COIN SUPERVISORY CONCENTRATOR AND TRUNK EQUIPMENT EQUIPMENT DESIGN REQUIREMENTS NO. 1 CROSSBAR SYSTEM

1. GENERAL

Scope

1.01 This specification, together with the supplementary information listed herein, provides the design requirements for the equipment and circuits to be used in the manufacture and installation of coin supervisory concentrator and trunk units for use in the No. 1 crossbar system.

Capacity

1.02 A concentrator unit provides access for a maximum of 20 coin supervisory circuits, arranged in two groups of 10, to a minimum of three common trunks and a maximum of three common or individual trunks per group in any combination. This permits a minimum of three common trunks to a maximum of six individual trunks to serve the 20 coin supervisory circuits. A typical arrangement for the concentrator and trunk unit is shown in Fig. 1 and 2.

Description

1.03 Coin supervisory circuits in groups of 10 are assigned to the levels of a 100-point 6-wire crossbar switch. The switch is effectively split into two units of five verticals each, permitting two groups or 20 coin supervisory circuits per switch. Each group is assigned to five verticals. These circuits can be switched to common or individual trunks wired to the verticals by closing two verticals to provide the required number of leads for monitoring coin overtime and stuck coin conditions. Two trunks are provided on four of the five verticals. A third trunk is provided by using the fifth vertical in conjunction with AK type relays to provide the required number of leads.

1.04 Corresponding contacts of the five switch verticals associated with a group of coin supervisory circuits are strapped together in groups of three and two as illustrated in Fig. 2. The wiring from the set of two verticals is extended to contacts of relays numerically designated to agree with the groups (tens digit) and levels (units digit) with which they are associated. In effect, the relays convert the 10 by 10 switch to a 10 by 12 switch and permit the use of a third trunk or sixth trunk when required.

1.05 The concentrator and trunk unit is variable insofar as the coin supervisory circuits and trunk circuits are variable. If, in a given entity, there are 20 or less coin supervisory circuits and no more than two groups, only one basic unit is required. If there are more than 20 circuits or more than two groups, a second basic unit will be required. Three common trunks are always required as a minimum operating condition and thus, in effect, form part of the basic unit. A maximum of six trunks may be provided, permitting each group of 10 coin supervisory circuits to have access to three individual trunks. Where less than six trunks are required, each group of 10 coin supervisory circuits may have access to three trunks in any combination of individual and common trunks.

1.06 A typical concentrator and trunk equipment arrangement requiring 31 two-inch plate spaces is shown in Fig. 1. The equipment is designed for mounting on the miscellaneous frame.

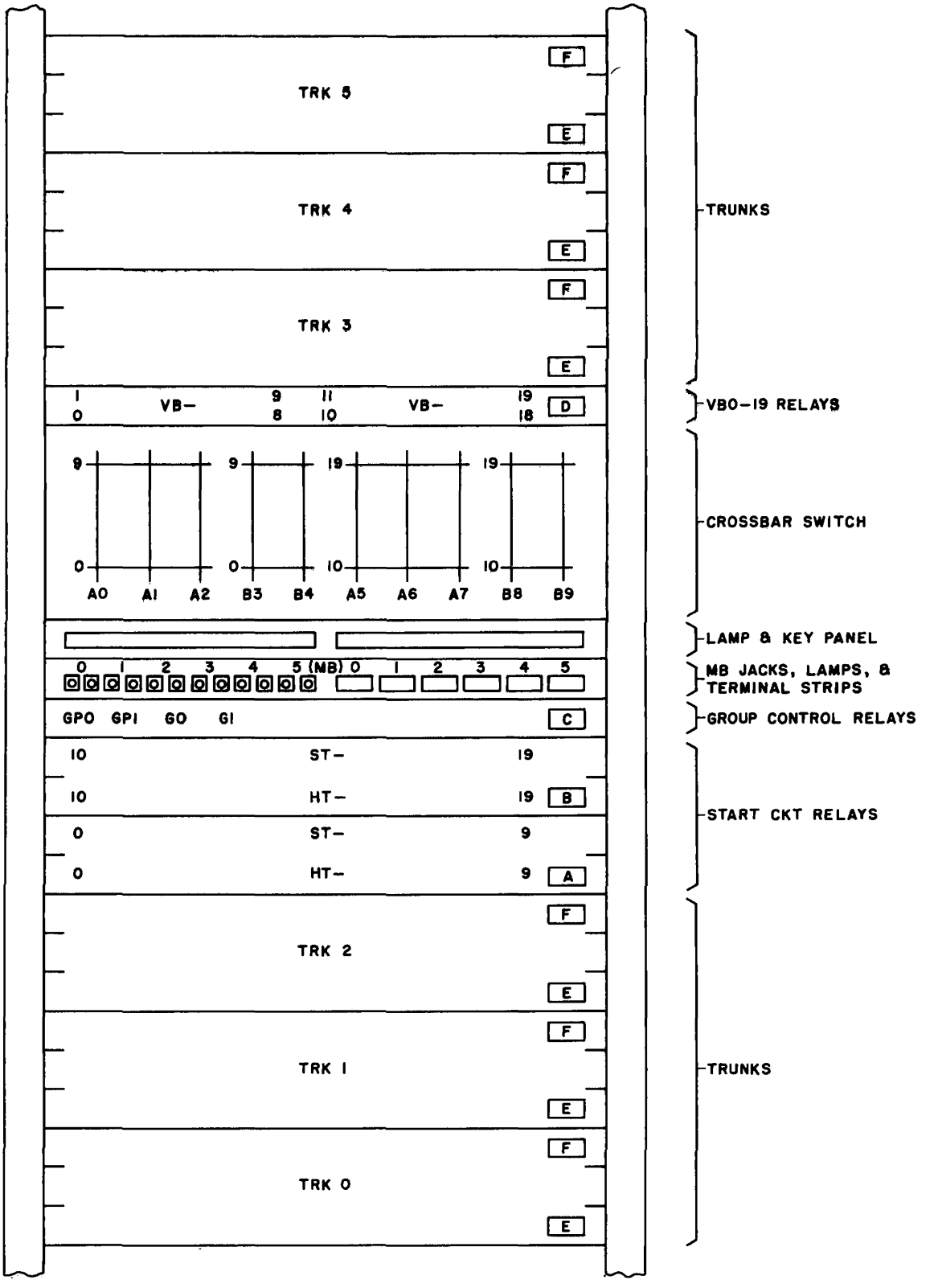

Fig. 1 – Typical Arrangement of Coin Supervisory Concentrator and Trunk Equipment

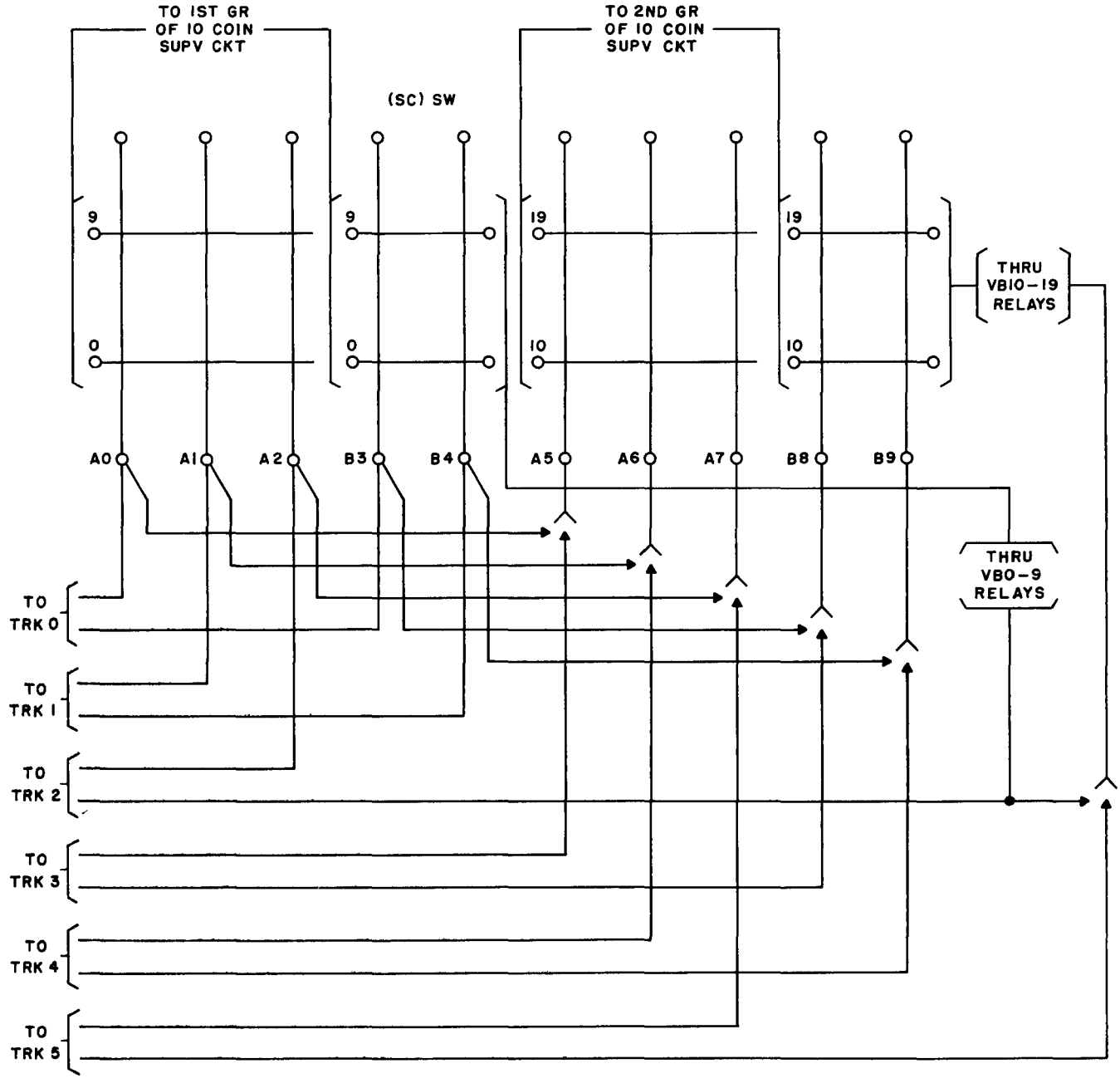

Fig. 2 – Typical Arrangement of Concentrator Switch Multiple Wiring

2. SUPPLEMENTARY INFORMATION

816-000-000 — Numerical Index — Division 816 — Equipment Design and General Equipment Requirements — No. 1 Crossbar System

ED-92216-01 — Switchboard No. 13C, 13D, 14C, 14D, 15C or 15D — Coin Supervisory Unit Equipment

J21551 (AA241.205) — Key Pulsing Sender Link Frame or — Coin Supervisory Link Frame — No. 1 Crossbar System

J23051 (AA241.805) — Miscellaneous Frame Equipment — Crossbar System No. 1

J61579 (AA261.046) — Miscellaneous Relay Rack Units — Toll Switchboards — Toll Systems

Current Drain Data Sheet — SD-25000-02

Floor Plan Data — Section 9.2, Sheet 6

3. DRAWINGS

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

J21557A-( ) — Coin Supervisory Concentrator Equipment

J21557B-( ) — Trunk Unit

SD-25000-01 — No. 1 Crossbar System

SD-27153-01 — Coin Supervisory Concentrator and Trunk Circuit

4. EQUIPMENT

J21557A (AT&TCo Std) — Coin Supervisory Concentrator Equipment

Equipment — J21557A-( )

List 1 — Assembly, equipment, and wiring for one coin supervisory concentrator unit arranged to serve 20 coin supervisory circuits and six outgoing trunks and equipped to serve 10 coin supervisory circuits (0-9) and three outgoing trunks (0-2).

	WIRE	EQUIP	SEE NOTES
Coin Supervisory Concentrator and Trunk Circuit, SD-27153-01:			
Start & Concentrator, Fig. 1	1	1	A
Start, Fig. 2	1	0	A
Trunk Make Busy, Fig. 4	6	3	B

List 2 — Equipment per SD-27153-01, Fig. 2, required in addition to list 1 for 10 additional coin supervisory circuits (10-19). (See note A.)

List 3 — Equipment per SD-27153-01, Fig. 4, required for each additional trunk circuit. (See notes B, C, and D.)

Notes

A. A list 1 basic unit consists in part of a subunit of seven 2-inch plates housing start circuit and group control relays and monitoring lamps and keys for two groups of 10 coin supervisory circuits and a make-busy lamp and jack panel for six outgoing trunks. Only one group of 10 coin supervisory start circuits (0-9) is wired and equipped. The basic unit also consists of a subunit occupying six 2-inch plate spaces interconnected with the seven-plate subunit by local cable. The subunit houses a crossbar switch and a 2-inch mounting plate with 10 AK type relays which effectively convert the switch to a 10 by 12 crossbar switch. This unit is fully wired and equipped although only the first half of the effective switch is associated with the group 0 and the second half with the group 1 coin supervisory circuits.

B. A minimum of three trunk units per J21557B, List 1 must be furnished in addition to list 1. These trunks are all considered common for wiring purposes if no additional trunks are added. (See notes C and D.)

C. A maximum of six outgoing trunk units, each consisting of three 2-inch plates, may be interconnected to the basic unit described in note A by means of switchboard cable. The first three trunks must be furnished with list 1 but additional trunks may be added as required. Trunks can be arranged in two groups of three, each of which may be individual to a group or common to both groups. (See note D.)

D. Trunks must be added in numerical sequence and wiring changes must be made to agree with the following considerations.

(1) When trunk 3 is added, trunk 0 changes from common to individual.

(2) When trunk 4 is added, trunk 1 changes from common to individual.

(3) When trunk 5 is added, trunk 2 changes from common to individual.

J21557B (AT&TCo Std) — Trunk Unit

Equipment — J21557B-( )

List 1 — Assembly, equipment, and wiring per SD-27153-01, Fig. 3, required for each trunk circuit. (See note A.)

Note

A. A trunk make-busy jack, lamp, and terminal strip required for each trunk is located on the basic concentrator unit and shall be ordered as J21557A, List 3 for No. 3, 4, or 5 trunk.

5. GENERAL NOTES

Equipment

5.01 The J21557A concentrator unit has facilities for associating a maximum of 20 coin supervisory circuits per J21551C to a minimum of three, and a maximum of six, outgoing trunks per J21557B. The 20 circuits are arranged in two groups of ten, each having access to a group of three trunks which may be arranged in various combinations of common and/or individual trunks. Trunks may be common to only one unit.

5.02 An office arranged for a maximum of 40 coin supervisory circuits requires two concentrator and trunk unit assemblies.

5.03 The order of assignment of coin supervisory circuits should be such that the units digit of the coin supervisory circuit number corresponds with the level of the switch. The first ten circuits of a group of 20 shall be located on the left-half of the switch as viewed from the front.

5.04 In order to reduce switchboard cabling, it is recommended that the concentrator and trunk units be located as close as possible to the coin supervisory circuits with which they are associated.

5.05 For maintenance purposes, it is recommended that the basic unit be mounted so that the lamp jack and key panels are near eye level.

Wiring and Cabling

5.06 Switchboard cable leads from the coin supervisory circuits and trunk circuits terminate on unit terminal strips and, also terminate directly on crossbar switch terminals. In addition, some switchboard cabling terminates directly on terminals of lamps and keys at the lamp and key panel on the concentrator unit.

5.07 Wiring of the concentrator circuit crossbar switch and associated relays shall be by means of local cable. The trunk units shall be surface wired.

5.08 No. 24 gauge type "C" wire shall be used for all local cable wiring except for battery and ground leads, which shall be No. 22 gauge type "C" wire.

5.09 Surface wiring shall be No. 24 gauge type "BU" wire.

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