

## RADIO ADMINISTRATION

### MOBILE RADIO

#### HANDLING CUSTOMER TROUBLE REPORTS AND INTERCOMPANY BILLING

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4. RECEIVING AND HANDLING TROUBLE REPORTS BY LOCAL REPAIR SERVICE BUREAUS—NONCONTROL OFFICE . . . . .	4	1.01 This section describes methods and procedures for recording and summarizing customer trouble reports for mobile radio equipment in the Domestic Public Mobile Radiotelephone Service and Industrial Radio Service.	
5. RECEIVING AND HANDLING TROUBLE REPORTS—MOBILE SERVICE CENTER (MSC) . . . . .	4	1.02 For purposes of this section, this includes all mobile telephone service furnished to the general public, including BELLBOY® and systems dedicated for telephone company use. These services fall under the general classification of VHF, UHF, and Highway Systems for private, maintenance, and <i>customer-owned</i> mobile units working with telephone company base stations and land line facilities. It also includes VHF Maritime Service for those watercraft having radio equipment maintained by a telephone company and procedures of a general nature for intercompany billing for replacement and repair of mobile radio units.	
6. HANDLING TROUBLE REPORTS FOR ANOTHER POINT OF REGISTRY . . . . .	4	1.03 This section does not include trouble recording procedures for Air to Ground Service, Rural Radio Service, Point-to-Point, or High Speed Train Service.	
7. HANDLING AND TESTING TROUBLE REPORTS—CONTROL OFFICE—LOCAL TEST DESK . . . . .	5	1.04 Application of this practice is suitable for either a manual or dial mobile radio system. Options are provided to accept and record trouble reports at a designated Mobile Repair Service Bureau (MRSB), Plant Service Center (PSC), Mobile Service Center (MSC), or at the Control Terminal.	
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needs. However, whatever location is selected to handle Mobile Repair Service reports, that location should be designated as responsible for the recording, compilation, and summary of all trouble reports within the assigned geographical area of responsibility. This includes the necessary compilation and forwarding of the Customer Trouble Report Summary, Form E-2700, through lines of organization to be included on either a district, division, or local Special Service Results report. (See Part 10.)

**1.06** Section 400-200-020 covers administrative procedures for mobile radiotelephone, fixed transmitters, receivers, and control terminals for maintenance personnel and general operation of a radio station.

**1.07** Because this section has been extensively revised, arrows indicating revisions have been eliminated.

## 2. TERMS AND DEFINITIONS

**Two Way Domestic Public Land Mobile** In general, this service, as provided by the Bell System companies, provides two-way communication between an individual with a mobile unit and another individual through the message telephone network. The customer has the option of providing his own mobile equipment should he desire to do so. When the customer provides the mobile station equipment, it will be his responsibility to see that the equipment is properly licensed and maintained, and meets the requirements of the service and the FCC. When these stations are using the telephone company facilities, it is responsibility of the company to see that proper operational control is exercised.

Under the general heading of **Two Way Domestic Public Land service**, three bands of frequencies are used:

30-50 MHz—commonly called Highway channels

152-158 MHz—commonly called Urban or VHF channels

454-459 MHz—commonly called UHF channels

VHF Maritime radiotelephone service uses the 156-162 MHz band.

**BELLBOY® Personal Signaling Service** A one way service consisting of a receiver or a mobile receiving set within the mobile service area. The mobile unit is equipped with a radio receiver and selector unit that results in an audible or visual signal being received. Reception of this signal conveys a prearranged message to the customer. In some cases voice communication is provided to the mobile unit.

**Base Station (Land Station Transmitter)** The fixed transmitter that serves the mobile stations or units. These transmitters are normally connected to the control terminal by means of land line facilities.

**Control Office** The location selected to handle mobile repair service calls.

**Control Terminal** The control terminal and the associated equipment is usually located in a central office. It provides a means for testing and controlling all fixed equipment of the mobile radio system, such as base transmitters and remote receivers.

**Dispatch Service** A private line from a customer to the mobile operator to dispatch mobile units that may also have access to the general public mobile network.

**Land Line Facilities** The wire lines or circuits used to connect base station radio transmitters and receivers to the control terminal.

**Mobile Repair Service Bureau** A selected location which handles reports of troubles from mobile stations.

**Mobile Service Center (Mobile Shop)** This is a selected location that handles the installation and maintenance of mobile station equipment. It can also be the location where mobile records are maintained, such as line cards and frequency measurement records.

**Mobile Service Area** The service area of a particular mobile radio system as covered by the tariffs.

**Mobile Service Operator** The operator who handles mobile service calls to and from mobile stations or units.

**Mobile Station (Unit)** A vehicle equipped with radio transmitting and receiving equipment to effect radiotelephone communication.

**Mobile Telephone Number** The number assigned by the telephone company to each mobile station or unit. The point of registry is considered to be a part of the telephone number.

**Point of Registry** The name or city of the mobile service area that serves the mobile station in the home location.

**Portable Set** Hand, pocket, or pack-carried radio equipment.

**Plant Service Center** A location which accepts, records, and supervises the clearing of local telephone service trouble reports. Subscriber line card files are maintained here and generally this location has access to the teletype service order network for processing service orders.

**Technical Operator** The employee responsible for proper system operation whose duties include operation of the control terminal.

**Remote Receivers (Land Receivers)** Radio receivers are distributed throughout a mobile service area to receive signals from the mobile stations. These receivers are normally connected to the control terminal by land line facilities.

### 3. RECEIVING AND HANDLING TROUBLE REPORTS—CONTROL OFFICE

**3.01** The Mobile Repair Service Bureau (MRSB) is a point at which trouble reports on mobile stations are received and arrangements made for the clearance of the trouble. This point can be at the Control Terminal, Mobile Service Center, Plant Service Center, or a designated location to accept mobile repair calls. Customers may also report their trouble to a local repair service bureau, in which case the trouble would then be referred to the proper mobile repair service location. The necessary 611 or dedicated repair service trunks terminated should include trunks from the mobile operator's switchboard, control terminal, and mobile service center depending on the arrangement chosen and local advantages.

**3.02** The location selected to handle mobile repair service calls is generally designated the Control Office.

**3.03** The most desirable configuration is to have the MRSB situated in a Plant Service Center (PSC) as part of regular repair service operations. The PSC selected should be located in the office where the dialable code connects to the control terminal of the radio system or, in the case of manual systems, located in the same building as the control terminal if possible.

**3.04** All calls from land or mobile users should be handled on regular 611 trunks, if possible. Section 660-103-300 describes the standard method of contact handling.

**3.05** Trouble reports should be recorded on Form E-4732, Trouble Report Ticket, or equivalent. See Section 660-100-014 for the Manual Trouble ticket and Section 660-100-018 for the Mechanized Trouble Ticket. Either method is acceptable depending on the local analysis procedures.

**3.06** A subscriber line card file should be established and maintained at the MRSB for mobile customers. Section 660-151-010 describes Forms E-3569 and E-3570 (Fig. 1), Mobile Station Cards. If desired, the "hard" copy of the service order fanfold may be used.

**3.07** Calls to this bureau over 611 or dedicated lines from land or mobile users should be handled in the following manner.

(a) Mobile User Complaint—Cause of Trouble Unknown:

(1) Determine the nature of the user's complaint and give a commitment time. Request a number where he can be reached and record on trouble ticket.

(2) Sufficient information should be secured and recorded on the trouble ticket to facilitate accurate testing, classification, and disposition of the report.

(3) Attach Mobile Line Card to trouble ticket.

**SECTION 400-200-008**

**(b) Mobile User Complaint—Customer Recognizes Trouble In Car:**

(1) If the customer recognizes that the trouble may be in his mobile unit or wishes to have the unit inspected or adjusted, inform him that he may drive to the Mobile Service Center. State the address and hours of service.

(2) Record time and date the customer desires to drive to the Mobile Shop. If time and date are approximate, record them as such. Also, obtain a contact telephone number.

**(c) Land Customer Complaint—Customer Direct:**

(1) Determine the nature of the land customer's complaint; eg, can't reach mobile radio, noisy connection, etc. Make a normal commitment.

(2) Request a number where the reporting customer can be reached and record same on trouble ticket.

(3) Sufficient information should be secured and the mobile station card attached as outlined in (a) above.

**(d) Land Customer Complaint—Relayed Report:**

(1) Relayed reports received from other locations should be acted upon the same as regular telephone station reports received from another center.

**4. RECEIVING AND HANDLING TROUBLE REPORTS BY LOCAL REPAIR SERVICE BUREAUS—NONCONTROL OFFICE**

**4.01** Reports received in any PSC which is not the control office should be recorded in the usual manner. These reports are generally from land customers. Sufficient information should be secured and recorded on the trouble ticket to facilitate accurate testing, classification, and disposition of the report.

**4.02** Reports positively identified as mobile radio troubles rather than those of land stations should be treated as a Customer-Received for Another Center (RAC). The number recorded should be that of the mobile station.

**4.03** Should the customer be a mobile user, request a number where he can be reached and record the number on the trouble ticket.

**5. RECEIVING AND HANDLING TROUBLE REPORTS—MOBILE SERVICE CENTER (MSC)**

**5.01** If repair trunks are installed at the MSC, the same procedures apply as outlined for the control office; see Part 3 of this practice. Drive in "appointments" and commitment time should be duly noted on Form E-4732, or equivalent.

**5.02** At the conclusion of tests and corrective action, the ticket may be closed. If the MSC is not the control office, the trouble record should be forwarded for proper counting and classification to the office designated for this purpose.

**5.03** Form E-3606, Trouble Memorandum (see Section 400-200-003), can be used by the radio craftsmen as a trouble ticket for trouble referred to them for clearance or for an original report. Care should be exercised, however, that all troubles are ultimately accounted for and properly recorded on a Form E-4732, or equivalent, for inclusion in the monthly report summary.

**6. HANDLING TROUBLE REPORTS FOR ANOTHER POINT OF REGISTRY**

**6.01** Section 400-200-005 covers the description and use of Form E-3587, Report of Mobile Station Repairs, for work performed on a mobile unit at other than its own point of registry. This form should be prepared by the MSC performing the work and forwarded to the home point of registry.

**6.02** When Form E-3587 is received at the home point of registry, the trouble report should be transcribed to the line card and, also, Form E-4732, or equivalent, should be prepared and counted as a customer relayed report even though the work was performed at another location.

**6.03** Form E-4732 should be prepared and handled as a Customer-Received for Another Center (RAC) at the originating Mobile Repair Service Bureau.

**6.04** See Section 400-200-002 for address and person to contact for other point of registry.

## **7. HANDLING AND TESTING TROUBLE REPORTS— CONTROL OFFICE—LOCAL TEST DESK**

**7.01** Mobile User Reports should be handled as follows:

(a) The trouble ticket received by the local test deskman should be tested within his capability. He may use tests, ticket information, and/or subsequent contact with the customer to determine the proper action to be taken. Contact may be required with the control terminal or the MSC. The ticket should remain open until the trouble has been cleared.

(b) Should any corrective action be taken at the control terminal to clear the trouble, the test deskman should call the number indicated on the trouble ticket notifying the customer that the trouble is cleared. The ticket may then be closed.

(c) Trouble history entries should be made on the mobile line card.

**7.02** Land customer reports within the area of the control office should be handled according to established procedures. Relayed reports from land stations from other PSC's should only be accepted for suspected mobile radio troubles.

## **8. HANDLING AND TESTING TROUBLE REPORTS— NONCONTROL OFFICE — LOCAL TEST DESK**

**8.01** Sufficient information should be secured and recorded on the trouble ticket by the Repair Clerk to facilitate prompt and accurate testing, classification, and disposition of the report.

**8.02** It must be determined through necessary testing that the trouble is not in the land telephone.

**8.03** If the land telephone and the facilities are not in trouble, the report should be referred to the control office. Otherwise, the trouble shall be cleared and closed to the customer in the usual manner.

## **9. HANDLING AND TESTING TROUBLE REPORTS— CONTROL TERMINAL**

**9.01** Upon receipt of a trouble report from the local test deskman, the information shall be

recorded on the Control Point-Operation Log, Form E-3601, by the Technical Operator. See Section 400-200-020.

**9.02** The technical operator should make all necessary tests to clear or isolate the trouble. Simulated mobile calls, dialed tests to the station, or common control tests which result with an "on the air" radiation by the station must be logged to conform with FCC Rules as outlined in the above practice.

**9.03** If it is determined that additional tests or corrective action is required at the base station transmitter, proper maintenance personnel should be dispatched.

**9.04** All troubles cleared at the control terminal or transmitter should be closed to the local test deskman promptly by the technical operator at the control terminal. Troubles not cleared and requiring further action at the mobile station end or facilities shall be referred promptly to the deskman.

## **10. CUSTOMER TROUBLE REPORT SUMMARY—FORM E-2700**

**10.01** Bell System Practice Series 660-100 describe the methods used to summarize trouble reports using either Form E-4737 (manual) or Form E-4737A (mechanized) for summary on Form E-2700, Customer Trouble Summary Report.

**10.02** Form E-2700 should be prepared and forwarded in the usual manner, each report period for inclusion in the Exchange Maintenance Service Results Plan (EMSR) or, if used, a Special Services Trouble Summary.

## **11. MOBILE STATION CARD—FORMS E-3569 AND E-3570**

**11.01** The use and selection of Mobile Station Cards is described in Section 660-151-010. The line cards have been modified to record equipment data for BELLBOY.

**11.02** Form E-3569 is a white card 4-3/4 inches wide and Form E-3570 is the standard 3-1/2 inch wide card. Either card may be used depending on the line card tub or file width.

**11.03** In some locations a "hard" copy of the service order fanfold is used in lieu of the standard line card.

**12. BILLING OTHER BELL COMPANIES FOR REPAIR WORK**

**12.01** In case the repair work on subscriber station equipment belongs to another telephone company, every reasonable effort should be made to effect repairs without replacing the equipment since any equipment placed in service on another company's mobile unit must be sold to the other company and the unit removed must be purchased from the other Bell System Company.

**12.02** A bill should be rendered to the other Bell System telephone company covering all material, equipment, and labor used on such repairs including the material, labor, and other charges necessary to restore the replaced equipment to normal working condition. See Section 400-200-002 for the person to contact in the other company.

**12.03** When it is necessary to replace mobile telephone station equipment because of trouble that can not be cleared in the time available, the bill rendered to the other company should also include the cost new of the equipment item replaced. The removed unit should be treated as a purchase from the other Bell System telephone company based on the cost when new. The cost when new of a unit should include the cost of all the modifications.

**12.04** When it is necessary to send a piece of subscriber station equipment to the Western Electric Company for repair, the charges to use for billing purposes should be the average repair charges plus the standard charges for each of any modifications necessary to make the unit equivalent to the unit that replaced it.

**12.05** In the event that the unit removed had more modifications than the unit which replaced it, the former owning company should be credited for the difference in value.

**13. BILLING OTHER BELL COMPANIES FOR INSTALLATION, REMOVAL, AND REARRANGEMENT WORK**

**13.01** The coordination of billing arrangements for mobile equipment units installed, removed, or rearranged for other Bell System

companies is generally done between the offices of the General Plant Supervisors of the companies involved.

**13.02** All material used in installation and rearrangement work (other than nuts, bolts, tape, etc) generally should be furnished by the telephone company for which the work is being done. In connection with removal work, the telephone company for which the work is being done should generally retain ownership of all removed equipment and material.

**13.03** The following check list is provided for the convenience of those responsible for billing coordination and includes typical items involved:

- (a) Other company involved.
- (b) Date of contact and date work is to be done.
- (c) Other company service order number.
- (d) Other company headquarters address.
- (e) Other company representative and his telephone number.
- (f) Subscriber name and where he can be contacted locally.
- (g) Point of registry.
- (h) Mobile telephone number.
- (i) Type of service.
- (j) Type of vehicle.
- (k) Location of equipment in vehicle.
- (l) Work to be done.
- (m) List of station equipment furnished or returned.
- (n) Requisition numbers involved.
- (o) Place of shipment for material.
- (p) Person in whose care the equipment is to be shipped.

- (q) Authority to proceed with the work.
- (r) Date work is completed.
- (s) Date the appropriate local and associated company people were notified of completion.

**14. RETURN OF MATERIAL AND EQUIPMENT TO OTHER BELL COMPANIES**

**14.01** Mobile station equipment and material removed from mobile units on service orders issued by other Bell System companies should be returned to the owning company promptly.

**14.02** Because of the cost and fragile nature of such equipment, it should be properly packed to guard against damage in handling during transit. Since all Western Electric distributing houses and most telephone company storerooms are better equipped for such work, it would appear

preferable that the packing of such equipment should be cared for by those organizations.

**14.03** Where the facilities mentioned in paragraph 14.02 are not readily available, it is suggested that the foreman supervise all such packing and inspect the packing prior to release of the items to the express company for shipment.

**15. INDEPENDENT COMPANIES**

**15.01** Normally, no reports are accepted or counted under the EMSR plan, or work performed on mobile units that are not registered to a Bell System company.

**15.02** The Bell Independent Company Relations Group (B-IR) in each company normally coordinates all billing charges and arranges for such work to be done should such an occasion arise.

FREQUENCY CHECK DUE															
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			
CALL NO.								REF. TEL. NO.			CARD				
TEL. NO.								C O E							
NAME															
ADDRESS								OWNED BY							
CITY								COMPANY			CPE				
								U S O C							
VEHICLE OR CRAFT DATA															
WHERE GARAGED								OR			FIXED LOCATION				
VEHICLE OR CRAFT NO.					MAKE AND YEAR					TYPE					
BATTERY						LOCATION OF RADIO SET									
6V		12V		OTHER		TRUNK		INSIDE BODY		TOP OF CAB					
EQUIPMENT DATA															
MAKE		TRANSMITTER				BELL BOY OR RECEIVER				TRANSCIVER					
MODEL															
SER. NO.															
CONT. UNIT OR HEAD				SUPV. UNIT				CONTROL CABLE				LOUD SPEAKER			
HAND SET				MICROPHONE				PORTABLE				AUX. RELAY			
UNIT KEY NO.				CABINET				MOBILE ANTENNA							
								WHIP		COAXIAL		OTHER			
MISC.															
												DEAD FILE DATE			

B.S.P. 660-151-010
MOBILE STATION
FORM E-3569 (9-72)

**Fig. 1—Mobile Station Card—Form E-3569— (Front)**