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APPENDIX 4 - SERVICE TERMINOLOGY & STEREOTYPES

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Familiarity with the style and peculiar phraseology which exist in military messages greatly facilitates the cryptanalytic recovery of the plain text of any such messages which have been encrypted. Thus, this appendix has been compiled to comprise notes on those idiosyncrasies present in military messages which are of particular interest and aid to the cryptanalyst.¹ The notes which are applicable to the messages of all Services are grouped together in Section A, below; those which are applicable to messages of ground, naval, and air origin, respectively, constitute Sections B, C, and D; those which apply to special types of messages, such as weather messages, are contained in Section E; and remarks on stereotypic beginnings and endings of messages comprise Section F.

A. REMARKS APPLICABLE TO MESSAGES OF ALL SERVICES

1. When mention is made of time in military messages, it is conventionally specified in terms of the 24-hour clock system (ending at midnight), in which time is expressed as a group of four numerals. The first two numerals of the group denote the hour and the last two numerals, the minute after the hour; for example, 6:00 AM appears as 0600 and 6:00 PM appears as 1800. Furthermore, for any current month, the day may be indicated by prefixing the four-digit time group with a two-digit date group, indicating the day of the month; for example, 080600 denotes 6:00 AM on the 8th day of the month.

2. Administrative messages in general often contain many sequences of numbers, brought about by numerous references to previous messages and to various Service regulations (among other items), reference generally being made on the basis of identifying serial numbers and dates which such items usually bear; specific illustrations of this fact appear in several of the succeeding paragraphs in this appendix. Furthermore, administrative messages contain references to items having literal designations; to minimize errors in this connection such designations are often spelled out phonetically, by means of a phonetic alphabet, such as

¹ Although the notes contained herein derive primarily from U. S. military communications, many apply as well to the military communications of other countries. At the very least, this appendix indicates the types of information on message style and phraseology which, when known concerning the messages of any source, can be quite helpful in the cryptanalysis of such messages.

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one of the following:

<u>ABLE</u>	<u>JIG</u>	<u>SUGAR</u>	<u>ALFA</u>	<u>JULIETT</u>	<u>SIERRA</u>
<u>BAKER</u>	<u>KING</u>	<u>TARE</u>	<u>BRAVO</u>	<u>KILO</u>	<u>TANGO</u>
<u>CHARLIE</u>	<u>LOVE</u>	<u>UNCLE</u>	<u>COCA</u>	<u>LIMA</u>	<u>UNION</u>
<u>DOG</u>	<u>MIKE</u>	<u>VICTOR</u>	<u>DELTA</u>	<u>METRO</u>	<u>VICTOR</u>
<u>EASY</u>	<u>NAN</u>	<u>WILLIAM</u>	<u>ECHO</u>	<u>NECTAR</u>	<u>WHISKEY</u>
<u>FOX</u>	<u>OBOE</u>	<u>XRAY</u>	<u>FOXTROT</u>	<u>OSCAR</u>	<u>EXTRA</u>
<u>GEORGE</u>	<u>PETER</u>	<u>YOKE</u>	<u>GOLF</u>	<u>PAPA</u>	<u>YANKEE</u>
<u>HOW</u>	<u>QUEEN</u>	<u>ZEBRA</u>	<u>HOTEL</u>	<u>QUEBEC</u>	<u>ZULU</u>
<u>ITEM</u>	<u>ROGER</u>		<u>INDIA</u>	<u>ROMEO</u>	

3. The messages of all Services exhibit a high content of abbreviations; for this reason, the following list of frequently-encountered abbreviations is included:

NAVY OFFICER RANKS

FADM....fleet admiral
 ADM....admiral
 VADM....vice admiral
 RADM....rear admiral
 COMO....commodore
 CAPT....captain
 CDR....commander
 LCDR....lt. commander
 LT.....lieutenant
 LTJG....lieut. jr. grade
 ENS.....ensign

ARMY, AIR OFFICER RANKS

GEN.....general
 LTGEN....lt. general
 MAJGEN...major general
 BRIGGEN..brigadier general
 COL.....colonel
 LTCOL....lt. colonel
 MAJ.....major
 CAPT....captain
 1ST LT...first lieutenant
 2ND LT...second lieutenant

PUNCTUATION

CLN....colon
 CMA....comma
 PARA...paragraph
 PAREN..parenthesis
 PD....period
 RPT....repeat

MISCELLANEOUS

CG.....commanding general
 CO.....commanding officer
 COMDT..commandant
 ETA....estimated time of arrival
 ETD....estimated time of departure
 GMT....Greenwich mean time
 HQ.....headquarters
 LTR....letter
 MSG....message
 NR.....number
 RE.....reference
 UR.....your

4. The identity of the person originating a military message may appear as a signature at the end of a message and the addressee's identity may appear at the beginning; or either, or both, of these may be "buried" in the middle of the message, set off by parentheses. If the signature is at the end of the message, it may be preceded by STOP (or PERIOD) or SIGNED, or both. The identification of the originator or addressee may

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consist merely of his command designation (e.g., COMMANDING GENERAL, FIRST ARMY) or it may consist of his name and rank, followed by COMMANDING or some other appropriate amplifying data (e.g., in the Army, his branch of service).

EXAMPLES:

JONES, COLONEL, ARTILLERY

COMMANDING OFFICER, THIRD REGIMENT

COMMANDER, DESTROYER SQUADRON SIX

SMITH, FLIGHT LEADER, SECOND SQUADRON

5. In military communications, long messages are often broken into parts, each part subsequently being treated as a separate message. Thus, messages arise which begin "PART (number) OF (number) PARTS", or "(number) PART MESSAGE PART (number)", often separated from the following message text by STOP.

B. REMARKS ON ITEMS APPEARING IN GROUND (ARMY) MESSAGES

1. When mention of an army unit appears in a military message, its size (echelon) is indicated, generally preceded by a numerical or literal designation and, as further information concerning the unit, its branch of service may be included. The several echelons of the U. S. Army, listed in descending order of size, are: army, corps, division (DIV), brigade, regiment (REGT), battalion (BN), company¹ (CO), platoon. Some of the branches of service which may appear, as mentioned above, are: Infantry (INF), Artillery (ARTY), Signal Corps (SIG C), Armor, Ordnance (ORD), Engineers (ENG), Quartermaster (QM).

Examples of unit designations:

- (a) "A" Company, 39th Infantry Regiment, 9th Infantry Division
- (b) 1st Armored Division
- (c) 57th Signal Battalion

2. In connection with 1, above, an army is the normal command of a general (four stars); a corps being the command of a lieutenant general; a division, the command of a major general; and a brigade, the command of a brigadier general. A regiment is normally commanded by a colonel; a battalion may be commanded by a lieutenant colonel or a major; a company, by a captain; and a platoon, by a lieutenant.

¹ An artillery unit at this echelon is termed a battery.

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3. For reference purposes, when giving locations of units, readily-recognizable landmarks such as hills, crossroads and road junctions may be referred to in terms of their altitude above sea level (in number of feet), if such landmarks do not bear proper names which are suitable for the purpose. Thus, a reference, in a military message, to CROSSROADS SIX FIVE ZERO would apply to that particular crossroads within a pre-selected area which is located at an altitude of 650 feet. If, within any preselected area of reference, there are two or more landmarks of any given type which are both at the same altitude, it is necessary to affix a distinctive letter or number to the altitude designation of each, in order to clearly identify a particular one; thus, such a reference as CROSSROADS SIX FIVE ZERO DASH [hyphen] B may be encountered. In this connection, CROSSROADS may be found abbreviated as "CR", and ROADJUNCTION as "RJ".

4. The location of any particular unit may be specified in terms of its location with respect to a particular place or locality, or to a particular landmark. However, its location may also be specified by stating how it is located on a specific map or portion of a map. This gives rise in military messages to phrases such as COORDINATES ONE FIVE POINT TWO FOUR DASH ONE NINE FOUR POINT SEVEN, wherein the numbers before the "dash" indicate the unit's location with respect to the horizontal grid lines of a preselected map and the numbers after the "dash" indicate its location with respect to the vertical grid lines.

5. Specific highways, turnpikes, and other roadways are often identified in military messages by stating the place names of their terminal points; thus the highway running between Grizurbeto and Bolzano could be called the GRIZURBETO DASH [hyphen] BOLZANO HIGHWAY. Similarly, when reference is made to an imaginary straight line across the terrain in a particular area, such a line may be identified by specifying any recognizable landmarks between which the line runs; for example, LINE CROSSROADS THREE ONE FIVE DASH ROADJUNCTION TWO NINE EIGHT.

6. Included below is a brief list of frequent words appearing in low-echelon ground traffic; the abbreviation for certain ones are appended in parentheses after them. In addition to the words listed below, numbers and ranks/titles will be found to have a high frequency of occurrence.

ACROSS	ARTILLERY (ARTY)	COUNTERATTACK
ACTIVITY	ATTACK	CROSSROADS (CR)
ADDITIONAL	BARRAGE	DAILY
ADVANCE	BATTALION (BN)	DASH
ADVISE	BRIDGE	DEFEND
AFTERNOON	CAPTURE	DEFENSIVE
AIRPLANE	CASUALTIES	DISPOSITION
AMMUNITION (AMMO)	COMMA	DIVISION
AREA	COMMAND POST (CP)	EAST
ARMORED	COMMUNICATION	EMPLACEMENTS
ARMY	COMPANY (CO)	ENEMY
ARRIVE	CONCENTRATION	ENLISTED PERSONNEL

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FIRE	NEAR	REQUEST
FLANK	NEUTRALIZE	REQUIRE
FORCE	NIGHT	REQUISITION
FROM	NORTH	RESERVES
HEADQUARTERS (HQ)	NOTHING	RIGHT
HEAVY	OBJECTIVE	RIVER
HILL	OFFENSIVE	ROAD
HOSTILE	OFFICER	ROADJUNCTION (RJ)
IDENTIFICATION	ORDER	ROCKET
IMMEDIATELY	PATROL	SEND
INFANTRY (INF)	PLANE	SMALL
INFORMATION	POSITION	SOUTH
LARGE	PREPARE	STOP
LEFT	PRISONER	SUPPLY
LIGHT	PROCEED	SUPPORT
LINE	RADIO	TANKS
LOCATION	RAILROAD	TODAY
MACHINEGUN (MG)	READY	TOMORROW
MESSAGE	RECEIVE	TONIGHT
MORNING	RECONNAISSANCE (RCN)	TROOPS
MORTAR	REFERENCE	VICINITY
MOUNTAIN	REGIMENT (REGT)	WEST
MOVE	REINFORCEMENTS	WOODS
MOVEMENT	REPORTS	YESTERDAY

C. REMARKS ON ITEMS APPEARING IN NAVAL MESSAGES

1. Mention of various sized groupings of vessels are found in messages of naval origin, among which those mentioned below are quite frequently encountered. A major naval force is called a fleet, and the levels of echelonment (or subdivision) within a fleet are the task force, task group, and task unit (in descending order of size). The basic unit of all fleet vessels is termed a division, and is comprised of two or more vessels of the same type; in this connection, when mention is made of a division in a naval message, the particular type of vessel of which the division is made up is often specified; for example, CRUISER DIVISION. A squadron is made up of two or more divisions of submarines, destroyers, landing ships or other light vessels; and a flotilla comprises two or more such squadrons.

2. In connection with 1, above, a fleet is normally commanded by an admiral (four stars); a task force being the command of a vice admiral; and a task group, the command of a rear admiral. Furthermore, the officer in command of a convoy or flotilla often holds the rank of commodore, and the senior officer commanding a ship is generally a captain.

3. A list of the main combat vessels is included below; the approximate maximum speed of each, which is expressed in KNOTS, is shown

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in parentheses.

BATTLESHIP	(35)
CARRIER	(35)
CARRIER ESCORT	(15)
CRUISER	(30)
DESTROYER	(35)
DESTROYER ESCORT	(25)
SUBMARINE	(20, on surface; 10, submerged)

When a particular vessel is mentioned in a naval message, it may be identified by a numerical designation, by a group of letters, or by some proper name.

4. In naval messages, the direction of an object from a ship, or the course of a particular naval vessel or unit at sea is given as a compass bearing expressed in degrees (from 0 to 359), for example, BEARING ZERO EIGHT FIVE. In some instances the statement of a bearing will be followed by the word TRUE or MAGNETIC, indicating that its direction is referred to the geographical pole or the magnetic pole, respectively.

5. The position of a particular naval vessel or unit at sea may be specified in a naval message by stating its latitude and longitude in degrees and minutes. The latitude may be from 0 to 90 degrees and the longitude from 0 to 180 degrees; a specified latitude is generally followed by NORTH or SOUTH (as appropriate) and, similarly, longitude is followed by EAST or WEST. For example, LATITUDE THREE ZERO DEGREES TWO ONE MINUTES NORTH LONGITUDE ONE FOUR TWO DEGREES ONE SIX MINUTES WEST, or more briefly LATITUDE THREE ZERO DASH TWO ONE NORTH LONGITUDE ONE FOUR TWO DASH ONE SIX WEST. If position is stated in conjunction with a bearing, it is not necessary to state both latitude and longitude; and the location, NORTH or SOUTH, with respect to the equator or EAST or WEST with respect to Greenwich Meridian may be found omitted where no ambiguity arises.

D. REMARKS ON ITEMS APPEARING IN AIR MESSAGES

1. The various elements of which an air force is composed and which may be mentioned in air messages are given below. The smallest grouping of aircraft, composed of one or more aircraft of a particular type, is called a flight. A squadron is two or more flights of the same type; a group is made up of two or more squadrons; a wing comprises two or more groups; an air division is composed of two or more wings; and two or more divisions constitute an air force.

2. In connection with 1, above, a flight is usually commanded by a major; a squadron being the command of a lieutenant colonel; a group being the command of a colonel; a wing, the command of a brigadier general; and an air force, the command of a major general.

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3. The position of a particular aircraft may be specified in an air message by stating its latitude and longitude in degrees and minutes, sometimes in conjunction with its altitude in feet. (Latitude may be from 0 to 90 degrees and longitude from 0 to 180 degrees).

4. The speed of an aircraft is expressed in knots.

E. REMARKS ON SPECIAL TYPES OF MESSAGES

1. Weather messages. Any generalization on the specific elements which a weather message will contain would perforce be rather tenuous, the contents of a particular weather message generally being dependent on its source and purpose. However, there are certain elements which may be expected to appear in most weather messages; these are listed below with an indication of the terms in which each is generally expressed:

a. Identification of the originating station (by code number, or location).

b. Wind speed (knots) and direction (tens of degrees, from 00-36).

c. Amount of low clouds (tenths of sky covered) and their height (hundreds of feet).

d. Types of low, medium, and high clouds (e.g., cumulus, stratus, cirrus, etc.).

e. Temperature of the air and temperature of the dew point (both in degrees Fahrenheit).

f. Present and past weather (e.g., clear, partly cloudy, cloudy or overcast, fog, drizzle, rain, snow, showers, thunderstorm, etc.).

g. Horizontal visibility (miles).

h. Atmospheric pressure (tens, units, and tenths digits in millibars) and barometric tendency (e.g., falling, steady, rising, etc.).

2. Air-to-ground position reports. Position reports made by aircraft in flight may be expected to contain the majority of the following elements of information:

a. Position of the aircraft (in latitude and longitude or with respect to some locality on the ground).

b. Time.

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- c. Speed.
- d. Altitude.
- e. Weather conditions.
- f. Estimated time of arrival at next reporting point or at destination.

F. STEREOTYPIC BEGINNINGS AND ENDINGS

Within the confines of the comparatively limited scope of military messages, stereotypy of phraseology is inevitable. Particularly in the beginnings of messages is this limitation apparent: thus these positions lend themselves most readily to attack by the cryptanalyst. The following list of stereotypes have a high frequency of positional occurrence, and therefore may provide a fruitful source for cribs. It is to be noted that a stereotypic initial word often may suggest a whole opening phrase. For example, if a message of low-echelon ground origin begins with the word HEAVY, then it is not too unlikely that the opening phrase is "HEAVY ARTILLERY (FIRE, BARRAGE) (FALLING, INTERDICTING)....," which might be expanded into "HEAVY ARTILLERY FIRE FALLING ON OUR POSITIONS (NORTH, EAST, SOUTH, WEST) OF...."

BEGINNINGS

ACKNOWLEDGE	INFORM (-ATION)
ADVANCE	IN REPLY (TO YOUR)(MESSAGE)
ADVISE (THIS COMMAND)	LOCATION (OF)
(THIS HEADQUARTERS)	NUMBERS (1, 1st, 2, 2d, etc.)
ARRIVE	ORDERS
ATTACK	OUR
ATTENTION	PARAPHRASE
CANCEL	PLEASE
CITE	POSITION
COMMANDING (GENERAL)	PREPARE (TO)(-ATIONS FOR)
COMMUNICATION (OFFICER)	PROCEED
CONCENTRATE (-ION OF)	RECEIPT
CONFIRM	RECEIVE
CONTINUE	RECOMMEND (-ATION)(-ED)
DEPART (-URE)	REFER (-RING)(TO)(YOUR)
DISCIPLINE	REFERENCE (YOUR, MY)(MESSAGE, RADIO-
EFFECTIVE	GRAM, TELEGRAM)(NUMBER)(DATED, OF)
ENEMY	REPEAT
EQUIPMENT	REPORT
EXPEDITE (SHIPMENT)	REQUEST
FOLLOWING (ARE)(IS)	REQUIRE
FOR	REFRAD
FROM	REURAD
HEAVY	SEND
HOSTILE	

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SITUATION REPORT
STATUS REPORT
SUPPLY

VERIFY
YOUR (COMMAND)(ORGANIZATION)

ENDINGS

ACKNOWLEDGE
ADVISE (IMMEDIATELY)
CONFIRM
END
END OF MESSAGE
IMMEDIATELY
NUMBERS (1, 1st, 2, 2d, etc.)

PERIOD
REPLY
REFERENCE
REQUESTED
SIGNED (NAME)
STOP
TITLES (MAJ, COL, etc.)

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