

METHOD OF OPERATION

NO. 177

Morro Bay
Emergency Manual Equipment

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1. General

Emergency manual equipment was made available recently for community dial offices in order to permit an attendant to assist the public temporarily in various ways in case outside plant or central office equipment in an exchange is disabled or overloaded as a result of a storm, fire, flood, military activity, etc. The primary functions of the equipment and the attendant who operates it are to make efficient use of the available working facilities, to give special service to the traffic of essential lines, and, in general, to give preference to any traffic judged to be important in the emergency. Two types of equipment have been developed: Type "A" for use in the larger offices, and Type "B" for use in the smaller offices.

Type "B" equipment is to be provided in the Morro Bay community dial office.

2. Service Features

Operations that may be carried out in Morro Bay with this equipment are:

2.1 Make contact with the operator-office over any working trunk pair and reserve one or more such trunks for dispatch use.

2.2 Convert to a manual basis any essential lines that have been prearranged for such conversion. Calls between the converted lines and the attendant, or between those lines and other manual lines or trunks terminating at the emergency board, may then be made without the use of the regular dial office equipment.

2.3 Originate and receive calls over any toll circuits which may be terminated in the emergency equipment during the period of the emergency or which are looped through the office and are prearranged for this service at the emergency board.

2.4 Make operating tests of the operator-office trunks.

2.5 Place a busy condition on the outgoing trunk terminals of any trunks which are out of order or which it is desired to reserve for incoming traffic.

2.6 Cause the release of a trunk which is being unintentionally or otherwise improperly held, or which may be in legitimate use but which is immediately required for more essential service.

2.7 Intercept outgoing calls, incoming calls, or both, to determine which are essential and non-essential, and pass information to calling subscribers. The interception may be applied to all working trunks connected to the equipment or to a part of them while the rest remain in normal service.

2.8 Originate calls to local subscribers over local lines terminating at the emergency board or receive calls over these lines from local subscribers.

Note: The office telephone line will be multiplied at the emergency board for such use as one of these lines.

2.9 Complete outgoing intercepted calls to the operator-office or to other trunks and complete incoming intercepted calls to local subscribers.

Note: Items 2.1-2.3, inclusive, apply even if the central office battery supply has failed. Items 2.4-2.9, inclusive, apply only if the central office battery supply is available.

3. Arrangement of Equipment

3.1 The following equipment will be provided at Morro Bay:

Basic Trunk Units	1
Completing Cord Units	2
Operator Office Trunks	5
Manual Lines	2
Toll Lines - 2-Way	2
Toll Lines - 1-Way, Outgoing	2
Local Telephone Lines	3
Patching Cords	2

The basic unit consists of the following equipment:

- (a) Emergency jack and lamp circuit equipment for five two-way operator office trunks.
- (b) An emergency talking cord and plug for use with the emergency telephone which will be equipped with a dial.
- (c) Battery control key associated with the regular central office battery and with an emergency battery.

4. Method of Operation

4.1 Battery Control Key

The battery control key, marked "BAT", is a two-way locking lever type key with one of the operated positions marked "REG" (for regular battery supply) and the other marked

"EMG" (for emergency battery supply). When the emergency equipment is not being used, this key is in the non-operated position. The equipment is placed in operation by operating the key to the "REG" or to the "EMG" position.

4.2 Single-Ended and Completing Cord Units

A single-ended cord associated with a separately mounted telephone equipped with a dial and with a dry battery for emergency power is provided. This equipment is used as an attendant telephone set and cannot be used for the completion of calls.

Two completing cord units, each consisting of a pair of cords, a supervisory lamp associated with the answering cord, a ringing key for ringing on either cord, and a talking-dialing key are provided. The talking and dialing key connects the cord pairs to the attendant telephone set.

The answering and calling cords are designated "ANS" and "CALL", respectively.

The ringing keys are non-locking lever-type keys designated "ANS" and "CALL" to indicate the direction in which the key should be operated to ring on the answering or calling cord of a pair.

The talking and dialing keys are two-way lever-locking keys designated "TALK" and "DIAL" to indicate the direction in which a key should be operated to permit of talking or dialing. When operated to the talking position, the attendant telephone set is associated with both cords of a pair. When in the dialing position, the dial is associated with the calling cord only.

The supervisory lamp gives supervision only on the answering cord and does not function if the cord is connected with a ringdown line or trunk. When connected to the appropriate jack of a line or trunk giving switchhook supervision, the supervisory lamp is lighted when the subscriber, or operator, is on the line and goes out when the party disconnects; the supervisory lamp will, therefore, follow plug or switchhook flashing under these circumstances. It will be noted that the operation of the cord supervisory lamp is the reverse of normal; this arrangement permits the lamp to function as a line lamp for certain types of service.

4.3 Hand Generator and Key

A hand generator and locking turn-type hand generator key are provided. If the regular ringing circuit supply is available, the key is left in the non-operated position. If the hand generator is required for supplying ringing current, the key is turned clockwise to the operated position.

4.4 Operator Office Trunk Equipment

Each of the five operator office trunks will be equipped with a busy lamp designated "BY" and four jacks designated "A", "B", "C", and "D", respectively. The four designated jacks provide access to different parts of the trunk circuit and perform different functions as described below. The operation of the "A", "B", and "C" jacks and of the busy lamp as described in the following presuppose the use of the regular central office battery supply since these items of equipment do not function when the emergency battery is in use.

Busy Lamp

In general the trunk busy lamp will be lighted whenever the trunk is in use, provided the regular central office battery supply is available and the battery control key is in the "REG" position. The lamp is inoperative with the battery control key in either the normal or "EMG" position. As a rule, a lighted busy lamp is not extinguished upon plugging into an associated trunk jack, but an exception to this rule is noted below under "'A' Jack".

"A" Jack

This is an outward intercepting and trunk out-off jack. It is not used on one-way incoming trunks. By plugging a cord into the "A" jack of a trunk which is not busy on an originating call, connection is established from the emergency board to the trunk terminal at the outgoing selector without making the terminal busy, and the trunk to the operator office is cut off from that connection. However, if the trunk is in working order, it may still be used by the attendant for originating or completing calls to the operator office, as mentioned under "'B' Jack".

For the interception of originating traffic from dial subscribers, the answering cord of a pair is plugged into the "A" jack of a trunk which is not busy on an originating call. As long as the plug is left in the jack, any outgoing call reaching the terminal of that trunk will be routed to the emergency board, will light the cord lamp, and may then be completed if desired.

If in case of urgency it is necessary to cause the release of a trunk to which an outgoing subscriber connection has been established, a dummy plug is inserted into the "A" jack of the trunk. After the insertion of the dummy plug the originating switch train will be released, and, unless the trunk is held at the operator office, the lighted busy lamp will go out. The dummy plug should be removed upon the extinguishing of the trunk lamp to prevent the immediate breakdown of any subsequent connection that may reach the trunk involved. The use of a cord instead of the dummy plug will break the connection between the calling party and the trunk but will not necessarily release the trunk, and if the release were not affected, the withdrawal of

the cord would again establish the subscriber connection to the trunk.

Since the insertion of a cord into the "A" jack of a trunk to which an outgoing connection has been established will at least temporarily break the connection, as a general rule care should be taken to avoid plugging into the "A" jack, unless it is intended to cause the trunk to be released, until it is determined that no outgoing connection has been set up. The absence of such a connection would be indicated by an extinguished busy lamp, or by lack of conversation, after challenging if necessary, when monitoring at the "B" jack as described below.

"B" Jack

This jack performs essentially the functions of an ordinary outgoing trunk jack. The single-ended cord or the calling cord of a pair, when plugged into this jack, is connected with the trunk to the operator office. The "B" jack is not used on one-way incoming trunks.

Assuming the associated trunk to be in working order and idle, the attendant may plug into the "B" jack to originate or complete a call to the operator-office, and in so doing will cause the trunk to test busy. However, incoming calls cannot be answered on the "B" jack. Similarly, if the attendant plugs into the "B" jack of a busy trunk, she may monitor or talk on the connection if the connection is outgoing, but not if it is incoming. The insertion of a dummy plug into the "B" jack of an idle trunk will place the busy test at the outgoing terminal, but a dummy plug should not be inserted into the "B" jack of a busy trunk as this may prevent the release of the trunk.

After the attendant has established a connection to the operator-office by way of the "B" jack, she may signal the operator-office by plug flashing, but in general will not receive flashing signals from that office.

"C" Jack

This is an incoming intercepting and incoming equipment cutoff jack. It is not used on one-way outgoing trunks.

On a call from the operator-office that the attendant wishes to intercept, she plugs into the "C" jack with the single-ended cord or the answering cord of a pair, and in so doing cuts off from the connection the incoming selector, substituting her cord for that equipment. The attendant's answer will extinguish the trunk busy lamp.

After the attendant answers in the "C" jack, the trunk may, if desired, be held at both ends for the relaying of calls or for other dispatch work between the two offices. This connection enables the attendant to signal the operator by plug

flashing, and if the attendant has used the answering cord of a pair, the operator will also be able to flash the attendant on the cord lamp.

By leaving the answering cord of a pair connected to the "C" jack of a trunk, any call completed at the operator-office to that trunk will light the attendant's cord signal, permitting the attendant to intercept the call and to complete it if desired.

When a plug has been inserted into a "C" jack, the busy lamp will be extinguished. This lamp will remain extinguished as long as the plug is in the jack, but will light when the plug is removed if the connection is still up at the operator-office. This feature permits the use of the busy lamp as a trunk answering lamp.

If an incoming connection has been established to a line before a plug is inserted in the "C" jack, the connection with the called line will be broken and the attendant will be connected with the operator-office. In general, therefore, care should be taken to avoid plugging in to the "C" jack unless it is known from the busy signal or from monitoring at the "E" jack that the trunk is not in use on an incoming call.

"D" Jack

This jack is not ordinarily used except when the regular central office battery supply has failed.

The emergency battery will not operate the trunk circuit relays and, therefore, when this battery must be resorted to, the "D" jack must be used on all connections to the trunk instead of the "A", "B", or "C" jacks. A cord plugged into the "D" jack is connected directly with the conductors of the operator-office trunk and all dial central office equipment is cut off. This enables the attendants to signal and communicate with the operator-office by means of the emergency battery. No signaling will be received from the operator-office unless a signaling circuit is patched to the line, as described in paragraph 4.8 (b) 5.

4.5 Manual Subscriber Lines

Provision is made in the emergency equipment for the conversion by key operation to a full manual basis of 2 selected essential local lines. This provision may be valuable in case of failure of the central office equipment or where, because of severe overloads or for other reasons, it is considered that the services of an attendant for such essential lines is desirable.

Each line selected for conversion is equipped at the emergency board with a locking turn-type transfer key, two jacks, and two lamps. The key is designated "EMG MAN". The jacks are

designated "SUB" and "INTCPT", respectively. The lamps are similarly designated.

To convert the line to manual operation, the key is turned clockwise to the operated position. This disconnects the line from the dial office line circuit and transfers it to the jack and lamp designated "SUB". At the same time connection is established between the connector terminal of the line and the jack and lamp designated "INTCPT".

With this arrangement in effect a call originating on the converted line operates the "SUB" lamp. The attendant answers with the single-ended cord or with the answering cord of a pair by plugging into the "SUB" jack. This operation disconnects the lamp. If a completing cord circuit is used, the call may be completed to another line or trunk.

To call a converted manual line from the emergency board the single-ended cord or either cord of a pair is plugged into the "SUB" jack and the ringing key is operated. With a completing cord pair this procedure is also followed in completing a call to converted manual line from another line or trunk.

Where the incoming dial office train is in working order and an incoming call to a converted manual line is received, the ringing current which would normally ring the called subscriber will instead operate the "INTCPT" lamp during the ringing interval. The attendant answers by plugging into the "INTCPT" jack, thereby disconnecting the lamp. If a completing cord circuit is used in answering, the connection may be completed to the called line by plugging the other end of the cord pair into the "SUB" jack and ringing as described above.

The operation of the "EMG MAN" key will break down any existing connection that may have been established from or to the line involved through the dial equipment. If a connection is broken in this manner, the attendant will be apprised thereof by the operation of the "SUB" lamp.

4.6 Toll Emergency Line or Patching Circuit

Ringdown or intertoll trunks or operator-office trunks converted for ringdown operation, not to exceed two regular two-way ringdown circuits and two supplemental one-way outgoing circuits may be terminated in the emergency board for toll operation in the event of the loss of the operator-office or if one or more intertoll trunks are needed as supplemental outlets in case all or a large portion of the trunks normally serving the office have failed or to supplement the operator-office trunk groups in cases of overload.

The equipment furnished at the emergency board consists of two circuits each consisting of a locking turn-type key designated "EMG TOLL", a jack designated "MON", a second jack designated "LINE", and a lamp. Since no suitable toll lines are

looped through this office this ringdown equipment will not normally be connected.

In the event that ringdown circuits are required it will be necessary to crossconnect them to this equipment.

With the key in the operated position a two-way inter-toll trunk may be cut into the jack designated "LINE" and a one-way outgoing intertoll trunk may be cut into the jack designated "MON" on the emergency board.

Under this condition, a ring from the distant toll operator actuates the lamp on the two-way intertoll trunk during the ringing period. The attendant answers by plugging into the "LINE" jack. The lamp remains connected so as to receive any rerings from the toll board. To originate or to complete a call to the toll operator, the attendant plugs into the "LINE" jack associated with a two-way trunk or into the "MON" jack associated with a one-way outgoing trunk and rings.

If the key is left in the non-operated position only a single ringdown toll line may be connected.

4.7 Local Telephone Lines

Provision is made in the emergency board for the termination of three telephone lines, including the regular dial office telephone connected to the dial equipment. These lines provide convenient means of communication between the attendant and local dial subscribers. One or more of the lines should be assigned unlisted numbers to help insure the availability of the attendant to designated persons.

The regular dial office telephone line is extended so as to appear at the emergency board. The line terminal apparatus at the emergency board consists of two jacks, one designated "ANS" for calls received by the attendant, the other designated "CALL" for calls originated by the attendant. Incoming calls are announced by the ringing of the dial office telephone bell and may be answered at that telephone, or in the "ANS" jack at the emergency board with the single-ended cord or with either cord of a pair. The attendant may originate calls at the dial office telephone or by plugging into the "CALL" jack with either the single-ended cord or the calling cord of a pair and by then dialing, after receiving dial tone, in the usual way.

Two local dial telephones not associated with the regular office line are terminated in the emergency board in "ANS" and "CALL" jacks as described above. These lines will be arranged for incoming as well as outgoing service. A lamp is associated with the "ANS" jacks at the emergency board to announce incoming calls. The answer of the attendant disconnects the lamp.

The answering and calling jacks of any local telephone line may normally be used for completing calls between that line

and any other lines or trunks accessible at the emergency board. However, since the local lines are operated through the dial office switching equipment, any general disablement of this equipment by reason of central office battery failure or other cause will render them inoperative.

4.8 Patching Cords

In some instances a connection between the lines or trunks at the emergency board may be made by means of a patching cord. A patching cord may also be used as a substitute for a completing cord if a completing cord is not available or cannot be spared, or may be used for setting up a connection that is expected to remain for some period of time and on which the attention of the attendant will not be required during that period.

The use of a patching cord is limited to those cases where talking battery is supplied, independent of the emergency board, to both ends of the connection, for example.

- (a) Patch between "SUB" jack of a converted manual line and
 1. The "B" jack of an operator-office trunk.
 2. The answering jack of a local telephone line.
- (b) Patch between the "LINE" jack of a toll line and
 3. The "LINE" jack of another toll line.
 4. The "ANS" jack of a local telephone line.
 5. The "D" jack of an operator-office trunk.

As a rule, patching cord connections provide no means for the attendant to monitor, talk, or dial; also, no supervision can be obtained except that which may be furnished by the lamp of the line or trunk itself. In general, therefore, care should be used to guard against the establishment of a patch connection where the subsequent removal of the patching cord may result in a cutoff.

APPROVED:
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