

EMERGENCY MANUAL EQUIPMENT EQUIPMENT DESIGN REQUIREMENTS STEP-BY-STEP SYSTEMS

1. GENERAL

Scope

1.01 This specification, together with the supplementary information listed herein, covers the equipment design requirements for the manufacture and installation of emergency manual equipment for use in No. 1, 350A, 355A, 360A, CX30, CX60, CX100, CX200, CX1000, 32A32, 32A44, 35E97, 375A, 375B, 385A, 385B, 386A, and 386B step-by-step dial offices. Equipment included in this specification may be ordered by specifying the code and list and group numbers covered in part 4.

1.02 This specification is reissued to incorporate previous appendix changes.

Capacity

1.03 The capacity of the emergency equipment is as follows:

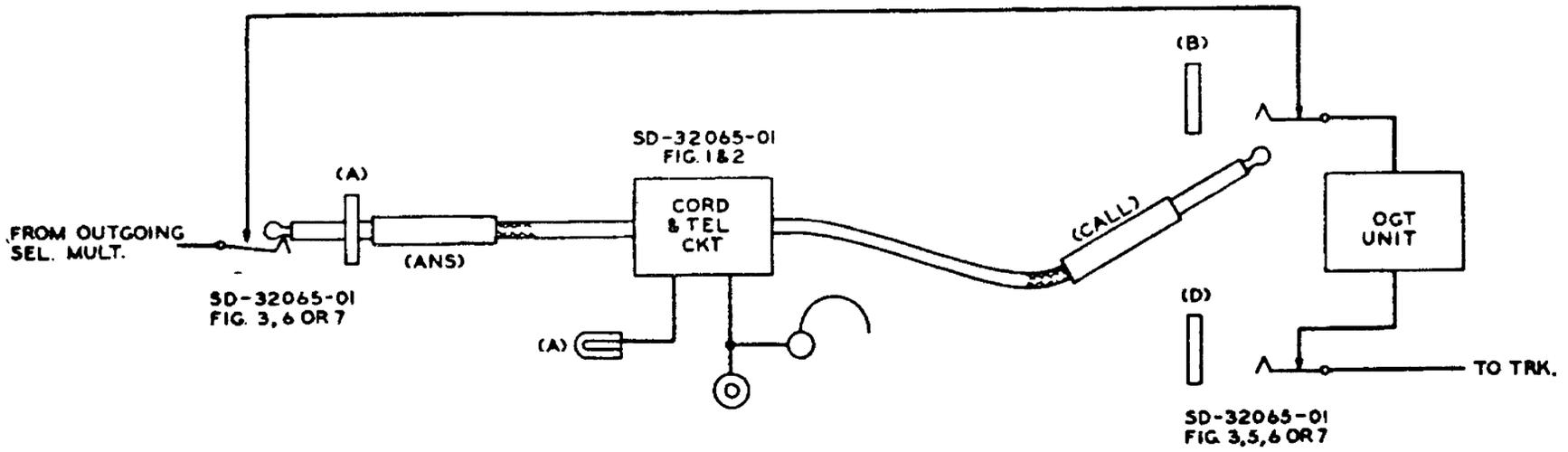
	NUMBER PER INSTALLATION
Initial Jack Field and Fuse Panel Assembly	1
Supplementary Jack Fields	As Req.
Emergency Telephone Unit (required when no key and cord shelf unit is provided)	1
Patching Unit (For Off- Premise Operation)	1
Key and Cord Shelf Unit (10 cord capacity)	3 Max

Description

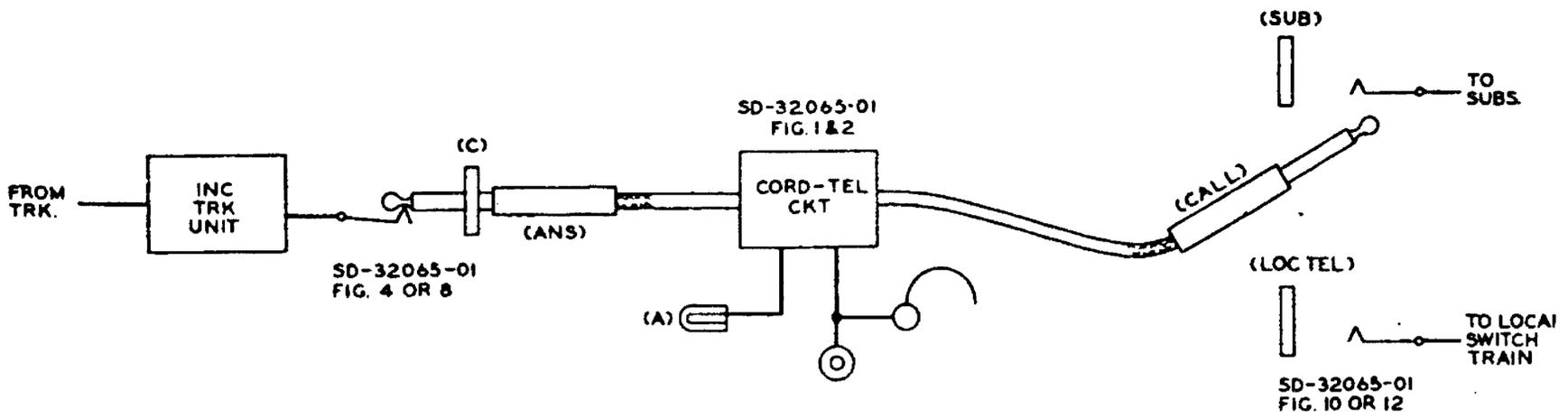
1.04 The equipment covered by this specification provides arrangements whereby important calls may be handled on an emergency manual basis in No. 1 step-by-step offices and most types of community dial offices. These services include manual interception (and in some cases completion) of calls on local trunks, sub-

scriber lines, and toll lines which have been equipped with the necessary jacks to provide for this service. All features of the emergency manual equipment are optional and combinations of these features may be furnished to care for such emergency conditions as follow:

(1) *In offices where temporary overload or failures have limited the use of the outside plant lines*, the incoming and outgoing trunk calls can be intercepted and selected by the manual operator so that the important calls receive completing priority. Fig. 1A illustrates *the interception of an outgoing call* on a trunk arranged for emergency manual service. The (ANS) plug of the cord circuit is placed in the (A) jack. When the call reaches this trunk, the cord supervisory lamp (A) lights to signal the attendant. If completion is required, the (CALL) cord can be plugged into the (B) jack. If a power failure disables the OGT unit, the cable pair can be reached direct by plugging the (CALL) cord into the (D) jack. As many trunks can be set up for interception as there are cords available on the key and cord shelf unit. If all outgoing calls are to be intercepted, all trunks not associated with the cord circuits must be made busy with a dummy plug placed in the trunk (B) jack. Intercepting can also be handled on a limited basis with the emergency telephone unit; however, this unit is not designed for completion of intercepted calls. Fig. 1B shows *the interception of incoming calls* on a trunk arranged for emergency manual service. The (ANS) plug of the cord circuit is placed in the (C) jack. A call reaching this trunk will light the cord supervisory lamp (A) to signal the attendant. If completion is required, the (CALL) cord is connected to a (SUB) jack, or to a (LOC TEL) jack. The latter jack permits the attendant to complete the call by dialing over the local switch train. Limited interception of incoming calls without completion, can be arranged with the emergency telephone unit.



INTERCEPTING OUTGOING CALLS
FIG. 1A



INTERCEPTING INCOMING CALLS
FIG. 1B

Fig. 1 - Manual Attendant Intercepting Incoming and Outgoing Calls On Local Trunks

(2) *In offices where temporary overloads or failures have limited the use of the switching equipment*, the more important subscribers, such as fire and police departments, can receive manual originating and completion service. Fig. 2 illustrates the general traffic plan for this condition. The operation of the (EMERGENCY MAN) key gives the preferred line a manual drop and jack appearance. With this key operated a *call originated by the preferred subscriber* operates the drop signal. As shown in Fig. 2A the attendant answers the call with the (ANS) cord and completes with the (CALL) cord to any other manual subscriber, or to the OGT through the (B) or (D) jack. The latter jack is used when the OGT unit is inoperative. *Calls to the preferred subscriber over the switching train* will operate the drop signal and will be intercepted by the attendant. Completion can be made with the (CALL) cord as shown in Fig. 2B, through the (SUB) jack. The emergency telephone unit can also be used for this intercepting service, although no completion of calls can be made with the unit.

(3) *Temporary toll switching service can* be furnished in offices where nearby toll lines have been given the necessary intercept jack appearances. In the event of an emergency in the toll plant, this office, remote from the toll center, can be used for toll intercept and completion. Fig. 3A illustrates the arrangements for the interception of a call which would normally reach the toll center. With the $\left\{ \begin{array}{l} \text{TOLL} \\ \text{EMG} \end{array} \right\}$ key operated, ringing on the toll line will operate the drop, indicating the presence of a call which is intercepted with the (ANS) cord. With equipment of Fig. 3A, the call can not be completed to the toll office direct, but can be completed locally or over an alternate route via trunks to the operator office. This completion is made with the (CALL) cord in the various jacks as shown. Fig. 3B is the arrangement required when interception and completion is desired in either direction on the toll line. When both $\left\{ \begin{array}{l} \text{TOLL} \\ \text{EMG} \end{array} \right\}$ keys are operated, calls from and to the toll center will operate the drop signals. The attendant can then intercept calls in either direction and can complete on the toll line or to the miscellaneous local jacks. Limited toll service can also be furnished with the emergency telephone unit.

Equipment

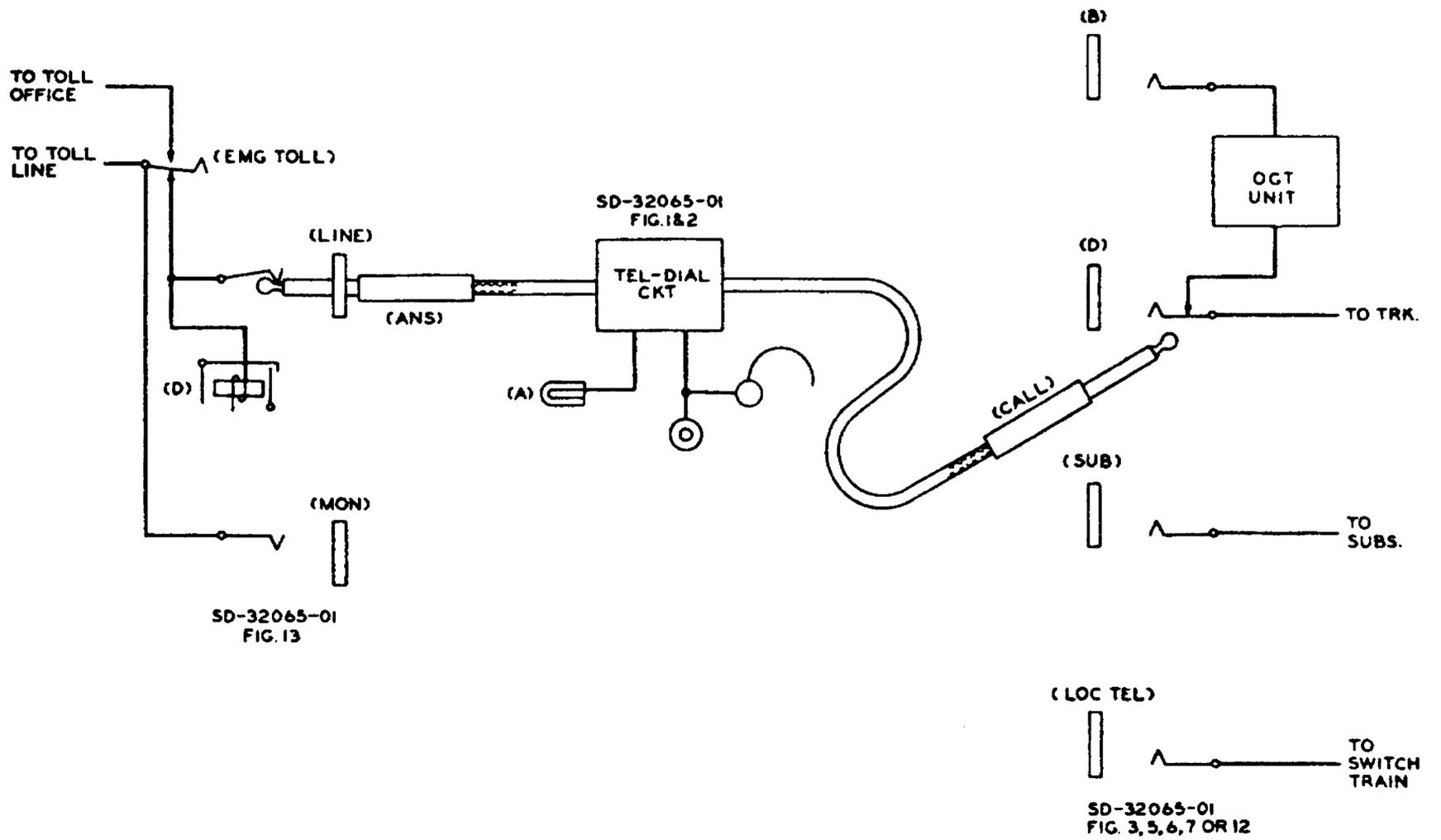
1.05 Two equipment arrangements are available for providing the above services: (1) The "Type A" equipment, which provides for a key and cord shelf, for use in No. 1 and large unattended dial offices and (2) the "Type B" equipment which may be mounted in steel apparatus cabinets for use in small unattended dial offices.

1.06 The "Type A" emergency manual equipment consists of six units: (a) the initial jack field and fuse panel assembly, (b) emergency telephone unit, (c) supplementary jack field assembly, (d) the ringing generator unit, (e) key and cord shelf unit, and, (f) a patching unit for off-premise operation of this equipment. These units are designed for 23" relay rack mounting. Where relay rack is not available a floor supported relay gate may be furnished.

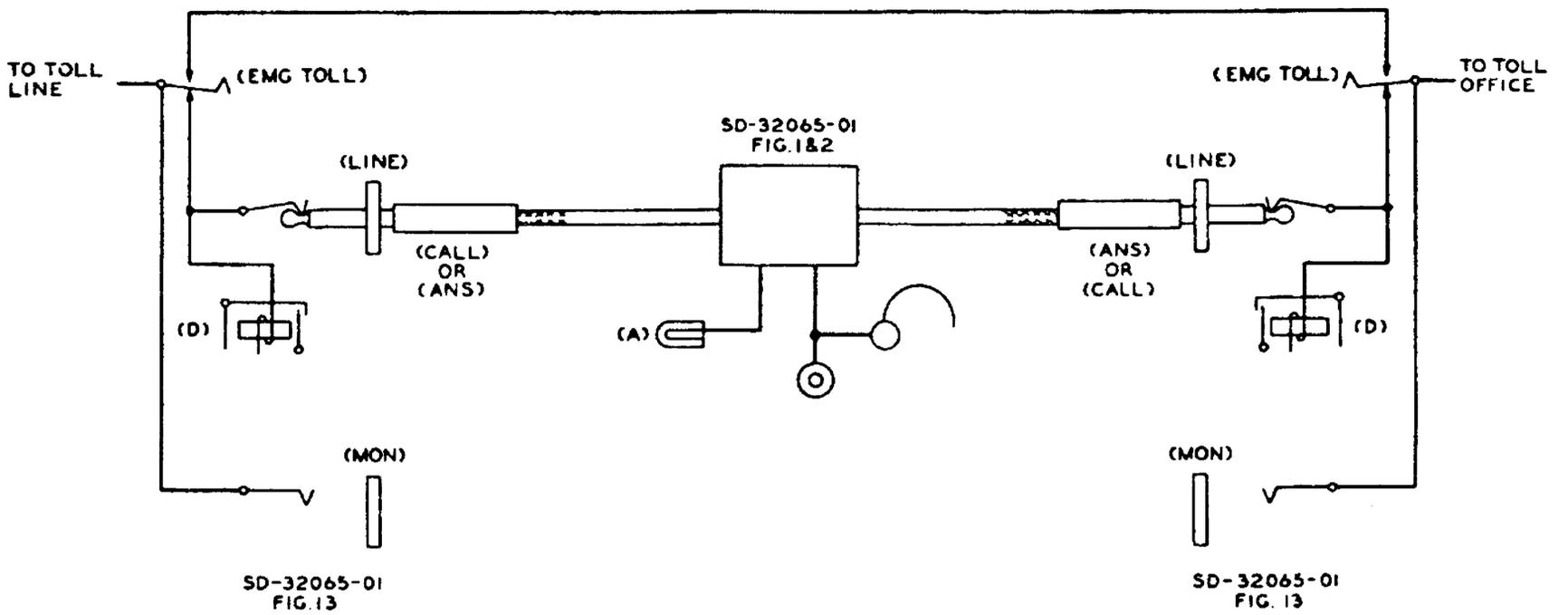
1.07 For smaller installations where only limited manual service is required the intercept service jacks can generally be accommodated on one jack field. For these cases, the emergency equipment will include only an initial jack field and fuse panel assembly, an emergency telephone unit, and a ringing generator unit. A patching unit may be furnished for off-premise operation of the equipment, if desired.

1.08 The average size installation may require only one jack field, but will need full manual intercepting and completing service. Where this is the case the equipment required for emergency operation will include the initial jack field and fuse panel assembly, and the key and cord shelf assembly. However, the key and cord shelf assembly may be stored at a central point and provided only as required. The patching unit may be desired for off-premise operation of the equipment.

1.09 In the larger installations it may be necessary to furnish more than one jack field to accommodate all of the intercept service jacks. For such jobs one initial jack field and fuse panel assembly will be supplied with supplementary jack fields as required. More than one key and cord shelf assembly may also be provided and when furnished should be mounted in bays adjacent to the initial jack field.



INTERCEPTING CALL TO TOLL OFFICE
FIG. 3A



INTERCEPTING CALL TO OR FROM TOLL OFFICE
FIG. 3B

Fig. 3 - Manual Attendant Intercepting Calls on Toll Lines With Patching Jacks at Local Office For Emergency Toll Service

1.10 Initial Jack Field and Fuse Panel Assembly:

(a) The jack field framework is arranged to mount jacks, keys, drops, and lamps, as required, for the optional intercept and manual services previously described. The framework of the jack field is drilled to mount one hang-up telephone set, one generator jack and 3 multiconductor Jones plugs for extending power to 3 key and cord shelf units. The miscellaneous apparatus associated with the intercept circuits, is assembled, as required, on mounting plates which are accommodated in the lower section of the relay rack.

(b) The fuse panel includes 35 individually mounted fuses, the night alarm and battery test circuit, and the emergency battery cutoff key.

1.11 The emergency telephone equipment includes a small relay unit, jacks, cord, and telephone set which permit limited manual operation of the intercept features. Any type of telephone may be specified by the telephone company, although provision is made for a hang-up type to be accommodated on the jack field framework. The jacks are mounted in the jack field. The one cord required is permanently fixed to the mounting plate and is sufficiently long to reach jack equipments on adjacent bays should they be required. This cord, when plugged into the appropriate jacks, connects the emergency telephone to the trunk or line for answering or originating a call.

1.12 The patching equipment for off-premise operation consists of a small relay unit, jacks and a telephone set. The telephone set at the desired location is connected by two cable pairs to the relay unit which, in turn, may be patched to any desired trunk, and permits originating or answering calls on this trunk.

1.13 The supplementary jack field accommodates intercept jack equipment in the same manner as the initial jack field assembly and is used for additional intercept facilities.

1.14 The ringing generator unit consists of one five bar generator and a plug ended cord mounted on a wooden panel. The ringing generator unit is furnished with the emergency telephone unit when no key and cord shelf unit is provided, and mounts on the frame in place of

the latter unit. The ringing generator connects, by the cord and plug, to the emergency telephone unit through the (GEN) jack furnished in the frame of the jack field. Neither jack nor generator unit need be furnished when a key and cord shelf is equipped. In cases where a key and cord shelf is installed after the emergency telephone unit and generator unit are installed, the generator unit is removed and the key and cord shelf unit installed in its place. The generator equipped with the key and cord unit automatically becomes the ringing supply for the emergency telephone unit.

1.15 The key and cord shelf unit contains the cord circuits, hand generator, and position and dial circuit equipment. The shelf with the cords, keys, and position dial is assembled on mounting bars as one unit with the associated relay equipment. The basic key and cord unit is wired for a maximum of ten cords and equipped as required with 2 circuit cord units. A writing shelf can also be furnished optionally with the assembly. The key and cord shelf assembly is designed as a portable unit and a portable relay rack and shipping trunk, listed herein, may be used where desired. The mounting design will permit the unit to be hung on the frame, with a minimum of effort, by mounting screws already in place. The necessary battery connections are made through the multiple conductor Jones socket which fits into the Jones plug equipped with the jack field. The key and cord shelf need not be provided initially but space should be reserved as shown on the equipment drawing, so that the unit, when furnished; can be hung in place on the framework.

1.16 An alternate equipment arrangement known as "Type B" for providing emergency manual operation is available for use in the very small offices where not more than 5 interoffice trunks are involved and very limited service will suffice. This equipment is intended primarily for use in a steel apparatus cabinet which has a capacity of four 1-3/4" x 19" mounting plates and is comprised of two basic units, one for other than CX type offices and the second for CX type offices. Each of these is made up of an emergency cord and telephone set circuit, a battery control circuit for switching from the regular office battery to an emergency battery and emergency jacks and lamps for 5 trunks. The telephone set is mounted externally

and where a hand generator is required, it too, is mounted externally. If more extensive service is desired, a second apparatus cabinet may be provided and various additional features furnished on an installer-wired basis. In this connection, a shop-wired cord (double ended) unit and a patching unit for off premise operation are available for auxiliary use.

Power

1.17 The regular battery and ringing supply are obtained from the dial office equipment. Should the local ringing supply fail, the emergency generator can be brought into service through the operation of the (HAND GEN) key. The emergency battery, consisting of a 45 volt dry cell, can also be put into service when necessary by the operation of the (BAT) key. The emergency battery furnishes power for all equipments except the busy lamps. The busy lamp circuit is cutout during emergency battery service to avoid excessive battery drain. The battery test circuit on the fuse panel unit permits routine test of the dry cells. A standard portable voltmeter can be temporarily clipped on the (+) and (-) terminals of the fuse panel for making the required voltage reading.

1.18 For the larger installations, the emergency battery can be placed on a standard battery shelf, which can be mounted above the fuse panel or in any convenient location that may be specified.

1.19 When the emergency equipment is mounted on the relay gate, the battery can be accommodated on the top of the supporting assembly.

Subdivisions of Equipment

KS-5328 — Shipping Trunk for Portable Relay Rack
 ED-20660-30 — Writing Shelf Assembly
 ED-30786-30 — Floor Supported Gate Assembly
 ED-61546-01 — Framework for Supplementary Jack Field
 ED-69065-01 — Protector Panel
 ED-80397-01 — Battery Shelf-Mounting Details
 ED-90523-01 — Portable Relay Rack
 ED-91472-01 — Steel Apparatus Cabinet
 J33011A (AT&TCo Std) — Type A Emergency Manual Equipment

J33011B (AT&TCo Std) — Type B Emergency Manual Equipment for Use in Steel Apparatus Cabinet

2. SUPPLEMENTARY INFORMATION

814-000-000 — Step-by-Step Systems Index
 AA128.006 — List of General Equipment Requirements Sections
 J93001 — Relay Rack Unit Framework
 J97013 — I-Beam Relay Rack
 J97014 — Channel Relay Rack
 J99219 — Steel Apparatus Cabinet

3. DRAWINGS

WECO J Drawings should be ordered by referring to the prefix and base number and requesting the current dash (—) number.

Circuits

SD-32065-01 — No. 1, 350A, 355A, 360A, CX1000, or 35E97, Type A Emergency Manual Circuit for Manual Operation and Interception of Subscriber Lines and Trunk Circuits
 SD-32093-01 — No. 1, 350A, 355A, 360A, CX30, CX60, CX100, CX200, 32A32, 32A44, 35E97, 375A, 375B, 385A, 385B, 386A, or 386B Type B Emergency Manual Circuit for Manual Operation and Interception of Subscriber Lines and Trunk Circuits

Framework

ED-20660-30 — Floor Supported Gate Assembly
 ED-30782-30 — Key and Cord Shelf and Ringing Generator Panel Assemblies
 ED-30786-30 — Floor Supported Gate Assembly
 ED-30800-10 — Fuse Panel Assembly
 ED-30801-10 — Initial Jack Field Assembly
 ED-61546-01 — Supplementary Jack Field Assembly
 ED-69065-01 — Protector Panel Assembly
 ED-80397-01 — Battery Shelf — Mounting Details
 ED-90523-01 — Portable Relay Rack
 ED-90782-01 — Relay Rack Unit Framework
 ED-91472-01 — Steel Apparatus Cabinet Assembly

Equipment and Cabling

ED-30783-01 — Local and Swbd. Cable for
Emergency Manual Equipment
ED-32093-01 — Type B Emergency Manual
Equipment for Use in Steel
Apparatus Cabinet
ED-90757-03 — Relay Rack Unit Local Cable
ED-91302-01 — Apparatus Cabinet Cabling
J33011A-() — Type A Emergency Manual
Equipment

4. EQUIPMENT**ED-20660-30 — Writing Shelf Assembly**

Item 2 — One writing shelf assembly for use in
space for 23" mounting plate (See
note 5.03)

ED-30786-30 — Floor Supported Gate Assembly

Group 1 — One floor supported frame assembly

ED-61546-01 — Framework for Supplementary Jack Field

Group 2 — Framework for one supplementary
jack field

ED-69065-01 — Protector Panel

Group 1 — One protector and ground punching
panel for 5 protectors

ED-80397-01 — Battery Shelf

Group 7 — One battery shelf for mounting on
23" relay rack

ED-90523-01 — Portable Relay Rack

Group 1 — One portable relay rack for 23"
mounting plates

ED-91472-01 — Steel Apparatus Cabinet

Group 2 — One cabinet arranged to mount 4 —
19" x 1-3/4" mounting plates

KS-5328 — Shipping Trunk for Portable Relay Rack

List 2 — One shipping trunk for portable relay
rack for 23" mounting plates

J33011A (AT&TCo Std) — Type A Emergency Manual Equipment

Equipment — J33011A-()
Local Cable — ED-30783-01

List 1 — Assembly, wiring, and equipment for
one initial jack field and fuse panel
assembly.

	WIRE	EQUIP	SEE NOTE
Fuse Panel Assembly ED-30800-10, G1	—	1	
Adapters ED-90335-01, G4	—	1	
Initial Jack Field Assem. ED-30801-10, G1	—	1	E, 5.01
Emergency Manual Ckt SD-32065-01:			
Bat. & Ringing Control Ckt Fig. 9	1	1	A
Night Alarm Ckt. Fig. 17	1	1	

List 2 — Assembly, wiring, and equipment for
one emergency telephone unit per
SD-32065-01, Fig. 14 (See notes B, C,
D, and 5.04).

List 3 — Assembly, wiring, and equipment for
one ringing generator unit.

	WIRE	EQUIP	SEE NOTE
Generator Panel Assembly ED-30782-30, G2	—	1	
Emergency Generator Ckt SD-32065-01, Fig. 15	1	1	G

List 5 — Assembly, wiring, and equipment re-
quired in addition to list 4 or 7
for a unit of two cord circuits per
SD-32065-01, Fig. 1.

List 6 — Assembly, wiring, and equipment for
one patching unit per SD-32065-01, Fig.
20 (See note C).

List 7 — Framework, assembly, wiring, and
equipment for one key and cord shelf
unit.

	WIRE	EQUIP	SEE NOTES
Key & Cord Shelf Assembly, ED-30782-30, G1	—	1	H
Emergency Manual Ckt, SD-32065-01:			
Cord Ckt, Fig. 1	10	0	
Telephone & Dial Ckt, Fig. 22	1	1	A,F

Notes

A. List 1 includes one multiconductor plug for
furnishing power to the first key and cord
shelf unit. One or two additional plugs can
be ordered when required and wired to serve
supplementary key and cord shelf units
mounted on adjacent bays. Each key and
cord shelf unit is equipped with a 6 ft. mul-
ticonductor cord and a Jones socket, which

engages the plug in the initial jack field assembly.

- B. The emergency telephone unit requires ringing current to be supplied from a hand generator. When no key and cord shelf units are installed, this supply shall be furnished by the portable generator J33011A, List 3.
- C. Jacks (A), (B), and (D) shall be mounted on the jack field as shown on the equipment drawing.
- D. In addition to this unit equipment, a telephone set must be provided. The set will be specified by the telephone company and connected to the emergency telephone unit through terminal strips on the rear of the panel. The jack field frame is drilled on the left hand front side to accommodate a hang-up set, the subset for which can be mounted in any convenient location, as specified.
- E. An initial jack field per ED-30801-10, G1 shall always be equipped as the first jack field on any installation and shall be associated with the other auxiliary equipment as shown on J33011A-(). Supplementary jack fields may be furnished per ED-61546-01, G2 and located to the left or right of the initial jack field.
- F. Unless otherwise specified the key and cord shelf unit is equipped with five foot cords which are long enough to reach one jack field to the right or to the left of the key shelf position. Where the key and cord unit must serve two jack fields to the right or left of the key and cord shelf unit position, 8 foot cords must be furnished.
- G. The (GEN) jack associated with this equipment mounts in the frame of the jack field as shown on the equipment drawings.
- H. The key and cord shelf assembly includes mounting bars to form a unit which will accommodate the telephone and dial circuit and a maximum of five 2-circuit cord units. The local cable for this cord shelf includes stub leads for connection to the terminal strip of each cord unit.

J33011B (AT&TCo Std) — Type B Emergency Manual Equipment for Use in Steel Apparatus Cabinet

Equipment — ED-32093-01
Local Cable — ED-90757-03

List 1 — Framework, assembly, wiring, and equipment for one emergency manual equipment unit for use in other than CX type offices.

	WIRE	EQUIP	SEE NOTES
Framework ED-90782-01, G4	-	1	
Emergency Manual Ckt SD-32093-01:			
Emg Cord and Tel Set Ckt, Fig. 1	1	1	A
Bat. Control Ckt, Fig. 2	1	1	B
Busy Lamp Rel Ckt, Fig. 4	1	1	
Emg Jack Ckts, Figs. 5, 6, Less "Z" Wiring & App & 7	5	5	C,F

List 2 — Framework, assembly, wiring, and equipment for one emergency manual equipment unit for use in CX type offices.

	WIRE	EQUIP	SEE NOTE
Framework ED-90782-01, G4	-	1	
Emergency Manual Ckt, SD-32093-01:			
Emg Cord and Tel Set Ckt, Fig. 1	1	1	A
Bat. Control Ckt, Fig. 2	1	1	B
Busy Lamp Rel Ckt, Fig. 4	1	1	
Emg Jack Ckts, Figs. 7 & 8	5	5	C

List 3 — Assembly, wiring, and equipment for a unit of one cord circuit per SD-32093-01, Fig. 10 less "X" wiring.

List 4 — Assembly, wiring, and equipment for one patching unit per SD-32093-01, Fig. 14 with "V" and "Y" wiring for CX type office (see notes D, E, & G).

List WA — Wiring per SD-32093-01, Fig. 10, "X" wiring only, required in addition to list 3 for other than CX type offices.

List WB — Wiring per SD-32093-01, Fig. 14, "X" wiring only, required in addition to list 4 for other than CX type offices (omit "Y" wiring).

Notes

- A. The hand telephone set shall be ordered separately and mounted in a convenient location by the Telephone Co.
- B. The emergency battery shall be ordered separately and placed in a convenient location specified by the Telephone Co.
- C. The "T", "R", and "S" leads shall be terminated directly on the apparatus terminals by the installer.
- D. Three P3E patching cords with 310 plugs per SD-32093-01, Fig. 20 are required for use with the patching unit.

- E. The off-premise telephone per SD-32093-01, Fig. 15 shall be ordered separately and located by the Telephone Co.
- F. When the (C) jack is associated with a one-way incoming trunk it shall be wired to the associated (BY) lamp ("Z" wiring) by the installer.
- G. The "V" strap shall be cut when hand generator is furnished.

5. GENERAL NOTES

5.01 In addition to the above coded equipment, the following apparatus will be ordered separately as required for the intercept and manual line services specified for the job. It shall be assembled and wired by the installer.

	WHERE MOUNTED	TYPICAL LAYOUT	ASSOCIATED SCHEMATIC
Jack, keys, lamp sockets, drops, & misc. mountings	Upper unit jack field ED-61546-01, G2 or ED-30801-10, G1	J33011A-()	SD-32065-01, Figs. 3-8, 10-13, & 21
Jacks, keys, lamps, relays, conds., etc	Auxiliary apparatus cabinets	ED-32093-01, Fig. 5	SD-32093-01, Figs. 9, 12, 13 & 16-18
Key, Res. Lamp, fuse, jacks, etc	Auxiliary apparatus cabinets	—	SD-32093-01, Figs. 11 & 19
Relays, resistances, condensers, tubes	On mounting plates below the jack field & key & cord shelf	J33011A-(), SK D-J	SD-32065-01, Figs. 4-7, 10-12, 19

5.02 Intercept circuits per SD-32065-01, Figs. 3, 4, 6, and 7 require a busy lamp battery supply circuit per Fig. 19. One (BY) relay and 6 resistances will serve 12 busy lamps. These relays and resistances will be ordered wired by the installer in accordance with J33011A-().

5.03 A writing shelf per ED-20660-30, Item 2 can be furnished when required and mounted in accordance with J33011A-().

5.04 The following miscellaneous apparatus shall also be furnished according to job requirements.

- (1) The dial number plate.
- (2) P3E patch cords with 310 plugs.
- (3) 258C and 258D dummy plugs.

- (4) Operator's telephone set (52A).
- (5) Emergency telephone set (500 DR-3 telephone set or 685A subset with 211C-3F hand telephone set modified per Section 502-302-401).
- (6) Off-premise phone per SD-32065-01, Fig. 16 and B.

List of "A&M Only" and Mfr Disc. "Equipment"

The following equipment has been replaced as indicated. Where "A&M Only" items appear, the issue numbers shown are those of the issue in which the rating was first applied.

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J33011A,L4	Mfr Disc.	1-D	J33011A,L7

Bell Telephone Laboratories, Inc.

Dept 2335