

(Insert this Supplement before Specifications 4566 or 4588)

DIAL AND MANUAL COMMON BATTERY STATIONS

LOCAL BATTERY TALKING, COMMON BATTERY SIGNALING ANTI-SIDETONE SETS

CONTENTS	SEC.	PAGE
GENERAL	1	2
DESCRIPTION	2	2
APPARATUS AND MATERIAL	3	3
INSTALLATION	4	6
CONNECTIONS	5	7
TESTS AND ADJUSTMENTS	6	13

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1. GENERAL

1.01 Reason for Issuing Supplement.

This supplement is issued to cover local battery talking, common battery signaling anti-sidetone sets developed for use at stations in common battery areas where the transmission standards would not be met with standard common battery sets.

1.02 Code Designations.

The code numbers of the subscriber sets, hand telephone sets and desk stands are as follows:

Wall Set	Bell Boxes	Hand Telephone Sets		
		Manual	Dial	Desk Stand
653-BB	634-BB	206A-3	206B-3, 206C-3	151-S
	634-BD		206D-3	

1.03 Scope.

The above sets are suitable for use at dial or manual individual line stations, P.B.X. stations, non-selective code ringing party line stations having bridged ringing with 1400 ohm ringers, two-party selective stations (except two-party message rate dial stations) and four-party semi-selective stations.

2. DESCRIPTION

2.01 Circuit.

The anti-sidetone circuit employs a three winding induction coil, the function of the third winding being to reduce the sidetone, that is, to reduce the amount by which sound entering the transmitter is heard in the receiver of the set. A condenser is placed in series with the receiver to prevent the flow of direct current through it. A retardation coil shunts the receiver and condenser. This gives a low resistance path for d.c. supervision but introduces no appreciable transmission loss. The transmitter is supplied from a separate battery circuit, current being obtained either from dry cells at the station or through battery feeders from a central office; or in certain cases where there are several sets in a group, from a local eight-volt power plant unit containing a small storage battery and dry disc trickle charger supplied from the lighting or power circuit. Where a group of telephone sets of this type receives the transmitter

supply from a local storage battery, or where battery feeder pairs are used, a filter is necessary in each transmitter circuit. This filter which is known as the 634-BD subscriber set consists of a 46 induction coil connected as a retardation coil and two 2 mf. condensers mounted in a metal bell box. Provision is also made in this set to mount an 18 or 19 type resistance in cases where this is necessary in order to meet the requirement that the transmitter current be maintained at a value between 100 and 125 mls. When a resistance is necessary, it will be specified in the order under which installation is made.

The ringer circuit employs a separate condenser from the condenser in the talking circuit. These condensers are both contained in the same can. The dialing circuit differs somewhat from that ordinarily used, but has the same range.

To afford facility for obtaining the best sidetone balance at each installation, an optional wiring arrangement is provided. This permits connecting into the circuit either a 300 ohm (63-H) resistance or a 1/2 mf. (149-B) condenser as specified. All orders covering the installation of a set of this type will specify whether the resistance or the condenser shall be used.

3. APPARATUS AND MATERIAL

Apparatus	50-B APPARATUS BLANK (Wall Set)
Blanks:	50-E APPARATUS BLANK (Deskstand)
	50J-3 APPARATUS BLANK (Hand Telephone Set)
Battery Bag:	BATTERY BAG per KS-6677 (Deskstand or Wall Set)
Battery Boxes:	1-A BATTERY BOX (Deskstand or Wall Set)
	2-A BATTERY BOX (Hand Telephone Set)
Cords:	D6B CORD (Switch Cord)
	D6D-9 CORD (Desk Stand)
	H4D-9 CORD (Hand Set)
	M1E CORD (Dial) 4-1/2 inches or 5-1/2 inches, as specified.
	R2A CORD (Receiver)
	T1A CORD (Transmitter)
Desk Stand:	151-S DESK STAND

- Dials:** 4HA-3, 4HB-3, or 4HE-3 DIAL
 Equiv. 2-AA, 2-AB, or 2-AE DIAL (Desk Stand)
 2-HA, 2-HB, or 2-HE DIAL (Hand Telephone Set)
 Note: The second letter of the above dial codes indicates whether the dial is equipped with a 132-A, 132-B or 132-E number plate, respectively.
- Dry Cells:** BLUE BELL DRY CELL per KS-6542
- Fuses:** 24-A FUSE, 1-1/3 AMPERE (8 Volt Power Plant Unit)
- Hand Set:** E2B-3 HAND SET
- Hand Set Mounting:** D5-3 HAND SET MOUNTING
- Hand Telephone Sets:** 206A-3 HAND TELEPHONE SET
 Consists of D5-3 hand set mounting, 50J-3 apparatus blank, D6D-9 cord and an E2B-3 hand set.
- 206B-3, 206C-3, or 206D-3 HAND TELEPHONE SET
 Consists of D5-3 hand set mounting, 4HA-3, 4HB-3, or 4HE-3 dial, two M1E cords 5-1/2" long, one M1E cord 4-1/2" long, one D6D-9 cord and an E2B-3 hand set.
- Power Plant Unit:** 8 VOLT POWER PLANT UNIT per KS-5257

Equipment Code Designations	List	Battery Type	Amp. Hrs.	Power Supply	
				Voltage	Frequency
KS-5257	3	B1-5	20	105-125 Volts	50-60 Cycles
"	4	"	"	105-125 Volts	25-40 Cycles

Receivers: *144 RECEIVER (Desk Stand or Wall Set)
*557B-3 RECEIVER (Hand Set)
567-A RECEIVER (Desk Stand or Wall Set)
Pole pieces and magnets have olive green finish
and receiver requires permalloy diaphragm
P-229505.
574A-3 RECEIVER (Hand Set)

Receiver PIECE PART NO. P-229505
Repair Permalloy Diaphragm for 567-A receiver. Piece
Parts: part number is stamped in red on back of
diaphragm.

Resistance: 18 or 19-TYPE RESISTANCE (Use in 634-BD
Subscriber Set when specified on service order)

Subscriber 634-BB SUBSCRIBER SET (Bell Box)
Sets: 634-BD SUBSCRIBER SET (Battery feed
filter)
653-BB SUBSCRIBER SET (Wall Set)

Subscriber For 634-BB or 653-BB Subscriber Sets:
Set Repair 147-B CONDENSER (Two 1 mf. conden-
Parts: sers in can.)
149-B CONDENSER (1/2 mf. cond.)
62 INDUCTION COIL
63-H RESISTANCE
54-S RETARDATION COIL
68-A RINGER
29-C GONGS
For 634-BD Subscriber Set:
147-A CONDENSER
46 INDUCTION COIL

Transmitters: *323 TRANSMITTER (Desk Stand or Wall
Set)
337 TRANSMITTER (Desk Stand or Wall Set)
395B-3 TRANSMITTER (Hand Set)

*To be used when specified on service order at
stations where full transmission gain is not
desirable.

4. INSTALLATION

4.01 General.

Follow standard methods for installation of apparatus at common battery dial or manual stations.

4.02 Installing 8 Volt Power Plant Unit.

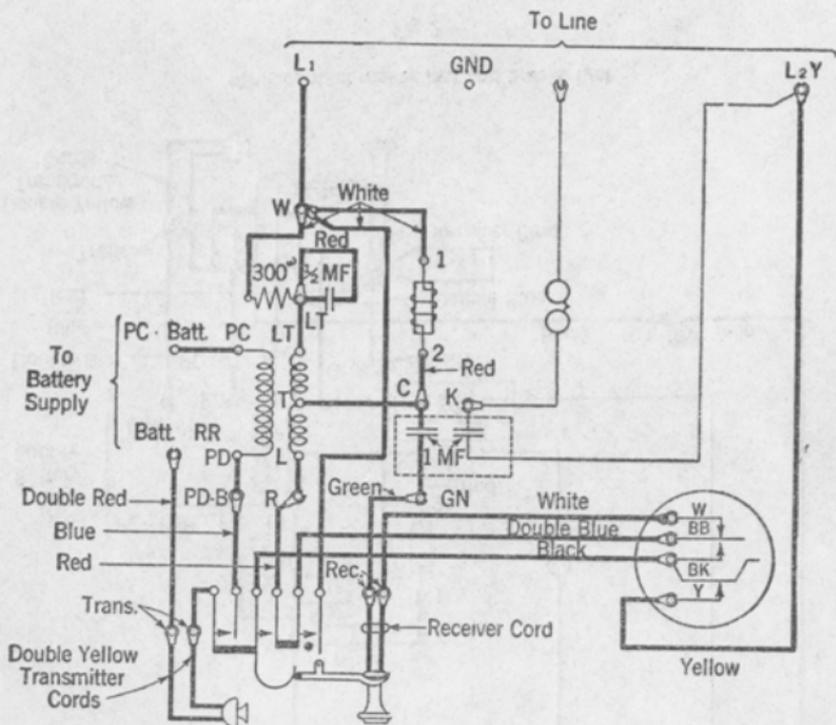
Where a local power plant unit per KS-5257 is to be installed for a number of transmitters, mount the unit on a suitable shelf or table or on top of a cabinet at a height such that the electrolyte level and gravity indicators may be readily observed and where the unit will be secure from being pushed off or overturned. The weight of power plant units of this type is about 30 pounds. No external power wiring is required other than the provision of an outlet from an a.c. power or lighting circuit of proper voltage within six feet so that it can be reached by the flexible cord of the power plant unit. Locate the unit where it will not be exposed to mechanical injury or excessive heat, moisture or dirt or be unsightly or in the way. Run separate leads in standard pair inside wire or 22 gauge switchboard cable from each associated 634-BD subscriber set to the power plant unit. Install on the mountings provided in the unit a 24-A 1-1/3 ampere fuse in the charge circuit and also one in each connected circuit.

5. CONNECTIONS

5.01 General.

The line and ringer connections for 634-BB and 653-BB subscriber sets are the same as for common battery manual or dial station sets equipped with a 1400 ohm ringer and having a capacity of 1 mf. in the ringing circuit.

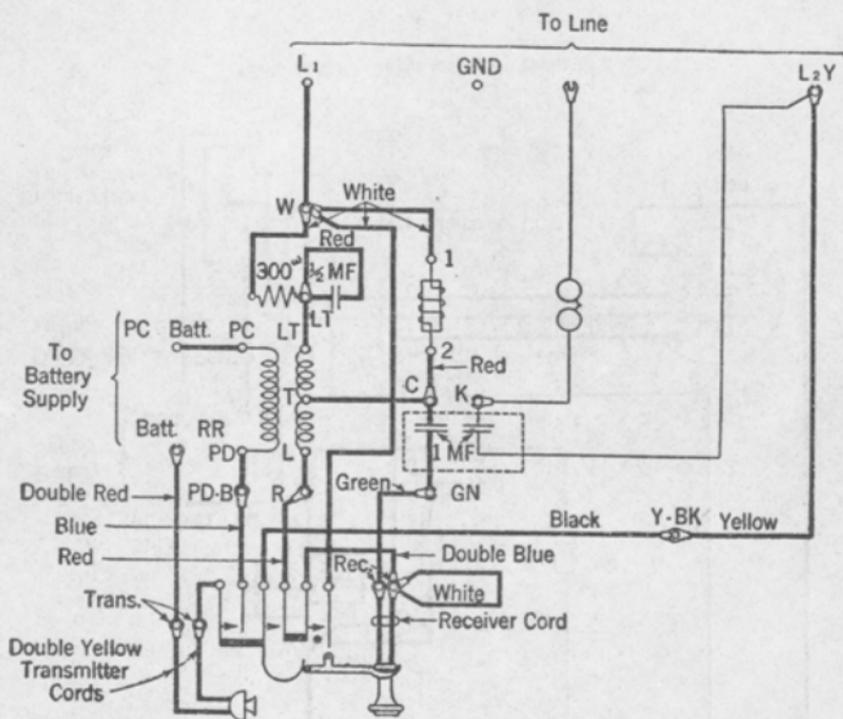
653-BB SUBSCRIBER SET
FOR DIAL SERVICE



*This contact makes last and breaks first

Fig. 1

653-BB SUBSCRIBER SET FOR MANUAL SERVICE



*This contact makes last and breaks first.

Fig. 2

634-BB SUBSCRIBER SET
FOR DIAL AND MANUAL SERVICE

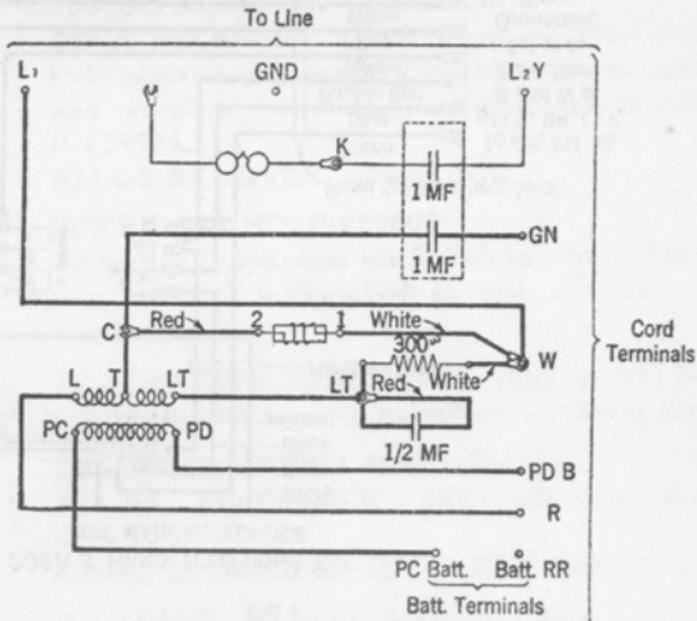
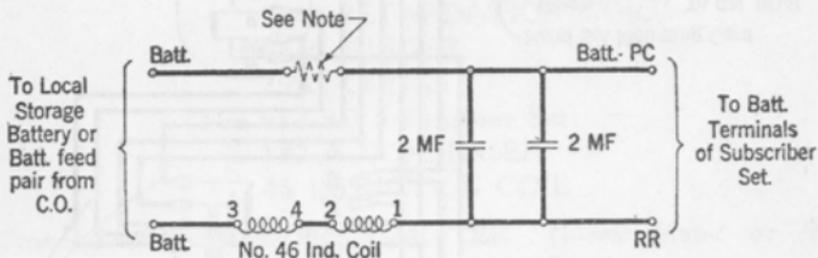


Fig. 3

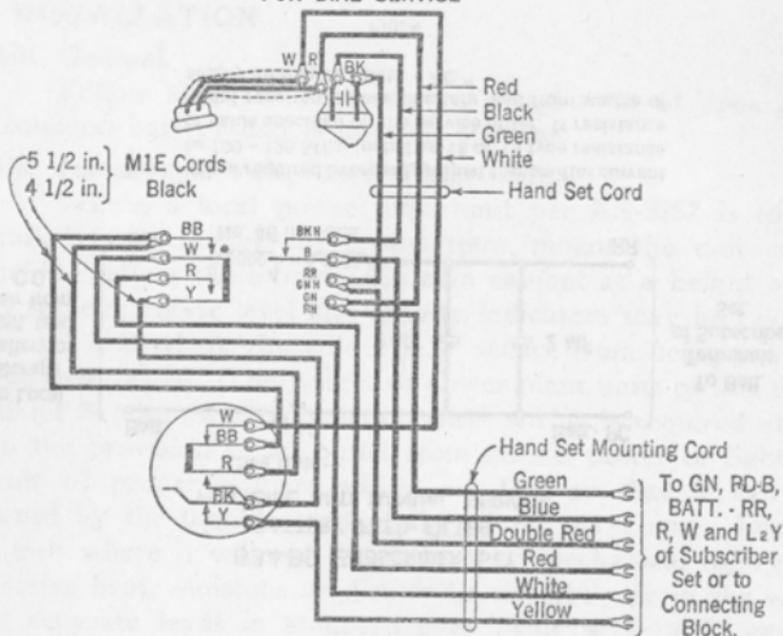
634-BD SUBSCRIBER SET
BATTERY FEED FILTER
FOR DIAL AND MANUAL SERVICE



Note: When required in order to adjust transmitter current to 100 - 125 Mils. install an 18 or 19 type resistance of value specified on the service order. If resistance is not required, connect battery lead from source of supply directly to "Batt. - PC."

Fig. 4

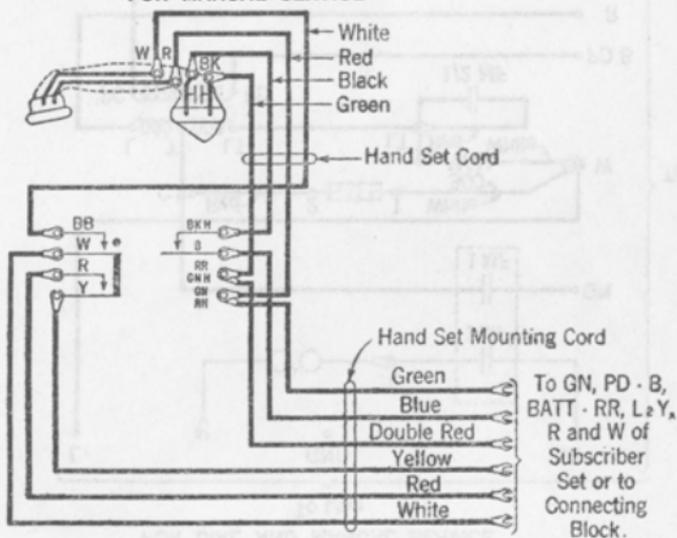
206 TYPE HAND TELEPHONE SET FOR DIAL SERVICE



*This contact makes last and breaks first.

Fig. 5

206A-3 HAND TELEPHONE SET FOR MANUAL SERVICE



*This contact makes last and breaks first.

Fig. 6

5.02 Main Station and Extension Station Without Ringer.

Where a ringer is not required at an extension station and a six wire run is practicable and would not exceed 25 feet, extend the double red, blue, red, white, green and yellow leads from the main station set to a 151-S desk stand or 206-type hand telephone set at the extension station. Where this course would be impracticable, provide at the extension station a separate 634-BB or 653-BB subscriber set with its own battery supply and with its ringer disconnected. Connect this set to tip and ring of the line.

5.03 Connection for Loaded or Non-Loaded Loops.

The order under which the set is installed will specify whether the 1/2 mf. (149-B) condenser or the 300 ohm (63-H) resistance shall be connected in the sidetone network. When the resistance is in circuit (as indicated on the above drawings of the 634-BB and 653-BB subscriber sets) the white leads having spade tips will be connected to the W terminal and the red condenser lead will be connected to the LT terminal. To change from the resistance connection to the condenser connection remove the red condenser lead from the LT terminal of the subscriber set. Transfer the white resistance lead from the W terminal to the LT terminal. Connect the red condenser lead to the W terminal.



FOR DXT 25ANK
151-S DXT 25ANK

6. TESTS AND ADJUSTMENTS

6.01 General.

Tests and adjustments of 634-BB and 653-BB subscriber sets and the associated instruments are in general the same as apply to the ordinary common battery sets.

6.02 Sidetone Balance.

When information specifying the proper connections of the 1/2 mf. condenser or 63-H resistance is not available, call the test desk and request information as to the proper connection. In cases where this information cannot be obtained, determine by means of a talking test which connection will give the lesser sidetone. To make this test, disconnect the red condenser lead and the white resistance lead from the LT and W terminals. Secure connection through the P.B.X. or Central Office to lines or trunks representative of those which would be involved in typical calls from the station under test, taking precautions that charges to the subscriber will not be made. While this connection is up, talk into, or tap the transmitter, alternately touching the W terminal with the red and white leads and noticing the difference in the volume of sidetone. Connect to the W terminal the lead which gives the lesser sidetone and connect the remaining lead to the LT terminal. Advise the test deskman of the connection made.

6.03 Adjustment of 8 Volt Power Plant Unit.

The adjustment of the rectifier should be such that the blue charge indicator ball will be up in the morning or before the load becomes heavy. By means of the rheostat, the amount of charge should be maintained at as low a value as will keep the battery charged. Avoid excessive charging as it results in loss of water more quickly and reduces the life of the battery. In order to make proper adjustment of the rheostat it is necessary that new installations be supervised frequently.

Operation of the gravity indicators is affected by the electrolyte level as well as by the state of charge. It is therefore desirable to keep the electrolyte level close to the upper level mark. Addition of water at intervals of not more than 90 days will be sufficiently often for this purpose if a careful adjustment is made of the amount of charge. Add only distilled water or water known to be suitable for storage battery use.

Tap "B" on the transformer primary winding is provided to permit obtaining rated output of the rectifier after the output has become reduced due to aging of the rectifier discs. If it is found necessary to obtain an output close to full load from an old unit, transfer the lead from terminal "A" to terminal "B".

The movable link is normally left in the "Low" position. If it should become necessary to give the battery an overcharge, due to its having become discharged or run for some time at low gravity, or if it is necessary to charge the battery after an extended power failure, temporarily transfer the movable link to the "High" position.

If detailed information covering storage battery maintenance should be required, refer to Bell System Practices—P.B.X. Installation and Maintenance (or Central Office Maintenance.)—Sections covering small storage batteries.

If detailed information covering maintenance of dry disc charger units should be required, refer to Bell System Practices—P.B.X. Installation and Maintenance (or Central Office Maintenance) Sections covering copper oxide type rectifiers.