

BASIC SIGNAL COMMUNICATION

I. INTRODUCTION

The word "Signal" is derived from the Latin word "signum", meaning a mark or sign. It is a means of transmitting information in accordance with certain pre arranged system or code in cases where direct verbal or written statement is either unnecessary, undesirable, or impractical.

Signal Communication is the method or means of conveying information of any kind from one person or place to another. The Means of Communication is the medium by which a message is conveyed from one person or place to another Agency of Communication is a facility which embraces the personnel and equipment necessary to provide signal communication by any particular means or combination thereof.

Signal Communication or signaling has long played an important role in warfare. It serves to provide the means for transmitting information from reconnaissance and other units in contact with the enemy, and the means for exercising command by transmitting the orders and instructions of commanders to their subordinates. It comprises all means of transmitting messages, orders and reports both in the field and between all Armed Forces headquarters and installations.

Signal communication includes automatic transmission of data over military wire and radio circuits, (such as those between computers, telex machines, facsimiles, and control systems used in gun-laying, air navigation, guided-missile control, telephotography and television) and in the various logistic and clerical activities of the military arms and service.

FIVE MEANS OF COMMUNICATIONS:

1. Voice
2. Telegraphy
3. Teletypewriter
4. Facsimile
5. Television

USES:

1. Voice is a direct communications between two or more individuals. It is the most common method available to the user and it includes telephone, voice radio and radio wire integration (a combination of both radio and wire).

2. Telegraphy (CW) is a method of transmitting written messages in international Morse Code over radio using the interrupted continuous wave (CW). CW is a relatively slow method approximately 10-15 words/ per minute, but it is usable when other types of radio propagation are suppressed either by distance or man-made or natural interference. It is normally employed by assigned operations using organic HF and/or SSB raidos, when the tactical situation or radio propagation requirements necessities.

3. Teletypewriter (TT) is a rapid method (40-100 words per minute) of transmitting written messages over write or multi channel radio circuits (or a combination of both) or by radio teletypewriter (RATT). It is normally employed on a common-user basis, available through a communications center. The speed of transmission depends on the type of equipment used and/or the skill of the operator.

4. Facsimile (FAX) is a relatively slow method of transmitting graphic material such as photographs, maps, and maps overlays. Facsimile required skilled operators and high quality voice circuits. Facsimile is normally employed on a point-to-point basis to meet a specific requirement:

5. Television is an electronic method of transmitting a combination of audio and graphic information over wire and/or radio circuits. Television (TV) requires expensive, complex terminal equipment and boardband circuits. It is virtually an instantaneous overway system since information is transmitted at one point and received at another simultaneously.

PROCEDURE WORD (PROWORD)

<u>PROWORD</u>	<u>MEANING</u>
ALL AFTER -----	I refer to the portion of the message that follows
ALL BEFORE-----	I refer to the portion of the message that precedes.
BREAK-----	I hereby indicate the separation of the text other portions of the message
CORRECTION-----	An error has been made in this transmission. Transmission will continue with the last word correctly transmitted. The correct portion is _____ DISREGARD THIS.
MISSION-----	The transmission is in error, Disregard it.
DO NOT ANSWER-----	Stations called are not to answer this call receipt for this message, or other to transmit in connection with this transmission. When this employed. The transmission shall be ended with "OUT."
EXEMPT-----	The addresses designations immediately following are exempted from the collective call.
FIGURES-----	Numerals or number follow.
I READ BACK-----	The following is my response to your instruction to read back the message.
I SAY AGAIN-----	I am repeating transmission (or portion) indicated.
I SPELL-----	I shall spell the next word phonetically.
I VERIFY-----	The message (or portion) has been verified at your request and is repeated. Used only as a replay to verify.
MESSAGE FOLLOWS-----	A message which required recording is about to follow (transmitted immediately after the call).
FROM-----	The originator of this message is indicated by the address designated immediately following.
INFO-----	The address designations immediately following addressed or information.
NUMBER-----	Station Serial Number.
OUT-----	This is the end of my transmission to you and no answer is required or expected.
OVER-----	This is the end of my transmission to you and a response is necessary. Go ahead, transmit.
PRIORITY-----	Precedence is Priority
READ BACK-----	Transmit this message to all addresses or to address designations immediately following.
ROGER-----	I have received your last transmission satisfactorily.
SAY AGAIN-----	Repeat all your transmissions "Repeat____ (portion indicated)."
SPEAK SLOWER-----	Your transmission is at too fast a speed. Reduce speed of transmission.
THAT IS CORRECT-----	You are correct, or what you have transmitted is correct.

THIS IS -----	This transmission is from the station whose designation immediately follows.
TIME-----	That which immediately follows is the time or the date-time group of the message.
TO-----	The addresses of the message which take action.
UNKNOWN STATION----	The identity of the station with whom I am attempting to establish communication is unknown.
VERIFY-----	Verify entire message (or portion indicated) with the addresses to which the questioned message was directed.
WAIT OUT-----	I must pause longer than a few seconds
WILCO-----	I have received your message, understand it, and will comply. (to be used only by the addressee. Since the meaning of ROGER is included in that of WILCO. The two prowords are never used together).
WORD AFTER-----	I refer to the word that follows
WORD BEFORE-----	I refer to the word that P-----
WORD TWICE-----	Communication is difficult each phrase or each quest or as information.

NOTE: Keep voice transmission as short and clear as possible. PROWORDS are used to take place of long sentences.

II. PRESENTATION

A. Definition:

Message – is a thought or idea expressed briefly in plain or cryptic language suitable for transmission in any means of Communication. Means: by messenger, courier, radio, telephone, radio telegraphy, teletype, facsimile, etc.

B. TYPES: According to the way they are address.

1. Single Address – message sent to one addressee only.
2. Multiple Addresses – message sent to two or more addresses each of whom is formed of the others. Each address must be designated either as action or information addressee.
3. Book Message – message sent to two or more addressees is of such a nature that no addressee needs to know who the others are, although each addressee is informed whether he receives the message for action or for information.
4. General Message – message has a wide standard distribution. They carry an identifying tile and which is intended for a certain standard set of addressees and serially numbered in sequence.

C. FORMS OF MESSAGES:

1. Planners – message which has originator and addressees designation in the heading. It contains all the components unless the call serves as the address as shown in

1. Drafter
2. Releaser
3. Originator/approving authority

Occasionally the responsibilities may overlap, especially if one person serving in a dual capacity, for example, the communication officer may occasionally draft and release a message then making line both drafter and releaser.

A. The drafter is the person actually compose the message.

Responsible for:

1. proper addressing
2. clear concise composition
3. selection of precedence
4. ensuring proper format
5. ensuring proper classification
6. ensuring application of proper downgrading and classification instruction.

B. The RELEASER = is a properly designated individual authorized the release message or transmission in the name of the command for activity.

1. Releasing individual ensure that the drafter has comply with the requirements in the ATP.
2. In addition to validity the content of the message the signature of the releaser affirm compliance with the message drafting instruction.
3. The signature of the releaser authorizes the message for instruction.

C. The ORIGINATOR = is the authority in whose name the message is sent.

1. The originator is presume to be the CO of the command/activity.
2. Most often, the originator and the releaser are one and the same.
3. Also in some cases the DRAFTER, RELEASER, and Originator can all be the same person.

EXAMPLE: if the CO drafts a message for transmission. After a message has been properly released, it is ready for transmission.

The DGT is normally assigned here at TELECOMS CENTER, TCC, proper transmission, receipting and filling procedure are done by the communications personnel.

PRECEDENCE:

The message drafter indicates the desire writer to reader delivery time thru the assignment of a message precedence. Although the drafter determines the precedence, the releaser may either confirm or change it.

PRECEDENCE = is assigned according to urgency, not according to the importance of the subject matter of the text.

EXAMPLE: An admin message maybe assigned a higher precedence that a message containing top secret info this would be because of the necessity for further

action on the admin message. Where as the TOP SECRET message may nit require fast response of any action at all.

The following is a list of the various precedence categories, their indicator and the basic definition.

FLASH (Z) – Reserved for initial enemy contact reports or operational combat message of extreme urgency. Message brevity is mandatory so as fast as possible less than 10 minutes.

IMMEDIATE (O) – Reserved for message relating to situation that gravely affect the national forces or populace and which requires immediate delivery to addressee, less than 30 minutes.

PRIORITY (P) – Reserved for message that furnish essential info for the conduct of operations in progress. This is the highest precedence normally authorized for admin messages within 3 hrs.

ROUTINE (R) – Assigned to all types of traffic that justify electrical transmission but which ate not of sufficient urgency to require a higher precedence – within 6 hrs.

In addition to the four (4) major precedence categorizes an EMERGENCY COMMUNICATION AND PRECEDENCE (ECP) is used within the AUTODIAN auto digital network – a worldwide auto communication system that provides auto data series.

This ECP is identified by the precedence prosing (Y) and is limited to designated emergency-action command and control message.

NOTE: On the speed of service objectives

There are many factors that may affect writer to reader delivery time some of these factors include TYPES OF FACILITIES and system used TRAFFIC VOLUME, RELAY REQUIREMENTS, MESSAGE length, number of added circuit conditions and other factors the speed of service objective provides general guidance. However, messages traffic must be handled as rapidly as possible, consistent with reliability and security.

Significance:

1. To the originator – the required speed of delivery to the addressee.
2. To the communication personnel – the relative order in handling of delivery.
3. To the addressee – the delivery order in which he should take action on the message.

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