SECRET

STANDARD FORM

of

W/T PROCEDURE

FOR USE IN

H.M. NAVY, ARMY, AND AIR FORCE.

W/T Board,

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CONTENTS.

ART. 1. DEFINITIONS

ART. 2. THE MORSE CODE
(a) Spacing Rules
(b) Morse Signals
(i) Alphabet
(ii) Numerals
(iii) Punctuation Symbols
(iv) Miscellaneous Signs and Signals.

ART. 3. COMPONENT PARTS OF A MESSAGE
(1) List of, with examples of Messages
(2) Description of Component Parts.

ART. 4. THE MESSAGE FORM FOR INTERSERVICE COMMUNICATION, SHOWING EXAMPLES OF MESSAGES AWAITING TRANSMISSION.

ART. 5. PROCEDURE AND OPERATING SIGNALS. PROCEDURE MESSAGES.

ART. 6. THE SEPARATIVE SIGN.

ART. 7. THE IDENTITY OF A MESSAGE.

ART. 8. SINGLE LETTER PROCEDURE SIGNALS.

ART. 9. TWO AND THREE LETTER PROCEDURE SIGNALS AND SIGNS.

ART. 10. THE PRELIMINARY CALL AND ANSWER.

ART. 11. TRANSMITTING A MESSAGE BY FULL PROCEDURE.

ART. 12. ANSWERING A MESSAGE BY FULL PROCEDURE.

ART. 13. RETRANSMITTING A MESSAGE THROUGH LINKS.

ART. 14. REPETITIONS AND CORRECTIONS.

ART. 15. BATCH WORKING.

ART. 16. LONG MESSAGES.

ART. 17. ABBREVIATED PROCEDURE FOR CONTROLLING AND ANSWERING.

ART. 18. MANOEUVRING PROCEDURE.

ART. 19. NAVAL FIRE CONTROL PROCEDURE.

ART. 20. AIRCRAFT SPOTTING PROCEDURE.
(a) Aircraft spotting with the Navy against Ship Targets
(b) Artillery Observation Wireless Procedure - One way working.
(c) Artillery Observation Wireless Procedure - Two way working.

ART. 21. THE I (OR INTERCEPT) METHOD OF HANDLING TRAFFIC.

ART. 22. D.F. STATION PROCEDURE.

ART. 23. TRANSFER OF W/T MESSAGES FROM SERVICE TO CIVIL ROUTES.

ART. 24. WIRELESS TELEPHONY PROCEDURE.

DEFINITIONS.

ACKNOWLEDGMENT is a message from the addressee informing the originator that his message is understood. (See also ANSWER and REPLY).

ADDRESSED TO. - This term (as opposed to REPEATED TO) denotes that the authority indicated is required to take all necessary action to carry out the purport of the message.

ADDRESSEE is the authority to whom the message is to be delivered and who is required to carry out the purport of the message.

ANSWER. - This term applies to procedure signals made by the receiving operator on receiving a call or message. (See also ACKNOWLEDGMENT and REPLY).

BATCH WORKING. Where there are a number of messages to be signalled in one direction, several of these messages may be sent without interrupting the transmission to obtain answers by arrange ment with the receiving station.

BROADCASTING OR C.Q.METHOD is transmitting a message to all stations without requiring an answer.

CALL SIGN. A Wireless Call Sign is a special form of Distinguishing Signal allotted to stations or authorities for use in wireless communication.

CIPHER - A secret means of Communication.

CIPHER MESSAGE. A message the text of which consists wholly of cipher groups with the exception of reference numbers or any instructions appended in plain language as to the address etc. of the message, such as "addressed ———— repeated ————".

CIPHERS. Are books or documents which provide a means of converting P/L messages into Cipher.

CLEARED. - A message is said to be cleared when the responsibility for transmitting or delivering it ceases.

CODE. A non-secret means of communication with the exception of certain Naval Codes which are marked Confidential and which are to be treated as Confidential by the other Services.

CODE MESSAGE. A message the text of which consists wholly of code groups with the exception of reference numbers or any instructions appended in plain language as to the address etc. of the message such as "addressed ———— repeated ————".

CODES are books or documents which provide a means of converting P/L messages into CODE.

CONTROL STATION is the station which controls the working of a group of wireless stations. In communication between mobile stations and a land station, the latter normally controls.

ART. 1 (contd.)

DECIPHERS are books or documents which provide a means of converting cipher messages into P/L.

DECODES are books or documents which provide a means of converting code messages into P/L.

DIRECT METHOD is transmitting a message to one or more stations who are required to answer direct.

DISTINGUISHING SIGNAL is a signal by which stations or authorities are identified for the purposes of signalling.

"F" METHOD. Transmitting a message to one or more stations without requiring them to answer direct.

GUARD STATION. A W/T station which is detailed to carry out W/T Duties on behalf of another W/T Station.

"I" METHOD. Transmitting a message to a station for the sole purpose of its reception by other stations whose identity may be concealed if desired.

LINKING STATION. A linking station is a station through which a message is passed in the course of its transmission from one station to another.

LISTENING IN is the process by which an operator hears signals emanating from his own aerial.

LISTENING OUT is the process by which an operator, while he is not engaged in transmitting, hears signals emanating from an aerial, other than his own.

LISTENING THROUGH is the process by which an operator while transmitting, hears (during the spaces of his own transmissions) signals emanating from an aerial other than his own.

MESSAGE applies to any communication dealt with by the Signal service and sent by any of the various methods of signalling or in writing.

NORMAL WORKING. Transmitting a message to one or more stations which are required to answer the message as soon as it is received.

OFFICE OF ORIGIN is the signal office or station at which the message was originally handed in for transmission.

OPERATING SIGNAL is a special form of signal designed to expedite wireless communication.

ORIGINATOR is the authority who orders a message to be sent.

ORIGINATOR'S NUMBER is a number used in a message to enable the originator or addressee to refer to such message.

ART. 1 (contd.)

PLAIN LANGUAGE (Abb. P/L) is the method of expressing messages in any recognised language, whereby the real meaning of the message is intelligible, without the assistance of a decode.

P/L MESSAGE. A message the text of which with the exception of any instructions appended in plain language as to the address of the message (such as "addressed ———— repeated ————") contains any word in plain language. A message the text of which contains mingled code and plain language is considered to be a P/L message.

PROCEDURE denotes the rules drawn up for the conduct of signalling.

PROCEDURE MESSAGE is a message of which the text consists of procedure and / or operating signals.

PROCEDURE SIGNAL is a signal designed to expedite the conduct of signalling.

READER is the operator who is responsible for the reception of the message.

RECEIVING STATION is the station by which the message is actually being received.

REPEATED TO denotes that the message, in addition to being ADDRESSED TO certain authorities, is also sent for information to the authorities indicated.

REPLY is a message originating out of, referring to, or replying to a previous message. (See also ANSWER and ACKNOWLEDGMENT).

SENDER is the operator who is responsible for transmitting the message.

SERIAL NUMBER is a number given to every "in", "out", and "through" message and is for internal office use only.

SERIES NUMBER is a number inserted in the message by the signal service at certain stations to identify a series of messages between that station and another station or group of stations, to enable them to ascertain whether all messages of that series have been received.

SIGNAL OFFICE (or SIGNAL DISTRIBUTING OFFICE) is the office established for routeing and distributing all outgoing and incoming messages, of the formations or units to which it is allocated.

STATION. Wireless stations are classified under the following heads. A station may however be included in more than one class

(a) Fixed Stations. Stations established on land (or on board any ship permanently moored), the term being only used in respect of their service with one another.

(b) Land Stations. Stations established on land (or on board any ship permanently moored); the term being used only in respect of their service with mobile stations. They are further sub-divided into :-

ART. 1 (contd.)

(1) Coast Stations, which are those utilised for communication with ships at sea.

(2) Aviation Stations, which are those employed for intercommunication with aircraft in flight.

(3) Beacon Stations, which are stations established on land or on a ship permanently moored whose transmissions are intended to enable the receiving station to ascertain its bearing from the beacon. The transmission from beacon stations may be :-

(i) Circular - In which the radiation is uniform in all directions, or

(ii) Directional - In which the radiation varies in azimuth.

(4) Direction Finding (Abb. D/F) Stations fitted with special aerials and receiving apparatus, enabling them to ascertain the direction of signals from other stations.

(c) Mobile Stations. Ship stations, aircraft stations, portable and other moving stations.

TIME OF DELIVERY denotes the time at which the message is delivered to the addressee.

TIME OF DESPATCH. is the time at which the receiving station notifies the transmitting station of the reception of the message. Where there is more than one receiving station there may be a different time of despatch to each receiving station. For messages broadcasted the time of despatch is the time at which the transmitting station completes the transmission of the message.

TIME OF ORIGIN. (Abb. T. of O.) is the time at which a message was authorised by the originator.

TIME OF RECEIPT. (Abb. T. O R) is the time at which the receiving station completes the reception of the message. In the Army and Air Force, this term is also used to denote the time at which a message is handed in for transmission.

TRANSMITTING STATION is the station by which a message is actually being sent.

UP AND DOWN WORKING is alternatively sending a message and receiving a message between two stations in direct communication.

WIRELESS COMMUNICATION (Abb. Wireless) is the method of communicating by means of radiated aether waves. It does not include those systems depending on the propagation of such waves controlled by currents in tangible conductors between definite receiving stations or systems depending on the effects of the current passing in the earth between electrodes.

WIRELESS TELEGRAPHY (Abb. W/T) is wireless communication carried out telegraphically.

WIRELESS TELEPHONY. (Abb. R/T) is wireless communication carried out telephonically.

ART. 1 (contd.)

WIRELESS STATION (See also station). One or more complete sets equipped for reception or transmission, or both, and employing the same call sign. The transmitting and receiving instruments may be separated by a considerable distance.

ZONE TIME is a system of time which depends on an agreed division of the World's surface into Zones. The times kept in all signal offices in any one zone being identical irrespective of the longitude.

ART. 2.

THE MORSE CODE.

(a) Spacing rules for letters, words and groups.

The dots and dashes, and spaces between them should be made to bear the following ratio one to another as regards their duration :-

A dash is equal to three dots.

The space between the signals which form the same letter, figure or symbol is equal to one dot.

The space between two letters, figures or symbols is equal to three dots.

Any number and combination of letters, figures or symbols signalled thus consecutively so as to form one entity is termed a group. A group consisting of letters forming a word in plain language is termed a word.

The space between two groups or words is equal to five dots.

(b) Morse signals.

The following tables show the signals employed when apparatus depending on the use of the morse code is used.

A bar over the letters expressing a sign denotes that the elements forming these letters are made as one morse code symbol.

The term "barred" is used to denote any accent or modification over a letter. In describing a letter phonetically, the term, 'barred' is used after the letter, e.g. 'a barred' means 'accented a'.

ART. 2.(continued)

Alphabet

SYMBOL.	MEANING.
. −	a
. − . −	$\bar{a}$ (barred)
− . . .	b
− . − .	c
− . .	d
.	e
. . − . .	$\bar{e}$ (barred)
. . − .	f
− − .	g
. . . .	h
. .	i
. − − −	j
− . −	k
. − . .	l
− −	m
− .	n
− − . − −	$\bar{n}$ (barred)
− − −	o
− − − .	$\bar{o}$ (barred) *
. − − .	p
− − . −	q
. − .	r
. . .	s
−	t
. . −	u
. . − −	$\bar{\bar{u}}$ (barred) *
. . . −	v
. − −	w
− . . −	x
− . − −	y
− − . .	z

* These letters are not used internationally.

ART.2(contd.)

Numerals

SYMBOL	MEANING.	REMARKS.
. - - - -	1	The figure 0 is sig-
. . - - -	2	nalled as T when occurring in
. . . - -	3	the cipher groups of a figure
. . . . -	4	cipher message. In all other
. . . . .	5	cases, such as times of origin,
-	6	times of receipt, originator's and
- - . . .	7	series numbers and in procedure
- - - . .	8	messages, it is signalled in full.
- - - - .	9	
- - - - -	0	

Punctuation symbols.

SYMBOL	SIGN	MEANING.
. . - . -	INT	Note of interrogation.(present international sign is IMI).
. - . - . -	AAA	Full stop.
. - . . -	EX	Horizontal Bar.
- . - - . . -	KK	Parenthesis ( ) before and after the words.
- - - -	MM	Separation between whole number and fraction.
. - . . - .	RR	Inverted Commas (before and after word or phrase placed between inverted commas).
- . . . . -	DU	Hyphen.
. . - - . -	UK	Underline or block letters (before and after word or phrase to be underlined or written in block letters.
. - - - - .	WG	Apostrophe.
- . . - .	XE	Oblique stroke.
. . - . .	FI *	Decimal Point *

* This symbol is not used in civil working, the word 'point' being spelt out.

ART.2 (contd.)

Miscellaneous signs and signals.

SYMBOL	SIGN	MEANING.	
.. - - . .	IMI	Repeat Sign	
... - .	VE	Commencing Sign	
.. ..	II	Separative (short term 'Break')	
- .... -	BT	Long Break Sign	
.. . .-.	NR	Number signal	
- - . -.-	GR	Group Signal	
.-.-.	AR	Ending sign	
... - . -	VA	Have no message, (or no further message) awaiting transmission for you.	
.....		Erase sign.	
.... - - (5 times)	HM	Silence Sign	
.. - - - - (5 times)	UO	Negative Silence Sign	
... - - - ...	SOS	Distress Sign.	
- - - - .-.	TOR	Time of Receipt Signal	
.. - ...	FI	Numeral Sign	
. - . -	AA	'All after'	Used in connection with repetitions and corrections
. - - ...	AB	'All before'	
. - - . -	WA	'Word or group after'	
. - - - ...	WB	'Word or group before'	
- .. - . - .	DC	Difficult Communication sign.	
- . - - -	NO	Negative Sign	
- - - .	OE	Preparative Sign	
— — —	T T T	Safety Signal	

ART. 3.

COMPONENT PARTS OF A MESSAGE.

(1) The component parts of a message are as follows :-

		Examples		
		Code or Cipher messages	P/L Message	Procedure Message.
THE HEAD	1. The Commencing Sign	VE	VE	VE
	2. The Call The Series number of the transmitting station	BYS V BYZ NR K47 (or NR 178) (Series No. of (BYZ)	LP7 V HQ8	ABC V DEF
	3. Service Instructions (alternative position)	G		
	4. W/T Route Instructions	M - BXK		
	5. Service Instructions (alternative position)	T - EF- F		
	6. W/T Address	Z -EF V AB	Z-LP7 V AK5	
	7. Indication of Priority	P		
THE BODY	8. Originator's special Instructions	Y		
	9. Address to and from	Commander from DAQMG		
	10. Number of groups in text of message including the T. of O.	GR5	GR3	
	11. Long Break sign, or full stop sign	BT	AAA	
	12. The text	Q41 15 KLMN OPQR	operations completed	B 1550 PQ V XY
	13. Long Break sign	BT	BT	
	14. The Time of Origin	1150	1327	
	15. The Time of Receipt	1223		
	16. Final Instructions	B		
	17. The ending Sign	AR	AR	AR

ART. 3.(contd.)

(2) Details of component parts of a message.

1. The Commencing Sign

The Commencing sign $\overline{VE}$ is to be used at the commencement of every transmission, except when the forms of abbreviated procedure given in Arts. 17 - 20 are employed.

2. The Call

The Call in a W/T message consists of the call sign(s) of the receiving station(s), the procedure letter V (from), the call sign of the transmitting station, and the series number of the transmitting station, if used.

Instructions as to the use of multiple and collective call signs, and as to the number of times the call sign(s) of the receiving station(s) should be made are given in Arts.10 and 11.

The Series Number of the Transmitting Station.

The Series number is a number employed by certain stations as a means of identifying messages of a particular series used by that station, and to enable the receiving station to ascertain whether all messages of that Series have been received. The series number is always preceded by the procedure signal NR and may consist of figures or figures preceded by a letter.

The Series number when used follows in the call immediately after the call sign of the station to which it belongs. It is included as a component part of the call. In the retransmission of a message by a linking station the series number is never transferred to any other part of the call or W/T address. A series number will thus normally only be retransmitted when a previous message is passed for information to stations other than the addressee, or is passed on by a W/T guard station.

(3) The Service Instructions (Alternative positions 3 and 5)

The Service Instructions include instructions to the Signal Staff in connection with the procedure in handling and in retransmission of the message viz:-

(a) The procedure signals F and G (See Art.8).

(b) The procedure signal T, followed when necessary by the call sign(s) of the station(s) to which the message is required to be retransmitted, and the procedure signal L, giving instructions for the retransmission of the message (See Art.8 and 13).

(c) Operating Signals conveying instructions to the signal staff of the receiving station as to the method which is to be followed subsequently in dealing with the message.

2. The directions given by the procedure signals in (a) and (b) above apply only to the station(s) whose call sign(s) immediately precede(s) the procedure signals, except that as the Call is transmitted as one indivisible whole, procedure signals giving directions to the receiving station follow immediately after component 2, as in the example given at the commencement of this article.

ART. 3 (contd.)

3. When directions are given by two or more procedure signals to the same station, the procedure signals are placed in alphabetical order (e.g. F II T) after the call sign of the station to which they give instructions.

4. Procedure signals used in the Service Instructions do not convey instructions to stations other than those indicated by the call sign(s) immediately preceding them and where it is desired, for example, to have a message passed through links repeated back by both the receiving station and the addressee's station and any links, the procedure signal must be repeated after the Call, and after the Call sign of each station which is required to repeat back the message. Thus the Service instructions "G II T II EF II G" following after the call direct both the receiving station and EF to repeat back the message. When it is desired to convey Service instructions to certain, but not all, of the stations named in any one component the call sign of the stations concerned must be repeated before the procedure signal giving the instructions (Thus:- AB CD V EF II AB II G)

5. Unless otherwise indicated by its signification, an operating signal, similarly to a procedure signal conveys instruction to the station whose call sign precedes it.

6. The Service Instructions as comprised by the several procedure or operating signals given in (a) (b) and (c) above and any call signs governed by such signals (e.g. T II EF) normally follow immediately after the Call. When however W/T route instructions (component 4) are included in the message, only Service Instructions which apply to the receiving station are placed in component 3, the remaining Service Instructions being placed in component 5 after the W/T route instructions.

7. The Service Instructions may also include instructions in plain language, code or cipher as to the route of the message, when such cannot be conveyed by operating signals or under the W/T route instructions.
(e.g. via "Eastern").

(4) The W/T Route Instructions.

When it is desired to indicate to the receiving station a W/T link by which a message is to be passed to the addressee, the procedure letter M (pass 'via') followed by the call sign of the linking station or stations may be employed. (See Art. 8.)

The procedure for dealing with such messages by the receiving and linking station is given in Art. 13.

(5) The Service Instructions (alternative positions 3 and 5.)

When a linking station is indicated in the W/T route instructions the Service instructions giving directions for the retransmission etc., of the message by the linking station are placed in component (5), following the rules given in component (3) above.

When several linking stations are indicated in the W/T route instructions, the procedure signal 'T' when placed immediately after the call signs of the several links gives instructions to the last link only for the final retransmission of the message.

ART. 3.(contd.)

(6) The W/T Address

Except when the receiving station(s) and the transmitting station are in both cases identical with the addressee(s) and the originator, the addressee(s) and originator must be indicated in the message. Whenever possible these are to be indicated by inserting the appropriate call signs in the W/T Address.

The W/T address is always preceded and governed by the procedure signal 'Z' (addressed to) followed by the call sign(s) of the addressee(s). The letter 'W' (repeated to) followed by the call signs of any stations or authorities to which the message is repeated may follow. The letter 'V' (from) followed by the call sign of the originator always concludes the W/T address, the form of which, viz "Z II AB V CD" is left unchanged through whatever W/T routes the message is subsequently passed or repeated. The W/T address consists only of these procedure signals and call signs.

When appropriate call signs for the addressee(s) and originator are not available, the address to and / or the address from are inserted in the body of the message (component 9), either in P/L, Code, or cipher as directed by the originator, and in the form "To ——— from ———", modified as desired.

(7) The Indication of Priority.

The degree of priority, if any, which the originator may assign to the message, is indicated by the procedure signals O (with its variants O.P. O.U, and O.A), P, D. The signification of these is given under Procedure signals (Art. 8.) In addition, the procedure signal 'S' when used for Signal Service messages is to be inserted in this position, and may be preceded by P or D if it is desired to add priority.

(8) The Originator's Special Instructions.

These include instructions to the addressee by the originator of the message. viz. :-

(1) The procedure signals 'X' and 'Y', vide Art 8.

(2) The special instruction "NODECO", meaning 'not to be decoded except by a mommissioned officer'.

(3) Operating signals, but only such as convey instructions to the addressee or to authorities generally. Operating signals concerning the signal staff of the receiving, linking or addressee stations are to be inserted in the appropriate position in the Service Instructions.

(9) The Address To and From.

When call signs in the call or W/T address (See component 6) are not available to indicate in full the addressee and originator of the message, the address to and from is signalled in this position either in plain language or as directed by the originator, and in the form "To ——— from ——— ", modified as necessary. For details of use, see Art 11, para.9. See also Art. 21 for use of this component in I method

ART. 3.(contd.)

(10) Number of Groups in text of Message.

The number of groups, preceded by the procedure signal GR is indicated in inter-service messages, except in the case of procedure messages. Between the Navy and Air Force, however, the number of groups is not indicated in Enemy reports and spotting signals, or in signals transmitted by the special procedures given in Arts. 18 - 20

Group Counting

The time of origin is to be counted as the last group of the text.

In messages the text of which is wholly in code or cipher, the separative sign (break) separates each group including any reference numbers, and the counting of the number of groups presents no difficulties.

In messages the text of which is wholly in words in plain language, each word is counted as a group.

The full stop sign, pair of inverted commas, pair of brackets sign are counted as one group. Other punctuation signs are not counted. The hyphen sign is signalled as part of the word or group preceding it, and hyphened groups are counted separately.

In messages in which the text is partly in plain language and partly in code, each word or code group is counted as a group. The Separative sign is to be used between consecutive code groups.

When a P/L message contains figure or letter groups in addition to spelt words the following rules are to be observed in counting the figure or letter groups :-

Each group consisting of letters or figures, or of a combination of letters and figures which is transmitted as one group is to be counted as one group. The Separative sign is to be placed between any such groups occurring in succession, in order to prevent their being read or counted as one group.

Examples

(a) Your Q42 concur :—— will be counted as 3 groups.

(b) Your Q42 415 cases received:—— will be counted as 5 groups and the separative sign will be transmitted between Q42 and 415.

(c) Have informed C-in-C :—— will be counted as 5 groups whether transmitted with hyphens after the first "C" and "in" or not.

(d) Inform Q M G —— This may be transmitted and counted as two groups, in which case QMG (a recognised abbreviation) will be counted and written as one group; alternatively it may be transmitted as four groups, in which case the separative sign must be placed before and after M.

(e) Enemy aircraft B E 3/5 (Monoplane):- B E 3/5 will be transmitted as one group. Total Groups 5. Brackets one group -

ART. 3. (contd.)

(f) Twelve 20 lb. stick-bombs.
Either 4 groups, 20 lb being signalled as one group, or 5 groups, 20 and lb being signalled as separate groups and the separative sign inserted between them.
The method adopted will depend on the way in which the originator wrote the message, but in neither case can there be confusion in counting.

(g) 246 13.5 fuzed shell received.
5 groups. The Separative sign is placed between 246 and 13.

(h) A date expressed completely in numerals is counted as one group. A date expressed in numerals and words (e.g.21 March 1924) counts as 3 groups.

(i) Secret letter 4694/22/S7 6/9/22 acknowledged:-
written by originator as 5 groups. Counted as 5 groups 4694/22/S7 being transmitted as one complete group, 6/9/22 as another complete group, separative sign between them.

(j) 2.15 p.m. is transmitted as 2 FT 15 p m, counted as one group; or 2 FT 15 II p m, counted as two groups.

NOTE 1.
In order, however, to simplify the counting of inter-service P/L messages, whenever brevity does not suffer unduly figures should be spelt out in words, each word being counted separately.

NOTE 2.
These rules must never be used in counting the number of words of messages that are to be paid for; the counting of such words will be governed by the special instructions provided in cases where service officers accept paid work.

Component (12) The Text.

The text of messages may consist of groups of cipher, code, or of plain language, or a combination of non secret code and P/L. In procedure messages the Text may consist entirely of procedure signals and / or operating signals, together with any groups governed by or amplifying such signals

In Army and Air Force messages the text of the message may commence with the originator's number and date, followed by the reference number of the addressee, if any, each transmitted as a separate group.

Component (14) The Time of Origin.

The time of origin is indicated by four figures which are not ciphered or coded. It is counted as the last group.

The time of origin may be followed by a date, (from which it should be separated by the oblique stroke, e.g. 1420/2) in cases where there may be doubt during transmission or retransmission as to the date of origin. The date may similarly be added when referring to the identity of a back message by a time of origin.

ART. 3.(contd.)

A time oforigin will follow the text of every message except that it is not used in the following :-

(a) Procedure Messages
(b) Repetitions and Corrections of parts of Messages
(c) The Executive Signal, Silence, and Nagative Silence Signs.
(d) Messages which are to be followed by an executive signal.(Manoeuvring Procedure).
(e) Fire control signals. (Art.19)
(f) Aircraft Spotting signals (Art. 20)

(15) The Time of Receipt.

The time of receipt is denoted by four figures and may be accompanied by a date as in the case of the time of origin. It is not counted as a group.

In the Army and Air Force, the time of receipt is the time at which a message is handed in to a signal office for transmission, or, in the case of a linking or receiving station, the time at which the message is received from the transmitting station. In the Army, a time of receipt is always transmitted in a message except in the case of a message bearing no time of origin and passed direct to the receiving station to which it is addressed - If, however, such an Army message bearing no time of origin is passed through a link, the linking station includes the time of receipt in the retransmission, preceded by the signal TOR (see Art. 9.)

In the Navy, the time of receipt is appended to a message only when such message is being passed in to the addressee by a guard station.

(16) Final Instructions.

The transmitting station may transmit in this portion before sending the Ending Sign:-

(a) The procedure signals B and Q giving instructions to the receiving station(s) in connection with the answering of the message or in connection with further messages to follow.

(b) Operating Signals referring to technical details in connection with the communication, such as strength of signals, wavelength, note, interference etc., may also be added here if desired, in preference to transmitting them as a further message. If such operating signals are added, however, the receiving station must not delay its answer in order to ascertain their signification (See Art. 12. Answering a message)

(c) Any corrections which have come to hand or any errors which have been noticed during the transmission of the message.

(17) The Ending Sign.

The Ending Sign $\overline{AR}$ is to terminate every message, and the receiving station if required to answer must await its transmission before answering.

ART. 4.

THE MESSAGE FORM FOR INTER-SERVICE COMMUNICATION.

The R.A.F. Message Form (R.A.F. Form 96) has been adopted for inter-service working, and is used on all occasions when the message form may be passed from one Service to another.

2. Specimen message forms are given below, showing examples of a cipher, p/l, and procedure message awaiting transmission. The examples are of a Cipher message originating from the Navy, a p/l message originating from the Army, and a procedure message respectively.

(14434) Wt. 22917A/9818 100 M Pads 5/24 Harrow E.739

R.A.F. Form 96.

MESSAGE FORM.

*The **Signal Department** is responsible that these details are transposed to the appropriate portion of the message form and that all possibility of compromising distinguishing signals, etc., by omitting to remove their signification from the address, etc., is avoided. Before delivery of the message these details are to be re-inserted in P/L.

Charge.

Serial No. of Telegram .....

For Postage Stamps
To be affixed by the Sender,
and
Date Stamp.

Call.— IN / OUT

AB V CD - T - XY - Z - PQ XY V HL 7

Series No.	Service Instructions.	Indication of Priority.	Words.	Time handed in
		0		

	In	Out	
System			
Reader			
Sender			
	Receipt	Despatch	
Time of			

Special Instructions.

TO* ~~C.H.Q. and A.C.D. B.E.F.~~ Y

FROM* ~~C. in C.A.F.~~

No. of Groups In text. 6

(Write horizontally).

12831	69438	41936	67481	98604

(The parts inserted by the Signal Staff are underlined)

Degree of Priority* Emergency

This message must be sent {AS WRITTEN / OR IN CYPHER†} and may‡.....be sent by W/T.

‡ If the message is not to be transmitted by W/T over any portion of its route either in P/L or cypher the originator will insert "NOT" in the blank space. † Strike out words inapplicable.

Originator's Special Instructions and Signature.*

Acknowledge.
J.Jones.Paymaster Lt.
Cipherer.

TIME OF ORIGIN. 1006

T.O.R.

(14434) Wt. 22917A/9818 100 M Pads 5/24 Harrow E.739

R.A.F. Form 96.

MESSAGE FORM.

*The **Signal Department** is responsible that these details are transposed to the appropriate portion of the message form and that all possibility of compromising distinguishing signals, etc., by omitting to remove their signification from the address, etc., is avoided. Before delivery of the message these details are to be re-inserted in P/L.

Charge.

Serial No. of Telegram 72

For Postage Stamps
To be affixed by the Sender,
and
Date Stamp.

Call.— IN / OUT: AB V CD

Series No.	Service Instructions.	Indication of Priority.	Words.	Time handed in
NR 7	G	P	-	-

	In	Out
System	D/R	
Reader		
Sender		

Time of	Receipt	Despatch
	1017	

Special Instructions.

TO* 4 Squadron R.A.F.

FROM* 2 Division

No. of Groups in text. 16

(Write horizontally).

G 37	12	A 42	Close	reconnaisance
aeroplane	required	as	arranged	at
1400	hours	to-day	Friday	acknowledge

(The parts inserted by the Signal Staff are underlined)

Degree of Priority* Priority

This message must be sent {AS WRITTEN ‡} and may‡.....be sent by W/T.

‡ If the message is not to be transmitted by W/T over any portion of its route either in P/L or cypher the originator will insert "NOT" in the blank space. † Strike out words inapplicable.

Originator's Special Instructions and Signature.*

F. Marchant.
Major G.S.

TIME OF ORIGIN. 1003

T.O.R. 1017

(14434) Wt. 22917A/9818 100 M Pads 5/24 Harrow E.739

R.A.F. Form 96.

MESSAGE FORM.

*The **Signal Department** is responsible that these details are transposed to the appropriate portion of the message form and that all possibility of compromising distinguishing signals, etc., by omitting to remove their signification from the address, etc., is avoided. Before delivery of the message these details are to be re-inserted in P/L.

Charge.

Serial No. of Telegram .....

For Postage Stamps
To be affixed by the Sender,
and
Date Stamp.

Call.— IN / OUT: AB V CD

Series No.	Service Instructions.	Indication of Priority.	Words.	Time handed in

	In	Out	
System			
Reader			
Sender			
	Receipt	Despatch	
Time of			

Special Instructions.

TO*

FROM* **No. of Groups In text.**

(Write horizontally).

X 205	1432 AW V AB	PQ		

Degree of Priority* | This message must be sent {AS WRITTEN / OR IN CYPHER†} and may†.....be sent by W/T.

‡ If the message is not to be transmitted by W/T over any portion of its route either in P/L or cypher the originator will insert "NOT" in the blank space. † Strike out words inapplicable.

Originator's Special Instructions and Signature.*

F. Johnstone
Cpl.
Signal Master C.D.

TIME OF ORIGIN.

T.O.R.

ART. 5.

PROCEDURE AND OPERATING SIGNALS. PROCEDURE MESSAGES

1. Procedure Signals.

A procedure signal is designed to expedite the conduct of signalling. It consists of the following types

(i) Single letters (R,B, K,J, V etc.)
(ii) Two or three letters (WA, GR, NR, TOR etc.)
(iii) Signs (IMI, BT, AR, HM etc.)

Arts. 8 and 9 deal with procedure signals in detail.

2. Operating Signals

"British W/T Operating Signals, O.U. 5301", contains a list of signals designed, similarly to procedure signals, to expedite the conduct of signalling. In addition these signals provide a rapid means of transmitting messages dealing with technical and other requirements in wireless communication. An operating signal is distinguished by the letter X followed by 3 or 4 numerals. It may be followed by separate groups expressing a time, wavelength, call sign etc.

3. Employment of Procedure Signals.

These signals may be employed in three capacities:-

(1) In the appropriate component part in the Head or the Body of all messages. General instructions for the use of these procedure signals are given in Art.3, and detailed instructions and examples in Articles 8 and 9 Each procedure signal so used forms a separate group, except that the group signal (GR), the number signal (NR) and the signal TOR (when used) together with the numerals required to complete their meaning are transmitted as one group.

(2) In transmitting repetitions and corrections. (For the use of the letter C in giving corrections, and for the use of the procedure signals WA, AB etc. in giving repetitions see Art.14.)

(3) To form by themselves the text of a message, in which case the message is termed a 'procedure message'. Thus, an answer to a message is a procedure message in its most simple form.

Procedure signals are not employed in the text of a code, cipher or P/L message.

4. Employment of Operating Signals.

Certain operating signals may be employed as in Para.3 (1) and when so used are placed in the service, special, or final instructions. The majority of operating signals are employed to form the text of a procedure message as in Para.3(3)

ART. 5.(contd.)

Operating signals are not employed in the text of a code, cipher or P/L message, except for the purpose of indicating groups that have been missed by guard stations.

5. Procedure Messages

(1) Definition. A procedure message is a message the text of which consists of one or more Procedure and / or operating signals together with any groups governed by or amplifying such signals. A correction to, or a repetition of a part of a message does not constitute a procedure message.

(2) Composition In addition to the commencing sign and the call, which are never omitted, the Head of a procedure message may contain, if required, any of the component parts used in other messages. In order to abbreviate procedure messages as far as possible and to render them distinct from other messages, a time of origin is not appended, and the Body of a procedure message consists of the text, the final instructions (if any) and the ending sign only. A procedure message can thus be identified by its time of receipt only.

6. The Text of a Procedure Message.

(1) When the text of a procedure message consists of several signals, such parts of the text as are independent of each other are to be signalled as separate groups. e.g.

IMI II R4
R II K
K5 II X7 II DC

(2) An operating signal is transmitted as a separate group and any groups amplifying such operating signal and expressing times, wavelengths, call signs etc. are to be signalled as separate groups e.g.:-

IMI II X 307
X 322 II CD
X 324 II 2700
X 200 II 1427 II X 542 II 36 II CD

(3) The identity of a message (Art.7) is treated as a single group together with any procedure signal governing such identity e.g:-

R 1053
G 1147 AB V CD
N NR 47
B K 95
Y 1552 V AB
J 1432/6/1 EF V GH
X 200 II 1427 AB V CD II EF

The method of identifying a message is dealt with in Art. 7.

ART.5.(contd)

(4) A part identity (Art. 7) is treated similarly e.g.

IMI AR 1

IMI 14037 to 22863

IMI 6

IMI WA guns

(5) In order to prevent possible confusion, each part-identity following an identity is signalled as a separate group. Similarly, when a part-identity is included in the procedure signal as in (4), additional part identities are signalled as separate groups e.g.

IMI 1053 AB V CD II AB 2 II 17

J NR27 II AA 12

IMI 6 II 12 to 15 II WA 13065

IMI WA guns II trucks TO lorries

Fuller examples illustrating such procedure messages used in obtaining repetitions are given in Art.14.

(6) Different identities are signalled as separate groups, and the procedure or operating signal governing such identities is repeated before each identity e.g.

R NR 42 II R NR43 II IMI NR41 II Tuesday TO

Orders

X 208 II 1451 KK5 V CD II X 208 II 488 Q

ART. 6.

THE SPACING OF GROUPS IN A MESSAGE USE OF THE SEPARATIVE SIGN.

1. General rule for spacing of groups.

In any message transmitted by W/T each group having a separate signification is signalled as one entity and if spelt in plain language is spaced from the next group following by an interval (5 dots) as laid down in Art.2(a). If the group is not a word in plain language, however, means to render the spacing more distinctive when necessary are employed as shown in the following paragraphs.

2. The Separative Sign (Short Name - Break)

In order to emphasise the distinction in a W/T message between each letter or figure group having a separate signification, the separative sign, i.e. the letters II made separately (.. ..) is used in general between groups other than words spelt in P/L, so as to prevent the possibility of mistakes in reception due to the letters or figures of adjacent groups being written together in one group.

The separative sign has no other signification.

The separative sign itself is spaced by the usual interval of five dots as given in Art. 2 (a) from the groups preceding and following it, but the two letters II forming the separative sign may be made as quickly as possible irrespective of the speed of transmission employed.

3. Use of Separative Sign.

Except as below, the Separative sign is placed between each component part of a message and between every group in a message having a separate signification, whether such group consists of a procedure signal, operating signal, call sign, or other group formed by a combination of figures and / or letters.

4. Exceptions to the use of the Separative Sign between groups.

In the case of words spelt in plain language reliance is placed on the spacing interval between the words to render them distinct and the separative sign is not used. In the text of a message in P/L each word so spaced is counted as a group and the importance of correct spacing is obvious. In the case of groups not spelt in plain language, the Separative sign is omitted in certain parts of the message, notably in the Head. This omission is made to secure brevity and in certain cases to avoid possible confusion. When the Separative sign is so omitted such groups are spaced by an interval slightly greater than the normal interval between letters or figures in a group (3 dots).

5. List of Exceptions.

The separative sign is omitted in the following parts of a message, the reference being to the component parts (Art.3):-

Components (1) and (2) Between VE and the Call.
In the Call itself, as defined in Art.3.

(3) (4) & (5) Between call signs occurring in the Service or Route Instructions when governed by the same procedure signal.

ART. 6.(contd.)

(6) In the W/T Address, The procedure signal Z (and W, if used) are however always preceded and followed by the Separative Sign .

(9) Between words spelt in P/L occurring in the Address To and From.

(10) Between GR and the number following

(11)& (13) Before and after BT and AAA

(12) In the text
(a) Before and after any word spelt in P/L, or punctuation symbol.
(b) In procedure messages:-

(i) Before the text when following directly after the call or W/T address.
(ii) In an identity or part identity (see Art. 5 and 7)
(iii) Between a procedure signal and an identity(or part identity) governed by such procedure signal (see Art.5)
(iv) After the INT sign

(16) Between call signs in the final instructions

(17) Before AR, and before and after IMI when making the message through twice.

6. In giving repetitions and corrections the same rule is observed as in the message or part of the message first transmitted, except that each identity or part identity quoted, together with the procedure signal C when giving correction, is always treated as one indivisible group (See Arts. 5 and 14).

Examples of Rules for use of Separative Sign :-

VE AB V CD R AR

VE AB V CD IMI 5 AR

VE AB AB V CD J 1046 V AB II 5 II 6 to 14 AR

VE CD V AB II 8 II 64158 II 7 II 74231 AR

VE CD V AB A 1043 II Exercise TO out II Portsmouth TO Friday AR

VE CD CD V AB NR K71 II M II QL KL II T II CX II G II Z II CX V PD II GR2 BT BXMP BT 0137 AR

VE CD CD V AB II P II GR3 BT MNKY II TRIX BT 2301 IMI CD CD V AB II P II GR3 BT MNKY II TRIX BT 2301 AR

VE CD CD V AB II GR6 AAA your A42 II 415 cases received BT 0943 AR

VE CD V AB II GR6 AAA Direct LUPOLPETRO II NUJALAARUM return forthwith BT 0957 AR

VE CD V AB II GR5 AAA G14 II 7 II G29 understood BT 1423 II 1437 AR

VE CD CD V AB X 158 AR

VE CD CD V AB II P II X 158 IMI CD CD V AB II P II X 158 AR

ART. 7.

THE IDENTITY OF A MESSAGE.

1. When it is necessary to identify a message this should be done in one of the following ways -

(i) Originator's number
(ii) Series number of the transmitting station
(iii) Time of origin

(i) and (iii) of the above may be amplified by the addition of the whole or part of the W/T Address (or Call, if the message carries no W/T Address). (ii) may be amplified by the addition of the whole or part of the Call.

The Identity of part of a message.

When it is necessary to identify part of a message this should be done in one of the following ways:-

(i) By quoting the numbers of the groups required if the text of the message is in code or cipher.
(ii) By quoting the groups or words on either side of the part of the text required, separated by the letters TO.
(iii) By using the procedure signals AA, AB, WA, WB, together with the groups or words necessary to complete their meaning.
(iv) In the case of the Head of a message, by using the procedure signal AB followed by the first convenient group in the Body of the message.

Example:-

VE BXB V BYZ NR K74 II T II Z II CD V AB II GR11 BT
G10 II 7 II 10475 II 67538 II 49321 II 75648 II 92731
II 54821 II 76128 II 93465 BT 1601 II 1617 AR

The above message may be identified as :-

(i) NR K74 or NR K74 V BYZ or NR K74 BXB V BYZ
(ii) 1609 or 1609 V AB or 1609 CD V AB
(iii) G10, or G10 V AB, or G10 CD V AB

In the above message.
The sixth group could be identified as :-

(i) 6
(ii) WA 49321
(iii) WB 92731

The sixth, seventh and eighth groups could be identified as

(i) 6 TO 8
(ii) 49321 TO 76128

The last part of the message from the 7th group could be identified as:-

(i) AA 7
(ii) AA 92731

The Head of the message could be identified as
(i) AB GR 11
(ii) AB 1

2. If it is required to identify a procedure message, or a message which cannot be identified as in para 1 above, the message may be referred to by its time of receipt, preceded by the signal TOR (see under Art.9) amplified by the addition of the whole or part of the call or W/T address.

ART. 8.

PROCEDURE SIGNALS AND SIGNS

SINGLE LETTER PROCEDURE SIGNALS.

"A"

The letter "A" used in the text of a procedure message, signifies "Verify the text, check from the decode and repeat", when referring to code or cipher messages, or "Verify the text and repeat" when referring to plain language messages. The letter "A" includes the action required under "J" but also entails reference back to the originator of the message in order that he may verify and confirm the text as originally written in P/L.

It is employed as laid down in Art. 14.

"B"

1. The letter "B" may be used in the final instructions to signify "Have a further message for you".

Example (a) BYB transmits a message to BYZ and wishes to notify that there is a further message to follow:-

VE BYZ BYZ V BYB NR K74 II T II Z II AB V CD II GR2 BT LUBO BT 1604 II B AR

BYZ makes:-

VE BYB V BYZ R II K AR

Example (b) BYZ has a message for all stations a message for AB and another for CD -

VE CQ CQ V BYZ II Z II CQ V BYA II GR10 AAA Christmas Day will be observed as a whole holiday BT 1406 II AB CD II B AR

Example (c) CD has two messages for transmission to AB the first of which is to be repeated back. CD does not send 'B' in the final instructions of the first message, but after AB has repeated back correctly makes:-

VE AB V CD C II B AR

AB if ready to take the second message makes:-

VE CD V AB K AR

2. The letter 'B' used at the end of a portion of a message transmitted in parts signifies "Have ——— groups been received"

Example (a) CD has a cipher message which CD wishes to make in portions to AB.

VE AB AB V CD NR15 II GR52 BT 06459 II (remainder of first 20 groups) II B20 AR

AB having received the first 20 makes:-
VE CD V AB K AR

CD then makes the next 20 groups :-
VE AB V CD II 01019, etc. II B40 AR

AB having answered, CD then finishes the message-
VE AB V CD II 81094 II etc. BT 1601 AR

AB having received the last portion makes:-
VE CD V AB R AR

ART. 8.(contd.)

Example (b) CD has a long P/L message for transmission to AB in portions:-

VE AB AB V CD II GR 106 AAA The following etc. etc. wagons II B52 AR

AB having received the first portion makes:-
VE CD V AB K AR

CD then completes the message -
VE AB V CD II Thus in the etc. etc. BT 1213 AR

AB having received the last portion makes:-
VE CD V AB R AR

3. The letter "B" used in the text of a procedure message signifies "has message _____ been received".

Example (a) CD having made a message to AB, and having received no answer, makes:-
VE AB V CD N II B 1041 AR

Example (b) CD wishes to know whether AB has received a message 1604 DT V LN

CD makes the procedure message:-
VE AB AB V CD B 1604 DT V LN AR

AB answers the procedure message thus:-
VE CD V AB R AR

or if able to reply at once AB may make
VE CD V AB R (or N) 1604 DT V LN AR

Example (c) CD wishes to know whether AB has received several messages which have been made at some previous time.

VE AB AB V CD B 1453 II B NR K74 V BYZ II B 1804 V KL II B0849 PK V LB AR

"C"

The letter 'C' is used -

(i) In reply to A and J, and to correct an error in a message after transmission is completed ('See Art.14)
(ii) To correct an error in a message before transmission is completed.
(iii) In the text of a procedure message to a station that has repeated back a message correctly.

Example (a) CD, while transmitting a code message to AB finds the second group has been made incorrectly. He will correct it thus:-

VE AB AB V CD II GR7 BT LUBQ II KOLZ II BAGQ II TOGQ II MUNR II MYTQ/1453 II C2 II KOLQ AR
BT

Example (b) BF while transmitting a P/L message to AB, finds he has omitted the word NOT. He will correct the omission thus:-

VE AB AB V BF II GR7 AAA Battalion is to return to Portsmouth BT 0951 II C AB return II AB V BF II GR8 BT Battalion is not to return AR

When a station discovers an error in the text, the coding or the transmission of one of its own outgoing messages already transmitted, the correction is made as shown in Art. 14.

ART. 8.(contd.)

Example (s). CD wishes AB to repeat back a message.
VE AB AB V CD II G II GR2 BT LUBQ BT 0814 AR
AB makes :-
VE CD V AB II AB V CD II G II GR2 BT LUBQ BT 0814 AR 0814 AR
CD makes the procedure message:-
VE AB V CD C AR
AB does not answer.

"D"

The letter 'D' used in the "indication for priority" of a message signifies "Urgent". It may be used for messages to be given precedence over others which have no degree of priority.

It is used in preliminary calls and messages carrying the indication urgent in the same manner as the letter 'O' (Emergency Sign), except that these messages need not be made twice through.

It is not used in the Army.

"Ē"

The letter Ē (E barred) used in the final instructions signifies "Am about to transmit a further message without waiting for an answer to this message".
CD while transmitting a message to AB has a further message handed in for the same station.

If desirable, CD may make

VE AB V CD NR3 II GR2 BT KAKQ BT 1437 II Ē AR and after a short pause will then proceed with the second message NR4.

AB answers:-
VE CD V AB R NR3 II R NR4 AR
CD makes:-
VE AB V CD R AR
The letter Ē is made in the final instructions of each message except the last of any series in which the above procedure (e.g.delayed answers) is adopted.

A series of messages so sent must not occupy a time longer than 10 minutes, and long messages must be dealt with as laid down in Art. 16.

When batch working is employed (see Art.15) the letter Ē is made in the final instructions of each message, except the last of each batch.

"F"

The letter 'F' is used in the Service instructions only and signifies "not to be answered".

It is not used in the text of a procedure message.

2. Messages with 'F' in the Service instructions to the receiving station are made twice through, except exercise P/L messages, which may be made once only if desired.

ART. 8.(contd.)

3. When the letter 'F' is used as in para.2 the receiving stations are not to answer or ask for repetitions direct.

Example (a) CD has a message for AB, and does not wish AB to answer -

VE AB AB V CD II F II GR2 BT LUBQ BT 1041 IMI
AB AB V CD II F II GR2 BT LUBQ BT 1041 AR

AB does not answer.

Example (b) CD has a message for AB to be passed through a link. CD does not wish AB to answer, but requires an answer from the link.

CD makes:-

VE EF EF V CD II T II AB II F II Z/AB V CD II GR2
BT KOTQ BT 1041 AR

EF makes:-
VE CD V EF R AR

EF then makes:-
VE AB AB V EF II F II Z II AB V CD II GR2 BT
KOTQ BT 1041 IMI AB AB V EF II F II Z II AB
V CD II GR2 BT KOTQ BT 1041 AR

AB does not answer.
For further details of the use of 'F' in the Service instructions, see under 'G', note to paras. 1 and 5.

Example (c) AB has a procedure message for a group of stations which is not to be answered. AB makes:-

VE CC2 CC2 V AB II F II X 252 IMI CC2 CC2 V AB II
F II X 252 AR
No stations answer.

"G"

The letter 'G' used in the Service instructions, signifies "repeat back". When repeating back or correcting repetitions, the text or groups concerned are only made once, even if the original message has been made twice.

Example (a) AB has a priority message for CD and wishes the message to be repeated back:-

VE CD CD V AB II G II P II GR3 BT KUBQ II ABWY
BT 1004 IMI CD CD V AB II G II P II GR3 BT
KUBQ II ABWY BT 1004 AR

CD having received the message makes:-
VE AB V CD II CD V AB II G II P II GR3 BT KUBQ
II ABWY BT 1004 AR

If the message has been repeated back correctly
AB answers:-
VE CD V AB C AR
CD does not answer.

ART. 8 (contd.)

Example (b) In Example (a) should CD repeat back the message incorrectly as follows:-

VE AB V CD II CD V AB II G II P II GR3 BT KABQ II RBWY BT 1004 AR

AB would correct the mistake thus:-

VE CD V AB II 1 II KUBQ II 2 II ABWY AR

CD receives one group correctly, but the other incorrectly and makes:-

VE AB V CD II 1 II KUBQ II 2 II ADWY AR

AB again corrects the mistake thus:-

VE CD V AB II 2 II ABWY AR

CD repeats back correctly:-

VE AB V CD II 2 II ABWY AR

AB makes:-
VE CD V AB C AR

CD does not answer.

Example (c) AB has a message for CD and EF which AB wishes to be repeated back by CD and EF.

VE CD CD EF EF V AB II G II GR2 BT KABQ BT 1027 AR

CD and EF each repeat back in order of call signs (see Art.10) as in Example (a)

AB makes:-
VE CD EF V AB C AR

Example (d) In example (c) AB wishes CD only to repeat back

AB makes:-
VE CD CD EF EF V AB II CD II G II GR2 BT KABQ BT 1027 AR

CD repeats back:-
VE AB V CD II CD EF V AB II CD II G II GR2 BT KABQ BT 1027 AR

EF makes:-
VE AB V EF R AR

AB then makes:-
VE CD V AB C AR

NOTE. The use of the letter 'F' in the Service instructions to one or more of several receiving stations is similar.

2. Whenever a message containing the letter "G" in the Service instructions to the receiving stations is sent in portions as described under the procedure signal "B" each portion of the message is to be repeated back before proceeding with the next portion of the message.

ART. 8 (contd.

Example (a) AB has a message for CD which is to be repeated back and which AB sends in two portions -

VE CD CD V AB II G II GR 39 BT First 20 groups II B 20 AR

CD makes:-
VE AB V CD II CD V AB II G II GR39 BT First 20 groups II K AR

If any groups have been repeated back incorrectly, AB now corrects them, as shown in previous example, but makes "II B" at the end. CD then repeats back the groups, and makes "II K" at the end.

AB then proceeds with the last portion:-
VE CD V AB II last portion BT 1415 AR

CD repeats back:-
VE AB V CD II last portion BT 1415 AR

AB makes:-
VE CD V AB C AR

CD does not answer.

3. CD requires EF to pass a message to AB through a link GH which he only wishes repeated back by the link :-

CD makes:-
VE EF EF V CD II M II GH II G II T II Z II AB V CD II GR2 BT KOKQ BT 0012 AR

EF makes:-
VE CD V EF R AR
Then
VE GH GH V EF II G II T II Z II AB V CD II GR2 BT KOKQ BT 0012 AR

GH repeats back:-
VE EF V GH II GH V EF II G II T II Z II AB V CD II GR2 BT KOKQ BT 0012 AR

EF makes:-
VE GH V EF C AR

GH does not answer but makes:-
VE AB AB V GH II Z II AB V CD II GR2 BT KOKQ BT 0012 AR

AB makes:-
VE GH V AB R AR

4. CD has a message to be passed through EF to AB, which is to be repeated back through all stages of its transmission.

CD makes:-
VE EF EF V CD II G II T II AB II G II Z II AB V CD II GR2 BT KOKQ BT 0012 AR

EF will repeat the message back to CD and retransmit the message to AB.
AB will repeat the message back to EF.

ART. 8. (contd).

NOTE Messages to be repeated back by the addressee and passed through links should only be required normally to be repeated back by the first link when the station of origin cannot hear the re-transmission by the linking station. If therefore in the example above CD will hear EF retransmitting the message, the direction to EF to repeat back, given by the first 'G', will be unnecessary.

5. When two or more call signs governed by the procedure signals M or T follow immediately after each other in the Service or Route instruction, (e.g. T II GH KL), the procedure signal G if placed after such call signs applies to all the stations so indicated. If it is desired that only certain of such stations should repeat back, the call signs of these stations are repeated before the 'G'.

NOTE. The Method of using the procedure signal 'F' in the Service Instructions is similar.

Example (a) CD has a message for GH and KL to be passed through EF. KL is required to repeat back the message to EF.

CD makes:-
VE EF EF V CD II T II GH KL II KL II G II Z II GH KL V CD II GR2 BT KOLM BT 1223 AR

EF makes:-
VE CD V EF R
Then
VE GH KL V EF II KL II G II Z II GH KL V CD etc.

GH makes:-
VE EF V GH R AR

KL makes:-
VE EF V KL II GH KL V EF II KL II G II Z II GH KL V CD etc.

EF makes:-
VE KL V EF C AR

Example (b) CD has a message for AB to be passed through linking stations EF, GH and KL in that order. GH is required to repeat back the message to EF.

CD makes:-
VE EF EF V CD II M II GH KL II GH II G II KL II T II Z II AB V CD II GR2 BT KIVT BT 1911 AR

EF makes:-
VE CD V EF R AR
Then:-
VE GH GH V EF II G II M II KL II T II Z II AB V CD etc.

GH makes:-
VE EF V GH II GH V EF II G II M II KL II T II Z II AB V CD etc.

EF makes:-
VE GH V EF C AR
GH does not answer but makes:-
VE KL KL V GH II T II Z II AB V CD etc.

6. The letter 'G' used in the text of a procedure message a and followed by the identity of a message means "Repeat back message indicated".

Example (a) CD having made to AB :-
VE AB AB V CD II GR2 BT TOGQ BT 0918 AR
subsequently wishes AB to repeat back.

CD makes the procedure message:-
VE AB AB V CD G 0918 AR

AB, if not in a position to repeat back immediate ly makes:-
VE CD V AB R AR
When ready to repeat back, AB makes:-
VE CD CD V AB II AB V CD II GR2 BT TOGQ BT 0918 AR

CD makes:-
VE AB V CD C AR

AB does not answer.

"H"

The letter "H" use. in the text of a procedure message by a receiving station indicates "Am counting the groups in the message just transmitted by you".

It is used by a receiving station which, although having received the whole message requires time before making 'R' to check the number of groups indicated against the number actually received in the text and time of origin.

It is not used for any other purpose.

The receiving station if uncertain of the correct reception of every group in the whole message does not make 'H' but at once requests a repetition of the doubtful group or groups, using the procedure signal IMI (See Art. 14.)

Example (a) AB has transmitted the following message to CD:

VE CD V AB NR15 II T II Z II EF V AB II GR47 AAA
(text of message) BT 1443 II 1457 AR

CD has read the complete message but requires time to check the number of groups indicated (GR 47) against the number of groups as read in the text and time of origin.

CD makes at once:-
VE AB V CD H AR

AB does not answer.

(1) When CD has counted the groups in the text and found that together with the time of origin the number agrees with the number indicated (GR 47).

CD makes:-
VE AB V CD R AR

ART. 8.(contd.)

If in the meanwhile AB has proceeded with other work, so that some time has elapsed before CD is able to make R, CD should identify the message when answering thus:-

VE AB AB V CD R 1443 AR
(or R 1443 EF V AB AR
(or R NR15 AR)
(or R (originator's number) AR

AB answers

VE CD V AB R AR

(2) If after making 'H' as above and counting the groups CD finds that the numbers do not agree, CD follows the procedure when the number of groups is in dispute given in Art.14. (Repetitions & Corrections)

NOTE. The correct use of the letter 'H' as above prevents departure from the rule (see Art.10) that in normal or up and down working the receiving station transmits an answer to or request for repetition of a message immediately the transmitting station makes the Ending Sign.

"I"

The letter 'I' is not used as a procedure signal.

"J"

The letter "J" used in the text of a procedure message signifies "Check from the decode and repeat". It is to be employed as laid down in Art. 14.

"J" is not used in the head of a message.

"K"

The letter "K" used in the text of a procedure message signifies "Go on"; used similarly and preceded by the INT sign so as to form one group signifies "May I go on ?"

It is not used in the Head of a message.

Example (a) CD calls AB
VE AB AB V CD AR

AB makes:-
VE CD V AB K7 AR (or whatever the strength of CD's signals are to AB - see under 'R')

CD then proceeds with his message.

Example (b) AB makes to CD the controlling Station:-

VE CD CD V AB INT K AR

CD does not wish AB to transmit, and makes:-
VE AB V CD Q AR

When CD wishes AB to go on CD makes:-
VE AB V CD K AR

ART. 8.)comtd.)

Example (c) CD has 2 messages for AB. CD makes the first one thus:-
VE AB AB V CD II GR2 BT BOBQ BT 1416 II B AR

AB if ready to receive the next, makes:-
VE CD V AB R II K AR

For the procedure for use of 'K' with messages made in portions, see under 'B' Example (c) and (d)

NOTE. The figure denoting the strength of signals is always signalled with 'K' so as to form one group in answer to a preliminary call. When 'K' is used on other occasions such as in example (c) above, the figure is only added when the receiving station wishes to inform the transmitting station that signals have changed from their original strength.

"L"

The letter "L" used in the Service Instructions, signifies "pass this message to those of the stations addressed for which you are responsible". It is always followed by a W/T address, preceded by Z.

It is not used in the text of a procedure message, an operating signal being provided with the same signification.

Example (a) CD wishes to pass a message to AB and EF for ZT, YB, and XC.
AB is responsible for ZT and YB; EF for XC
CD makes:-
VE AB AB EF EF V CD II L II Z II XC YB ZT V CD II GR2 BT KIVQ BT 0148 AR
AB makes:-
VE CD V AB R AR
EF makes
VE CD V EF R AR

The procedure for re-transmission is given in ART. 13.

Example (b) CD wishes to pass a message to AB and EF for ZT, YB, and XC, message is addressed to ZT, YB, XC, PL and MN. AB is responsible for ZT and YB; EF for XC.

CD makes:-
VE AB AB EF EF V CD II L II Z II MN PL XC YB ZT V CD II GR2 BT TUYB BT 0231 AR

AB makes:-
VE CD V AB R AR

AB then makes:-
VE YB YB ZT ZT V AB II Z II MN PL XC YB ZT V CD II GR2 BT TUYB BT 0231 AR

YB makes:-
VE AB V YB R AR

ZT makes:-
VE AB V ZT R AR

EF carries out a similar procedure for the station for which EF is responsible.

ART. 8. (contd.)

"M"

The letter 'M' when used in the W/T route instructions, signifies "Pass via _____"

It is not used in the text of a procedure message.

Example (a) CD has a message for AB and wishes to pass it through GH EF and DB in that order.

VE GH GH V CD II M II EF DB II T II Z II AB V CD II GR2 BT DADX BT 0124 AR

GH makes.
VE CD V GH R AR
GH then makes:

VE EF EF V GH II M II DB II T II Z II AB V CD II GR2 BT DADX BT 0124 AR

EF makes:-
VE GH V EF R AR

EF then makes:-
VE DB DB V EF II T II Z II AB V CD II GR2 BT DADX BT 0124 AR

DB makes:-
VE EF V DB R AR

DB then makes:-
VE AB AB V DB II Z II AB V CD II GR2 BT DADX BT 0124 AR

AB makes:-
VE DB V AB R AR

2. The letter 'M' followed by 4 figures indicating a time of origin, so as to form one group, is used as the first group of the text of a message made in certain Naval codes and referring to the enemy, to signify "With reference to my _____ (previous message from the same originator)".

"N"

The letter "N" (N barred) used in the text of a procedure message signifies "Nothing received".

It is not used in the Head of a message.

2. When a station does not immediately answer a message which requires an answer, or does not proceed with a message after "K" has been made in answer to the preliminary call "N" may be made.

Example (a) AB makes:-
VE CD CD V AB II GR2 BT LUBQ BT 1041 AR
but receives no answer from CD.

AB may make
VE CD V AB N AR
or
VE CD V AB N II B 1041 AR

ART. 8 (contd.)

Example (b) AB calls up CD
VE CD V AB AR
CD answers
VE AB V CD K 7 AR
but AB fails to proceed with the message
CD may make
VE AB V CD N II K 7 AR

3.

3. The letter "N" followed by the identity of a message signifies "Message _____ has not been received".

Example (a) CD wishing to inform AB that message NR 42 from AB has not been received makes the procedure message:-

VE AB AB V CD N NR 42 AR

AB answers:-
VE CD V AB R AR

Example)b) CD wishing to inform AB that message 1212 from EF to GH has not been received makes:-

VE AB AB V CD N 1212 GH V EF AR

AB answers:-
VE CD V AB R AR

"O"

The letter "O" is the "Emergency" signal and is used

(a) in the Indication of Priority in an "Emergency" message
(b) as the text of a procedure message by a station which has an "Emergency" message awaiting transmission

Its use is reserved to distinguish messages or calls of the utmost importance concerning operations, the enemy, imminent danger, serious damage or distress.

W/T messages with 'O' in the indication of priority are always made twice through.

Example (a) CD has an Emergency message for AB.

CD makes:-
VE AB AB V CD II O II GR3 BT MQLR II SPOX BT 1301
IMI AB AB V CD II O II GR3 BT MQLR II SPOX BT 1301 AR

AB answers:-
VE CD V AB R AR

NOTE. Between the Navy and Air Force the number of groups is not signalled in "enemy reports".

Example (b) The station AB has ordered the stations which AB controls to wait.

CD has an Emergency message for AB.
CD makes the procedure message:-
VE AB AB V CD O AR

If AB wishes CD to transmit the message, AB will make:-
VE CD V AB K AR

ART. 8.(contd.)

CD then proceeds with the message as in example (a)
Should AB wish CD still to wait, AB makes:-
VE CD V AB Q AR

The letter 'O' may be used similarly as the text of a procedure message when it is desired to make a preliminary call before transmitting an emergency message (See Art. 10 para.2).

"O II P." "O II A", "O II U".

In addition to the use of 'O' as a priority indication for Emergency messages generally as described above, the letter O is followed by one of the letters A, P or U to form a double priority indication for use exclusively in certain classes of Emergency messages as follows:-

Indication of Priority	Signification	Application
O II P	Emergency - Battleships.	In reports of Enemy battleships only.
O II A	Emergency - Aircraft	In reports of imminent air attack by Enemy Formations only.
O II U	State	For Government messages of vital importance.

The procedure for the use of these three double priority indications is exactly similar to that given in (a) above for the use of "O". "O II U" may also be used in a preliminary call as in (b).

"P"

The letter "P" is the priority signal and signifies "Priority".

2. It is used in priority calls and messages in exactly the same manner as the Emergency signal is used for emergency calls and messages.

3. W/T messages with "P" in the indication of priority are always to be made twice through.

4. The priority signal is used for messages of extreme importance which do not however fall under the Emergency heading.

"Q"

The letter "Q" made in the text of a procedure message signifies "Wait".

Example (a) AB calls up CD
VE CD CD V AB AR
CD being unable to attend to AB at the time makes the procedure message:-
VE AB V CD Q AR
AB does not answer.
When ready to attend to AB, CD makes:-
VE AB V CD K T AR

ART. 8.(contd.)

Example (b) The controlling station AB is in communication with a station, when another station EF commences communication with GH and causes interference.

AB may make:-
VE EF EF V AB Q AR
or
VE EF EF GH GH V AB Q AR

The station or stations addressed do not answer.

2. Whenever the controlling station makes "Q" in a procedure message the stations addressed are not to recommence signalling except to answer the controlling station until they are directed to "go on" by "K"

Should, however, any such station have a message awaiting transmission with "O", or "P" in the indication of priority addressed to a station other than the controlling station, such station makes a procedure message requesting permission to go on by INT K (see example (b) of 'K'), followed by the procedure signal or signals denoting the priority of the message.

If the message awaiting transmission is addressed to the controlling station, the station desiring to transmit omits INT K and proceeds as in example (b) of "O"

Example The controlling station AB has made to JJ4 and KK6 (two collective callsigns)

VE JJ4 KK6 V AB Q AR

CD, a station coming under the collective callsign JJ4, has a priority message for another station, not AB.

CD makes the procedure message:-
VE AB AB V CD INT K II P AR

AB wishing CD to go on will make:-
VE CD V AB K AR

AB wishing CD to wait will make:-
VE CD V AB Q AR

The permission to transmit when given covers also the answer to the message by the station to which the message is transmitted.

3. A controlling station having made "Q" in the text of a procedure message or in the final instructions of a message to a station or stations must make "K" to them as soon as the state of communications permits, If it should appear, after a reasonable interval, that this has been overlooked, a station may ask permission to transmit thus:-

Example (a) AB has made
VE JJ4 KK6 V AB Q AR

After a reasonable interval, CD having a message to transmit may make:-
VE AB AB V CD INT K AR

AB, wishing CD to go on will make:-
VE CD V AB K AR

ART. 8. (contd.)

AB not wishing CD to go on will make:-
VE CD V AB Q AR

4. In addition to its use in the text of a procedure message or in the final instructions of a message, the letter 'Q' may be used at any point of a message by a station which in the act of transmitting is unable for some reason to continue, to signify "Am obliged to wait." When so used it does not convey directions to the receiving station also to wait.

Example (a) AB transmitting to CD makes:-
VE CD CD V AB II T II KL V AB II GR12 BT KVLI II LOTQ II ABKR II Q

CD does not answer.

When ready to continue the message AB will make the number of the last group transmitted, the group itself and then continue with the message, thus:-

VE CD V AB II 3 II ABKR II QLXP etc. etc.

AB answers in the usual way.

If during the interval it appears to AB that CD has commenced other communications, before proceeding AB will make:-
VE CD V AB INT K AR

CD if ready to continue reception of the message makes:-
VE AB V CD K AR

AB then proceeds with the message as above.

If some considerable time has elapsed between AB breaking off communication and wishing to continue it again, it may be necessary to repeat the head, and that part of the body which precedes the text, in order that CD can identify the message.

In the above case, under these circumstances, AB makes:-
VE CD CD V AB II T II Z/KL II V AB II GR12 II 3 II ABKR II the remaining groups of the text BT 0514 AR

CD makes:-
VE AB V CD R AR

5. The letter "Q" is used in the final instructions to direct the stations addressed not to answer until the transmitting station makes "K" to them.

Example (a) AB has a message for BJ, BK, and BL, and wishes them all to wait at the conclusion of the transmission.

VE BJ BJ BK BK BL BL V AB II GR2 BT GUGT BT 0234 II Q AR

Example (b) In the above message AB wishes BK and BL to answer, but BJ to wait.
VE BJ BJ BK BK BL BL V AB II GR2 BT GUGT BT 0234 II BJ II Q AR

BK and BL answer.

ART. 8.(contd.)

"R"

The letter "R" used in the text of a procedure message siginfies "Message received".

2. When certain of the reception of the whole of the message (i.e. when no further repetitions are required), the receiving station must answer the message (if the procedure employed by the transmitting station requires an answer) by making "R"

Example (a) AB makes to CD
VE CD CD V AB II GR2 BT OVBL BT 1102 AR

CD answers
VE AB V CD R AR

If CD is not prepared to make R or a request for repetition immediately owing to requiring time to count the number of groups, CD will make use of the procedure signal 'H' (see under 'H')

3. The letter "R" used in the text of a procedure message and followed by the identity of a message signifies "Message .... has been received".

Example (a) CD wishing to inform AB that message 1402 from AB has been received makes:-
VE AB AB V CD R 1402 AR

AB answers:-
VE CD V AB R AR

Example (b) CD wishing to inform AB that message 1501 EF V XL has been received, makes:-
VE AB AB V CD R 1501 EF V XL AR

AB answers:-
VE CD V AB R AR

Example (c) CD wishing to inform AB that several messages have been received, makes:-
VE AB AB V CD R 1604 II R 0812 V AB II R NR74K V BYZ II R 0031 XP V YZ AR

AB answers:-
VE CD V AB R AR

4. The letter 'R' used in a procedure message and followed by a number so as to form one group signifies "Your signals are of the strength indicated".

It may be used in connection with request for repetitions or to inform the transmitting station that the strength of signals received is unsatisfactory in cases where this information has not been conveyed previously by the use of K followed by a number.

Example (a) AB has made message 1043 to AB without preliminary call. AB is unable to receive the message owing to the weakness of signals.

AB may make:-
VE CD V AB IMI II R 2 AR
or
VE CD V AB IMI II R 4 II X AR

ART. 8. (contd.)

Example (b) CD has called AB preliminary to transmitting a message.
Signals from CD are unnecessarily strong to AB
AB may make:-
VE CD V AB R 9 II X 303 AR

CD answers:-
VE AB V CD R AR

CD then transmits the message with reduced radiation.
Alternatively AB may make:-
VE CD V AB R 9 II K AR

CD does not answer but proceeds with the transmission of the message, using roduced radiation.

If AB had made:-
VE CD V AB K 9 AR

CD should use discretion as to the reduction of radiation according to whether the message ia an 'I' or direct message, and according to the degree of interference from atmospherics etc.

NOTE. The Scale of Notation for strength of signals or atmospherics, for appending to the procedure signals K, R, or X, and for use as a single numeral group with certain operating signals, is as follows:-

1. Just audible
2. Very faint, unreadable
3. Just readable
4. Faint
5. Rather faint
6. Fair
7. Good
8. Strong
9. Very strong.

"S"

The letter "S" used in the text of a procedure message signifies "Am W/T guard on the wave you are using for the station(s) you have called (or for .....)"

Example (a) AB calls CD
VE CD CD V AB AR

EF, the W/T guard for CD makes:-
VE AB V EF S II K7 AR

In transmitting the message, AB will continue to address CD

Example (b) AB transmits a message to CD without preliminary call
VE CD CD V AB II GR2 BT PXAB BT 0053 AR.
EF guard for CD answers:-
VE AB V EF S II CD II R AR

NOTE. A W/T guard station answers in the order of the station for which guard is being maintained, or if guard for several stations in the order of the first station addressed (see Art. 10., Order of call signs).

ART. 8. (contd.)

2. The letter 'S' used in a preliminary call and in the indication of priority in the Head of a message signifies "Signal Service Message". The procedure for its use is similar to that for the letter 'D'. In the Army, a message with the letter 'S' in the indication of priority takes precedence over ordinary messages. (See also Art. 3, component 7).

"T"

The letter 'T' in the Service instructions signifies "Pass to _____". It is not used elsewhere. In the text of a procedure message an operating signal is used to give the same signification.

A message for retransmission, containing T in the Service instructions, always contains a W/T address, preceded by X (See Art.3, Component 6).

(NOTE. If a W/T address cannot be used, a spelt Address to and from (Art.3, Component 9) if used must be so worded as to make it clear to the receiving station that the message is required to be passed to the addressee. The procedure signal T is not permitted to be used to govern a spelt address).

The letter T is followed by the call sign of the stations to which the message is to be retransmitted. If however such call signs are identical with the call signs of all the addressees given in the W/T address, they are omitted and the letter T then immediately precedes the Z in the W/T address. Call signs must however follow T in all cases when it is desired to add procedure signals (such as F, G.) conveying Service instructions to the station to which the message is to be retransmitted. Call signs must also follow T when the procedure signal W (repeated to) is used in the W/T address.

Example (a) AB has a message for CD, which AB transmits to EF for retransmission to CD.

AB makes:-
VE EF EF V AB II T II Z II CD V AB II GR2 BT BLTU
BT 0149 AR

EF answers and then makes:-
VE CD CD V EF II Z II CD V AB II GR2 etc.

Example (b) AB directs EF to retransmit to CD a message addressed CD and GH from AB:-
VE EF EF V AB II T II CD II Z II CD GH V AB II
GR2 etc.

EF answers and then makes:-
VE CD CD V EF II Z II CD GH V AB II GR2 etc.

Example (c) In example (a) AB requires CD to repeat back the message to the link EF

AB makes:-
VE EF EF V AB II T II CD II G II Z II CD V AB II GR2
etc.

EF answers and then makes:-
VE CD CD V AB II G II Z II CD V AB II GR2 etc.

CD repeats back (see under 'G')

ART. 8.(contd.)

Example (d) AB directs EF to retransmit to CD and GH a message addressed to CD repeated to GH from AB, thus:-
VE EF EF V AB II T II CD GH II Z II CD II W II GH V AB II GR12 etc.

Further detailed examples are given in Art. 13 (Retransmitting a message through links).

"U"

The letter "U" is not used as a procedure signal, except in conjunction with "O" (See under 'O').

2. The letter 'U' followed so as to form one group by four figures indicating a time of origin is used as the first group of the text of a message made in certain Naval codes and referring to the enemy, to signify "with reference to your _____"

"V"

The letter "V" used before a call sign signified "from _____"

Example (a) AB wishing to call CD, makes:-
VE CD CD V AB AR

Example (b) VE CD CD V AB B 1043 V EF AR

The letter 'V' is used in the call, W/T address, and an identity only. It is not used with a P/L, coded or ciphered "Address To and from".

"W"

The letter "W" used in the W/T address of a message signifies "repeated to stations or authorities whose call signs follow".

Example CD has a message addressed to AB and EF and repeated to GH.

CD transmits the message to AB thus:-
VE AB AB V CD II Z II AB EF II W II GH V CD II GR2 BT LVTO BT AR

"X"

The letter "X" used in a procedure message signifies "Am experiencing interference", followed if desired by the call sign of the station causing the interference

Example (a) AB calls CD, who is experiencing interference
VE CD CD V AB AR

CD answers
VE AB V CD K6 II X AR

or if the interference is being caused by station LP
VE AB V CD K7 II X II LP AR

ARI. 8. (contd.)

Example (b) AB transmits a message to CD.
VE CD CD V AB II GR2 BT ZOGT BT 0312 AR

CD requires a repetition owing to interference and makes:-
VE AB V CD IMI II X AR

The cause of the interference may be stated as in Example (a)

Example (c) Should CD, in the above example, consider that the interference was too bad for reception, CD would make:-
VE AB V CD Q II X AR
or
VE AB V CD Q II X II FL AR

When the interference has abated, CD makes:-
VE AB V CD K AR

2. The letter 'X' used in a procedure message and followed by a number so as to form one group signifies "Am experiencing interference from atmospherics of the strength indicated" (for scale of notation see under 'R')

Example (a) AB calls CD, who is experiencing interference from atmospherics:-
VE CD CD V AE AR

CD answers, assuming signals from AB are fair
VE AB V CD K 6 II X 8 AR

AB should then transmit the message using increased radiation if possible.

Example (b) Similarly, if AB has transmitted a message to CD without preliminary call, and CD requires a repetition owing to atmospherics.

CD may make:-
VE AB V CD IMI II X 9 AR
or
VE AB V CD IMI II X 8 II R 6 AR
or
VE AB V CD IMI II DC II X 8 AR

3. The letter "X" in the Originator's special instructions signifies "this message is for exercise".

Example (a) AB transmits a message to EF for re-transmission to CD. The message is for exercise only.

VE EF EF V AB II T II Z II CD V AB II X II GR2 BT
KLTO BT 2131 AR

"Y"

The letter "Y" used in the originator's special instructions signifies "acknowledge". The "Y" refers only to those authorities to whom the message is addressed and not to those to whom it is repeated.

The letter 'Y' is not used in messages originating from Army Authorities. The practice in the Army is for the originator to write "acknowledge" in the text.

ART. 8. (contd.)

Example (a) AB has a message for CD, which AB wishes "acknowledged".

VE CD CD V AB II Y II GR2 BT BXTO BT 0119 AR

CD answers:-
VE AB V CD R AR

When the message is understood by the authority to whom it is addressed, CD makes:-
VE AB AB V CD Y 0119 AR

AB answers:-
VE CD V AB R AR

Example (b) AB transmits a message to EF for re-transmission to CD, GH and KL. Message is addressed to CD and GH, and repeated to KL.

AB wishes CD and GH to acknowledge:

VE EF EF V AB II T II CD GH KL II Z II CD GH II W II KL V AB II Y II GR2 BT XPTO BT 1312 AR

2. The letter "Y" used in a procedure message, and followed by the identity of a message, signifies "message ..... received and understood".

CD wishing to "acknowledge" message 0119 from AB, makes:-
VE AB AB V CD Y 0119 V AB AR

3. The letter "Y" preceded by the Interrogative sign INT, and followed by the identity of a message, signifies "Is message ..... understood".

AB wishing to know whether message 0426 is understood makes:-
VE CD CD V AB INT Y 0426 V AB AR
or
VE CD CD V AB INT Y 0426 AR

CD answers:-
VE AB V CD R AR

When ready to acknowledge CD makes:-
VE AB AB V CD Y 0426 AR
or
VE AB AB V CD Y 0426 V AB AR

AB answers:-
VE CD V AB R AR

"Z"

The letter "Z" signifies "Addressed to .....", and always precedes the W/T address.

It is not used elsewhere.

Example (a) AB transmits a message to EF for re-transmission to CD.
VE EF EF V AB II T II Z II CD V AB II GR2 BT BLTO BT 1341 AR

ART. 8. (contd.)

EF answers:-
VE AB V EF R AR

EF then makes to CD
VE CD CD V EF II Z II CD V AB II GR2 BT BLTO
BT 1341 AR

Example (b) AB transmits a message to EF for re-transmission to GH. Message is addressed to GH and KL.

VE EF EF V AB II T II GH II Z II GH KL V AB II
GR2 BT LPTQ BT 1358 AR

EF answers:-
VE AB V EF R AR

EF then makes:-
VE GH GH V EF II Z II GH KL V AB II GR2 BT LPTQ BT
1358 AR

Example (c) A station EF transmits to CD to pass to AB a message addressed to KL from QX.

EF makes:-
VE CD CD V EF II T II AB II Z II KL V QX II GR2
BT ENQT BT 0001 AR

CD answers:-
VE EF V CD R AR

CD then makes:-
VE AB AB V CD II Z II KL V QX II GR2 BT ENQT BT
0001 AR

See also Art. 13 (Retransmitting a message through links).

ART. 9.

TWO AND THREE LETTER PROCEDURE SIGNALS AND SIGNS.

(A) Two and Three letter procedure signals.

"AA" - The "all after" procedure signal

The letters AA made separately (.-.- . -) may be used in conjunction with the repeat sign (IMI) and the letters A,J and C, in order to identify the part of the message referred to. (See Art.14).

Example :-

IMI AA4 means repeat all after 4th group

IMI AA 09146 means repeat all after group 09146

IMI 1604 V AB II AA4 means repeat in message 1604 from AB all after 4th group.

The letters AA form also the call sign of an unknown station (See Art. 10 for use).

"AB". The "all before" procedure signal

The letters AB made separately (.- -...) may be used in conjunction with the repeat sign (IMI) and the letters A, J and C C, in order to identify the part of the message referred to (See Art. 14)

Example :-

J 1003 II AB 1 means check 1003 from the decode and repeat all before the first group

J 1003 V AB II AB 01672 means check 1003 from AB from the decode and repeat all before the group 01672.

"GR". The "group" procedure signal

The letters GR made separately (--. .-.) and followed immediately by a number so as to form one group are used in the body of all inter-service messages, except procedure messages and messages such as enemy reports in which brevity is of vital importance, to signify :-

"The text and the time of origin together contain the number of words or groups indicated".
(See Art. 3, Component 10).

2. The position of the "GR" and its number is invariably immediately before the BT or AAA sign at the commencement of the text.

Example (a) CD has a message of 21groups for AB

VE AB AB V CD II GR22 BT KLXU II the remainder of the 21 groups of text BT 2101 AR

Example (b) VE AB AB V CD II To 3 Div from 4 Squad II GR15
AAA ... (text in plain language) ... BT
1503 AR

ART. 9.(contd.)

3. "GR" is used in a procedure message in conjunction with the interrogative sign (INT) toverify the number of groups or words in a message which has been transmitted with th the "GR" omitted. (See Art. 14, para 9).

Example :- CD makes a message of one group and a "T of O" to AB, but omits the "GR" sign.

VE AB AB V CD BT OLBM BT 0513 AR

AB makes:-
VE CD V AB INT GR AR

CD makes:-
VE AB V CD II GR2 AR

AB answers:-
VE CD V AB R AR

The procedure when the number of groups is in dispute or is omitted is given in Art. 14 (Repetitions and Corrections). Para. 9.

"NR". The "Number" procedure signal

The letters NR made separately (-. .-.) and followed immediately by a number or a letter and a number so as to form one group, signify the series number of a transmitting station.

2. The position of NR and its number is immediately following the station who uses the series number in question.

Example :- VE BLK V BGH NR 471 II T II Z II AB V CD II GR2 BT DNTO BT 0146 AR
(See also Art. 11, para 7.)

TOR Time of Receipt Procedure Signal

1. The letters TOR made separately (- --- . - .) and followed by a four figure group so as to form one group, are used in a procedure message to identify a message which can not be referred to in any other way (see Art.7).

Example :- CD has made the following procedure message to EF at 1033:-
VE EF EF V CD X330 II 1470 AR
AB the guard station has answered for EF.
EF then informs AB that the procedure message has been received thus:-
VE AB AB V EF R TOR 1033 V CD AR

2. In the Army and Air Force, the TOR procedure signal is not used before the time of receipt when transmitted in a message containing a time of origin. In the Navy, the time of receipt is not transmitted, except when a message is passed in to the addressee by a guard station; in such case the TOR sign precedes the time of receipt transmitted.

Example :- An Army station sending a message, which was handed in for transmission at 1033, to a Naval station makes:-

VE EF EF V CD II GR8 AAA G14 II 10 will send lorries as required BT 1030 II 1033 AR

3. If necessary, the time of receipt may be transmitted in a message passed through a link and containing no time of origin. In this case the TOR signal precedes the time of receipt to distinguish it from a time of origin.

4. Not more than one time of receipt is appended to any message.

"WA" The "group after" procedure signal.

The letters WA made separately (.-- .-) may be used in conjunction with the repeat sign (IMI) and the letters A, J and C in order to identify the part of the message referred to (See Art. 14)

Example :- IMI WA trucks

"WB" The"group before" procedure signal.

The letters WB made separately (.-- -...) may be used in conjunction with the repeat sign (IMI) and the letters A, J and C in order to identify the part of the message referred to (see Art. 14)

Example :- J1606 AB V CD II WB Guns.

(B) Procedure Signs.

"AAA" "Full stop"sign.

In addition to its ordinary use as a punctuation symbol in the text of a P/L message, when it is counted as a group, the "Fullstop"sign, i.e. AAA made as one sign (.-.-.-) is used to precede the text of a plain language message (Art. 3, component 11). When this used the full stop sign is not counted as a group.

Example :- VE CD CD V AB II GR8 AAA Many thanks AAA very glad to come BT 0136 AR

"AR". The "ending" sign.

The "ending" sign, i.e. AR made as one sign (.- .- .) is used at the end of every completed transmission made with full procedure (Art. 5, Component 17)

"BT" The "Long Break" sign.

"BT" made as one sign (-...-) is used to separate the text from the time of origin in all messages made with full procedure, and precedes the text in all code and cipher messages made with full procedure (Art. 3, Components 11 & 13)

Examples:- (a) VE AB AB V CD II GR2 BT XTUB BT 0131 AR

(b) VE AB AB V CD II GR3 AAA Thank you BT 0132 AR

"DC - The "Difficult Communication" Sign.

The difficult communication sign i.e. the letters DC made in one sign (—..—. —.) is used in the text of a procedure message to signify that difficult communication procedure will be used or is desired:-

ART. 9.(contd.)

(1) By a station to whom a call or message has been made signifying "Use DC procedure" when, owing to difficult conditions of communication, atmospherics, interference etc. this procedure is necessary.

(2) By the transmitting station, before using F or broadcast method, signifying "Am adopting DC procedure", when conditions make this procedure necessary.

The sign DC is not used in the Service instructions of the actual message transmitted with DC procedure

Example (a) AB has a message for CD who is experiencing difficulty in reception owing to atmospherics.

AB calls:-
VE CD CD V AB AR

CD answers:-
VE AB AB V CD K5 II X7 II DC AR

AB then sends the message repeating each component part and each group of the text twice in succession (Art.11 para.5)

Example (b) AB has transmitted a message to CD and is unable to read the answer made by CD. AB may make:-

VE CD CD V AB IMI II DC AR

CD will then repeat the answer using DC procedure (see Art. 11 para.5).

Example (c) AB has a message for CD to be sent by F method. Conditions are difficult owing to atmospherics and AB considers DC procedure desirable.

AB makes:-
VE CD CD V AB II F II DC IMI CD CD V AB II F II DC AR and will then transmit the message by F method using DC procedure.

NOTE DC procedure may also be adopted by similar F procedure message by the transmitting station before sending a message by I method, after the preliminary call has been answered.

For the form of procedure used in the transmission of a message when DC procedure is adopted, see Art. 11 Para.5

HM etc. "The Silence Sign"

The letters "HM" made five times as one sign (.... -- .... - - .... - - .... - - .... --) is used by the controlling station in the text of a procedure message when signalling is to cease altogether, or is to cease in any station or group of stations or on any wave.

Example (a) AB requiring silence from two stations CD and EF makes:-

VE CD CD EF EF V AB "silence" sign AR

ART. 9.(contd.)

Example (b) AB requiring silence from a group of stations whose collective call sign is KK6, makes:-

VE KK6 KK6 V AB "Silence" sign AR

Example (c) AB requiring silence from a group of stations on 1100 and 1900 metres, makes:-

VE KK6 KK6 V AB "silence" sign II 1100 II 1900 AR

In Example (a) and (b). The station addressed keep complete silence.

In Example (c) they keep silence on the waves indicated.

2. The "Silence" sign is not answered and stations to which it has been addressed cease communication until the negative silence sign has been received.

"IMI" The repeat sign.

IMI made as one sign (..--..) is used:-

(i) When making a message through twice. In this case the IMI sign is made at the end of the first transmission of the message in the place of the AR sign, and the VE sign is omitted at the commencement of the repetition of the message.

Example :- CD transmits a message to AB with "F" in the Service instructions. This message is in consequence made through twice thus:-

VE AB AB V CD II F II GR2 BT DRNK BT 0152 IMI
AB AB V CD II F II GR2 BT DRNK BT 0152 AR

IMI is used in the same manner with messages with P,O, O II P, O II A, or O II U in the indication of priority or with 'D' messages if made through twice.

(ii) In conjunction when necessary with the identity of a message or of part of a message in order to ask for repetitions. For examples in the use of IMI for this purpose see Art. 14.

"UO" etc. The "Negative Silence " sign.

The letters "UO" made five times as one sign (.. - - - - .. - - - - .. - - - - .. - - - - .. - - - -) is used to cancel the silence sign.

Example (a) AB having imposed silence on CD and EF wishes to cancel this order.

AB makes)-
VE CD CD EF EF V AB "negative silence" sign AR

Example (b) AB having imposed silence on a group of stations whose collective call sign is KK6, wishes to cancel this order.

AB makes:-
VE KK6 KK6 V AB "negative silence" sign AR

Example (c) AB having imposed silence on a group of stations whose collective call sign is KK6 on 1100 and 1900 metres, wishes to cancel this order on 1100 metres.

AB makes:-
VE KK6 KK6 V AB "negative silence" sign II 1100 AR

2. The negative silence sign is not answered, but the stations addressed may recommence signalling as indicated.

The Executive Sign.

For the general use of the Executive sign with manoeuvring procedure, to direct stations to carry out the purport of a message at a time indicated by the controlling station, see Art. 18 (Manoeuvring Procedure).

2. A special use of the executive sign with full procedure is in connection with the W/T Operating Signal denoting "Am about to transmit a Timing signal for correcting clocks. The four numerals indicating the time will be followed by the Executive Sign.

Example :- Controlling station AB wishes to make a timing signal for correcting clocks to a group of stations CC3.

AB makes:-
VE CC3 CC3 V AB II F II X454 IMI CC3 CC3 V AB II F II X454 AR

Alternatively AB may use normal working for this procedure message, omitting the F, and obtain answers.

When ready, AB makes the timing signal and the executive sign thus:-

VE CC3 CC3 V AB II 1120 II II _____ (5 second dash) AR

Stations in CC3 do not answer.

The 5 second dash terminates at the exact minute in the time indicated, and the Separative sign may therefore be repeated as necessary before the long dash until the correct time for transmitting the dash has arrived.

"VA" - "No message" Sign.

The letters VA made as one sign (...-.-) are used in the text of a procedure message by a station to indicate that it has no message, or no further message awaiting transmission.

Example (a) A station AB having made a preliminary call to a station CD in order to establish communication and having received K wishes to inform CD that it has no message for CD awaiting transmission. AB makes the procedure message:-

VE CD V AB VA AR

Example (b) A station AB has made a preliminary call to a station CD. A station CF reads the preliminary call incorrectly and makes K to AB.

AB may make:-
VE CF CF V AB VA AR

Similarly, a station may make VA to another station which has been called in error.

ART. 9.(contd.)

Example (c) Stations AB and CD are using 'up and down' working. AB has transmitted all the messages on hand and wishes to direct CD to continue with any further messages CD has not yet transmitted.

AB makes to CD:-
VE CD V AB R II VA II K AR

CD then proceeds with the next and subsequent messages using normal working.

"VE" The "commencing" sign.

The letters "VE" made as one sign (...-.) is used at the commencement of every transmission made with full procedure:-

Example (a) AB calls up CD
VE CD CD V AB AR

Example (b) AB makes a message to CD without preliminary call
VE CD CD V AB II GR2 BT KLPO BT 0133 AR

Example (c) CD answers AB in example (b)
VE AB V CD R AR

(C) Miscellaneous Signs.

"Erase" sign.

The "erase" sign, i.e., a succession of Es. made separately about 10 times (.....), is used to erase a word or group which has been transmitted incorrectly, or to cancel a message which is in process of being made.

2. Should a station, in the course of a message make a word or group incorrectly, that station immediately makes the "erase" sign and then makes the Separative sign followed by the last group or word which was correctly transmitted. The station then continues the message.

Example :- AB, in transmitting the message "CLXU II JMOT BT 0812" to CD makes mistakes. The message as transmitted is as follows:-

VE CD CD V AB II GR2 BT CP "erase" sign II GR2 BT CLXU II JMU "erase" sign II CLXU II JMOT BT 0812 AR

3. Should a station in the course of actually transmitting a message wish to cancel that message before the transmission is completed, the station will make the erase sign followed by the ending sign AR

Example (b) AB making the message "COLV II JOMW BT 0810" to CD wishes to cancel the message after having made the group COLV.

AB makes:-
VE CD CD V AB II GR3 BT COLV "erase" sign AR

CD does not answer.

4. This method of cancelling a message is only employed when the transmitting station has not reached the transmission of the time of origin. If the time of origin has been transmitted, the message must be completed and can only be cancelled by a fresh message.

INT The interrogative Sign

The "interrogative sign", i.e., INT made as one sign (..--.-) is used in the text of procedure messages in conjunction so as to form one group with :-

(a) The procedure signal "K" when asking permission to transmit (See under 'K', Art. 8).

(b) The procedure signal "GR" when asking for the number of groups in the text and time of origin of a message, when this has been omitted, or when the number of groups is in dispute (See Art. 14 Para.9).

(c) The procedure signal "Y" when asking whether a message can be acknowledged (see under Y, Art. 8)

Example:- AB wishing to ask CD for permission to transmit, makes:-
VE CD CD V AB INT K AR
should permission be granted, CD makes:-
VE AB V CD K AR
should permission not be granted, CD makes:-
VE AB V CD Q AR

2. The interrogative sign is not used as a separate procedure signal. It is not used in conjunction with procedure signals other than the above.

The interrogative sign in its general interrogative sense is confined ~~XX~~ to its international use as a punctuation symbol when occurring in the text of a P/L message, and it is not used as an alternative to asking for repetitions in order to query groups etc. the accurate reception of which is doubtful.

An operating signal is provided to convey the interrogative sense when required to signals taken from "British W/T Operating Signals".

The present international sign is IMI. It is proposed that this should be altered to INT under the draft of the new Convention

"FI." "Numeral Sign".

The numeral sign, i.e. the letters "FI" made as one sign thus (..-...) is used in conjunction with numerals to represent a decimal point, or to separate hours and minutes when occurring in the text of a message and when not expressed by the 24 hour clock system. It is not counted as a group.

Used in conjunction with certain signals from special codes, the "FI" sign, when not followed by any numerals, represents "a half" or "decimal 5".

ART. 91 (contd.)

"NO", The Negative Sign.

The letters "NO" made as one sign (- . - - - -) are used in the Call or W/T address in conjunction with a collective call sign when it is desired to negative a particular station or group of stations included in that call sign, and to indicate that the particular station or group is not required to answer. The negative sign followed by the call signs of the stations to which it applies is made immediately after the collective sign of the group to which the station belong.

For purposes of the sequence of call signs, the collective call, the negative sign and the call signs of the stations governed by the negative sign will be considered as forming one call sign. The combination will follow after any other call signs in the Call or W/T address.

Example (a) AB has a message for all stations of a group except the two stations EF and GH.

The message does not concern EF and GH, and these stations are not required to answer.

KK6 is the collective call sign of the group.

AB makes:-
VE KK6 NO EF GH KK6 NO EF GH V AB BT LUBQ BT 1043 AR

All stations of the unit answer in the usual manner with the exception of EF and GH who do not answer.

Example (b) If AB were not in direct communication with the group KK6, the message would be passed through a linking station thus:-

AB makes:-
VE CD CD V AB II T II Z II KK6 NO EF GH V AB BT LUBQ BT 1043 AR

CD answers:-
VE AB V CD R AR

CD then makes:-
VE KK6 NO EF GH KK6 NO EF GH V CD II Z II KK6 NO EF GH V AB BT LUBQ BT 1043 AR

All stations of the group answer in the usual manner with the exception of EF and GH who do not answer.

2. The negative sign is used in the W/T address in conjunction with a collective call sign when it is desired to negative a particular station or group included in that call sign, but to obtain answers from all the stations included in the collective call sign.

Example (a) AB has a message addressed to a station QK7 and to all stations of a group KK6 except two stations in it EF and GH. AB wishes to pass the message to the group KK6, and to obtain answers from all stations in the group, including EF and GH.

AB makes:-
VE KK6 KK6 V AB II Z II QK7 KK6 NO EF GH V AB BT
LUBQ BT 1043 AR

All stations of the group KK6 answer in the usual manner.

3. For use of the negative flag sign in Manoeuvring procedure, see Art. 18.

Underline or Block letter sign "UK"

The underline or Block letter sign i.e. UK made as one sign (.. - - . -) is made before and after a code group or a series of code groups occurring in the text of a P/L message. The UK sign is not counted as a group.

Examples:- VE CD CD V AB II GR10 AAA Send all available stores to UK CLOXT UK by next train BT 1543 AR

VE CD CD V AB II GR6 AAA UK BRINTAB II COMBRAX UK reports all quiet BT 0112 II 0119 AR

SPECIAL SIGNS USED IN CIVIL W/T PROCEDURE.

SOS The "Distress"Sign.

The distress sign, i.e. the letters SOS made as one sign (... - - - ...) is used in international W/T procedure by a mobile station or land station to indicate that a mobile station (Mercantile vessel or Aircraft) is in danger and requires immediate assistance.

It is also used in peace time by Service Aircraft when in distress over water.

The "distress sign" is used with international W/T procedure on the 600 metre wave in :-

(a) The Distress Signal, when the sign SOS is either used in the form of a general call:-

SOS SOS SOS de G E F K, repeated as necessary - or if the signal is addressed to one particular station only, in the form :-

SOS SOS ABC ABC de G E F K .The distress signal is followed as soon as possible by :-

(b) The Distress Message which consists of the Distress Signal above followed immediately by the position of the mobile station in distress and any other necessary particulars.

By International Convention distress signals and messages take priority over all other communications, and mercantile mobile stations hearing the distress sign are required to suspend all ordinary traffic until the communications consequent upon the call for help are completed.

NOTE 1. It is proposed that "de" be replaced by "V" under the draft of the new International Convention.

NOTE 2. Under the draft of the new International Convention it is proposed that the position if expressed in Latitude and Longitude be sent in the form of two four figure groups giving the latitude and longitude respectively followed by a two letter group e.g. 5527 1340 NW.

DDDT - The "Service Signalling" Sign.

The sign DDDT (made as one sign) is used with civil W/T procedure by a British man of war or Service Aircraft calling a British Coast station and having a message for transmission to the Admiralty or Air Ministry. The sign DDDT precedes the call sign of the Coast station in the call:-

Example :- A British man of war (GAKM) calling a coast station GCK with a message for Admiralty makes:-

CT DDDT GCK GCK de GAKM AR

A British coast station is obliged to give priority to a DDDT call over all other communications except distress messages.

The sign DDDT is not recognised internationally

NOTE. It is proposed that the sign CT be replaced by the sign VE, and the sign 'de' by the letter V under the draft of the New International Convention.

TTT - The "Safety" Signal.

The Safety Signal, i.e. the letters TTT repeated slowly at short intervals ten times, signifies that the station making the signal is about to transmit urgent information regarding the safety of navigation.

2. The signal is used by any R.A.F. station which has on hand a priority or urgent message containing information of an urgent nature regarding air navigation (such as reports of squalls, sand storms, aerodrome obstructions) which it is desir ed to transmit without delay.

3. On receipt of the safety signal, all stations will cease signalling on the wave involved until the message contain ing the information has been transmitted.

4. The message containing the information will be transmitted one minute after the commencement of the safety signal, and will be made in accordance with the procedure applicable to the indication of priority contained in it.

5. The safety signal is used by Civil W/T stations exactly as described above. It is NOT used by stations of the Royal Navy or Army.

Example:- AB, a station on the Cairo-Baghdad air route, has a report of a sand storm to transmit to a ground station and an aeroplane on the route. The message is handed in at 0743. At 0744 AB makes:-

TTT TTT (repeated slowly ten times).

All stations keeping watch on the wave employed by AB cease signalling.

At 0745 AB makes:-
VE CD CD EF EF V AB NR3 II P II GR5 AAA
Sand storm at ZIZA BT 0742 IMI CD CD EF EF V AB NR3 II P II GR5 AAA Sand storm at Ziza BT 0742 AR

Stations addressed answer in alphabetical order and all stations are then at liberty to recommence signalling.

THE PRELIMINARY CALL AND ANSWER.

1. Use of Preliminary Call

A station which has a message awaiting transmission may make a preliminary call to the receiving station to establish communication before transmitting the message.

In deciding whether to make a preliminary call or not, a transmitting station is guided by the following:-

(1) Between stations which communicate regularly at short or medium ranges, or between whom messages have recently passed, the preliminary call as a rule is unnecessary. In particular, in the case of short messages of an urgent nature passed under such conditions the preliminary call is omitted in order to enable the message to be transmitted with the minimum of delay. An exception is made however in the case of I method working between stations when a preliminary call is used in order to give warning to other stations which may require to read the message.

(2) The preliminary call is desirable with the object of avoiding delay in the final reception of the message in the case of

(a) Messages of great length.

(b) Between stations at a great distance, or between whom signals are likely to be weak.

(c) In signalling conditions which are unfavourable owing to interference or atmospherics, except in the case of short messages of an urgent nature.

(d) In interservice working, between stations which have not recently been in wireless communication.

2. The Preliminary Call

In the preliminary call the call sign(of the receiving station(is made twice, and the call sign of the transmitting station is made once only.

Example (a) AB calling up CD makes:-
$\overline{VE}$ CD CD V AB $\overline{AR}$

If the message awaiting transmission has an indication of priority, the procedure letter indicating the degree of priority is appended in the preliminary call, if made, so as to form the text of a procedure message.

Example (b) AB has a priority message for CD and decides to make a preliminary call. AB makes:-

$\overline{VE}$ AB AB V CD P $\overline{AR}$

The procedure letters 'O', O-U and 'D' may be used similarly in the preliminary call.

ART. 10.(contd.

3. Answer to the Preliminary Call.

A preliminary call clearly received is answered without delay.

In answering the preliminary call, the receiving station makes the call sign of the calling station once only and uses the procedure signal K followed by a number denoting the strength of signals of the calling station.

Example (a) CD answers the preliminary call of AB thus:-
VE AB V CD K7 AR

(NOTE At extreme ranges, or when communication appears very difficult the call sign of the calling station may be repeated twice in answering a preliminary call)

Example (b) If CD cannot attend to AB, CD makes:-
VE AB V CD Q AR

Example (c) If signals from AB are not sufficiently strong or are not satisfactory to CD, CD may make:-
VE AB V CD R3 II X 304 AR
or other suitable procedure message.

Example (d) In answering the preliminary call, CD may append if necessary additional procedure signals or operating signals for the guidance of AB. viz:-

VE AB V CD K5 II X7 AR
or
VE AB V CD K6 II X II BQ AR
or
VE AB V CD Q II X II FL II R9 AR

Example (e) If CD distinguishes the call sign CD in the preliminary call, but is uncertain of the call sign of the station calling, CD makes:-

VE AA V CD K5 AR

Example (f) If CD is in doubt whether the call sign CD is included in a preliminary call from AB which CD hears, CD does not answer but awaits a repetition of the preliminary call by AB.

On receiving K. AB will transmit the message (see Art.11) or if there is no message to transmit at present will make:-

VE CD V AB VA AR

4. Multiple Preliminary Call

In the case of a preliminary call to more than one station (Multiple Preliminary Call), the call sign of each receiving station is made twice, and the call signs are made in alphabetical sequence.

Example :- AB calling up CD and EF makes:-
VE CD CD EF EF V AB AR

CD and EF answer in sequence thus:-
VE AB V CD K7 AR

VE AB V EF K8 AR

ART. 10. (contd.

AB then proceeds with the message. Alternatively if AB was in regular communication with CD but not with EF, a preliminary call may be made to EF only.

5. Order of Call Signs.

When the call signs of a number of stations or groups of stations are employed in the Call or W/T address, or in a preliminary call, the order in which the call signs are made is as follows:-

(a) Two letter calls AB to ZZ in alphabetical order
(b) Three letters AAB to ZZZ in alphabetical order
(c) Letter, letter, figure Series, AA2, AA3 etc. to ZZ9
(d) Letter, figure, letter, series A2A, A2B etc. to Z9Z
(e) Figure, Letter, letter, series 2AA, 2AB etc.to 9ZZ
(f) Four letters AAAA to ZZZZ
(g) Five letters in alphabetical order

NOTE (i) A barred letter takes precedence immediately after the equivalent natural letter.

NOTE (ii) A collective call sign combined with the Negative sign takes precedence after all other call signs (see NO, Art. 9).

Example of a multiple preliminary call:-

$\overline{VE}$ AZ AZ $\overline{AP}$ $\overline{AP}$ PQ PQ BYQ BYQ LB7 LB7 LK2 LK2 R4B R4B 3ZK 3ZK 4AQ 4AQ V HP6 $\overline{AR}$

The stations whose call signs are included in a multiple preliminary call answer in the order as laid down above, thus:-

$\overline{VE}$ HP6 V AZ K7 $\overline{AR}$
$\overline{VE}$ HP6 V AP K7 $\overline{AR}$
$\overline{VE}$ HP6 V PQ K8 $\overline{AR}$
etc.

NOTE A guard station answers in the turn of the station (or first station, if there are several) for which the guard station is responsible (see Art.12, para.3).

6. Collective Preliminary Call

When a preliminary call is made to a group of stations forming one unit or formation and addressed by one collective call sign, the stations of such unit or formation answer the call in the order as laid down above.

For the procedure when more than one unit or formation is addressed by a single collective call sign, or when more than one collective call sign is used in the preliminary call See Art.12. para.5.

7. Failure to answer in Multiple or Collective Preliminary Call.

If the station whose turn it is to answer fails to do so in ten seconds, the next in the proper order is to do so.

Any stations which fail to answer in their proper turn wait until all stations of their group have had time to answer and the stations which have missed their turn then answer in order of their call signs.

ART. 10. (contd.)

8. Repetition of Preliminary Call.

A preliminary call which has not been answered may be repeated at intervals of about one minute. Except when made by a station controlling the traffic, not more than three such consecutive calls should be made. If the call is still unanswered, the transmitting station should normally wait an interval of at least five minutes before calling again or subsequently, or preferably should pass the message through a suitable link.

9. Preliminary Call through Link.

When unable to obtain an answer to preliminary calls made before transmitting a message, a transmitting station may direct any other station which is likely to be able better to attract the attention of the distant station to pass on the preliminary call

When thus passed on the preliminary call is preceded by Z in the same way as a W/T address.

Example. AB has called CD several times but has failed to receive K from CD. AB is in good communication with EF and considers EF for technical or local reasons should be able to attract CD's attention without difficulty. AB makes:-

VE EF EF V AB II T II Z II CD V AB AR
EF answers and passes on the call thus:-

VE CD CD V EF II Z II CD V AB AR
CD hearing EF makes:-
VE EF V CD R AR, and then makes:-
VE AB AB V CD IMI AR

AB may then call CD again and on obtaining K and satisfactory strength of signals proceeds with the message. If CD is still unable to hear AB, or makes K followed by an unsatisfactory strength of signals, AB should pass the message through EF or other suitable link.

10. Answer to Preliminary Call through Link.

Similarly when a preliminary call has been made and answered, and the calling station has failed to hear the answer, the station called may direct any other suitable station to pass in the answer to the preliminary call.

Example. AB has called CD
CD answers:-

VE AB V CD K6 AR, and as AB does not proceed with the message follows it by:-
VE AB V CD N II K6 AR

AB still does not transmit the message and it is evident to CD that AB cannot hear CD making K.

CD therefore directs F to pass to AB the procedure message answering the call thus:-

VE EF EF V CD II T II Z II AB V CD N II K6 AR
EF answers CD and makes to AB:-
VE AB V EF II Z II AB V CD N II K6 AR

ART. 10. (contd.)

AB then proceeds to pass the message direct to CD.

As CD is uncertain whether AB has heard CD, CD having received the message answers by procedure message in the form:-

VE AB V CD R 1403 AR, to which AB answers:-
VE CD V AB R AR

If AB does not make R, CD then directs EF to pass the procedure message to AB.

NOTE. Similar procedure may be used by any station which is able to act as a link in passing in answers or requests for repetition, in cases where the receiving station can hear the transmitting station without difficulty but the transmitting station is unable for any reason to hear the answer etc. direct.

ART. 11

TRANSMITTING A MESSAGE BY FULL PROCEDURE.

1. Form of Transmission

A message is transmitted in the form and order of its component parts, as shown in Article 3.

Example :-

VE CD CD V AB NR15 II Z II CD V PQ II GR3 BT KLMO II XAKL BT 1321 AR

When a preliminary call has not been made, the call signs of the receiving stations are made twice in succession. The call sign of the transmitting station, and call signs in the Service, final and Route instructions, and in the W/T address are made once only.

After a preliminary call and answer, the call signs of the receiving stations are normally made once only, but may be made twice when communication is difficult.

2. Messages to be made twice through.

The message complete is made twice through:-

(a) If it contains the letters 'O' or 'P' in the indication of priority, except when Difficult Communication (DC) procedure is used (see para.5 below)

(b) If desired, when broadcast to all stations.

(c) If it is transmitted by the 'F' method, except that P/L messages referring to exercises or the Signal service and transmitted by the 'F' method may be made once only if desired.

(d) If desired, in the case of messages containing the letter 'D' in the indication of priority.

Example (a)

VE CD CD V AB II P II GR5 BT A47 II 12 II 14325 II 05621 BT 1728 II 1739 IMI CD CD V AB II P II GR5 BT A47 II 12 II 14325 II 05621 BT 1728 II 1739 AR

Example (b)

VE CQ CQ V AB II GR7 AAA South cone hoisted in all districts BT 0945 IMI CQ CQ V AB II GR7 AAA South cone hoisted in all districts BT 0945 AR

Example (c)

VE CD CD V AB II F II Z II CD V PQ II GR2 BT KAMQ BT 0739 IMI CD CD V AB II F II Z II CD V PQ II GR2 BT KAMQ BT 0739 AR

Example (d)

VE CD CD V AB II F AAA You must answer at once BT 1357 AR

ART. 11.(contd.)

3. Repetitions of Messages made twice through

When a message has been made twice through, and the receiving station asks for repetitions of part of it, the part or parts required are repeated once only. When, however, the receiving station asks for a repetition of the whole message, the transmitting station retransmits the message twice through as in the first transmission.

A guard station passing a message having 'O' or 'P' in the indication of priority to the controlling station for information makes the message once through only. If, however, the message is addressed to the controlling station, it is made twice through.

Example:-

A guard station AB being in close touch with the controlling station CD for which AB is guard on a given wave, reads an 'O' message from PQ to LK. AB passes the message to CD for information thus:-

VE CD CD V AB II Z II PQ V LK II O II GR3 BT 14327 II 99245 BT 1601 AR

(see also Art. 14, para.8).

4. Long 'O' or 'P' Messages.

When a long message having 'O' or 'P' in the indication of priority is transmitted in portions (see under 'B', Art.8, and Art.16.) each portion is made twice through in succession, except when DC procedure is used (see para 5 below)

Example :-

AB has a long cipher message, with P in the indication of priority, to be made in portions to CD after a preliminary call. AB transmits the first portion thus:

VE CD V AB NR27 II P II GR78 BT (first 40 groups) IMI CD V AB NR27 II P II GR78 BT (first 40 groups) II B 40 AR

On receiving K, AB transmits the second portion as follows:-

VE CD V AB II (remaining 37 groups) BT 2249 IMI CD V AB II (remaining 37 groups) BT 2249 AR

5. Difficult Communication Procedure.

Before adopting this procedure, the DC sign is used in a procedure message as laid down in Art. 9.

In DC procedure each component part of the message and each group of the text with the exception of the commencing, long break and ending signs is made/through in succession.
twice

Example (a)

AB has a cipher message of 34 groups for CD and calls CD

CD wishes difficult communication procedure to be used and makes the procedure message:-

VE AB AB V CD K5 II DC AR

ART. 11. (contd.)

AB then transmits the message as follows:-

VE CD CD V AB NR91 II CD CD V AB NR91 II T II PX II T II PX II Z II PX RQ V QL II Z II PX RQ V QL II GR34 II GR34 BT 14721 II 14721 II 32658 II 32658 II (remaining 31 groups of text transmitted twice similarly) BT 0951 II 0951 AR

Or, if preferred, AB may transmit the text of the messa message in portions (see Art. 16).

Example (b) With the same procedure a P/L message is transmitted as follows:-

VE CD CD V AB II CD CD V AB II GR9 II GR9 AAA Q15 II Q15 II 10 II 10 II Q45 II Q45 Lorries Lorries arranged arranged AAA AAA send send guides guides BT 1150 II 1150 II 1234 II 1234 AR

Example (c) AB has transmitted a message and having been unable to receive completely the answer made by CD has made:-

VE CD CD V AB IMI II DC AR

CD then repeats the answer thus:-
VE AB AB V CD II AB AB V CD IMI 7 II IMI 7 II 10 to 21 II 10 to 21 AR

AB then gives the necessary repetitions with the same procedure as employed in the first transmission of the message.

CD makes:-
VE AB AB V CD II AB AB V CD R II R AR

Example (d) CD in giving any repetitions required, makes each component part and group of text required twice in succession, thus:-

AB has transmitted a message by DC procedure to AB, and AB has requested repetitions. In giving the repetitions, AB makes each component part and group required twice in succession:-

VE CD CD V AB II CD CD V AB II 5 to 7 II 5 to 7 II (fifth, sixth and 7th groups each made twice) II 15 II 15 II (fifteenth group made twice) AR

(2) A transmitting station having messages to dispose of by 'F' or Broadcast method and desiring to adopt difficult communication procedure will inform the receiving station or stations by means of a procedure message transmitted by the 'F' method and will then proceed with the message.

Example :- CD has an 'F' message for AB and decides to use DC procedure - CD makes:-

VE AB AB V CD II F II DC IMI AB AB V CD II F II DC AR, and then proceeds with the message using DC procedure as in (1) above.

Similar procedure may be used if desired by the transmitting station before transmitting a message by the 'I' method after the preliminary call has been made and answered.

ART. 11.(contd.)

A message having 'O' 'P' or D in the indication of priority or 'F' in the Service instructions to the receiving station and sent by the above procedure owing to conditions of difficult communication is not also repeated through again in its entirety.

6. Multiple and Collective Call and W/T Address Messages.

When a message is made to several receiving stations simultaneously, the call signs of the receiving stations whether single or collective are made in the order given in Art. 10 (para.5). When several stations or authorities are indicated in the route instructions or W/T address, the order of the call signs of such stations or authorities is similar. Thus:-

VE PQ PQ LRC LRC X4K X4K 3AZ 3AZ V AB II L II LRC KK8 QQ7 VC4 V AB II GR27 BT etc.

7. Multiple Series Number

In cases where messages are transmitted by a W/T station to two or more receiving stations simultaneously, separate series numbers may be employed for each receiving station. The series numbers will follow the order of call signs in the "Call" of the message, and, in the case of collective call signs, the alphabetical order of the individual call signs of the stations addressed by the collective call signs.

Example :-

VE AB AB CD CD V EF NR14 NR2 II GR15 etc.

indicating that this is the fourteenth ~~signal~~ message transmitted by EF to AB and the second ~~signal~~ message transmitted by EF to CD.

8. Negative Sign in Collective Calls.

See NO, Art.9, for use of negative sign with a collective call, and Art. 10 para. 5 for the order of Call Signs combined with the negative sign.

9. Use of Component 9 (Address To and From) in transmitting a Message.

The general rule for the use of the Address To and From component, when call signs in the call or W/T address are not available, is given in Art. 3 component 9.

2. A plain language address may be used in a message addressed to a single addressee, either:-

(a) To amplify the call or W/T address, or
(b) To replace the W/T address when the receiving or linking station is responsible for delivery to the authority or unit indicated.

In case (a) the P/L address will be transmitted in the form "To ..... from ....." modified as necessary

Example (a) VE AB AB V CD NR12 II G II Y II To Commander from Commander II GR 58 BT ..... Text .... BT 1238 AR

Example (b) VE AB AB V CD II To PMO II GR6 AAA ... Text.. BT 1447 AR

ART. 11.(contd.)

Example (c) VE AB AB V CD NR47 II To 4 Squadron from 10 Wing II GR9 AAA ..... Text .... BT 1239 AR

In case (b) if there is any doubt as to whether the receiving station will understand that a message bearing a P/L address is for delivery by that receiving station to the authority or unit addressed, it is the duty of the transmitting station to transmit any instructions required either by W/T operating signal in the special instructions or by preceding the P/L address by the words "Pass to" in place of "To".

Example (d) VE CD CD V AB NR12 II Pass to 4 Squadron from 10 Wing II GR9 AAA ..... Text ..... BT 0931 AR

Example (e) VE CD CD V AB NR12 II X200 II To 4 Squadron from 10 Wing II Gr9 AAA .... Text .....BT 0931 AR
(Assuming X200 - Pass this message to .....)

3. When a message is addressed to several addressees, one of whom has no W/T call sign, the addressees possessing W/T call signs and the originator may be indicated in the W/T address, and the addressee without a call sign may be indicated in component 9 preceded by the words "And to ....."

Example :- VE CD CD EF EF GH GH V AB II GH II X208 II Z II CD EF V AB II and to 5 F T S II GR12 AAA ..... Text ..... BT 0748 AR
(Assuming X208 - Pass this message to the stations addressed for which you are responsible).

In the above example, if GH is not responsible for passing the message to 5 F T S, and it is desired to direct GH to pass it, the necessary instruction should be given by AB in a fresh message to GH.

4. When a message, originated by an authority or unit not possessing a W/T call sign and addressed to another unit not possessing a call sign, is handed in at a W/T station for transmission through two linking W/T stations for delivery by the sec second link to the authority or unit addressed, the address will be indicated in P/L in component 9 and the message will not carry a W/T address in addition. The necessary instructions to the first link regarding the retransmission will be conveyed in the W/T route instructions, and instructions to the second link as laid down in para 2.

Example :- VE CD CD V AB NR8 II M II PQ II Pass to 4 Squadron from 10 Wing II GR37 AAA .... Text .....BT 0749 AR

CD retransmits as follows:-
VE PQ PQ V CD NR2 II Pass to 4 Squadron from 10 Wing II GR37 AAA .... Text.... BT 0749 AR

5. When code or cipher addresses are employed in place of P/L addresses, they may be made in component 9 of the message in the general form "To..... from ....." as necessary; alternatively the words "To ..... from ....." may be included in the coded or ciphered addresses and omitted in P/L.
(See also Art. 21, para.2 (a)

Example :- VE CD CD V AB NR12 II JUNA II LUBO II GR23 BT ..... Text ..... BT 0938 AR

ART. 12.

ANSWERING A MESSAGE BY FULL PROCEDURE.

1. Single Call Messages

As soon as the transmitting station makes AR the receiving station answers (see under 'R' and 'H' Art.5), or requests a repetition. The receiving station transmits the answer or request for repetitions at once in order that the transmitting station may not be in doubt as to the reception of the message, and in order to avoid the confusion and delay which may be caused by the transmitting station making 'N' at the same time as the receiving station answers.

2. Multiple Call Messages

The receiving stations answer in the order of call signs given in Art. 10 para.5.

Example :- AB has transmitted the message with multiple call given in para.6 Art.11.

The receiving stations answer in order as follows:-
VE AB V PQ H AR
VE AB V LRC IMI WB 2 AR
VE AB V X4K R II B AR
VE AB V 3AZ IMI 21 AR

As soon as the last station has answered, PQ may make R or request a group check (Art.14 para.7.)

If PQ is still not ready, PQ waits until AB has cleared the required repetitions.

AB makes the required repetitions to LRC and 3AZ (see Art.14. para.2 and 3).

AB then makes K to X4K.

NOTE. Stations which fail to answer in their turn or/make which H follow the procedure given in Art. 10 para.7.

3. Collective Call Messages

(a) When a message is made to a group of stations comprising one unit or formation and addressed by one collective call sign, the stations of such unit or formation answer the call in the order as laid down in Art. 10 para.6.

Example (a) The stations CD, EF, GH, and KL form one unit, and are addressed by the collective call sign CC2. AB makes:-

VE CC2 CC2 V AB II GR9 BT (text of message) BT
1046 AR

The receiving station answer:-
VE AB V CD R AR
VE AB V EF R AR
VE AB V GH IMI 4 AR
VE AB V KL R AR
VE AB V AC S II MN II R AR

ART. 12. (contd.)

General Collective Call Messages.

(b) When a general collective call sign is used which addresses more than one group of stations, the transmitting station will direct each group in turn to answer using the procedure signal K. Until so directed the receiving stations do not answer.

Example (b) The general collective call sign KK5 addresses the two groups denoted by collective call signs CC2 and CC3

AB has made:-
VE KK5 KK5 V AB II GR12 BT (text ofmessage) BT
1132 AR

The receiving stations do not answer -
AB makes:-
VE CC2 V AB K AR

Stations in the group addressed by CC2 answer in order of their call signs:-

VE AB V CD R AR
VE AB V EF R AR
etc.

AB then makes:-
VE CC3 V AB K AR

Stations in the group addressed by CC3 then answer in order.

4. Multiple Collective Call Messages

When two or more collective call signs are used which address two or more units or formations, or when a collective call sign is used in conjunction with the call signs of other single stations, the receiving stations do not answer until directed to do so in turn by the transmitting station.

Example (a) AB has made a message to two groups of stations addressed respectively by the collective call signs RR3 and RR7

Stations do not answer
AB makes:-
VE RR3 V AB K AR

Stations in the group addressed by RR3 then a answer in order of their call signs.

AB then makes:-
VE RR7 V AB K AR

Stations in the group addressed by RR7 then answer in order -

Example (b) AB has a message to a group addressed by the collective call sign CC3, and to stations AK7 and RQ5

AB makes:-
VE AK7 AK7 CC3 CC3 RQ5 RQ5 V AB etc.

Stations do not answer.

ART. 12. (contd.)

AB wishes the stations addressed by CC3 to answer first and makes:-
VE CC3 V AB K AR

Stations addressed by CC3 then answer in order of their call signs

AB then makes:-
VE AK7 RQ5 V AB K AR
AK7 and RQ5 then answer in order.

5. Preliminary Call in Collective Call or Multiple Collective Call Messages.

If desired, a preliminary call may be made before the transmission of a message containing a collective or multiple collective call.

If the preliminary call is made to a single group of stations (forming one unit or formation) addressed by one collective call sign, the stations of such group answer at once in the order of their individual call signs.

If the preliminary call is made to two or more groups addressed by one general collective call sign, the stations do not answer but await 'K' from the transmitting station, which will direct each group to answer in turn.

Similarly, if the preliminary call is made to a single group of stations addressed by a collective call sign and to one or more single stations in addition, the group and stations await K from the transmitting station, which will in turn direct the group and the single station or stations to answer.

The procedure for a preliminary call in such cases is thus exactly similar to that used when obtaining answers to a message made with a collective or multiple collective call (see Para.3 (b) and 4 above).

Example :- AB has a message for a group CC3 and for a single station LB7, and decides to make a preliminary call to both

AB makes:-
VE CC3 CC3 LB7 LB7 V AB AR

The stations do not answer but
AB makes:-
VE CC3 V AB K AR

Stations addressed by CC3 then answer in order:-
VE AB V CD K7 AR
VE AB V EF K8 AR
etc.
AB then makes:-
VE LB7 V AB K AR

LB7 then answers:-
VE AB V LB7 K7 AR

AB then proceeds with the message.

In the above example of a message to CC3 and LB7, if AB had elected to make a preliminary call to CC3 only, CC3 would have answered at once in order of their call signs (see Art. 10. para.6).

ART. 13.

RETRANSMITTING A MESSAGE THROUGH LINKS

(1) Single Call Messages - retransmission

The procedure for retransmitting a message through one or more links is given separately under the use of the letters T, M, L and Z in Article 6.

Examples of the part of the Head of the message affected are as follows:-

Example (a) AB from CD, pass to EF from CD:-
AB V CD II T II Z II EF V CD

AB passes:-
EF V AB II Z II EF V CD

Example (b) AB from CD, pass to EF message addressed PQ from XY :-
AB V CD II T II EF II Z II PQ V XY

AB passes:-
EF V AB II Z II PQ V XY

Example (c) AB from CD, pass to EF message addressed AB and EF from XY :-
AB V CD II T II EF II Z II AB EF V XY

AB passes:-
EF V AB II Z II AB EF V XY

Example (d) AB from CD pass to EF message addressed to a collective call from CD:-
AB V CD II T II EF II Z II CC3 V CD

AB passes:-
EF V AB II Z II CC3 V CD

(It will be noted that when a message already contains a W/T address preceded by Z, the linking station does not indicate, when retransmitting the message, the station which directed the retransmission, i.e. the letter 'Z' precedes the call sign(s) of thostation(s) addressed in the actual message only).

Example (e) AB from CD pass via GH to EF message addressed EF from CD:-
AB V CD II M II GH II T II Z II EF V CD

AB passes:-
GH V AB II T II Z II EF V CD

GH passes:-
EF V GH II Z II EF V CD

Example (f) AB from CD, pass via GH to EF message address ed EF PQ repeated to RZ from XY:-
AB V CD II M II GH II T II EF II Z II EF PQ II W II RZ V XY

AB passes:-
GH V AB II T II EF II Z II EF PQ II W II RZ V XY

GH passes:-
EF V GH II Z II EF PQ II W II RZ V XY

(It will be noted that the linking stations are not indicated in the final transmission of the message to EF).

ART. 13. (contd.)

Example (g) AB from CD pass, to stations of those addressed for which you are responsible, message addressed RR7 from CD:-

AB V CD II L II Z II RR7 V CD

AB passes to KL and PX, stations in the group RR7 for which AB is responsible:-

KL PX V AB II Z II RR7 V CD

(2) Multiple Call Messages - Retransmission.

(a) When a message is required to be passed to two or more linking stations at once for retransmission by each of them to two or more W/T addresses, similar procedure to that in example (g) above is used if it is unnecessary for the station directing the retransmission to indicate to the linking stations to which station or stations they are to retransmit the message.

Example (a) AB and EF from CD pass to PQ and RS from CD:-
AB EF V CD II L II Z II PQ RS V CD

AB is the guard station for PQ and passes:-
PQ V AB II Z II PQ RS V CD

EF is the guard station for RS and passes to RS similarly.

Example (b) AB and EF from CD pass to stations of those addressed for which you are responsible message addressed RR7 from HP6 :-
AB EF V CD II L II Z II RR7 V HP6

AB passes to QX, station in the group RR7 for which AB is responsible:-
QX V CD II Z II RR7 V HP6

EF passes to the stations for which EF is responsible similarly.

(b) If, however, it will not be obvious to the linking stations to which station each is required to retransmit the message, the transmitting station indicates the duty of each by repeating in the Service instructions the call sign of each station before the directions to that station for retransmission, followed by the W/T address.

Example (a) AB and EF from CD, AB pass to PQ, EF pass to RS, message addressed PQ and RS from CD:-

AB EF V CD II AB II T II PQ II EF II T II RS II Z II PQ RS V CD

AB passes:-
PQ V AB II Z II PQ RS V CD

EF passes to RS similarly.

Example (b) AB and EF from CD, AB repeat back and p - to PQ, EF pass to RS, message to KK5 from HP6

AB EF V CD II AB II G II T II PQ II EF II T II RS II Z II KK5 V HP6

AB repeats back to CD and then passes to PQ, and EF passes to RS as in example (a)

ART. 13. (contd.)

Example (c) AB and EF from CD, AB pass to PQ via HZ, EF pass to RS, message to KK5 from HP6.

AB EF V CD II AB II M II HZ II T II PQ II
EF II T II RS II Z II KK5 V HP6

AB makes to HZ:-
HZ V AB II T II PQ II Z II KK5 V HP6

HZ passes:-
PQ V HZ II Z II KK5 V HP6

EF passes:-
RS V EF II Z II KK5 V HP6

Example (d) AB EF and GH from CD, AB pass to PQ via HZ and XY, HZ repeat back, EF pass to RS via QX message to GH, PQ, and RS from CD:-

AB EF GH V CD II AB II M II HZ XY II HZ II G II
XY II T II PQ II EF II M II QX II T II RS II
Z II GH PQ RS V CD

AB makes to HZ:-
HZ V AB II G II M II XY II T II PQ II Z II GH PQ
RS V CD

HZ repeats back to AB, and then makes to XY:-
XY V HZ II T II PQ II Z II GH PQ RS V CD

XY passes to PQ:-
PQ V XY II Z II GH PQ RS V CD

EF makes to QX:-
QX V EF II T II RS II Z II GH PQ RS V CD

QX passes to RS:-
RS V QX II Z II GH PQ RS V CD

ART. 14.

REPETITIONS AND CORRECTIONS.

1. This article shows the procedure employed in:-

(i) Requesting a repetition of a message or a part or parts of a message, prior to having signified that the message has been received -(use of IMI); and making the repetition required.

(ii) Making a correction to a message or a part or parts of a message which has been previously transmitted - (use of "C").

(iii) Requesting a check from the decode and repetition of a message or a part or parts of a message after the message has been received; and replying to the request (use of "J" and "C").

(iv) Requesting a verification from the text, check from the decode and repetition of a message or a part or parts of a message after the message has been received; and replying to the request (use of "A" and "C").

(v) Correcting the number of groups.

(vi) The repetition of messages read by a Guard station to a control station ("Passing in" messages); and requests for the repetition of such messages.

2. Repetitions of code and cipher messages

Example:- CD transmits the following message to AB:-

VE AB AB V CD II T II EF II F II Z II EF V CD II GR9 BT 12395 II 46273 II 75121 II 83214 II 96047 II 59321 II 87456 II 49732 BT 2301 AR

AB requires a repetition of -

(a) All the message.

AB makes:-
VE CD V AB IMI AR

CD makes:-
VE AB V CD II T II EF II F II Z II EF V CD II GR9 BT II 12395 II 46273 II 75121 II 83214 II 96047 II 59321 II 87456 II 49732 BT 2301 AR

AB having received the message makes:-
VE CD V AB R AR

(Should AB wish, the reason for requesting a repetition may be indicated by a procedure signal thus:-

VE CD V AB IMI II X 8 AR (atmospherics strength 8)
or
VE CD V AB IMI II R2 AR (your signals are only strength 2).)

(b) The Head of the Message

VE CD V AB IMI AB 1✕ AR
or
VE CD V AB IMI AB 12395 AR

NOTE. ✕ In the Army and Air Force, where component 9 (address to and from) may consist of several groups, one of these groups may be used in conjunction with AB to refer to the Head of the Message, in order to avoid the unnecessary repetition of all the groups in component 9.

ART. 14.(contd.)

CD makes:-
VE AB V CD II AB 1 II AB V CD II T II EF II F II Z II EF V CD II GR9 AR
or
VE AB V CD II AB 12395 II AB V CD II T II EF II F II Z II EF V CD II GR9 AR

AB makes:-
VE CD V AB R AR

(c) All after 5th group

VE CD V AB IMI AA 5 AR
or
VE CD V AB IMI AA 96047 AR

CD makes:-
VE AB V CD II AA 5 II 59321 II 87456 II 49732 BT 2301 AR
or
VE AB V CD II AA 96047 II 59321 II 87456 II 49732 BT 2301 AR

(d) Group number 6.

VE CD V AB IMI 6 AR
or
VE CD V AB IMI WA 96047 AR
or
VE CD V AB IMI WB 87456 AR

CD makes:-
VE AB V CD II 6 II 59321 AR
or
VE AB V CD II WA 96047 II 59321 AR
or
VE AB V CD II WB 87456 II 59321 AR

AB makes:-
VE CD V AB R AR

(e) Groups 4 to 7.

VE CD V AB IMI 4 to 7 AR

CD makes:-
VE AB V CD II 4 to 7 II 83214 II 96047 II 59321 II 87456 AR

AB makes:-
VE CD V AB R AR

Alternatively, AB may make:-
VE CD V AB IMI 83214 to 87456 AR

CD makes:-
VE AB V CD II 83214 II 96047 II 59321 II 87456 AR

It will be noted in this alternative method the transmitting station does not repeat the identity of the part of the message asked for as the information is included in the repetition.

(f) Group 2, groups 5 to 7 and Time of origin.

VE CD V AB IMI 2 II 5 to 7 II WA8 AR

ART. 14 (contd.)

CD makes:-
VE AB V CD II 2 II 46273 II 5 to 7 II 96047 II 59321 II 87456 II WA8 II 2301 AR

AB makes:-
VE CD V AB R AR

When giving repetitions or corrections the part of the message required is only made once, notwithstanding that the original message may have been made twice.

The only exception to the above is when the entire message is asked for, when the repetition or correction will be made exactly as the original transmission.

5. Repetitions of P/L messages.

Example :- CD has transmitted the following message to AB:-

VE AB AB V CD II T II Z II EF V CD II GR13 AAA G15 II 12 despatch is necessary in dealing with situation AAA Report progress BT 0351 II 0355 AR

AB requires

(a) All the message

AB makes:-
VE CD V AB IMI AR

CD makes:-
VE AB V CD II T II Z II EF V CD II GR13 AAA G15 II 12 despatch is necessary in dealing with situation AAA Report progress BT 0351 II 0355 AR

(b) The Head of the message and number of groups

VE CD V AB IMI AB G15 * AR

CD makes:-
VE AB V CD II AB G15 II AB V CD II T II Z II EF V CD II F II GR13 AR

AB makes:-
VE CD V AB R AR

* See also note to para. 2 (b) above.

(c) All after the word "dealing".

VE CD V IMI AA dealing AR

CD makes:-

VE AB V CD II AA dealing II with situation AAA Report progress BT 0351 II 0355 AR

AB makes:-

VE CD V AB R AR

ART. 14(contd.)

(d) The word"dealing"

VE CD V AB IMI WA in AR
or
VE CD V AB IMI WB with AR

CD makes:-
VE AB V CD II WA in II dealing AR
or
VE AB V CD II WB with II dealing AR

AB makes:-
VE CD V AB R AR

(e) The part of the message between "necessary" and "situation".

VE CD V AB IMI necessary TO situation AR

CD makes:-
VE AB V CD II necessary in dealing with situation AR

(f) The number of groups and the text between "dealing" and "Report".

VE CD V AB IMI WB G15 II dealing TO report AR

CD makes:-
VE AB V CD II WB G15 II GR13 II dealing with situation AAA report AR

AB makes:-
VE CD V AB R AR

4. Corrections of code and cipher messages.(see Note)

Example :- CD has transmitted the following message to AB:-
VE AB AB V CD II GR9 BT 12395 II 46273 II 75121 II 83214 II 96047 II 59321 II 87456 II 49732 BT 2301 AR

CD subsequently finds that corrections have to be made.

(a) To the whole message.

CD makes:-
VE AB AB V CD II C 2301 II AB V CD II Z II ABQX V CD II GR9 BT 12395 II 36374 II 75211 II 83142 II 96047 II 59312 II 87456 II 49732 BT 2301 AR

AB makes:-
VE CD V AB R AR

(b) To the head and that part of the body that precedes the text.

VE AB AB V CD II C 2301 II AB 1 II AB V CD II Z II ABQX V CD II GR9 AR
or
VE AB AB V CD II C 2301 AB V CD II AB 12395 II AB V CD II Z II ABQX V CD II GR9 AR

(NOTE. For the procedure for correcting an error before transmission is completed see under 'C', Art. 8.).

ART. 14.(contd.)

(c) To all after the 5th group of the text.

VE AB AB V CD II C 2301 AB V CD II AA5 II 59312 II 87455 II 49732 BT 2301 AR

or

VE AB AB V CD II C 2301 AB V CD II AA 96047 II 59312 II 87455 II 49732 BT 2301 AR

AB makes:-

VE CD V AB R AR

(d) To group No. 6.

VE AB AB V CD II C 2301 AB V CD II 6 II 59312 AR

or

VE AB AB V CD II C 2301 AB V CD II WA 96047 II 59312 AR

or

VE AB AB V CD II C 2301 AB V CD II WB 87456 II 59312 AR

AB answers:-

VE CD V AB R AR

(e) To groups 4 to 7.

VE AB AB V CD II C 2301 AB V CD II 4 to 7 II 83122 II 96047 II 59312 II 87456 AR

AB answers:-

VE CD V AB R AR

(f) To group 2, groups 5 to 7, and to Time of origin.

VE AB AB V CD II C 2301 AB V CD II 2 II 46273 II 5 to 7 II 96047 II 59132 II 87455 II AA 49732 II 2031 AR

AB answers:-

VE CD V AB R AR

5. Corrections to P/L Messages.

Example:- CD has transmitted the following message to AB:

VE AB AB V CD II GR13 AAA A15 II 12
Despatch is necessary in dealing with situation AAA
Report progress BT 0351 AR
CD subsequently finds that corrections have to be made: -

(a) To the whole message.

VE AB AB V CD II C 0351 II AB V CD II Z II AB II W II EF V CD II GR14 AAA A15 II 12 Despatch is quite unnecessary in dealing with situation AAA
Report protests BT 0351 AR

AB makes:-

VE CD V AB R AR

(b) To the head and that part of the body that precedes the text.

VE AB AB V CD II C 0351 II AB A15 II AB V CD II Z II AB II W II EF GH V CD II GR13 AR

ART. 14. (contd.)

AB answers:-
VE CD V AB R AR

(c) To all after the word "dealing"

VE AB AB V CD II C 0351 AB V CD II AA dealing II with situation AAA Report protests BT 0351 AR

6. Checking from the decode and repetition.
or
Verification from the text, checking from the decode and Repetition.

The letters 'J' and 'A' are used in the same way as IMI except that the identity of the message is also quoted. In reply to these requests the letter 'C' always precedes the identity quoted in the request, whether the original version transmitted is found to be correct or incorrect.

CD has transmitted the following two messages to AB and has received 'R' for each of them.

(i) VE AB AB V CD II GR4 BT KNQU II KLNX II BLCK BT 0313 AR

(ii) VE AB AB V CD II GR7 AAA am proceeding Westerly direction third March BT 0514 AR

(a) AB wants check from decode and repetition of all before 1st group in message (i)

AB makes:-
VE CD CD V AB J 0313 II AB 1 AR
or
VE CD CD V AB J 0313 II AB KNQU AR

CD answers:-
VE AB V CD R AR

When ready CD replies:-
VE AB AB V CD II C 0313 II AB 1 II AB V CD II GR4 AR
or
VE AB AB V CD II C 0313 II AB KNQU II AB V CD II GR4 AR

AB answers:-
VE CD V AB R AR

(b) AB wants a verification from the text and repetition of all after "direction" in message (ii):-

VE CD CD V AB A 0514 II AA direction AR

CD answers:-
VE AB V CD R AR

When ready CD replies:-
VE AB AB V CD II C 0514 II AA direction II third March BT 0514 AR

AB answers:-
VE CD V AB R AR

ART. 14. (contd.)

(c) AB wants a check from the decode and repetition of group 2 in message (i)

VE CD CD V AB J 0313 II 2 AR

CD answers:-
VE AB V CD R AR

CD replies:-
VE AB AB V CD II C 0313 II 2 II KLNQ AR

AB answers:-
VE CD V AB R AR

NOTE If CD finds that the group is correct as originally transmitted:-

CD replies:-
VE AB AB V CD II C 0313 II 2 II KLNX AR

7. Correcting the number of groups.

(1) The interrogative sign (INT) is used in conjunction with the group procedure signal GR so as to form one group in the following cases when the number of Groups is in question between the receiving and transmitting stations:-

(a) to ask for the number of groups in a message which has been transmitted with the group sign omitted.

(b) to indicate to the transmitting station that the number of Groups or words received by the receiving station does not agree with that indicated by the Group Sign.

(b) may fall under three headings:-

(i) When the message is wrongly counted by the transmitting station.

(ii) When the message is correctly counted but wrongly transmitted by the transmitting station.

(iii) When the message is incorrectly received or incorrectly counted by the receiving station.

(2) For the purpose of clearing queries which may arise in the counting of messages the "initial check" will be used. The initial check is carried out by the transmitting station and consists of the transmission of the initial letter or figure of each P/L word, cipher or code group, and combination of letters and figures and symbols which has been counted as a group in the original counting of the message. The receiving station, by comparing the initial check with the original received version, is able to identify that portion of his version which differs from the original.

Example (a) CD makes a message of one group and a T.of O. but omits the GR signal:-

VE AB AB V CD BT QLBM BT 0513 AR

AB makes:-
VE CD V AB INT GR AR

ART. 14. (contd.)

CD makes:-
VE AB V CD II C WB OLBM II GR2 AR

AB makes:-
VE CD V AB R AR

Example (b, i) CD makes a message of 7 groups to AB but omits to count the T. of O. and signals groups as six :-

VE AB AB V CD II GR6 AAA G 14 II 15 Send lorries as arranged BT 0516 II 0519 AR

AB makes:-
VE CD V AB INT GR7 AR

CD recounts the message and if it is a short one in which this can be done without any delay, makes:
VE AB V CD II C WB G14 II GR7 AR

AB makes:-
VE CD V AB R AR

If however the message is a long one, which CD is unable to recount without delay, CD will answer:-
VE AB V CD R AR

and will furnish the correction as shown above as soon as possible

Example (b, ii) CD makes a message of 60 groups to AB but inadvertently omits one line of five groups during transmission:-

VE AB AB V CD NR 15 II GR 60 AAA Q47 II 15 Send following by quickest possible route 125 shackles 3½ inch AAA 35 fathoms wire steel 2½ inch AAA ---------- (followed by 34 further groups referring to stores)---------- BT 2316 AR

AB makes:-
VE CD V AB H AR

AB counts message and finding groups 55, makes to CD:-
VE CD V AB INT GR55 AR

CD answers:-
VE AB V CD R AR

CD having verified his counting as 60 groups proceeds with the "initial check" thus:-
VE AB V CD II C 2316 II GR60 II Q II 1 II S II F II B II Q II P II R II 1 II S II 3 II 1 II 1 II AAA II 3 II F II W II S II 2 II 1 II AAA II ---------- (followed by the initial letters of each of the remaining 39 groups) ----------II 2 AR.

AB is thus enabled to ascertain what portion of his version of the message is corrupt or missing and then proceeds to ask for repetitions as laid down in paras. 2 and 3 of this article.

ART. 14. (contd.)

Example (b, iii) CD makes a message of 9 groups to AB:-

VE AB AB V CD II GR9 AAA G15 II 15 Send "V-frames" to dump BT 1913 AR

AB omits to count the inverted comma sign, and making the groups 8, makes:-
VE CD V AB INT GR8 AR

CD verifies his counting as 9 groups and makes initial check:-

VE AB V CD II C 0918 II GR9 II G II 1 II S II RR II V II F II T II D II 1 AR

AB sees his mistake and makes:-

VE CD V AB R AE, or if not certain that he has now received the correct number of groups, AB may make 'H' and count before making R.

(3) In the case of a long message sent in two or more portions the number of groups in each portion is checked by the receiving station before making K, or if necessary the receiving station may make 'H' or may query the number of groups as described in this article.

8. Repetitions of Messages read by guard stations ("Passing in" Messages).

A W/T guard station having read a message which has been made to a station or stations other than the station for which W/T guard is being kept (or which has been broadcasted to all stations), and requiring to pass the message in to the control station or senior officer will use the following procedure:-

(a) If the message which has been read contains no W/T address, the guard station will prefix the call of the message by Z, so that the call becomes the W/T address.

Example (a) A guard station CD (Naval) has read the following message:-

VE PQ PQ V XY II GR2 BT LUBQ BT 1437 AR

CD passing the message in to AB, the control station for information makes:-

VE AB AB V CD II Z II PQ V XY II GR2 BT LUBQ BT 1437 II TOR 1451 AR

(NOTE: for use of TOR signal by the Navy in this connection, see under TOR, Art.9).

(b) If the message which has been read contains a W/T address, the guard station in passing in the message will use the operating signal signifying "Following message has been read".

Example (a) A guard station HK (Air Force) has read the following broadcasted message:-

VE CQ CQ V BYZ II Z II CQ V BYA II GR2 BT MANQ BT 1338 AR

ART. 14.(contd.)

HK passing the message in to AB the control station makes:-

VE AB AB V HK II X216 II CQ V BYZ II Z II CQ V BYA II GR2 BT MANQ BT 1338 II 1349 AR

Example (b) A guard station QX has read the following:-

VE PQ6 PQ6 V BYD II Z II PQ6 V AK7 II GR27 etc.

The guard station passing the message as read to AB the control station, for information, makes:-

VE AB AB V QK II X216 II PQ6 V BYD II Z II PQ6 V AK7 II GR27 etc.

Similar procedure may be used by any station which desires to repeat a message which has been read to another station for information.

9. Requests for repetitions of messages by stations other than the receiving Station.

A W/T control station which has read a message or part of a message made to another W/T Station and which desires to obtain a repetition of the whole or part of the message from a guard station or from some other station which may also have read it, will ask for the repetition desired in accordance with the procedure given in paras.2 and 3 of this article, except that the identity of the message must be quoted before the part identity both in the request for repetition and in the reply thereto.

Example :-

Control station PQ requests XY to repeat the 10th and 12th groups of a message 1421 from AB to CD which PQ has read incompletely:-

VE XY V PQ IMI 1421 CD V AB II 10 II 12 AR

XY answers with R and subsequently replies:-

VE PQ V XY II 1421 CD V AB II 10 II LOMX II 12 II PAYL AR

PQ answers with R.

If XY has not read the groups in question, XY makes the procedure message:-

VE PQ V XY II 1421 CD V AB II 10 II 12 AR

PQ answers with R.

ART. 15.

INSTRUCTIONS FOR BATCH WORKING.

1. Batch working is especially suitable for working between fixed stations of medium or high power carrying out routine Services when receiving conditions are good and when a large number of short messages are on hand for transmission. It may also be employed by mobile stations or by stations belonging to a group of stations under the rules laid down in paragraph 2.

2. Batch working is used as follows :-

(a) Between pais of stations carrying out fixed routine working. The receiving station decides whether batch working is to be employed.

(b) Between a control station and a station under its control or vice versa. The consent of the receiving station must be obtained before batch working is commenced. The control station, however, retains the final decision in the matter and in this must be guided by the general state of the wireless communications in the group of stations which it is controlling

(c) Between two stations of a group of stations. The consent of the receiving station and the permission of the control station in charge of the group is obtained before batch working is started. Control stations only grant this permission in cases where there is no likelihood of batch working by the two stations in question delaying the work of the whole group.

3. Limitation of Batch working.

(a) Each batch of messages must be regulated so as not to exceed the following limits :-

(i) 15 minutes in the case of paragraph 2 (a)

(ii) 10 minutes in the case of paragraphs 2 (b) and (c).

(b) Messages to be "repeated back" or containing "O" or "P" in the indication of Priority should be dealt with separately and not included in batches.

(c) Receiving operators must anticipate good reception before resorting to batch working.

4. Procedure for Batch working.

(1) Before messages are transmitted in batches, use is made of the appropriate operating signals to indicate the number of messages awaiting transmission and the number which can be accepted in a batch.

(2) The transmitting station then makes each message once only using the procedure signal $\bar{E}$ (E barred) in the final instructions of each message (except the last of each batch) and pausing a few seconds before starting the next message in order to enable pads to be changed. Every message must be complete with its full call (vide Art. 3.)

ART. 15.(contd.)

(3) In answering batches the receiving station first gives the procedure signal "R" for every message completely received and then proceeds to ask for any repetitions required. In batch working it is convenient to identify messages by their series numbers.

Example (a) AB having 10 messages on hand for CD, makes:-
VE CD CD V AB X143 (1) II 10 AR

CD, whose receiving conditions are good and who wishes AB to use batch working, answers:-
VE AB V CD R II X249 (2) II 5 II K8 AR

(1) Assuming X143 to signify "Have _____ messages awaiting transmission".

(2) Assuming X249 to signify Transmit your messages in batches of ___at a time.

AB then transmits five messages as laid down in para.4 (a) CD receives series numbers 1,3 and 5 correctly but requires repetition in series numbers 2 and 4 and makes:-

VE AB V CD R NR1 II R NR3 II IMI NR2 II Tuesday To orders II IMI NR4 II AB 2 II NR5 II IMI GR12 AR

AB gives the repetition as laid down in Article 14. and after "R" has been obtained from CD for series numbers 2, 4 and 5, and CD has also given K, proceeds with a further batch of 5 messages.

Example (b) AB having 10 messages on hand for CD makes:-
VE CD CD V AB X143 II 10 AR

CD's receiving conditions are not good enough for batch working and wishes to use normal working. CD will make:-
VE AB V CD R II K4 AR

Example (c) A station, CD, of a group controlled by PQ, has 20 messages on hand for station AB of the same group. CD calls AB and makes:-

VE AB AB V CD X143 II 20 AR

AB wishing to start batch working, makes:-
VE CD V AB R II X249 II 5 AR

CD then calls PQ asking permission to use batch working:-

VE PQ PQ V CD X102[X] II X249 II 5 AR

PQ if approving makes:-

VE CD V PQ X101[X] II

CD and AB then continue working as in example (a) taking care to listen for any orders from the control station to cease batch work.

(Assuming X101 - Affirmative.

X102 - Interrogative).

ART. 16.

LONG MESSAGES.

1. A long message is defined as follows:-

(a) A P/L message the text of which contains more than 100 groups.

(b) A code or cipher message the text of which contains more than 60 groups.

Mobile Communications, Normal Working.

2. In communications to or from mobile stations, when normal working and hand speed signalling are employed, the transmitting station should be guided by the following :-

(a) In a 'long message', i.e. when the text contains more than the above number of groups, the text should be divided for the purpose of transmission into two or more portions. In code or cipher messages, each portion will normally consist of 20 or a multiple of 20 groups. The maximum number of groups in each portion should not exceed 40 groups. The last portion of the message, containing the time of origin, is the number of groups remaining after transmitting the preceding portion or portions so determined and may consist of any number of groups not exceeding a maximum of 40. In 'long' P/L messages the text may be divided as convenient, but no portions made in one transmission should exceed 60 groups.

(b) Messages of Moderate Length. When the text of a message contains a fairly large number of groups, not however reaching the number required to define the message as a "long message", it is at the option of the transmitting station whether the whole message is made in one transmission or in portions, and the transmitting station should be guided in its procedure by the conditions of communication, interference etc. prevailing. When such a message is made in portions, the divisions should normally be made in accordance with (a) above; but when DC procedure is employed, any portions may be less than 30 groups if desired.

3. Procedure. The procedure for the transmission of messages in portions is given in Art. 8, letter B, examples (c) and (d).

Batch Working and Fixed Station Communications

4. In Batch working, and in communication between fixed stations (point to point service), messages may be sent complete in one transmission irrespective of the length of the text or whether hand or automatic speed is employed. In batch working, however, the time of any one transmission is limited (vide Art. 15 para.3) and any long message in course of transmission must be interrupted, using the procedure signal B followed by the number of groups transmitted, at the expiration of the time limit.

ART. 16.(contd.)

5. Examples(Mobile Communication, Normal Working).

(a) Text cipher 69 groups. Portions, 40 and 29; or 20, 20, 29; or 20, 20, 20, 9; as preferred.

(b) Text P/L 137 groups. Portions as convenient to suit text, no portion exceeding 60 groups.

(c) Text code 57 groups. In one transmission if desired; or in portions 20, 20, 17; or 40, 17.

(d) Text P/L 91 groups. In one transmission if desired, or in portions as convenient to suit text, no portion exceeding 60 groups.

(e) Text cipher 33 groups. DC procedure. 10, 10, 13; or 20, 13.

(f) Text cipher 121 groups. Good communication. Portions, 40, 40, 20, 21; or 20, 40, 40, 21.

ART.

ABBREVIATED PROCEDURE FOR CONTROLLING AND ANSWERING.

In place of the full form of procedure, an abbreviated procedure may be used in connection with messages containing collective or multiple calls under conditions of good communication.

With "abbreviated procedure" the message itself is always transmitted using the full procedure, and the use of the abbreviated form is confined to the procedure for obtaining and making answers and repetitions.

The direction to adopt abbreviated procedure is given by the transmitting station by the abbreviated form in which the latter after completing the message directs the receiving stations to answer. When with full procedure the receiving stations would answer in turn immediately the message is completed, the transmitting station makes Q in the final instructions of the message, and then directs stations to answer by the abbreviated form -

The features peculiar to Abbreviated Procedure are:-

(i) $\overline{VE}$ (commencing sign) is omitted

(ii) $\overline{AR}$ (ending sign) is omitted, except when making a repetition which includes the last group.

(iii) The call is abbreviated as follows:-

(a) The station which has transmitted the message uses the call sign of the receiving station as the "call"

(b) A station to which the message has been transmitted uses the letter V (from) followed by the station's call sign as the "call".

Example (a) A station AB has a message for a group of stations whose collective call sign is CC3.

AB may make a preliminary call, which will be answered in the usual manner (vide Art. 10.) or, knowing communication to be good, may transmit the message without a preliminary call. AB wishes to use abbreviated procedure for controlling and answering.

(1) AB makes:-
$\overline{VE}$ CC3 CC3 V AB II GR3 $\overline{BT}$ LBXO II DTMU $\overline{BT}$ 1043 II Q $\overline{AR}$

AB then makes:-
CC3 K.

Stations answer thus:-
V CD R
V EF $\overline{IMI}$ AB 1
V GH $\overline{IMI}$ 2
V HJ R

AB makes:-
EF GH II AB 1 II CC3 V AB II GR3 II 2 II DTMU

ART. 17. (contd.)

EF and GH answer:-
V EF R
V GH R.

or if preferred AB may give EF and GH the necessary repetition separately.

(2) If EF had made
V EF IMI II X9

AB makes:-
EF II CC3 V AB II GR3 BT LBXO II DTMU BT 1043 AR

EF answers:-
V EF R

Example (b) A station AB has a message for several stations which are not included in the same collective call sign:-

VE MQ MQ NY NY PL PL XY XY V AB II GR3 BT LBXO II DTMU BT 1043 II Q AR

AB then makes:-
MQ NY PL XY K.

Stations answer thus:-
V MQ R
V NY R
V PL R
V XY R

Example (c) A station AB has a message for two groups, CC3, and KK6, and for a station MQ:-

VE MQ MQ CC3 CC3 KK6 KK6 V AB II GR3 BT LBXO II DTMU BT 1043 AR

AB then makes:-
MQK

MQ answers:-
V MQ R

AB then makes:-
CC3 K

The stations included in the collective call sign CC3 answer

V BL R
V DQ R
V FX R

AB then makes:-
KK6 K

The stations included in the collective call sign KK6 then answer in the same way.

2. Repeating back by Abbreviated Procedure.

In repeating back, the call, Service instructions to the receiving station and AR sign are omitted.

ART. 17. (contd.)

Example (a) AB has a message for a group which is to be repeated back:-

VE CC3 CC3 V AB II G II GR3 BT LBXO II DTMU BT 1043 II Q AR

AB then makes:-
CC3 G.

Stations then make :-
V CD II GR3 BT LBXO II DTMU BT 1043
etc. etc.

AB does not answer if all stations have repeated back correctly.

Example (b) In the above example CD repeating back makes a mistake in the 2nd group.

When all ships have repeated back, AB makes:-

CD II 2 II DTMU

CD then repeats the 2nd group again

V CD II 2 II DTMU

AB does not answer.

NOTE. Abbreviated procedure is not used in requesting or giving corrections.

ART. 18.

MANOEUVRING PROCEDURE.

A special form of transmission is employed when making certain classes of messages, such as those employed in the manoeuvring of mobile stations, both for the sake of brevity and for the sake of distinguishing such messages from ordinary messages. The procedure for the transmitting and answering of such messages is known as Manoeuvring procedure.

1. Form of Message

The form in which a message is transmitted with Manoeuvring procedure differs from the full form given in Art.3 in the following respects:-

(1) The text is always made twice through only.

(2) The text is preceded and followed by the Separative sign instead of the long break sign BT. The GR signal is not used and the number of groups is not indicated.

(3) The message may or may not bear a time of origin, according to the following rules:-

(a) Messages with a time of origin - These require no further signal to enable the addressee to take the necessary action to carry out their purport.

(b) Messages without a time of origin. These except the negative flag sign require the transmission subsequently of the executive sign before their purport is to be carried out. They are thus obeyed when the executive sign is received.

Example The control station AB transmitting a message to a group CD by manoeuvring procedure :-

(1) Without a time of origin, makes:-
VE CC3 CC3 V AB II G1O IMI G1O AR

(2) With a time of origin makes:-
VE CC3 CC3 V AB II WM IMI WM II 1403 AR

2. Procedure for Answering.

When a message has been transmitted by manoeuvring procedure, the procedure employed for answering, repeating back, and obtaining repetitions is similar to that used with Abbreviated Procedure (Art.17). but

(1) The abbreviated form of procedure is obligatory and the transmitting station does not therefore make Q at the end of a message addressed to a single group or with a multiple call.

(2) When a repetition is required, the whole message is always asked for.

Example (a) The answers to either of the messages given in the example in para.1 above are given by the group CC3 at once as follows:-

V MN R
V PQ R
V RS IMI
etc.

ART. 18.(contd.)

Example (b) AB has made:
VE CC3 CC3 V AB II G II WM IMI WM II 1403 AR

The group CC3 repeat back as follows:-

V MN II WM II 1403
V PQ II WM II 1403 etc.

3. Procedure for giving repetitions.

The procedure is similar to that given in abbreviated procedure, the message being repeated in the form as previously transmitted by manoeuvring procedure.

Example. AB giving a repetition to RS in example (a) above makes:-
RS II CC3 V AB II G10 IMI G10 AR

4. Procedure for obtaining corrections.

In a request for a check, the whole message must be asked for. If there is no doubt as to the message referred to, the identity need not be added.

The request is made in abbreviated form as follows:-

V CX J, or
V CX J 1403

5. Procedure for giving corrections.

Messages which have been transmitted by manoeuvring procedure are corrected by means of the letter 'C' as shown below.

Example. A control station AB has transmitted a message to a group CC3 as follows:-

VE CC3 CC3 V AB II WM II XP IMI WM II XP II 1403 AR

Stations in the group CC3 answer:-
V MN R
V PQ R
V RS R
etc.

The station MN wishing to obtain a check and repeat of the whole message or part of the message makes:-

V MN J
or
V MN J 1403

AB makes:-
MN R

If AB finds the whole or part of the message was incorrectly transmitted, AB makes:-

CC3 II C II CC3 V AB II WM II XQ IMI WM II XQ II 1403 AR

Stations in CC3 answer as above.

ART. 18. (contd.)

If AB finds the whole message was correctly transmitted, AB repeats the message to MN, who requested the check, prefacing the repetition by C, thus:-

MN II C II CC3 V AB II WM II XP IMI WM II XP II 1403 AR

MN answers:-
V MN R

NOTE If the message had contained no time of origin, and a station requires a check before the executive sign is made the message referred to is identified if necessary by the TOR sign.

6. Use of Erase sign and Negative Flag sign.

The erase sign may be used by manoeuvring procedure in the same manner as with full procedure, either for erasing the preceding group transmitted, or when followed by AR for cancelling a message in course of transmission. In the latter case, if the message has no time of origin, the erase sign, followed by AR, must be made before the second transmission of the last group of the message. If the last group has been made twice, the message must be completed by the AR sign, and cancelled immediately by a fresh message, using the negative flag sign.

Message without a time of origin.

Example (a) AB has made to a group CC3:-

VE CC3 CC3 V AB II G15 IMI G15 AR
and wishes to cancel the message. AB makes:-
VE CC3 CC3 V AB II NO IMI NO AR

Stations in CC3 answer, using manoeuvring procedure as in para 2 above.

The negative flag sign so made cancels all unexecuted messages, and if it is desired to cancel only one of such messages, the negative flag sign must be followed by the text of the message to be cancelled, and will be joined with the first group of the text so as to form one group.

Example (b) If in example (a) there are two unexecuted messages AB would make:-

VE CC3 CC3 V AB II NO G15 IMI NO G15 AR

Message with a time of origin

Example (c) AB having made a message
VE CC3 CC3 V AB II XP IMI XP II 1547 AR and wishing to cancel it, makes by Manoeurring procedure the negative flag sign followed by the time of origin of the message to be cancelled, so as to form one group, thus:-

VE CC3 CC3 V AB II NO 1547 IMI NO 1547 AR

Stations in CC3 answer as in para.2 above.

Alternatively, if answers are not required AB may use F in the Service instructions.

The negative flag sign is not used in the text of a procedure message or of a message made with full procedure.

ART. 18. (contd.)

7. The Executive Sign.

The class of message given in para.1 of this Article which contains no time of origin requires the subsequent transmission of the executive sign to direct its purport to be carried out.

The executive sign consists of a 5 second dash followed by the AR sign

Example (a) AB has made to the group CC3

VE CC3 CC3 V AB II G12 IMI G12 AR
Stations in CC3 have answered.
AB when ready directs the purport of the message to be carried out as follows:-

VE CC3 CC3 V AB _____ (5 sec. dash) AR

The executive sign is not answered, except when made to a linking station for retransmission. (see Para. 9 below).

Example (b) When there can be no doubt as to the station of origin, the message containing the executive sign may be made by abbreviated procedure as follows:-

CC3 _____ (5 sec.dash) AR

Example (c) When there are two or more messages awaiting the transmission of the executive sign, the text of the message to be executed is transmitted before the executive sign in order to remove aby doubt as to which message is to be carried out. Thus:-

VE CC3 CC3 V AB II G12 _____ (5 sec.dash) AR
or, by abbreviated procedure:-

CC3 II G12 _____ (5 sec. dash) AR

NOTE. The executive sign once transmitted cannot be cancelled.

8. Messages Requiring Acknowledgment.

(a) In the case of messages addressed to a single group or to a multiple call containing Y in the special instructions and transmitted with manoeuvring procedure, the receiving stations will acknowledge with abbreviated procedure.

Example (a) AB makes to the group CC3
VE CC3 CC3 V AB II Y II WM IMI WM 1032 AR

Stations answer in order by manoeuvring procedure as usual, and make their acknowledgment when ready as follows:-

V PQ Y
V MN Y
etc.

(b) In the case of messages addressed to two or more groups, the transmitting station when ready to receive acknowledgments will direct the several groups by using INT Y.

ART. 18.(contd.)

Example (b) AB makes to the groups CC3 and CC4 addressed by the general collective call KK5.-

VE KK5 KK5 V AB II Y II WM IMI WM 1032 AR

AB then makes:-
CC4 K

Stations in the group CC4 answer with manoeuvring procedure.

AB then makes:-
CC3 K

Stations in the group CC3 answer similarly. AB when ready to receive acknowledgments makes:-

CC3 INT Y

Stations in the group CC3 then acknowledge as in Example (a). but in order of call signs.

AB then makes:-
CC4 INT Y

Stations in the group CC4 acknowledge similarly.

If a station in a group (say RS) is not prepared to acknowledge in turn the station makes:-
V RS R

and when ready later
V RS Y

Example (c) Similarly, in the case of a message which does not contain Y in the special instructions AB may ask for an acknowledgment later from all or any of the stations to which the message was transmitted thus:-

MN INT Y

MN answers
V MN R
and when ready to acknowledge by
V MN Y

NOTE. In messages transmitted with manoeuvring procedure it will be unnecessary as a rule to use an identity when asking for or giving an acknowledgment. If however other messages have been transmitted since the message referred to, or in any case of doubt, AB may make:-

CC3 INT Y 1032
Stations in CC3 acknowledge by
V MN Y 1032
etc.

9. Messages through a link.

When a message transmitted in the form used with manoeuvring procedure is passed through a link, the linking station answers and passes on the message by manoeuvring procedure.

Example (a) AB passes a message to a group CC3 via a station GH by manoeuvring procedure:-

VE GH GH V AB II T II Z II CC3 V AB II WM IMI WM II 1403 AR

GH makes:-

V GH R

and then passes on the message thus:-

VE CC3 CC3 V GH II Z II CC3 V AB II WM IMI WM II 1403 AR

stations in the group CC3 answer with manoeuvring procedure.

Example (b) AB has passed a message not containing a time of origin through GH to the group CC3 as in Example (a) above. AB requires to pass the executive sign to CC3 through GH.

AB makes:-

VE GH GH V AB II T II Z II CC3 V AB _____ (5 sec dash) AR

GH answers

V GH R

and immediately makes:-

VE CC3 CC3 V GH II Z II CC3 V AB II_____ (5 sec. dash) AR

Stations in CC3 do not answer.

ART.19. NAVAL FIRE CONTROL PROCEDURE.

The features of this procedure are:-

1. Abbreviated Procedure is used throughout, both for Transmitting messages and for answering.

2. Times of origin may be omitted.

3. The executive signal followed by the AR sign is only used after a timing signal and certain special signals.

4. The following messages only are answered -

(a) Fire discipline signals.
(b) Gun control signals.
(c) Target identification signals.
(d) Orders to shift wave.
(e) Timing signals.

5. Repetitions may only be asked for in the case of those messages which have to be answered.

6. Repetition of the whole of the message only may be asked for. When giving a repetition the message is repeated as originally made but only the stations which have asked for a repetition answer.

7. Messages which require a reply need not be answered if the reply can be given at once.

8. The separative sign is used between the Call and the Text.

In the following examples :-

SO is the call sign of the Senior Officer.

AB " " " " " " Senior Officer's Ship.

CD)
EF) are the call signs of the ships or vessels
GH) comprising the division.

D1 is the call sign of the division.

S1) are the call signs of the Sub-Divisions comprising
S2) the division.

Examples :-

(a) The Senior Officer directing his division his to concentrate on the enemy ship bearing 034°, makes -

D1 II GSB 034 II L4.

CD, EF and GH answer

V CD R
V EF R
V GH R

or EF being uncertain of the correct reception makes -

V EF IMI

SO repeats the message thus -

D1 II GSB 034 II L4.

EF answers

V EF R

(b) The Senior Officer of the Division directing his Division to engage a pair of enemy ships, the bearing of the target of the Senior Sub-Division being 006, makes -

D1 II GUP 006

CD, EF and GH answer as before.

The Senior Officer of the Division then directs his Sub-Division to shift to the sub-divisional wave, thus :-

S1 II X 351

CD answers

V CD R

(c) When the division is engaging a pair of enemy ships, the Senior Officer wishing the division to concentrate as a whole on a ship in the enemy's line bearing 027, first directs his sub-division to revert to the divisional wave, thus -

S1 II X 350

and CD answers -

V CD R

AB and CD then shift to the divisional wave and the Senior Officer makes the new fire discipline signal -

D1 II GSB 027

All ships answer as before.

(d) When the division is engaging a pair of enemy ships, and the Senior Officer of the division wishes the division to engage another pair of enemy ships, the bearing of the target of his sub-division being 037, if it is not practicable to pass the message by V/S, SO makes on the sub-divisional wave -

S1 II GUP 037

CD answers

V CD R

SO then shifts to the divisional wave, and makes -

S2 II GUP 037

EF and GH answer

V EF R

V GH R

SO then reverts to the sub-divisional wave.

(e) AB reporting that shots are short, range 18,000 yds. makes -

V AB II TAS 180

CD, EF and GH do not answer.

(f) The Senior Officer ordering ships to fire a divisional salvo, range 18,700 yds, makes -

D1 II OSF 187

CD, EF and GH do not answer.

(g) The Senior Officer ordering EF to pass the rate, makes -

EF II PTR

EF does not answer but signals the rate when ready thus

V EF II C3C

SO does not answer.

(h) The Senior Officer wishing the division to concentrate on the enemy's ship having only one funnel and bearing 324 makes -

D1 II GSB 324 $\overline{\text{AAA}}$ one funnel

CD, EF and GH answer

V CD R
V EF R
V GH R

(i) The Senior Officer wishing to make a time signal for correcting firing watches to his division makes -

D1 II CFW

CD, EF and GH answer.

When ready to make the time, SO makes -

D1 II 1120 II II _____ (5 sec. dash) $\overline{AR}$

CD, EF and GH do not answer.

(j) The Senior Officer wishing to negative the last signal he has made or a previous signal will do so in the form :-

D1 II $\overline{NO}$

or, if desired :-

D1 II $\overline{NO}$ GSB 142.

ART. 20. AIRCRAFT SPOTTING PROCEDURE.

PART A. AIRCRAFT SPOTTING WITH THE NAVY.

Part A of this article deals with the W/T procedure employed by aircraft of Naval Co-operation Squadrons when carrying out spotting duties for Naval gun fire.

2. The procedure adopted assumes the presence of two spotting aircraft for each Division, one aircraft being allotted to each sub-division. If additional aircraft are available they act as stand-by to the Divisional and Sub-divisional aircraft and take over their duties should any failures or casualties occur.

3. When first establishing communication, prior to action, with the ships for which they are to spot, both the ships and aircraft employ full procedure as laid down in Arts. 1 to 14 of this book.

4. When communication has been satisfactorily established both ships and aircraft adopt Naval Fire Control procedure for messages dealing with the Control of Fire as laid down in Art. 19. If, however, at a later stage, difficulty is experienced in communication either ships or aircraft are at liberty to revert to full procedure. Full procedure is also used for all messages other than those dealing with the control of fire.

5. The special rules, peculiar to aircraft spotting procedure are as follows:-

(a) Aircraft make their call signs twice at intervals of two minutes from the time of tuning in until firing commences and subsequently at intervals in any lulls in the action.

(b) Spotting signals from aircraft are made without any call signs. They are preceded, however, whenever possible by the letter 'T', made by the aircraft at the exact moment at which a salvo pitches. Spotting signals are not answered.

(c) Inclination signals made by spotting aircraft during action are transmitted without any call signs.

(d) The warning signals of the approaching fall of a salvo is transmitted by the ship and is completed by the long dash which indicates that the salvo is due to pitch.

(e) Times of origin are not used on Fire control messages when such messages are passed from ships to aircraft by full procedure (see para. 4).

(f) All messages transmitted from ships to aircraft by Fire control procedure are made through twice.

(g) When aircraft and ships are addressed together in the call, the aircraft answer in order before the ships.

6. Messages made by aircraft other than those laid down in 5 (a), (b) and (c) are made by full procedure.

7. The waves to be employed by the divisional and sub-divisional aircraft depend upon the Fire discipline signal in force at any time. Aircraft shift wave on receipt of a Fire discipline signal without waiting for further orders.

8. Assume the following call signs throughout the examples:-

SO = Senior Officer.

D1 = 1st Division.

S1 = 1st Sub-division.

S2 = 2nd " "

AB) CD) = Ships of 1st Sub. (AB Senior Officer, CD Divisional Transmitting Ship).

PQ) XY) = Ships of 2nd Sub. (PQ Senior Officer XY Sub-divisional Transmitting Ship).

FA = Spotting aircraft of Senior Sub-division.

FC = " " " Junior " "

Example (a).

FA has flown off and during the approach wishes to establish communication with the Senior Officer.

FA makes on the aircraft divisional wave

$\overline{VE}$ AB AB V FA X 300 $\overline{AR}$

AB answers

$\overline{VE}$ FA FA V AB R II X141 II 9 $\overline{AR}$

FA answers

$\overline{VE}$ AB V FA R $\overline{AR}$.

FC establishes communication with FA, PQ and if necessary AB in a similar manner, also on aircraft divisional wave.

Example (b).

FA has an enemy battle fleet report for the Senior Officer during the approach.

FA makes

VE SO SO V FA II O II P BT OMX WLFAX II O15QE21

BT 0614 IMI SO SO V FA II O II P II OMX WLFAX II

O15QE21 BT 0614 AR.

If answering calls, SO makes

VE FA V SO R AR.

Example (c).

The Senior Officer wishes to concentrate all ships on the leading ships of the enemy's line, i.e. on the left ship.

Divisional transmitting ship CD makes on divisional aircraft wave

D1 II GSB 160 II L1 IMI D1 II GSB 160 II L1.

Aircraft answer

V FA R

V FC R

or FC, requiring repetition of the counting signal, makes

V FC IMI

CD makes

D1 II GSB 160 II L1 IMI D1 II GSB 160 II L1.

Stations which have asked for the repetition (i.e. FC) answer

V FC R.

Example (d).

FA wishes to report the inclination of the target as 125 degrees left. FA makes

INL 12 FI

SO does not answer if message is received, but may if repetition is required, make

FA IMI.

Example (e).

SO wishes to warn spotting aircraft that the first salvo is about to fall. Divisional Transmitting Ship makes

FA II AR _____

the dash being made at the instant at which the salvo should pitch.

If after making the signal AR it proves impossible to make the dash at the correct moment, the Divisional Transmitting Ship would make

AR ..... erase sign.

FA does not answer.

Example (f).

FA spotting the fall of shot makes

___ SS4 II LF 4 FI

___ SS1

___ KK

___ GG5 II XX

The dash indicates the moment at which the salvo pitches.

Spotting reports are not answered by ships.

Example (g).

SO now wishes to concentrate on the 5th and 6th ships from the left of the enemy's line. Bearing of SO's target being 165 degrees.

Divisional transmitting ship (CD) makes on aircraft divisional wave:

D1 II GUP 165 II L5 TL 6 IMI D1 II GUP 165 L5 TL 6

Both aircraft answer on divisional wave

V FA R

V FC R

FA continues on divisional wave spotting for the Senior Sub-division.

FC without waiting for further orders shifts to sub-divisional wave and informs PQ that FC is ready to observe.

FC makes on sub-divisional wave

VE PQ V FC II AW AR.

The Sub-divisional transmitting ship XY answers

VE FC V XY R AR.

XY warns FC of the fall of the first salvo on the Sub-divisional wave as in example (e).

Both aircraft spot for their respective Sub-divisions as in example (f), FA on Divisional wave, FC on Sub-divisional wave.

Example (g).

SO now decides to concentrate all ships on the 4th ship from the left of enemy's line bearing 147°.

SO makes to PQ by Type 31 and Divisional transmitting ship repeats to FA on aircraft Divisional wave.

D1 II GSB 147 II L4 IMI D1 II GSB 147 II L1.

FA answers

V FA R

XY makes to FC on aircraft Sub-divisional wave

D1 II GSB 147 II L4 IMI D1 II GSB 147 II L4

FC answers on Sub-divisional wave

V FC R

FC without waiting for further orders shifts to Divisional wave and acts as stand-by to FA.

Example (h).

If after ordering the concentration shown in example (f) SO wishes to concentrate the whole division on the target being engaged by the Junior Sub-division, CD repeats on Divisional aircraft wave

S1 II SOB I II EYT IMI D1 II SOB I II EYT

FA answers

V FA R.

FA at once shifts to aircraft Sub-divisional wave as do also AB and CD.

SO then makes on the Sub-divisional wave

S2 II EYT IMI S2 II EYT.

FC continues spotting for the whole Division on the Sub-divisional wave, with FA acting as stand by. The normal distribution of spotting duties will be reverted to for the next concentration.

9. Ships do not normally answer message made on the aircraft waves although such messages are addressed to the Divisional or Sub-divisional call signs. If the SO of a division or Sub-division wishes ships as well as aircraft to answer on aircraft waves he will direct the whole unit addressed to answer by controlling procedure as shown below.

Example (i).

In example (c) if SO wishes ships to answer as well as aircraft, the message would be made thus :-

D1 II GSB 160 II LI IMI D1 II GSB 160 II LI II D1 K

Aircraft answer:

V FA R

V FC R

V FQ R

V XY R

Ships then answer

V AB R

V CD R

ART. 20 (Contd).

PART B. ARMY ARTILLERY OBSERVATION WIRELESS PROCEDURE.

I. GENERAL.

1. This chapter deals with the signalling procedure which will be employed by Army Co-operation aeroplanes when observation of fire is being carried out by pilots. The procedure applies equally to the observation of the fire of land batteries against land targets, of land batteries against ships, and of ships against shore targets when such observation is undertaken by an Army Co-operation Squadron. It applies also to the observation of fire of Army Artillery when such observation is carried out by Naval Co-operation Aircraft.

2. Under all ordinary conditions the observation of fire and the transmission of reports and information regarding targets is performed by the pilot of an Army Co-operation aeroplane who is not accompanied by a W/T operator.

3. The method of communication from air to ground is by W/T and from ground to air by ground strip signalling. In certain cases two way W/T may be employed, and a gunner trained in W/T carried in the aeroplane; the procedure then to be used is dealt with in X of this article.

4. In order to render the transmission of the necessary messages by the pilot as simple a matter as possible, the codes employed are constructed so as to be memorised easily and the component parts of the message are reduced to an absolute minimum. The procedure assumes that W/T operators employed in ground stations are conversant with the codes and methods used.

II. THE SEPARATIVE SIGN.

The Separative Sign is not employed in this class of signalling.

III. CALL SIGNS.

1. (a) Single letter call signs are allotted to the following:-

(i) Artillery Brigades and Batteries.

(ii) R.A.F. Squadrons.

(b) Two letter call signs are allotted to:-

(i) Sections of a map squared on a pre-arranged scheme, known as "Zones".

(ii) Certain classes of messages of special importance.

(c) Personal numbers consisting of one or two figures are allotted to each pilot of an Army Co-operation Squadron.

(d) Call signs consisting of a letter and a figure are allotted to targets for use during impromptu shoots.

2. The call of a message is composed of a combination of the call letters of the Artillery unit, zone or special call addressed, followed by the call letter of the R.A.F. Squadron to which the aeroplane belongs and followed again in certain cases by the personal number of the pilot sending the observation. The call is transmitted as one unit, the components not being separated by procedure letters.

Example (a).

Battery call letter C. Squadron call letter M. If pilot whose personal number is 7 wishes to call up the battery the call would consist of the following:

CM7.

Example (b).

Squadron call letter M. A pilot sees a target in zone WA and wishes to call batteries detailed for that zone. The call of the message would consist of:

WA M

3. The personal numbers allotted to pilots are only employed in pre-arranged shoots and in impromptu shoots with allotted batteries. The personal numbers are used only:

(a) When calling up the battery until the first order to fire has been given.

(b) When changing targets.

(c) When sending the "Returning to base" signal.

At other times in the course of the shoot, the call will consist of the call letters of the Battery and R.A.F. Squadron only.

4. Target call letters are allotted by a pilot when transmitting the first report of the target in the form of a zone call. They are in force for the period of that flight only and are used subsequently in the call to replace the squadron call letter.

Example (c).

A pilot has reported by zone call, a target in zone WA, and in making the report has allotted to the target the indicating call N4. After waiting the specified time the pilot wishes to indicate that he is ready to observe on the target. The call of the message will be:-

WA N4

This call will be used for all further messages regarding this particular target during the flight in which N4 is allotted.

IV. USE OF THE ZONE CALL SYSTEM.

1. In transmitting a message by the zone call system the pilot will send the call letters of the zone to which the message refers three times before transmitting the message. This is done in order to warn battery receiving stations responsible for the zone indicated that a message referring to them is about to be transmitted. The call proper of the message will follow the warning call and will consist of the call letters of the zone followed by the call letter of the R.A.F. Squadron.

Example (a).

A target is seen in zone LA by a pilot of a Squadron with call letter C. The warning and call will be as follows:

LA LA LA LA C Text.

2. In cases where no squared maps are available targets may be indicated by the Protractor reference method. When this is done the call letters for "Protractor Reference" are substituted for the zone letters and the warning and call are transmitted exactly as laid down in para. 1.

Example (b).

Assume the letters PRO to signify "Protractor Reference". Pilot whose ssquadron call letter is C wishing to transmit a report of a target would make -

PRO PRO PRO PRO C Text.

3. The protractor reference method is also employed in reporting positions of our own troops. For this purpose special call letters are allotted and the warning and call are transmitted exactly as in example (b).

Example (c).

Assume the letters OWN to signify "Our own troops". Pilot whose squadron call letter is C, wishing to transmit a report of our own troops makes -

OWN OWN OWN OWN C Text.

V. USE OF SPECIAL TARGET INDICATING CALLS.

1. Call letters are allotted to indicate certain classes of messages of great importance as follows :-

(a) To denote targets of great importance which demand as powerful a concentration of fire as the situation permits.

(b) To obtain fire when the enemy is actually seen to be advancing to the assault.

(c) To denote a fleeting target which is not of sufficient importance to come under (a) above.

Messages sent with these calls will be transmitted by the zone call method as described in IV above.

2. Messages of the classes detailed in para. 1 (a) and (b) are transmitted by aeroplanes on a special note which is distinct from any note employed for ordinary artillery observation duties.

3. Messages of the type described in para. 1 (a) are composed of the special call made three times as a warning followed by the call proper comprised of the special letters, followed by the letters of the zone affected and followed again by the Squadron call letter.

Example (a).

Assume the letters LL to signify "All available batteries to open fire". A pilot of squadron with call letter C sees a target in zone BX of sufficient importance to warrant an LL call. Pilot makes -

LL LL LL LL BX C Text.

4. Messages of the type described in para.1 (b) are composed of the special call made three times as a warning followed by the call proper consisting of the special letters followed by the squadron call letter. In this case the zone or zones threatened by the attack are indicated in the text.

Example (b).

Assume the letter PP to signify "Enemy assaulting". A pilot of squadron with call sign C wishing to report an enemy attack on zones MA and MC makes -

PP PP PP PP C MA MC.

5. In messages of the type described in para. 1 (c) the special call letters are combined with the call letters of the zone in which the target is situated. The warning is transmitted three times followed by the call consisting of the zone letters, the squadron letter and the special letters.

Example (c).

Assume the letters GF to signify "Fleeting target". A pilot of squadron with call sign C, wishing to report a fleeting target in zone MA makes -

MAGF MAGF MAGF MA C GF Text.

VI. FORM AND TRANSMISSION OF MESSAGES.

1. The texts of messages will consist of:

(a) Procedure signals, or

(b) Code groups or a mixture of code groups and Plain language.

2. The various groups forming the text of a message are spaced from each other but are not separated by the separative sign.

3. The message consists of the call and the text only.

4. The texts of all messages made by aircraft will be repeated but the IMI sign will not be used.

5. In the case of reports made by the zone call method the repetition will include the call of the message (but not the warning).

Example (a).

Battery call M. Squadron call C. Pilot number 7.

(i) Pilot asks battery if signals are being received thus:

MC7 R B

(ii) Pilot reports fall of shot at 100 yards 3 o'clock from the reference point thus:

MC A3 A3.

(iii) Assume the group ANF to mean "Guns now firing; will observe". Pilot wishing to report guns firing at position W 12-64 and to allot target number N7 to the target, makes -

MC7 ANF W 1264 N7 ANF W 1264 N7.

Example (b).

Zone BX, squadron call M.

(i) A pilot wishes to report hostile battery at B27-38 and to allocate target number L5. Pilot makes -

BX BX BX BX M ANF B2738 L5 BX M ANF B2738 L5.

(ii) A pilot wishes to report by LL call a column of 2000 infantry moving south at B84-05. Assume the group COL to signify "Column" and the group FAN to signify "Infantry". Pilot makes -

LL LL LL LL BX M COL 2000 FAN S B8405

LL BX M COL 2000 FAN S B8405.

(iii) A pilot wishes to report by a GF call a column of 400 infantry at B82-31. Pilot makes -

BMGF BMGF BMGF BM M GF COL 400 FAN B8231

BM M GF COL 400 FAN B8231.

VII. SPECIAL USE OF THE NUMERAL PENDANT (FI) AND PREPARATIVE (OE) SIGNS.

1. The numeral pendant sign is used in reporting the fall of shot by the clock code method to indicate "half hours".

Example (a).

A pilot of squadron with call letter M wishes to report to battery C that a shot fell 200 yards at half past three from the target. Pilot makes -

CM C3FI C3FI

2. The preparative sign is used in the text of certain messages to warn the addressee to stand by for a certain specified event or action.

Example (b).

Pilot number 6 of squadron with call letter M wishes to warn battery B to stand by for a Verys light. Assume VL to signify "Verys light". Pilot makes -

BM6 OE VL OE VL

Example (c).

Pilot of squadron with call letter M wishes to warn batteries in zone WA to stand by to engage a target consisting of a column of 1000 infantry in position W12-89. Pilot allots target number F6 and makes -

WA WA WA WA P OE COL 400 FAN W1289 F6

WA P OE COL 400 FAN W1289 F6.

VIII. PROCEDURE SIGNALS AND SIGNS.

1. The following procedure signals and signs are employed by aircraft for this class of signalling. The same signals may also be employed for ground to air communication if lamp signalling is being employed.

Signal.	Signification.
B	Are you receiving my signals.
R	General answer or message received.
N	Am not receiving your signals or messages not received.
IMI	Repeat.
AF	Yes.
NO	No, or cancel last message.

IX. GROUND SIGNALS.

1. Communication from ground to air is normally carried out by means of ground signals. These signals consist of strips of white cloth measuring 8 ft. 6 ins. by 1 ft. 4 ins. which are laid out in accordance with a pre-arranged code. The reverse side of the strips is painted red for use on snow covered ground or on chalk.

2. Signals will be laid out so as to be read from the target side of the battery.

3. Ground signals are laid out by Battery Personnel and not by the R.A.F. W/T Operators attached to Army Artillery units or formations.

4. Ground signals will be put out only on the orders of the Battery Commander except that the W/T operator may order to be put out the signals for "Signals weak" or "Not receiving your signals" or "Yes" in reply to a procedure message from the aeroplane.

5. All ground signals are answered by the aeroplane by repeating back the signal followed by the procedure signal "R".

6. The following are specimens of ground strip signals.

Signal.	Morse equivalent.	Signification.
II	II (·· ··)	Am not receiving your signals.
H		Signals weak.
⌐	C (-·-·)	Yes.
W		Wireless not ready.
□	O (---)	Target not understood or not received.
△	D (-··)	Battery receiving signals but guns not ready to fire.
L		Ready to engage target.
LX		Ready to engage target ~~to~~ X (the Roman number after the L indicating which target is to be engaged).
F		Message received.

Example (a).

Battery call letter M. Squadron call letter B. Pilot number 5. Pilot calls up battery to establish communications thus -

MB5 B B

and repeats the signal till the battery puts out ground strips.

The battery is receiving signals satisfactorily and puts out



Pilot answers

MB5 CR CR

Pilot warns battery to stand by for fire on target number W5 thus:

MB5 $\overline{OE}$ W5 $\overline{OE}$ W5.

Battery when ready to engage target, puts out



Pilot answers:

MB5 LR LR

Pilot gives the order to fire (assuming the group KT to signify "Fire").

MB5 KT KT.

Battery fires.

Pilot reports the fall of shot:

MB A9 A9.

X. EMPLOYMENT OF TWO-WAY W/T.

1. When two-way W/T is employed for special shoots with long range batteries the texts of messages will still be made in the form described in the preceding articles. The system of calling may also be as described in III para. 2 of this article, the order of the components of a call from ground to air being the Squadron call followed by the Battery call. If, however, it is found more convenient locally to adopt normal inter-service procedure for calling and answering this may be done.

ART. 21. THE I (OR INTERCEPT) METHOD OF HANDLING TRAFFIC.

The I method of transmitting a message is one in which the transmitting station sends the message to a receiving station, the later answering and/or repeating back as directed. The message itself, however, is intended for a station or stations other than the receiving station. The station(s) for which the message is intended are required to read the message but NOT to answer.

2. (a) The I method is usually employed in cases where it is desired to conceal the identity of the station or stations for which the message is intended and for this reason the true address of the message is conveyed in the cipher or confidential code in the "Address To and From" component.

(b) If, however, it is not desired to conceal the identity of the call sign of the station to which the message is addressed, the call sign of the addressee and originator may form the W/T address of the message in the normal manner.

3. The I method is most usefully employed between pairs or groups of stations working to definite routine times at which time other stations can listen out for messages made by this method.

4. Stations for which an I method message is intended are not permitted to ask for repetitions except by order of the Commanding Officer. When a station is so ordered to obtain a repetition or to obtain a "check" the request must be made in the form of a cipher or confidential code message and not by a procedure message.

5. Stations carrying out the disposal of messages by the I method will invariably exchange a preliminary call and answer at the commencement of each routine period before starting the transmission of messages.

6. It is the duty of the receiving station

(a) To indicate the strength of signals accurately to the transmitting station so that that station may increase to the required strength.

(b) To read the message and ask for repetitions of any group badly transmitted or of any groups which may have been lost to the interception station owing to interference noted during transmission.

(c) To repeat back the message when so ordered using for this purpose sufficient power to render its signals similar in strength to those of the first station.

(d) To decipher or decode the message, if in possession of the cipher or code employed, and ask for a "check" of any groups which appear wrongly ciphered.

7. Pairs of stations employed on I method working and which at any routine time have no message for disposal should indicate the fact by the procedure sign VA followed by an operating signal stating the series number or originator's reference number of the last message transmitted.

8. If it appears to the transmitting station that reception by the intercepting stations may be difficult owing to atmospherics or interference, the service instruction "G" should be used to the receiving station.

9. Examples of Procedure.

AB is working routine communication with CD for the purpose of disposing of messages by the I method.

(i) At the commencement of a period AB makes a preliminary call

VE CD CD V AB AR

CD answers

VE AB V CD K9 AR.

AB, knowing that the intercepting stations are at a greater range than CD does not reduce power.

(ii) AB has a message with a concealed address and considering that reception may be difficult to the intercepting stations uses the service instruction "G", thus -

VE CD V AB NR47 II G II NUJO II PALA II WONK II

GR10 BT LUBX II NUNZ II ..... Remainder of

Text BT 0716 AR.

CD repeats back as laid down in Art. 8 ("G").

(iii) After decoding the message CD is unable to obtain any sense from the 4th and 5th groups of the text. If the routine period is not completed CD asks for a "check" at once. If the routine period is finished the request is made at the commencement of the next period. The intercepting station will thus receive a correction to the corrupt groups without transmitting.

(iv) AB has a message in which it is not necessary to conceal the call signs of the addressee and originator. The message is from ~~PQ~~ PW to ~~OK~~ XO.

AB makes -

VE CD V AB NR 48 II Z II XO V PW II GR 15 BT QTXM

II ZPWA II .... remainder of text .... BT 1512 AR.

CD has missed the 2nd group of the text but has also noticed that a station was transmitting at the same time as AB between the 11th and 15th groups. This interference did not prevent CD from receiving the message but CD considers that XO may have experienced interference. CD therefore makes -

VE AB V CD IMI 2 II 11 TO 15 AR.

AB gives the repetitions as laid down in Art.14.

(v) AB has no messages to transmit. The series number of the last message transmitted was NR27.

AB makes -

VE CD V AB VA II X137 II 27 AR.

CD answers -

VE AB V CD R AR.

* Assuming that X137 signifies "Have nothing to communicate. Series number of last message was.....".

ART. 22. D.F. STATION PROCEDURE.

Land D.F. Stations operate either singly or in groups of two or more stations under a control D.F. station.

2. A station requiring a bearing from a single D.F. station or a position or bearings from a group of D.F. stations will call the independent D.F. station or the control D.F. station as the case may be and will pass a procedure message consisting of the appropriate W/T operating signals for "Stand by to take my bearing" or "Stand by to determine my position".

3. The D.F. station addressed will answer this message and when ready to take the bearing will give K to the calling station. In the case of a request for a position from a group of stations, the control station will ascertain that all the stations under its control are ready to take bearings before giving K.

4. On receipt of K from the D.F. station, the station requiring a bearing or position will call the D.F. station and repeat its own call sign continuously for a period of 30 to 60 seconds. At the end of this period the D.F. station will answer with R if a satisfactory bearing has been obtained or with IMI if a further transmission is required. If IMI is made the station requiring a bearing will transmit its call sign for a further period of 30 seconds.

5. In transmitting its call sign for the purpose of obtaining a bearing the transmitting station must assure that transmission is made regularly and that no variation of signal strength or note is allowed to occur.

6. The D.F. stations will report the bearings or positions obtained either by the appropriate W/T operating signals or by cipher, code or P/L messages. In the latter case the time of origin of the message will be the time at which the bearings were taken.

As a general rule, the service instruction "G" should be included in the bearing or position message when made in P/L or by W/T operating signal.

7. Bearings will be classified as follows:-

(a) 1st class bearing is one in which a perfect zero or a clear, sharply defined minimum is present and in which no interference is experienced over the "Zero" or minimum.

(b) 2nd class bearing is one in which the minimum or equalisation points are less well defined than in a first class bearing but still are not sufficiently ill defined to render the bearing unreliable. A 2nd class bearing is also one in which the minimum is sharp as in (a) but in which interference is present over the "Zero".

(c) 3rd Class bearing is one in which the minimum or equalisation points are so ill defined as to render difficult the calculation of the bearing. A 3rd class bearing is also one in which the minimum is defined as in (a) or (b) but in which extreme interference is experienced over the aero.

8. Positions will be classified as follows -

(a) A 1st class position is one which is plotted from three or more first class bearings in the case of a ship, or two or more first class bearings in the case of an aircraft.

(b) A 2nd class position is one plotted from one first class bearing and one or more second class bearings.

(c) A 3rd class position is one plotted entirely from bearings other than first class bearings.

9. The class of the bearing or position will in all cases be specified by a D.F. station when transmitting the bearing or position to the station requiring the information.

10. D.F. stations are empowered to refuse bearings or positions when conditions for obtaining bearings are unsatisfactory. As a general rule D.F. stations should refuse bearings and positions when no bearings of a class higher than class 3 can be obtained.

11. Bearings are expressed in degrees from 000° to 359° representing the TRUE bearing OF the station requiring the bearing FROM the D.F. station.

12. Positions are expressed by means of a squared chart or map or alternatively may be given as Latitude and Longitude or by bearing and distance from a known point.

13. Examples.

Note. Throughout the examples assume the following W/T operating signals:-

X400 - Stand by to take my bearing.

X420 - What is my position.

X404 - Your bearing (or bearing of ____) is (was)

(at ____) _____ or its reciprocal, class____

X416 - Your position at _____ was _____ by

cross cross bearings (fom _____ and _____),

class ____.

Example (a).

AB requires a bearing from a single D.F. station, CD.

AB makes -

VE CD CD V AB X400 AR.

CD answers -

VE AB V CD R AR.

When ready to take the bearing CD makes -

VE AR V CD K7 AR.

AB makes -

VE CD V AB AB AB AB···for 30 to 60 seconds ...AB AR.

CD if satisfied with the bearing answers -

VE AB V CD R AR.

or, if not satisfied with the bearing.

VE AB V CD IMI AR.

AB will then repeat the call sign for a further 30 seconds.

When the bearing has been determined CD makes -

VE AB V CD II G II X404 II 036 II 1 AR.

meaning that the bearing of AB from CD is 036° and that the bearing is a first class one.

The ensuing procedure is as given in Art. 8. (letter "G").

Example (b).

AB requires bearings from three D.F. stations, CD, PQ and RO which are working under the control of CD.

AB makes -

VE CD CD V AB II T II Z II CD PQ RO V AB X400 AR.

CD answers -

VE AB V CD R AR.

AB does not answer.

CD ascertains by L/T that PQ and RO are prepared to take bearings, and then makes -

VE AB V CD K AR.

AB then proceeds as in example (a) and CD answers R or IMI. When satisfactory bearings have been obtained by all three stations, CD collects the results by L/T from PQ and RO. Suppose the bearings obtained are 45° by CD, 276° by PQ and 10° by RO, the first two being 1st class and the last second class. CD makes -

VE AB V CD II G II X404 II CD II 045 II I II PQ

II 276 II I II RO II ~~10~~ 010 II 2 AR.

The ensuing procedure is as given in Art.8. (letter "G").

Example (c).

AB wishes to obtain a position by cross bearings obtained by a group of D.F. stations CD, PQ and RO which are working under the control of CD. The position to be plotted by the control D.F. station.

AB makes -

VE CD CD V AB X421 AR.

It will be noted that it is unnecessary for AB to address PQ and RO since a position automatically requires the services of all the stations in the group.

CD answers -

VE AB V CD R AR.

The procedure followed in similar to example (b).

When CD has collected all the bearings by L/T, the position is plotted by that station and is found to be in square 72BUZ of a squared chart and to be a first class position. The taking of bearings was completed at 0956. CD makes -

VE AB V CD II G II X416 II 0956 II 72BUZ II I II AR.

AB repeats back, etc. (See Art. 8. "G").

Example (d).

AB wishes to obtain bearings from three D.F. stations which are working independently of each other; the D.F. stations are CD, PQ and RO.

AB calls the three stations:

VE CD CD PQ PQ RO RO V AB X400 AR.

Stations answer in order and the ensuing procedure is similar to that shown in example (a) except that on each occasion the three stations answer in alphabetical order, subsequently transmitting the bearings independently.

14. Land stations may be detailed to act as wireless beacon stations carrying out all round transmission in order to enable mobile stations to obtain bearings by means of D.F. apparatus carried in the mobile stations. Land stations detailed for such duties will usually transmit at certain definite periods during each hour a programme consisting of a single letter repeated for a period of the three to five minutes. When several stations are detailed for this duty, the programmes of each station at each routine period should be arranged so that immediately one station ceases to transmit another commences.

15. Land stations constructed on the rotating beacon principle may transmit a pre-arranged signal when the beam is directed in a certain known direction and keep the key depressed during the remainder of the complete rotation of the beam through 359 degrees.

16. Communications within a group of D.F. stations.

(1) The D.F. stations of a group are normally connected to their control D.F. station by land line telegraph circuits. In certain cases lateral communication by land line may also be provided. If L/T circuits cannot be provided, W/T is used instead.

(2) Similar procedure may be employed within a group of D.F. stations whether L/T or W/T communication is being employed. In the latter case, however, the rules for the sequence of answering laid down in Article ~~8 — 1 is~~ 10 - 6 are observed.

(3) Immediately upon hearing the control D.F. station called by a station requiring D.F. assistance, each station of the group makes to the control station the W/T operating signal for "affirmative" or "negative" according as to whether the station is ready to take the bearing or not. This message is passed-in to the control station without waiting for a call from that station.

(4) As soon as the most accurate bearing possible under the existing conditions has been obtained, each station of the group passes the bearing to the control station by a special form of message the text of which consists of the call sign of the station on which the bearing has been obtained, the bearing, the class of bearing. The time of origin of this message is the time at which the bearing was obtained. Special instructions may be issued from time to time regarding the ciphering of these reports if W/T is being used. Example (a).

Example (a).

D.F. station CD has obtained a second class bearing of 271° on station PQ at 1239. CD wishing to report to control station AB, makes -

VE AB V CD BT PQ II 271 II 2 BT 1239 AR.

(5) The control station repeats back all uncoded messages containing the reports of bearings passed in by the stations of its group. As the repeating back is a definite routine between D.F. stations of a group for this class of message, the use of the service instruction "G" is unnecessary.

(6) Any station of the group which fails to obtain a bearing, makes to the control station a procedure message the text of which will consist of the W/T operating signal meaning "Am unable to determine bearing". The XControl D.F. station if necessary then instructs the station requiring D.F. assistance to "repeat" as laid down in Article 18 - 2 paragraph 4.

Example (b).

The station CD named in example (a) fails to obtain a bearing of PQ. CD makes to AB -

VE AB V CD X422 AR.

(7) The abbreviated answering procedure (see Art. 17) is employed for all communications within a group of D.F. stations.

ART. 23. TRANSFER OF W/T MESSAGES TO CIVIL LINES. (PAID WORKING).

A W/T to L/T.

1. When a W/T message received at a wireless station has to be retransmitted to its address by or via L/T (other than lines operated by the Services) the whole of the message including the necessary Route and Service instructions, and the originator's special instructions, with the exception of the Address TO is transferred to the text portion of the Post Office telegraph form, or of the Interservice Message form, if used for paid working. The order of such instructions, is left unchanged, but the GR sign and number of groups are omitted. The L/T identity group, if used, is inserted as the first word in the Text space of the telegraph form.

2. In paid working, the columns above the Address TO in the form are reserved for use by the Post Office Staff only, and no instructions forming part of the message are admitted in these columns, except the indication "Priority" (See para.6 below) used in the inland telegraph service.

3. The Address TO consists of the name and Postal address or of the registered telegraphic address of the addressee.

4. If the W/T message contains a multiple address, the whole address is placed in the text portion of the telegraph form thus "addressed ___ ·___ etc. This is followed by the address from, in the form "From ____.

5. The signification of procedure signals in a message retransmitted by the inland telegraph service is spelt out thus in P/L :-

A	Verify
C	Correct
F	Not to be answered
G	Repeat back
J	Check
M - T	Pass via ____ to
T	Pass to
V	From
W	Repeated
Y	Acknowledge
Z	Addressed

6. The following rules are observed with priority indications:-

(a) In the case of message sent by the inland telegraph service, the signification of the priority indication letter or letters is spelt out (e.g. Emergency, State, Priority or Urgent) in its usual place as a component part in the message as transferred to the text portion of the telegraph form in accordance with para.1 above.

In the case of messages sent by British cable, the signification is coded (see para.8).

(b) In addition, in the case of W/T messages forwarded by the inland telegraph service, containing "O" or "P" in the indication of priority component part, the word "Priority" is placed in the column of the telegraph form headed "Office of Origin and Service Instructions" (or, if the interservice message form is employed for L/T, paid working, in the column headed "Indication of Priority"). If the W/T message contains "O - U" in the Indication of Priority component part, the words "State c/o" are also placed as the first two words of the Address TO. Thus, an emergency or priority message received by W/T for retransmission by L/T to (say) C-in-C Portsmouth (telegraphic address "Afloat, Portsmouth") will have the word "Priority" written in the service instructions, and "Afloat, Portsmouth" in the Address TO column of the telegraph from on which the W/T message is rewritten. A "State" W/T message addressed to Admiralty for retransmission by the inland telegraph service will have "Priority" written in the Service Instructions column, and "State c/o Admiralty, London" in the Address TO column of the telegraph form.

In the case of "O" or "P" W/T messages forwarded by British cable, in addition to the procedure given in (a) above, the word "Priority" is written as the first word of the Address TO, e.g. "Priority Britannia Malta". In the case of "O - U" QW/T messages the words "State c/o" are written as the first two words of the Address TO. The word "Priority" is not written in the head of the form employed for rewriting the W/T message as a cable message.

(c) In the case of W/T messages containing D in the indication of priority component part, the word "urgent" is placed before the Address TO when forwarded over British cables only. In the case of such messages forwarded by the inland telegraph service, no indication of priority is placed before the Address TO and such messages therefore carry no priority over ordinary messages so far as their transmission over the inland telegraph service is concerned.

7. Except in the address TO column, which is filled in as in para. 3 above, so as to be understood by the Post Office staff, the significations of call signs for stations or authorities occurring in a W/T message forwarded by the inland telegraph service are spelt out in P/L or are sent in code which ever is most convenient. The actual call signs are not retransmitted by L/T, except over service lines.

8. For messages forwarded by British cable, code and not plain language is used for the signification of both call signs and the procedure signals given in paras. 4, 5 and 7 above.

9. Special instructions are issued for the use of cipher or confidential code addresses when secrecy as to the Address To and From is required, or in war of emergency.

10. Code or cipher addresses contained in the 'Address to and from' component part of the W/T message are retransmitted by L/T in the same form as received by W/T. (See Art. 21. 'I' method).

11. Example (a)

A station AB receives the following W/T message from a station CD.

VE AB V CD II T II LK7 II Z II LK7 PQ6 II W II BYA

V HK8 II P II GR3 BT 04725 II 81628 II 0924 AR.

AB requires to retransmit the message to LK7 by the inland telegraph service.

Assuming LK7 is the call sign of C-in-C Portsmouth, (Telegraphic address Afloat, Portsmouth) BYA call sign of Admiralty, and LK7 the call sign of A.C.2nd B.Sϕ., AB converts the message as follows:-

Priority

TO Afloat, Portsmouth.

BAKRA (L/T Identity Word) Addressed JOKOP RYLAN repeated

Admiralty from NOPUK Priority 04725 81628 0924

Example (b)

A station CD receives the following W/T message from a station AB

VE CD V AB II T II BYA II Z II BYA RQ4 V AB II Y II

GR3 II 14725 II 88623 II 1426 AR.

CD requires to forward the message by cable to BYA (Admiralty), and converts the message as follows (using code to express the signification of both procedure signals and call signs):-

TO Admiralty, London

AKALOJOMUK ZOBCAFAREL NIKOLBAZCY

14725 88623 1426

Note. The L/T identity word if used by cable is written as a separate five letter group and not amalgamated with the group following, as are the groups AKALO - JOMUK, etc.

K.

B. L/T TO W/T.

1. When a message is received by L/T (other than lines operated by the Services) at a W/T Station for retransmission by W/T to the address or to the next linking station, the W/T stations converts the message from its L/T form to the W/T form as laid down in Art. 5. Whenever possible, the address to and from (as indicated in P/L or code in the L/T message) any necessary service or route instructions, and the originator's special instruction and indication of priority are transposed into W/T Call signs and the appropriate procedure signals.

2. Example (a).

A W/T Station (telegraphic address Wireless, Seabury) receives the following message by the inland telegraph service at 1347.

Handed in at Westminster 1.26 p.m.

TO Wireless Seabury.

KOMLA (L/T Identity Word) Pass via NALOK to BARIL

from FIZGOF Acknowledge LUBQ AMZT 1321

The W/T Station converts the message to its W/T form omitting the L/T identity word, and transmits it to the link indicated by the code word NALOK as follows:-

VE BLR V BQZ II T II Z II LP6 V HQ8 II Y II GR3 BT

LUBQ II AMZT II 1321 AR.

Example (b).

In the above example if the address to and from cannot be indicated by call signs, BLR passes the message by W/T in the following form:-

VE BLR V BQZ II Y II To BARIL from FIZGOF II GR3

BT LUBQ II AMZT FT 1321 II 1347 AR.

Example (c).

A W/T Station (Seabury) receives at 1152 the following message by the inland Telegraph Service.

Handed in at Hereford 1138

TO Wireless Seabury.

Pass to RTO Avonmouth from A O C Hereford

~~Spare~~ parts sent passenger train today fifteenth 1127.

Assuming the W/T call sign of the station at Avonmouth is ABC, and that of A.O.C. Hereford KLF, the W/T Station transmits the message by W/T in the following form:-

VE ABC V BQZ II Z II ABC V KLF II

TO R T O II GR7 AAA Parts sent passenger train today fifteenth/1127 II 1152 AR.

BT

ART. 24.

WIRELESS TELEPHONY PROCEDURE.

1. Special Definitions.

"OVER" - The word "Over" used at the conclusion of a R/T call or message signifies that the transmitting station is changing over to the receive position. Any receiving station required to answer a call or message must await the "Over" before starting transmission. The ending sign AR is the W/T equivalent of "Over".

SWITCHING OFF" - The words "Switching off" used at the conclusion of an R/T message signify that communication is concluded for the time being and that if two way work is being carried out, the station using the phrase is reverting to the receive position.

2. General Considerations.

(a) The efficient use of Radio Telephony depends primarily upon the method of speaking and upon the articulation of the operator. As the distinctive sound of consonants are liable to become blurred in the transmission of speech by telephone and as words containing the same vowels are therefore apt to sound alike, special care is necessary in the pronunciation of words. All words must be spoken plainly and each word ended clearly and not allowed to drag into the next. Any tendency to shout, to employ undue accentuation or to talk rapidly must be suppressed.

(b) It must be remembered that it takes considerably longer to write down a message than it does to speak it and this must be allowed for by the operator transmitting a message.

(c) Messages which require to be reported to or acted upon by a person other than the receiving operator must invariably be written down on the appropriate message form before they are answered.

(d) Messages should be written in full whenever possible. It may sometimes be necessary, however, to use abbreviations in writing down and in these cases the greatest care is to be taken to use only well known abbreviations from which no confusion is likely to arise.

3. Phonetic Equivalents.

(a) Alphabetical.

(i) Whenever it is necessary to identify any letter this will be done by means of an analogy taking the form of a word. For general convenience standard analogies are adopted for general use within the three services and are known as the Phonetic Alphabet.

(ii) The Service phonetic alphabet is as follows:-

ART. 24. (Continued).

A.	Ac.	N.	Nuts.
B.	Beer.	O.	Orange.
C.	Charlie.	P.	Pip.
D.	Don.	Q.	Queen.
E.	Edward.	R.	Robert.
F.	Freddie.	S.	Sugar.
G.	George.	T.	Too
H.	Harry.	U.	Uncle.
I.	Ink.	V.	Vic.
J.	Johnnie.	W.	William.
K.	King.	X.	X-ray.
L.	London.	Y.	Yorker.
M.	Monkey.	Z.	Zebra.

(iii) In addition to the Service phonetic alphabet there exists an International Alphabet for communication with foreign stations consisting of the names of places, as follows:-

A	- Argentine	N	- Nancy
B	- Brussels	O	- Ostend
C	- Canada	P	- Paris
D	- Damascus	Q	- Guebec
E	- Ecuador	R	- Rome
F	- France	S	- Sardinia
G	- Greece	T	-- Tokio
H	- Hanover	U	- Uruguay
I	- Italy	V	- Victoria
J	- Japan	W	- Washington
K	- Khartoum	X	- Xaintrie
L	- Lima	Y	- Yokahama
M	- Madrid	Z	- Zanzibar.

(b) Numerical.

In passing numerals by R/T the following rules will be employed.

O	will	be	pronounced	as	"Oh" X
1	"	"	"	"	"Wun" with accent on "N".
2	"	"	"	"	"Too" with accent on "T" and long "oo".
3	"	"	"	"	"Thr-r-ree with slight rolling of "R" and long "ee".
4	"	"	"	"	"Foer" one syllable with long "o" and slightly rolled "R".
5	"	"	"	"	"Fife" emphasising the consonants.
6	"	"	"	"	"Six" with accent on "X".
7	"	"	"	"	"Sev-en" two syllables.
8	"	"	"	"	"Are" with accent on "A".
9	"	"	"	"	"Niner" with long "i" and Niner emphasising the consonant"n".

X The numeral O occurring in the text is spelt out as Z-e-r-o.

ART. 24. (Continued).

4. Component Parts of a R/T Message.

(a) The components of a R/T message are as follows:-

EXAMPLES.

	P/L Message.	P/L Message.	Procedure Message.	P/L Message.
(i) The call	Hullo AX Swallow two calling.	Hullo DY Thrush nine calling.	Hullo Thrush two Baboon calling.	Hullo Thrush Thrush one calling.
(ii) Offer of message.	Message begins.	Message begins.	-	-
(iii) Indication of Priority.	Priority.	-	-	-
(iv) Address to and from (if other than the stations indicated in the call.)	Pass to Chub from Swallow two.	-	-	-
(v) Text.	Send up relief acknowledge.	Two Tanks at B4213.	Can you hear me	Dive
(vi) Time of origin.	1423	1552	-	-
(vii) Completion of message.	Message ends.	Message ends.	-	-
(viii) Final Instructions.	Fresh message for you.	-	-	-
(x) Ending sign.	Over	Over	Over	Switching off.

NOTE. Every R/T message must include the Call, the Text and an Ending sign.

ART. 24. (Continued).

(b) The Call.

The call of a R/T message consists of the word "Hullo" followed by the call sign(s) of the receiving station(s) and the call sign of the transmitting station followed by the word "calling".

(c) Offer of Message.

The "offer of message" consists of the words "Message begins" and is employed whenever the transmitting station is about to transmit a message other than a procedure message or one to be acted upon by the person actually carrying out the duties of receiving operator.

(d) Indication of Priority.

The degree of priority, if any, which the originator may assign to the message will be indicated by the words, Emergency, State, Battleship emergency, Aircraft emergency, Priority or Urgent.

(e) Address to and from.

Except when the receiving station(s) and transmitting station are in both cases identical with the addresse(s) and originator of the message, the address to and from will be signalled in this position either by call signs or in P/L.

(f) The Text.

The text of R/T messages will normally consist of plain language. Difficult or unusual words and names of places or individuals should be spelt out by transmitting operators, use being made of the phonetic alphabet as necessary (vide para.3(a) (ii) above). All figures, or groups of figures occurring in the texts of R/T messages will be spelt out figure by figure; thus the group "3480" occurring in the text of a R/T message would be transmitted as:-

3, t-h-r-e-e-, 4, f-o-u-r, 8, e-i-g-h-t, O, z-e-r-o

(g) The Time of Origin.

The time of origin if employed will be indicated by four figures. It is used in all messages which require to be reported or acted upon by any other person than the receiving operator. It is not used to aircraft for referring to previous messages.

(h) Completion of Message.

The "completion of message" consists of the words "Message ends" and is employed whenever the transmitting station has transmitted a message other than a procedure message or one to be acted upon by the person actually carrying out the duties of receiving operator.

(i) The Final Instructions.

In this position the transmitting station may send any instructions to the receiving station either regarding further messages or the conduct of signalling (e.g. "Have fresh message for you". "Wait one minute before answering", etc.)

ART. 24. (Continued).

(j) The Ending Sign.

One of the ending signs "Over" or "Switching Off" will be sent at the conclusion of every R/T message.

(k) Essential Components.

Owing to the type of communication for which R/T is usually employed the number of components of the messages generally handled are reduced to a minimum and will in most cases comprise only :

The Call.
The Offer.
The Text.
The Completion.
The Ending Sign.

5. Call Signs.

(a) The Call signs allotted to R/T stations consist of two or three syllable words which may be accompanied by a numeral, or of two or more letters or combinations of letter(s) and figure(s).

(b) R.A.F. Squadrons are allotted one or more collective call signs for use by all their aircraft, any particular aircraft being identified by a number following the collective call sign. These personal numerals are allotted by the O.C. Squadron arbitrarily among the pilots of the Squadron and are selected between one and ninety nine.

Example:- A R.A.F. Squadron is allotted the word "Thrush" as its general aircraft call sign.

(i) Pilot number three wishing to communicate with a station call sign DX will make:-

"Hullo DX, Hullo DX, Thrush three calling. Thrush three calling, ...

(ii) Pilot number five wishing to communicate with Pilot number twenty, will make:-

"Hullo Thrush twenty, Hullo Thrush twenty, Thrush five calling, Thrush five calling .....

(iii) A leader of a formation wishing to communicate with all aircraft of his Squadron will make:-

"Hullo Thrush, Hullo Thrush, Thrush two calling, Thrush two calling, ..."

(iv) A ground station call sign "Swallow" wishing to communicate with three specified aircraft of a squadron whose general aircraft cal is "Thrush" will make:-

"Hullo Thrush four and six and twenty, Hullo Thrush four and six and twenty, Swallow calling, Swallow calling, "etc.

ART. 24. (Continued).

(c) Letter or letter and figure R/T call signs may be transmitted either as written or by means of phonetic alphabet.

Example :- Call sign AB may be transmitted as :

"AB" or
"A for Ac B for Beer"

(d) The order in which R/T call signs will be transmitted is as follows:-

(i) Single word call signs in Alphabecical order. In the case of aircraft calls followed by a numeral, the individuals addressed by the numerals will answer in numerical sequence after each collective call word.

(ii) Two letter call signs in alphabetical order.

(iii) Three letter call signs in alphabetical order.

(iv) Letter, letter figure series AA2 etc., to ZZ9.

(v) Letter figure letter series A2A etc., to Z9Z.

(vi) Figure letter letter series 2AA etc., to 9ZZ.

6. Calling up and Answering.

(a) The same general considerations govern the use of the preliminary call as in the case of W/T (vide Art.10 para.1.)

The preliminary call, when used, will consist of the call sign(s) of the receiving station(s) made twice and the call sign of the transmitting station made twice.

Example (a)

"Baboon" calling up "Snooker Two" makes :-

"Hullo Snooker two, Hullo Snooker two, Baboon calling, Baboon calling, Message for you, Message for you, Over".

Example (b)

"Baboon" calling up Snooker, Tennis two, Tennis five and DX makes:-

"Hullo Snooker Hullo Snooker, Hullo Tennis two and five, Hullo Tennis two and five, Hullo D for Dover X for X-ray Hullo DX, Baboon calling, Baboon calling. Message for you, Message for you, Over".

(b) In answer to the preliminary call the receiving station will normally make the call sign of the calling station once followed by its own call sign once and a procedure message telling the calling station to transmit the message or wait. When communication is difficult, however, the call signs of both stations may be made twice in answering the preliminary call.

ART. 24. (Continued).

Example (a)

"Snooker two" answering a preliminary call from "Baboon" makes:-

"Hullo Baboon, Snooker two answering, Pass your message, Pass your message, Over".

or

"Hullo Baboon, Snooker two answering, Wait, wait, switching off".

Example (b)

"Snooker" "Tennis two" "Tennis five" and DX wishing to answer a preliminary call from Baboon will do so in the order laid down in Section 5(d) of this Article, thus :

"Hullo Baboon Snooker answering. Pass your message, pass your message, Over".

"Hullo Baboon, Tennis two answering, Pass your message, pass your message, Over".

"Hullo Baboon, Tennis five answering. Pass your message, Pass your message, Over".

"Hullo Baboon, D for Dover X for X-ray answering, Pass your message, pass your message, Over".

(c) Subsequent calls between stations in good communication will contain the call sign of the receiving and transmitting stations once only.

7. Transmitting and Answering a Message.

(a) The following general rules govern the transmission of R/T messages when two way working is employed :-

(i) All parts of the message following the call will be made through twice by the transmitting station, the repetition being prefixed by the words "I repeat". The final instructions (if any) and the ending sign will be, however, made at the end of the repetition only.

(ii) The whole message from the "offer" to the "completion" will be repeated back once only by the receiving station.

(iii) The transmitting station will confirm the accuracy of the receiving stations version by the use of the word "Correct".

(iv) In any message which is transmitted without a preliminary call, the call signs of both the receiving and transmitting stations will be made twice.

ART. 24. (Continued.)

Example (1)

"Baboon" wishes to send to "Snooker" the following message:-

"Company of Infantry stationary at B7142".

"Baboon" makes (assuming that a preliminary call has been passed):-

"Hullo Snooker, Baboon calling message begins Company of Infantry stationary at B for Bertie 7 s-e-v-e-n 1 o-n-e 4 f-o-u-r, 2 t-w-o, message ends I repeat. Message begins Company of Infantry stationary at B for Bertie, 7 s-e-v-e-n, 1 o-n-e, 4 f-o-u-r, 2 t-w-o ends, Over".

Snooker answers:-

"Hullo Baboon Snooker answering Your message begins Company of Infantry stationary at B for Bertie 7 s-e-v-e-n, 1 o-n-e, 4 f-o-u-r, 2 t-w-o, message ends, Over".

Baboon answers:-

"Hullo Snooker Baboon answering Correct, Correct. Switching off".

Snooker does not answer and both stations resume normal watch.

(b) In single way working all R/T messages including the call will be made through twice, the repetition being prefixed by the words "I repeat" and the transmission ended by the ending sign. The call signs of both the receiving and transmitting station will always be made twice when single way work is employed.

Example (II)

Aircraft "Lizard four" working single way wishes to send to ground station AX the following message :-

"Tanks at P2043 now moving towards Berck".

"Lizard four" makes:-

"Hullo A for Ac X for X-ray, Hullo A for Ac X for X-ray Lizard four calling Lizard four calling, Message begins, Tanks at P for pip 2 t-w-o, O z-e-r-o 4 f-o-u-r, 3 t-h-r-e-e now moving towards Berck B for beer E for Edward R for Robert C for Charlie K for King, message ends, I repeat, Hullo AX Hullo AX, Lizard four calling, Lizard four calling message begins .....
(Text given in exactly same form as above) .....
Message ends, switching off".

ART. 24. (Continued.

8. Repetitions.

(a) When words are missed or are doubtful, repetitions will be asked for by the receiving station before attempting to repeat back the message.

(b) Requests for repetitions will be made by means of the following procedure phrases :-

"Repeat"	- Meaning repeat the whole message.
"Repeat all before ....."	Meaning repeat all before word quoted.
"Repeat all after ....."	Meaning repeat all after word quoted.
"Repeat from ..... to ...."	Meaning repeat all between the words quoted.
"Repeat word (or group) after ....."	Meaning repeat word after the word quoted.

(c) In making repetitions the transmitting station will always repeat the word or words quoted in the request for repetition.

Example :-

"Snooker" transmits the following message to "Baboon":-

"Hullo Baboon Hullo Baboon, Snooker calling Snooker calling, Message begins, Returning to base send up relief Message ends, I repeat, Message begins, etc. Over".

(i) Baboon requiring the whole message maked:-

"Hullo Snooker, Baboon answering, Repeat repeat Over".

Snooker transmits the whole message again twice.

(ii) Baboon requiring all after the word "send", makes:-

"Hullo Snooker Baboon answering, repeat all after send, repeat all after send, Over".

"Snooker" answers :-

"Hullo Baboon Snooker answering, All after send up relief message ends, I repeat, all after send up relief message ends, Over".

(iii) Baboon requiring from "Returning" to "up", makes:-

"Hullo Snooker Baboon answering, Repeat from returning to up, repeat from returning to up, Over".

Snooker answers :-

"Hullo Baboon Snooker answering, from returning to up, returning to base send up, I repeat, from returning to up, returning to base send up Over".

ART. 24. (Continued).

9. Procedure Phrases.

It is inadvisable to lay down definite wording for all procedure phrases likely to be required in R/T work. The following are however phrases in constant use and should be adopted :-

"Message for you"

"Pass your message"

"Correct"

"Can you hear me"

"Hear you strength ....."

"Wait"

"Message received"

"Speak slower"

Care must be taken to curtail all procedure phrases to the minimum consistent with clarity.

10. Manoeuvring messages made by R/T.

(1) When R/T is employed in a group for manoeuvring purposes, three classes of messages will require to be made.

(a) Messages the purport of which is to be carried out as soon as possible after the message is received and understood by the authority to whom it is addressed.

(b) Messages the purport of which is to be carried out on the receipt of an executive word; the executive word being included in the same message.

(c) Messages the purport of which is not to be carried out till the receipt of a further executive message.

(2) The word "GO" will be used as the executive signal for R/T working.

(3) Messages under the heading (a) in paragraph 1 will be transmitted as laid down in the preceding articles of this chapter.

(4) Messages under the heading (b) in paragraph 1 will be transmitted as follows and will not be answered by R/T:-

(a) The Call will be made through once.

(b) A sentence describing the evolution about to be carried out will be made through twice, the repetition being preceded by the words "I repeat".

ART. 24. (Continued).

(c) The executive will be made through once and will consist of the description of the evolution followed by the executive word "GO". No ending sign will be used.

Example (a)

The Leader, call sign Thrush one, of a formation of aircraft, call sign Thrush, wishes to order the formation to carry out the evolution indicated by the code word "Blanket". The leader wishes the evolution to be performed at once and therefore adopts the class of message described in paragraph 1 (b).

"Thrush one" makes:-

"Hullo Thrush Hullo Thrush, Thrush one calling Thrush one calling. The Formation will blanket, I repeat, the formation will blanket, Blan-n-n-ket GO!!"

The aircraft of the formation carry out the evolution indicated, but no R/T answers are made.

(5) Orders for evolutions to be carried out by messages under paragraph 1 (c) will be conveyed by two messages.

(a) The "stand by message" which will be transmitted exactly as laid down in the preceding Articles of this chapter and which will be answered by all the stations in the group. The text of the message will consist of the words "Stand by" followed by the orders for the evolution or the code word conveying such orders. The "ending sign" will be used.

(b) The executive message which will be transmitted as soon as desired by the control station after all the group have answered the first message. The executive will consist of the Call, made in the ordinary manner and of the text consisting of the code word describing the evolution and the executive word "GO!!" The ending sign will not be used and the message will not be answered by R/T.

Example (b)

Taking the case of example (a), the leader wishes the evolution to be performed after a definite interval and therefore adopts the class of message described in paragraph 1 (c).

"Thrush one" makes:-

"Hullo Thrush Hullo Thrush, Thrush one calling Thrush one calling, Stand by Blanket, I repeat, Stand by Blanket, Over".

All aircraft addressed, answer (See Article 24 - Para.11.)

ART. 24. (Continued)

When ready to carry out the evolution "Thrush one" makes:-

"Hullo Thrush Thrush one calling,
Blan-n-n-ket GO!!"

Aircraft carry out the evolution but no answers are made.

11. Abbreviated Answering Procedure for R/T messages transmitted within a group of stations.

(1) In place of the method of repeating back messages by the receiving station laid down in Art. 24. 7(a) for general purposes, the following abbreviated method of answering will be employed between stations of the same group.

The repeat back will consist of

(a) The abbreviated call composed of the call sign of the station repeating back and the word "answering".

(b) The text composed of the word "understand" followed by the text of the message as received from the transmitting station made once only.

(c) The ending sign.

(2) The same abbreviated form of answer may be used in giving immediate replies to questions from the control station.

(3) When messages have been made to more than one aircraft of a group, the original transmitting station will wait till all stations addressed have repeated back before giving repetitions or the "correct" signal.

Example (a)

Taking the case illustrated by example (a) of Art.24. Para.10, Aircraft addressed by "Thrush" answer the "stand by" message as follows:-

"Thrush two answering, Understand stand by blanket, Over".

"Thrush three answering, Understand stand by blanket, Over".

"Thrush four answering, Understand stand by bunker, Over".

"Thrush five answering, Understand stand by blanket, Over.

"Thrush one" corrects "Thrush four's" mistake thus :-

"Hullo Thrush four Thrush one calling, correct message is stand by blanket, I repeat, correct message is stand by blanket, Over".

ART. 24. (Continued).

"Thrush four" then answers again -

"Thrush four answering, Understand stand by blanket, Over".

"Thrush one" then makes to the formation -

"Hullo Thrush, Thrush one calling, Correct, switching off".

Example (b).

A formation has left the ground and the leader wishes to test out R/T.

"Thrush one" makes -

"Hullo Thrush Hullo Thrush, Thrush one calling, Thrush one calling, can you hear me, I repeat, can you hear me, Over".

Aircraft addressed answer -

"Thrush two answering, Hear you strength 9, Over".

"Thrush three answering, Hear you strength 8, Over".

When all aircraft have answered "Thrush one" makes -

"Hullo Thrush, Thrush one calling, correct, switching off".

(4) (a) In large groups where the time taken to collect answers from all stations by R/T may prove too great, it may be necessary to devise visual means of answering such manoeuvring messages as require an answer. The visual means of answering should consist of some fixed object which will be kept displayed by each aircraft of the formation until the executive is received for the message in respect of which the visual answer was hoisted.

(b) Similarly in formations in which the leader's and deputy leader's aircraft are fitted with two way R/T and the remainder with single way, it will be necessary to arrange some visual means of answering certain messages transmitted by the leaders. The visual means adopted will depend upon the type of aircraft employed and may consist of the display of an object or alternatively of some prearranged movement of the aircraft.