OPERATION OF WIRELESS STATION A5IO

WITH END-FED AERIAL

FREQUENCY RANGE
2-10 Mc/s.

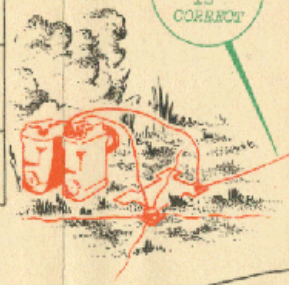
SETTING UP RECEIVER A5IO AND TRANSMITTER A5IO

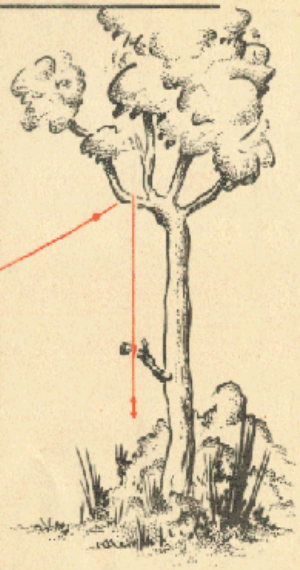
1. INTERCONNECTING PLUG AND SOCKET. Join, and screw firmly together.
2. RECEIVER - HANDSET AND HEADSET. Plug either or both in sockets.
3. TRANSMITTER - CRYSTAL SELECTOR SWITCH. Select crystal of ordered frequency by turning to number corresponding with number and frequency shown on cover for crystal units.
4. TRANSMITTER - FREQUENCY CONTROL KNOB. Turn to set transmitter to ordered frequency.
5. RECEIVER - FREQUENCY BAND SWITCH. Set to appropriate band - BLUE - 2-4.5 Mc/s. ORANGE-4.5 to 10 Mc/s.

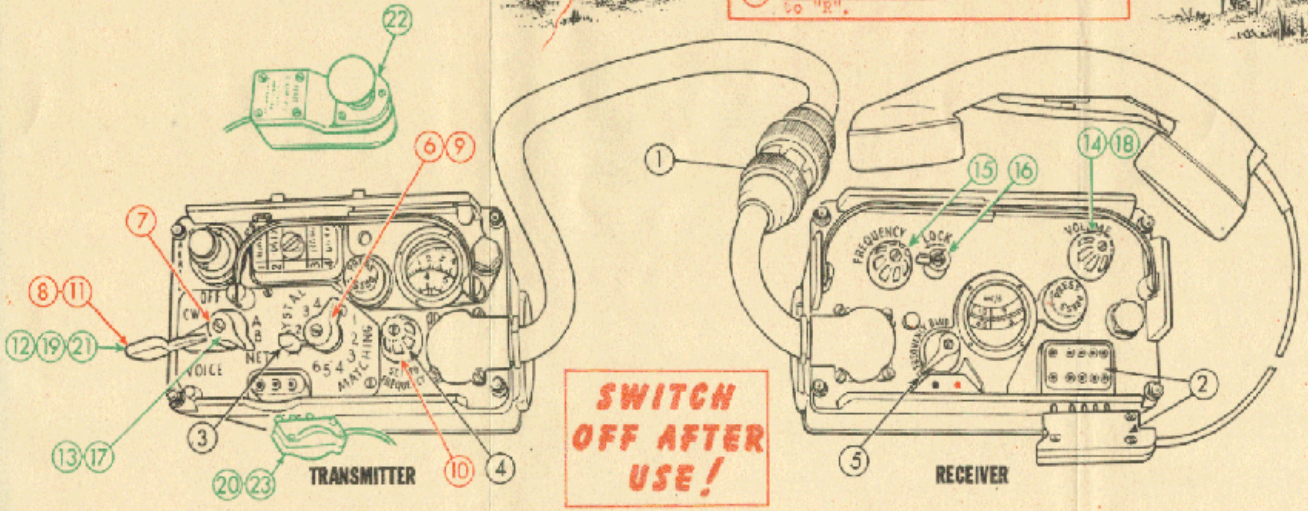
TUNING TRANSMITTER A5IO

6. MATCHING SWITCH - Set to "O".
7. A-B-NET SWITCH - Turn to "A" or "B" to agree with aerial length and frequency range chosen from aerial bobbin chart.
8. FUNCTION SWITCH - Hold on "VOICE".
9. MATCHING SWITCH - Turn until maximum reading obtained on aerial tuning meter.
10. FREQUENCY CONTROL KNOB - Slightly re-adjust for maximum reading on aerial tuning meter.
11. FUNCTION SWITCH - Allow to return to "R".

ENSURE AERIAL LENGTH IS CORRECT







SWITCH OFF AFTER USE!

NOTE

Use position "A" on the A-B-NET switch whenever possible as this position gives the greatest range.

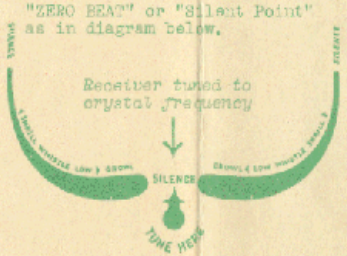
If fading occurs on ground wave operation when in the "A" position, try changing to "B".

FIG. 31

VOICE OPERATION

TO RECEIVE

12. TRANSMITTER - FUNCTION SWITCH. Turn to "R".
13. TRANSMITTER - A-B-NET SWITCH. Turn to "NET".
14. RECEIVER - VOLUME CONTROL KNOB. Turn fully clockwise (UP).
15. RECEIVER - FREQUENCY CONTROL KNOB. Turn CAREFULLY about required frequency on dial scale until whistle is heard. Reduce to "ZERO BEAT" or "Silent Point" as in diagram below.



16. RECEIVER - FREQUENCY LOCK. Turn anti-clockwise CAREFULLY without altering tuning point.
17. TRANSMITTER - A-B-NET SWITCH. Turn to "A" or "B" as applicable.
18. RECEIVER - VOLUME CONTROL KNOB. Adjust for comfort of hearing.

TO SEND

19. TRANSMITTER - FUNCTION SWITCH. Hold on "VOICE". Speak in normal voice, DO NOT SHOUT. If using handset, press pressel switch.

C.W. OPERATION

TO RECEIVE

20. TRANSMITTER - PLUG FOR KEY. Plug in and proceed as for "VOICE" operations 12 to 18. Until key is plugged in distant station will not be heard.

TO SEND

21. TRANSMITTER - FUNCTION SWITCH. Turn to "CW".
22. TRANSMITTER - KEY. Send.
23. TRANSMITTER - PLUG FOR KEY. Remove before returning to "VOICE" operation.

REPEAT AT FREQUENT INTERVALS TO CHECK NET

OPERATION OF WIRELESS STATION A5IO WITH DIPOLE AERIAL

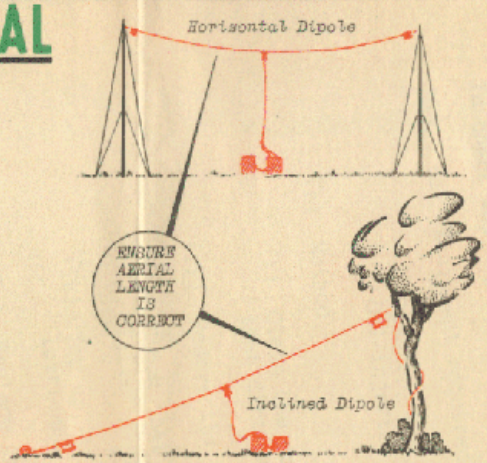
FREQUENCY RANGE
3·3 - 10 M/s.

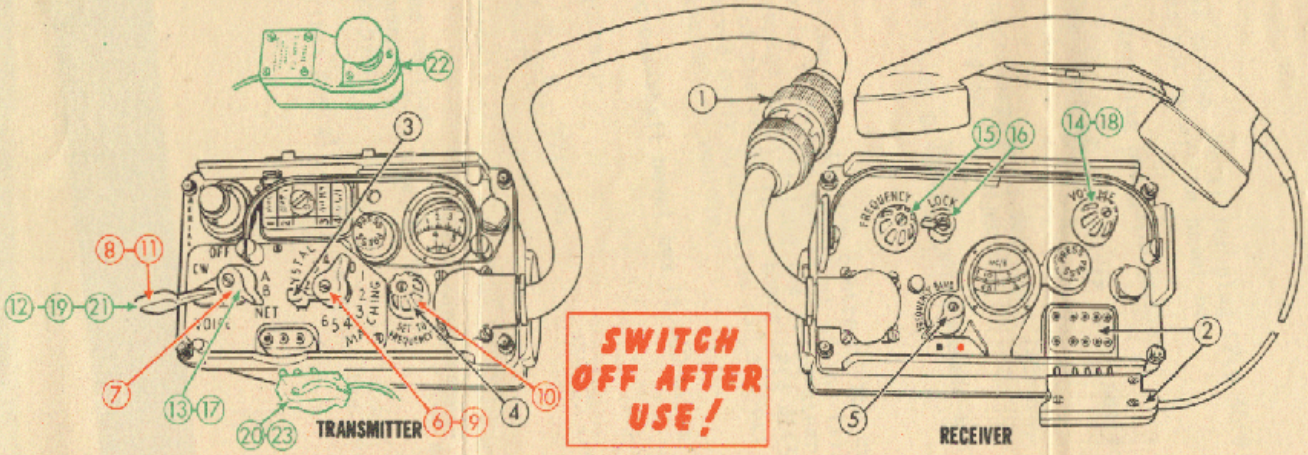
SETTING UP RECEIVER A5IO AND TRANSMITTER A5IO

1. INTERCONNECTING PLUG AND SOCKET. Join, and screw firmly together.
2. RECEIVER - HANDSET AND HEADSET. Plug either or both in sockets.
3. TRANSMITTER - CRYSTAL SELECTOR SWITCH. Select crystal of ordered frequency by turning to number corresponding with number and frequency shown on cover for crystal units.
4. TRANSMITTER - FREQUENCY CONTROL KNOB. Turn to set transmitter to ordered frequency.
5. RECEIVER - FREQUENCY BAND SWITCH. Set to appropriate band - BLUE - 2-4.5 Mc/s. ORANGE-4.5 to 10 Mc/s.

TUNING TRANSMITTER A5IO

6. MATCHING SWITCH - Set to "C".
7. A-B-NET SWITCH - Set to "B".
8. FUNCTION SWITCH - Hold on "VOICE".
9. MATCHING SWITCH - Turn until maximum reading obtained on aerial tuning meter. "C" IS INVARIABLY BEST POSITION WITH DIPOLE AERIAL.
10. FREQUENCY CONTROL KNOB - Slightly re-adjust for maximum reading on aerial tuning meter.
11. FUNCTION SWITCH - Allow to return to "R".





SWITCH OFF AFTER USE!

NOTE ONE — When changing frequency, dipole aerial lengths must be altered to agree with chart inside dipole case flaps. EXACT LENGTHS MUST BE USED.

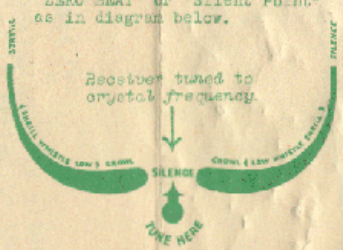
NOTE TWO — If HORIZONTAL dipole used, it does not matter which way feeder connections are made to set. If INCLINED dipole used, reversal of connections may give better results. ONLY DISTANT STATION CAN INFORM YOU WHICH IS BETTER. (Aerial tuning meter is not a reliable guide in the inclined dipole set-up; it is quite possible for it to give a reverse indication to the best connection).

FIG. 32

VOICE OPERATION

TO RECEIVE

12. TRANSMITTER - FUNCTION SWITCH. Turn to "R".
13. TRANSMITTER - A-B-NET SWITCH. Turn to "NET".
14. RECEIVER - VOLUME CONTROL KNOB. Turn fully clockwise (UP).
15. RECEIVER - FREQUENCY CONTROL KNOB. Turn CAREFULLY about required frequency on dial scale until whistle is heard. Reduce to "ZERO BEAT" or "Silent Point" as in diagram below.



16. RECEIVER - FREQUENCY LOCK. Turn anti-clockwise CAREFULLY without altering tuning point.
17. TRANSMITTER - A-B-NET SWITCH. Turn to "B".
18. RECEIVER - VOLUME CONTROL KNOB. Adjust for comfort of hearing.
19. **TO SEND** TRANSMITTER - FUNCTION SWITCH. Hold on "VOICE". Speak in normal voice, DO NOT SHOUT. If using handset, press pressel switch.

C.W. OPERATION

TO RECEIVE

20. TRANSMITTER - PLUG FOR KEY. Plug in and proceed as for "VOICE" operations 12 to 18. Until key is plugged in distant station will not be heard.

TO SEND

21. TRANSMITTER - FUNCTION SWITCH. Turn to "CW".
22. TRANSMITTER - KEY. Send.
23. TRANSMITTER - PLUG FOR KEY. Remove before returning to "VOICE" operation.

REPEAT AT FREQUENT INTERVALS TO CHECK NET

CHAPTER FOUR — USER MAINTENANCE

SECTION 16 — GENERAL.

79. No equipment or installation can be expected to work properly unless it is kept in first-class condition by regular maintenance, conscientiously carried out. This maintenance is the responsibility of the NCO or man who is in direct charge of the equipment, and responsible for its operation, NOT of workshop or repair staffs, though workshop personnel may be called upon to carry out certain maintenance tasks.

80. The WS A510 is primarily for use by the Infantryman who is not normally expected to make any adjustments or attempt any repairs. Damage can only result from tampering with the sealed units of the set. Repairs must be left to R.Aust.Sigs., or RAEME technicians. However, emergencies may arise when simple, temporary repairs may be carried out by the operator to enable him to keep his set in action. In such cases the set should be inspected by qualified personnel on return to base.

81. The station will remain in good working order if the following simple instructions are observed :-

(a) Keep all parts of the station clean and dry. Watch plug holes particularly, to see that no water settles in them. Keep all plugs clean and dry.

(b) Keep fixing screws tight.

(c) Watch the humidity indicators in the transmitter and receiver units. Should they show PINK, moisture has entered the units which must be exchanged as soon as conditions permit.

(d) Take especial care of aerial gear. Keep it as clean as conditions permit, and replace damaged items as soon as possible.

When re-winding aerial wires, wind them side by side, and as neatly as possible.

(e) Report at once any fault in the station or any loss of components.

SECTION 17 – REPLACEMENT OF FAULTY PILOT LAMPS.

82. (a) Remove the rubber cover assembly marked "PRESS" by unscrewing it by hand.

(b) Remove the defective lamp and coil spring (See Fig. 33).

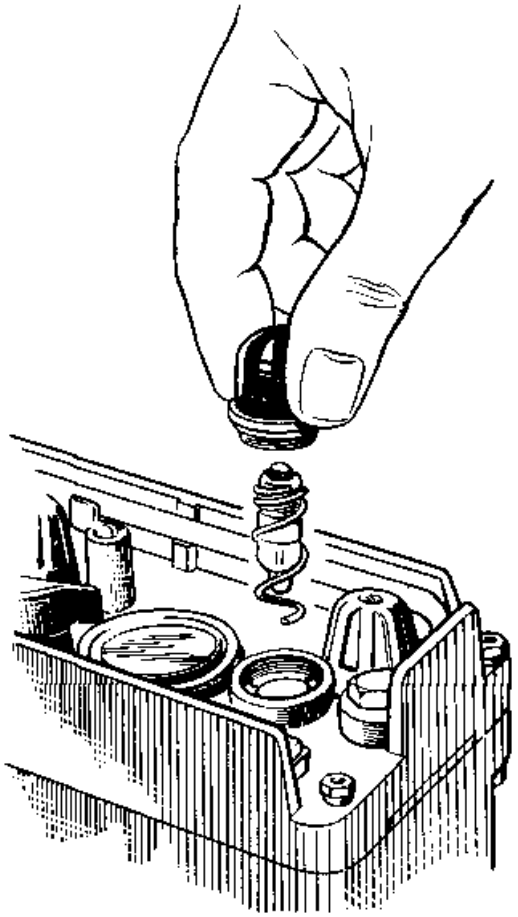


FIG.33 - REPLACEMENT OF PILOT LAMP

(c) Remove the defective lamp from the spring and substitute a new lamp. The base of the lamp should be screwed TWO TURNS into the close coils of the spring. The base of the lamp should be well clear of the spring.

(d) Insert the lamp and its spring into the lamp housing on the panel, with the head of the lamp downwards.

(e) Replace the rubber cover assembly in the housing.

SECTION 18 — REMOVAL OF RECEIVER AND MICROPHONE INSETS FOR INSPECTION.

83. It should seldom, if ever, be necessary to remove insets from the headset or handset assemblies, and the practice should be confined to emergencies only. If the headset does not work, try the handset in both sockets. If the handset works in each socket , obviously the fault is in the headset. If either a defective headset or handset *must* be used it may be possible to carry out emergency repairs when the fault is confined to broken connections to an inset.

84. To remove the receiver insets from the headset, follow the procedure shown in Fig. 34. Treat the insets very carefully as the connecting wires are very light.

85. The procedure for removing the microphone inset is as follows :-

(a) Fold back the retaining lip opposite the horn, and lift the cover plate clear.

(b) Fold back the retaining lip opposite the cable entry, and lift the inset clear carefully.

86. If any lead is found to be broken, it may be possible to rejoin it temporarily.

87. The handset insets are removed by unscrewing the cover of the microphone and receiver compartments. Again care should be exercised with the delicate wirings.

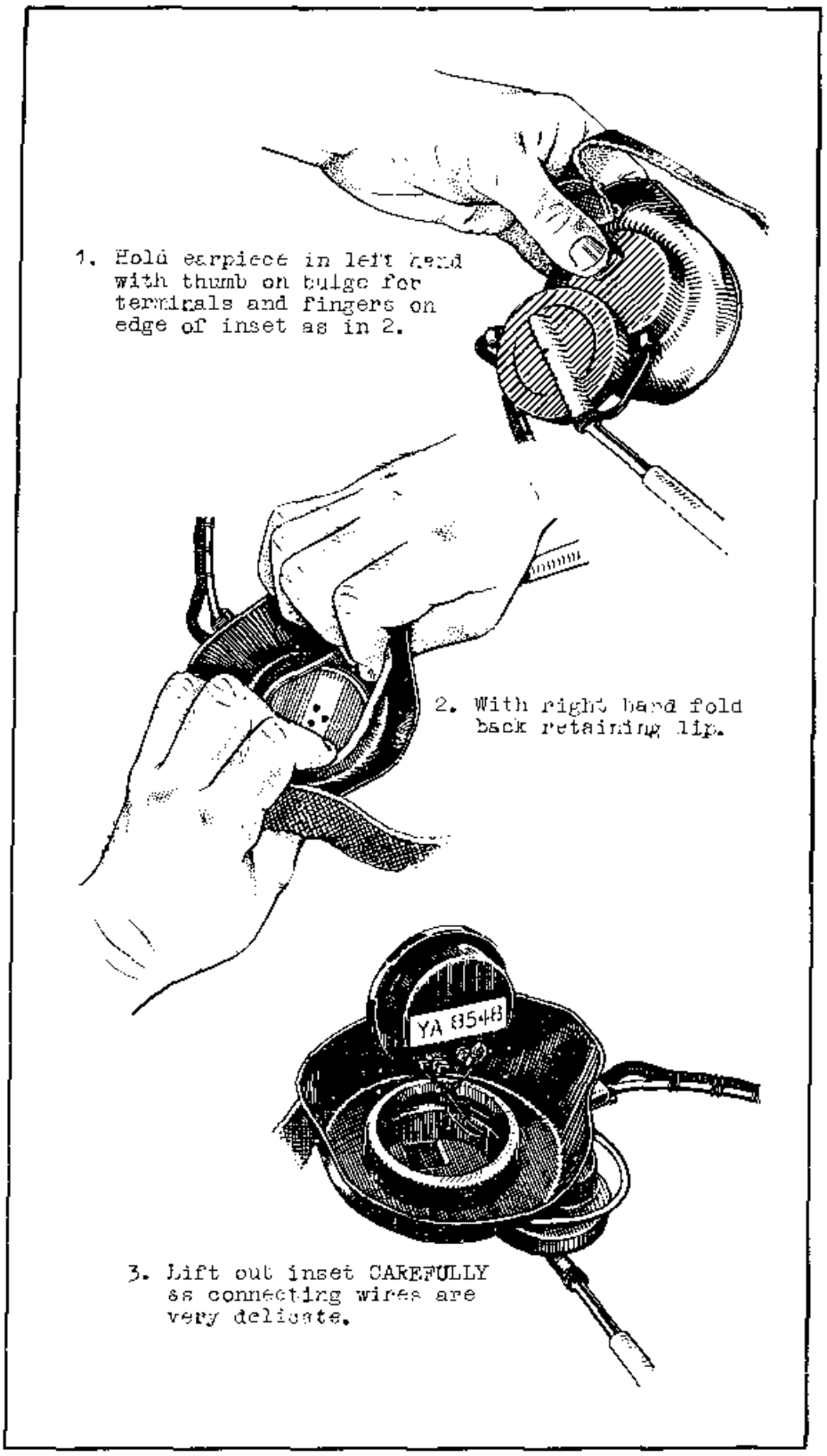


FIG. 34 - REMOVAL OF RECEIVER INSETS

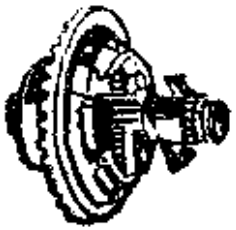
SECTION 19 — FAULT LOCATION

88. The operator's duties in regard to tracing faults in his set are very limited in nature. If the set will not function correctly the following Table will indicate whether the fault is external, and within his power to rectify. *In no circumstances will the set be opened by operators or any unqualified person.*

TABLE 2 - FAULT FINDING CHART

Symptom	Possible fault	Action
1. Humidity indicators appear pink.	Interior of set is moist.	Return set to base at earliest opportunity.
2. Set appears dead.	(a) Batteries.	(a) Test as detailed in para. 70. If confirmed faulty, change batteries.
	(b) Switches in wrong positions.	(b) Re-set and check.
	(c) Plugs not making contact.	(c) Ensure plugs not damaged, then wipe clean pins and sockets and re-connect.
	(d) Headset or handset faulty.	(d) Change. See para. 83 for emergency repairs.
3. Receiver noise heard but no signals sent or received.	(a) Switches in wrong position.	(a) Double check.
	(b) Faulty aerial connection.	(b) Check aerial connection; clean socket.
	(c) Internal fault.	(c) Report.
4. Set not sending on any channel but O.K. on receive.	(a) Faulty microphone (VOICE), if aerial meter gives tuning indication.	(a) Change headset or handset. For emergency repairs see para. 83.
	(b) Faulty pressel switch (VOICE), if aerial meter gives tuning indication.	(b) Replace handset.
	(c) Faulty plug connection to transmitter from key (CW).	(c) Change key if adjustment not possible.
	(d) Internal fault.	(d) Report.
5. Set defective on certain frequencies but O.K. on others.	(a) Faulty crystal.	(a) Replace.
	(b) Internal fault.	(b) Report.

REMEMBER THAT THE STATION IS YOUR RESPONSIBILITY. ITS EFFICIENCY MAY WIN AN ACTION OR SAVE LIVES - PERHAPS YOUR LIFE. IT IS ROBUST AND RELIABLE BUT NOT INDESTRUCTIBLE. CARE FOR IT AND IT WILL SERVE YOU WELL.



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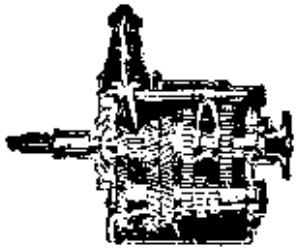

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