

TECHNICAL LOG REQUIREMENTS—TD-2, TD-3, AND TH-3 MICROWAVE RADIO RADIO ADMINISTRATION

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NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

SECTION 400-401-001

1. GENERAL

PURPOSE

1.01 This section provides guidelines to be followed by the Bell System Operating Companies in preparing the required technical log entries for TD-2, TD-3, and TH-3 Radio Systems. Each Bell System Operating Company, as a radio station licensee, has the responsibility to ensure that all technical log entries meet Federal Communications Commission (FCC) requirements.

SCOPE

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 The title for each figure includes a number(s) in parentheses which identifies the paragraph(s) in which the figure is referenced.

1.04 This section is intended to provide overall guidance to ensure that all technical log entries are in compliance with FCC rules. This information is applicable to the TD-2, TD-3, and TH-3 Radio Systems.

REFERENCES

1.05 In addition to the applicable Equipment Test Lists, references to be consulted along with this section are:

- (a) Section 400-100-001—Radio Log Abbreviations
- (b) Section 400-401-000—Microwave Radio FCC Compliance Requirements
- (c) Section 410-206-502—TD-2 Tube Type F.M.
- (d) Section 420-210-502—3A Type F.M.
- (e) Section 420-214-502—4A Type F.M.
- (f) Section 410-410-500—TD-2 TR Bays
- (g) Section 410-410-501—TD-2 Microwave Generator
- (h) Section 410-410-502—TD-2 40 MHz Shifter
- (i) Section 410-410-506—TD-2 IF Carrier Resupply

- (j) Section 410-608-500—TDAS Protection Carrier Supply
- (k) Section 420-611-504—100A Protection Carrier Supply
- (l) Section 420-620-107—400A Protection Carrier Supply
- (m) Section 411-100-509—TD-3 Carrier Frequency Measurements
- (n) Section 411-402-501—TD-3 J68387 Microwave Generator
- (o) Section 411-402-503—TD-3 J68387D 40 MHz Oscillator
- (p) Section 411-402-504—TD-3 J68387R Microwave Generator
- (q) Section 411-406-501—TD-3 TR Bays
- (r) Section 411-502-503—TD-3A J68387W 40 MHz Oscillator
- (s) Section 411-502-504—TD-3A J68387R Microwave Generator
- (t) Section 415-100-509—TD-3D Carrier Frequency Measurements
- (u) Section 415-310-500—TD-3D J68387R-2 Microwave Generator
- (v) Section 415-310-501—TD-3D J68387W 40 MHz Oscillator
- (w) Section 415-301-501—TD-3D TR Bays
- (x) Section 413-402-501—TH-3 Microwave Generator and Shift Oscillator
- (y) Section 413-402-502—TH-3 Carrier Level and Frequency
- (z) Section 413-406-500—TH-3 Bay Transmitter Tests

2. FREQUENCY CONFIGURATIONS

2.01 TD-2, TD-3, and TH-3 Radio Systems are of the heterodyne type. These transmitters utilize two frequency sources in the development

of their final radiated frequency. One source is the microwave generator physically located in the same bay as the transmitter. The second frequency source is the modulated 70-MHz IF input signal. Since the transmitters' output frequency is determined by these sources, it is possible to divide all transmitters into the following three basic configurations (see Fig. 1 and 2).

- (a) **Terminal Station Configuration**—The regular transmitter receives its IF signal directly from an FM transmitter. The protection channel transmitter normally receives its IF signal from a protection carrier supply located in the protection switching bays.
- (b) **Repeater Station Configuration**—These transmitters receive their IF signals from the microwave receivers physically located in the bay or an IF carrier resupply.
- (c) **Main Station Configuration**—This transmitter receives its IF signal from a microwave receiver through the protection switching or an IF carrier resupply. The protection channel transmitter normally receives its IF signal from a protection carrier supply located in the protection switching bays.

2.02 In all transmitter configurations, the frequency-determining components must be measured and the results logged at least annually to comply with FCC rules. Anytime work is done on these components that might affect frequency, the frequency must be measured and the results logged. These components are identified in Fig. 1 and 2.

2.03 In the TD-2, TD-3, and TH-3 Radio Systems, there are four equipment units that supply the 70-MHz IF signal to the transmitter. They are as follows:

- (a) **FM Transmitter**—This unit translates a baseband signal into a modulated 70-MHz IF signal. Its frequency characteristics are determined by its own internal components.
- (b) **Microwave Receiver**—Receivers derive their frequency characteristics from two sources. In the case of the repeater, its 70-MHz output is controlled by a frequency shifter and its associated microwave generator. The 70-MHz output of the main station type receiver is

controlled by its own microwave generator. (The frequency of the incoming microwave signal, while affecting the 70-MHz IF, is determined by equipment in preceding stations, and those frequency-determining components are checked there.)

- (c) **IF Carrier Resupply**—This unit internally produces a 70-MHz modulated IF signal that is used to hold up a channel whose normal 70-MHz source has failed.
- (d) **Protection Carrier Supply**—This unit produces a modulated 70-MHz signal that is used on an idle protection channel transmitter.

3. MODULATION CONFIGURATIONS

3.01 The regular TD-2, TD-3, and TH-3 transmitter's modulation characteristic is derived from an FM transmitter located at the terminal station. The protection transmitter obtains its modulation characteristic from the protection carrier supply located in the transmit IF automatic switching bay.

3.02 If the system is equipped with an IF carrier resupply, the resupply when connected, will control the transmitter's modulation characteristics.

3.03 In all transmitter configurations, the modulation-determining components must be measured and the results logged at least annually to comply with FCC rules. These components are identified in Fig. 1 and 2.

4. TECHNICAL LOG CONTENTS

4.01 The following documents should be included in the front of each log binder.

- (a) E-10117 "Pertinent Technical Log Information"—Statements covering the system modulation and frequency-determining components, antenna structure lighting, and microwave equipment alarm systems (see Fig. 3).
- (b) E-10116 "Typical System Configurations"—Show on Form E-10116 (sheet 1 of 2) the applicable configuration of the transmitters covered by this log, ie, whether it is a terminal, repeater, or main station configuration (see Fig. 1 or 2).
- (c) E-5182—"Licensed Operators Register" (sample in Section 400-401-000)—List by

SECTION 400-401-001

name, home address, class of license, license number, and license expiration date for each employee assigned to perform work on radio equipment at the station. Use of this register is optional; if it is not used, operator's license information must be entered on each log sheet, (Form E-5175).

(d) **All** abbreviations used in logs **must** be defined in the log book. (Section 400-100-001 lists some commonly used abbreviations.)

(e) E-5175—"Technical Log"—Entries concerning pertinent maintenance details including the carrier frequency checks, modulation checks, and other activities affecting transmitter operations must be recorded on the front of this form (see Fig. 4). Instructions for completing this form are shown in Fig. 5.

Note: Forms E-10117, E-5182, E-5175, and E-10116, sheet 1 and 2 can be ordered from Western Electric

Ordering Unit—Pads of 25 each.

5. TECHNICAL LOG ENTRIES

5.01 Due to the numerous components that require technical log entries, some guidelines that must be followed are:

(a) The required log entries for any equipment unit located in the same bay as the transmitter shall be recorded on the same log sheet (E-5175) as the transmitter. Each sheet shall be identified by the R-unit number or other designation number as specified by local company policy.

(b) The required log entries for any equipment unit **not** located in the same bay as the transmitter shall be recorded on a separate log sheet(s) for each unit, and cross referenced to the transmitter by R-unit or other designation number. These log sheets may be filed in the same binder as the transmitter logs, or their location noted in the transmitter log.

(c) The required log entries for common and spare equipment units shall be recorded on individual log sheet(s) and may be maintained in a separate log binder. When any spare unit is assigned to a particular transmitter, the log entry

should be cross referenced to that transmitter R-unit number and/or other designation number.

5.02 The exacting requirements of the FCC rules and regulations make it extremely important that all log entries provide sufficient information to accurately reflect the actual operations that were performed. The wording used in the log entries should leave no room for doubt that the proper measurements and/or tests were made.

5.03 In most cases, FCC technical requirements are not as stringent as Bell System Practices limits, (eg, the output frequency of a TD-2 transmitter must be as authorized, $\pm 0.005\%$, to meet FCC requirements). A typical transmitter's output frequency of 3970-MHz could have a tolerance of ± 1985 -MHz. The in-service requirement for a J68387R-2 Microwave Generator crystal frequency is ± 600 -Hz. At radio frequencies, this allows only ± 0.0192 -MHz, a limit over 10 times more stringent than FCC requirements.

5.04 It is important that log entries not show a measurement out of limits unless it is out of FCC requirements. However, if a Microwave Generator, as an example, is readjusted, that is a "pertinent maintenance detail" and must be noted in the log.

5.05 All microwave transmitters used in the Bell System are type accepted by the FCC. As a result, the maintenance procedures and technical data are filed with them, and are contained in Bell System Practices. These Bell System Practices are considered to meet FCC requirements in maintaining the equipment. Since they are to be followed in the maintenance of all radio systems, it is not necessary to note in the log that a particular Bell System Practice, Test Set (model or serial number), or Procedure was used. Technical logs are kept to satisfy FCC requirements and are not intended to be a maintenance record of test equipment, tube usage, etc. Any records kept in the log binder become part of the Technical Log and are subject to FCC rules; therefore, only those records necessary to satisfy the FCC requirements should be kept in the log binder.

5.06 Refer to Fig. 6 through 18 for representative log entries as follows:

(a) Terminal Station Configuration, Fig. 6 and 7.

- (b) Repeater Station Configuration, Fig. 8 and 9.
- (c) Main Station Configuration, Fig. 10 and 11.
- (d) Protection Channel Configuration, Fig. 12 and 13.
- (e) Frequency Modulated Transmitters, Fig. 14, 15, 16, and 17.
- (f) IF Carrier Resupply, Fig. 18.

REFERENCE 400-401-001

TYPICAL SYSTEM CONFIGURATIONS TD2 & TD3

FORM E-10116-1
(6/78)
SHEET 1

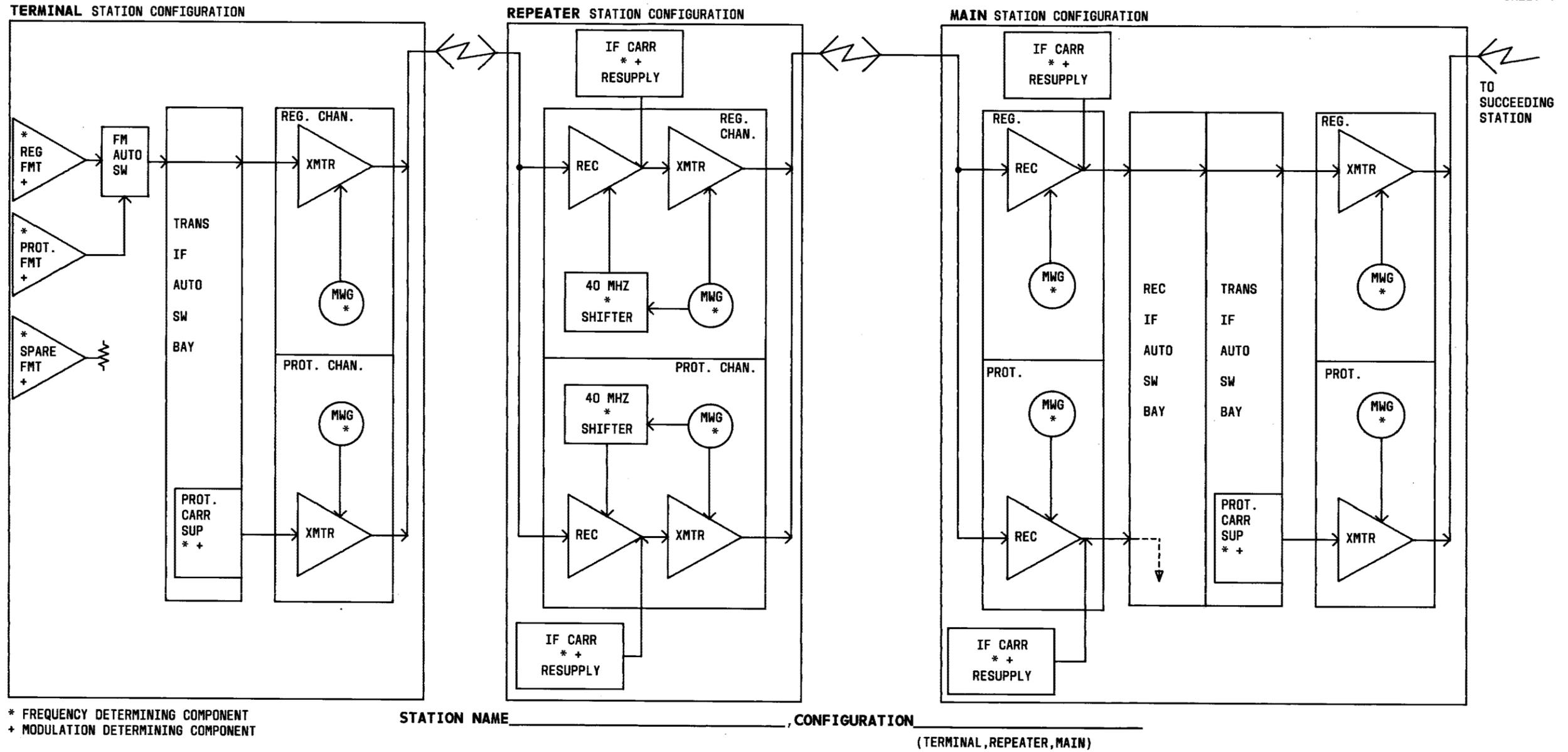
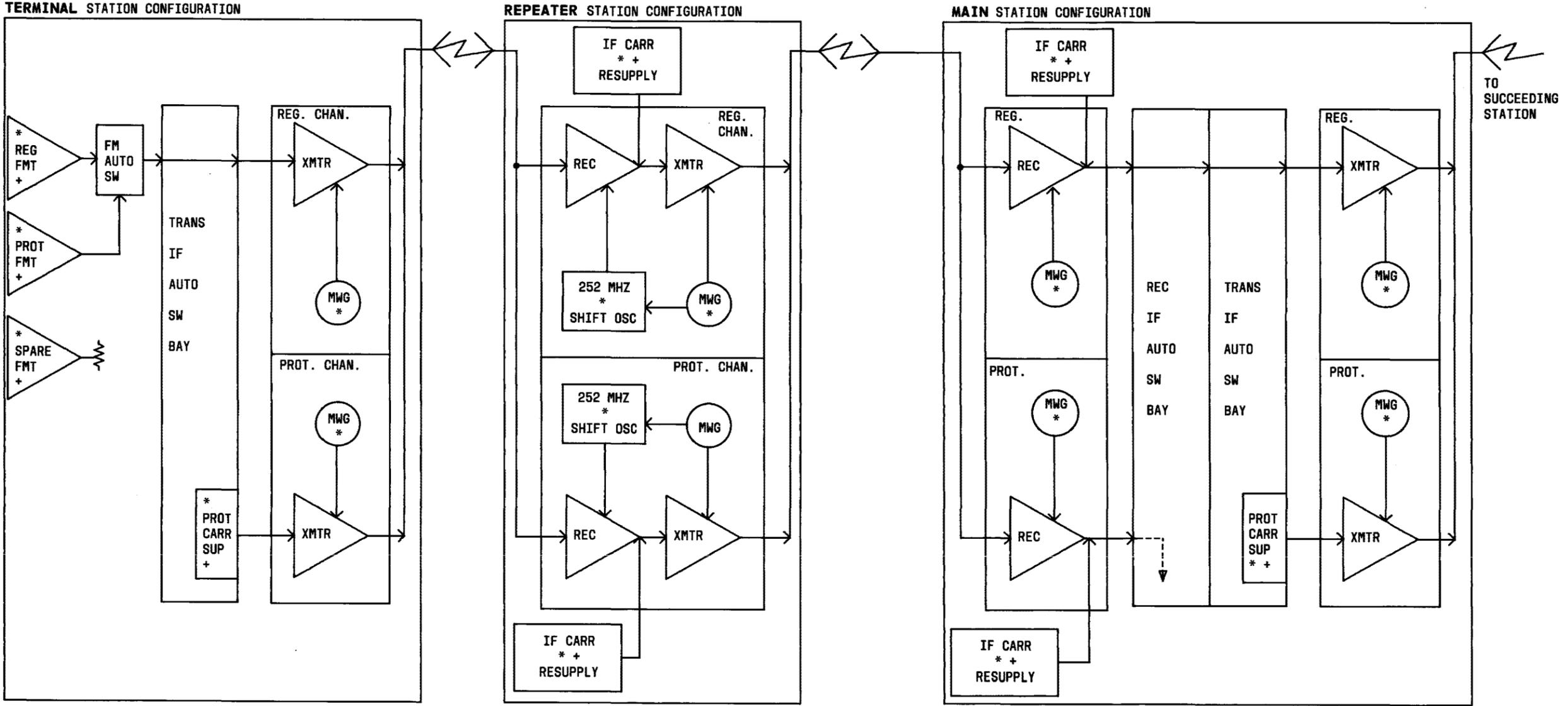


Fig. 1—Typical System Configurations—TD-2 and TD-3, Form E-10116-1 (2.01) (2.02) (3.03) (4.01)

REFERENCE 400-401-001

TYPICAL SYSTEM CONFIGURATIONS - TH3

FORM E-10116-2
(6/78)
SHEET 2



* FREQUENCY DETERMINING COMPONENT
+ MODULATION DETERMINING COMPONENT

STATION NAME _____, CONFIGURATION _____
(TERMINAL, REPEATER, MAIN)

Fig. 2—Typical System Configurations—TH-3, Form E-10116-2 (2.01) (2.02) (3.03) (4.01)

Pertinent Technical Log Information**A. Frequency**

The frequency of the transmitters at this location is determined:

1. Wholly by equipment at this station or
2. Partly by equipment at this station and partly by the frequency of the signal received from the preceding station.

Periodic measurements of the frequency determining components located at this station are contained herein. (See the Microwave Equipment Configuration Sketch included in this log.)

B. Modulation

Under normal service conditions the modulation characteristics of the signals from the transmitters covered by this log are determined:

1. Wholly by equipment at this station or
2. Partly by equipment at this station and partly by the modulation characteristics of the signal received from the preceding station or
3. Wholly by equipment at a preceding station.

The modulation characteristics of this microwave system are under control of the responsible operating personnel at the terminals of the radio channel. These characteristics are measured and adjusted periodically and the results entered in the logs of the terminal stations. Such information for any channels terminating at this station is contained herein. (See the Microwave Equipment Configuration Sketch included in this log.)

C. Microwave Transmitters and Associated Equipment Alarms (Unattended Stations)

The microwave transmitters and associated equipment at this station are under continuous automatic surveillance by an alarm system. The log of alarm indications and action taken is maintained at the alarm center. The alarm center location is:

Location Name _____
Address _____
City _____

D. Antenna Structure Obstruction Lighting (When required by the station authorization.)

The antenna structure obstruction lighting at this station is under continuous automatic surveillance by an alarm system. The log for the obstruction lighting system is maintained at:

Location Name _____
Address _____
City _____

Fig. 3—Pertinent Technical Log Information—Form E-10117 (4.01)

Instructions

The following are instructions for making appropriate entries in the Radio Station Technical Log, Form E-5175. Use one log sheet for each day's activity on one unit (such as a MWT or FMT). Any abbreviations used on the front of this log sheet must be defined in the front of the log binder.

1. Station Name: Enter name of this station.
2. Call Sign: Enter the call sign as indicated on the station authorization.
3. Radio Unit or Other Identification: Show the channel designation number (e.g., R102) or the equipment unit number and/or bay number.
4. Transmitting To or Receiving From: Enter the name of the station this transmitter is transmitting to or that this receiver is receiving from. (Fill in correct blank)
5. Equipment: Examples: Microwave Transmitter, Frequency Modulated Transmitter, Microwave Generator and Microwave Carrier Supply.
6. Date: Show date work began. If work extends into the next day, start a new sheet with the new date.
7. Transmitting Frequency and Polarization: Channel output frequency and polarization as indicated on the station authorization (for MW transmitters only — e.g., 3790.00H)
8. Associated With: Normally this refers to an FMT at a terminal, R-Unit (MWG) at a main station or a Prot. Carrier Resupply. (See specific logging examples.)
9. Time: Enter the local time when work began. If work extends into the next day, start a new sheet with the new date with the time starting at 12:01 a.m.
10. Details of Work Performed: Log entries shall be made when work such as the following is performed on transmitters, carrier frequency producing equipment or other equipment.
 - A. Frequency checks
 - (a) At time of initial installation.
 - (b) When any change occurs that may affect the frequency or its stability.
 - (c) At least annually for crystal controlled or temperature controlled/compensated cavity type transmitters.
 - B. Modulation checks
 - (a) At the time of initial installation.
 - (b) When any change occurs that may affect modulation characteristics.
 - (c) At least annually.
 - C. Other Pertinent Information
 - (a) Checks of power output. Measurements may be entered as dbm or watts (enter the same term as used in the BSP or manufacturer's manual).
 - (b) Details of any outage or interference.
 - (c) Details of other service or maintenance work.
11. Operator's Signature: The log should be signed exactly as operator's signature appears on their license, verification card and licensed operators' register if used.
12. License Number, Class (Radio Telephone or Telegraph — 1st or 2nd) and Expiration Date: Enter this information only if not found on an Operators' Register posted at this station.

Fig. 5—Instructions for Completing Form E-5175 (4.01)

Reference 400-401-000

Form E-5175
Revised 6/78

Bell System
Point-To-Point Microwave Radio Technical Log

Station Name Denver, Co. Call Sign KAB 24 Radio Unit or Other Identification R202

Receiving From _____
or
Transmitting To Buckhorn Mtn., Co. Equipment Microwave Transmitter

Date 12-8-76 Frequency and Polarization 3810 V Megahertz
Associated With Frequency Modulation Transmitter #13

TIME	DETAILS OF WORK PERFORMED
8:00 AM	Channel released for trouble investigation.
	Alarm Center received a low microwave
	output alarm on 12-7-76 at 10:15 P.M.
	Tube V-2 in transmitting amplifier indicated
	low plate current. Beat oscillator level
	normal. Replaced V-2. Realigned transmitting
	modulator and transmitting amplifier.
	Transmitter power output +32.8 dBm.
9:30 AM	Returned channel to service.

Operator's Signature Peter R. Lind
(As appears on operator's license)

* License Number and Class P2-4-2331 2nd class

* Expiration Date Aug. 7, 1978

* Complete only if not listed on the Operator's Register (E-5182) posted at this station.

Fig. 7—Representative Log Entries for Terminal Station Configuration—Maintenance Entry (5.06)

Reference 400-401-000

Form E-5175
Revised 6/78

Bell System
Point-To-Point Microwave Radio Technical Log

Station Name Hanna, Wyo. Call Sign KOB67 Radio Unit or Other Identification R209

Receiving From _____
or
Transmitting To North Rawlins, Wyo. Equipment Microwave Transmitter

Date 11-3-76 Frequency and Polarization 3870H Megahertz
Associated With _____

TIME	DETAILS OF WORK PERFORMED
10:15 AM	Channel released for annual frequency checks. Measured 40 Megahertz shifter frequency and found within limits. Made minor adjustment to closer tolerance. Measured frequency of microwave generator and it was within limits.
10:52 AM	Returned channel to service.

Operator's Signature Richard Millman
(As appears on operator's license)

* License Number and Class _____

* Expiration Date _____

* Complete only if not listed on the Operator's Register (E-5182) posted at this station.

Fig. 8—Representative Log Entries for Repeater Station Configuration—Annual Frequency Measurements (5.06)

Reference 400-401-000

Form E-5175
Revised 6/78

Bell System
Point-To-Point Microwave Radio Technical Log

Station Name Red Hill, N.M. Call Sign WAD 45 Radio Unit or Other Identification R263

Receiving From _____ or Transmitting To Quemado, N.M. Equipment Microwave Transmitter

Date 6-26-76 Frequency and Polarization 5945.2 V Megahertz
Associated With _____

TIME	DETAILS OF WORK PERFORMED
1:35 PM	Channel released due to trouble. Low microwave output alarm received by Albuquerque Alarm Center at 11:55 A.M. Found Repeater alarm and low transmitting microwave carrier reading. Replaced 500 Megahertz generator in microwave generator. Realigned microwave generator and adjusted frequency to within limits. Realigned transmitter/receiver bay. Output power +40.0 dBm.
3:25 PM	Returned to service.

Operator's Signature Mary Healey
(As appears on operator's license)

* License Number and Class _____
* Expiration Date _____

* Complete only if not listed on the Operator's Register (E-5182) posted at this station.

Fig. 9—Representative Log Entries for Repeater Station Configuration—Maintenance Entry (5.06)

Bell System
Point-To-Point Microwave Radio Technical Log

Station Name Rincon, N.M. Call Sign KKX58 Radio Unit or Other Identification R108

Receiving From Fairacres, N.M. or Transmitting To _____ Equipment Microwave Generator

Date 10-15-76 Frequency and Polarization 3790V MegaHertz
Associated With R108 Transmitting to Cutter, N.M.

TIME	DETAILS OF WORK PERFORMED
2:00 PM	Channel released to make annual frequency check of R108 transmitter towards Cutter. Measured frequency of receive microwave generator and found within limits. Made minor adjustment to closer Bell System Practice tolerance.
2:25 PM	Returned channel to service.
	(see Fig. 11)

Operator's Signature Michael R. Fox
(As appears on operator's license)

* License Number and Class _____

* Expiration Date _____

* Complete only if not listed on the Operator's Register (E-5182) posted at this station.

Fig. 10—Representative Log Entries for Main Station Configuration—Receive Microwave Generator (5.06)

Reference 400-401-000

Form E-5175
Revised 6/78

Bell System
Point-To-Point Microwave Radio Technical Log

Station Name Rincon, N.M. Call Sign KKX58 Radio Unit or Other Identification R108

Receiving From _____ or Transmitting To Cutter, N.M. Equipment Microwave Transmitter

Date 10-15-76 Frequency and Polarization 3830 H MegaHertz
Associated With R108 Receiver from Fairacres, N.M.

TIME	DETAILS OF WORK PERFORMED
2:30 PM	Channel released for annual frequency check. Measured frequency of microwave generator and found it within limits.
2:52 PM	Returned channel to service.
	(see Fig. 10)

Operator's Signature Michael R. Fox
(As appears on operator's license)

* License Number and Class _____

* Expiration Date _____

* Complete only if not listed on the Operator's Register (E-5182) posted at this station.

Fig. 11—Representative Log Entries for Main Station Configuration—Annual Frequency Check (5.06)

Bell System
Point-To-Point Microwave Radio Technical Log

Station Name Cedarwood, Co. Call Sign KAS 85 Radio Unit or Other Identification Serial # 24

Receiving From _____
or
Transmitting To Manzanola, Co. Equipment 100A Protection Carrier Supply

Date 12-13-76 Frequency and Polarization _____
Associated With R106-X Protection Channel

TIME	DETAILS OF WORK PERFORMED
3:30 PM	Protection Carrier Supply released for annual frequency and deviation checks. Measured frequencies and drive levels of unit. Found frequencies within limits. Found output level of 63 MegaHertz output to be -14.5 dBm at a -13 dBm point. Readjusted output to within limits.
4:10 PM	Returned to service.

Operator's Signature Jack O. Harris
(As appears on operator's license)

* License Number and Class _____

* Expiration Date _____

* Complete only if not listed on the Operator's Register (E-5182) posted at this station.

Fig. 12—Representative Log Entries for Protection Channel Configuration—Annual Frequency and Deviation Checks (5.06)

Reference 400-401-000

Form E-5175
Revised 6/78

Bell System
Point-To-Point Microwave Radio Technical Log

Station Name Cedarwood, Co. Call Sign KAS 85 Radio Unit or Other Identification R106

Receiving From _____
or
Transmitting To Manzanola, Co. Equipment Microwave Transmitter

Date 12-14-76 Frequency and Polarization 4130 H MegaHertz
Associated With Protection Carrier Supply

TIME	DETAILS OF WORK PERFORMED
9:30 AM	Transmitter released for annual frequency check. Measured frequency of microwave generator and found within limits. Made minor frequency adjustment to bring into closer tolerance.
10:15 AM	Returned transmitter to service.

Operator's Signature Jack Q. Harris
(As appears on operator's license)

* License Number and Class _____

* Expiration Date _____

* Complete only if not listed on the Operator's Register (E-5182) posted at this station.

Fig. 13—Representative Log Entries for Protection Channel Configuration—Annual Frequency Check (5.06)

Reference 400-401-000

Form E-5175
Revised 6/78

Bell System
Point-To-Point Microwave Radio Technical Log

Station Name Albuquerque, N.M. Call Sign KKW31 Radio Unit or Other Identification Frequency Modulation Transmitter #13
 Receiving From _____
 or
 Transmitting To Albuquerque, N.M. Equipment Frequency Modulation Transmitter
 Date 11-15-76 Frequency and Polarization _____
 Associated With R105 to Albuquerque

TIME	DETAILS OF WORK PERFORMED
1:10 PM	Removed frequency modulation transmitter from service for annual frequency and deviation sensitivity checks. Measured rest frequency of frequency modulation transmitter and found it to be out of Bell System practice requirements (20.030 Megahertz). Readjusted to 20.000 Megahertz. Checked deviation of frequency modulation transmitter and it was in limits.
2:15 PM	Returned to service.

Operator's Signature Hop Sing
 (As appears on operator's license)

* License Number and Class _____

* Expiration Date _____

* Complete only if not listed on the Operator's Register (E-5182) posted at this station.

Fig. 14—Frequency Modulated Transmitter—Annual Measurement (5.06)

Reference 400-401-000

Form E-5175
Revised 6/78

Bell System
Point-To-Point Microwave Radio Technical Log

Station Name Albuquerque, N.M. Call Sign KRW31 Radio Unit or Other Identification #3

Receiving From _____ or Transmitting To Albuquerque Jct. N.M. Equipment Frequency Modulation Transmitter

Date 10-10-76 Frequency and Polarization _____
Associated With R105 to Albuquerque Jct., N.M.

TIME	DETAILS OF WORK PERFORMED
1:00 PM	Channel "B" switched to protection on frequency modulation automatic switching. Alarms indicated frequency modulation transmitter #3 had failed. Found defective amplifier-limiter and replaced with shelf spare. Checked frequency and deviation. Found within limits.
2:25 PM	Returned frequency modulation transmitter to service.

Operator's Signature Jack Daniels
(As appears on operator's license)

* License Number and Class _____

* Expiration Date _____

* Complete only if not listed on the Operator's Register (E-5182) posted at this station.

Fig. 15—Frequency Modulated Transmitter—Maintenance Entry (5.06)

Reference 400-401-000

Form E-5175
Revised 6/78

Bell System
Point-To-Point Microwave Radio Technical Log

Station Name Prospect Valley, Co. Call Sign KAB 26 Radio Unit or Other Identification #26

Receiving From _____
or
Transmitting To Common

Equipment Frequency Modulation Transmitter

Date 12-15-76

Frequency and Polarization _____

Associated With Switch Group #2 Channel X

TIME	DETAILS OF WORK PERFORMED
10:30 AM	Released switching spare frequency modulation transmitter for annual frequency and deviation checks. Found frequency within limits. Adjusted transmitter gain control on baseband amplifier for correct deviation sensitivity.
11:15 AM	Returned to service.

Operator's Signature Henry Cooper
(As appears on operator's license)

* License Number and Class _____

* Expiration Date _____

* Complete only if not listed on the Operator's Register (E-5182) posted at this station.

Fig. 16—Frequency Modulated Transmitter—Switching Spare Annual Checks (5.06)

Reference 400-401-000

Form E-5175
Revised 6/78

Bell System
Point-To-Point Microwave Radio Technical Log

Station Name Lamar 2, Co. Call Sign KAZ 61 Radio Unit or Other Identification #14

Receiving From _____ or Transmitting To Common Equipment Frequency Modulation Transmitter

Date 5-10-76 Frequency and Polarization _____
Associated With All Frequency Modulation Systems in Office

TIME	DETAILS OF WORK PERFORMED
9:45 AM	Patching spare frequency modulation transmitter released for annual frequency and deviation checks. Measured rest frequency and deviation sensitivity and found within limits.
10:50 AM	Spare frequency modulation transmitter now available for service.

Operator's Signature J. R. Dent
(As appears on operator's license)

* License Number and Class _____

* Expiration Date _____

* Complete only if not listed on the Operator's Register (E-5182) posted at this station.

Fig. 17—Frequency Modulated Transmitter—Patching Spare Annual Frequency Check (5.06)

Bell System
Point-To-Point Microwave Radio Technical Log

Station Name Sanders, Ariz. Call Sign KOP55 Radio Unit or Other Identification Serial #15

Receiving From _____ or Transmitting To Black Rock, N. M. Equipment Intermediate Frequency Carrier Resupply

Date 10-15-76 Frequency and Polarization _____ Associated With R101 thru R106 to Black Rock, N. M.

TIME	DETAILS OF WORK PERFORMED
11:15 AM	Released resupply #15 from service for annual frequency and deviation checks. Measured frequency and found it within limits. Checked sideband power and found 9.0 megaHertz frequency to be -20.5 dBm at a -18.0 dBm point. Readjusted output to obtain correct deviation.
12:10 PM	Returned to service.

Operator's Signature Maria L. Hernandez
(As appears on operator's license)

* License Number and Class _____

* Expiration Date _____

* Complete only if not listed on the Operator's Register (E-5182) posted at this station.

Fig. 18—IF Carrier Resupply—Annual Frequency and Deviation Checks (5.06)

Instructions

The following are instructions for making appropriate entries in the Radio Station Technical Log, Form E-5175. Use one log sheet for each day's activity on one unit (such as a MWT or FMT). Any abbreviations used on the front of this log sheet must be defined in the front of the log binder.

1. Station Name: Enter name of this station.
2. Call Sign: Enter the call sign as indicated on the station authorization.
3. Radio Unit or Other Identification: Show the channel designation number (e.g., R102) or the equipment unit number and/or bay number.
4. Transmitting To or Receiving From: Enter the name of the station this transmitter is transmitting to or that this receiver is receiving from. (Fill in correct blank)
5. Equipment: Examples: Microwave Transmitter, Frequency Modulated Transmitter, Microwave Generator and Microwave Carrier Supply.
6. Date: Show date work began. If work extends into the next day, start a new sheet with the new date.
7. Transmitting Frequency and Polarization: Channel output frequency and polarization as indicated on the station authorization (for MW transmitters only — e.g., 3790.00H)
8. Associated With: Normally this refers to an FMT at a terminal, R-Unit (MWG) at a main station or a Prot. Carrier Resupply. (See specific logging examples.)
9. Time: Enter the local time when work began. If work extends into the next day, start a new sheet with the new date with the time starting at 12:01 a.m.
10. Details of Work Performed: Log entries shall be made when work such as the following is performed on transmitters, carrier frequency producing equipment or other equipment.
 - A. Frequency checks
 - (a) At time of initial installation.
 - (b) When any change occurs that may affect the frequency or its stability.
 - (c) At least annually for crystal controlled or temperature controlled/compensated cavity type transmitters.
 - B. Modulation checks
 - (a) At the time of initial installation.
 - (b) When any change occurs that may affect modulation characteristics.
 - (c) At least annually.
 - C. Other Pertinent Information
 - (a) Checks of power output. Measurements may be entered as dbm or watts (enter the same term as used in the BSP or manufacturer's manual).
 - (b) Details of any outage or interference.
 - (c) Details of other service or maintenance work.
11. Operator's Signature: The log should be signed exactly as operator's signature appears on their license, verification card and licensed operators' register if used.
12. License Number, Class (Radio Telephone or Telegraph — 1st or 2nd) and Expiration Date: Enter this information only if not found on an Operators' Register posted at this station.

