NATO STANDARD

APP-11

NATO MESSAGE CATALOGUE

Edition D Version 1

November 2015

NORTH ATLANTIC TREATY ORGANIZATION

ALLIED PROCEDURAL PUBLICATION

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

NATO STANDARDIZATION OFFICE (NSO)

NATO LETTER OF PROMULGATION

23 November 2015

1.   The enclosed Allied Procedural Publication APP-11, Edition D, Version 1 NATO Message Catalogue, which has been approved by the nations in the Military Committee Joint Standardization Board, is promulgated herewith.   The agreement of nations to use this publication is recorded in STANAG 7149.

2.   APP-11, Edition D, Version 1 will come into effect on 1 March 2016 and supersedes APP-11, Edition C, Change 1 which shall be retained for backwards compatibility for a period of 3 years and then destroyed in accordance with the local procedure for destruction of documents on 1 March 2019.

3.   No part of this publication may be reproduced, stored in a retrieval system, used commercially, adapted, or transmitted in any form or by any means, electronic, mechanical, photo-copying, recording or otherwise, without the prior permission of the publisher. With the exception of commercial sales, this does not apply to member or partner nations, or NATO commands and bodies.

4.   This publication shall be handled in accordance with C-M(2002)60.

Edvardas MAŽEIKIS
Major General, LTUAF
Director, NATO Standardization Office

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATIONS BY NATIONS
General	HUN
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]
HUN	The messages are finalized in the near future and are currently processing electronic, used almost exclusively in NATO air systems such as ICC, TDL. The manual processing some messages possible used in various fields - CBRN, logistics, health care system. Wider use of automated message system can only be achieved if the Hungarian Defence Forces has automated command and control systems.
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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CHAPTER 1 - GENERAL INFORMATION

1.1. PURPOSE

The APP-11 NATO Message Catalogue provides users, system developers and Message Text Format (MTF) managers with a library of messages and instructions for their use. It is a compendium of formatted messages, structured messages, and voice templates for the exchange of information within and between NATO Forces. The use of formatted messages as contained in this catalogue is mandatory for all NATO forces exchanging character-orientated messages.

1.2. SCOPE

1.   APP-11 is the definitive source of NATO agreed ADatP-3 formatted messages.

2.   APP-11 consists of all approved formatted, selected structured user formats and voice templates with supporting instructions and data tables.

1.3. DEFINITIONS

1.   **Information Exchange Requirement (IER).** An IER is the finalized, harmonized detailed operational expression of an information requirement, complemented by other operational constraints. It will specify the information to be exchanged in the context of the mission, key tasks, required degree of interoperability, and parameters of communication and information systems involved.

2.   **Change Proposal (CP).** A CP is the transformation of the IER into an update of the ADatP-3 database. It results from consultation between the NATO HQ C3 Staff Information Services Branch (ISB) and the Message Sponsor, which forms the basis of the updated Message Text Format.

3.   **Message Formats**. In the context of this document, a Message format is an agreed character orientated data exchange specification. The 4 types of message specification that are referenced in this publication are:

>   a.   **Message Text Format (MTF)**. MTFs are formatted in accordance with the rules of ADatP-3 and are designed to be unambiguous and concise in a form that is man-readable and computer processable. The information to be transmitted in a MTF message is sequentially ordered and the format must be adhered to.

>   b.   **Structured Message Text**. A message text composed of paragraphs ordered in a specific sequence, each paragraph characterised by an identifier and containing information in free form. It is designed to facilitate manual handling and processing and cannot be processed consistently by computer based systems.

>   c.   **Voice Template.** A Voice Template (VT) is a format for voice transmission, normally based on the information content of an equivalent MTF. It is comprised of a list of headings against which the user adds relevant information.

>   d.   **Non-Compliant Message**. A Non-Compliant Message is one that has been identified as the authoritative source of other messages that are defined in other publications used by NATO forces that do not conform to the rules in ADatP-3.

4.   **User Format (UF).** The UF is a user-orientated guide to aid the interpretation of a MTF.

5.   **Extensible Mark-up Language - Message Text Format (XML-MTF).** XML-MTF provides an alternate representation of the traditional slash-delimited Message Format. Systems utilising XML-MTF representation of ADatP-3 messages are governed by, and must conform to, the specifications detailed in ADatP-3(A).

1.4.   DESCRIPTION OF APP-11 NATO MESSAGE CATALOGUE

1.   **Chapter 1 – General Information.** Provides an overview of the NATO Message Catalogue, its structure, layout and content; states the operational, procedural and technical processes to develop new or make amendments to existing message formats.

2.   **Chapter 2 – Formatted Message Instructions.** Provides instructions for the use of formatted messages as well as message instructions, set instructions, formatted table instructions and segmentation, providing understanding to the structure of formatted messages.

3.   **Chapter 3 – MTF Operational User Guide.** Provides instructions on how to read and write a formatted message at the user level.

4.   **Chapter 4 – XML-MTF Guide.** Provides an insight into ADatP-3(A) XML Schemas, Style Sheets and their purposes; a basic guide to XML for operators and system developers in the process of implementing message formats in systems.

5.   **Chapter 5 – Voice Templates.** Provides instructions for the use of Voice Templates.

6.   **Chapter 6 – Structured Messages.** Provides instructions for the use of Structured Messages that have NOT yet been converted to a formatted message.

7.   **Annex A – Message Text Formats.** MTFs are issued as a Baseline to ADatP-3 database on an as-needed basis. Appendix 1 to Annex A (A-1) includes hyperlinks to ADatP-3 (current) message User Formats (UF) and Style Sheets. For operational reasons, MTFs may be updated or created between baselines. These are issued as a Change to this publication and are temporarily contained in Appendix 2 to Annex A (A-2).

  a.   A - 1   - current MTFs in Message Title order
              - current MTFs in Message Identifier (MSGID) order
              - current MTFs by Functional Area

  b.   A - 2   - Operationally required MTFs (new or updated) available for
                immediate use

8.   **Annex B – Voice Templates**. Provides a list of user Voice Templates (VT).

  a.   B-1   - VTs in Message Title order

9.   **Annex C – Structured Message Formats.** Provides a list of structured messages that have not yet been converted to formatted message text.

  a.   C-1   – Formats in Message Title order

10.   **Annex D – Non-Compliant Messages.** Provides a list of various message/publication titles that are not in compliance with ADatP-3(A) but are required by the operational community. It includes OTH-Gold messages and NATO publications with

embedded non-compliant messages. This Annex only provides a list of message titles. It does not provide copies of these messages.

11.   **Annex E – APP-11 Feedback.** Gives instructions on how to provide feedback on APP-11.

12.   **Annex F – Points of Contact.** Provides a list of related web sites and contact details of associated NATO Working Groups.

1.5.   ROLES AND RESPONSIBILITIES

The Controlling Authority for APP-11 is the Information Exchange Requirement Harmonization Working Group (IERHWG) which is under the authority of the Military Committee, Joint Standardization Board (MCJSB). A Nation will hold custodianship for executing document maintenance. Individual message formats are sponsored by either a NATO Working Group or a Strategic Command (SC).

1.6.   AIMS AND OBJECTIVES

1.   **Formatted Messages.** The use of formatted messages in command and control systems has the following objectives:

    a.   Enable interoperability by providing data commonality.

    b.   Reduce the risk of ambiguity and misunderstanding of information.

    c.   Ensure that messages include essential and consistent data in accordance with agreed NATO doctrine, tactics and procedures.

    d.   Reduce the time and effort involved in the drafting, reading and processing of messages.

(Formatted Messages in APP-11 provide the required operational and technical detail to allow for exchange of information by automated or manual means).

2.   **Voice Templates.** Chapter 5 gives instructions on how information has to be exchanged over a voice circuit in a pre-determined structured order. This is essential to ensure consistency in the use of each message, whatever its means of transmission, and reduces the risk of ambiguity, misunderstanding or omission of essential information detail.

3.   **Structured Messages.** Structured messages as contained in the catalogue will be superseded by formatted messages in the future. Until then, Chapter 6 provides general instructions for their use.

1.7.   STANDARDS

In accordance with the STANAG 2211 (Geodetic Datum's, Projections, Grids and Grid References), the mandated geodetic datum to be used in NATO operations shall be World Geodetic System 1984. Where, for operational reasons, this is not possible the geodetic transformation to be applied to locations in a message is to be included with the message. Where no geodetic datum transformation information is included in a message, the positions are to be converted to World Geodetic System 1984 before message transmission.

1.8. CONFIGURATION MANAGEMENT INFORMATION

1.   Under the cover of STANAG 7149, APP-11 will be managed using the procedures detailed in AAP-3. Whilst APP-11 is under the configuration control of the IERHWG, the content of Annex A is technically managed and agreed by nations under the procedures for managing message text formats prior to inclusion into APP-11. Due to the higher level of scrutiny given to the content of proposed changes to Annex A, the process for changes to this Annex will normally use the urgent ratification procedure outlined in para 2.11 of AAP-3(J)(2) (Directive for the Development and Production of NATO Standardization Agreements (STANAGs) and Allied Publications). Ideally, national representatives at the IERHWG will be able to indicate the ratification position for changes that will be taken by their national delegation to the MC JSB. Nations not wishing to implement a particular message or express other reservations can do so during this process. Changes to Chapters and the remaining Annexes will use the normal ratification process. Once APP-11 receives sufficient positive ratification responses, and the MC JSB considers that the promulgation criteria have been achieved, the document is promulgated by the Director NATO Standardization Office (NSO). The NATO Effective Date (NED) is established based on recommendation of the IERHWG.

2.   The Single Service Standardization Boards nominate the Message Formats to be included in their functional areas listed within the Annexes of APP-11. The IERHWG is ultimately responsible for determining the Message Formats to be included within the Annexes. All Message Text Formats included in APP-11 must be from the agreed portion of the ADatP-3 database.

3.   Requests for the development of new messages or changes to current messages as laid down in the Annexes are to be submitted via the national Chain of Command to the sponsoring NATO Working Group. These changes are to be submitted using the IER instructions contained in APP-15.

4.   All UFs contained in APP-11, Annex A have been developed in consultation with the NATO HQ C3 Staff (NHQC3S) Information Services Branch (ISB) Staff in conformance with ADatP-3. Any changes made by ISB must be technically approved through extant procedures for the Message Text Format Capability Team (MTFCaT) at the time the change is reviewed. The release of this technically complete work will be agreed by the MC JSB based on recommendations of the IERHWG.

5.   Nations/SCs proposing changes to the content of this publication are to ensure that proposals are addressed to the appropriate authority IAW Annex E.

CHAPTER 2 - FORMATTED MESSAGES INSTRUCTIONS

2.1.   INSTRUCTIONS FOR USE

1.   **General.** The formatted messages in this publication are designed in accordance with the NATO Message Text Formatting System (FORMETS), described in ADatP-3, and covered by STANAG 5500. This system is designed for the exchange of character oriented information in a format that can be processed both manually and by computers. It has the following objectives.

   a.   To improve interoperability between different national and NATO authorities and systems.

   b.   To provide the rules, constructions and vocabulary for standardized character-oriented Message Text Formats (MTF) that can be used in both manual and computer-assisted operational environments.

   c.   To ensure that messages include essential data and to reduce the risk of misunderstanding.

2.   **Purpose.**   This Chapter contains detailed information on formatted message construction. This section sets out the general and special information required by an operator writing, processing, and reading formatted messages. Information and instructions specified to an individual message or set are contained on the appropriate pages. Annotated examples on reading and writing formatted messages are contained in Chapter 3.

3.   **Concept.** A formatted message is defined in a simple language suitable for the exchange of character oriented information. The system comprises the rules governing representation of agreed conceptual definitions and arrangement of these representations within predetermined formats. The application of FORMETS rules of information exchange requirements results in an open-ended inventory of agreed representations, i.e. Field Formats, Set Formats and Message Formats, which is designed in accordance with a defined set of rules to produce a formal structure.

4.   **Format Structure.** Formatted messages have a formal structure, which must be followed according to the rules set out in this Chapter. Figure 2-1 shows the relationship between the major components of an MTF; solid lines are relationships that must exist, dashed lines are relationships that may exist depending on the design of the message. Every formatted message is generated from an Information Exchange Requirement (IER). IERs specify the information to be exchanged in accordance with APP-15, within the context of the mission. They describe key tasks, required degree of interoperability, and the parameters of communications and information systems involved. The order of all components (i.e. sets, segments, fields) in a message is predefined in the format and are referred as format positions.
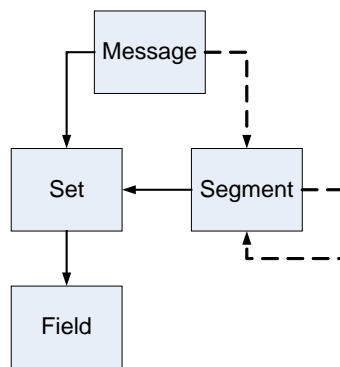
Figure 2-1: Message Structure

2.2.   MESSAGE INSTRUCTIONS

1.   **Message Text Composition.** The content of a formatted message is an ordered collection subdivided into 'Sets' each covering a specific aspect of the message. Sets within a message can be grouped together to form segments and one segment may be nested within another segment.

2.   **Message Formats.** A Message Format has a unique Message Text Format Identifier (MTFID) and specified sequence of sets and segments. The unique MTFID is a mnemonic keyword that associates the type of information that is to be provided by the message. It is contained in the message identification set (MSGID) which is at the beginning of each message. It also identifies the sets allowed by the message text format and the order in which they must be arranged.

> a.   Set Formats with identifiers EXER, OPER, MSGID, and REF occupy the first set format positions in each Message Format. Of these set format identifiers only MSGID is mandatory and must be specified in each Message Format.

> b.   The subsequent set format positions of the Message Format have been assigned as needed to satisfy a particular information requirement.

3.   **Occurrence Categories.** Each set and segment in a formatted message is assigned an occurrence category based on the importance and logical relevance to the information to be conveyed. The occurrence categories are also used in the field format positions within a set format. There are three types of occurrence categories:

> a.   **Mandatory (M).** Format positions that provide information considered essential to the message are assigned a "Mandatory" occurrence category and must be filled in.

> b.   **Operationally Determined (O).** Format positions whose use is determined solely by operator considerations are assigned an occurrence category of "Operationally Determined". This format position may or may not be filled in depending on the operational requirement and availability of information.

> c.   **Conditional (C).** Format positions whose use is dependent upon a defined condition are assigned an occurrence category of "Conditional".

4.   **Message Introduction.** An example of the introduction page for a message is shown in, with the following keys:

[1]   The Message Identifier, as used in the MSGID set.

[2]   Full name of message.

[3]   Related Documents.

[4]   Brief summary of purpose of the message.

[5]   Sponsor of the message format.

[6]   Explanatory notes about the message format.

[7]   Administrative status of the message format.

[8]   Publication Name, Message Reference Number, Version Number.

	Publication Name:	APP-11(D)(1)
	Message Reference Number:	F072
	Version Number:	5.0 [8]

[1] **AOD**

Message identifier (Name):	[2] AOD (AIR OPERATIONS DIRECTIVE)
Related Documents:	[3] AJP-3.3
Purpose:	[4] The AOD is used to provide directives to (Combined) Air Operations Centre (CAOC) commander (COMCAOC) for the employment of air assets and includes Air Defence (AD) priorities, AD postures, task forces allocations and mission orders.
Sponsor:	[5] (MC ASB) AIR OPERATIONS WORKING GROUP (AOWG)
Notes:	[6] none
Status:	[7] In Service

Figure 2-2: Message Introduction

5.   **Message Map.** The Message Map follows the Message Introduction. The following figures identify features of this format.

The message map is divided up into 8 columns, the content of which is discussed later in this section. The column details are:

Seg   - Used to indicate the grouping of sets in segments (see para 2.2.7).
Alt   - Used to indicate alternative set use (see para 2.2.11).
Rpt   - Used to indicate repeatability of sets (see para 2.2.16).
Occ   - Occurrence category of the set (see para 2.2.3).
SETID   - Used to identify the name of the set. (see para 2.3.2).
Seq   - The sequence number of the set.
Set Format Name   - The name of the set (For GENTEXT sets, this is the content of field 1) (See para 2.3.17.d)
Description   - Provides a brief description of the information

Seg	Alt	Rpt	Occ	SETID	Seq	Set Format Name	Description
	1#		O	EXER	1	EXERCISE IDENTIFICATION	IF USED, IDENTIFIES THE EXERCISE THE MESSAGE PERTAINS TO. NOT TO BE USED IN CONJUNCTION WITH SET OPER.
	1#		O	OPER	2	OPERATION CODEWORD	IF USED, IDENTIFIES THE OPERATION THE MESSAGE PERTAINS TO. NOT TO BE USED IN CONJUNCTION WITH SET EXER.
			M	MSGID	3	MESSAGE IDENTIFIER	SPECIFIES THE MESSAGE IDENTIFIER, MESSAGE ORIGINATOR, AND OTHER MESSAGE IDENTITY DETAILS.
FIELD 1 IN SET 3 (MSGID) IS ASSIGNED THE VALUE /OPTASK LINK/.							
		✓	O	REF	4	REFERENCE	IF USED, SPECIFIES IDENTIFYING DETAILS REGARDING A DOCUMENT, IMAGE OR OTHER INFORMATION EXCHANGE MEDIA THAT IS APPLICABLE TO THE CONTENT OF THIS MESSAGE.
			O	CANX	5	MESSAGE CANCELLATION WITH NEW INFORMATION PROVIDED	IF USED, PROVIDES DETAILS OF A PREVIOUS OPTASK LINK MESSAGE BEING CANCELLED BY THIS ONE.

Figure 2-3: Message Map: Part 1

6.   Interspersed through the message are a number of rules. In Figure 2-3 after Set 3 (MSGID) there is a rule stating that "FIELD 1 IN SET 3 (MSGID) IS ASSIGNED THE VALUE /OPTASK LINK/". These rules must be complied with to ensure the validity of a message. As well as rules assigning values, other rules prohibit or require certain information depending on another component in the message.

7.   **Segmentation.** Two or more sequential set format positions in a Message format that are related by their content can be designated as a segment structure. Instances corresponding to such a segment structure may occur as many times as needed within a message format. Normally there is no limit to the number of times a segment can be repeated within an instance of a message; however, in some messages, the number of repetitions of a segment may be restricted in the message design. Any restrictions are included at the end of the segment start line. By specifying a limit of only one occurrence, a non-repeatable segment can be present in a message.

8.   Where segments occur in a message, additional information is available about how they are to be used. Each segment is given a number and if it contains another (nested) segment, the segment number is extended using dot notation. Figure 2-4, shows an example of the start of a segment and supporting information about how it should be used. Note that the segment number, 3.1 is shown against each set in the segment. At the end of each segment there is a statement to inform the message drafter that they have reached the end of the segment e.g. "[3.1] End of FRIENDLY CONTACT DETAILS SEGMENT".

[3.1] Start of OPERATIONALLY DETERMINED Segment FRIENDLY CONTACT DETAILS SEGMENT which MAY be repeated (unlimited times).
PROVIDES DETAILS ON MULTIPLE FRIENDLY FORCES OPERATING IN THE ASSIGNED MISSION AREA.
THE SETS FYFCE THROUGH FYPOS FORM A SEGMENT.

Seg	Alt	Rpt	Occ	SETID	Seq	Set Format Name	Description
3.1			M	FYFCE	23	FRIENDLY FORCES	THE FYFCE SET PROVIDES INFORMATION ON FRIENDLY FORCES OPERATING IN THE ASSIGNED AEW MISSION AREA.
3.1			M	FYPOS	24	FRIENDLY FORCES POSITION	IDENTIFIES THE POSITION OF THE FRIENDLY FORCES REPORTED IN THE PREVIOUS SET.

[3.1] End of FRIENDLY CONTACT DETAILS SEGMENT

Figure 2-4: Message Map: Part 2

9.   Segment structures can be nested to whatever extent is required, Figure 2-5. Segments are identified in the message map through the use of numbers in the "Seg" column. For example, the first segment in the example is numbered 2.1. The first segment nested within the segment is 2.1.1 a second nested segment would be numbered 2.1.2 and so on.

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Seg	Alt	Rpt	Occ	SETID	Seq	Set Format Name	Description

[2.1] Start of OPERATIONALLY DETERMINED Segment MULTI TDL CO-ORDINATION DETAILS which MAY be repeated (unlimited times).
THIS SEGMENT DETAILS THE MULTI-TACTICAL DATA LINK (TDL) COORDINATION PLAN.
THIS SEGMENT COMPRISES THE SETS 'INTCOORD' THROUGH 'GENTEXT'('WEB COORDINATION') AND THE NESTED SEGMENTS 'MULTI TDL CO-ORDINATION TASK' AND 'VOICE CONTACT INFORMATION FOR MULTI TDL UNIT'.
This segment may contain the following nested segments [2.1.1] MULTI TDL CO-ORDINATION TASK

Seg	Alt	Rpt	Occ	SETID	Seq	Set Format Name	Description
2.1			M	INTCOORD	26	INTERFACE COORDINATION SEGMENT HEADING	IDENTIFIES THE START OF THE INTERFACE COORDINATION SEGMENT.

[2.1.1] Start of MANDATORY Segment MULTI TDL CO-ORDINATION TASK which MAY be repeated (unlimited times).
THIS SEGMENT DETAILS THE MULTI-TACTICAL DATA LINK (TDL) TASKING FOR A UNIT.
THE SEGMENT COMPRISES THE SET 'MULCDUTY' AND THE NESTED SEGMENT 'VOICE CONTACT INFORMATION FOR MULTI TDL UNIT'.
This segment may contain the following nested segments [2.1.1.1] VOICE CONTACT INFORMATION FOR MULTI TDL UNIT

Seg	Alt	Rpt	Occ	SETID	Seq	Set Format Name	Description
2.1.1			M	MULCDUTY	27	MULTILINK COORDINATION DUTY	INDICATES CONTACT AND IDENTIFICATION INFORMATION FOR DESIGNATED MULTI LINK COORDINATOR DUTY ASSIGNMENTS.

Figure 2-5: Message Map: Part 3

10.   The initial set of a segment may be selected from two or more mutually exclusive set format positions where one is required. This concept is explained in para 2.2.11.

11.   **Alternatives.**   Adjacent sets/segments may have an inter-dependence on one another that prohibit one if another is used. The allowed conditions for alternative sets are:

a.   The sets/segments are mutually exclusive but one is required, i.e. only one of the alternatives **must** be selected. Only a number is shown. See para 2.2.13

b.   The sets/segments are mutually exclusive but none are required, i.e. only one of the alternatives **may** be selected. A number and the "#" character, see para 2.2.14.

c.   At least one of the alternatives is required but more than one can be used, i.e. one or more alternatives **must** be selected. A number and the "*" character, see para 2.2.15.

12.   In the message map alternatives sets/segments are identified by the same number being used in the "Alt" column. i.e. all sets/segments that are alternatives will have the same number against them. In order to identify which kind of alternative is to be used, an additional character may be added after the number.

13.   If only the number is shown in the column, only one of the sets/segments with the same number against it must be used at that position in an instance of a message. Figure 2-6 is an example taken from a message. Sets 17 (RADARC), 18 (POLYGON) and 19 (CIRCLE) can all be used in the message but the message drafter must only select one of the sets to be used at that position in the message. Of course, if the segment 1.1 is repeated, where it is allowed in the message, the message drafter can make the choice of the alternative again.

Seg	Alt	Rpt	Occ	SETID	Seq
1.1			M	TBMFAREA	16
1.1	2		O	RADARC	17
1.1	2		O	POLYGON	18
1.1	2		O	CIRCLE	19

Figure 2-6: Alternate Example, One Required Annotation

14.   If # follows the number, e.g. 1#, in the Alt column then either 0 or 1 of the alternatives may be selected. In Figure 2-7 sets 1 (EXER) and 2 (OPER) cannot be used together in the

same message; however, there is no requirement to include either of these sets in an instance of the message.

Seg	Alt	Rpt	Occ	SETID	Seq
	1#		O	EXER	1
	1#		O	OPER	2

Figure 2-7: Alternate Example, Non-Required Annotation

15.   If * follows the number, e.g. 3*, in the Alt column then one of the alternatives must be included in an instance of a message but it is permissible to use more than one of the alternatives. It should be noted that the order that the sets appear in an instance of a message must be the same as the order that they appear in the message map.

16.   **Repetition.** In the Message Map sets may be identified as being repeatable. In an instance of a message, the repeated set must immediately follow the original set. Sets that may be repeated can be identified by a ✓ in the Rpt column. E.g. in Figure 2-8 Set 4 (REF) can be repeated as many times as required.

Seg	Alt	Rpt	Occ	SETID	Seq
		✓	O	REF	4

Figure 2-8: Repeatable Set

17.   In some messages a maximum number of repetitions of the set may have been specified. In this case, the ✓ mark will be followed by a number, e.g. ✓4 which should be interpreted as the set being repeatable up to 4 times.

18.   There are a number of set types that cannot be repeated and should not appear in the message map as being repeatable. These are:

a.   The initial set format position of a segment, this includes alternative initial sets.

b.   Scheduled freetext sets (GENTEXT)

c.   Additionally, unscheduled freetext AMPN, NARR and RMKS cannot be repeated as adjacent locations sets in an instance of a message. E.g. the construction in Example 2-1 is not legal.

```
AMPN/Amplification 1//
AMPN/Amplification 2//
```
Example 2-1: Example of Illegal Unscheduled Freetext Repetition

2.3.   SET INSTRUCTIONS

1.   **Definition of a Set.** A set is a component of a formatted message covering one specific aspect of the message subject. Sets are made up of one or more fields which contain the data. There are two types of sets; Linear where all the fields are in sequential order and Columnar sets where the fields are presented in the form of a table. Sets must start with a Set Identifier (SETID) which gives an indication of the content, as well as providing the identification of the set format used, e.g. the REF Set contains information about references.

2.   **SETIDs.** The SETID is a unique group of characters assigned to each set format as a key to the structure and information content of that format. The SETID for each set in the message is shown in the 5th column of the message map, see Figure 2-3. In electronic copies of the publication the SETID in the message map is also a hyperlink to the set format page. The SETID is not referred to in the field count i.e. Field 1 is the first field after the SETID.

3.   The set format page provides the detailed layout of the set. A Set Map for a linear set is shown in Figure 2-9; the map provides the order in which the fields in the set appear. Like sets, each of the field positions have an occurrence category, marked as M, C and O on the set map, with the same meanings as detailed in section 2.2.3.

4.   The minimum and maximum permitted length of the field is shown as a range on the set map. Note that if the set map extends onto a second line, the SETID is included, this should not appear when writing a message, e.g. in Figure 2-9 the "Location" Field should immediately follow the "Area Geometry" Field.

Figure 2-9: Linear Set Map.

5.   **Repetition within Linear Set.** In the linear set, the designated final field, or group of contiguous fields that includes the final field, may be repeated.

6.   If there are a group of fields that can be repeated at the end of the set the word "REPEATABLE" is shown underneath the field group. When repeating fields, all the fields in the previous repetition must be completed irrespective of their occurrence category.

7.   Below the set map is a detailed explanation of the information that can be placed into each field. An example is in Figure 2-10.

Figure 2-10: Set Filler Notes.

8.   The set filler notes identify the fields in sequential order. The majority of fields have a single format for the information that can be included in the field; however fields such as Field

2 in the example can have more than one format. These are known as alternative content fields.

9.   **Repetition within Columnar Set.** All the fields of a columnar set comprise of a repeatable group of fields. In columnar sets, each instance of the group of fields is always entered on a new line in order to maintain the desired tabular arrangement.

10.   The set map for a columnar set, Figure 2-11 is similar to a linear set with an additional 2 rows of information for each field, these are:

    a.   column header

    b.   the start column and justification (Left or Right).

Figure 2-11: Columnar Set Map.

11.   **Alternative Content Fields.** Some types of information can be expressed in a variety of ways. For example, Location can be stated as geographic coordinates, bearing and range, place name, etc. The Set Format may specify two or more mutually exclusive alternative field formats for the same field format position of a linear or columnar set format. These fields are known as Alternative Content Fields. In these cases a field descriptor may have been specified in the set construction to assist the reader in determining the alternative that the message creator used and remove the risk of ambiguity; it is common in the design of a message for the most commonly used alternative not to have been assigned a field descriptor in the format. For example, in Figure 2-10, Alt A of field 2 was consider the most frequently used alternative so no Field Descriptor was assigned where Alt B of field 2 has the field descriptor "TYPE". In an instance of a message if Alt B was used it would look like: /TYPE:LTR/ .

Note: A field descriptor is always separated from the field content by a colon (systems may automatically insert this character).

12.   To the right of the table is an explanatory note about the field and how it should be used. There is an example of the format that the information should be entered in and a link to a table which details the exact information that may be entered into the field.

13.   After the set filler notes there is additional information that may assist with the interpretation of the set, these are:

a.   Notes and special instructions that are applicable to the set.

b.   Documents that are related to the set and may provide further guidance as to how it should be used.

c.   At least one example of a completed set.

d.   Rules that are specifically associated with the set can be found at the final entry on the set format page. These have a similar function as the message level rules described in para 2.2.6 but are only applicable to the content of the set.

Notes:	IF A TRANSIT POINT IS SPECIFIED, THE STRUCTURED LANGUAGE/NOTATION REQUIRES SPECIFICATION OF BOTH DTG OF ARRIVAL AT AND LOCATION OF THE TRANSIT POINT.
Related Documents:	ATP-8
Examples:	ADVMOVE/091630ZJUN2004/LOC:BRAVO ONE// ADVMOVE/100800ZJUN2004/LOC:RENDEZVOUS/A1/102000ZJUN2004 /4520.3500N-02126.1500E/A2/111100ZJUN2004/4522.0000N-02127.1000E//
Specific Requirements::	SIGNIFICANT FIELD 4 IN CORRESPONDING [A] FIELD GROUP IN SET ^ (ADVMOVE) IS REQUIRED IF SIGNIFICANT FIELD 3 IN CORRESPONDING [A] FIELD GROUP IN SET ^ (ADVMOVE) OCCURS, OTHERWISE IT IS PROHIBITED. SIGNIFICANT FIELD 5 IN CORRESPONDING [A] FIELD GROUP IN SET ^ (ADVMOVE) IS REQUIRED IF SIGNIFICANT FIELD 3 IN CORRESPONDING [A] FIELD GROUP IN SET ^ (ADVMOVE) OCCURS, OTHERWISE IT IS PROHIBITED.

Figure 2-12: Amplifying Information in The Set Format

14.   **Rules for the Construction of a Set.** In order to provide both manual and automated readability of a formatted message, a number of syntax rules must be obeyed for the completion of each set.

a.   All sets must start at the beginning of a line with the SETID.

b.   All sets must have at least 1 field completed.

c.   Each field in each set must begin with a field marker (/).

d.   With the exception of the free-text field in the GENTEXT, AMPN, NARR and RMKS sets, a field must not be split between lines.

e.   The end of each Set must be indicated by the end-of-set marker – double slash (//). The // characters must not be split between lines. If this is likely to occur on the communication system being used then a line feed should be inserted to create a continuation line that only contains the end-of-set marker. See Example 2-2.

```
COMMS/CTF40/ABC/333.3MHZ/P/VOICE/222.2MHZ/S/VOICE/S/303.0MHZ
//
```

Example 2-2: A Linear Set Where the End Of Set Marker Extends Over The Line

f.   Appropriate unscheduled free text sets may be inserted between sets in the message map, but they must not interrupt a set.

15.   **Linear Sets.** A linear set is constructed so that fields are arranged in a linear manner. A linear set format may contain as many field format positions as are necessary to satisfy the information exchange requirements addressed by the set.

a.   A linear set format identifier uniquely e.g. JUDATA as shown in Example 2-3.

b.   The meaning of the contents of the fields of a linear set is established during the design of the set by specifying the type of information to be provided in each field position. The fixed relationship between field position and context meaning makes it essential that the order of fields be maintained in all applications of a given set.

c.   Theoretically, a linear set should appear on a single line of infinite length; however, in most transmission mediums it will be necessary to split a set with several fields onto more than one line, in this case the line feed should be inserted at the end of the field so that the new line starts with a new field marker. See Example 2-3.

```
JUDATA/SHIP:NIMITZ/CS:STONEWALL/JU:00001/16/00277-00300
/BLOCK:00201-00500/-/SHIP-3/12/NORM/1000/PRI/Y/-/-
/FBLOCK:00300-00500//
```
Example 2-3: A Linear Set Extending Over More Than One Line

d.   The final field format position or Group of Field Formats in a linear set format may be designated as being repeatable.

16.   **Columnar Sets.** Set formats designed for columnar presentation allow repetitive information to be arranged in vertically aligned columns under an appropriate column header, Example 2-4. The fields of a columnar set often contain, as part of the field content, blank characters that are required to achieve the columnar presentation.

a.   The SETID for columnar sets always begins with a numeric character, The SETID for a columnar set is entered alone on the first line of a columnar set. E.g. 1AMMOH in Example 2-4

b.   The second line of a columnar set comprises the header line, which may occur only once. It contains column headers, blank characters and slashes (/) as column delimiters, all of which are specified by the set format. Column headers provide a cue to the human reader as to the type of information contained in each column, and are required irrespective of the occurrence categories assigned to the corresponding field positions by the columnar set format. The column headers are always justified to the left irrespective of the justification specified for the contents.

c.   Columnar sets make use of the convention for grouping fields to allow for their repetition as a group. After the header line each subsequent line of a columnar set is made up of a group of fields. All of the fields that are specified for the set must be included in this group. The specification of column position, column header and maximum field position length of the last column in a columnar set format must be such that, the header line and lines of group of fields are limited to a maximum of 69 character-positions. Each instance of the group of fields is entered on a separate line beginning at the first character position of the line.

d.   Blank characters are added as part of the field content to maintain the columnar alignment.

e.   Each field is fixed in length and contains sufficient character positions for the entry of either the field marker, the field descriptor and the longest code permitted by the assigned data codes or the column delimiter and column header, whichever is greater.

f.   Data codes are left or right justified within the field according to specifications given in the Set Map.

g.   The end-of-set marker (//) is positioned immediately after the final data code of the last iteration of the group of fields; however, it shall be placed on the next line if the final data code plus the end-of-set marker exceeds the 69 character line length.

```
1AMMOH
/CODE           /AMMO-NAME      /QTY-OH      /DOS
/AMMO50        /50CAL          /       3000/2
/HOW105        /105MM          /           -/2//
```
Example 2-4: Columnar Set

17.   **Free Text Sets.** Free Text sets begin with a SETID and are terminated with an end-of-set marker (//). A Free Text set contains a free text field of unrestricted length, which is arranged in contiguous lines. The information conveyed in the free text field of Free Text sets usually contains natural language and may make use of all available characters. Additionally the 4 free text sets have a number of special rules that are unique to them. Normally the slash character (/) and the colon (:) are reserved for special use in sets; however, the following deviations from this general rules are permissible in the free text field.

a.   A colon may be used but not as the last character of the free text field.

b.   Single slash character may be used provided it is not the first or last character of the free text field.

c.   Two slash characters may not be used adjacent to each other, other than to mark the end of the set, unless they are proceeded by a colon, i.e. (://)

```
GENTEXT/SPECIAL INFORMATION/This is an example of how the colon and two
slashes can be used within the free text field. http://www.nato.int
providing information that previously had to be spelled out.//
```
Example 2-5: The Use of :// In a Free Text Field of a Free Text Set.

d.   There are four Free Text set formats. One (GENTEXT) appears in the Message Map and the others (AMPN, NARR and RMKS) are unscheduled and may be inserted at specific positions in a message.

(1)   **GENTEXT Set** – (General Text). This set contains two fields; the first field provides the description of the subject and is followed by a free text field with no prescribed length limitation. The content of field 1 is predefined and a rule will always follow each GENTEXT set in the message map e.g. "FIELD 1 IN SET 140 (GENTEXT) IS ASSIGNED THE VALUE /SPECIAL INSTRUCTIONS/." The value given must be entered exactly as written in the rule.

```
GENTEXT/SPECIAL INSTRUCTIONS/1. CAPACITY:MDM TK, 50 VEHICLE CONVOY.
2. CHOKE POINTS:EXIT 5, TANTA, AND ALEXANDRIA.
3. DAMAGE: LARGE POT HOLES 10 KM SOUTH OF TANTA.
4. NO ENEMY ACTIVITY//
```
Example 2-6: Use of GENTEXT

(2)   **The AMPN, NARR and RMKS sets** – Amplification, Narrative, and Remarks. These sets contain only a single free text field and are for unscheduled use. These sets are not repeatable. A message text may not contain successive AMPN or NARR sets and only one RMKS set may be used as the very last set of the message.

(a)   AMPN set is used to provide an explanation or additional information concerning only the preceding set.

(b)   NARR set is used to provide an explanation or additional information concerning an immediately preceding group of two or more adjoining sets. The sets that the NARR set is referring to should be able to be identified through the content of the free text. A NARR set could commonly be used to provide a free text explanation about a group of sets in a segment.

(c)   RMKS set is used to provide an explanation or additional information applicable to the whole message text. When used, it will always be the last set of the message text.

(3)   Depending on the structural relationships of the required free text information, it is possible for an AMPN set to be immediately followed by a NARR or the RMKS set, or for a NARR set to be immediately followed by the RMKS set. The AMPN set cannot immediately follow the NARR or GENTEXT set.

(4)   Unscheduled free text can only be used between sets, for instance, in a columnar set with four lines, explanatory information regarding data in the third line would be entered in a Free text such as in the AMPN set, positioned immediately after the completed columnar set and **not** between the lines in the columnar set, see Example 2-7.

```
1AMMOH
/CODE     /AMMO-NAME  /QTY-OH /DOS
/AMMO50   /50CAL      /   3000/2
/HOW105   /105MM      /    500/2//
AMPN/NO CHANGE TO HOLDING OF 50CAL IN LAST 24 HOURS//
```
Example 2-7: Use of AMPN in Columnar Set

18.   **Truncation of Sets.** Truncation of a set by omission of one or more fields is permitted as follows:

a.   Unused fields (fields with single hyphen as content) at the end of a set with operationally determined or conditional occurrence category may be omitted.

b.   Unused fields with operationally determined or conditional occurrence category at the end of a group of fields in a columnar set may be omitted. Example below shows in line 2 with the last two fields omitted and in line 3 with the last field omitted.

```
2PAX
/PAX /TOTWGT      /EMBARK          /DEBARK           /PREFDEL/R/HEL
/  2/      110KG/N:GARMISCH  /N:BRUSSELS       /PARAHIG/N/  1
/  2/      120KG/N:BRUSSELS  /N:KOLN           /LANDNRQ
/  3/      115KG/N:KOLN      /N:KOBLENZ        /PARGULL/Y//
```
Example 2-8: Truncation of a Columnar Sets

2.4. FIELD LEVEL INSTRUCTIONS

1.   **Definition of a Field.** A field is a subdivision of a set which contains data items, a chain of linked data items, or free text. The message map and set instructions guide the originator and the recipient to the position of the entry, but the actual data is contained in the field.

2.   **Field Formats.** There are 2 types of field formats, elemental or composite. These types and their relationships are described below.

    a.   **Elemental Field Format.** The content of an elemental field relates to a single piece of data e.g. the month of the year. The types of data that an Elemental Field can contain is covered in Para 2.4.3 below.

    b.   **Composite Field Format.** Is composed of a sequence of elemental fields in a specific order. E.g. a Date time group is composed of the elementals Day of the month, Hour, Minute, Time zone, Month and Year. These elementals are combined to form a single field.

3.   **Types of Elemental Field Formats.** Elemental field formats fall into 3 types, data codes, range entries and instructive entries:

    a.   **Data Codes.** Words in natural language are not always suited for use in formatted messages and are usually represented either by abbreviations or by codes already in existence in publications. In the UF, list of coded items are shown in table specifying the list of individual data items and data codes where each entry has a specific meaning, Figure 2-13. Data codes are the legal values permitted in a field. Each of the Data Items may have an explanation associated with it to ensure that a clear definition is provided where necessary.

Table 1004/1 - MONTH NAME, ABBREVIATED (3-3)
Related Documents: None
Explanation: THE NATO-STANDARD 3-LETTER ABBREVIATED ENGLISH NAME OF A SPECIFIC MONTH, ONE OF THE TWELVE PARTS INTO WHICH A GREGORIAN CALENDAR YEAR IS DIVIDED.

MONTH NAME, ABBREVIATED (Data Item)	Data Code	Explanation
JANUARY	JAN	None
FEBRUARY	FEB	None
MARCH	MAR	None
APRIL	APR	None
MAY	MAY	None
JUNE	JUN	None
JULY	JUL	None
AUGUST	AUG	None
SEPTEMBER	SEP	None
OCTOBER	OCT	None
NOVEMBER	NOV	None
DECEMBER	DEC	None

Figure 2-13: Coded Items

    b.   **Range Entry Type.** Specifies a range of data items and data codes, there are 3 different types of range entries.

        (1)   **Integer Ranges.** An integer range is specified using the minimum integer value and the maximum inclusive integer value of the range with intermediate values understood to be whole numbers. Allowed characters for integer range are the characters "0" through "9" and the character "-" to express negative values.

(2)   An integer range is specified as either fixed or variable length, if the length is fixed, leading 0 characters should be added. Figure 2-14 shows how an Integer Range is represented in the User Format.

Table 1000/1 - DAY (2-2)			
Related Documents:	None		
Explanation:	None		
DAY	**Range - Integer (2-2)**		**Explanation**
	MIN Value	MAX Value	None
	01	31	

Figure 2-14: Integer Range Table

(3)   **Ranges Containing Decimal Point Values.** A decimal range is specified using the minimum value and the maximum value of the decimal range. A decimal range specifies either a fixed or a variable number of decimal places (digits to the right of the decimal point).

(4)   A fixed number decimal place specification indicates that all values contain the same number of decimal places. A variable number of decimal places specifies the minimum and maximum value over which the number of decimal places may vary. Values without decimal point are only allowed when the minimum range of decimal places is zero.

(5)   Allowed characters for decimal range are the same as for integer range and the decimal point character ".". Figure 2-15 shows how a Decimal Range is represented in the User Format.

Table 1800/3 - OVERSIZE CARGO WEIGHT IN SHORT TONS IN TENTHS (3-5)				
Related Documents:	None			
Explanation:	THE WEIGHT OF CARGO THAT EXCEEDS THE USABLE DIMENSION OF THE 436L PALLET, 104" X 84" X 96", OR A HEIGHT SET BY THE PARTICULAR MODEL AIRCRAFT TO THE NEAREST TENTH.			
OVERSIZE CARGO WEIGHT IN SHORT TONS IN TENTHS		**Range - Decimal (3-5)**		**Explanation**
MIN Places	MAX Places	MIN Value	MAX Value	None
1	1	0.1	999.9	

Figure 2-15: Decimal Range Table

(6)   **Alphabetic and Alpha-numeric Ranges.** An alpha-numeric range is used to specify a range of values that contain all alphabetic characters, a mixture of alphabetic and numeric characters, purely numerical ranges where the interval is not one and complex ranges expressed as regular expressions. The explanation of how this is achieved mathematically in ADatP-3 is beyond the scope of this publication. In order for operators to be able to interpret the requirements for a message, the ranges of data items available have been expressed in a format similar to Figure 2-16. Care must be taken to ensure that the value chosen can be derived by looking at the 1st, 2nd and last value, particularly when the second value is incremented by a value other than 1, e.g. in Figure 2-16 the 1st value is 000, the 2nd value is 005 and the final last value is 990, only values that are incremented by 5 are permitted.

Table 1218/5 - INNER RANGE IN HUNDREDS OF YARDS (3-3)				
Related Documents:	None			
Explanation:	AN INNER RANGE MEASURED IN HUNDREDS OF YARDS			

INNER RANGE IN HUNDREDS OF YARDS		Range - Alphanumeric (3-3)		Explanation
First Value	Second Value	Last Value	Omit	None
000	005	990		

Figure 2-16: Alpha-Numeric Range Table

(7)   **Regular Expressions.** A method of specifying complex Alpha-numeric Ranges is the UF is known as a Regular Expression. These cannot be defined in simple terms in a table. Where these mathematical expressions appear in the UF a plain language explanation is also provided, Figure 2-17.

Table 1023/20 - CONTEXT QUANTITY, DECIMAL PT PERMITTED, 3 CHAR MAX (1-3)		
Related Documents:	None	
Explanation:	THE RANGE FOR THIS FUD IS: [0 THROUGH 999, 0 TO 2 DECIMAL PLACES].	

CONTEXT QUANTITY, DECIMAL PT PERMITTED, 3 CHAR MAX	Instructive Regular Expression (1-3)	Explanation
[0-9]{1,3}|[0-9]{0,1}\.[0-9]|\.[0-9]{2,2}		THE RANGE FOR THIS FUD IS: [0 THROUGH 999, 0 TO 2 DECIMAL PLACES]. THE VALUES ARE THE INTEGERS 0 THROUGH 999, AND DECIMAL POINT VALUES. THE DECIMAL POINT VALUES ARE IN THE RANGE OF .01 THROUGH 9.9, INCREMENTED BY: .01 IN THE RANGE OF .01 THROUGH .99; .1 IN THE RANGE OF .1 THROUGH 9.9.

Figure 2-17: A Regular Expression Table

c.   **Instructive Entry Type.** In this type of entry, data items are not specified; however, allowable characters and a maximum and minimum length are specified.

(1)   There are normally 3 instances where this type may be used:

(a)   Fields that are to contain text, the exact wording of which cannot be anticipated.

(b)   Those exceptional cases when the volatility of individual entries or ranges is such that the standard cannot be updated in time to reflect the operational needs.

(c)   Individual entries or ranges would result in a classification of the ADatP-3 format repository that is higher than acceptable at the time of specification.

(2)   In Figure 2-18 the number of characters permitted are between 1 and 15 and must be Alphabetic Upper Case (A-Z), Blank, Numeric (0-9), Special characters. There may be additional information in the explanation.

Table 1864/2 - ADDITIONAL LINK MANAGEMENT CODE (1-15)		
Related Documents:	None	
Explanation:	THE ADDITIONAL LINK MANAGEMENT CODES NOT PREVIOUSLY USED IN THE MESSAGE.	

ADDITIONAL LINK MANAGEMENT CODE	Instructive - Allowable Entries (1-15)	Explanation
Alphabetic Upper Case (A-Z), Blank, Numeric (0-9), Special		None

Figure 2-18: Instructive Entry

(3)   **Field Contents.** Field content of an instructive entry is divided into 6 general groups these are:

(a)   Alphabetic Upper Case Characters: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

(b)   Alphabetic Lower Case Characters:
a b c d e f g h i j k l m n o p q r s t u v w x y z

(c)   Blank Characters

(d)   Numeric Characters
1 2 3 4 5 6 7 8 9 0

(e)   Special Characters
. , - ( ) ?

(f)   Extended Special Characters
! @ # $ % ^ & * = _ + [ ] { } \ " ' ; < > ~ |

(4)   The free text field of the GENTEXT, AMPN, NARR and RMKS sets can also contain:

(a)   Free Text Special Character
:// The colon double slash character sequence.

(b)   Slash Character
/   The single slash character.

(c)   Colon Character
:   The colon character may be used on its own in a freetext set but may not immediately precede the end of set marker "//" which could cause confusion with para 2.4.3.c(4)(a).

(d)   Line Separator
The sequence of control characters carriage return and line feed necessary to begin a new line.

(e)   Horizontal Tab

4.   **The Use of the Hyphen "-".** There are several uses for the hyphen as described below.

a.   **Data Not Available or Being Withheld.** When the data needed to complete a field is not available or is being withheld, the Hyphen "-" is used as the field content.

(1)   The use of a Hyphen may only be used once in a field irrespective of whether it is an elemental or a composite. In the case of a composite if one of the elements of the composite are not available or being withheld the whole field should be considered to be not available and a single hyphen should be inserted in the field. A field descriptor cannot be used in conjunction with a hyphen.

(2)   If a Composite Field is specified, all elements of a composite field format must be known in order for it to be completed. As an example, Table 2000 (Day and Time) is a composite field format composed of elemental

Tables 1000 (Day), 1001 (Hours), 1002 (Minutes) and 1003 (Time Zone). If the correct time zone is not known, Table 2000 is not known, in its entirety, and the hyphen must be used.

b.   **Linear Sets**

(1)   When the data needed to complete a field within a linear set is not available or being withheld, the hyphen will be entered immediately following the associated field marker. The hyphen will be followed immediately by either the next field in the set, or the end-of-set marker.

(2)   At least one field in each repetition of a group of fields shall contain a data code. It is not permissible to place a hyphen in all the fields in the field group.

c.   **Columnar Sets**. Hyphens are entered in the fields of columnar sets when corresponding data is not available for those fields.

d.   **Inappropriate Data.** The hyphen is also used to complete a field when entry of a data code would be inappropriate. This situation could arise when there is a rule that prevents one field being used when another one is. E.g. "FIELD 1 IN SET ^ (MODE) IS REQUIRED IF FIELD 2 IN SET ^ (MODE) DOES NOT OCCUR. ". In this case the requirement for Fields 1 is dependent on Field 2 having data in it. To maintain the structure of the set (para 2.3.15.b) a hyphen must be placed in the field that cannot be completed.

`MODE/SUBMERGED/TURBINE-REDUCTION/250FT/M/LLOYDS MIRROR//`	☑
`MODE/SUBMERGED/-/250FT/M/LLOYDS MIRROR//`	☑
`MODE/SUBMERGED/250FT/M/LLOYDS MIRROR//`	☒

Example 2-9: Correct and Incorrect Maintenance of Field Integrity

e.   **Occurrence Requirements.**   The use of the hyphen for Mandatory, Operationally Determined and Conditional occurrence categories is explained further in the Occurrence Categories of Fields section below.

f.   **Unknown data items.** In some cases, the data codes prescribed for a coded item includes an individual entry data code representation for Unknown, e.g. UNK. When such a data code is available, it must be used rather than the hyphen when the information to complete the field is not known rather than not being available.

5.   **Occurrence Categories of Fields.** Every field format position in a set format is assigned an occurrence category based on the necessity and structural relevance of the information within the set. These occurrence categories remain constant regardless of the set usage in different Message formats. As explained in para 2.2.3, the occurrence categories are Mandatory, Operationally Determined and Conditional. The following occurrence category rules apply to fields of a set.

a.   Mandatory field position must be completed for every use of the set. Entry of a hyphen "-" to represent a lack of data constitutes field completion.

b.   Operationally Determined field position is to be completed when it is appropriate to do so. Where data for any reason cannot be entered, the field may be omitted unless it is followed by one which requires completion, in which case a hyphen "-" is entered.

c.   Conditional field position has a condition governing its use in the set. That condition must be explicitly stated in the set or Message Format specifications. If other fields following such a field in a set are used, and the condition prohibits the use of the field, a hyphen "-" must be entered.

6.   **Field Descriptors.** A field descriptor is a word, abbreviation or acronym. It comprises of one to eight alphabetic upper case or numeric characters followed by a colon ":" to separate it from the data code that follows. The field descriptor is used if there is an operational requirement to cue the user to the meaning of the field content or to identify the alternative used in an alternative content field.

CHAPTER 3 - MTF OPERATIONAL USER GUIDE

3.1. INTRODUCTION

1. The message text formats (MTFs) which are linked Appendices to Annex A as have been agreed by NATO nations as meeting operational information exchange requirements. MTFs are in a format that is man-readable and computer processable and are designed to be unambiguous and concise. The information to be transmitted in a MTF message is sequentially ordered and the format must be adhered to.

2. The User Format (UF) is a user oriented guide to aid the interpretation of a MTF.

3.2. AIM

The aim of this Chapter is to provide guidance at the operational user level on how to read or write a formatted message using the User Formats in Annex A.

3.3. ASSUMPTION

It is assumed that the user does not have the assistance of message preparation software or sufficient guidance with the messaging software. Where the user has software assistance they should be using the software as a primary message preparation system. A more detailed interpretation of the rules governing MTFs can be found in Chapter 2.

3.4. SECTIONS OF THE MESSAGE TEXT FORMAT (MTF)

1. Making messages flexible enough to be able to pass information on a wide range of subjects but also precise enough as to be able to be interpreted accurately and unambiguously by a computer creates a requirement for a formal layout. The requirement for man readability makes the division of the message into identifiable components advantageous.

2. The MESSAGE is the information part of a communication which could be over high grade messaging, email, web service, fax or pen/paper. In fact MTFs are flexible and simple enough to be passed over any bearer that can carry textual characters.

3. A SEGMENT is a number of SETs that are grouped together.

4. A SET is a collection of FIELDS about the same specific subject area. They start with a keyword, such as MSGID and end with a double slash (//) e.g. Example 3-1.

```
MSGID/MISREP/APP-11(D)/1/SHAPE/-/20150606T123401Z/-/-/NATO
/UNCLASSIFIED/MEDICAL//
```
Example 3-1: MSGID Set

5. A FIELD is an individual text area. They are separated from each other by a single slash (/).

Note: A simple analogy would be to think as a Message as a letter, a Segment as a paragraph, a Set as a sentence and a Field as a word within the sentence.

3.5. HOW TO READ A MESSAGE

1. MTF messages will be received in one of two formats, these are either textual, Example 3-2 or as an instance of a XML-MTF, Example 3-3. Both of the formats contain the same information; however, the textual version is more suited to man readability but can also be machine read using appropriate software, while the XML-MTF is more suited to machine reading.

2. On receiving a MTF message the user will normally be presented with the man-readable version as shown in Example 3-2, this may be on a screen or as a printout. This section is intended to assist in interpreting the information contained in a message using the User Formats contained in Annex A of this publication.

```
EXER/CMX 10/DISTAFF//
MSGID/AOD/APP-11(D)/1/SHAPE/001/JUL/-/-/NATO/UNCLASSIFIED//
REF/A/NUC1/SHAPE/DMY:02062003/AIR 051/NOTAL//
REF/B/TYPE:LTR/SACLANT/FEB2003/100/NOTAL/FN:4503B/FN:3780C//
```
Example 3-2: Textual MTF

3. If the received message is similar to Example 3-3, the message is a XML-MTF and chapter 4 should be referred to.

```
<?xml version="1.0"?>
<mtf:GeneralInformationMessage xmlns:mtf="urn:nato:mtf:app-
11(d):1:geninfomsg" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:nato:mtf:app-11(d):1:geninfomsg messages.xsd">
   <ExerciseIdentification>
      <ExerciseNickname>CMX 10</ExerciseNickname>
```
Example 3-3: XML-MTF Instance

3.6. DECODING A MESSAGE

1. **Identify the Message.** The first step in decoding a message is to identify which MTF the message drafter used in order to create the message. To identify the correct MTF, locate the Message Identifier set which begins with "MSGID". The MSGID will always be in the field following the set identifier "MSGID". – This is "AOD" in Example 3-4.

```
MSGID/AOD/APP-11(D)/1/SHAPE/001/JUL/-/-/NATO
/UNCLASSIFIED//
```
Example 3-4: Identify the Message Using the MSGID Set

2. The remainder of this set contains:

    (1)   /APP-11(D)   - The publication the UF can be found in.

    (2)   /1   - The change state of that publication.

    (3)   /SHAPE   - The originator of the message.

    (4)   /001   - The serial number of these messages sent in the month.

      (5)   /JUL   - The month this message was sent.

      (6)   /-/-   - 2 fields that were not required in this message.

      (7)   /NATO   - The security policy for the content of the message.

      (8)   /UNCLASSIFIED   - Message security classification.

      (9)   //   - End of set marker.

3.   **Locate the User Format –** The second step in decoding a message is to locate its User Format in Annex A.

    a.   Annex A, Appendix 1 lists messages alphabetically by Message Title, MSGID and by Functional Areas.

    b.   Annex A, Appendix 2 list messages alphabetically by MSGID. (For more information on the purpose of Appendix 2 see para 1.4.7.b).

4.   **Verify the Version of the Message –** As the sole repository for NATO MTFs, Annex A may contain several versions of the same message depending upon operational requirements.

    a.   The version of the message is given in the MSGID set in field position 2 and 3. In Example 3-4, the MTF was published in the original release of APP-11(D). If the third field position stated "1", the MTF was published in the first version of APP-11(D).

    b.   If the correct version is not found in Annex A, Appendix 1, search Appendix 2.

5.   **Check the UF**. The next step in reading a message is identifying the purpose of the message which is stated on the front page of the UF as shown in Figure 3-1. The UF contains information about the MTF.

    a.   APP-11(D) – The publication release edition

    b.   F072 – The Message Reference Number

    c.   1.0 – Version number used for configuration management

    d.   AOD (AIR OPERATIONS DIRECTIVE) – Message Identifier and long title

    e.   AJP 3.3 – Related Documents to the MTF

    f.   The purpose of the message and its use.

    g.   MC ASB - The sponsor of the MTF

    h.   Any notes which pertain to the MTF or amplification to the purpose or use of the message.

    i.   In use – Status of the message.

Figure 3-1: Front Page of User Format

3.7. USING THE USER FORMAT TO DECODE A MESSAGE

1.   **Reading a Message Map** – The Message Map provides a breakdown of the Message in Segments and Sets. Compare the message in Example 3-2 and the Message Map in Figure 3-1. Each set in the message will correspond to a Set Identifier (SETID) in the Message Map.

2.   **Contents of a Message Map.** A description of each column of the Message Map is given in Figure 3-2. A decode for the meaning of the symbols in the first 2 rows of the message map are shown in the footer of each page. The Seg, Alt, and Occ column contents are described in para 2.2. Note particularly the example of the Alternative set use symbols in the "Alt" column, this is explained in para 2.2.11.

Seg	This indicates whether or not a set is contained in a segment. Segments are numbered using the "legal" numbering style. E.g. segment 2.1.1.1 is contained within segment 2.1.1 which in turn is contained within segment 2.1.
Alt	This indicates whether there is a choice of different SETs to use when creating the message. (The 1 indicates that this is the first time that an alternative is available in the message. All the sets with the same number are included in the same alternative group. The **#** indicates that only 1 of the alternatives MAY be selected.)
Occ	This indicates that the sets are Operationally Determined and the use is determined by the message drafter.
SETID	The first component you will see in each set (line on the message) in this case EXER or OPER. Each SETID corresponds to a Set Map. See para 2.3.2.
Seq	Sequence Number – sequentially numbers all the SETs used in the message.
Set Format Position name	A full name for the SET.
Description	Guidance on how to use the SET in the context of the message.

Figure 3-2: Decode Of First 2 Rows of Message Map

3.   **Identifying Set Map.** The Set Map lays out the components (fields) for each set, the UF documentation for each message contains a Set Map for each set used in the message. The initial field in each set provides the set name and is the indicator for the set map to be used to decode the meaning of the fields. The third set used in Example 3-2 is the REF set, the set map for this set is shown in Figure 3-3.

REF

Set identifier (Name):   REF (REFERENCE)

Figure 3-3: Set Map

4.   The table in the lower portion of Figure 3-3 shows the decode information for the first 3 fields in the set, an explanation of the column contents is shown in Figure 3-4,

No	Lists the Field location in respect to the SETID. The first field to follow the SETID is the "SERIAL LETTER".
Designator	Contains the name of the Field and any alternative formats which may be used. The first field following the SETID in the REF set is its "Serial Letter". The second field can either contain the "MESSAGE TEXT FORMAT IDENTIFIER" of a referenced message or a different "COMMUNICATION TYPE"
Field Desc	For clarity Field Descriptors may have been included in the message design, the Field Descriptor is separated from the field content by a colon ":". Field Descriptors provide signposts to the field content. e.g. to clarify date format, DMY: may be have been included to indicate that 040565 is 4 May 65 and not 5 April 65.
Concept/Explanation/Examples	The Concept/Explanation/Example contains additional text and examples where appropriate. It also contains the reference number of the table to be consulted for the exact values to be used in the field.

Figure 3-4: Decode of the REF Set

```
REF/A/NUC1/SHAPE/DMY:02062003/AIR 051/NOTAL//
REF/B/TYPE:LTR/SACLANT/FEB2003/100/NOTAL/FN:4503B/FN:3780C//
```
Example 3-5: Instances Of A REF Set.

5.   **Reading a Set** – The 2 instances of the Reference set (REF) that appear in the "AOD" message are shown in Example 3-5.

6.   **Decoding Field content Using Field Tables**. In MTFs, all fields have restrictions on their content, characters and length. This may be a table of *CODED ITEMS*, or a *RANGE* of letters or numbers as is dictated in the "Concept/Explanation/Examples". Not all information can be so tightly defined therefore there are *INSTRUCTIVE* entries which allow a free text entry but may have restrictions such as only upper case letters.

    a.   **A Coded List** - The coded list provides standard abbreviations or a list of allowable values. These prevent confusion because all users utilise the same abbreviation. This list is short and relatively obvious. Example 3-6 shows a number of coded items such FEB in the second line, the decode can be found in the appropriate table Figure 3-5. Using coded ensures that the strong relationship of text transmitted and meaning are closely maintained.

```
REF/A/NUC1/SHAPE/DMY:02062003/AIR 051/NOTAL//
REF/B/TYPE:LTR/SACLANT/FEB2003/100/NOTAL/FN:4503B/FN:3780C//
```
Example 3-6: REF Sets With Coded Items in Bold.

Table 1004/1 - MONTH NAME, ABBREVIATED (3-3)
Related Documents: None
Explanation: THE NATO-STANDARD 3-LETTER ABBREVIATED ENGLISH NAME OF A SPECIFIC MONTH, ONE OF THE TWELVE PARTS INTO WHICH A GREGORIAN CALENDAR YEAR IS DIVIDED.

MONTH NAME, ABBREVIATED (Data Item)	Data Code	Explanation
JANUARY	JAN	None
FEBRUARY	FEB	None
MARCH	MAR	None
APRIL	APR	None
MAY	MAY	None
JUNE	JUN	None
JULY	JUL	None
AUGUST	AUG	None
SEPTEMBER	SEP	None
OCTOBER	OCT	None
NOVEMBER	NOV	None
DECEMBER	DEC	None

Figure 3-5: A Typical List of Coded Items

    b.   **Range Table.** There are 3 types of ranges in MTFs. These are Integer ranges, Decimal Ranges and Alpha-numeric Ranges.

        (1)   **Integer Range:** This table only allows a limited choice of entries in that field which must be whole numbers; therefore the user cannot enter a time which makes a day longer than 23 hours. An Integer Range table is shown in Figure 3-6

Table 1000/1 - DAY (2-2)
Related Documents: None
Explanation: None

DAY	Range - Integer (2-2)		Explanation
	MIN Value	MAX Value	None
	01	31	

Figure 3-6: An Integer Range

(2) **Decimal Range:** The second type of range is the decimal range. In this type of range, decimal numbers can be entered. The explanation is normally completed to provide additional guidance. An Decimal Range table is shown in Figure 3-7.

Table 1800/3 - OVERSIZE CARGO WEIGHT IN SHORT TONS IN TENTHS (3-5)				
Related Documents:	None			
Explanation:	THE WEIGHT OF CARGO THAT EXCEEDS THE USABLE DIMENSION OF THE 436L PALLET, 104" X 84" X 96", OR A HEIGHT SET BY THE PARTICULAR MODEL AIRCRAFT TO THE NEAREST TENTH.			
OVERSIZE CARGO WEIGHT IN SHORT TONS IN TENTHS		Range - Decimal (3-5)		Explanation
MIN Places	MAX Places	MIN Value	MAX Value	None
1	1	0.1	999.9	

Figure 3-7: Decimal Ranges

(3) **Alpha-numeric Range:** The third type of range is the Alpha-numeric Range. In this range the first 2 and the final values given. The remaining values can be calculated using these 3 pieces of information. Some characters may be omitted, these characters can be found in the Omit column. An Alpha-numeric Range table is shown in Figure 3-8

Table 1102/3 - SERIAL LETTER (1-1)				
Related Documents:	None			
Explanation:	AN ALPHABETIC CHARACTER IDENTIFYING AN INDIVIDUAL COMMUNICATION.			
SERIAL LETTER		Range - Alphanumeric (1-1)		Explanation
First Value	Second Value	Last Value	Omit	None
A	B	Z		

Figure 3-8: Alpha-Numeric Ranges

c. **Instructive Field -** The contents of these fields are only constrained by the types of characters the user may employ. The length of the field is given by the bracketed numbers after the table name. An Instructive Field table is shown in Figure 3-9, the minimum and maximum length of the field in this case is 1-10.

Table 1102/13 - PRISONER OF WAR NATIONAL IDENTIFIER (1-10)		
Related Documents:	None	
Explanation:	None	
PRISONER OF WAR NATIONAL IDENTIFIER	Instructive - Allowable Entries (1-10)	Explanation
Alphabetic Upper Case (A-Z), Blank, Numeric (0-9), Special		None

Figure 3-9: Instructive Fields

3.8.   WRITING A MESSAGE TEXT FORMAT (MTF)

1.   The drafter is assumed to have a requirement to create a MTF using the APP-11 User Format in Annex A, without the aid of any message preparation software. This means that any user that has message preparation software should in the first instance use the associated documentation and help facilities that are coupled with the software. If word processing software is used, it is recommended to use a fixed-width font such as "Courier"; blank spaces are important to correct completion of MTFs, specifically columnar set alignment.

2.   It would be difficult for a user to write a MTF before knowing how to read a MTF. It is recommended that users be familiar with sections 2.2 and 3.5-3.7.

3.   Annex A contains a list of all messages broken down in Message Title, MSGID and Functional Areas.   If the user does not know the exact message that is required, it is recommended that the functional area index is consulted.

3.9. USING THE USER FORMAT TO WRITE A MESSAGE

1.   After the relevant MTF message has been identified, the next step is to check the front page of the associated User Format (see Figure 3-10). This has important information about the use of the message, including the Purpose, and Related documents that may be useful in its completion.

2.   Versioning is an important aspect of messaging. It is possible to have more than one version of the message located in the Appendices to Annex A. The most current version should be used unless otherwise directed by the Operational Commander.

Figure 3-10: Front Page of User Format

3.   After the front page of the User Format, the rest of the document specifies the construction of the message. The terminology used has specific meaning as detailed in Chapter 2. The main components are:

    a.   **SEGMENTs** – A number of sets that are grouped together.

    b.   **SETs** – are a line (or lines) of text about the same specific subject area. They start with a keyword (e.g. MSGID) and end with a double slash (//).

    c.   **FIELDs** – are the individual text areas (e.g. 001) and they are separated from each other by a single slash (/).

4.   **The Message Map.** The first part of the User Format is often called the Message Map, Figure 3-11. It lays down the overarching rules for the construction of a message i.e., the order in which the sets appear and the rules associated with the construction of the message. The Message Map also contains an important description of how each set is intended to be used.

Figure 3-11: Message Map

5.   The Message Map looks busy, but is simply made up of a table that shows all the possible sets, options and rules that are required or optional used in the message. Each of the columns provides specific additional information about how the set shall be used in the message. From left to right, the column headings are:

a.   **Seg –** Indicates if the sets are part of a segment. Shown above is a 3 set segment indicated by the 1.1 in the segment column.

b.   **Alt –** Indicates if another set can be used as an alternative (i.e., an option). Each group of alternatives are identified by having the same number in this field. There are 3 different ways that alternatives may be employed. Sets that can be used as alternatives are identified by a number and possibly with a modifying symbol when appropriate:

(1)   **Number -** Only 1 of the alternatives (with the same number) MUST be selected.

(2)   **#** - Only 1 of the alternatives MAY be selected

(3)   ***** - One or more alternatives MUST be selected.

c.   **Rpt –** A tick ✓ in this field indicates that a set may be repeated. Example above shows that REF may be repeated an unlimited number of times. If a number appears after the e.g. ✓5 then set may only be repeated up to 5 times.

d.   **Occ** – Shows the occurrence of the set.

(1)   **M** = **Mandatory**, The set must be included in the message.

(2)   **C** = **Conditional**, There are rules relating to the inclusion of the set in the message, the rules for the set immediately follow the set.

(3)   **O = Operationally Determined**, The set may be included in the message if the author has information to pass.

e.   **SETID** – Indicates the name of the set, and for those users with an electronic copy of the User Format, a hyperlink is provided to the Set Map. The name of the set – SETID -- is used to start each set in the MTF followed by a "/" (slash) character.

f.   **Set Format Position Name** – indicates the full name of the set (not used when writing a MTF), which makes it easier for the user to identify the set usage.

g.   **Description** – Provides additional information about how the function of the set within the message.

6.   **Free Text Sets.** There are a number of free text sets used in MTFs. In the message map only the GENTEXT set is shown. This set always has the set identifier GENTEXT followed by the content identifier that is assigned in the rule following each GENTEXT set in the message map; e.g. "FIELD 1 IN SET 14 (GENTEXT) IS ASSIGNED THE VALUE /MISSION/.". The assigned identifier must be copied exactly as shown in the message map including spelling and spaces.

```
GENTEXT/MISSION/The mission focuses on the training of the NATO Response
Force (NRF) by using a scenario centered on a fictitious group of islands in
the North Atlantic off the coast of Africa.//
```
Example 3-7: Free Text Set

7.   The message drafter can add additional free text, notwithstanding the message map, which can appear at any point in a message and can be one of the following set types:

a.   **AMPN** – Amplification. If the free text only relates to the preceding set then the AMPN set must be used.

b.   **NARR** – Narrative. If the free text relates to more than one adjacent sets then the NARR set is used after the last set that the NARR refers too.

c.   **RMKS** - Remarks. If the free text relates to the whole message than a RMKS set is used at the end of the message. Only 1 RMKS set can be used in a message.

Note. *It is prohibited to have 2 consecutive occurrences of AMPN and NARR.*

8.   These 3 types of set have the set identifier AMPN. NARR or RMKS which is followed by a "/" characters and then the text. At the end of the free text a double slash, "//", must be used to indicate that that is the end of the set. Example 3-8 shown how an AMPN set would appear in a message. See para 2.3.17 for more details on the use of Freetext field.

```
AMPN/Amplification text goes here//
```
Example 3-8: AMPN Set

9.   **Set Content.** Sets are constructed in a similar manner using the relevant set map, as specified in the user format. See Figure 3-12.   Set Maps identify the sequence that fields appear in the set.

Figure 3-12: Set Map for the MSGID Set

10.   The Set Map includes information for the message drafter, in a similar manner to the message map; the Set Map shows the fields which make up a set. Field occurrence uses the same code (M, O, C) as used in the Message Map level. The minimum and maximum number of characters that can be included in each of the fields is also shown.

11.   Each set starts with the set identifier which is followed by a "/" character. Spaces must not be inserted either before or after the "/" character (except in the case of columnar sets where spaces are used for alignment, see para 2.3.16.d). All mandatory fields must be included in the set, if there is no data available for inclusion in a mandatory field, the field should be filled with a hyphen "-" character. The operationally determined fields are completed as required by the message drafter. Finally the set is terminated with a "//". If no further operationally determined fields are required, the set may be terminated prematurely with "//" characters.

12.   **Columnar Set Construction --** Columnar sets are formatted so that data codes appear in tabular form under appropriate column headers.

    a.   The first line of a set for columnar presentation contains only the set format identifier. The identifier begins with one numeric character.

b.　　The second line contains the column headings. Each column begins with a field marker (/) and contains the exact title and spacing specified in the user instructions.

c.　　Data is reported in the third and subsequent lines. Each entry in each column begins with a field marker (/). Alphabetic and alphanumeric data are left justified in a column. Numeric data are right justified. The data reported must be spaced exactly as shown in the user instructions. If an item of information is not known when completing a line of data, a hyphen (-) must be entered in the appropriate column. This hyphen will be justified the same as other entries in that column.

d.　　The set ends with an end-of-set marker (//) which is positioned immediately after the last data code of the last field. However, it will be placed on the next line if the final data code extends beyond the 67th character position.

13.　　**Line Breaks within a set** – When a set contains more than the number of characters that the method of transmission allows, e.g. ACP-127 has a maximum line length of 69 characters, the set must be continued onto a line or subsequent lines, without repetition of the set format identifier, as follows:

a.　　A field must not be split between lines; therefore, continuation lines must always begin with the field marker (/) of the following field. See Example 3-9.

```
AREA/AREA 1/5500.12N-02000.34W/5500.12N-01000.34W/5400.12N-01000.34W
/5400.12N-02000.34W//
```
Example 3-9: Liner Set Showing Correct Form for a Line Break

b.　　A free text field that can be continued on one or more subsequent line(s). see Example 3-10

```
AMPN/USS GEORGE WASHINGTON WILL BE OPERATING IN THIS AREA DURING
NIGHT OF 15/16 JUNE//
```
Example 3-10: Freetext Set Showing Correct Form for a Line Break

c.　　The end-of-set marker must not be split between lines. Thus, a continuation line may occasionally contain only the end-of-set marker. See Example 3-11.

```
COMMS/CTF40/ABC/333.3MHZ/P/VOICE/222.2MHZ/S/VOICE/S/303.0MHZ/T/VOICE
//
```
Example 3-11: Freetext Set Showing End of Set Marker in Next Line Break

14.　　The message drafter must take care to ensure that the correct position (i.e. sequential order) of operationally determined fields is maintained by using the "-" character for empty operationally determined fields in the set. At the end of a set, one or more of the fields may be repeated; repeatable fields can be identified by the word "REPEATABLE" under the fields of the set map, Figure 3-13.

Figure 3-13: Repeatable Field

15.   **Field Content.** The content of each field is determined by the related table that is identified in the "Concept/Explanation/Examples" notes for the field, under the "Field Filler Notes", that follows the set map, Figure 3-14.

No	Designator	Field Desc	Concept/Explanation/Examples
1	**MESSAGE TEXT FORMAT IDENTIFIER**		
	1A MESSAGE TEXT FORMAT IDENTIFIER		ENTER THE MESSAGE TEXT FORMAT IDENTIFIER, FOR EXAMPLE: "SITREP". See table **1018/2** which is a coded item.

Figure 3-14: Field Content Explanation

16.   For each field the explanation provides a context to use that field and the number of the relevant table. The tables that are referred to are either a data code list, an instructive entry or a range.

   a.   **Data Codes.** Where the table is a coded list, the message drafter will need to refer to the correct table to identify the allowable content of the field. The only information that will be allowed in the field will be taken exactly as written in the Data Code column of the table. A typical codes list table such as in Table 1004/001 – Month Names is shown in Figure 3-15.

Table 1004/1 - MONTH NAME, ABBREVIATED (3-3)
Related Documents: None
Explanation: THE NATO-STANDARD 3-LETTER ABBREVIATED ENGLISH NAME OF A SPECIFIC MONTH, ONE OF THE TWELVE PARTS INTO WHICH A GREGORIAN CALENDAR YEAR IS DIVIDED.

MONTH NAME, ABBREVIATED (Data Item)	Data Code	Explanation
JANUARY	JAN	None
FEBRUARY	FEB	None
MARCH	MAR	None
APRIL	APR	None
MAY	MAY	None
JUNE	JUN	None
JULY	JUL	None
AUGUST	AUG	None
SEPTEMBER	SEP	None
OCTOBER	OCT	None
NOVEMBER	NOV	None
DECEMBER	DEC	None

Figure 3-15: Data Code List Table

   b.   **Instructive Entries.** These types of tables give instructions on the type of data that is to be entered into the field. The explanation in the set map must be studied to determine the information required. The relevant table must also be referred to determine the minimum and maximum length of the field and also to identify which characters are permitted. These limitations should not be discarded and are important if the message is to be successfully read by a machine on receipt. A typical instructive entry table is shown in Figure 3-16, note the minimum and maximum length (1-8) and the list of legal characters that can be used, for an explanation of Special and Extended Special Characters see para 2.4.3.c(3).

Table 1864/2 - ADDITIONAL LINK MANAGEMENT CODE (1-15)
Related Documents: None
Explanation: THE ADDITIONAL LINK MANAGEMENT CODES NOT PREVIOUSLY USED IN THE MESSAGE.

ADDITIONAL LINK MANAGEMENT CODE	Instructive - Allowable Entries (1-15)	Explanation
Alphabetic Upper Case (A-Z), Blank, Numeric (0-9), Special		None

Figure 3-16: Example of Instructive Entries

   c.   **Ranges:** Where a range is given, the entry in the field must lie within the range. If the range is a simple range such as Reference letter [A, B through Z], this information will be included in the set map so that reference to the appropriate table is not necessary, however, if the range is more complex it will be necessary to refer to the

appropriate table. There are 3 types of ranges, and Integer Range, a Decimal Range and an Alpha-numeric Range.

(1)   **Integer Range**-. An integer range is specified using the minimum inclusive integer value and the maximum inclusive integer value of the range with intermediate values understood to be whole numbers. Allowed characters for integer range are the characters "0" through "9". If permitted, the "-" may be used to show a negative value. An integer range is specified as either fixed or variable length. Where it is a fixed length, a leading "0" character must be inserted. Figure 3-17 shows an integer range with a fixed length.

Table 1000/1 - DAY (2-2)			
Related Documents:	None		
Explanation:	None		
DAY	**Range - Integer (2-2)**		**Explanation**
	MIN Value	MAX Value	None
	01	31	

Figure 3-17: Integer Range Table

(2)   **Decimal Range.** A decimal range is specified using the minimum inclusive value and the maximum inclusive value of the decimal range. A decimal range specifies either a fixed number or a range of decimal places (digits to the right of the decimal point). A fixed number decimal place specification indicates that all values contain the same number of decimal places (specification of zero decimal places is not permitted). A range of decimal places specifies the minimum and maximum value over which the number of decimal places may vary (range values are zero or greater). Values without decimal point are only allowed when the minimum range of decimal places is zero. Allowed characters for decimal range are the same as for integer range and the decimal point character ".". A decimal range is specified as either fixed or variable length. A typical decimal range table is shown in Figure 3-18.

Note: In some decimal range tables the format for decimal numbers less than 1 may be required to be written without an integer part i.e. ".5" for a value of "0.5".

Table 1800/3 - OVERSIZE CARGO WEIGHT IN SHORT TONS IN TENTHS (3-5)				
Related Documents:	None			
Explanation:	THE WEIGHT OF CARGO THAT EXCEEDS THE USABLE DIMENSION OF THE 436L PALLET, 104" X 84" X 96", OR A HEIGHT SET BY THE PARTICULAR MODEL AIRCRAFT TO THE NEAREST TENTH.			
OVERSIZE CARGO WEIGHT IN SHORT TONS IN TENTHS		**Range - Decimal (3-5)**		**Explanation**
MIN Places	MAX Places	MIN Value	MAX Value	None
1	1	0.1	999.9	

Figure 3-18: A Decimal Range

(3)   **Alpha-numeric Range.** This type of range, can be made up of alphabetic or a mix of alphabetic and numeric characters. In most cases the first couple of values and the last value are given, the message drafter is expected to interpolate other allowable values. A list of values that are to be omitted may also be given. In a small number of cases where the range is very complex it may be represented by a form of computer code known as a regular expression. In this case an explanation will be given for clarity. A typical alpha-numeric range table is shown in Figure 3-19

3-15   **Edition D Version 1**

Table 1102/3 - SERIAL LETTER (1-1)				
Related Documents:	None			
Explanation:	AN ALPHABETIC CHARACTER IDENTIFYING AN INDIVIDUAL COMMUNICATION.			

SERIAL LETTER		Range - Alphanumeric (1-1)		Explanation
First Value	Second Value	Last Value	Omit	None
A	B	Z		

Figure 3-19: An Alpha-Numeric Range

17.   **Alternative Formats.** For some fields, alternative formats for the information may be available to the message drafter, such as in the date formats (DDMMYYYY, MMDDYYYY or YYYYMMDD). In these cases the message drafter should select the most appropriate format using the relevant table for the selected field. In some cases a field descriptor must be used. These are shown in the "Field Desc" column of the "Field Filler Notes" and are only associated with a single alternative. The field descriptor is used by message readers to identify which alternative has been used when the data in the field could be ambiguous. Field descriptor prefixes the data in the field and is separated from the field content by a colon ":", neither of which are included in size count for the field. Figure 3-20 shows part of a set map for a field with several alternatives. Note that field descriptors are required for alternatives E and F. Example 3-12 shows how a field descriptor is used in a message.

No	Designator		Field Desc	Concept/Explanation/Examples
4	DATE AND/OR TIME OF REFERENCE			SPECIFIES THE DATE AND/OR TIME USED TO IDENTIFY THE REFERENCE.
	4A	DTG OF REFERENCE, 4 DIGIT YR		ENTER THE DATE-TIME GROUP OF REFERENCE, FOR EXAMPLE: "150830ZJAN1996". See table **2033/2** which is a composite.
	4B	DAY-TIME OF REFERENCE		ENTER THE DAY-TIME OF REFERENCE, FOR EXAMPLE: "150830Z". See table **2000/34** which is a composite.
	4C	DAY-TIME AND MONTH OF REFERENCE		ENTER THE DAY-TIME AND MONTH OF REFERENCE, FOR EXAMPLE: "150830ZJAN". See table **2030/2** which is a composite.
	4D	DATE OF REFERENCE, DDMMMYYYY		ENTER THE DATE OF REFERENCE, DAY-ALPHAMONTH-YEAR, FOR EXAMPLE: "15JAN1994". See table **2001/3** which is a composite.
	4E	DATE OF REFERENCE, DDMMYYYY	DMY	ENTER "DMY:" FOLLOWED BY THE DATE OF REFERENCE, FOR EXAMPLE: "DMY:15011994". See table **2052/2** which is a composite.
	4F	DATE OF REFERENCE, YYYYMMDD	YMD	ENTER "YMD:" FOLLOWED BY THE DATE OF REFERENCE, FOR EXAMPLE: "YMD:19940115". See table **2053/2** which is a composite.
	4G	MONTH YEAR		ENTER THE ALPHABETIC MONTH AND FOUR DIGIT YEAR, FOR EXAMPLE: "JAN2003". See table **2472/1** which is a composite.

Figure 3-20: Field With Alternatives And Field Descriptors

```
REF/A/TYPE:DOC/CAOC 9/DMY:01062008/RAF-123/097723//
```

Example 3-12: Set Showing Field Descriptor in Field 2 And 4

18.   **Composite Field** - A Composite Field Format is a sequence where 2 or more elements are specified. Concatenating elements together in a single field is considered during the design of a message to make the reading of the field easier for humans while still maintaining the required separation of individual pieces of data for machine readers (see para 2.4.2.b for more details). There is no option to insert a hyphen to replace an elemental value within a composite field, either all the data must be inserted or a single hyphen used for the whole field (see para 2.4.4.a(2)). Figure 3-21 shows Date of Reference DDMMYYY, example of the composite table.

Table 2052 - DATE, DDMMYYYY (8-8)		
Related Documents:	NONE	
Definition:	A POINT IN TIME EXPRESSED AS DAY (DD), MONTH (MM), AND YEAR (YYYY).	

Seq	Elemental FUD Name	Elemental Use
1	DAY	See table **1000/1** which is a range [01 through 31] (2)
2	MONTH, NUMERIC	See table **1004/2** which is a coded item (2)
3	YEAR	See table **1005/7** which is a range [0001 through 9999] (4)

Figure 3-21: Composite Table

19.   The data codes that are associated with the allowable data in the table produce the result from the concatenation of the data items and data codes of the elemental fields that make up the composite.

3.10.   COMPLETING THE MESSAGE.

Having completed the set the message drafter should refer to the Message Map to locate the next set to be included in the message repeating this process until the message is completed.

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CHAPTER 4 - XML-MTF GUIDE

4.1. PURPOSE

1.   The purpose of this chapter is to provide operators with information which allows them to recognise a MTF message received in Extensible Markup Language (XML) format.

2.   This chapter does not provide an education in XML. Detailed XML information can be found in many commercial publications or self-teaching aids on the Internet.

4.2. INTRODUCTION TO XML

1.   XML is used to 'tag' information which allows a computer to process it and a user to read it. In other words, a general-purpose specification to allow organisations to define their own data elements. XML-MTF is one such specification. Its primary advantage is to facilitate the sharing of structured data across different computer systems, via any network, for example NSWAN or the Internet.

2.   A XML version of formatted messages has been produced by NATO. The operational content of the message formats (traditional textual MTF and XML-MTF) is identical. Textual format is useful for message delivery where bandwidth of the network is limited; XML format is better suited to computer-to-computer data 'understanding'. Conversion from one format to the other can be achieved through software.

3.   There are 3 fundamental parts associated with XML, a XML schema that defines the rules for a XML Instance, a XML Instance is the actual data to be transmitted, (ie a XML-MTF) and a Style Sheet which provides a layout for the way a XML Instance will be viewed. The XML schema and XML Instance are essential information; the Style Sheet is optional.   Further definition of the terminology is given below:

     a.   **XML Schema**. The XML rules for each XML-MTF message are called a schema which contains all the tag names for the fields and any limitations on field content.   Well-designed XML documents allow information systems to exchange structured data in an unambiguous manner. By using the schema as a framework a computer can map data from an instance of a message to applications such as spread sheets, databases and situational awareness programs.

     b.   **XML Instance**. This is an instance of a message that conforms to the rules for that message in the associated schema. Each element of data in a XML Instance is held between opening and closing tags (words bracketed by '<' and '>') which have unique names that describe the data, Example 4-1 shows a tagged element. Note that the closing tag is identical to the opening one but starts with "</". It is possible to read data received in a XML Instance manually, but the size of the document can make this a difficult task. Fortunately when a XML document is combined with an XSL Style Sheet, in a computer generated view e.g. a browser, the data can be easier to read.

```
<ExerciseNickname>OPEN GATE 09</ExerciseNickname>
```
Example 4-1: A Tagged Element

     c.   **XSL Stylesheet**. (**EX**tensible **S**tylesheet **L**anguage) describes how the XML Instance should be displayed. Numerous style sheets can be created for viewing the

same type of XML Instance, each showing different sets of message data or laying the same message data out in different ways.

Note: When viewing a message with a style sheet, operational users should always be aware that they may not be able to see all the information that was contained in the message.

4.3.   EXAMPLES

1.   To show a comparison between the same message in the 2 formats (textual and XML-MTF), Example 4-2 and Example 4-3 show how the same data payload would appear.

   a.   The traditional textual format is shown in Example 4-2, The message is laid out as described in Chapter 3, with "/" characters delimiting the data and the meaning of the data determined by the position that the field occurs.

```
EXER/OPEN GATE 15//
MSGID/GENINFO/APP-11(D)/1/SHAPE/-/20090628T123500Z/-/-/NATO
/UNCLASSIFIED//
REF/A/TYPE:DOC/SHAPE/20APR2009//
GEODATUM/WGE//
SUBJECT/MAIN PLANNING CONFERENCE//
GENTEXT/GENERAL INFORMATION/THE MAIN PLANNING CONFERENCE FOR OPEN GATE 09
WILL BE HELD.....//
```
Example 4-2: Textual Version of a GENINFO Message

   b.   The same information in XML-MTF format would appear in the format shown in Example 4-3. Every field is tagged which allows a computer to locate data in the message.

```
<?xml version="1.0"?>
<mtf:GeneralInformationMessage xmlns:mtf="urn:nato:mtf:app-
11(d):1:geninfomsg" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:nato:mtf:app-11(d):1:geninfomsg messages.xsd">
   <ExerciseIdentification>
      <ExerciseNickname>OPEN GATE 09</ExerciseNickname>
   </ExerciseIdentification>
   <MessageIdentifier>
      <MessageTextFormatIdentifier>GENINFOMSG</MessageTextFormatIdentifier>
      <Standard>APP-11(D)</Standard>
      <Version>1</Version>
      <Originator>SHAPE</Originator>
      <ReferenceTimeOfPublication>
         <DateTimeIso>
            <Year4Digit>2009</Year4Digit>
            <MonthNumeric>06</MonthNumeric>
            <Day>28</Day>
            <TimeDelimiter>T</TimeDelimiter>
            <HourTime>12</HourTime>
            <MinuteTime>35</MinuteTime>
            <SecondTime>00</SecondTime>
            <TimeZoneZulu>Z</TimeZoneZulu>
         </DateTimeIso>
      </ReferenceTimeOfPublication>
      <MessageSecurityPolicy>NATO</MessageSecurityPolicy>
      <MessageSecurityClassification>
        <MessageSecurityClassificationExtended>UNCLASSIFIED
         </MessageSecurityClassificationExtended>
      </MessageSecurityClassification>
   </MessageIdentifier>
   <Reference>
      <SerialLetter>A</SerialLetter>
      <CommunicationType>
         <CommunicationType>DOC</CommunicationType>
      </CommunicationType>
      <Originator>SHAPE</Originator>
      <DateAndOrTimeOfReference>
         <DateOfReferenceDdmmmyyyy>
            <Day>20</Day>
         <MonthNameAbbreviated>APR</MonthNameAbbreviated>
            <Year>2009</Year>
         </DateOfReferenceDdmmmyyyy>
      </DateAndOrTimeOfReference>
   </Reference>
   <GeodeticDatum>
      <GeodeticDatum>WGE</GeodeticDatum>
   </GeodeticDatum>
   <MessageSubject>
      <TextIndicator>MAIN PLANNING CONFERENCE</TextIndicator>
   </MessageSubject>
   <GeneralInformation>
      <TextIndicator>GENERAL INFORMATION</TextIndicator>
      <FreeText>THE MAIN PLANNING CONFERENCE FOR OPEN GATE 09 WILL BE
HELD.....</FreeText>
   </GeneralInformation>
</mtf:GeneralInformationMessage>
```

Example 4-3: A XML View of a GENINFO Message

2.   The data in Example 4-3 can be difficult to pick out; however, when combined with a style sheet and web browser, relevant content can be displayed, normally in html. Figure 4-1,

is an example of how the message in Example 4-3 can be presented with a style sheet. It should be noted that the text in the message should not be altered; however, the surrounding text could be translated into the local language.

Figure 4-1: Example 4-3 Combined With a Style Sheet

4.4. XML-MTF OR MTF?

When determining the format to be used for sending a MTF, the message originator should consider the needs of the recipient, their ability to convert from one format to the other and the bandwidth available. It may be necessary for message originators to produce both formats of the same message. The format to be used on systems should be detailed in operational orders.

4.5. PROVISION OF XML-MTF SCHEMAS

1.   The authoritative source for XML schemas for messages is the NATO XML Metadata Registry. The schemas are distributed using a number of methods:

   a.   **APP-11.** Annex A of this document contains a set of XML schemas for each message. The APP-11 DVD is the primary reference for all MTF Schemas, there is a SHA1 hash file for each directory to provide confirmation that the files have not been tampered with.

   b.   **NATO XML registry**. The NATO Metadata Registry and Repository (NMRR) project aims to capture all the necessary information and perform the groundwork required for procurement of a NATO Metadata Registry and Repository, which will be an NATO Network Enabled Capability (NNEC) Core Enterprise Service, for administrative and operational use. Through registration in the Metadata Registry and Repository, a wide range of specifications will be visible and accessible in the NNEC environment, such that they can be reused in order to create better coherence and interoperability between computer systems that are based on these specifications. The NMRR is web-based (https://nmrr.ncia.nato.int/home.htm). Access to the NMRR can be requested on the home page.-

2.   The schemas provided for MTFs contain a single message. Combining more than one message into a schema is not considered practical due the size of the resulting files.

3.   NATO style sheets, if available, will be published in Annex A.

4.6.   BEST PRACTICE FOR SYSTEMS IMPLEMENTATION

1.   The following guidance is provided for procurement and implementation of systems that use XML-MTFs.

   a.   **Message Automation** – The latest version of all messages (Appendix 1 to Annex A (A-1)) should be automated in their entirety. However, for a specific system it may not be practical to automate the entire message catalogue or all parts of a message. Where a message is partially automated this partial implementation should be carefully documented so that end users are aware of any limitations. However, end users must be given the capability to view all data that is received in any MTF message irrespective of the level of automation that can be applied to it.

   b.   **Validation of XML-MTF Instances** – When validating an instance of a XML-MTF message against a schema, the rules associated with the message must also be taken into account as well as the data content; standard XML software will generally not check this.

   c.   **Changes to message** – Messages in this catalogue will be subject to modification over time to meet changing operational needs. Consideration should be given to system design to ensure that sufficient flexibility is built in to be able accommodate these modifications within a reasonable timescale whilst retaining the ability to at least interoperate with at least one previous version of the message.

   d.   **Metacard Specification** – Where instances of messages are stored on a system and there is a need for the messages to be searchable, the FORMETS Discovery Metadata Specification (FDMS) should be used to advertise the instance of the message.

   e.   **Implementation matrix** – During the process of implementing MTFs in a system, an accurate record should be kept of all attributes that are implemented. The spread sheet included in the supporting files folder on the APP-11 DVD should be completed and forwarded to MTFSS@hq.nato.int.

   f.   **Difference Reports** – When assessing the scale of upgrading from a previous version of a message, difference reports can be obtained from national MTF issuing authorities.

   g.   **Test Messages** – The MTFCaT are developing a repository of test messages that will be made available to government agencies to test systems implementing MTFs. These test messages can be obtained through national MTF issuing authorities.

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CHAPTER 5 - VOICE TEMPLATES

5.1. PURPOSE

1.   Voice Templates provide a voice format for use when data communications are not available.

2.   They assist in ensuring the integrity of the information content of a MTF, when it is transferred to a voice communication system, or vice versa.

5.2. SCOPE

1.   It is essential that the VTs in APP-11 are coherent with their associated MTF.

2.   VTs cannot be used for information exchange over automated CIS.

5.3. RESPONSIBILITY

The message sponsor of a MTF is responsible for the development and configuration management of the associated VT if one is required. Where voice templates are required, the sponsor should ensure that the publication of new or modified MTFs and associated VTs, irrespective of the operational urgency, is conducted in a coherent manner.

5.4. STRUCTURE

1.   The structure of a VT is to include the following elements:

   a.   **Message Title** - To contain the long and short MTF message titles.

   b.   **Message Purpose Statement -** To include the MTF purpose statement and a message usage summary.

   c.   **Message Reference -** To specify the NATO message sponsor and the associated MTF Message Reference Number.

   d.   **Information Content Table -** To contain the information contained in the associated MTF in the same sequence and in the same level of detail, where possible.

   e.   **Notes -** To expand the meaning of the information elements in the information content table.

2.   The structure of a VT is shown Figure 5-1.

5.5. PRESENTATION

Figure 5-1: Voice Template Format

1.   The main emphasis within the presentation of a VT is the need for brevity, clarity and consistency.

2.   Although the presentation of the information content within a VT is based on the structure and information content of its associated MTF, it is not always possible to reflect this exactly, for example, owing to segmentation within the associated MTF. Any deviation between the information content within the VT, and the information content within the associated message text format, must be authorized by the MTF sponsor.

3.   Wherever possible, a VT should be contained within a single page. This is not always achievable with some VTs, owning to the length and complexity of their associated MTFs.

4.   The right-hand column of the information content table indicates the maximum number of characters that can be used to complete each information element. This information is for guidance only, and in order to encourage brevity. It is not a mandatory requirement.

5.6. DEVELOPMENT

Once the NATO ADatP-3 message sponsor has produced the associated VT and has operationally validated the VT, it is to be approved through the normal operational process.

5.7. CONFIGURATION MANAGEMENT

1.   The NATO ADatP-3 message sponsor is responsible for VT configuration management.

2.   A change to an existing VT is only permissible when:

   a.   It results from an authorized change to the associated UF.

   b.   The existing VT is not consistent with the existing associated UF.

3.   The staffing process for the submission of a change proposal to a VT is the same as for the development of a VT.

5.8.   LIST OF VOICE TEMPLATES

A list of Voice Templates is located in Annex B.

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CHAPTER 6 - STRUCTURED MESSAGES

6.1. PURPOSE

1.   This chapter contains the drafting instructions for the few remaining structured messages in the obsolescent Maritime Tactical Message System (MTMS). Messages in this format will be replaced by MTFs in the imminent future.

2.   Although structured messages appear to have a formal construction, the rules for their creation are very liberal which means that they are unlikely to be capable of successful automation. Structured Messages are structured in such a way that the contents of the component sections appear in free text, or in established sequences which are repeatable and may be amplified.

6.2. DRAFTING INSTRUCTIONS FOR STRUCTURED MESSAGES

1.   Message sections are distinguished using an alpha-numeric identifier which is followed by a slant, a self-explanatory abbreviation, a further slant and then the text. Each section, with its associated identifier, abbreviation and text is to be started on a new line. Unlike MTFs there is no marker at the end of each section. A typical section of a message is shown in Example 6-1.

```
B1/MICA/ZERO NINE ZERO/RANDOM
```
Example 6-1: Typical Structured Message Section

2.   **Readability** may be improved by indenting the second and subsequent lines after the self-explanatory abbreviation.

3.   **Free Text** sections may be specified in the structure, these appear in the same manner as any other section with an alpha numeric identifier and a section abbreviation. See Example 6-2.

```
Y1/SPECINST/NON-REPROGRAMMABLE MINES TO BE LAID SAFE
```
Example 6-2: Free Text Section

4.   **Establish Sequences.** The sequence for sections and blocks are shown in the structure for each message in Annex C. The sequence of information in the message should be adhered to otherwise the risk of miss interpretation increases:

   a.   Within a section, blocks of data are separated by slants. Within a block of information, required items are separated by periods, spaces, hyphens, etc., but not by a slant. In addition, slants are not to be used for abbreviations such as N/A, A/C, etc. These must be written NA, AC, etc, or the words spelled out. To ensure that the required sequence of specified information is maintained, hyphens are to be entered where there is no information except as exempted in the detailed instructions, or if it is clear that the correct sequence will not be lost. A section using slant delimiters is shown in Example 6-3.

```
B4/ACTCOMP/PROGREP ASAP/IAW MLORDER 567
```
Example 6-3: Slant Delineation

5.   **Amplifying data.** Elements may be amplified by inserting the appropriate text at the end of the block, separated by a dash. In amplifying an entire sequence, appropriate text may be inserted at the end, separated from the last element by a slant. An example of a section with amplifying text is shown in Example 6-4.

```
E4/SAFESECT/GOLF/VICTOR LIMA/100NM NORMALLY-FROM 182000Z1 TO 182200Z3
150NW/235/10/FL100/DISESTABLISHED 220001Z5.
```
Example 6-4: Section with Amplifying Text Added To The Third Block

6.   **Repeating Sequence.** The repetition of sections or blocks is permissible, although message originators have to make it obvious that this has occurred. Repetition can be achieved using one of the following methods:

a.   Continuous repetition of a series of blocks is permissible; however, in the interest of readability, this is only to be used for short sequences requiring little repetition. An example of this repetition format is shown in Example 6-5.

```
B3/SURFAAW/KIDD/GOLF/000ZZ30/ROGERS/GOLF ALFA/120ZZ10
/BROADSWORD/GOLF BRAVO/240ZZ10
```
Example 6-5: Continuous Repetition Of Blocks

b.   Repeating the sequence of block on a new line without an alpha-numeric identifier, and self-explanatory abbreviation. This method is appropriate for shorter sequences requiring a lot of repetition. An example of this repetition format is shown in Example 6-6.

```
B3/SURFAAW/KIDD/GOLF/000ZZ30
/ROGERS/GOLF ALFA/060ZZ10
/BROADSWORD/GOLF BRAVO/120ZZ10
/ILLUSTRIOUS/ECHO/ZZ
/MACDONOUGH/HOTEL/180ZZ5
/SPRUANCE/HOTEL ALFA/240ZZ10
/ALGONQUIN/HOTEL BRAVO/300ZZ10
```
Example 6-6: Repetition Using Line Separation

c.   Repeating the whole section, including the alpha-numeric identifier and self-explanatory abbreviations on a different line for each sequence. This is appropriate for lengthy sequences. An example of this repetition format is shown in Example 6-7.

```
G1/EMCON/ALFA/A-14E-1A-40P-51P-66U-81UV-82A-90EB-B-14F-40P-51P-8U-82H-90EB-
L-10U-40P-60U-80M-84U
G1/EMCON/BRAVO/A-10U-30U-60U-80U-B-10U-20U-40P-60U-80U-L-10E-20E-40P-85U
```
Example 6-7: Repetition Using Sections

7.   **Amplifying Repeated Sequences.** All repeated sequences in the same section can be amplified by adding the same alpha-numeric identifier and self-explanatory abbreviation, followed by amplifying text at the end of the section. An example of this form of amplification format is shown in Example 6-8.

```
B3/SURFAAW/KIDD/GOLF/000ZZ30
/ROGERS/GOLF ALFA/060ZZ10
/BROADSWORD/GOLF BRAVO/120ZZ10
/ILLUSTRIOUS/ECHO/ZZ
/MACDONOUGH/HOTEL/180ZZ5
/SPRUANCE/HOTEL ALFA/240ZZ10
/ALGONQUIN/HOTEL BRAVO/300ZZ10
B3/SURFAAW/ON DETECTION OF NUCLEAR THREAT STATION RANGES ARE TO BE INCREASED
BY 20 NM WITHOUT FURTHER ORDERS.
```
Example 6-8: Amplification of Repeated Blocks Or Sections

8. **Avoid Lengthy Messages.** To conserve bandwidth, sections which are not required should be omitted.

9. **Change Instructions.** Previously promulgated messages can be modified in the course of an operation as follows:

    a.   Changes to promulgated messages. This method has the advantage of allowing some degree of separation between perishable and non-perishable information, thus reducing repetition of the same text in subsequent messages. It is described below:

        (1)   Changes are identified by MSGID followed by the title of the message being changed, followed by "CHANGE", followed by a three-figure number indicating the change serial, followed by the effective date time group (DTG) of the change, with each separated by a slant. The complete message identifier is not given because, as explained in section A1 of each message structure, referencing the message to be changed is mandatory. An example of the initial section of a change message is shown in MSGID/MIPROGORD/CHANGE/CINCGERFLEET/234567Z8/NOV/003

        (2)   Example 6-9.

```
MSGID/MIPROGORD/CHANGE/CINCGERFLEET/234567Z8/NOV/003
```
Example 6-9: Message ID With A Change

        (3)   To delete a section in an existing message, the appropriate section alpha-numeric identifier is listed, followed by "DELETE". An example of a deleted section is shown in Example 6-10.

```
E3/DELETE
```
Example 6-10: A Deleted Section

        (4)   To add a new section to an existing message, its complete text, including the alpha-numeric identifier and self-explanatory abbreviations, is inserted.

        (5)   For major amendments to a section in an existing message, the complete section, including the alpha-numeric identifier, self-explanatory abbreviation, and revised text, are inserted. For minor amendments the alpha-numeric identifier, self-explanatory abbreviations and directions for the amendment only are necessary.

(6)   The order of the contents of a change message is to conform to the structure sequence of the message to be changed.

b.   **Promulgation of the replacement message.** A replacement message is promulgated using the next sequential serial number and will automatically supersede its predecessor.