TD-3 MICROWAVE RADIO
J68386G AND J68386H TRANSMITTER-RECEIVER BAYS
TD-3A OPERATION WITH PORTABLE MICROWAVE REPEATER

This section contains the procedure for connecting the Farinon Portable Microwave Repeater (PMR 4000) and the Hewlett-Packard 4-GHz Portable Microwave Repeater (83001A) to a TD-3A transmitter-receiver bay. The portable microwave repeater (PMR) will be used to provide service while maintenance is being performed on a TD-3A radio transmitter-receiver bay.

The PMR is capable of replacing any TD-3A radio transmitter-receiver bay. Nominal transmitter output power is +30 dBm with a received signal level between −20 and −65 dBm. Two IF outputs are provided (+10 and +1 dBm) for connections at a repeater station or main station. One transmitter input jack is provided to accept an input signal between −7 and +5 dBm. The PMR is also provided with two RF coaxial cables to allow connection to the transmitter-receiver bay. Alarm indications are provided to indicate the status of the PMR.

Caution: If alarm conditions are generated while the PMR is in service, determine if the PMR is defective and if so, return service to the regular radio channel equipment as quickly as possible.

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CHART 1

FARINON PORTABLE MICROWAVE REPEATER CONNECTION FOR A REPEATER STATION CONFIGURATION

This chart provides the procedure for connecting the Farinon PMR 4000 to a TD-3A radio bay at a repeater station.

APPARATUS:

1—Farinon Portable Microwave Repeater, PMR 4000

2—Microwave Research Corporation (MRC) Transducers (B40-186)

STEP	PROCEDURE

Note: If any of the requirements of this chart cannot be met, refer to the manufacturer's instruction manual provided with the PMR.

Placing the PMR in Service

1 Place the PMR on the top of the test set to be used (J68392A or J68428A). Arrangements should be made to secure the PMR to the top of the test set.

Note: The J68428A test set must be modified to allow proper ventilation for the test set.

2 Connect the PMR power supply to a 117V ***protected*** AC receptacle and then connect the power cable from the power supply to the power connector on the PMR.

Note: If the audible alarm on the PMR power supply operates, depress the ACO key on the power supply to silence the audible alarm.

3 Operate the power switch on the PMR to the OPERATE position.

4 Position the meter switch to the −21V position and observe the meter indication.

Requirement: 21 $\pm$1 divisions on the upper scale of the meter.

5 Position the RCVR FREQUENCY SELECT and the TRMTR FREQUENCY SELECT switches to the 26th position.

Requirement 1: The channel frequency light emitting diode (LED) displays should indicate 8888.

CHART 1 (Cont)

STEP	PROCEDURE
	Note: If any segment of a numerical display does not light, the PMR must not be used as the display could indicate an incorrect operating frequency. This will result in a service failure.
	Requirement 2: The CARRIER RE-SUPPLY ON indicator should light.
6	Position the RCVR FREQUENCY SELECT switch to the desired receiving frequency.
	Requirement 1: The receiver frequency LED display should indicate the desired receiving frequency.
	Requirement 2: The RCVR UNLOCKED indicator should not be lighted.
7	Remove the working radio channel from service by following the established release procedure given in Section 400-400-004. Make the necessary entries in the radio station log.
	Warning: Radiation hazard may exist when connecting the PMR into the radio bay. DO NOT look into energized waveguides.
8	Break the waveguide connection at the test access port between the channel separating network and the isolator. Local bay alarms will be generated and the station audible alarm may be silenced by operating the ACO key on the alarm panel.
9	Establish the connection given in Fig. 1 by connecting the MRC transducer to the output of the channel separating network. Use waveguide screws to secure this connection.
10	Connect the transducer to the PMR RCVR INPUT connector using the RF coaxial cable provided with the PMR.
	Caution: Handle the RF coaxial cable carefully and avoid any sharp bends.
11	Verify that a signal is being received by operating the meter switch on the PMR to the RCVR INPUT position.
	Requirement 1: The indication on the center scale of the meter should be ± 5 dBm of the calculated received signal level for the regular channel receiver.
	Requirement 2: The CARRIER RE-SUPPLY ON indicator should be extinguished.
	If the above requirements are not met, verify that the PMR receiver frequency is set to the correct frequency.
	If the requirements still cannot be met, measure the received signal level as given in Section 411-100-508. If the received signal level meets the requirements, check the PMR, the transducer, and the RF coaxial cable.

CHART 1 (Cont)

STEP	PROCEDURE

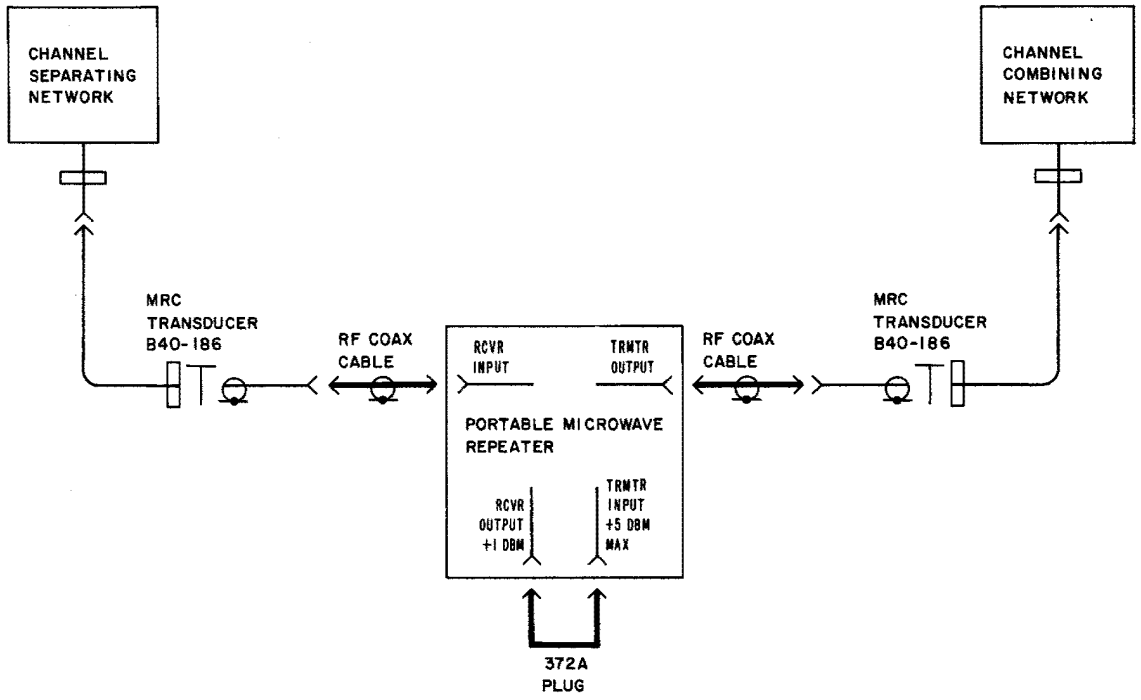

Fig. 1—PMR Connection to a Repeater Bay Configuration

12 Position the meter switch to the IF OUTPUT position and observe the meter indication.

Requirement: 0 $\pm$1 dB on the bottom scale of the meter. This corresponds to +1 $\pm$1 dBm and +10 $\pm$1 dBm at the two RCVR OUTPUT jacks.

13 Position the TRMTR FREQUENCY SELECT switch to the desired transmitting frequency.

Requirement 1: The transmitting frequency LED display should indicate the desired transmitting frequency.

Requirement 2: The TRMTR UNLOCKED indicator should be extinguished.

14 Insert a 372A plug between the RCVR OUTPUT +1 dBm jack and the TRMTR INPUT +5 dBm MAX jack.

15 Remove drive from the IF driver amplifier in the TD-3A radio bay by removing the IF cable from the IF IN jack on the unit.

CHART 1 (Cont)

STEP	PROCEDURE
16	Break the waveguide connection at the test access port between the 30A integrated circuit and the channel combining network.
17	Establish the connection given in Fig. 1 by connecting the MRC transducer to the input of the channel combining network. Use waveguide screws to secure this connection.
18	Connect the transducer to the PMR TRMTR OUTPUT connector using the RF coaxial cable provided with the PMR. ***Caution: Handle the RF coaxial cable carefully and avoid any sharp bends.***
19	Momentarily operate and then release the power switch to the TRMTR KEY position. ***Requirement:*** TRMTR ON indicator should light to indicate that the PMR transmitter is on. ***Note:*** The power switch will return to the OPERATE position when the switch is released.
20	Position the meter switch to the TRMTR OUTPUT position and observe the meter indication. ***Requirement:*** 0 $\pm$2 dB on the bottom scale of the meter. This corresponds to +30 $\pm$2 dBm at the TRMTR OUTPUT connector. ***Caution: Continuity of the radio channel has now been established through the PMR. Changing the position of any of the switches other than the meter switch will mute the transmitter and interrupt service.***
21	Make the necessary entries in the PMR log.
22	Service may now be transferred back to the radio channel according to the procedures in Section 400-400-004. ***The PMR is now maintaining service for the radio bay and maintenance can now be performed on the regular radio equipment.*** ***Note:*** It is desirable to position the meter switch on the PMR to the TRMTR OUTPUT position so that the output power of the PMR can be checked if necessary.
	Removing the PMR from Service
23	Remove the PMR from service by following the established release procedures given in Section 400-400-004.
24	Position the power switch on the PMR to the POWER OFF position. Make the necessary entries in the PMR log. Retire local alarms by operating the ACO key on the alarm panel.

CHART 1 (Cont)

STEP	PROCEDURE
25	Remove the MRC transducers from the receiving channel separating network and from the channel combining network.
26	Reconnect the radio receiver to the channel separating network and the radio transmitter to the channel combining network. Check the regular channel transmitter output power by observing the output power indication on the meter panel. Make the necessary entries in accordance with FCC rules to the radio station log.
27	If the output power is correct, return the radio channel to service according to Section 400-400-004.

CHART 2

FARINON PORTABLE MICROWAVE REPEATER CONNECTION FOR A RECEIVER ONLY CONFIGURATION

This chart provides the procedure for connecting the Farinon PMR 4000 to a TD-3A radio bay in a receiver only configuration. This procedure may be used at a receiving main station.

APPARATUS:

1—Farinon Portable Microwave Repeater, PMR 4000

1—Microwave Research Corporation (MRC) Transducer (B40-186)

STEP	PROCEDURE
	Note: If any of the requirements of this chart cannot be met, refer to the manufacturer's instruction manual provided with the PMR.
	Placing the PMR in Service
1	Place the PMR on the top of the test set to be used (J68392A or J68428A). Arrangements should be made to secure the PMR to the top of the test set.
	Note: The J68428A test set must be modified to allow proper ventilation for the test set.

CHART 2 (Cont)

STEP	PROCEDURE
2	Connect the PMR power supply to a 117V ***protected*** AC receptacle and then connect the power cable from the power supply to the power connector on the PMR. ***Note:*** If the audible alarm on the PMR power supply operates, depress the ACO key on the power supply to silence the audible alarm.
3	Operate the power switch on the PMR to the OPERATE position.
4	Position the meter switch to the −21V position and observe the meter indication. ***Requirement:*** 21 ±1 divisions on the upper scale of the meter.
5	Position the RCVR FREQUENCY SELECT and the TRMTR FREQUENCY SELECT switches to the 26th position. ***Requirement 1:*** The channel frequency light emitting diode (LED) displays should indicate 8888. ***Note:*** If any segment of a numerical display does not light, the PMR must not be used as the display could indicate an incorrect operating frequency. This will result in a service failure. ***Requirement 2:*** The CARRIER RE-SUPPLY ON indicator should light.
6	Position the RCVR FREQUENCY SELECT switch to the desired receiving frequency and maintain the TRMTR FREQUENCY SELECT switch on the 26th position. ***Requirement 1:*** The receiver frequency LED display should indicate the desired receiving frequency. ***Requirement 2:*** The RCVR UNLOCKED indicator should not be lighted.
7	Remove the receiver from service by following the established release procedure given in Section 400-400-004. Make the necessary entries in the radio station log. ***Warning: Radiation hazard may exist when connecting the PMR into the radio bay. DO NOT look into energized waveguides.***
8	Break the waveguide connection at the test access port between the channel separating network and the isolator. Local bay alarms will be generated and the station audible alarm may be silenced by operating the ACO key on the alarm panel.
9	Establish the connection given in Fig. 2 by connecting the MRC transducer to the output of the channel separating network. Use waveguide screws to secure this connection.

CHART 2 (Cont)

STEP	PROCEDURE

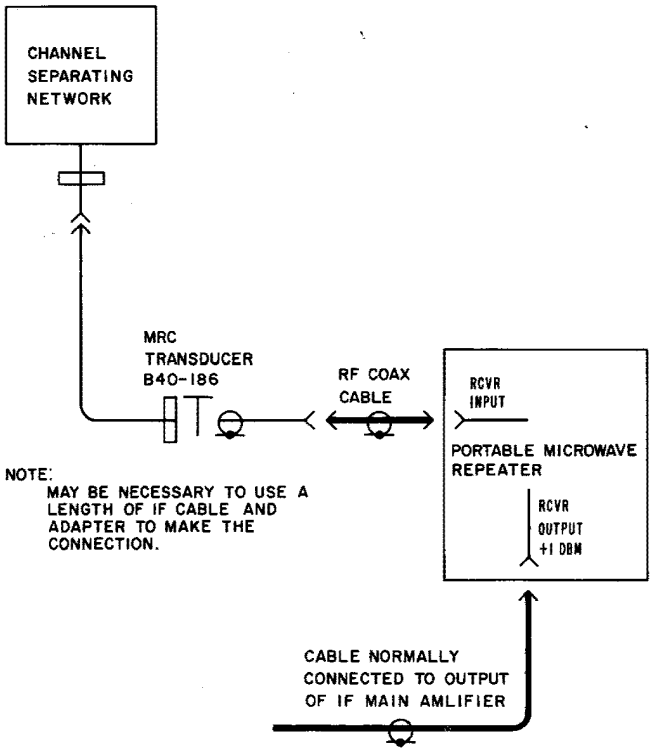

Fig. 2—PMR Connection to a Receiver Only Bay Configuration

10 Connect the transducer to the PMR RCVR INPUT connector using the RF coaxial cable provided with the PMR.

Caution: Handle the RF coaxial cable carefully and avoid any sharp bends.

11 Verify that a signal is being received by operating the meter switch on the PMR to the RCVR INPUT position.

Requirement 1: The indication on the center scale of the meter should be ± 5 dBm of the calculated received signal level for the regular channel receiver.

Requirement 2: The CARRIER RE-SUPPLY ON indicator should be extinguished.

If the above requirements are not met, verify that the PMR receiver frequency is set to the correct frequency.

CHART 2 (Cont)

STEP	PROCEDURE
	If the requirements still cannot be met, measure the received signal level as given in Section 411-100-508. If the received signal level meets the requirements, check the PMR, the transducer, and the RF coaxial cable.
12	Position the meter switch to the IF OUTPUT position and observe the meter indication.
	Requirement: 0 $\pm$1 dB on the bottom scale of the meter. This corresponds to +1 $\pm$1 dBm and +10 $\pm$1 dBm at the two RCVR OUTPUT jacks.
13	Connect the cable normally connected to the output of the IF amplifier to the PMR RCVR OUTPUT +1 dBm jack. Refer to Fig. 2.
	Caution: Continuity of the radio channel receiver has now been established through the PMR. Changing the position of any of the switches other than the meter switch will interrupt service.
14	Service may now be transferred back to the radio channel receiver according to the procedure in Section 400-400-004. ***The PMR is now maintaining service for the radio bay receiver and maintenance can now be performed on the regular radio receiver equipment.***
	Removing the PMR from Service
15	Remove the PMR from service by following the established release procedure given in Section 400-400-004.
16	Position the power switch on the PMR to the POWER OFF position.
17	Remove the MRC transducer from the receiving channel separating network.
18	Reconnect the radio receiver to the channel separating network and reconnect the cable to the output of the IF main amplifier. Verify that a signal is being received. Make the necessary entries in accordance with FCC rules in the radio station log.
19	If the received signal level is correct, return the radio channel to service according to Section 400-400-004.

CHART 3

FARINON PORTABLE MICROWAVE REPEATER CONNECTION FOR A TRANSMITTER ONLY CONFIGURATION

This chart provides the procedure for connecting the Farinon PMR 4000 to a TD-3A radio bay in a transmitter only configuration. This procedure may be used at a transmitting main station.

APPARATUS:

1—Farinon Portable Microwave Repeater, PMR 4000

1—Microwave Research Corporation (MRC) Transducer (B40-186)

STEP	PROCEDURE

Note: If any of the requirements of this chart cannot be met, refer to the manufacturer's instruction manual provided with the PMR.

Placing the PMR in Service

1 Place the PMR on the top of the test set to be used (J68392A or J68428A). Arrangements should be made to secure the PMR to the top of the test set.

Note: The J68428A test set must be modified to allow proper ventilation for the test set.

2 Connect the PMR power supply to a 117V ***protected*** AC receptacle and then connect the power cable from the power supply to the power connector on the PMR.

Note: If the audible alarm on the PMR power supply operates, depress the ACO key on the power supply to silence the audible alarm.

3 Operate the power switch on the PMR to the OPERATE position.

4 Position the meter switch to the −21V position and observe the meter indication.

Requirement: 21 $\pm$1 divisions on the upper scale of the meter.

5 Position the TRMTR FREQUENCY SELECT and the RCVR FREQUENCY SELECT switches in the 26th position.

Requirement 1: The channel frequency light emitting diode (LED) displays should indicate 8888.

CHART 3 (Cont)

STEP	PROCEDURE
	Note: If any segment of a numerical display does not light, the PMR must not be used as the display could indicate an incorrect operating frequency. This will result in a service failure.
	Requirement 2: The CARRIER RE-SUPPLY ON indicator should light.
6	Position the TRMTR FREQUENCY SELECT switch to the desired transmitting frequency while maintaining the RCVR FREQUENCY SELECT switch in the 26th position.
	Requirement 1: The transmitting frequency LED display should indicate the desired transmitting frequency.
	Requirement 2: The TRMTR UNLOCKED indicator should be extinguished.
	Note: The CARRIER RE-SUPPLY ON indicator will remain lighted, but the final IF stage is turned off. This indication can be ignored since the receiver stage will not be used in this procedure.
7	Remove the working radio channel transmitter from service by following the established release procedure given in Section 400-400-004. Make the necessary entries in the radio station log.
	Warning: Radiation hazard may exist when connecting the PMR into the radio bay. DO NOT look into energized waveguides.
8	Remove drive from the IF driver amplifier in the TD-3A radio bay by removing the IF cable from the IF IN jack on the unit.
9	Break the waveguide connection at the test access port between the 30A integrated circuit and the channel combining network.
10	Establish the connection given in Fig. 3 by connecting the cable normally connected to the input of the IF limiter and carrier resupply to the PMR TRMTR INPUT +5-dBm MAX jack.
11	Establish the connection given in Fig. 3 by connecting the MRC transducer to the input of the channel combining network. Use waveguide screws to secure this connection.
12	Connect the transducer to the PMR TRMTR OUTPUT connector using the RF coaxial cable provided with the PMR.
	Caution: Handle the RF coaxial cable carefully and avoid any sharp bends.
13	Momentarily operate and then release the power switch to the TRMTR KEY position.

CHART 3 (Cont)

STEP	PROCEDURE

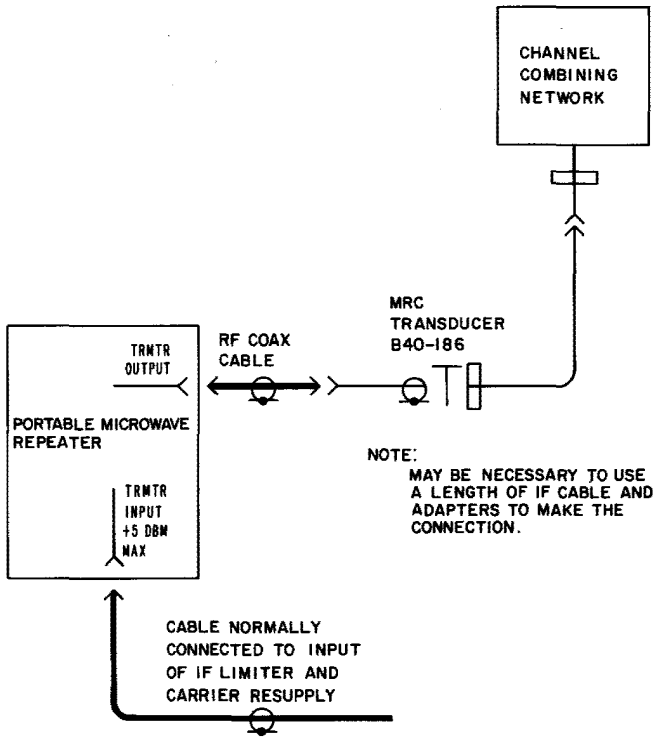

Fig. 3—PMR Connection to a Transmitter Only Bay Configuration

Requirement: TRMTR ON indicator should light to indicate that the PMR transmitter is on.

Note: The power switch will return to the OPERATE position when the switch is released.

14 Position the meter switch to the TRMTR OUTPUT position and observe the meter indication.

Requirement: 0 $\pm$2 dB on the bottom scale of the meter. This corresponds to +30 $\pm$2 dBm at the TRMTR OUTPUT connector.

Caution: Continuity of the radio channel transmitter has now been established through the PMR. Changing the position of any of the switches other than the meter switch will mute the transmitter and interrupt service.

15 Make the necessary entries in the PMR log.

CHART 3 (Cont)

STEP	PROCEDURE
16	Service may now be transferred back to the radio channel transmitter according to the procedure in Section 400-400-004. ***The PMR is now maintaining service for the radio bay transmitter and maintenance can now be performed on the regular radio transmitting equipment.***
	Note: It is desirable to position the meter switch on the PMR to the TRMTR OUTPUT position so that the output power of the PMR can be checked if necessary.
	Removing the PMR from Service
17	Remove the PMR from service by following the established release procedures given in Section 400-400-004.
18	Position the power switch on the PMR to the POWER OFF position. Make the necessary entries in the PMR log. Retire local alarms by operating the ACO key on the alarm panel.
19	Remove the MRC transducer from the channel combining network.
20	Reconnect the radio transmitter to the channel combining network and reconnect the cable to the input of the IF limiter and carrier resupply. Check the regular channel transmitter output power by observing the output power indication on the meter panel. Make the necessary entries in accordance with FCC rules to the radio station log.
21	If the output power is correct, return the radio channel to service according to Section 400-400-004.

CHART 4

HEWLETT-PACKARD PORTABLE MICROWAVE REPEATER CONNECTION FOR A REPEATER STATION CONFIGURATION

This chart provides the procedure for connecting the Hewlett-Packard 83001A PMR to a TD-3A radio bay at a repeater station.

APPARATUS:

1—Hewlett-Packard 4-GHz Portable Microwave Repeater (83001A)

2—Microwave Research Corporation (MRC) Transducers (B40-186)

CHART 4 (Cont)

STEP	PROCEDURE

Note: If any of the requirements of this chart cannot be met, refer to the manufacturer's instruction manual provided with the PMR.

Placing the PMR in Service

1 Place the PMR on the top of the test set to be used (J68392A or J68428A). Arrangements should be made to secure the PMR to the top of the test set.

Note: The J68428A test set must be modified to allow proper ventilation for the test set.

2 Connect the PMR power supply to a 117V ***protected*** AC receptacle and connect the power cable from the power supply to the power connector on the PMR.

3 Operate the POWER switch on the PMR to the ON position.

4 Position the RECEIVER FREQUENCY MHz switch to the desired receiving frequency.

Requirement 1: The LO LOCKED indicator should be lighted.

Requirement 2: The IF RESUPPLY ON indicator should be lighted.

5 Remove the working radio channel from service by following the established release procedure given in Section 400-400-004. Make the necessary entries in the radio station log.

Warning: Radiation hazard may exist when connecting the PMR into the radio bay. DO NOT look into energized waveguides.

6 Break the waveguide connection at the test access port between the channel separating network and the isolator. Local bay alarms will be generated and the station audible alarm may be silenced by operating the ACO key on the alarm panel.

7 Establish the connections given in Fig. 1 by connecting the MRC transducer to the output of the channel separating network. Use waveguide screws to secure this connection.

8 Connect the transducer to the PMR RECEIVER INPUT connector using the RF coaxial cable provided with the PMR.

Caution: Handle the RF coaxial cable carefully and avoid any sharp bends.

9 Verify that a signal is being received by depressing the METER SCALE RCVR INPUT LEVEL pushbutton on the PMR.

Requirement 1: The indication on the RCVR INPUT DBM scale should be ± 5 dBm of the calculated received signal level for the regular channel receiver.

CHART 4 (Cont)

STEP	PROCEDURE

Requirement 2: The IF RESUPPLY ON indicator should be extinguished.

If the above requirements are not met, verify that the PMR receiver frequency is set to the correct frequency.

If the requirements still cannot be met, measure the received signal level as given in Section 411-100-508. If the received signal level meets the requirements, check the PMR, the transducer, and the RF coaxial cable.

10 Depress the METER SCALE RCVR OUTPUT LEVEL pushbutton on the PMR and observe the meter indication.

Requirement: 0 $\pm$1 dB on the RCVR OUTPUT DB scale. This corresponds to +1 $\pm$1 dBm and +10 $\pm$1 dBm at the two 70-MHz OUT jacks.

11 Position the TRANSMITTER FREQUENCY MHz switch to the desired transmitting frequency.

Requirement 1: STBY indicator should remain lighted.

Requirement 2: LO LOCKED indicator should remain lighted.

12 Insert a 372A plug between the 70-MHz OUT +1-dBm jack and the 70-MHz IN +5-dBm MAX jack.

13 Remove drive from the IF driver amplifier in the TD-3A radio bay by removing the IF cable from the IF IN jack on the unit.

14 Break the waveguide connection at the test access port between the 30A integrated circuit and the channel combining network.

15 Establish the connection given in Fig. 1 by connecting the MRC transducer to the input of the channel combining network. Use waveguide screws to secure this connection.

16 Connect the transducer to the PMR TRANSMITTER OUTPUT connector using the RF coaxial cable provided with the PMR.

Caution: Handle the RF coaxial cable carefully and avoid any sharp bends.

17 Momentarily operate and then release the STBY-OPERATE switch to the OPERATE position.

Requirement: OPERATE indicator should light and the STBY indicator should extinguish.

18 Depress the METER SCALE TRMTR OUTPUT LEVEL pushbutton and observe the meter indication.

CHART 4 (Cont)

STEP	PROCEDURE

Requirement: 0 ±2 dB on the TRMTR OUTPUT DB scale. This corresponds to +30 ±2 dBm at the TRANSMITTER OUTPUT connector.

Caution: Continuity of the radio channel has now been established through the PMR. Changing the position of any of the switches other than the METER SCALE pushbuttons will mute the transmitter and interrupt service.

19 Make the necessary entries in the PMR log.

20 Service may now be transferred back to the radio channel according to the procedures in Section 400-400-004. ***The PMR is now maintaining service for the radio bay and maintenance can now be performed on the regular radio equipment.***

Note: It is desirable to depress the METER SCALE TRMTR OUTPUT LEVEL pushbutton on the PMR so that the output power of the PMR can be checked if necessary.

Removing the PMR from Service

21 Remove the PMR from service by following the established release procedure given in Section 400-400-004.

22 Momentarily operate the STBY-OPERATE switch to the STBY position.

Requirement: The OPERATE indicator should extinguish and the STBY indicator should light. Make the necessary entries in the PMR log. Retire local alarms by operating the ACO key on the transmitter control unit.

23 Remove the transducer from the receiving channel separating network and from the output monitor.

24 Reconnect the radio receiver to the channel separating network and the radio transmitter to the channel combining network. Check the regular channel transmitting output power by observing the output power indication on the meter panel. Make the necessary entries in accordance with FCC rules to the radio station log.

25 If the output power is correct, return the radio channel to service according to Section 400-400-004.

CHART 5

HEWLETT-PACKARD PORTABLE MICROWAVE REPEATER CONNECTION FOR A RECEIVER ONLY CONFIGURATION

This chart provides the procedure for connecting the Hewlett-Packard 83001A PMR to a TD-3D radio bay in a receiver only configuration. This procedure may be used at a receiving main station.

APPARATUS:

1—Hewlett-Packard 4-GHz Portable Microwave Repeater (83001A)

1—Microwave Research Corporation (MRC) Transducer (B40-186)

STEP	PROCEDURE

Note: If any of the requirements of this chart cannot be met, refer to the manufacturer's manual provided with the PMR.

Placing the PMR in Service

1 Place the PMR on the top of the test set to be used (J68392A or J68428A). Arrangements should be made to secure the PMR to the top of the test set.

Note: The J68428A test set must be modified to allow proper ventilation for the test set.

2 Connect the PMR power supply to a 117V ***protected*** AC receptacle and connect the power cable from the power supply to the power connector on the PMR.

3 Operate the POWER switch on the PMR to the ON position.

4 Position the RECEIVER FREQUENCY MHz switch to the desired receiving frequency and position the TRANSMITTER FREQUENCY MHz switch to OFF.

Requirement 1: The LO LOCKED indication should be lighted.

Requirement 2: The IF RESUPPLY ON indication should be lighted.

5 Remove the receiver from service by following the established release procedures given in Section 400-400-004. Make the necessary entries in the radio station log.

Warning: Radiation hazard may exist when connecting the PMR into the radio bay. DO NOT look into energized waveguides.

CHART 5 (Cont)

STEP	PROCEDURE
6	Break the waveguide connection at the test access port between the channel separating network and the isolator. Local bay alarms will be generated and the station audible alarm may be silenced by operating the ACO key on the alarm panel.
7	Establish the connection given in Fig. 2 by connecting the MRC transducer to the output of the channel separating network. Use waveguide screws to secure this connection.
8	Connect the transducer to the PMR RECEIVER INPUT connector using the RF coaxial cable provided with the PMR. ***Caution: Handle the RF coaxial cable carefully and avoid any sharp bends.***
9	Verify that a signal is being received by depressing the METER SCALE RCVR INPUT LEVEL pushbutton on the PMR. ***Requirement 1:*** The indication on the RCVR INPUT DBM scale should be ± 5 dBm of the calculated received signal level for the regular channel receiver. ***Requirement 2:*** The IF RESUPPLY ON indicator should be extinguished. If the above requirements are not met, verify that the PMR receiver frequency is set to the correct frequency. If the requirements still cannot be met, measure the received signal level as given in Section 411-100-508. If the received signal meets the requirements, check the PMR, the transducer, and the RF coaxial cable.
10	Depress the METER SCALE RCVR OUTPUT LEVEL pushbutton and observe the meter indication. ***Requirement:*** 0 ± 1 dB on the RCVR OUTPUT DB scale. This corresponds to $+1 \pm 1$ dBm and $+10 \pm 1$ dBm at the two 70-MHz OUT jacks.
11	Connect the cable normally connected to the output of the IF amplifier to the PMR 70-MHz OUT +1 dBm jack. Refer to Fig. 2. ***Caution: Continuity of the radio channel receiver has now been established through the PMR. Changing the position of any of the switches other than the METER SCALE pushbuttons will interrupt service.***
12	Make the necessary entries in the PMR log.
13	Service may now be transferred back to the radio channel receiver according to the procedure in Section 400-400-004. ***The PMR is now maintaining service for the radio bay receiver and maintenance can now be performed on the regular radio receiver equipment.***

CHART 5 (Cont)

STEP	PROCEDURE
	Removing the PMR from Service
14	Remove the PMR from service by following the established release procedure given in Section 400-400-004.
15	Position the POWER switch on the PMR to the OFF position. Make the necessary entries in the PMR. Retire local alarms by operating the ACO key on the alarm panel.
16	Remove the MRC transducer from the receiving channel separating network.
17	Reconnect the radio receiver to the channel separating network and reconnect the cable to the output of the IF main amplifier. Verify that a signal is being received. Make the necessary entries in accordance with FCC rules in the radio station log.
18	If the received signal level is correct, return the radio channel to service according to Section 400-400-004.

CHART 6

HEWLETT-PACKARD PORTABLE MICROWAVE REPEATER CONNECTION FOR A TRANSMITTER ONLY CONFIGURATION

This chart provides the procedure for connecting the Hewlett-Packard 83001A PMR to a TD-3A radio bay in a transmitter only configuration. This procedure may be used at a transmitting main station.

APPARATUS:

1—Hewlett-Packard 4-GHz Portable Microwave Repeater (83001A)

1—Microwave Research Corporation (MRC) Transducer (B40-186)

STEP	PROCEDURE
	Note: If any of the requirements of this chart cannot be met, refer to the manufacturer's instruction manual provided with the PMR.

CHART 6 (Cont)

STEP	PROCEDURE
	Placing the PMR in Service
1	Place the PMR on the top of the test set to be used (J68392A or J68428A). Arrangements should be made to secure the PMR to the top of the test set.
	Note: The J68428A test set must be modified to allow proper ventilation for the test set.
2	Connect the PMR power supply to a 117V ***protected*** AC receptacle and then connect the power cable from the power supply to the power connector on the PMR.
3	Operate the POWER switch on the PMR to the ON position.
4	Position the TRANSMITTER FREQUENCY MHz switch to the desired transmitting frequency and position the RECEIVER FREQUENCY MHz switch to OFF.
	Requirement 1: LO LOCKED indicator should light.
	Requirement 2: STBY indicator should light.
5	Remove the working radio channel transmitter from service by following the established release procedure given in Section 400-400-004. Make the necessary entries in the radio station log.
	Warning: Radiation hazard may exist when connecting the PMR into the radio bay. DO NOT look into energized waveguides.
6	Remove drive from the IF driver amplifier in the TD-3A radio bay by removing the IF cable from the IF IN jack on the unit.
7	Break the waveguide connection at the test access port between the 30A integrated circuit and the channel combining network.
8	Establish the connection given in Fig. 3 by connecting the cable normally connected to the input of the IF limiter and carrier resupply to the PMR 70-MHz IN +5-dBm MAX jack.
9	Depress the METER SCALE TRMTR INPUT LEVEL pushbutton and observe the meter indication.
	Requirement: Indication between −7 and +5 dBm on the TRMTR INPUT DBM scale.
10	Establish the connection given in Fig. 3 by connecting the MRC transducer to the input of the channel combining network. Use waveguide screws to secure this connection.

CHART 6 (Cont)

STEP	PROCEDURE
11	Connect the transducer to the PMR TRANSMITTER OUTPUT connector using the RF coaxial cable provided with the PMR. ***Caution: Handle the RF coaxial cable carefully and avoid any sharp bends.***
12	Momentarily operate and then release the STBY-OPERATE switch to the OPERATE position. ***Requirement:*** OPERATE indicator should light and the STBY indicator should extinguish.
13	Depress the METER SCALE TRMTR OUTPUT LEVEL pushbutton and observe the meter indication. ***Requirement:*** 0 $\pm$2 dB on the TRMTR OUTPUT DB scale. This corresponds to +30 $\pm$2 dBm at the TRANSMITTER OUTPUT connector. ***Caution: Continuity of the radio channel transmitter has now been established through the PMR. Changing the position of any of the switches other than the METER SCALE pushbuttons will mute the transmitter and interrupt service.***
14	Make the necessary entries in the PMR log.
15	Service may now be transferred back to the radio channel transmitter according to the procedure in Section 400-400-004. ***The PMR is now maintaining service for the radio bay transmitter and maintenance can now be performed on the regular radio transmitting equipment.*** ***Note:*** It is desirable to depress the METER SCALE TRMTR OUTPUT LEVEL pushbutton on the PMR so that the output power of the PMR can be checked if necessary.
	Removing the PMR from Service
16	Remove the PMR from service by following the established release procedure given in Section 400-400-004.
17	Momentarily operate the STBY-OPERATE switch to the STBY position. ***Requirement:*** The OPERATE indicator should extinguish and the STBY indicator should light.
18	Make the necessary entries in the PMR log. Retire local alarms by operating the ACO key on the alarm panel.
19	Remove the MRC transducer from the channel combining network.
20	Reconnect the radio transmitter to the channel combining network and reconnect the cable to the input of the IF limiter and carrier resupply. Check the regular channel transmitter

CHART 6 (Cont)

STEP	PROCEDURE
	output power by observing the output power indication on the meter panel. Make the necessary entries in accordance with FCC rules to the radio station log.
21	If the output power is correct, return the radio channel to service according to Section 400-400-004.