

# MODULE EIGHT - RATEL

## MATERIALS



### CONTENTS

<b>State the components and characteristics of the Service Radio and it's Maintenance</b>	<b>2</b>
<b>Demonstrate the assembly and disassembly of the Service Radio</b>	<b>2-4</b>
<b>Explain how to use Correct Ratel Procedure</b>	<b>4</b>
<input type="checkbox"/> <b>Security, Accuracy, Discipline</b>	<b>4</b>
<input type="checkbox"/> <b>Basic security rules</b>	<b>4</b>
<input type="checkbox"/> <b>Rhythm, Speed, Volume, Pitch</b>	<b>5</b>
<b>Explain how to use Radio Appointment Titles and Common Radio Appointment Titles</b>	<b>5</b>
<b>State the Phonetic Alphabet</b>	<b>6-7</b>
<b>Demonstrate how to Establish Communications</b>	<b>7</b>
<b>Common Proformas</b>	<b>8</b>
<b>Operating hints</b>	<b>8</b>
<b>Pronouncing figures</b>	<b>9</b>
<b>Pronouncing Miscellaneous terms</b>	<b>9</b>
<b>Prowords</b>	<b>10-11</b>

## State components/characteristics & maintenance of the Service Radio

### *Characteristics of the Service Radio*

Description	Weight	Frequency	Channels	Antennae	Output	CES	Range
Short range Portable FM VHF Receiver Transmitter	11.5 kg with CES & battery	30.0- 75.95 Mhz	920 at 0.5 Mhz spacings	Short antenna (Battle whip) (0.9 m)  Long antenna (Multi-section whip) (3 m)	1.6 watts (min)	Harness handset Bag cotton duck Battle whip + base Multi-sect whip + base	Av = 8 km depends on terrain  Note: The ANPRC-77 set can be fitted with the Antennae Lightweight or the Antennae RC-292 to improve range

### *Maintenance of ANPRC-77*

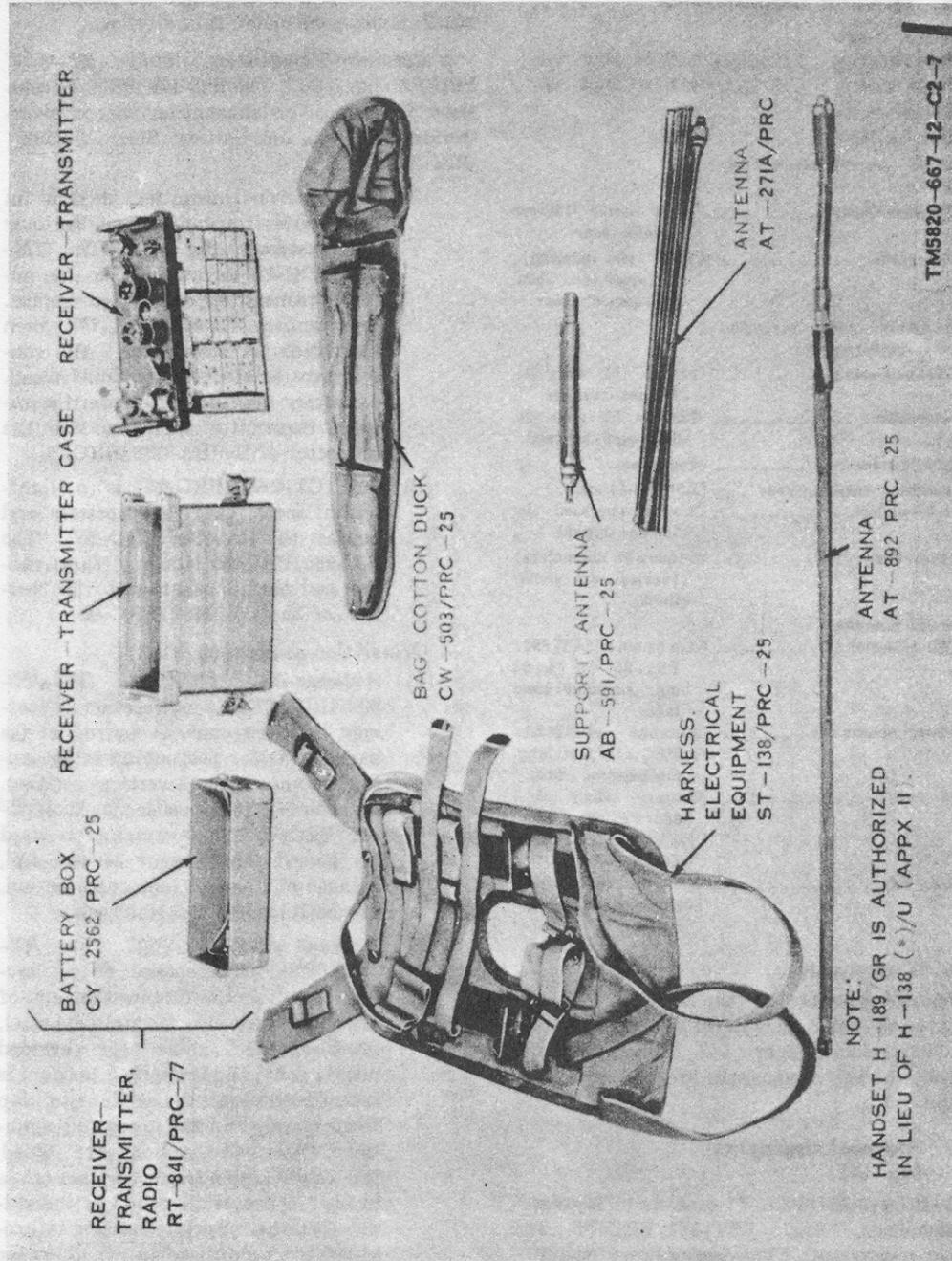
1. Ensure the battery cover breather hole is clear.
2. Ensure radio & handset contacts are clean, free of rust & tarnish to ensure a good connection.
3. Remove all dust and grime from the body of the radio and it's CES.

## Demonstrate the assembly and disassembly of the Service Radio

### *Assembly procedure*

- |  |  |
|--|--|
| 1. Set function switch to "OFF"  | 7. Fit chosen antennae base and antennae |
| 2. Check external power supply connector cover is secure                           | 8. Connect the handset                   |
| 3. Remove battery box  | 9. Select desired frequency              |
| 4. Fit the battery   | 10. Set "VOLUME" switch to "5"           |
| 5. Secure the battery box  | 11. Turn function switch to "ON"         |
| 6. Check the battery by turning function switch to "LITE" and checking dial light] | 12. Turn function switch to "SQUELCH"    |

TM 11-5820-667-12



1-4 Change 2

Figure 1-8. Radio Set AN/PRC-77, components.

### ***Disassembly procedure***

- |                             |                   |
|-----------------------------|-------------------|
| 1. Function SWITCH TO "OFF" | 3. Remove Handset |
| 2. Remove Antennae          | 4. Remove battery |

### **Explain how to use Correct Ratel Procedure**

The aim of all Ratel procedure is to ensure clear, accurate and secure communications. Information about long term plans **MUST NOT** be transmitted in clear {i.e. clear - not in code}. Whereas information about short term plans or past event may be, depending on the tactical situation at the time.

The length of transmission time is critical to security of transmissions. Each "burst" of a message should be kept under 30 seconds. This is assisted by all the facets of Ratel procedure (appointment titles, prowords, proformas, the rules below). Even using the word yes and no instead of affirmative and negative can help, as can not adding to prowords e.g. use "ROGER" not "ROGER THAT".

### ***Security, Accuracy, Discipline***

**SAD** Radiotelephone procedure, or RATEL, consists of a set of rules designed to achieve three things. These are remembered by the letters SAD which stand for:-

- S** - security: following the "Basic Security Rules" below to ensure that the net remains secure.
- A** - accuracy: use of prowords, the phonetic alphabet, appointment titles and procedures for difficult conditions [when needed] will all help you get your message across correctly without confusion.
- D** - discipline: the net control station (NCS) is in charge of the net, regardless of rank. Ensure that you and your troops don't overuse the radio, and make sure that the radio is manned at all times.

### ***Basic Security Rules***

- |  |  |
|--|--|
| a. Do not violate radio silence        | e. Don't transmit troop locs/intentions    |
| b. No informal "chatting" on the radio | f. Don't transmit unit names etc. in clear |
| c. No unauthorized use of radio        | g. No unauthorized use of plain language   |
| d. Avoid continual radio checks        | h. No swearing/obscene language            |

### ***Rhythm, Speed, Volume, Pitch***

The letters R S V & P will remind you that when you are using the radio:

- R** - rhythm: speak with your normal voice rhythm, break up sentences naturally.
- S** - speed speak a little slower than normal, it makes you easier to understand.
- V**- volume: speak a little more softly than normal - never yell into the handset.
- P** - pitch: speak at a slightly higher pitch than normal, but don't overdo it!

### **Explain how to use Radio Appointment Titles**

Appointment titles are used to avoid disclosing the nature of a headquarters by referring to specific appointments, such as adjutant, quartermaster, etc.

The standard radio appointment titles below are used to give low grade security cover, but are only to be used in the Army or when working with other Commonwealth armies.

<b>SERIAL</b>	<b>APPOINTMENT</b>	<b>TITLE</b>
1	Commander	SUNRAY
2	Second-in-command	SUNRAY MINOR
3	Adjutant	SEAGULL
4	Intelligence Officer	ACCORN
5	Quartermaster	MOLAR
6	Armour	IRONSIDE
7	Artillery	SHELDRAKE
8	Engineer	HOLDFAST
9	Signals	PRONTO
10	Infantry	FOXHOUND
11	Aviation	HAWKEYE
12	Supplies/Transport	PLAYTIME
13	Medical	STARLIGHT
14	Electrical & Mechanical Engineering	BLUEBELL
15	Regimental Police	WATCHDOG

## **State the Phonetic Alphabet**

In RATEL, when you need to identify a letter of the alphabet, or to spell out a word, you use the phonetic alphabet. The phonetic alphabet is a set of words which are used to represent a letter of the alphabet. The words we use have been set out in the table below. You should already know them, but just in case you are rusty on a few of the letters the correct pronunciation has been given, [note that the stress is placed on the part of the word in capitals].

<b>LETTER</b>	<b>WORD USED</b>	<b>HOW TO SAY THE WORD</b>
A	ALPHA	AL - fah
B	BRAVO	BRAH - vo
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	JULIET	JEW - lee - ETT
K	KILO	KEE - lo
L	LIMA	LEE - mah
M	MIKE	Mike
N	NOVEMBER	No - VEM - ber
O	OSCAR	OSS - car
P	PAPA	Pah - PAH
Q	QUEBEC	Kweh - BECK
R	ROMEO	RO - me - oh
S	SIERRA	See - AIR - ah
T	TANGO	TANG - go
U	UNIFORM	YOU - knee - form
V	VICTOR	VIK - tah
W	WHISKY	WISS - key
X	X-RAY	ECKS - ray
Y	YANKEE	YANG - kee
Z	ZULU	ZOO -loo

## **State the Phonetic Alphabet [Continued]**

Difficult words or groups within text may be spelt out using the proword "I SPELL". If you are spelling out a word that can be pronounced, you should say the word, then "I SPELL", spell the word out and then say the word again. If you are not spelling out a word, or the word can't be pronounced, use the proword "I SPELL" and spell the word or group of letters out. See the examples below:-

1. **Word can't be pronounced:** e.g. Augathella:- AUGATHELLA, I SPELL, ALPHA, UNIFORM, GOLF, ALPHA, TANGO, HOTEL, ECHO, LIMA, LIMA, ALPHA. Augathella"
2. **You are not spelling out a word:** "RENDEZVOUS POINT IS, I - SPELL, BRAVO, WHISKY, TANGO, INDIA, MIKE".

## **Demonstrate how to Establish Communications**

Listed below are the steps to Establishing Communications with another call sign. Remember most nets are known as "Directed Nets" which means that sub-stations on the net are not permitted to communicate directly with other sub-stations without the Net Control Stations (NCS) approval. The steps are:-

- ❑ When the net is clear depress the hand sets pressel switch and pause.
- ❑ Say the call sign of the station you wish to establish communications with.
- ❑ Say the proword "THIS IS".
- ❑ Say your callsign.
- ❑ Say the pro word "OVER"
- ❑ Wait for the called station to respond. If no response, respond repeat above procedure twice.
- ❑ On the third attempt, it is usual to use the proword WORDS TWICE.
- ❑ If you still don't get a response, repeat the above procedure but the 4<sup>th</sup> say NOTHING HEARD, OUT.
- ❑ If the other station responds then repeat the above procedure but insert the text of your message after the 4<sup>th</sup>.

If you going to transmit information using a proforma, for example a SITREP or LOCSTAT, then when establishing communication for the first time with the station you are sending the proforma to, after step 4 you state the name of the proforma you wish to send to the other station i.e. "0A this is 11, LOCSTAT, OVER". When they respond you again state, after step 4, the title of the proforma (e.g. LOCSTAT) then send the information before saying OVER.

### **Common Proformas**

Proformas are standard formats used to transmit information pertaining to common Army situations. They are used to reduce transmission time and conceal the nature of the information being transmitted. Each proforma has a title which is offered to the receiving station when first establishing communications with them and repeated once communication has been established just prior to sending the information e.g. a stations "Location Statistic {where they are on the ground} is called a LOCSTAT. Proformas have serials, or sub-components, which relate to specific items of information.

For example LOCSTAT has three serials {A, B, & C}. Serial A is the sending stations current grid reference or GR, usually sent in numerical code, serial B is whether the station is MOVING or HALTED {halted means is halted for a long period, usually 30 minutes or more not just halted at a bound point and will be moving in 5 minutes) and serial C is the direction of move, a magnetic bearing, also usually sent in numerical code. Commonly used Proformas are:-

<b>Proforma Title</b>	<b>Use</b>
CASEVAC	Used to request the evacuation of casualties.
OPDEM, PRIDEM, MAINTDEM	Used to request the resupply of items. OPDEM - immediate need, PRIDEM - priority need, MAINTDEM - routine need.
SITREP	Used to advise of a stations Situation Report.
NODUFF NOTICAS	Used to advise the personal details of a casualty. Sent after a CASEVAC request.
STRENGTH RETURN	Used to advise HQ of stations daily strength for administrative purposes e.g. rations.
TRANSPORT REQUEST	Used to request the provision of transport to a station.
LOCSTAT	Used to advise of a stations Location Statistic.

### **Operating hints**

- Keep the antennae upright
- Raise the antennae as high as possible - a few metres can make all the difference
- Avoid depressions, select nearby high ground
- Make maximum use of clearings in dense woods
- Select a site on a high spot whether artificial or natural - hill, mast, tree tower etc.
- Use accessories - antennae lightweight, antennae RC-292 if available
- Move the radio around if signals are weak - a few metres may give some improvement
- Avoid screening by keeping away from power lines, bridges, fences & metal structures
- Select sites on forward slopes of hills for point to point transmission
- Tune to correct channel & ensure battery is fresh
- Use relay procedure - say you want 1,1, but you can't raise him although you can raise 1,2. Ask 1,2 if she can hear 1,1. If yes, then use 12 to pass your message to 1,1.
- Carry out regular maintenance - ensure that antennae and handset are in good contact with terminals.
- Don't allow antennae to touch leaves/foilage or other objects including your body.
- Don't put the antennae between an obstruction and the station you are calling.

### ***Pronouncing figures***

<b>NUMBER</b>	<b>HOW TO SAY IT</b>	<b>COMMENTS</b>
1	WUN	Emphasis on the N
2	Too	Short T and long "oo"
3	Thur-ee	Short U, slight roll of R, long "e"
4	FO-wer	Long "O" as in "FOE"
5	FI-yIV	Long 1st "I" as in "PIE", short 2nd "I" as in "GIVE"
6	siX	Emphasis on the "X"
7	SEV-en	2 distinct syllables, with the "en" as in "HEN"
8	Ate	Long "A" as in "ATE"
9	NINer	Long "I" as in "PIE", emphasize each "N"
0	ZERo	Emphasize first syllable

### ***Pronouncing Miscellaneous terms***

- DATES:**  
Digit by digit, with the months said in full e.g.: 20 AUG = Two Zero August etc.
- DECIMAL POINT:**  
"DAY-SEE-MAL" e.g.: 12.3 = One Two Decimal Three
- GRID REFERENCES:**  
Precede GR with "GRID" e.g.: GR 123 456 is said as "GRID One Two Three {PAUSE} Four Five Six". The pause between the easting and the northing helps interpretation
- MIXED GROUPS:**  
Depends on whether conditions are good or poor e.g.. Generators 5 KVA is said as "Generators Five Kay-vee-ay" in GOOD conditions but as "Generators FIGURES Five, I SPELL, Kilo Victor Alpha in POOR conditions.
- PRONUNCIATION:** "FULL STOP" for a full stop (.)  
"PAREN" / "UNPAREN" for left and right BRACKETS  
"SLANT" for an Oblique stroke (/)  
"QUOTE and UNQUOTE" for Quotation marks ("")  
"HYPEN" for a Hyphen (-)

### **Prowords**

Prowords are words that have a distinct meaning when used over the radio. They are used to reduce transmission time to an absolute minimum. Some of the more common prowords and their meanings are listed on the next two pages.

<b>PROWORD</b>	<b>MEANING</b>
ACKNOWLEDGE	a) Instruction to a station on the net to acknowledge that it has heard a message which may not have been specifically addressed to it. b) When used in the text of a message, instruction to the addressees that the message must be acknowledged.
ALL AFTER ALL BEFORE	Used with reference to a catch-word or phrase when requesting or giving repetitions or corrections.
ANSWER AFTER	Used to instruct a station that joins an established net, the order in which the station is to answer calls.
CALLSIGN	That which follows is a callsign.
CLOSE DOWN	Stations called are to close down when indicated. Acknowledgments are required.
CLOSING DOWN	May I close down (until ...).
CORRECT	You are correct, or what you have transmitted is correct.
CORRECTION	a) What has been said is wrong, the correct version follows. b) An error has been made in transmission (or message indicated). The correct version is ... c) That which follows is a correct version in answer to your request for verification.
CRYPTO MESSAGE	Offer of a crypto or coded message.
DISREGARD THIS TRANSMISSION	Used to cancel a message during its transmission.
EXEMPT	The callsigns which follow are excluded from a collective or all-station call.
FETCH	Used, in conjunctions with an appointment title, to indicate to whom the caller wishes to speak.
FIGURES	Used before sending groups of figures digit by digit. Not used for callsigns, grid references, time checks, authentication and date-time groups.
FORMAL MESSAGE	Offer of a formal message. Must be qualified by the precedence and may be qualified by LONG.
FROM	a) Used by a relaying station to indicate the station originating the message. b) The originator of this message is indicated by the address designator immediately following.
GRID	Used before any grid reference, encoded or in clear.
I READ BACK	Used by a receiving station to satisfy himself that he has received the transmission, or portion of it, correctly or introduces a response to instruction to read back.
I SAY AGAIN	Used by a sender when making repetitions for emphasis, or in response to request to say again.
I SPELL	Used when spelling out a word or letter group.

<b>PROWORD</b>	<b>MEANING</b>
I VERIFY	That which follows has been verified at your request and is repeated. To be used only as a reply to VERIFY.
LONG MESSAGE	Offer of a long unregistered message (one that will take more than 30 seconds to send).
NOTHING HEARD	Indication that no signals have been received from a particular station.
OUT	This is the end of my transmission. No reply is expected.
OUT TO YOU	This is the end of my transmission to you. No reply is expected and a call to another station follows immediately.
OVER	This is the end of my transmission to you; a reply or acknowledgment is required, go ahead and transmit.
RADIO CHECK	Report how you receive my transmission.
READ BACK	Repeat this entire transmission back to me exactly as received.
RELAY THROUGH	Instruction to a station to relay through another.
RELAY TO	Instruction to a station to relay a message.
ROGER	I have received your last transmission satisfactorily.
SAY AGAIN	Request for repetition of all, or portions indicated, of a message.
SEND	I am ready to receive your message.
SPEAKING	Used, in conjunction with an appointment title, to indicate who is speaking.
THIS IS	Indicates identity of calling station.
THROUGH ME	Invitation by a station to relay through him.
... TO ...	Used to identify part of a message.
UNKNOWN STATION	The identity of the station I am calling is unknown to me.
USE ABBREVIATED CALLSIGNS	Abbreviated callsigns are to be used.
USE ABBREVIATED PROCEDURE	Abbreviated procedure is to be used.
USE FULL CALLSIGNS	Full callsigns are to be used.
USE FULL PROCEDURE	Full procedure is to be used.
VERIFY	Verify portion indicated with originator and send correct version.
WAIT	I must pause for up to 5 seconds before replying. No other station is to transmit during this period even if my set is not transmitting.
WAIT OUT	Your transmission is received; a further transmission on the same subject will follow later. Other stations may continue transmitting as normal.
WILCO	Message received, understood and will be complied with.
WORD AFTER WORD BEFORE	Used to identify part of a message.
WORDS TWICE	Communication is difficult. Transmit each phrase or code group twice. This proword may be used as an order, a request, or as information.
WRONG	What has been said is wrong; the correct version is ....