

Preface

This Handbook is intended, primarily, for use by Members of Staffordshire Radio Amateurs' Emergency Network. However, technical terms and jargon have been avoided as it may need to be interpreted in wartime by those who have no previous knowledge but who need to operate radio apparatus in the voice mode.

It is written mainly in the context of civil defence; where procedures for peacetime emergency use are at variance, the entries are appropriately annotated.

Amendments

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Basic principles

SECTION 1 — INTRODUCTION & GENERAL INTRODUCTION

101. In civil defence operations, the Radio Operator will rarely work in isolation but as part of a team forming the staff of a Communications Centre (COMMCEN). The whole COMMCEN team and all others concerned in civil defence are trained in the use of a common basic procedure. Variations in the formal procedures are to be avoided as they disrupt the harmony of the team, with resultant bad effects on communication handling.

102. The adopted Procedures have been refined to the minimum necessary for efficient working for use by those who may have received little or no detailed training.

103. The Communications Centre concept will vary in peacetime disaster operations, in which circumstances communications requirements are arranged to meet the specific needs of each individual situation.

THE COUNTY EMERGENCY RADIO SYSTEM

104. This System provides an alternative to the conventional telecommunications facilities linking the Emergency Headquarters of the County and District local authorities in North Staffordshire.

When other telecommunications have failed, such as the public telephone system, the Radio System's full capacity can be exploited by using it for the transmission of formal messages, as described in this Handbook.

105. The System uses 'net' working, defined as 'an organisation of radio stations capable of direct communication

with one another'. The Net has two types of station, viz, control station and outstation. As all have the same basic equipment, any station can be used as either the control station or as an outstation.

106. Stations are permanently located at the Emergency Centres of the County Council and at the District Councils in the County. The County Council Main Emergency Centre station is the normal control station, with whom each of the district outstations are required to have communication. Each District outstation is required to communicate with its geographically neighbouring District outstation and with the outstation at Hanley, which latter is co-located with the County Council Standby (or alternative) Headquarters.

107. Working Simplex in the VHF 144-MHz band, voice transmission is by FM (frequency modulation) or SSB (single sideband) USB (upper sideband) or LSB (lower sideband) modes; the System also has a CW (morse) capability. No repeaters are used due to their vulnerability to damage in wartime, especially from the effects of nuclear electro-magnetic pulse (NEMP) (see paragraph 111).

108. Outstations on the Net at District Headquarters would each be used, by pre-arranged time schedule, as control stations on District nets working downwards to Community Group Posts.

STANDING OPERATING PROCEDURES (SOPs)

109. SOPs are a set of instructions covering those activities, which lend themselves to a definite standardised procedure without loss of effectiveness. The procedure is applicable unless prescribed otherwise in a special case. COMMUNICATIONS SOPs cover such detail as:

Radio Operator's duties on the County Emergency Radio System (COMMS SOP 1)

Each duty in the COMMCEN at County or District Emergency Centre (COMMS SOPs 2 to 6)

Routine testing of telecommunications at County or District Emergency Centre (COMMS SOP 7)

110. Relevant COMMS SOPs are maintained at the County Emergency Centre or District Emergency Centre to which they refer.

NUCLEAR ELECTROMAGNETIC' PULSE (NEMP)

111. NEMP is a pulse of electromagnetic radiation created by a nuclear weapon explosion; this can damage unprotected electrical and electronic equipment over a very large area. This effect is outlined in the County's CIVIL DEFENCE HANDBOOK and more fully elsewhere.

112. Action to be taken to reduce the effects of NEMP on the County Emergency Radio System is included in COMMS SOP No 1.

TIME STANDARD

113. COMMCENs manned for civil defence purposes use GMT (Time Zone 'Z') and COMMCEN clocks have 'Z' at their dial centres. When used for peacetime disaster emergency purposes, local time will be used; in these circumstances the 'Z' on COMMCEN clocks should be ignored and the clocks set to local time for the duration of that, particular emergency.

PHONOGRAMS

114. A Phonogram is a formal message transmitted by speech over telephone or radiotelephone. For simplicity, formal messages sent over radio by morse, or physically handled by courier, are also termed Phonograms.

PEACETIME TRAINING

115. Some radio operating licences necessitate special

Mobile Radio operations do not normally permit mobile-to-mobile communications. Whilst such licence limitations would be suspended in wartime civil defence operations, in peacetime training, Operators should rigidly comply with the instructions written for each training session and use only the relevant procedures detailed in this Handbook.

SECTION 2 - MESSAGES

GENERAL

201. The most economical use of circuit time is achieved by transmission of formal (written) messages. A good, received message is an accurate replica of the original before transmission. To this end, standard message formats are used.

202. The County's MESSAGE FORM (Form EP 6), developed primarily for civil defence use, is also used for formal messages in peacetime disaster situations. A half-size copy of this Form is at page 1-2-9 and variations on its peacetime use are dealt with in paragraph 220 below.

203. Receiving Radio Operators act as intermediary not arbiter nor interpreter; their function is to provide a service to give the recipient of a message an accurate replica of the original. Thus:
WRITE DOWN ONLY WHAT YOU RECEIVE.

204. Radio Operators handed messages by the COMMCEN containing obvious errors/omissions should query the discrepancy with the COMMCEN before transmission eg. Date-Time of Origin omitted.

CIVIL DEFENCE MESSAGES

205. The operational nature of some messages necessitates their handling ahead of other less urgent messages already in the 'pipeline'. Thus, each message is given a Precedence by the originator:

FLASH For Controller's use only, containing/requiring decisions of extreme urgency. Takes precedence over and handled before all others.

IMMEDIATE Very urgent operational message, taking precedence over Priority and Routine, before which they are handled.

PRIORITY. Urgent Operational message, justifying higher precedence than Routine, before which they are handled.

ROUTINE. Insufficiently urgent to justify a higher precedence. Sent in Date-Time of Origin sequence when higher precedence messages have been cleared.

Where the originator indicates no precedence, ROUTINE will be assumed, and the message handled accordingly.

206. Message originators are required to adhere to this foregoing guideline, since raising the precedence of messages in an attempt to overcome communication delays inevitably leads to further congestion.

Subject codes

207. These indicate the service, in District HQ and above, to which the received message is to be delivered, e.g., CON will go to the Controller, POL to the Police Liaison Officer, etc. The SUBJECT also gives an addressee an indication of which service has originated the message.

The Message Form

208. MESSAGE FORM (Form EP 6), reproduced at page 1-2-6, is used for all messages sent by printer, telephone, radio (telephony or morse) or by courier to external addresses. It is not used for internal communication between branches or departments of the same headquarters, such information being summarised on an INCIDENT LOG SHEET.

209. The formal message is divided into two parts - the Heading, comprising lines 1 to 10 inclusive, and the Text commencing at line 11.

210. HEADINGS

- Line 1 Used in the COMMCEN to direct Operators in handling the message. All the detail on this line must be transmitted.
- Line 2 Used only for transmission by teleprinter.
- Line 3 DE is used for printer messages After 'Msg. Serial' a (four-figure serial number) is inserted by the COMMCEN Out Recorder; it is used to identify the message in the event of handling queries. This 'Msg Serial' detail is transmitted by all systems.
- Line 4 Used to give instructions to the distant COMMCEN. (See paragraph 218).
- Line 5 Precedence - one only is encircled to indicate the precedence required.

Date-Time of Origin (DTO). Inserted by the originator when the text and all other detail is complete, it comprises six figures and three letters viz: Two figures for the date (digits are prefixed V), four figures for the time (24-hour system) and 'Z' (the time zone code for GMT) then three letters - first three letters of the month eg. 011235Z JAN (1235hrs. on 1st January). No reference to the year is made.

A DTO is used solely in this context in messages. Elsewhere, reference to time is by the 24-hour system and to date by two figures for the day, first three letters for the month and the last two figures of the year e.g. 1830 hrs. on 01 Jan 84. 'Z' is added where it is essential to the sense of the text.

The detail in the 5th line forms the identity of the message and is used by originators and COMMCENs to refer to earlier messages. To obviate duplication of DTOs in messages, originators are required to use the time to the nearest minute (not rounded to the nearest five minutes).

- Line 6* Designation of the originator's HQ or Service Centre (not the branch/service, appointment or name of individual). Eg. 1 Dist ('HQ' omitted). Security classification is used only for printer messages.
- Line 7* Addressee's HQ or Service Centre (not branch, appointment etc.) Where necessary, addresses continue on 8th and 9th line.
- Line 9* SUBJECT indicates to which service a received message should be delivered. The codes used (see page 1-2-10) apply only to District HQ and above.
- Line 10* Addressees who require the message for information only and are not required to take action on it.

*Where incorrect designations for headquarters or service centres in the 6th to 10th lines have been used these are corrected by the COMMCEN Operator before transmission.

211. TEXT

- Line 11 Texts of very long messages should be continued on extra copies of Form EP6. 'CONTINUED' should be written at the end of the text on all but the last page and at the beginning of the text on the subsequent line's page/s

212. ENDING

Last line Originator's name (not appointment);
Dispatch time or Receipt time; System: insert 'R'
for radio; Operator's initials (not callsign).

MESSAGE WRITING

213. Communications personnel would not normally be required to originate messages - their function is to

handle those messages produced by others. However, Operators should be aware of the principles concerning message writing, since they may be called upon to advise staff and others in this technique.

214. A brief guide, as at page 1-2-9, is available to MESSAGE FORM users on the inside cover of each pad of Message Forms. Operators should regard this as a set of rules and conform rigidly to them.

215. A full stop written & is not required at the end of the text - Operators use a mandatory Break sign, making the full stop superfluous. Note that the use of block characters is mandatory.

216. Message texts containing 'READ IN.. COLUMNS' or similar should be written in running line form and NOT in columns. Message recipients are responsible for extracting the detail from the text in the form most suitable to themselves; long messages would otherwise run needlessly into many pages.

Abbreviations

217. Abbreviations, listed in the County's CIVIL DEFENCE HANDBOOK, can be used by persons originating messages and also by communications personnel in transcribing messages, except where common usage and message context leave no cause for doubt e.g.: MR (not MISTER) SMITH.

Message handling

218. From the message example on page 1-2-6, on line 3 only 'MSG Serial 0004 is to be transmitted (the preceding detail is for printer systems only). The line 4 detail is sent 'LINE 4 6 DIST PASS TO 5 DIST' - this requests 6 District HQ to pass on the message to 5 District HQ and must therefore be written at line 4 of the copy received at 6 District HQ, for action by the COMMCCEN at that HQ.

219. Operator's sending/receiving messages should complete the 'Dispatch time' or 'Receipt time' box as appropriate with the current GMT time, the System box with 'R' and their initials as in the example on page 1-2-6.

COMMON USE

Inst. _____
1.1.2 _____
M&S DE _____
Inst. r³/s⁷ P '1'55 To 5 Dis'r

ROUTINE * PRIORITY IMMEDIATE FLASH * * * *

D-Tone of Origm
03<i3oi;33 0444c

FROM -STAFF'S MAIO

Smells classification
UNCLAS

TO E 15-1

Subj:
F'10 or

INFO -t", 774 t)sy

P cZ ov60 sracr-s OF PR f;e RI

Orgnsatnel num,
An BLOCK Irhea

P.F. W It sovJ

S
S
o
p

Despatch time
ULL-
tc=04-5

Receipt urns

IN

System

R

(Marmot

JBc

• encircle one only

Words In italics and or I g Inst or's name not tranarnMad

117125

Failure to take this action will cause the COMMCEN Operator to return the message for correct completion. Note that Operator's initials are required (not callsigns).

PEACETIME DISASTER SITUATION MESSAGES

220. It is unlikely that a formal system, using Communication Centers as in civil defence, would be needed for communications in support of a peacetime disaster situation. The following parts of the standard MESSAGE FORM (Form EP 6) would not then be used:

Lines 1 to 4

SECURITY CLASSIFICATION and SUBJECT

221. If an originator indicates a precedence on the 5th line, this is to be actioned as appropriate by the Radio Operator. FLASH would not be used in peacetime disaster operations.

222. Supplies of Form EP 6 are available at District HQs and additional copies could be made available at short notice under local arrangements.

NUMBER OF COPIES

223. The number of copies of each message required to be produced by originators and Radio/Telephone Operators will be determined locally. For civil defence use this will be laid down in Emergency Centre STANDING OPERATING PROCEDURES; for peacetime disaster operations the requirement will be stipulated, by the senior officer of each establishment involved.

SITUATION REPORTS (SITREPs)

224. Civil Defence leaders at all levels are required to assess and report their local situation, after an attack, to the next higher control. To simplify compilation of SITREPs, their handling by communications personnel and subsequent interpretation, an Operational Reporting

(OPREP) Code is used; it is detailed in the County's CIVIL DEFENCE HANDBOOK.

225. SITREPs are also used in peacetime disaster situations but no special codes are employed in this event.

BRIEF GUIDE TO MESSAGE WRITING

PRINT BOLDLY IN BLOCK CHARACTERS THROUGHOUT, with full stops thus: 0 Commas, hyphens and oblique strokes should be boldly expressed.

Figure 0, spoken 'zero', is hand-written: 0; figure 1 should be underscored: 1; Print decimal points, fractions and mathematical signs in words. E.g., 2.5 as 2 POINT 5: 7/8 as SEVEN EIGHTHS: + as PLUS

Always use Greenwich Mean Time + and the 24-hour system e.g., 1835 hours. Express dates with two figures for the day, the first three letters of the month and the last two figures of the year e.g., 01 JAN 85

Print Date-Time of Origin with two figures for the day and four figures for the time, followed immediately by Z (the Time Zone code for GMT), then the first three letters of the month; omit the year e.g., 051437Z MAR (1432 hours GMT on 5th March). Z should be ignored for peacetime disaster use.

Refer to earlier messages by Precedence and Date-Time of Origin i.e., the detail to be used from line 5 e.g., REF YOUR ROUTINE 041347Z JAN ...

	NOTES ON COMPLETING THE MESSAGE FORM
Line 5	FLASH • For Controller's use only, containing/requiring decisions of extreme urgency, taking precedence over and cleared before all others
	<i>IMMEDIATE</i> Very urgent operational content, taking precedence over Priority and Routine, before which, such messages are handled
	PRIORITY Urgent operational content, justifying higher precedence than Routine, before which they are handled
	ROUTINE Insufficiently urgent to justify a higher precedence. Sent in Date-Time of Origin sequence when higher precedence messages have been cleared
	Date/Time of Origin. Use precise time (not rounded to nearest 3 minutes) and Insert last, when message text and all other detail is complete

Lines 6-8 Insert correct designation of headquarters or service centre (not the appointment or the branch/service) e.g.
 FROM STAFFS MAIN Message from County Main HQ
 TO 1 DIST to No.1 District HQ (Staffs Moorlands) for action
 INFO STAFFS SBY with copy to County Standby HQ for information

Note. Messages to information addressees are handled as for Routine precedence only

Line 9 Insert Subject Code* as under - this indicates to which service the received message is to be delivered (applies to District HQ and above)

Armed Forces	MIL	Information	INFOSER
British Telecom	BTELS	Police	POL
Broadcasting Service	WTBS	Radiological Report	RADREP
Communications Controller	COMMS	Scientific Advice	SA
(County/District)	CON	Situation Report	SITREP
Energy Services	Energy	Transport Services	TRANSPORT
Fire Service	Fire	Water Service	WATER
Food Supplies & Distribution	FOOD	Welfare Services	WELFARE
Health Services	HEALTH	Works & Construction	WORKS

Note. The area outside the heavy black line is for Communications (Comms) use only. Words in *italics* and the originator's name are not transmitted

*Ignore for peacetime disaster use

SECTION 3 - TRANSMISSION TECHNIQUES AIDS

ACCURACY

301. There are numerous aids to achieving accuracy, mainly in voice procedure. These are dealt with in Section 5 of Chapter 2 of this Handbook.

WORKING SPEEDS

302. **A good operator never sends faster, by voice or morse, than the person at the other end can comfortably write down, in BLOCK CHARACTERS, what has been received.** Failure to apply this basic rule is the prime cause of time (and temper) wasted in sending corrections.

PROWORDS, PROSIGNS & OPERATING SIGNALS

303. Prowords are easily pronounceable words or phrases used in voice procedure to convey an exact meaning from one user to another. One word or phrase is thus used in place of a complete sentence eg:

- a. Proword ROGER means 'I have received your last transmission satisfactorily'
- b. Proword OUT means 'this is the end of my transmission; no reply is expected, and I am ready for further **traffic**'.

304. The correct use of prowords assists accuracy and saves time.

305. A list of Prowords is at pages 2-5-7 to 2-5-10 of this Handbook.

306. **Prosigns and Operating Signals** are morse equivalents of prowords, used to convey, in condensed form, information related to communications. Where a Prosign comprising two or more letters is over scored e.g., AA, the combination of letters is sent as one character. A list of Prosigns and Operating Signals is at pages 3-8-3 to 3-8-8 of this Handbook. Some Morse abbreviations are also included.

307. Prowords, Prosigns and Operating Signals listed in Chapters 2 and 3 of this Handbook are those to be used for civil defence and/or peacetime disaster situations in this County. Variations are not acceptable.

SENDING MESSAGES

308. Message texts containing 'READ IN COLUMNS' or similar entries, even if written in column format by the originator, should be sent in running line form and NOT in columns. It is the responsibility of the recipient to extract the detail in the format required. Without this procedure, messages containing a lot of data could well run, unnecessarily, into many pages.