CIVIL DEFENCE
HANDBOOK NO. 1

Line & Wireless Instruction

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Line & Wireless Instruction

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Introduction

The purpose of this handbook is to describe the procedures to be adopted in the Civil Defence Corps for sending and receiving messages both by line and wireless. The handling of messages within signal offices is dealt with in Civil Defence Handbook No. 9, *Signal Office Practice*.

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I. Message Procedure

MESSAGE FORM F.Sigs.52

General

1. A copy of the message form used for formal messages is shown at Appendix A. It is available in both a large and a small size, but the smaller size is intended primarily for field use and the Warden Section.

Using the form

2. The purposes of the various spaces on the form are as follows:
   (A) "*For Comm Cen/Signals Use*" *space* (elsewhere shortened to "For Signals Use" space)
      (i) As its title implies, this space is for the use of the signal office staff to indicate:
         (*a*) the system of communication by which a message is to be sent;
         (*b*) any special routing instructions;
         (*c*) any special instructions to be included in the prefix of a message and
         (*d*) for memorandum purposes, e.g. for recording The Call.
      (ii) The system of communication is indicated by the signal clerk by using "LT" for phonogram (line), "RT" for wireless and "Hand" for despatch rider or messenger. When required the actual circuit used, i.e. the circuit designation, will also be shown.
      (iii) Routing instructions are inserted for memorandum purposes when a message cannot be sent direct; they are described in detail in paragraph 3.
      (iv) Special instructions include special indicators such as "Live" (*peace-time training*), "Exercise" (*war-time training*) (this instruction would be omitted by the signal clerk if all messages were for exercise purposes and so indicated at the beginning of the text), "Long" and terms such as "Priority", if introduced in the Civil Defence Corps, to warn the distant operator of the type of message which is being offered.
   (B) "*From*", "*To*" *and* "*Info*" *spaces*
      (i) These are filled in by the originator in plain language.
      (ii) When the message is to be sent by wireless the signal clerk encodes the address in call signs, where available, on the appropriate copy. Similarly, when a message

is received by wireless the receiving operator decodes any call signs and inserts their plain language equivalents on all copies before they leave him.

(iii) When a multiple address message is to be cleared by more than one means of communication or channel the signal clerk will mark each copy in the "For Signals Use" space with the method by which it is to be sent and will ring the names (or call signs) of the addressees concerned in that transmission.

(iv) When the address has been expressed by the originator in collective form (e.g. "All Sub-Areas") and different methods or routes have to be employed to clear it, the signal clerk arranges for the individual addresses to be inserted in the address space before copies are made.

(C) *Space for text*

The text follows the "INFO" address space and should be transmitted as written. If a message is intended for a particular officer or the holder of a particular appointment, this is indicated by the originator at the beginning of the text in the form "For General Green", "For S.I.O.". If an *acknowledgement* is desired for a message, the request for acknowledgement is included by the originator in the text. The acknowledgement may only be originated by the addressee, e.g. the operations staff, to whom the request was made.

(D) "*Date-Time Group*"

This contains the Time of Origin, expressed as a six figure date-time group, and should be completed by the originator. This indicates the date and time at which the message was originated; forms the main identity of the message, and must never be altered even if the message has to be relayed. When a message extends to more than one page the Date-Time Group should be recorded on each page.

(E) "*Releasing Officer's signature*"

The person authorising a message signs his name in this space or in the "*Signature*" space when the small form is used.

(F) "*For Opr's Use*" *space*

This space is divided into R and D sections for the signal office personnel to insert either the date and time of receipt (TOR) or the date and time of despatch (TOD), the system of communication and their initials. The sections are filled in by a message telephonist or wireless operator if the message is sent by line or wireless, and by the signal clerk when the message is passed by hand. Dates and times are expressed in the forms "16 JAN" and "1535".

(G) *Other spaces*

The other spaces on the form not specifically mentioned will not be used by the Civil Defence Corps except the "Page..... of..... pages" space. This may be used when the message requires more than one page, to indicate the page number and the total number of pages in the message; this information is not transmitted. Messages from sources other than the Civil Defence Corps may be received with an originator's number before the text and this should be inserted in the space provided.

Routing instructions

3. These are inserted in the "For Signals Use" space to indicate the method by which a message is to be routed when it cannot be sent direct. The letter "T" is used to mean "*Relay to*" and the letter "V" to mean "*From*"; both letters are preceded and followed by hyphens. Call signs are used wherever possible even if the message is being routed by line.

On outgoing messages the signal clerk inserts the instructions for the information of the wireless operators and telephonists (see examples in Col. 4 (below); on incoming "through" messages the wireless operators and telephonists insert them for the information of the signal clerk (see examples in Col. 5 below). Wireless operators may also insert the Call and Sign-Off of "IN" messages as a memorandum when the address is not sent separately.

Originating HQ of message (1)	HQ to which message addressed by (1) (2)	System and routing from (1) (3)	System and routing instructions inserted by signal clerk at (1) (4)	Routing and other instructions recorded on F.Sigs.52 at relaying station by wireless operator or telephonist respectively (5)
Sector C2K (see Note (*a*))	Area C Operational Base 4	Wireless to Sub-Area 2	RT SB2-T-ACC Operational Base 4 (no call sign)	SB2-T-ACC Operational Base-4 V-STK (see Note (*b*))
Sub-Area 4	All Sectors (K, L, M, N, V)	Wireless on Sub-Area net Sector 4L relay to Sector 4M on same net	RT STL-T-STM	ST⊖ exempt STM ✓ STL-T-STM-V-SB4 (see Note (*c*))
Sub-Area 1	Sectors K, L, M	Line. Sector L relay (by wireless or hand) to K and M	LT STL-T-STK STM	T-STK STM
Sub-Area 1	Old Town RV	Line. Area C to relay (by wireless or hand)	LT ACC-T-Old Town RV	T-Old Town RV

Notes: see overleaf

Notes:

(*a*) An originator addressing a message other than to his immediate subordinate or superior headquarters, or a headquarters under the immediate control of the same superior headquarters, should identify his address so that the recipient cannot mistake his identity—if this is not done the signal clerk must amplify the address "FROM" as necessary. In the first example above, if it is assumed that Operational Base 4 covers a whole Area it will not know which Sector K is sending the message unless the figure suffix of the Sub-Area (2) is added. Similarly if Operational Base 4 covers more than one Area, the relative Area suffix (C) must be added. Hence the "FROM" address should read Sector 2K or Sector C2K and the call signs 2STK or C2STK as the case may be.

(*b*) As Sector 2K (or C2K) cannot route directly to Operational Base 4 the signal clerk sends the message to his superior headquarters (Sub-Area C2) and the signal clerk then routes it directly if he can or to his superior headquarters (Area C).

(*c*) The call sign STM has been ticked to indicate to the signal clerk that the message has been relayed immediately by the wireless operator over the same net.

METHOD OF DICTATING AND RECORDING ADDRESSES AND TEXTS OF MESSAGES

Sending messages

4. The following points should be observed by both telephonists and wireless operators unless otherwise indicated:

(*a*) Check that the message is legible and that any abbreviations are understood BEFORE the message is sent. Refer any queries to the Signalmaster so that they may, if necessary, be referred to the originator.

(*b*) Send all the information between the thick line at the top and the thin black line at the end of the text space, beginning with the "FROM" space and ending with the Date-Time Group. If the addresses are in call sign form, transmit them as such, but do not use phonetic equivalents except for the final symbol when this is a letter, e.g. ACA is transmitted as AC Alfa.

(*c*) (*Line transmissions only*). Transmit each message in short intelligible phrases and ensure that the receiving telephonist repeats back correctly before proceeding.

(*d*) (*Wireless transmissions only*). Transmit each message in short intelligible phrases, sufficiently slowly for the receiving wireless operator to be able to write it down. NEVER TRANSMIT A MESSAGE FASTER THAN YOU CAN WRITE IT LEGIBLY YOURSELF.

(*e*) Speak words written as abbreviations (see Appendix C) in the message in full, e.g. "casualties" for "cas", unless it is usual to speak the abbreviation, e.g. "recce" or the abbrevi-

ation is formed and spoken as capital letters, e.g. TOD WVS, HQ, SITREP.

(*f*) Spell difficult or unusual words, words which might be misunderstood, or any code group occurring in the text, using the NATO alphabet (see Appendix B). When spelling, speak the words "*I spell*" before each word or code group spelt (except in messages when the whole text is coded) and then speak the whole word, if pronounceable, e.g. (Proceed to *I spell* BRAVO-OSCAR-UNIFORM-GOLF-HOTEL Bough Lane".

(*g*) Distinguish numerals from words when any confusion is likely to arise by speaking the proword "figures" before the numerals, especially where these start with 2 or 4. ("Prowords" are standard words and phrases—see Appendix F). Use of the proword "figures" should not be necessary in such instances as:

(i) times in the text followed by the word "hours";

(ii) times of origin, despatch or receipt preceded by the words "Date-Time Group", "TOD", "TOR" respectively;

(iii) figures in addresses;

(iv) call signs, and

(v) figures in the text which are preceded by a word which implies that figures will follow, e.g. "Doserate 10", "grid reference 744537".

(*h*) Use the special pronunciations for all figures wherever they occur (see Appendix B).

(*j*) Transmit numbers digit by digit except multiples of hundreds up to 900 and thousands up to 9,000 which, unless they express time, are spoken as such, Examples are as follows:

44—figures, fower-fower
100—figures, wun hundred
330—figures, thuh-ree, thuh-ree, zero
1000—figures, wun thousand
1100—figures, wun, wun hundred
11000—figures, wun, wun, thousand
1000 hrs—wun, zero, hundred hours
1300 hrs—wun thuh-ree, hundred hours
2011 hrs—too, zero, wun wun hours

(*k*) Convey:

(i) inverted commas by the word "quote" at the beginning of the quotation and "unquote" at the end;

(ii) oblique stroke by "oblique";

(iii) full stop (which is written as ⊙) as "full stop", and

(iv) θ as "zero".

No other punctuation or similar marks are transmitted.

Receiving messages

5. The following points should be observed by both telephonist and wireless operators unless otherwise indicated:

(*a*) Write down all messages on an F.Sigs.52 message form. DO NOT try to memorise any part of a message.

(*b*) Be prepared to receive the message, i.e. have sharpened pencils and the correct number of carbon papers in the message pad.

(*c*) (*Line transmissions only*). When the caller says "Message for you", reply "Go ahead", if you are ready. If you are not quite ready, say "Wait" until you can give the "Go ahead".

(*d*) (*Line transmissions only*). Repeat the message phrase by phrase as you write it down. This enables the sender to check that you are receiving it correctly and to adjust his speed of sending to your speed of writing.

(*e*) When writing down messages, the standard abbreviations (see Appendix C) should be used. Use block letters for addresses, proper names, points of the compass (written in full, e.g. NORTH), the word NOT and months.

(*f*) If there is any uncertainty about a word or phrase a repetition must be sought from the sender. The method of doing this is described in paragraph 13.

(*g*) Write the figures one and zero as $\underline{1}$ and θ respectively if there is any chance of confusion.

(*h*) Write the full stop as an encircled dot, viz. ⊙ to make it more conspicuous.

(*j*) Write fractions, decimal points, mathematical and other signs in words, e.g. 2·5 as "2 pt 5", ½ as "one half", + as "plus".

(*k*) The 24-hour clock system (see below) will be used for expressing all times.

(*l*) Dates will be expressed by one or two figures indicating the day of the month, followed by the first three letters of the name of the month in block letters and the last two figures of the year if necessary, e.g. 16 JAN, 30 SEP 58.

(*m*) A date and time together will be expressed by a six-figure date-time group, the first three letters of the month and the last two figures of the year if necessary, e.g. 161500 JAN 58.

(*n*) Give an immediate *answer* to every transmission. Do not delay giving an *answer* even if in doubt about the accuracy of the transmission which may involve making a *reply* within a short time. An *answer* signifies that a transmission has been received by the telephonist or operator; a *reply* involves the transmission of a new message referring to matters raised in a previous message for which an *answer* has been given.

24-Hour clock system

6. This system is used for all times and expresses the number of hours and minutes which have elapsed from the previous midnight. It is always expressed as four figures and reading from left to right these represent the hours in tens, the hours in units, the minutes in tens and the minutes in units. Examples are:

12.5 a.m.	becomes	0005 hrs.
10 a.m.	„	1000 hrs.
11.35 a.m.	„	1135 hrs.
Noon	„	1200 hrs.
4.9 p.m.	„	1609 hrs.
11.15 p.m.	„	2315 hrs.

The time 2400 is not used for signal purposes and midnight is expressed as a minute before *or* a minute after, e.g. 2359 hrs. or 0001 hrs.

Reports

7. Reports are identified by the text commencing with the prefix "OPREP", "SITREP" or "INTERIM SITREP". The text itself will make use of a reporting code by which most of the letters of the alphabet are given a special meaning. For example, instead of writing a heading "Hazards threatening operations" the originator will use the letter "C" (sent as "Charlie").

Identification of message

8. Every message has a recognized means of identification which can be used as a reference:

(*a*) The Date-Time Group of the message.

(*b*) The time the message was transmitted, e.g. "TOD 1652" or "TOD 240328": this is only used when (*a*) is not available.

(*c*) The originator's numbers when used.

Any identity may be amplified by indicating the originator, e.g.:
"My 121640"
"Your TOD 1652"
"Message 121640 from ACB"
Phrases such as "with reference to" are unnecessary and should NOT be used.

METHOD OF REPEATING AND CORRECTING MESSAGES

Part identities

9. Where reference is required to part of a message the name of that part, e.g. text and one of the following prowords is used:

All after ————
All before————
From —— to ——
Word after ————
Word before ———

The blanks are filled in by one or more catchwords, thus forming the part identity needed to identify the part in question. Care must be taken in choosing the catchword, to avoid any ambiguity: it should be a word or phrase that occurs once only in the message.

For example if reference was required to the words in italics of the following text:

"Rescue *vehicles* 2 crushed by collapse of house⊙
Casualties 2 *among* rescue parties"

it would be useless to use the figure "2" and the word "rescue" as catchwords as both appear twice in the text. Part identities such as: "From rescue to crushed" and "From casualties to rescue" would however, identify the words in question.

Sending a message

10. *Corrections.* When an error is detected:

(*a*) At the time the word or phrase is spoken the proword "Correction" is spoken followed by the last word or phrase before the mistake and then the correct version.

(*b*) Not at the time of the mistake but before the message is finished, it is corrected after sending the time of origin by saying "Correction" followed by the appropriate part identity and the correct version, e.g. "———— Ends. Date-Time Group 211234. Correction. Word before SQUARE —GOLDEN".

(*c*) After a message has been transmitted, a fresh message must be sent in the form "My (identification). Correction (appropriate part indentity)————".

11. *Repetitions*. Requests for repetition will be received as: "say again" followed as required by the appropriate part identity; they will be answered in the form "I say again" followed by the part identity and the correct version.

12. *Spelling*. Difficult words, abbreviations, single or a series of letters may be spelled using the phonetic alphabet and preceded by the proword "I spell". If the operator or telephonist can pronounce the word spelled he will do so after the spelling to identify the word. Requests for spelling will be received in the form "Spell—word before square" and replied to as "I spell—word before square—GOLF OSCAR LIMA DELTA ECHO NOVEMBER—Golden".

Receiving a message

13. When a word or phrase is missed or is doubtful, requests for repetitions will be made using the proword "say again" followed as required by the appropriate part identity. If there is uncertainty of the correct spelling of a word, or difficulty still persists after a repetition, the receiving station should ask for the word to be spelled using the proword "Spell" followed by the necessary part identity (Word before ———— or Word after ————). Telephonists will request repetitions or spelling as the phrase is heard: wireless operators will of course have to wait for the sign-off and the sending station will clear queries with each station in proper order.

HANDLING OF MESSAGES BY WIRELESS OPERATORS AND TELEPHONISTS

General

14. Wireless operators and telephonists are provided with message trays as follows:

(*a*) In a signal office with internal messengers:

"IN" tray	for "IN" messages.
"ACTION" tray	for "OUT" messages and messages to be copied.

"SIGNAL CLERK" tray	for messages, all copies of which have to go to the signal clerk including those which have been copied by the operator or telephonist.

(*b*) In a signal office without internal messengers:

"ACTION" tray	for "OUT" messages and messages to be copied.

15. Message forms and carbon paper are also provided so that each message can be recorded with the number of copies appropriate to the level and status of the headquarters which the signal office serves.

Copying messages

16. Wireless operators and telephonists may be required to make additional copies of messages, for example when an outgoing message has to be sent to more than one address by hand, and such messages are placed in the "ACTION" tray or "COPYING" tray if there is one. Copied messages are placed in the "SIGNAL CLERK" tray, or, if there is not one, handed to the signal clerk.

"IN" messages

17. The action required of the wireless operator or telephonist is as follows:

(*a*) Make the number of copies of message on F.Sigs.52 appropriate to that office.

(*b*) Record any routing or other instructions in the "For Signals Use" space and complete address spaces.

(*c*) Write text and Date-Time Group.

(*d*) Complete "For Opr's Use 'R section' ".

(*e*) Withdraw carbons and put all copies either in "IN" tray or, if there is no internal messenger, the signal clerk's "ACTION" tray.

"OUT" messages

18. The action required of the wireless operator or telephonist is as follows:

(*a*) Refer to "For Signals Use" space for any special routing instructions and obtain wireless station or distant line telephonist required.

(*b*) Send message.

(*c*) Complete "For Opr's Use 'D section' ".

(*d*) Put message in "SIGNAL CLERK" tray or, if there is not one, the signal clerk's "ACTION" tray.

Relayed and Through messages

19. At the relaying signal office these messages will be treated as follows:

(*a*) *Immediate relay on the same wireless net when the relaying station is NOT in the Address.*

As an "IN" message but, in addition, wireless operator relays message with permission of the signal clerk (unless instructed to proceed by control station); ticks through the call sign(s) preceded by "T" in the "For Signals Use" space of the station(s) to which the message has been relayed, inserts the "TOD" and writes "ND" (*no distribution*) at the top of the message before passing it to signal clerk.

(*b*) *Immediate relay on the same wireless net when the relaying station is in the Address.*

As an "IN" message but in addition wireless operator relays message with permission as in (*a*) above; ticks through the call sign(s) entered in the "For Signals Use" space of the station(s) to which the message has been relayed and inserts the "TOD".

(*c*) *Relay on other than the same wireless net or by deferred relay on same net or by line or DR when relaying station is not in the Address.*

As an "IN" message but wireless operator or telephonist writes "ND" at the top of the message before passing it to signal clerk; the fact that the message requires relaying will be indicated by the 'relay to' (T) entry in the "For Signals Use" space.

(*d*) *Relay on other than the same wireless net or by deferred relay on same net or by line or DR; when relaying station is in the Address.*

As an "IN" message. The 'relay to' (T) entry by the wireless operator or telephonist in the "For Signals Use" space will indicate to the signal clerk that the message requires relaying.

II. Line Communication—Telephone

Types of Post Office telephone exchange systems

20. Telephone systems are of two types, namely:

(*a*) *Automatic*—Calls are dialled direct to the required number, or obtained via an operator; the dial inset label will show the code for operator assistance (i.e. 0, 01, or 100).

(*b*) *Manual* —The exchange operator connects all calls. On the magneto manual system the operator is called by turning a generator.

Types of lines

21. (*a*) *Exchange lines.* These are connections to the public exchange system and are of two types:

(i) Ordinary lines, as used by private renters.

(ii) Coin box lines, as found in public call offices.

(*b*) *Private circuits.* These are lines permanently connecting two points, for speech or teleprinter working.

Switchboards (Private Branch Exchanges—P.B.X.'s)

22. These provide a switching system at a renter's premises to interconnect his extensions (local lines) and the exchange lines.

There are two types:

(*a*) *Cordless switchboards*—for small installations. Lines are interconnected by keys.

(*b*) *Cord switchboards* for large installations. Lines are interconnected by plug-ended cords inserted into jacks.

Note: The instructions on how to use any form of telephone or switchboard on any exchange system are obtainable from the Telephone Manager, and information about local exchange systems is printed in the preface to the Telephone Directory.

Use of Post Office telephones in Civil Defence

23. Exchange lines and private circuits are both used. Exchange lines intended for the use of the message telephonists normally terminate on telephone instruments in the signal office. Private circuits will normally terminate on a P.B.X. or some other switching device to enable them to be used by both telephonists and operational staff

and the P.B.X. may also be equipped with exchange lines to serve the operational staff and for training purposes.

Testing Post Office lines

24. It is usually sufficient to check that an automatic telephone is giving dial tone but if there is any doubt about the working of the exchange a confirmatory call can be dialled to another telephone in the same office. Exchange lines to manual exchanges may be checked with the exchange operator. Private circuits and extensions are tested by ringing on the circuit and obtaining an answer from the distant end. Faults should be reported immediately in accordance with the procedure laid down in the preface to the Telephone Directory for the exchange area concerned. On no account should a Post Office installation be interfered with.

Field telephones

25. A field telephone system is set up as required to connect those points which cannot be served by the Post Office telephone system either because the latter is out of action or because the points, e.g. mobile controls, cannot be connected to the Post Office system in the time available. Army type equipment is used and comprises magneto switchboards, telephones J or L and field cable. Field telephone lines will usually be laid by members of a field cable party but very short ones may be laid by members of a signal office staff. A switchboard operator is required to test his magneto switchboard as well as operate it. A description of the switchboard and of the telephones is given in Appendix D together with details of the method of testing them and the action to take when anything is found faulty.

Teed lines and code ringing

25A. To save time it may be necessary to connect more than two points to the same field line, e.g. two warden posts to the same Sector Post, in which case it is necessary to adopt a system of code ringing so that each telephone point is rung by a different series of rings, e.g. one ring for Sector, two or three rings for the respective warden posts. Teed circuits should not be connected to a switchboard if it can be avoided, owing to the difficulty of distinguishing code ringing on an indicator. (When an indicator drops, the buzzer, if connected, operates continuously and only the latch of the armature vibrates to the additional rings).

Using a telephone

26. The noise in a signal office must be kept at a very low level if

the staff are to work efficiently. To keep the noise of telephoning to a minimum, the following points should be observed:

(*a*) *Speaking*. Speak quietly, close to and into the mouthpiece throughout the call. Speak deliberately and distinctly and do not raise the voice or shout; do not drop the pitch of the voice at the end of a word or phrase.

(*b*) *Answering a call*. Answer a call as quickly as possible with the identity of the control, e.g. "Area 11 Alfa," "Sector 2 Lima" or if it has passed through a switchboard with the official identity or the nature of the duty, e.g. "Signal Clerk", "Messages". NEVER say "Hello" or "Yes".

(*c*) *Making a call*. If working through a switchboard ask the operator clearly for the person, duty or control wanted. When through, make the purpose of the call clear at the outset. If there is a message to send say "Message for you" when the call party answers with his identity.

(*d*) *Clearing*. When using a Post Office magneto telephone or a field telephone ring off at the end of the call.

Form of message

27. All messages have three separate parts:

(*a*) Heading, comprising the Prefix (if any),
the Address.

(*b*) Text, preceded by the proword "begins" and followed by the proword "ends".

(*c*) Ending, comprising—the Time of Origin;
corrections of any errors found during transmission;
the Time of Despatch (if used);
the Final Instructions (if any);
the Sign-Off.

The Heading

28. (*a*) The Prefix may contain:

(i) Special instructions such as "Relay to ————".

(ii) The word "message" to indicate that the transmission is to be recorded. Any special indicator (see paragraph 2(A) (iv)) is inserted before this word, e.g. "Live Message".

(*b*) The Address consists of the following:

From—Originator's address
To—Action address
Info—Information address

The Text

29. This follows the "INFO" address space and should be transmitted as written. The text is preceded and followed by the words "Begins" and "Ends".

The Ending

30. (*a*) *The Time of Origin* consists of the words "Date-Time Group" by the figures as written.

(*b*) *Corrections.* If any errors have been noticed during transmissions they may be corrected here (see paragraph 10).

(*c*) *The Time of Despatch* takes the form "Time Now" followed by the 24-hour clock time. It is normally only signalled when the message bears no time of origin or when exceptional delay has occurred before transmission.

(*d*) *The Final Instructions* may include an indication that there is further traffic, e.g. "further traffic (for . . .)".

(*e*) *The Sign Off.* This is the final part of any transmission. The sending telephonist will say "Over" if a response is required or "Out" if no response is called for.

31. Example showing all components of message sent from Sub-Area to Sectors L or M:

Heading	Prefix	Relay to (Sector) 2 Kilo Live message
	Address	From (Sub-Area) Bravo 2 To (Sectors) 2 Kilo and 2 Lima Info (Sector) 2 Mike
Text		Begins . . . . .Ends.
Ending	Time of Origin	Date-Time Group 121212
	Correction	Correction word before Square—Golden
	Time of Despatch	Time now 1321
	Final Instructions	Further traffic for you
	Sign Off	Over

MESSAGE OPERATING PROCEDURE

Point to point call

32. When the receiving telephonist is on the line, the originating telephonist offers the message in the form "Message for you" and waits for a reply in the form "Go ahead" or "Wait"; if the "Wait" is received the originating telephonist waits on the line until "Go ahead" is received. When the "Go ahead" is received the message is dictated in the following form:

"Message"
"From (gives originator's address)"
"To (gives "TO" address)"
"Info (gives "INFO" address)"
"Begins"
. . . . . .TEXT. . . . . .
"Ends"
"Date-Time Group (followed by figures as written)"

All the above information is repeated phrase by phrase by the receiving telephonist and corrections and repetitions are dealt with after each phrase. When the originating telephonist says "Over", the receiving telephonist answers "Roger" if he is satisfied with the message, and closes the transmission with "Out". Both ring off (if magneto generator working).

Point to multiple points call using lines on a magneto switchboard

33. In this type of call a message is transmitted to not more than three points (stations) at the same time (see paragraph 35). The dictation of the message is as in paragraph 32 but the originating telephonist must appoint one station to repeat the message. The remaining stations listen and if they need a repetition ask for it at the end of the call when the originating telephonist asks each station in turn to "Come in". The procedure is as follows:

Originating Telephonist at Sub-Area A1: (when switchboard operator has set up call—see paragraphs 34-36.)	"Multiple call to Sectors 1 Kilo, 1 Lima, 1 Mike. Sector 1 Kilo to repeat". (Sends message in the form given in paragraph 32 and Sector 1K (nominated telephonist) repeats, asks for repetitions, etc. At end of transmission says "Over".)
Sector 1K Telephonist:	"Roger Out"

Sub-Area A1 Telephonist: "Come in Sector 1 Lima"
Sector 1L Telephonist: (Asks for a repetition using standard procedure words)
Sub-Area A1 Telephonist: (Gives repetition) "Over"
Sector 1L Telephonist: "Roger Out"
Sub-Area A1 Telephonist: "Come in Sector 1 Mike"
Sector 1M Telephonist: (Is satisfied with message) "Roger Out"
Sub-Area A1 Telephonist: "Sub-Area Alfa 1 Out".
(Sub-Area and Sector telephonists ring off)

Note: If outstation telephonists ring off individually before receiving "Out" from Sub-Area they will interfere with progress of call between the originating and any remaining stations.

MAGNETO SWITCHBOARD OPERATING PROCEDURE

Ordinary call

34. A call is signalled by the dropping of the indicator flap associated with the caller's circuit. The following procedure should then be carried out by the operator:

(*a*) Insert the operator's plug into the line jack under the indicator, which will be restored. Announce your identity by giving the name of your control.

(*b*) When the caller asks for the required connection, repeat the demand to satisfy the caller that it has been heard correctly.

(*c*) Transfer the operator's plug into the jack of the wanted line and put the plug associated with the wanted line half-way into the caller's jack. Call the wanted line by turning briskly the generator handle of the operator's telephone. On hearing a reply on the wanted line push home the plug on the caller's line and say—"You are through".

Note: If the plug is pushed home before the wanted line replies it will be necessary to withdraw it again if a second ring becomes necessary, otherwise the caller will be rung also.

(*d*) As soon as conversation starts, take the operator's plug out of the jack of the wanted line; no clearing signal can be received unless this is done.

(*e*) On receiving the clearing signal, (the falling of the indicator associated with the wanted line) insert the operator's plug into the line jack below the fallen indicator (thus restoring it) and say "Have you finished?". If nothing is heard, remove the plugs from the jacks of the lines concerned. If the call has been connected for some time but a clearing signal has not been received, monitor the connection by inserting the operator's plug in the appropriate free line jack and listen. If conversation is still in progress remove the plug; if nothing is heard say "Have you finished?" and if there is no reply, remove the plugs from the jacks of the lines concerned.

Conference or multiple address call

35. The switchboard may be used to set up conference calls (for conversations between a number of points) and multiple address calls (for passing formal messages to a number of points at the same time). The number of points so linked for a conference call will depend on the condition and length of the lines, but not more than three points should be linked for a multiple address call otherwise the message procedure becomes unwieldy.

36. To set up a conference or multiple call:

(*a*) Proceed as at 34(*a*) and (*b*) above.

(*b*) Transfer the operator's plug into the line jack of the first wanted line and ring. Insert the plug associated with this particular line half-way into the caller's line jack and, on hearing a reply, say "Conference (or Multiple) call for you, one moment please". If, however, a switchboard is at the end of the line and, for example, a conference call between controllers is required, ask the switchboard operator for "Conference call for Controller" and only when the extension answers, say, "Conference call for you, one moment please".

(*c*) Insert operator's plug into second wanted line jack. Insert plug of the cord associated with the second wanted line half-way into first wanted line jack. Ring second wanted line.

(*d*) Proceed in the same way for all other wanted lines.

(*e*) As soon as last wanted line answers push all plugs home and say "You are through".

(*f*) Monitor conversation to ensure satisfactory communication and then withdraw operator's plug.

Examples of switchboard operating procedure

37. The following examples are intended to illustrate the operating procedure necessary for setting up a point to point call using field telephones and switchboards.

(*a*) *Extension—extension call*, e.g. Controller Sector 1L to Ambulance Check Point.

Controller Sector 1L	Switchboard Operator Sector 1L	Ambulance Check Point
(Calls switchboard)		
	"Sector 1 Lima"	
"Ambulance Check Point"		
	"Ambulance Check Point" (Rings called extension)	"Ambulance Check Point"
	"You are through"	
"Sector Controller speaking"		
	(Conversation ensues and finishes)	
(Rings off)		(Rings off)
	"Have you finished?" (As no reply, disconnects)	

(*b*) *Extension-switchboard — switchboard — extension call*, e.g. Staff Officer, Sector 1K to Staff Officer (Ops.), Sub-Area A1.

Staff Officer Sector 1K	Swbd. Operator Sector 1K	Swbd. Operator Sub-Area A1	Staff Officer (Ops.) Sub-Area A1
(Calls switchboard)			
	"Sector 1 Kilo"		
"Sub-Area 1"	"Sub-Area Alfa 1" (Rings called line)		
		"Sub-Area Alfa 1"	
	*"Through to Sub-Area Alfa 1"		
"Staff Officer (Ops.)"			
		"Staff Officer (Ops.)" (Rings called extension)"	
			"Staff Officer (Ops.)"
		" You are through"	
"Staff Officer Sector 1 Kilo speaking . . ."			

Staff Officer Sector 1K	Swbd. Operator Sector 1K	Swbd. Operator Sub-Area A1	Staff Officer (Ops.) Sub-Area A1
	(Conversation ensues and finishes)		
(Rings off)			(Rings off)
	"Have you finished?" (As no reply, disconnects)	"Have you finished?" (As no reply, disconnects)	

* On a call necessitating more than one inter-switchboard connection, the expression "Through to . . . " will not be used until the terminal switchboard operator answers.

38. The following examples are intended to illustrate the operating procedure necessary for setting up calls for formal messages using field telephones and switchboards.

(*a*) *Passing of point to point formal messages*, e.g. Sector 1K to Sub-Area A1.

Sector 1K Telephonist	Swbd. Operator Sector 1K	Swbd. Operator Sub-Area A1	Sub-Area A1 Telephonist
(Calls switchboard)			
	"Sector 1 Kilo"		
"Sub-Area Alfa 1"			
	"Sub-Area Alfa 1" (Rings called line)		
		"Sub-Area Alfa 1"	
	"Through to Sub-Area Alfa 1"		
"Messages"			
		"Messages" (Rings disengaged telephonist)	
			"Messages"
		"You are through"	
"Message for you"			
			"Go ahead" (or "Wait" as appropriate—when ready "Go ahead")
	(Message passed)		
"Over"			
			"Roger Out"
(Rings off)			(Rings off)
	"Have you finished?" (As no reply, disconnects	"Have you finished?" (As no reply, disconnects)	

(*b*) *Passing of formal messages on a multiple address basis*, e.g. Sub-Area A2 to Sectors 2K, 2L and 2M.

Sub-Area A2		Sectors	
Telephonist	**Swbd. Operator**	**Swbd. Operators**	**Telephonist**
(Calls switchboard)			
	"Sub-Area Alfa 2"		
"Multiple call to Sectors 2 Kilo, 2 Lima and 2 Mike" (see Note)			
	(Repeats request. Rings Sector 2 K)		
		SECTOR 2K	
		"Sector 2 Kilo"	
	"Messages"		
		"Messages"	
		(Rings disengaged telephonist)	
			"Messages"
		"You are through"	
	"Multiple call for you, one moment please"		
	(Rings Sector 2L)		
		SECTOR 2L	
		"Sector 2 Lima"	
	"Messages"		
		"Messages"	
		(Rings disengaged telephonist)	
			"Messages"
		"You are through"	
	"Multiple call for you, one moment please"		
	(Rings Sector 2M)		
		SECTOR 2M	
		"Sector 2 Mike"	
	"Messages"		
		"Messages"	
		(Rings disengaged telephonist)	
			"Messages"
		"You are through"	
	"Multiple call for you"		
	(Pushes all plugs home)		
	"You are through"		

Sub-Area 2		Sectors	
Telephonist	**Swbd. Operator**	**Swbd. Operators**	**Telephonist**
		SECTORS 2K, 2L & 2M	
"Multiple call to Sectors 2 Kilo, 2 Lima and 2 Mike. Sector 2 Kilo to repeat"			
	(Message passed)		
	(and acknowledgements obtained as in paragraph 33)		
"Sub-Area Alfa 2 Out"			
(Rings off)			(Rings off)
	"Have you finished?" (As no reply, disconnects)	"Have you finished?" (As no reply, disconnects)	

Note: If one or more of the Sector lines are engaged the telephonist should be informed before the call is set up, so that, if necessary, the call can be set up to a different set of destinations or deferred until all the lines are free.

III. Wireless Communication

GENERAL

Introduction

39. Radio can be a most valuable means of communication, especially in emergency, but it has its limitations and it is important that these limitations should be appreciated.

Screening

40. Broadly speaking the frequencies likely to be used for civil defence provide satisfactory communication over "line of sight" paths. Paths, however short, which are obstructed or "screened" by intervening hills or tall buildings, especially when these latter are steel framed, may prove unsatisfactory; on the other hand communication may well prove possible in apparently unfavourable conditions because of reflection from neighbouring hills or even buildings.

These problems of screening and reflection are complex subjects but for civil defence purposes it is sufficient to know that they exist and can cause fluctuations in wireless communications which cannot be foretold. Moving a mobile station a few yards, or even only feet, or raising an aerial, may make all the difference between being in or out of touch. A fair guide is that a good receiving position is usually also a good transmitting position.

Aerial height

41. As will be gathered from the above it is always best to use an aerial which is as high as possible above the surrounding ground. Though mobile units are normally associated with an aerial mounted on the vehicle, they can, when stationary, be connected by a feeder cable to an entirely separate aerial, e.g. on a mast or on the roof of a building. The length of the feeder cable between the aerial and the transmitter must be kept as short as practicable because of the inevitable power losses involved and the co-axial feeder cable will be supplied in lengths of not more than 100-150 feet. It is of course ideal if the set itself can be placed reasonably close to an elevated aerial (e.g. on or near the top floor of a building with the aerial on the roof) but normally the best that can be done is to connect an aerial on the roof of a building to a mobile in the street.

Grouping of stations

42. Wireless can be used on a point to point basis, but the usual arrangement in civil defence will be for a number of stations to work together on the same frequency; this arrangement is known as a "net".

Method of working

43. In order to achieve maximum flexibility and simplicity, all civil defence radio systems will employ single frequency "simplex working". This means that the same frequency is used for sending and receiving and it involves the use of an operating procedure which is designed to ensure that on any net, only one station at a time transmits.

The important points to remember are:

(*a*) A station cannot break-in while another station is talking to it, but must wait until it receives the word "Over" before transmitting.

(*b*) Only one transmission at a time is possible on a net and it is therefore necessary to finish what has to be said as speedily as possible, thus freeing the channel for other users.

Station nomenclature

44. The station controlling all signalling on a net is known as the control station and is usually the station serving the highest level of control working on that net. All the other stations are known as *outstations*

Control of signalling

45. All civil defence wireless nets will be "directed", that is the control station is responsible for the general conduct of signalling and all the outstations must conform to its instructions. No outstation may transmit any message, other than a procedure message to the control station, without seeking the permission of the latter by means of a preliminary call. This permission should not be sought whilst communication between other stations is in progress on that net. The seniority of outstations in relation to control for signalling purposes, is determined by the alphabetical or numerical sequence of the final symbol of their call signs and the level of the headquarters they serve. The senior outstation will normally assume control of a net when the nominated control station is not functioning but may

place this responsibility on another outstation if the latter has better wireless communications with the net as a whole.

Need for procedure

46. The use of the word "Over" and the other procedure details set out in this instruction are designed solely to facilitate smooth and efficient operation of a net. They form a "procedure" based on long experience which should always be followed so far as it is applicable to any particular transmission until all operators are thoroughly efficient. Then, providing communications conditions are good, some abbreviations in procedure, as set out later, are permissible.

Definitions

47. The meanings of various prowords (procedure words) used in wireless procedure are set out in Appendix F.

Reports on Signals

48. Reports on signals must be kept short and to the point as in the following examples:

Easily readable will be reported as "Signals good".
Hardly readable „ „ „ „ "Signals poor".
Unreliable „ „ „ „ "Signals bad".

When applicable the report should include the word "Interference (from ———)" the source being specified, if known. Additional information may be added, if necessary, especially when communications are being checked by technicians, e.g.:

"Fluctuating"
"Intermittent"
"Distorted".

Reports on signals will be given automatically in reply to a preliminary call if signals are poor or bad. Apart from this, they will only be given on request, which will be made in the following form:

"Report my signals".

CALL SIGNS

Definition

49. A call sign is any combination of letters or of letters and figures which identifies a wireless station, or a number of wireless stations; it is used primarily when establishing and maintaining communications.

Individual call sign

50. This is a call sign applying to one wireless station on a net.

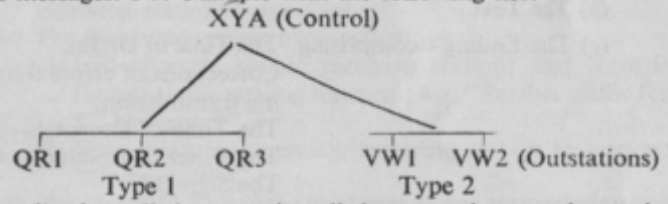
Type collective call sign

51. This call sign covers all the stations of any one type on a net, such as all Sub-Areas, all Operational Bases, etc. These call signs always end in Zero.

Net collective call sign

52. This call sign covers *all* the stations on a net irrespective of type. These call signs always end in Zulu.

53. Both "Type" and "Net" collective call signs are provided, as a net may comprise stations of more than one type and each type may need to be called separately for the purpose of passing multiple address messages. For example with the following net:



the net collective call sign covering all the outstations on the net is XYA Zulu, and the type collective call signs for the two individual types of stations are QR Zero and VW Zero. If it is desired to send a message to a number of stations on a net but not to all, the appropriate collective call sign may be used followed by the proword "exempt" and the call signs of the stations which are not concerned, e.g. "XYA Zulu *exempt* QR1 and VW2" or "QR Zero *exempt* QR3". The net collective call sign should always be used when all the outstations on a net are of the same type.

54. Appendices E. 1-3 show the fictitious call signs which have been adopted for the examples which follow and the call signs which have been adopted for civil defence training. The latter cover all levels of control and types of user at present envisaged in England and Wales and Scotland respectively.

55. When transmitting these call signs phonetic equivalents (see Appendix B) will not be used except for the final symbol when this is a letter, e.g.:

ACA = AC Alfa

Note: Collective call signs will be transmitted as:

AC Zero
ACA Zulu

OPERATING PROCEDURE

Form of message

56. Any transmission consists essentially of three parts, each comprising components as follows:

(*a*) The Heading—comprising The Call.
The Prefix—if any.
The Address—if not covered by the Call and Sign-Off.

(*b*) The Text.

(*c*) The Ending—comprising The Time of Origin.
Corrections of errors found during transmission.
The Time of Despatch—if used.
The Final Instructions—if any.
The Sign-Off.

The Heading

57. (*a*) The Call consists of the commencing sign "Hallo" followed by the call sign(s) of the station(s) called. This is usually sent twice unless a preliminary call has been made or unless the stations concerned are already in communication with each other.

(*b*) The Prefix may contain:

(i) Special instructions such as "Relay to .....".

(ii) The word "Message" to indicate that the transmission is to be recorded. Any special indicator (see paragraph 2A (iv)) is inserted before this word, e.g. "Exercise Message".

(*c*) The Address consists of the following, where not sufficiently indicated by the Call and the Sign-Off:
"From —— To —— Info", the blanks being filled in by the call signs of the stations concerned where available.

The Text

58. This follows the "INFO" address space and should be transmitted as written. Except in procedure messages (see paragraph 62) and when using abbreviated procedure (see paragraph 75), the text is preceded and followed by the words "Begins" and "Ends".

The Ending

59. (*a*) *The Time of Origin* consists of the words "Date-Time Group" followed by the figures as written.

(*b*) *Corrections.* If any errors have been noticed during transmission they may be corrected here (see paragraph 10).

(*c*) *The Time of Despatch*, when used, takes the form "Time now" followed by the 24-hour clock time. It is normally only signalled when a message bears no time of origin or when exceptional delay has occurred before transmission. It is recorded as the TOD and TOR at the originating and receiving stations respectively.

(*d*) *The Final Instructions* may include:—

(i) Indication to certain receiving stations that there is further traffic waiting for them; e.g. "Further traffic for ST November".

(ii) Instructions to a certain receiving station to answer: "Come in SB4".

(*e*) *The Sign-Off.* This is the final part of any transmission and indicates that the sending station is switching to "receive". It comprises the call sign of the sending station followed by the word "Over" (or "Out" if no response is called for). The Sign-Off may be omitted by the controlling station when using abbreviated procedure (see paragraph 75).

60. Example, showing all components of a message:

Heading	Call	Commencing sign	Hallo
		Call sign	QR Zero
	Prefix		QR1 relay to QR4
			Exercise Message
	Address		From XY Alfa
			To QR4
			Info QR1 QR2 QR3
Text	—		Begins .....
			..... Ends

Ending	Time of Origin	Date-Time Group 121212
	Correction	Correction word before Square—Golden.
	Time of Despatch	Time now 1321
	Final Instructions	Further traffic for QR2 Come in QR1
	Sign-Off	XY Alfa Over

Direct method of transmission

61. A preliminary call (see paragraph 63) is used when required. The message is sent once through only and usually an answer is obtained from the station or stations called. However, for multiple address messages not all the stations called need be controlled to answer if the communication conditions are known to be good.

Procedure messages

62. These are messages between operators and are concerned only with the conduct of signalling. Preliminary calls, reports on signals, corrections, repetitions, etc., are all "procedure messages". They may contain any of the components of a standard message except that the text is not separated by "Begins" and "Ends" and they do not bear a time of origin.

Preliminary call

63. This is a special transmission used:

(*a*) to check that communication is satisfactory before passing a message to a station which has not been in communication for some time;

(*b*) to indicate that the message awaiting transmission requires special treatment (e.g. precedence) or a special procedure (e.g. long messages);

or (*c*) by outstations on directed nets, to obtain permission to send a message.

64. It consists of the Call (sent twice), the phrase "Message for you (and/or for .....)" and the Sign-Off. For example, outstation WXA would call control YZ1 as follows:

"Hallo YZ1. Hallo YZ1. Message for you. WX Alfa over".

Where appropriate, one of the following special indicators is inserted before the word "Message".

Live: A live message sent during exercises in peace.
Exercise: An exercise message sent during exercises in war.
Long: When long message procedure is to be employed.
Priority: For appropriate messages if precedence markings are introduced for civil defence purposes.

65. When control is uncertain whether communication is satisfactory to one or more of the stations to which it wishes to pass a multiple address message, it sends a preliminary call to all stations, but only calls for an answer from the doubtful one(s). For example, if YZ1 is uncertain of communication to WXB he calls as follows:

"Hallo WX Alfa WX Bravo WX Charlie. Hallo WX Alfa WX Bravo WX Charlie. Message for you. Come in WX Bravo. YZ1 Over"

and WXB answers YZ1 as in paragraph 66 (*a*) or (*b*) below.

Answer to preliminary call

66. (*a*) This normally consist of the Call (sent once), the appropriate prowords (e.g. "Go ahead", "Wait" or "Through me") and the Sign-Off. Thus the answer to the preliminary call in paragraph 64 would, if control was ready, be:

YZ1: "Hallo WX Alfa. Go ahead. YZ1 Over"

or if control is not ready to accept the message immediately and wants the outstation to wait:

YZ1: "Hallo WX Alfa. Wait. YZ1 Out"

("Out" because YZ1 does not expect WXA to reply).

This answer is then followed by a further transmission when YZ1 is ready to accept the message as follows:

YZ1: "Hallo WX Alfa. Go ahead. YZ1 Over".

(*b*) If signals from the calling station were poor the control station's response would be in the form:

YZ1: "Hallo WX Alfa. Signals poor. YZ1 Over".

The outstation concerned would then check equipment, battery voltage, etc., and when satisfied call again. If signals were still poor control station might decide to proceed normally, to order difficult communications procedure to be used (see paragraph 77) or to instruct another outstation to act as a relay station (see paragraph 69).

(*c*) If a preliminary call was made to control (YZ1) from outstation (WXA) wishing to send a message direct to outstation (WXB)—assumed to be in contact—the control

station, in order to save time, would not give the normal answer to WXA but would instead pass a preliminary call to WXB.

WXA: "Hallo YZ1. Hallo YZ1. Message for WX Bravo. WX Alfa Over".

YZ1: "Hallo WX Bravo. WX Alfa calling. YZ1 Out".

WXB: "Hallo WX Alfa. Go ahead. WX Bravo Over".

(*d*) If control knew that WX Bravo could hear him but not WX Alfa, or was temporarily out of wireless communication, but could be reached from control by other means, it would answer the above preliminary call as follows:

YZ1: "Hallo WX Alfa. Through me. YZ1 Over"

and WXA would proceed:

"Hallo YZ1. Relay to WX Bravo. Message From WX Alfa to WX Bravo Begins . . . etc".

General clearance

67. In order to assist other stations to know when the net is free for traffic, it is desirable that the control station should indicate the completion of any period of signalling by giving what is known as the General Clearance which consists of the words "To stand by". When the last transmission in a series is made by the control station the General Clearance is included in the Ending as follows:

"Hallo QR1. Roger. XY Alfa To stand by. Out".

If the last transmission is made by some other station, the control station gives the General Clearance in a separate transmission as follows:

"Hallo XYA Zulu. XY Alfa To stand by. Out".

The General Clearance is never answered but the use of the Sign-Off "Out" implies this.

Normal message and answer

68. (*a*) *General*

(i) The transmission of messages follows the form indicated in paragraph 56 though all components need not appear in every transmission.

(ii) The normal answer consists of the Call (sent once), the proword "Roger" and the Sign-Off. The proword "Roger" is a receipt for the transmission and is not an acknowledgment of the substance of the message.

(iii) When more than one station is called in one transmission they do not answer until instructed to do so by

the proword "Come In". Not all stations included in the original call need however be instructed to answer should the control station so decide.

(*b*) *Examples of messages from control station*

(i) *Control to outstation in contact.*

XYA: "Hallo QR1. Hallo QR1. Message begins ..... Ends. Date-Time Group 251624. XY Alfa Over".

QR1: "Hallo XY Alfa. Roger. QR1 Out".

XYA: "Hallo XYA Zulu. XY Alfa To stand by. Out".

(ii) *Control to three outstations in contact—all outstations controlled to answer.*

XYA: "Hallo QR1 QR2 QR3. Hallo QR1 QR2 QR3. Message begins ..... Ends. Date-Time Group 241752. Come in QR1. XY Alfa Over".

QR1: "Hallo XY Alfa. Roger. QR1 Out".

XYA: "Come in QR2. XY Alfa Over".

QR2: "Hallo XY Alfa. Roger. QR2 Out".

XYA: "Come in QR3. XY Alfa Over".

QR3: "Hallo XY Alfa. Roger. QR3 Out".

XYA: "Hallo XYA Zulu. XY Alfa To stand by. Out".

(iii) *Control to all outstations of a type except one—using collective call sign and the proword "exempt"—only one outstation controlled to answer.*

YZ1: "Hallo WX Zero exempt WX Bravo. Hallo WX Zero exempt WX Bravo. Message begins .... Ends. Date-Time Group 231123. Come in WX Alfa. YZ1 Over".

WXA: "Hallo YZ1. Roger. WX Alfa Out".

YZ1: "Hallo YZ1 Zulu. YZ1 To stand by. Out".

(iv) *Control to two outstations one for action and one for information.*

XYA: "Hallo QR1 VW1. Hallo QR1 VW1. Message From XY Alfa. To QR1. Info VW1. Begins ..... Ends. Date-Time Group 121234. Come in QR1. XY Alfa Over".

QR1: "Hallo XY Alfa. Roger. QR1 Out".

XYA: "Come in VW1. XY Alfa Over".

VW1: "Hallo XY Alfa. Roger. VW1 Out".

XYA: "Hallo XYA Zulu. XY Alfa To stand by. Out".

(c) *Routing of messages from outstations*

(i) Permission to send a message must always be obtained from the control station.

(ii) Messages from outstations to only one other outstation on the same net which is known to be in touch may be sent direct, with permission of control.

(iii) All other messages from outstations, however addressed, must be sent to the control station with the necessary relaying instructions. The control station will normally call for receipts from other stations on the same net who were addressed so as to avoid the need for re-transmission if possible (see paragraph 69).

(d) *Examples of messages from outstations*

(i) *Outstation to control*

WXA: "Hallo YZ1. Hallo YZ1. Message for you. WX Alfa Over".
YZ1: "Hallo WX Alfa. Go ahead. YZ1 Over".
WXA: "Hallo YZ1. Message begins ..... Ends. Date-Time Group 171624. WX Alfa Over".
YZ1: "Hallo WX Alfa. Roger. YZ1 To stand by. Out".

(ii) *Outstation to outstation*

QR2: "Hallo XY Alfa. Hallo XY Alfa. Message for QR4. QR2 Over".
XYA: "Hallo QR4. QR2 calling. XY Alfa Out".
QR4: "Hallo QR2. Go ahead. QR4 Over".
QR2: "Hallo QR4. Message begins ..... Ends. Date-Time Group 311326. QR2 Over".
QR4: "Hallo QR2. Roger. QR4 Out".
XYA: "Hallo XYA Zulu. XY Alfa To stand by. Out".

Relay procedure

69. A station accepting a message containing the instruction "Relay to" is responsible for clearing that message to the stations indicated by any means available, or for informing the sending station that the relay cannot be accepted.

(a) *Outstation to more than one other station on the same net*

WXB: "Hallo YZ1. Hallo YZ1. Message for you. WX Alfa and WX Echo. WX Bravo Over".

YZ1: "Hallo WX Bravo. Go ahead. YZ1 Over".
WXB: "Hallo YZ1. Relay to WX Alfa and WX Echo. Message From WX Bravo. To YZ1 WX Alfa. Info WX Echo. Begins.....Ends. Date-Time Group 291956. WX Bravo Over".
YZ1: "Hallo WX Bravo. Roger. Come in WX Alfa. YZ1 Over".
WXA: "Hallo YZ1. Roger. WX Alfa Out".
YZ1: "Come in WX Echo. YZ1 Over".
WXE: "Hallo YZ1. Roger. WX Echo Out".
YZ1: "Hallo YZ1 Zulu. YZ1 To stand by. Out".
Note: If WXA or WXE required repetition these would be cleared with YZ1 before "Roger" was given.

(b) *Outstation via control to a station BA5 on the same net but out of touch, or on another wireless net or by means other than wireless.*

WXB: "Hallo YZ1. Hallo YZ1. Message for BA5. WX Bravo Over".
YZ1: "Hallo WX Bravo. Through me. YZ1 Over".
WXB: "Hallo YZ1. Relay to BA5. Message From WX Bravo. To BA4. Info BA5. Begins.....Ends. Date-Time Group 291436. WX Bravo Over".
Then if BA5 is on the same net:
YZ1: "Hallo WX Bravo. Roger. YZ1 Out".
or if BA5 is on a different net:
YZ1: "Hallo WX Bravo. Roger. YZ1 To stand by. Out".
If passed on the same, or another wireless net, (assuming YZ1 is still the control station) the procedure would be:
YZ1: "Hallo BA5. Hallo BA5. Message From WX Bravo. To BA4. Info BA5. Begins.....Ends. Date-Time Group 291436. Time now 1451. YZ1 Over".
BA5: "Hallo YZ1. Roger. BA5 Out".
YZ1: "Hallo YZ1 Zulu. YZ1 To stand by. Out".

(c) *Control to two or more outstations at least one of which is out of direct touch.*

XYA: "Hallo QR1 QR3 QR5. Hallo QR1 QR3 QR5. QR5 relay to VW2. Message From XY Alfa. To VW2. Info QR1 QR3. Begins.....Ends. Date-Time Group 151515. Come in QR1. XY Alfa Over".
QR1: "Hallo XY Alfa. Roger. QR1 Out".
XYA: "Come in QR3. XY Alfa Over".
QR3: "Hallo XY Alfa. Roger. QR3 Out".

XYA: "Come in QR5. XY Alfa Over".
QR5: "Hallo XY Alfa. Roger. QR5 Out".
Control is satisfied that all the outstations in direct touch have received the message and he therefore gives QR5 permission to pass the message to VW2.)
XYA: "Hallo QR5. Go ahead with VW2. XY Alfa Out".
QR5: "Hallo VW2. Hallo VW2. Message From XY Alfa. To VW2. Info QR1 QR3. Begins ..... Ends. Date-Time Group 151515. QR5 Over".
VW2: "Hallo QR5. Roger. VW2 Out".
(Control may not hear VW2 giving the Sign-Off so QR5 must inform control that the message has been passed.)
QR5: "Hallo XY Alfa. Message passed. QR5 Out".
XYA: "Hallo XYA Zulu. XY Alfa To stand by. Out".

Long message procedure

70. Messages, the texts of which are more than about fifteen words must be transmitted in portions of not more than about one minute's duration in order:

(*a*) to avoid undue delay to other more urgent traffic which may be waiting, and

(*b*) to check that receiving conditions remain satisfactory and so avoid lengthy repetitions.

Portions should, whenever possible, consist of complete phrases. These messages will always be preceded by a special preliminary call indicating that the message to follow is a "long" one and the following points of procedure should be observed:

(i) A pause of five seconds between portions is imposed by the control station if it is sending or receiving a message, or if the message is between outstations, by the outstation sending the message. If no more urgent call is originated by any station on the same net during this period the transmission is resumed (see paragraph 71 (*d*)).

(ii) "Portion received" not "Roger" is used as a receipt for a portion of a message.

(iii) Any repetitions required are cleared after each portion before "portion received" is given.

(iv) The second and subsequent portions commence with the

last word of the preceding portion in order to maintain continuity.

(v) Not all stations called need be controlled to answer if communication conditions are known to be good.

71. The following examples show long message procedure between various types of station:

(*a*) *Outstation to control*

WXA: "Hallo YZ1. Hallo YZ1. Long message for you. WX Alfa Over".
YZ1: "Hallo WX Alfa. Go ahead. YZ1 Over".
WXA: "Hallo YZ1. Long message begins. Post .... fire. End of portion. WX Alfa Over".
YZ1: "Hallo WX Alfa. Portion received. Wait. YZ1 Out".
— Wait 5 seconds —
YZ1: "Hallo WX Alfa. Go ahead. YZ1 Over".
WXA: "Hallo YZ1 Fire. Request ..... point. Ends. Date-Time Group 221745. WX Alfa Over".
YZ1: "Hallo WX Alfa. Roger. YZ1 To stand by. Out".

(*b*) *Control to more than one outstation*

XYA: "Hallo QR1 QR2. Hallo QR1 QR2. Long message for you. Come in QR1. XY Alfa Over".
QR1: "Hallo XY Alfa. Go ahead. QR1 Over".
XYA: "Come in QR2. XY Alfa Over".
QR2: "Hallo XY Alfa. Go ahead. QR2 Over".
XYA: "Hallo QR1 QR2. Long message begins. Transport ..... hours. End of portion. Come in QR1. XY Alfa Over".
QR1: "Hallo XY Alfa. Portion received. QR1 Over".
XYA: "Come in QR2. XY Alfa Over".
QR2: "Hallo XY Alfa. Portion received. QR2 Over".
XYA: "Hallo QR1 QR2. Wait. XY Alfa Out".
— Wait 5 seconds —
XYA: "Hallo QR1 QR2. Hours ..... Sherwood. Ends. Date-Time Group 241123. Come in QR1. XY Alfa Over".
QR1: "Hallo XY Alfa. Roger. QR1 Out".
XYA: "Come in QR2. XY Alfa Over".
QR2: "Hallo XY Alfa. Roger. QR2 Out".
XYA: "Hallo XYA Zulu. XYA To stand by. Out".

(*c*) *Outstation to outstation*

QR1: "Hallo XY Alfa. Hallo XY Alfa. Long message for QR2. QR1 Over".
XYA: "Hallo QR2. QR1 calling with long message. XY Alfa Out".
QR2: "Hallo QR1. Go ahead. QR2 Over".
QR1: "Hallo QR2. Long message begins. Help .... hours. End of portion. QR1 Over".
QR2: "Hallo QR1. Portion received. QR2 Over".
QR1: "Hallo QR2. Wait. QR1 Out".
— Wait 5 seconds —
QR1: "Hallo QR2. Hours ..... possible. Ends. Date-Time Group 141216. QR1 Over".
QR2: "Hallo QR1. Roger. QR2 Out".
XYA: "Hallo XYA Zulu. WYA To stand by. Out".

(*d*) *Interruption for more urgent message*

If we assume that the message in (*c*) above was sent during an exercise and control had an urgent "Live" message to send, the procedure after QR1 had imposed the pause would be:
XYA: "Hallo QR2. Hallo QR2. Live message for you. XY Alfa Over".
QR2: "Hallo XY Alfa. Go Ahead. QR2 Over".
XYA: "Hallo QR2. Live message begins ..... Ends. Date-Time Group 141219. XY Alfa Over".
QR2: "Hallo XY Alfa. Roger. QR2 Out".
XYA: "Hallo QR1. Go ahead with your long message. XY Alfa Out".
The message is then completed as in (*c*) above.

SPECIAL PROCEDURES

Test call and answer

72. Test calls should only be given:

(*a*) *On first opening a net, when the control station will proceed as follows:*

XYA: "Hallo XYA Zulu. Hallo XYA Zulu. Report my signals. Come in QR1. XY Alfa Over".
QR1: "Hallo XY Alfa. Signals (Good, etc.). QR1 Over".
XYA: "Come in QR2. XY Alfa Over".

QR2: "Hallo XY Alfa. Signals (Good, etc.). QR2 Over", etc.

Finally, the controlling station will acknowledge receipt of all replies as follows:
XYA: "Hallo XYA Zulu. Roger. XY Alfa To stand by. Out".

Note: If any outstation does not reply, control waits for 5 seconds and then passes on, repeating call to missing outstation before giving General Clearance. Control may ask a selected outstation to call an outstation which has not replied and report the result to him.

Any outstation which did not hear the reply of another outstation should inform the control station as follows:
QR1: "Hallo XY Alfa. Hallo XY Alfa. Cannot hear QR2. QR1 Over".
XYA: "Hallo QR1. Roger. XY Alfa To stand by. Out".

(*b*) *By an individual station when joining a net or on taking up a new location*

OR

(*c*) *If communication conditions are suspected to have deteriorated for any reason, such as a marked drop in received signal strength.*

An example of (*b*) or (*c*) is as follows:
QR2: "Hallo XY Alfa. Hallo XY Alfa. Report my signals. QR2 Over".
XYA: "Hallo QR2. Signals (Poor). XY Alfa Over".
QR2: "Hallo XY Alfa. Roger. QR2 Out".
XYA: "Hallo XYA Zulu. XY Alfa To stand by. Out".

Note: When the signals are poor or bad the outstation concerned would check equipment, battery voltage, etc., and when satisfied call again (see paragraph 66 (*b*)).

Closing down

73. (*a*) Any outstation wishing to close down must first seek permission from its control station:

WXA: "Hallo YZ1. Hallo YZ1. Request permission to close down (for ..... minutes, or until .....). WX Alfa Over".

(i) *If approval can be given immediately:*

YZ1: "Hallo WX Alfa. Approved. YZ1 To stand by. Out".

(ii) *If approval cannot be given immediately:*

YZ1: "Hallo WX Alfa. Roger. YZ1 To stand by. Out". Then later:

YZ1: "Hallo WX Alfa. Hallo WX Alfa. Close down (for ..... minutes, or until .....) approved. YZ1 Over".

WXA: "Hallo YZ1. Roger. WX Alfa Out".

YZ1: "Hallo YZ1 Zulu. YZ1 To stand by. Out".

(*b*) A control station may instruct one outstation or the whole net to close, e.g. in the case of the whole net:

YZ1: "Hallo YZ1 Zulu. Hallo YZ1 Zulu. Close down (until ..... or for ..... minutes). Come in WX Alfa. YZ1 Over".

WXA: "Hallo YZ1. Roger. WX Alfa Out", etc

(i) If the control station is itself remaining on watch it will send the General Clearance as soon as all answers have been received:

"Hallo YZ1 Zulu. YZ1 To stand by. Out".

(ii) If the control station itself is closing, it will indicate the fact as follows as soon as all answers have been received:

"Hallo YZ1 Zulu. Closing down now (until .....). YZ1 Out".

Notes: (*a*) When stations are instructed to close they should not actually cease watch until they have received the control station's intentions as at (*a*) or (*b*) (i) or (ii) above.

(*b*) A station must never close down without giving a time of resumption except when leaving the net for good.

Imposing and lifting silence

74. Silence may only be imposed and lifted by the control station. The procedure is as follows:

(*a*) *Imposing silence.*

YZ1: "Hallo YZ1 Zulu. Hallo YZ1 Zulu. Silence until (further orders/specified time). Silence until (further orders/specified time). YZ1 Out".

(*b*) *Lifting silence.*

YZ1: "Hallo YZ1 Zulu. Hallo YZ1 Zulu. Silence lifted. Silence lifted. YZ1 To stand by. Out".

When silent, stations continue to keep a listening watch and do not close down.

Abbreviated procedure

75. As operators become more proficient, an appreciable amount of abbreviation in procedure is permissible, provided conditions are favourable—and that no confusion or ambiguity will arise as a result.

(*a*) *Call signs* can be shortened to the final symbol only—

"Hallo WX Alfa. Go ahead. YZ1 Over".

could become—

"Hallo Alfa. Go ahead. 1 Over".

(*b*) *The Call* can be omitted altogether—

"Go ahead. 1 Over".

"Roger. 4 Out".

(*c*) *The Text.* The words "Begins" and "Ends" can be omitted —"Hallo WX Alfa. Message return to base. Date-Time Group 121846. YZ1 Over".

(*d*) *The Ending.* The Sign-Off can be omitted by the controlling station when passing operating instructions, such as "Go ahead". Where it is necessary to indicate the station addressed, as when obtaining answers after a collective call, the abbreviated call sign of the station concerned is inserted after the instruction: "Come in Alfa".

(*e*) *General.* The use of abbreviated procedure achieves considerable saving in time when clearing a message addressed to a number of stations:

XYA: "Hallo QR Zero. Message. No further help can be expected until reinforcements arrive. Date-Time Group 161131. Come in 1. XY Alfa Over".

QR1: "Roger. 1 Out".

XYA: "Come in 2".

QR2: "Say again. Word after 'expected'. 2 Over".

XYA: "I say again. Word after 'expected' 'until'. Over".

QR2: "Roger. 2 Out".

XYA: "Come in 3".

QR3: "Roger. 3 Out".

XYA: "XY Alfa. To stand by. Out".

Officer-to-officer calls

76. It is essential that personal calls between officers should be "set up" by the operators concerned, who should remain in a position to break in if necessary, and the following procedure will be used:

The Controller at YZ1 wishes to talk to the Controller at WX Bravo.

Notes:

(i) A signalling buzzer circuit is provided between Controllers and their operators.

(ii) A control panel is provided for each wireless set and has a three-position switch giving the following facilities:

Remote (R)—Controller can speak or receive and operate the Transmit/Receive switching by means of the pressel switch on his handset; operator able to monitor both sides of the conversation.

Int. Com. (I)—Inter - communication possible between Controller and his operator; the latter is still able to receive incoming signals in one earpiece of his headset.

Local (L)—Normal conditions. Operator controlling set, Controller out of circuit.

(iii) When two wireless sets are provided a control switch fitted between the operators' positions determines which set is associated with the extended control facilities.

(iv) For brevity in the following example the Controllers will be referred to as "Con 1" and "Con B" and their operators as "Op 1" and "Op B" respectively, and the switch position as shown in brackets in (ii).

(1) **Con 1** buzzes Op 1 (once for the forward link operator and twice for the rear link operator when two sets are fitted). If free, **Op 1** switches to I (and switches the control panel switch to his position if two sets are fitted see (iii)) and says "Operator"—then as at (6) etc.
(2) If busy, **Op 1** indicates this fact by buzzing twice, which also means that he will call when free.
(3) When free, **Op 1** buzzes Con 1 and switches to **I.**
(4) **Con 1** "Controller".
(5) **Op 1** "Free now".
(6) **Con 1** "Get me Controller Bravo"
(7) **Op 1** "Roger", switches to **L.**
(8) **Op 1** "Hallo WX Bravo. Hallo WX Bravo. Call for Controller. YZ1 Over".

(9) **Op B** "Roger. Bravo Out".
(10) **Op B** buzzes Con B and switches to I.
(11) **Con B** "Controller".
(12) **Op B** "Controller One wants you. Wait"; switches to L.
(13) **Op B** "Hallo YZ1. Controller Bravo waiting. WX Bravo Over".
(14) **Op 1** "Roger. Wait".
(15) **Op B** switches to R.
(16) **Op 1** buzzes Controller and switches to I.
(17) **Con 1** "Controller".
(18) **Op 1** "Controller Bravo waiting. Go ahead"; switches to R.
(19) **Con 1** "Hallo Bravo. General fire situation is worse are you seriously affected. Over".
(20) **Con B** "Hallo One. Fires held in this sector. No need to move yet. Over".
(21) **Con 1** "Roger. Out".
(22) **Op 1**, **Op B** } Switch to L.
(23) **Op 1** "Hallo YZ1 Zulu. YZ1 To stand by. Out".

Difficult communications procedure

77. When communication conditions are difficult all parts of a call or message are sent twice, the text being dealt with in words or phrases as convenient.

The fact that this procedure is to be used or is being used is indicated by the insertion of "Words Twice" after the call—

QR1 sends a preliminary call:

QR1: "Hallo XY Alfa. Hallo XY Alfa. Message for you. QR1 Over".

XY Alfa considers conditions difficult and answers:

XYA: "Hallo QR1. Hallo QR1. Words twice. Words twice. Go ahead. Go ahead. XY Alfa. XY Alfa. Over".

QR1: "Hallo XY Alfa. Hallo XY Alfa. Words twice. Words twice. Message begins. Message begins. Reinforcements have arrived. Reinforcements have arrived. Bough Lane. Bough Lane. Ends. Ends. Date-Time Group 261845. Date-Time Group 261845. QR1. QR1. Over".

XYA: "Hallo QR1. Hallo QR1. Roger. Roger. XY Alfa To stand by. XY Alfa To stand by. Out".

If a repetition was required the same procedure would be used:

XYA: "Hallo QR1. Hallo QR1. Say again. Say again. Word after arrived. Word after arrived. XY Alfa. XY Alfa. Over".

QR1: "Hallo XY Alfa. Hallo XY Alfa. I say again. I say again. Word after arrived. Word after arrived. Bough. Bough. QR1. QR1. Over".

If after this reception difficulty still exists:

XYA: "Hallo QR1. Hallo QR1. Spell. Spell. Word after arrived. Word after arrived. XY Alfa. XY Alfa. Over".

QR1: "Hallo XY Alfa. Hallo XY Alfa. I spell. I spell. Word after arrived. Word after arrived. Bravo Oscar Uniform Golf Hotel—Bough. Bravo Oscar Uniform Golf Hotel—Bough. QR1. QR1. Over".

XYA: "Hallo QR1. Hallo QR1. Roger. Roger. XY Alfa To stand by. XY Alfa To stand by. Out".

This procedure can also be requested or imposed by an outstation.

Time signals

78. It is sometimes required, particularly in exercises, to transmit time signals so that all stations on a net can synchronise clocks.

These are broadcast as follows:

YZ1: "Hallo YZ1 Zulu. Hallo YZ1 Zulu. Time signal 1615 hours. Time signal 1615 hours. Stand by .... check. YZ1 To stand by. Out".

Note: The transmission of the word "check" coincides with the time specified. Times should be given on the minute, the interval between stand by and check should be kept short, about five seconds.

RECORD MAINTAINED BY WIRELESS OPERATORS

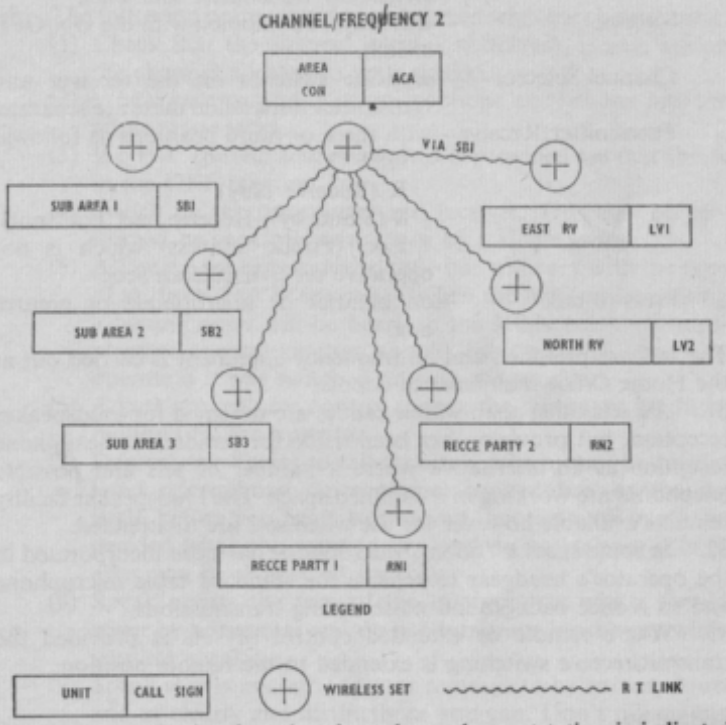
Wireless plan

79. This shows the stations operating on the net and is kept by the wireless operator for that net at each wireless station on it. It is amended as stations join or leave the net (except for periods of short duration) and is kept up to date from the information available

from messages passing on the net. The plan should show the channel or frequency being used and the names and call signs of all stations on the net. The Signalmaster or signal clerk should be kept informed of changes so that the Wireless and Line Diagram in the Signal office can be amended accordingly. An example of a plan follows:

DATE: 20 JUNE 1956

AREA CONTROL NET



Note: Communication by relay through another outstation is indicated by inserting the word "via" and the call sign of the relaying station in the link connecting the control station to the outstation out of touch with it. Lateral wireless links between outstations are never inserted and if at an outstation there is no direct communication with another outstation on the same net the relaying station should be indicated by inserting the word "via" and the call sign of the relaying station in the link between control and the outstation which is out of touch.

NOTES FOR OPERATORS

General

80. All wireless equipment supplied for civil defence purposes is designed to have the minimum number of controls available to the operator; these controls are as follows:

ON/OFF	—for power supply to both receiver and transmitter or there may be a separate switch for transmitter filaments.
Volume	—this may be combined with the ON/OFF switch.
Channel Selector	—separate switches on the receiver and transmitter units when these are separate.
Transmitter/Receive	—with three or more positions as follows: OFF R (Receive only) S (Stand by—Receive and Transmit) P.A. (Public address) which is not operative on civil defence sets.
Press-to-talk	—on handset or microphone or control box.

The sets are pretuned and all frequency alignment is carried out at the Home Office maintenance depots.

81. All sets other than walkie talkies are designed for loudspeaker reception, but provision has been made for handset or headphone reception as an alternative where a number of sets and possibly telephones are working in a confined space. The loudspeaker facility remains available however for use when sets are unattended.

82. In some cases a "boom" microphone has been incorporated in the operator's headgear to replace the standard table microphone and so reduce background noise during transmissions.

83. Where remote or extended control of sets is provided the transmit/receive switching is extended to the remote position.

Setting up

84. Detailed instructions are available separately for each type of set in use, but the following points should be observed (where applicable):

(*a*) *Mains driven sets.* Check that the voltage setting plugs are in the correct position for the mains supply available. Plug the appropriate end of the mains lead into the mains plug

at the back of the set and the other end into the mains outlet socket.

(*b*) *Battery sets.* Check the connections to the battery.

(*c*) *Aerials.* Check that the aerial is in position, and that the aerial lead is plugged into the aerial socket on the set.

Operating points

85. The following points should be observed whenever a set is used:

(1) Check that the channel selector switch(es), if any, are on the channel allotted to your station.

(2) Where necessary plug the microphone and headset into the appropriate jacks.

(3) If a P.A. (public address) switch is provided see that this is in the OFF position.

(4) Switch on the transmitter and receiver. This may be performed by separate switches or by a single switch.

(5) Allow the set time to warm up—this will vary with the type of set from 5 to 30 seconds—(when the receiver is working a hissing noise will be heard in the loudspeaker or headphones: the transmitter should then also be ready to operate if it was switched on with the receiver).

(6) Adjust any volume control to give the minimum loudness required by the operator.

(7) Depress the "press-to-talk" switch, which may be on the hand microphone, microphone, control box or the set itself, before you begin to transmit, but not until you have decided what you want to say, and do not release it until after you have finished speaking.

(8) Speak across the face of the microphone, which should never be horizontal and do not turn your head away while you are speaking.

(9) Speak slowly enough for your message to be written down and as clearly and distinctly as you can. Don't release the "press-to-talk" switch before you have finished speaking.

(10) Do not forget that all vehicle sets (and walkie talkies) are battery driven and that batteries inevitably run down. Conserve battery life as much as possible by ensuring that sets are switched "off" when not actually required for use, and by keeping the length of transmitting periods as short as possible. Power consumption when transmitting is about double that when receiving.

APPENDIX A

Message Form F. Sigs. 52 (large)

F. Sigs. 52 (large) (pads of 100)

MESSAGE FORM

NUMBER

FOR COMM CEN/SIGNALS USE _____

PRECEDENCE—ACTION	PRECEDENCE — INFO DEFERRED	DATE — TIME GROUP	MESSAGE INSTRUCTIONS

FROM — PREFIX GR

TO — SECURITY CLASSIFICATION

INFO — ORIGINATOR'S NUMBER

Page ..... of ..... pages | REFERS TO MESSAGE DATED ☐ YES ☐ NO | DRAFTER'S NAME | OFFICE | TEL No.

FOR OPR'S USE	R	DATE	TIME	SYSTEM	OPERATOR	D	DATE	TIME	SYSTEM	OPERATOR	RELEASING OFFICER'S SIGNATURE / RANK

APPENDIX B

NATO Phonetic Alphabet

Letter	Phonetic Equivalent	Pronunciation
A	ALFA	*AL* FAH
B	BRAVO	*BRAH VOH*
C	CHARLIE	*CHAR* LEE
D	DELTA	*DELL* TAH
E	ECHO	*ECK* OH
F	FOXTROT	*FOKS* TROT
G	GOLF	GOLF
H	HOTEL	HOH *TELL*
I	INDIA	*IN DEE AH*
J	JULIETT	*JEW* LEE *ETT*
K	KILO	*KEY* LOH
L	LIMA	*LEE* MAH
M	MIKE	MIKE
N	NOVEMBER	NO *VEM* BER
O	OSCAR	*OSS* CAH
P	PAPA	PAH *PAH*
Q	QUEBEC	KEH *BECK*
R	ROMEO	*ROH* ME OH
S	SIERRA	SEE *AIR*RAH
T	TANGO	*TANG* GO
U	UNIFORM	*YOU* NEE FORM
V	VICTOR	*VIK* TAH
W	WHISKEY	*WISS* KEY
X	X-RAY	*ECKS* RAY
Y	YANKEE	*YANG* KEY
Z	ZULU	*ZOO* LOO

Notes:

1. "Roger", meaning "I have received your last transmission satisfactorily", is a "proword" (a procedural word in telephony) and will be retained until further notice. "Romeo" is not to be used to replace "Roger" as a proword.
2. The General Post Office will continue to use their own phonetic alphabet, as the NATO alphabet, which is intended for use by trained personnel, is not considered suitable for use by the general public.

Numerals

Number	Pronunciation
0 (written as θ)	ZERO
1 (written as 1)	WUN
2	TOO
3	THUH-REE
4	FO-WER
5	FI-YIV
6	SIX
7	SEVEN
8	ATE
9	NINER

APPENDIX C

List of Abbreviations for Use in Civil Defence

(Correct to 1-1-62)

In full	*Abbreviation*
Accommodation	accn
Acknowledge, acknowledged or acknowledgement	ack
Administration or administrative	adm
Ambulance	amb
Ambulance check point	ACP
Ambulance loading point	ALP
As soon as possible	ASP
Assistant(ce)	asst(ce)
Battalion	bn
Battery	bty
Biological Warfare	BW
Bridge, bridging	br
Brigade	bde
Building(s)	bdg(s)
Casualty(ies)	cas
Chemical Warfare	CW
Chief Sector Warning Officer	CSWO
Civil Defence	CD
Column	colm
Command, commanded or commander	comd
Communication(s)	comm(s)
Company	coy
Company Equipment Vehicle	CEV
Control or controller	con
Cross Roads	X rds
Date-Time group	DTG
Despatch rider	DR
Dose-rate at 7 hours (etc)	DR7 (etc)
Electricity	elec
Equipment	eqpt
Estimate(d) ...	est
Estimated time of arrival	ETA
Estimated time of completion	ETC
Estimated time of departure	ETD
Evacuate, evacuated or evacuation	evac
Fall-out (arrival) (complete)	FO(A) (C)
(limit) (maximum)	(L) (M)

In full	*Abbreviation*
Field Cable Party	FCP
First Aid Party or Post	FAP
Forward or forwarded	fwd
Forward Medical Aid Unit	FMAU
Grid reference	GR
Ground Zero	GZ
Group	gp
Headquarters	HQ
High Explosive	HE
Homeless	hmls
Hospital	hosp
Hospital Area Officer	HAO
Hour(s)	hr(s)
Include(s), included, including or inclusive	incl(s)
Inform, informed, information or for information of	info
Injured (but see seriously injured)	inj
Intelligence Officer	IO
Junction	junc
Kiloton	KT
Leader	ldr
Liaison Officer	LO
Local Authority	LA
Location, locate, locality, located or locating	loc
Medical	med
Medical Officer	MO
Medical Officer of Health	MOH
Megation	MT (normally with a preceding number)
Message or messenger	msg
Meteorological or meteorology	met
Mobile or mobilisation	mob
Movement	mov
Officer	Offr
Operate, operated, operation, operational or operator	op
Operational Base	OB
Operational Reporting Code	OPREP
Party	pty

In full	*Abbreviation*
Patrol Post	PP
Personnel Carrying Vehicle	PCV
Personnel and Equipment Vehicle	PEV
Platoon	pl
Point	pt
Post Warden	PW
Principal Medical Officer	PMO
Radioactivity, radioactive	rad A
Radio telephony	RT
Railway	rly
Reconnaissance or reconnoitre	recce
Region	reg
Regional Commissioner	RC
Regional Fire Commander	RFC
Regional Police Commander	RPC
Regional Scientific Adviser	RSA
Reinforcement	rft
Rendezvous	RV
Required	reqd
Rescue	rsc
Restricted	RESTD
Roentgens per hour	rph
Royal Observer Corps	ROC
Scientific Intelligence Officer	SIO
Second, section or sector	sec
Sector Operations Centre	SOC
Sector Post	SP
Senior Administrative Medical Officer	SAMO
Seriously injured	SI
Signal(s)	sig(s)
Situation	sit
Situation report	SITREP
Staff Officer	SO
Station	sta
Stretcher bearer	SB
Telephone	tele
Temporary	temp
Time of Despatch	TOD
Time of Receipt	TOR
Towards	twds

In full	*Abbreviation*
Transport	tpt
Unclassified	UNCLAS
Unexploded missile(s)	UXM(s)
Vehicle	veh
Warden	wdn
Warden Post	WP
With effect from	wef

Notes: The above list is designed:

(*a*) so that the sound of the abbreviation resembles the original where possible;

(*b*) so that C.D. abbreviations do not clash with those in use by the Armed Forces.

In addition to the above, the wireless call signs are based on two letter abbreviations as follows:

Scottish Central Control	CC	Area Control	AC	Local Rendezvous	LV
Zone (Scotland)	SN	Group Control	GP	Recce Party	RN
Region	RG	Sub-Area	SB	Recce Aircraft	RA
Sub-Region	SR	Sector	ST	Ground Station (for aircraft)	GS
		Operational Base	BA		

APPENDIX D

Field Telephone Equipment

I—DESCRIPTION

Switchboard, Magneto, 10 Line

1. This is a compact telephone switchboard which will accommodate up to ten field telephone circuits. No operator's circuit is provided and a separate Telephone Set J (or L) must be used to provide speaking and ringing facilities for the operator. The method of calling between the switchboard and the telephones connected to it is by magneto ringing (i.e. by turning the handle of the generator of the operator's telephone). When the switchboard is called from a telephone connected to it, a flap indicator associated with the particular telephone circuit in use drops, but is restored when the operator answers by plugging into the line jack beneath the indicator. At the end of a call the user of each telephone concerned should turn his generator handle, this will cause the appropriate flap indicator on the switchboard to drop as an indication that the call has terminated.

2. A buzzer and external battery may be connected in series with the ALARM terminals to give an audible calling signal. Lightning protectors are connected to the line circuits within the switchboard.

3. The switchboard is housed in a mild steel case, having two hinged lids which give access to the front and back panels. The front panel carries the drop indicators, line jacks, operator's jack and single plug-ended cords; the back panel carries ten pairs of line terminals, two alarm terminals, an earth terminal and a cord for connecting to the operator's telephone set.

4. A five-foot length of copper braid attached to the back of the case is provided for earthing the switchboard. When in use one end of the braid should be connected to the EARTH terminal and the other end connected to the earth pin which should be inserted into moistened ground. The switchboard must be earthed in order to render the lightning protectors effective.

5. A guard strip is attached to the front panel and this must be slid over the indicator shutters to prevent them being damaged when the switchboard is not in use.

Telephone Set, J

6. This is a portable field telephone built into a watertight metal case and having a hinged lid and carrying strap.

7. Operating current is provided either by two Cells, Dry, X or two Cells, Inert, S, which are housed in the battery box and a magneto generator is used for calling the switchboard or telephone to which the instrument is connected.

8. A bell gong is not provided, the bell hammer being arranged to strike two projections on the case. A press-to-speak ("pressel") switch is fitted in the handset and should be depressed when speaking. Two small terminals are provided for connecting an additional receiver but are not used for this purpose in civil defence. The KEY which is for calling on special types of exchanges and for cutting off the bell will be used only in the down position.

Telephone Set, L

9. This is similar to the Telephone Set, J, The main differences between the two instruments are that the Telephone Set, L, is heavier, has a bell gong fitted, has its handset attached to a plug and is not watertight.

II—SIMPLE MAINTENANCE AND TESTING

Telephone Sets, J and L

Simple Maintenance

10. Keep the set clean and dry. It is essential that the battery compartment be kept thoroughly clean and all traces of corrosion should be removed from the batteries. Examine the handset cord for signs of wear. See that the line terminals are tight.

Testing

Test and Method	Correct Result	Probable Fault and Remedy (see Note 1)
(*a*) *Receiver* Press and release pressel switch.	Clicks heard in receiver.	If no clicks: (*a*) Battery wrongly connected. (Connect as shown on lid of battery compartment). (*b*) Battery exhausted (replace). (*c*) Inert cells (where used) not activated (see Note 2). (*d*) If changing battery or activating inert cells does not correct—report or change instrument.
(*b*) *Transmitter* Press pressel switch and blow into microphone.	Rustle heard in receiver.	If no rustle—report or change instrument.

Test and Method	Correct Result	Probable Fault and Remedy (see Note 1)
(*c*) *Bell and Generator Telephone Set 'L'* Moisten fingers, place across L1 and L2. Turn handle.	Slight shock felt.	If result is not as stated—generator fault—report or change instrument.
Short circuit L1 and L2 and turn generator handle.	Bell should ring and handle should be stiff to turn.	If result is not as stated — bell fault — report or change instrument.
Telephone Set 'J' Moiston fingers, place across L1 and L2. Turn handle.	Slight shock felt.	If result is not as stated—generator fault—report or change instrument.
Connect L1 and L2 of any proved magneto telephone to L1 and L2 of telephone 'J'. With the KEY down turn handle of the other telephone.	Bell of telephone 'J' should ring.	If result is not as stated—bell fault—report or change instrument.
With KEY up. Turn handle of telephone 'J'.	Bell should not ring. Bell of the other telephone should ring.	If result is not as stated—report or change instrument.

Magneto Switchboard

Simple Maintenance

11. Keep the set clean and dry. Keep all terminals clean and free from corrosion. Keep the space between the terminals clean, otherwise low insulation may result. Clean the plugs with a dry cloth (NOT with metal polish). See that all line terminals are tight.

Testing

Test and Method	Correct Result	Probable Fault and Remedy (see Note 1)
(*a*) *operator's telephone* (As in paragraph 10).		
(*b*) *Indicators* Make test call on each working line.	Indicator operates (also buzzer if connected).	Indicator does not operate—report or change instrument.
	Indicator returns and buzzer silenced when operator's plug is inserted.	Buzzer does not operate—replace buzzer battery. If still does not work—report or change instrument.

Notes:

1. When a fault cannot be remedied by attention to the batteries, the action to be taken will depend on the circumstances. For example, a Signalmaster is responsible for seeing that faults on equipment in his office receive attention by reporting them in accordance with standing orders, but a field cable party leader can change equipment if he has spares available. Also replacement of a switchboard for an indicator fault can be postponed if the line circuit affected can be reterminated.

2. When Cells, Inert, S, are used for a battery they must be activated by introducing water into the containers in accordance with the instructions on the case.

APPENDIX E.1

Call Signs

STATIONS IN CONTROL CHAIN

ENGLAND AND WALES

Stations in CONTROL CHAIN	Individual Call Signs	TYPE Collective	NET Collective
REGION	RG1 RG2 RG3 etc.		
SUB-REGION / GROUP	(2)SR1 (2)SR2 (2)GP3 (2)GP4 etc.	(2)SR Zero / (2) GP Zero	RG2 Zulu (2)SR2 Zulu
AREA	(2)ACA (2)ACB (2)ACC etc.	(2)AC Zero	(2)ACB Zulu
SUB-AREA	(B)SB1 (B)SB2 (B)SB3 etc.	(B)SB Zero	(B)SB2 Zulu
SECTOR	(2)STK (2)STL (2)STM etc.	(2)ST Zero	

SCOTLAND

Stations in CONTROL CHAIN	Individual Call Signs	TYPE Collective	NET Collective
SCOTTISH CENTRAL CONTROL	CC1		CC1 Zulu
ZONE	SNA SNB SNC	SN Zero	SNB Zulu
GROUP	(B)GP1 (B)GP2 (B)GP3 etc.	(B)GP Zero	(B)GP2 Zulu
AREA	(2)ACA (2)ACB (2)ACC etc.	(2)AC Zero	(2)ACB Zulu
SUB-AREA	(B)SB1 (B)SB2 (B)SB3 etc.	(B)SB Zero	(B)SB2 Zulu
SECTOR	(2)STK (2)STL (2)STM etc.	(2)ST Zero	

APPENDIX E.2

Call Signs

OTHER STATIONS

OTHER STATIONS	Individual Call Signs	TYPE Collective	
ZONE and SUB-REGIONAL RENDEZVOUS	(2)RV1 ...etc.	(2)RV Zero	If combined Rendezvous and Operational Bases are adopted, common call sign series (2)RD1 . . . etc., and Collective (2)RD Zero would be used.
OPERATIONAL BASE	(2)BA1 ...etc.	(2)BA Zero	
LOCAL RENDEZVOUS	(B)LV1 ...etc.	(B)LV Zero	
RECCE UNITS	(2)RN1 ...etc. or (B)RN1 etc.	(2)RN Zero or (B)RN Zero	Depending on whether Units are working to Sub or Area Control.
RECCE SCOUTS	(1)P, (1)Q, (1)R etc.		NET Collective / 1 Zulu
RECCE AIRCRAFT	RA1, 2, etc.		
AIRCRAFT GROUND STATION	GS1, 2, etc.		

Notes:

1. The prefix letters and figures shown in brackets are only for use when this additional identification is necessary to avoid confusion, e.g. between two Sectors "K" in different Sub-areas which are working to the same Area control.
2. The suffix figures for the call signs for Sub-Regions and Groups are in one sequence.

APPENDIX E.3

Fictitious Call Signs Used in Examples

STATIONS IN CONTROL CHAIN	CALL SIGNS	COLLECTIVE CALL SIGNS
CONTROL	XYA	NET XYA Zulu
OUTSTATIONS (CONTROLS)	QR1 QR2 QR3 etc.	TYPE QR Zero
OUTSTATIONS (RVs Operational Bases, etc.)	VW1 VW2 VW3	TYPE VW Zero

OR

CONTROL	YZ1	NET YZ1 Zulu
OUTSTATIONS (CONTROLS)	WXA WXB WXC etc.	TYPE WX Zero

APPENDIX F

Prowords and their meaning

The following standard words and phrases known as "prowords" are used in line and radio operating procedure:

"All after . . ."	The part of the message referred to is that following the word or words quoted.
"All Before . . ."	The part of the message referred to is that preceding the word or words quoted.
"Begins"	This is the start of the Text.
"Come In"	Go ahead with your response.
"Correction'	(i) An error has been made. I will continue with the last word correctly transmitted. (ii) An error has been made in this message (or message indicated). The correct version is as follows.
"Date-Time Group"	The following date and time indicates when this message was originated. It expresses the "Time of Origin" of a message.
"Ends"	This is the end of the Text.
"Exempt"	The following stations are not concerned with this message (used only after a collective call sign).
"Figures"	I am about to transmit figures.
"From — to —"	The part of the message referred to is that between the word or words quoted.
"Further Traffic (for ——)"	I have further message traffic waiting for you or for the station indicated.
"Go ahead (with—)"	Proceed with your transmission to me (or station indicated).
"Hallo"	A transmission is commencing.
"Info"	The following are given this message for information only.
"Message"	The message that follows is to be written down. This proword may be preceded by an indicator such as "Long" or "Exercise".

"Out"	I have finished my transmission and no answer is required or expected.
"Over"	I have finished my transmission to you and a response is necessary. Go ahead.
"(——) Relay (to——)"	The recipient or station indicated is to relay this message by any means available to all addressees or to those indicated.
"Roger"	I have received your last transmission satisfactorily.
"Say Again"	Repeat all your last transmission, or the portion indicated. (Reply: "I say again".)
"Silence"	All stations addressed are to remain silent until further orders. *Note:* Silence can only be imposed by the control station.
"Silence lifted"	Stations addressed may now resume transmission. *Note:* This release can only be given by the control station which imposed silence.
"Spell"	Spell phonetically the word or words indicated ("*I spell*"—I am about to spell phonetically.)
"Through me (for ——)"	I will accept your message (to ——) for relay.
"Through to ——"	I have connected you to the switchboard named; ask for the extension or duty required.
"Time now ——"	The time indicated is the time at which this transmission is made, or your transmission received. (Only used when indicating time of despatch or receipt.)
"To"	The following recipients are to take action on this message.
"To stand by"	The net is now free for fresh traffic. (Only used by the control station).
"Wait"	The stations addressed must not transmit until directed to do so. Any station on the net may however originate a more urgent call during the waiting period.

"Wilco"	I have received and understood your message and will comply. (Can only be authorised by the actual addressee and, when used as an immediate answer to a message, replaces "Roger".)
"Word after ——"	The word referred to is that immediately following the word or words quoted.
"Word before ——"	The word referred to is that immediately preceding the word or words quoted.
"Words Twice"	Transmit each word (or code group) twice. (Used when communication is difficult as an order, a request or for information).
"Wrong"	Your last transmission was incorrect. The correct version is (————).

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