOR AXIS (2-9 ANS)	LINE TYPE (1-2 N)	**REPETITION RATE (3 N)**
5	BEARING OF MAJOR AXIS (4-6 ANS)	RADIO FREQUENCY (3-10 ANS)	ORIENTATION (4-7 ANS)	LINE COLOR (1 A)	
6	LENGTH OF SEMI-MAJOR AXIS (2-7 ANS)	PULSE REP INTERVAL (1-11 NS)	START BEARING (4-7 ANS)	FILL TYPE (1-2 N)	
7	LENGTH OF SEMI-MINOR AXIS (2-7 ANS)	PULSE REP FREQUENCY (1-11 NS)	END BEARING (4-7 ANS)	FILL COLOR (1 A)	
8	COURSE (4-6 ANS)	PULSE WIDTH (1-7 NS)	LINE TYPE (1-2 N)		
9	SPEED (4-8 ANS)	SCAN RATE (3-8 ANS)	LINE COLOR (1 A)		
10	ALTITUDE (3-8 ANS)	SCAN TYPE (1-4 A)	FILL TYPE (1-2 N)		
11	DEPTH (2-7 ANS)		FILL COLOR (1 A)		
12	RDF RF (3-10 ANS)				
13	SOURCE CODE (2-6 AN)				
14	SEQUENTIAL CONTACT IDENTIFIER (1-7 N)				
15	PHOTOS (3 A)				
16	TOTAL NO OF CONTACTS/ UNITS (1-3 N)				

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	XRSEC	XRSYM	XRTXT	XSECT	XSGNA
1	**BEAR FM ORGN TO SECTOR CTR (4-7 ANS)**	**BEARING (4-7 ANS)**	BEARING (4-7 ANS)	**CENTER (4-24 ANS, 7-27 ANS)**	**SOURCE (1-15 ANBS)**
2	**RANGE FM ORGN TO SECTOR CTR (2-9 ANS)**	**RANGE (2-9 ANS)**	RANGE (2-9 ANS)	**START BEARING (4-7 ANS)**	**FUNDAMENTAL FREQ (3-10 ANS)**
3	**START BEARING (4-7 ANS)**	**SYMBOL (3 N)**	**TEXT (1-30 ANBS)**	**END BEARING (4-7 ANS)**	**HARMONICS (1-22 NS)**
4	**END BEARING (4-7 ANS)**	MODIFIER (2 N)	ORIENTATION (4-7 ANS)	INNER RADIUS (2-9 ANS)	**RPM (1-4 NS)**
5	INNER RADIUS (2-9 ANS)	ORIENTATION (4-7 ANS)	CHARACTER SIZE (1-2 N)	**OUTER RADIUS (2-9 ANS)**	**TURNS PER KNOT (1-5 NS)**
6	**OUTER RADIUS (2-9 ANS)**	LABEL (1-21 ANBS)	FONT (1 N)	LINE TYPE (1-2 N)	**DATE-TIME GROUP (8-12 ANS)**
7	LINE TYPE (1-2 N)	SYMBOL SIZE (1-2 N)	COLOR (1 A)	LINE COLOR (1 A)	**MONTH-YEAR (5 A)**
8	LINE COLOR (1 A)	**LINE COLOR (1 A)**		FILL TYPE (1-2 N)	**ACOUSTIC SENSOR CODE (2-6 AN)**
9	FILL TYPE (1-2 N)			FILL COLOR (1 A)	**DETECTION STATUS (4-13 AB)**
10	FILL COLOR (1 A)				

TABLE 6-5 FIELD IDENTIFIERS BY SET (SHADED MANDATORY) (Continued)

FLD	XSYMB	XTEXT	/	/	/
1	**SYMBOL LOCATION (4-24 ANS, 7-27 ANS)**	**TEXT LOCATION (4-24 ANS, 7-27 ANS)**			
2	**SYMBOL (3 A)**	**TEXT (1-30 ANBS)**			
3	MODIFIER (2 N)	ORIENTATION (4-7 ANS)			
4	ORIENTATION (4-7 ANS)	CHARACTER SIZE (1-2 N)			
5	LABEL (1-21 ANBS)	FONT (1 N)			
6	SYMBOL SIZE (1-2 N)	COLOR (1 A)			
7	**LINE COLOR (1 A)**				

CHAPTER 7

DEVELOPMENTAL OTG MTFs

7.1 PURPOSE

This chapter contains a detailed explanation of the structure of each formally recognized developmental OTG MTF. This chapter is organized in the same manner as Chapter 3. Additional discussion of developmental OTG MTFs is provided in paragraph 1.3b.

ANNEX 7A

GRIDDED FIELD MESSAGE

(GRIDFLD)

1. GENERAL

This message is used to define a two- or three-dimensional grid on the face of the earth and to transmit a specific parameter for each position in the grid. The parameters may be compacted to increase communication efficiency.

IMPLEMENTATION OF PROJ SET TBD

2. SET ORDER MAP

STATUS : AGREED

DATE : 29 NOVEMBER 1989

MSG IDENTIFIER : GRIDFLD

MSG NAME : GRIDDED FIELD

FUNCTION OR PURPOSE : USED TO TRANSMIT PARAMETERS IN A TWO- OR THREE-DIMENSIONAL GR IDDED FIELD.

SPONSOR(S) : FLEET NUMERICAL OCEANOGRAPHY CENTER (FNOC)

RELATED DOCUMENT(S) : NONE

GRIDFLD FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
		(M)	PROD	/M/M/M/O/M/O	PRODUCT
		(M)	GRID	/M/M/O/M/M/C/M/M/C/M	GRID DATA
		(O)	PROJ	/M/M/M/O/O/O/O/O/O	PROJECTION
		(O)	CMPCT	/M/*C	DATA COMPACTION
		(M)	NARR	/M	NARRATIVE
	*	(O)	RMKS	/M	REMARKS
		(M)	ENDAT	/C/*C/*C	END OF DATA

2. SET ORDER MAP (Continued)

NOTE: The following conditional set/fields are mandatory:

GRID:

Fields 6,9: These fields are mandatory if Field 3 contains a value.

CMPCT:

Field 2: If EOF1 compaction is used in Field 1, Field 2 is not required.

3. TABLES AND ENTRY LISTS

The GRIDFLD message uses the following tables:

TABLE	TITLE
5-12	Message Identifiers
5-13	Vertical (Z-Axis) Units and Codes
5-14	Grid Spacing Units and Codes
5-15	Compaction Codes
5-16	Grid Data Units and Codes

4. MESSAGE EXAMPLE

GRIDFLD EXAMPLE

[MESSAGE HEADER]

```
MSGID/FNOC/GRIDFLD/0001/AUG
PROD/OCEANMET/091200Z2/AUG/000/1OF1/SEA LEVEL PRESSURE
GRID/4000N4/17000E8//037/013//2.5DEG/2.5DEG//1
PROJ/01/60DEG/60DEG/3200N5/3400N7/3130N7/12030W6/N
CMPCT/BS1/.10080E04/.17056E-01
NARR/ANALYSIS FOR 091200Z AUG99
SHRURESDTDSDO7KWJLKJMDPER2VZ014C6X8M9V998X5M14Z8YYU2MWGPETIRJ21L1L1L
H9GGGJHOKPPOW5V4TWSORHPBLKJUK
RMKS/SHORT EXAMPLE OF COMPACTED DATA
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 7B

SHORT CONTACT REPORT

(SCR)

1. GENERAL

The SCR is used to exchange processed contact data between computer systems in an abbreviated format during peak periods of high volume communications traffic. It should not be used for initial contact reporting. It should normally be transmitted only to systems requesting this abbreviated data format. The minimum sets for the SCR message consist of the MSGID set, at least one RPT set, and an ENDAT set. A maximum of 20 RPT sets may be contained in a SCR message. The RAD and RADB sets are optional and mutually exclusive. Only one RAD or RADB set is allowed per RPT message.

IMPLEMENTATION TBD
Current format may change significantly prior to incorporation into OS-OTG

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	30 JUNE 1989
MSG IDENTIFIER	:	SCR
MSG NAME	:	SHORT CONTACT REPORT
FUNCTION OR PURPOSE	:	USED TO EXCHANGE PROCESSED CONTACT DATA BETWEEN COMPUTER SYSTEMS IN AN ABBREVIATED FORMAT DURING PEAK PERIODS OF HIGH VOLUME COMMUNICATIONS TRAFFIC.
SPONSOR(S)	:	NONE
RELATED DOCUMENT(S)	:	NONE

SCR FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
[	*	(M)	RPT	/M/M/M/M/M/O/O/O/O/O	REPORT
[		(O)	RAD	/M/M/C/C/O/O/O/O/O/O	RADAR DATA
[		(O)	RADB	/M/M/C/C/O/O/O/O/O/O	EXPANDED RADAR DATA
		(M)	ENDAT	/C/*C/*C	END OF DATA

2. SET ORDER MAP (Continued)

NOTES:

1. Maximum number of RPT, RPT/RAD, or RPT/RADB set pairs is 20 per message.
2. RAD and RADB are optional and mutually exclusive. The RAD and RADB may not be used in the same message.
3. The following conditional sets/fields are mandatory:

RAD:

Field 3: This field is mandatory if Emitter Name is not used.

Field 4: This field is mandatory if ELINT Notation is not used.

RADB:

Field 3: This field is mandatory if Emitter Name is not used.

Field 4: This field is mandatory if ELINT Notation is not used.

3. TABLES AND ENTRY LISTS

The SCR message uses the following tables and entry lists:

TABLE	TITLE
5-1	Force Codes
5-3	Scan Type Codes
5-12	Message Identifiers

ENTRY LIST	TITLE
92	Scan Types
1104	Sensor Codes

4. MESSAGE EXAMPLES

SINGLE CONTACT EXAMPLE

[MESSAGE HEADER]

```
MSGID/CTG 81.0/GOLD/0001/APR
RPT/T7410/152100Z9/APR/2300N5/11900E1/020008008/RADAR
ENDAT
```

[END OF MESSAGE SEQUENCE]

MULTIPLE CONTACT EXAMPLE

[MESSAGE HEADER]

```
MSGID/CTG 81.0/GOLD/0002/APR
RPT/T7410/152145Z8/APR/2255N4/11905E6/018015015/ES
RADB/152145Z8/APR/C234Z//9.3475GHZ/003333.3333/300.05/2.208/10.2SPC
/CIRC
RPT/T7410/152146Z9/APR/2255N4/11905E6/ESPO
RADB/152146Z9/APR/C456Z/FLOP WHEEL/5478.21MHZ/000125.4762/7969.63
/2.148/2.0SPC/RAST
RPT/T7120/152247Z1/APR/2150N8/11957E3/010015015/RADAR
RADB/152253Z8/APR/A123Z/MUSHRUT/9189.26MHZ/000098.445/10158/0.2684
//STDY
ENDAT
```

[END OF MESSAGE SEQUENCE]

ANNEX 7C

WEATHER DATA

(WEX)

1. GENERAL

The WEX message is used to transmit meteorological and oceanographic (METOC) observational data in the World Meteorological Organization (WMO) format. This data can be used as input to tactical decision aids (TDAs).

The WEX message is designed to pass bathythermal (BT) observations in the JJXX format, upper air soundings (radiosonde) observations in the UUAA format, and data obtained from drifting METOC buoys. Single observations, or groups of observations may be included in a message. When passing observations of a single type, indicate the type in the PROD line as BTHY, RSND, or BUOY as appropriate. Use OCEANMET in the PROD line if some combination of data types are being transmitted (e.g., a BT and a radiosonde observation).

BTHY, MUNIT, AND RDSND SETS ADDED TO WEX MESSAGE UNTIL SYSTEMS TRANSITION TO WMO FORMAT

2. SET ORDER MAP

STATUS	:	AGREED
DATE	:	13 JANUARY 1993
MSG IDENTIFIER	:	WEX
MSG NAME	:	WEATHER DATA
FUNCTION OR PURPOSE	:	USED TO TRANSMIT METEOROLOGICAL/OCEANOGRAPHIC DATA.
SPONSOR(S)	:	FLEET NUMERICAL OCEANOGRAPHY CENTER
RELATED DOCUMENT(S)	:	NONE

WEX FORMAT

SEG	RPT	USE	SET ID	FIELD ORDER AND USE	SET FORMAT NAME
		(M)	MSGID	/M/M/M/M/O/O/O	MESSAGE IDENTIFICATION
		(O)	SEC	/M/O	SECURITY
	*	(O)	ADDEE	/M/O/O/O/O/O/O/O/O	ADDRESSEES
		(M)	PROD	/M/M/M/O/M/O	PRODUCT
		(M)	NARR	/M	NARRATIVE
	*	(O)	RMKS	/M	REMARKS
END OF SEGMENT					
[		(C)	BTHY	/M/M/M/M/M/*M/*M (Total of 99 Points)	BATHYTHERMAL
[		(C)	MUNIT	/M/M/M/M/O/M/M/M/*M/*M (Total of 50 Points)	M UNIT
[		(C)	RDSND	/M/M/M/M/O/M/M/M/M/M/*M/*M/*M (Total of 50 Points)	RADIOSONDE
[	*	(O)	RMKS	/M	REMARKS
END OF SEGMENT					
		(M)	ENDAT	/C/*C/*C	END OF DATA

2. SET ORDER MAP (Continued)

WEX FORMAT (Continued)

NOTES:

1. The PROD and NARR sets are used to transmit METOC observational data in the World Meteorological Organization format.

2. The following conditional sets/fields are mandatory:

NARR: This set is mandatory and immediately follows the PROD set when the PROD set is used. If this set is not used, then the BTHY, MUNIT, or RDSND sets must be used.

Field 1: This field contains the observation(s) in WMO format.

PROD: If this set is not used, then the BTHY, MUNIT, or RDSND sets must be used.

Field 1: This field consists of the product type which may be general, i.e., OCEANMET or specific, i.e., SYNOP (synoptic surface observation), RDSND (radiosonde), or BTHY (bathythermal observation).

BTHY: This set is mandatory if PROD, MUNIT, or RDSND is not used.

MUNIT: This set is mandatory if PROD, BTHY, or RDSND is not used.

RDSND: This set is mandatory if PROD, BTHY, or MUNIT is not used.

3. TABLES AND ENTRY LISTS

The WEX message uses the following table:

TABLE	TITLE
5-12	Message Identifiers

4. MESSAGE EXAMPLE

DRIFTING BUOY EXAMPLE

[MESSAGE HEADER]

```
MSGID/FNOC/WEX/0006/SEP
PROD/BUOY/071200Z0/SEP/000/1OF1/ARGOS BUOY DATA
NARR/AMBTN/12345/4230N/06540W/345T/00.5KTS/5000M/1M/
345T/200M/010.0/5HZ/020.0/10HZ/030.0/32HZ/040.0/50HZ/
050.0/100HZ/060.0/200HZ/070.0/500HZ/080.0/1000HZ/090.0/
2000HZ/100.0/3150HZ/110.0/4000HZ/120.0/5000HZ/130.0/
8000HZ/140.0/14500HZ/150.0/20000HZ/160.0/25000HZ
ZZXX 41501 07093 11024 74230 06540 611// 11119 00221
10152 20100 3018 41804 5//// 22219 00152 10402 20///
21/// 33311 88871 20000 31520 43180 20100 31501 43180
66091 20000 345001 444 1000 200// 74230 06540 8VVVVV
ENDAT
```

[END OF MESSAGE SEQUENCE]

CHAPTER 8

DEVELOPMENTAL SET LIBRARY

8.1 PURPOSE

This chapter contains a detailed description of formally recognized developmental sets. These sets, along with approved sets, are used to construct the developmental MTFs contained in Chapter 7. Additional discussion of developmental OTG MTFs is provided in paragraph 1.3b.

BATHYTHERMAL

		1		2		3		4
BTHY	/	**8AN**	/	**3A**	/	**6-8AN**	/	**7-9AN**
		DATE-TIME GROUP		**MONTH**		**LATITUDE**		**LONGITUDE**

	5		6		7
/	**1-2N**	/	**3-7AN**	/	**2-6ANS**
	NUMBER OF DEPTH/ TEMPERATURE PAIRS		**DEPTH**		**SEA TEMPERATURE**

THIS SET ADDED TO WEX MESSAGE UNTIL SYSTEMS TRANSITION TO WMO FORMAT

NOTE: SHADED FIELDS ARE MANDATORY

NOTE: FIELDS UNDER BRACKET ARE REPEATABLE

The BTHY set is used to provide bathythermal data which is needed to determine ASW coverage and for computing propagation loss curves.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group	M	Enter the date-time group of the bathythermal data in days (01-31), hours (00-23), minutes (00-59), and time zone (Z) followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

BATHYTHERMAL (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Month	M	Enter the first three letters of the month in which the bathythermal data was generated, e.g., JAN, FEB, MAR. (3A)
3	Latitude	M	Enter the latitude of the bathythermal reading point in degrees (00-90), minutes (00-59), and optional seconds (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 900000N9, 304015N3, 895912S4, 323520S5. The maximum value is 90 (i.e., 900000) degrees. (6-8AN)
4	Longitude	M	Enter the longitude of the bathythermal reading point in degrees (000-180), minutes (00-59), and optional seconds (00-59) followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W9, 1340912E0, 0000000E0. The maximum value is 180 (i.e., 1800000) degrees. (7-9AN)
5	Number of Depth/Temperature Pairs	M	Enter the number of depth/temperature pairs as 1-2 digits (1-99) to follow within this set, e.g., 1, 35, 85, 99. (1-2N)
6	Depth	M,R	Enter the depth of the accompanying temperature reading in feet (FT) or meters (M), e.g., 35FT, 20M, 120FT, 99FT, 60M. Leading zero (0) is mandatory for indicating nine meters or less (09M). Use "FT" (feet) when the temperature is reported in Fahrenheit and "M" (meters) when the temperature is reported in Celsius. Fields 6 and 7 may be repeated as a group (creating Fields 8 and 9 up through Fields 205-206) to define a maximum of 99 depth/temperature pairs. (3-7AN)
7	Sea Temperature	M,R	Enter the temperature, for the given depth, in degrees with optional decimal point, followed by "F" (Fahrenheit) or "C" (Celsius). Use Fahrenheit when the depth is reported in feet and Celsius when the depth is reported in meters. A negative sign is valid for temperatures below zero, e.g., 3.0C, 20F. (2-6ANS)

BATHYTHERMAL (Continued)

Set Example:

```
BTHY/080355Z4/APR/3100S4/09500W4/7/00M/15.9C/05M/9.8C/10M/7.7C/20M
/7.1C/30M/6.1C/40M/5.1C/121M/4.2C
```

MUNIT **MUNIT**

MODIFIED REFRACTIVE INDEX MEASUREMENT UNIT

		1		2		3		4
MUNIT	/	**8AN**	/	**3A**	/	**6-8AN**	/	
		DATE-TIME GROUP		**MONTH**		**LATITUDE**		**LONGITUDE**

	5		6		7		8		9
/	2-6ANS	/	**2-6ANS**	/		/	**1-2N**	/	**2-8ANS**
	SEA SURFACE TEMPERATURE		**AIR SURFACE TEMPERATURE**		**RELATIVE HUMIDITY**		**NUMBER OF READINGS**		**HEIGHT**

	10
/	**2-5NS**
	MUNIT

THIS SET ADDED TO WEX MESSAGE UNTIL SYSTEMS TRANSITION TO WMO FORMAT

NOTE: SHADED FIELDS ARE MANDATORY

NOTE: FIELDS UNDER BRACKET ARE REPEATABLE

The MUNIT set is used to provide height and modified refractive index measurements (M UNITS) for up to 50 different height locations. The M Unit provides a measure of the atmospheric effects on radio waves for a given height.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

MODIFIED REFRACTIVE INDEX MEASUREMENT UNIT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group	M	Enter the date-time group of the M Unit data in days (01-31), hours (00-23), minutes (00-59), and time zone (Z) followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
2	Month	M	Enter the first three letters of the month in which the M Unit data was measured, e.g., JAN, FEB, MAR. (3A)
3	Latitude	M	Enter the latitude of the radiosonde launch point for the M Unit in degrees (00-90), minutes (00-59), and optional seconds (00-59) followed by the hemisphere (N/S), and a checksum (0-9), e.g., 900000N9, 304015N3, 895912S4. The maximum value is 90 (i.e., 9000) degrees. (6-8AN)
4	Longitude	M	Enter the longitude of the radiosonde launch point for the M Unit data in degrees (000-180), minutes (00-59), and optional seconds (00-59) followed by the hemisphere (E/W), and a checksum (0-9), e.g., 1800000W9, 13040E8, 07500W2. The maximum value is 180 (i.e., 18000) degrees. (7-9AN)
5	Sea Surface Temperature	O	Enter the sea surface temperature, if applicable, in degrees with an optional decimal point, followed by "F" for (Fahrenheit) or "C" for (Celsius), e.g., 40.0F, -1.0C. The negative sign is valid for temperatures below zero. (2-6ANS)
6	Air Surface Temperature	M	Enter the air surface temperature at launch height in degrees with an optional decimal point, followed by "F" for (Fahrenheit) or "C" for (Celsius), e.g., 40.0F, -1.0C. The negative sign is valid for temperatures below zero. (2-6ANS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

MODIFIED REFRACTIVE INDEX MEASUREMENT UNIT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
7	Relative Humidity	M	Enter the relative humidity (0-100) at launch height with an optional decimal point followed by "%" (percentage), e.g., 99.9%, 45%, 100%, 3%. (2-5NS)
8	Number of Readings	M	Enter the number of readings (1-50) of height and M Unit data to follow within this set, e.g., 1, 25, 50. (1-2N)
9	Height	M,R	Enter the height (0-9999.9) of the M Unit reading in meters or feet with an optional decimal point followed by "M" for meters or "FT" for feet. Fields 8 and 9 may be repeated as a group (creating Fields 10 and 11 up through fields 108 and 109) to define a maximum of 50 height/M Unit readings, e.g., 90M, 1500FT. (2-8ANS)
10	MUNIT	M,R	Enter the M Unit reading (0-9999.9) with an optional decimal point (i.e., 350.0), e.g., 439.3, 545.7. (2-5NS)

Set Example:

```
MUNIT/170000Z8/APR/3148N6/10624W3/12.2C/25.0C/12.0%/10/3917.0FT/431.9
/4838.7FT/467.6/10173.6FT/695.4/18829.4FT/1056.8/24237.9FT/1288.9
/30848.9FT/1576.6/34808.0FT/1753.1/39462.6FT/1960.7/45383.4FT/2225.3
/53767.2FT/2608.4
```

PROJECTION

	1		2		3		4
PROJ	/	**2N**	/	**2-9ANS**	/	**2-9ANS**	/	
		PROJECTION TYPE		**LATITUDE SPAN**		**LONGITUDE SPAN**		**STANDARD LATITUDE 1**

	5		6		7		8		9
/	6AN	/	6AN	/		/	1A	/	3AN
	STANDARD LATITUDE 2		**REFERENCE LATITUDE**		**REFERENCE LONGITUDE**		**HEMISPHERE**		**NAME**

IMPLEMENTATION TBD

NOTE: SHADED FIELDS ARE MANDATORY

The PROJ set identifies the type of projection being transmitted. This set must immediately follow the GRID set prior to the CMPCT set.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Project Type	M	Enter the projection code from the following list (2N): 00 - Polar Stereographic 01 - Mercator 02 - Lambert Conformal

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

PROJECTION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Latitude Span	M	Enter the North/South span of the grid (1-6NS) with an optional floating decimal point followed by the unit of measure (1-3A) from Table 5-14 (Grid Spacing Units and Codes), e.g., 45.00DEG, 35M. (2-9ANS)
3	Longitude Span	M	Enter the East/West span of the grid (1-6NS) with an optional floating decimal point followed by the unit of measure (1-3A) from Table 5-14 (Grid Spacing Units and Codes), e.g., 35.4DEG, 40M. (2-9ANS)
4	Standard Latitude 1	O	Enter the first intersection of the geometric surface of project with the earth's surface in degrees (00-90), minutes (00-59), hemisphere (N/S) and checksum (0-9), e.g., 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6AN)
5	Standard Latitude 2	O	Enter the second intersection of the geometric surface of project with the earth's surface in degrees (00-90), minutes (00-59), hemisphere (N/S) and checksum (0-9), e.g., 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6AN)
6	Reference Latitude	O	Enter the latitude of the point located at the bottom center of the image in degrees (00-90) and minutes (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6AN)
7	Reference Longitude	O	Enter the longitude of the point located at the bottom center of the image in the degrees (000-180), and minutes (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W9, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 18000). (7AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

PROJECTION (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
8	Hemisphere	O	Enter the hemisphere as "N" for North or "S" for South. (1A)
9	Name	O	Enter the three character name for the map. This field is used to denote a particular named projection area. This conveys the local name of the map to the receiving TDP. (3AN)

Set Example:

```
PROJ/01/29.0DEG/32.3DEG/0000N0/0000N0/1001N2/04500E9/N/CAT
```

REPORT

		1		2		3		4
RPT	/	**5-6AN**	/	**8AN**	/	**3A**	/	**6AN**
		TRACK NUMBER		**DATE-TIME GROUP**		**MONTH**		**LATITUDE OF CENTER**

	5		6		7		8		9
/	**7AN**	/	9N	/	2-6AN	/	6AN	/	2N
	LONGITUDE OF CENTER		**ELLIPSE**		**SENSOR CODE**		**OTHER IDENTIFIER**		**FORCE CODE**

	10
/	6AN
	SCONUM

IMPLEMENTATION TBD

NOTE: SHADED FIELDS ARE MANDATORY

The RPT set is used to provide condensed locating data for auto processing by ADP systems.

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Track Number	M	Enter the track number being reported as found in the track database, e.g., T0001, T0023, T99999. (5-6AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

REPORT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
2	Date-Time Group	M	Enter date-time group of the position event in days (01-31), hours (00-23), minutes (00-59), and time zone (Z), followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
3	Month	M	Enter the first three letters of the month of the position report, e.g., JAN, FEB, MAR. (3A)
4	Latitude of Center	M	Enter the latitude of the center in degrees (00-90), and minutes (00-59), followed by the hemisphere (N/S) and checksum (0-9), e.g., 9000N9, 3040N7, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6AN)
5	Longitude of Center	M	Enter the longitude of the center in degrees (000-180), and minutes (00-59), followed by the hemisphere (E/W) and checksum (0-9), e.g., 18000W9, 13040E8, 00000E0, 17959E1. The maximum value is 180 (i.e., 1800) degrees. (7AN)
6	Ellipse	O	Enter the ellipse associated with the reported contact. The first three digits report true bearing of semi-major axis. The second three digits report length of semi-major axis in NM. The third three digits report length of semi-minor axis in NM, e.g., 180004004. (9N)
7	Sensor Code	O	Enter the sensor code for the sensor used to develop the RPT from Entry List 1104 (Sensor Codes), e.g., ES, SONPAS. (2-6AN)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

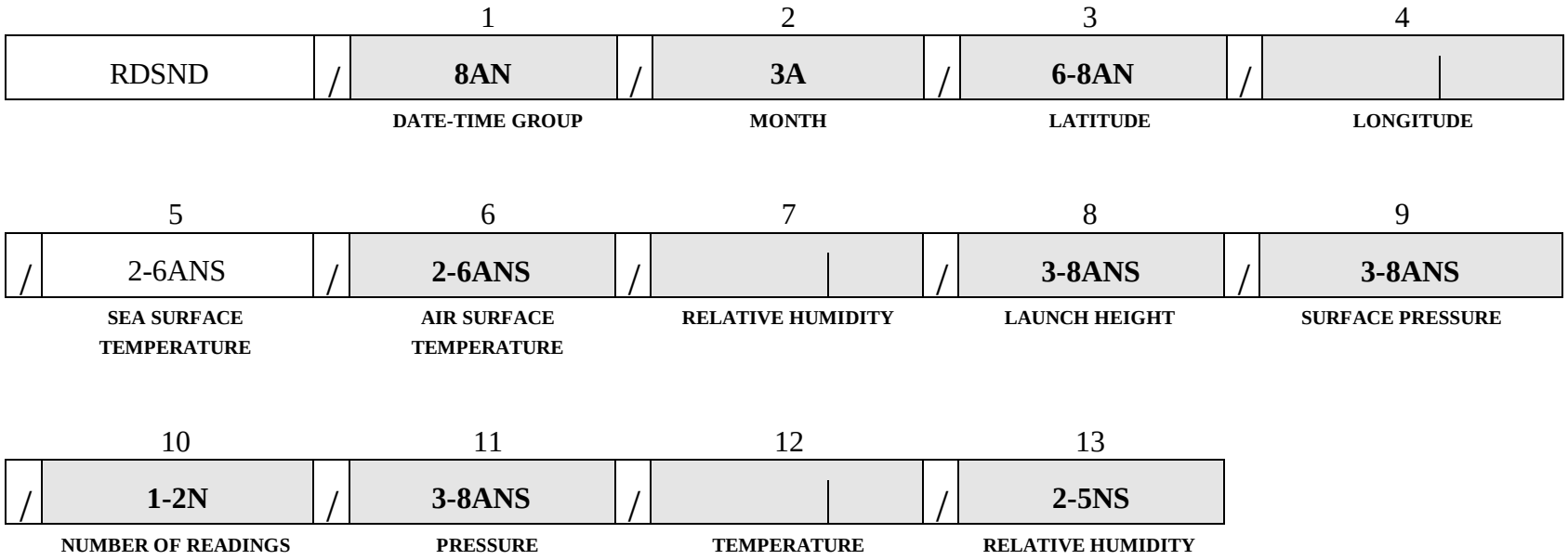
REPORT (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
8	Other Identifier	O	Enter the additional identification (Discrete Identifier (DI)/Selective Identifier (SI) information on the specified contact. Enter DI or SI followed by 4 octal digits (0000-7777), e.g., DI2337, SI3727. For DI codes refer to Technical Supplement to OPNAVINST C3120.39 (series). (6AN)
9	Force Code	O	Enter the force code of the track being reported from Table 5-1 (Force Codes), e.g., 08, 15. (2N)
10	SCONUM	O	Enter the Ship Control Number (SCONUM) of the track being reported, e.g., B45524, A41942. The SCONUM is a unique identification code assigned by ONI and listed in the STAR and DST-2050G-612 (series). (6AN)

Set Example:

```
RPT/T12345/010001Z2/JUL/3040N7/08040W2/095010002/HFDF/DI6765/07/A12345
```

RADIOSONDE



THIS SET ADDED TO WEX MESSAGE UNTIL SYSTEMS TRANSITION TO WMO FORMAT

NOTE: SHADED FIELDS ARE MANDATORY

NOTE: FIELDS UNDER BRACKET ARE REPEATABLE

The RDSND set is used to provide radiosonde data which is needed for computing radar coverage based on the upper air observations and for performing IREPS computations.

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

RADIOSONDE (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
1	Date-Time Group	M	Enter the date-time group of the radiosonde data in days (01-31), hours (00-23), minutes (00-59), and time zone (Z) followed by a checksum (0-9), e.g., 012115Z0, 312359Z3. (8AN)
2	Month	M	Enter the first three letters of the month of the radiosonde report, e.g., JAN, FEB, MAR. (3A)
3	Latitude	M	Enter the latitude of the radiosonde launch point in degrees (00-90), minutes (00-59), and optional seconds (00-59), followed by the hemisphere (N/S) and a checksum (0-9), e.g., 900000N9, 304015N3, 8959S1, 3235S3. The maximum value is 90 (i.e., 9000) degrees. (6-8AN)
4	Longitude	M	Enter the longitude of the radiosonde launch point in degrees (000-180), minutes (00-59), and optional seconds (00-59) followed by hemisphere (E/W) and a checksum (0-9). The maximum value is 180 (i.e., 18000) degrees, e.g., 1800000W9, 1304E8, 1795920E3. (7-9AN)
5	Sea Surface Temperature	O	Enter the sea surface temperature, if applicable, in degrees with an optional decimal point, followed by "F' for (Fahrenheit) or "C" for (Celsius), e.g., 40.0F, -1.0C. The negative sign is valid for temperatures below zero. (2-6ANS)
6	Air Surface Temperature	M	Enter the air surface temperature at launch height in degrees with an optional decimal point followed by "F" for (Fahrenheit) or "C" for (Celsius), e.g., 40.0F, -1.0C. The negative sign is valid for temperatures below zero. (2-6ANS)
7	Relative Humidity	M	Enter the relative humidity (0-100) at launch height with optional decimal point followed by "%" (percentage), e.g., 99.9%, 45%, 100%, 3%. (2-5NS)

NOTE: THIS SET CONTINUED ON THE FOLLOWING PAGE

RADIOSONDE (Continued)

FIELD NO.	NAME	USE	EXPLANATION (ALLOWED FORMATS)
8	Launch Height	M	Enter the launch height of the radiosonde (0-99999) with an optional decimal point followed by "FT" (feet), e.g., 90.8FT, 100.9FT, 50FT. (3-8ANS)
9	Surface Pressure	M	Enter the surface pressure (0-99999) with an optional decimal point followed by "MB" (millibars), e.g., 993.7MB, 1000MB. (3-8ANS)
10	Number of Readings	M	Enter the number of readings (1-50) of pressure, temperature, and relative humidity to follow within this set, e.g., 1, 25, 50. (1-2N)
11	Pressure	M,R	Enter the ambient pressure as (0-99999) with an optional decimal point followed by "MB" (millibars). Fields 11 through 13 may be repeated as a group (creating Fields 14 through 16 up through Fields 161 through 163) to define a maximum of 50 pressure, temperature, and relative humidity readings, e.g., 993.7MB, 1000MB. (3-8ANS)
12	Temperature	M,R	Enter the ambient air temperature in degrees Celsius with an optional decimal point followed by "C" (Celsius), e.g., 40.0C, -15.0C. The negative sign is valid for temperatures below zero. (2-6ANS)
13	Relative Humidity	M,R	Enter the relative humidity (0-100) at launch height, with an optional decimal point followed by "%" (percentage), e.g., 99.9%, 45%, 100%, 3%. (2-5NS)

Set Example:

```
RDSND/170000Z8/APR/3148N6/10624W3/0.0C/25.0C/12.0%/3917.0FT/878.0MB
/10/878.0MB/25.0C/12.0%/850.0MB/20.2C/11.0%/700.0MB/4.6C/32.0%
/500.0MB/-16.1C/51.0%/400.0MB/-26.1C/84.0%/300.0MB/-42.1C/0.0%
/250.0MB/52.3C/0.0%/200.0MB/-59.9C/0.0%/150.0MB/-58.1C/0.0%/100.0MB
/-57.9C/0.0%
```

CHAPTER 9

DEVELOPMENTAL TABLES AND ENTRY LISTS

9.1 PURPOSE

This chapter contains developmental tables and entry lists used by the developmental sets described in Chapter 8. Additional discussion of developmental OTG MTFs is provided in paragraph 1.3b.

TABLE 5-12 MESSAGE IDENTIFIERS

FIELD ENTRY	DESCRIPTION
AOI	Area of Interest Filter
FOTC	FOTC SITREP
GOLD	Contact Report, OPNOTE, and Short Contact Report
GRIDFLD	Gridded Field
GROUP	Group Track Information
JUNIT	Joint Unit Report
OVLY1	Overlay 1
OVLY2	Overlay 2
OVLY3	Overlay 3
PIMTRACK	PIM Track
PING	**Ping**
QRY	Query
RECON	TLAM/TASM Reconstruction
REP	Reply
ROTHRSREQ	ROTHR Status Request
ROTHRSTAT	ROTHR Status Report
ROTHRTASK	ROTHR Task Request
SATELLITE	Satellite Charlie Elements
SCRNKILO	Screen Kilo
4WHISKY	4-WHISKY
WEX	Weather Data
XCTC	Enhanced Contact Report

IMPLEMENTATION OF SHORT CONTACT REPORT IN TABLE 5-12 IS TBD

SUMMARY OF CHANGES

OS-OTG (Rev C)
Change 2
1 October 1999

This document includes modifications agreed to at the following meetings:

1998 COMBINED TISG/OIRG-MTF (Oct 98)
1999-1 COMBINED TISG/ORIG-MTF (Feb 99)

ENCLOSURE (2)

CHAPTER 4 - SET LIBRARY

SET	MESSAGE AFFECTED	AGENDA ITEM #	EFFECTIVE
POS	AOI, CR, GROUP, OVLY2	TISG/OIRG 98-009	10/1/99
XPOS	OVLY3, PING, XCTC		

Changed structure in the "Sequential Contact Identifier" field in both sets from 1-6N to 1-7N.

EOB, GOB	JUNIT Report	TISG/OIRG 99-003	10/1/99

Added both sets to the JUNIT Report Message.

CHAPTER 5 – TABLES/ENTRY LISTS

Updated Entry Lists 97, 98 and 1030 to correspond with MIL-STD-6040 2000 baseline.