3A COMMUNICATION SYSTEM
(HOSPITAL INTERPHONE)
METHOD OF OPERATION

1. GENERAL

1.01 This section covers the method of operation of the control console and the patient telephone set in the 3A Communication System. Information in this section can also be used as an overall operational test of connecting circuits.

> ***Caution: Due to the nature of customer usage of this system care should be exercised in removing equipment from service.***

1.02 This section is reissued because Issue 1 did not receive general distribution.

2. METHOD OF OPERATION

STATION TO CONTROL CONSOLE

2.01 A patient signals the control console by momentarily operating the nonlocking NURSE key on the patient telephone set or the pendant key on the nurse call cord.

2.02 The audible signal at the control console will operate at 60 ipm as will the lamps associated with the console station signaling key, NURSE key on the telephone set, and door lamp, if provided.

2.03 The control console answers the signal by operating the line pickup key associated with the interphone line and momentarily depressing the station signaling key associated with the flashing signal.

2.04 When the system is seized by the control console, a line seizure tone is applied to the line and the interphone pickup key lamp is lighted steady. When station signaling key is depressed, door lamp and nurse lamp on patient set will light steady.

2.05 If a second call is being received at the console at this time, the audible signal will continue to operate but at a reduced volume to avoid interference with the established call.

2.06 The patient can now talk to the control console hands-free or by use of the dial-in-handset, if privacy is desired. The same option is available at the control console if speakerphone feature is provided.

2.07 Disconnect occurs when the control console goes on-hook or operates another station signaling key. All lamps will be extinguished. If the nurse answers a station call by going to the patient's room, the call may be abandoned by pressing the release button (Bell System Seal) on the patient telephone set.

2.08 Provision is made for emergency signaling by means of a customer-supplied locking type key, associated with the patient station but not part of it. When the key is operated, the three associated lamps flash at 120 ipm and the audible signal at the control console operates continuously. The signals can only be released by restoring the emergency key at the station.

2.09 If it is desired to leave the control console unattended, station, CO, PBX, and Centrex calls may be answered at a remote answering station. Operation of the REMOTE ANSWER key at the console extends the audible signal to the remote station. At the remote answering station, patient signals are automatically scanned and connected on a numerical sequence basis.

CONTROL CONSOLE TO STATION

2.10 The control console signals a patient station by operating the line pickup key associated with the interphone line and momentarily depressing the desired station signaling key.

2.11 When the interphone line is seized, the line seizure tone is heard at the control console.

2.12 When the called station is signaled, the patient hears the alerting tone for about 1/2 second indicating the control console is calling the station.

2.13 If the PRIVATE key at the called station is operated, a steady tone is heard at the control console as an indication that the station desires privacy. Under this condition the called station can hear the control console but cannot be monitored by the console. If the patient station wishes to talk to the control console, the NORMAL key at the station must be operated.

2.14 If the station is on a CO, PBX or Centrex line connection when called by the control console, the microphone and the loudspeaker at the station are energized, but the station remains connected to the line. If the station does not wish to be monitored, the PRIVATE key must be operated. Momentary operation of the switch hook of the station telephone set will disconnect the station from the CO, PBX, or Centrex line and connect it to the interphone line. The recall switch in the dial-in-handset cannot be used for this operation. Release is the same as for a station to control console call.

CO OR PBX CONNECTIONS

2.15 Calls on CO, PBX, or Centrex lines are originated or received at patient stations by lifting the dial-in-handset of the telephone set. Hands-free operation is not available on these lines at patient telephone set.

2.16 A maximum of four CO, PBX, or Centrex lines can be terminated at the control console and if desired may be extended to remote answering stations, if provided. These lines appear on line pickup keys on the 1st key of the console and operate the same as other 1A1 or 1A2 key telephone system lines. Hands-free operation is available at the control console if speakerphone feature is provided.

2.17 If a patient station signals the console while a CO, PBX, or Centrex line call is in progress, the line must be placed on hold before the calling station can be answered.

3. CIRCUIT PACK FUNCTIONS

3.01 ***Common Control Circuit (AE1):***

(a) **K1 relay**— Operates when the remote answering station goes off-hook to disable the control console signaling keys, transfers the speakerphone control from the console to the remote answering station and activates the scanning circuit.

(b) **K2 relay**—Starts the K3 relay to time out the tone control circuit and disables the scanning circuit.

(c) **K3 relay**—Controls the tone generator in the 57-type control unit.

(d) **K4 relay**—Converts the 60 ipm lamp signal to 120 ipm when an emergency key is operated at a station.

3.02 ***Battery Control Circuit (AE2):***

(a) **K1 relay**—Operates when control console goes off-hook to supply battery to entire system.

(b) **K2 relay**—Pulses each time a control console signaling key is depressed, disconnecting the console from the station it was connected to. This allows the console to operate another signaling key without operating the switch hook to disconnect manually.

(c) **K3 relay**—Controls the K2 relay in the AE1 circuit pack, controlling the scanning function of the remote station, when provided.

(d) **K4 relay**—Starts the interrupter and operates the K4 relay in the AE1 circuit pack.

3.03 ***Station Signaling Circuit (AE3):***

(a) **K1 relay**—Prepares the associated station for hands-free operation by closing the microphone and speaker leads.

(b) **K2 relay**—Prepares the station for handset operation on nurse to patient calls. With station to station or PBX call, locks station on hands-free operation if nurse calls.

(c) **K3 relay**—Energizes the audible and visual signals at 60 ipm when the station calls the control console.

(d) **K4 relay**—Energizes the audible and visual signals at 120 ipm when an emergency key is operated.

3.04 *Auxiliary Control Circuit (AE4):*

(a) **K1 relay**—Prepares the 57-type control unit for hands-free operation at the control console or remote answering station when speakerphone is provided.

(b) **K2 relay**—Protects the power supply from overload by disconnecting the 14-26 volt dc signal battery supply to the station signaling circuits if approximately 750 ma is drawn.

(c) **L1 inductor and R1 and R2 resistors**—Provide the talk battery for the intercommunication line to the system.