

WIRING DIAGRAMS
AIRLINE SYSTEM

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1. GENERAL

1.1 Scope of Section

1.11 This section describes and explains the reading of wiring diagrams prepared by the airline system.

1.2 General Description

1.21 The airline system, replaced the highway system and was devised to improve legibility, obtain greater compactness, and to simplify wiring diagram preparation. Circuit labels are still being prepared by this method although it has been replaced by the simplified airline system.

1.22 In the airline system, each individual piece of apparatus (each group in some cases) is numbered and the lines representing the individual wires from each piece of apparatus are carried a short distance and terminated at a common or base line, at an angle of 90°. These individual lines between apparatus and base line (called feed lines) are numbered to correspond with identification number of the piece of apparatus at which the other end of the connection terminates. It is therefore not necessary to follow a connection through the base line and no provision is made for doing so. However, by observing the color and identification number on the feed line, it is possible to jump directly between pieces of apparatus: hence the term "airline." This system is not used for relatively simple figures.

1.23 The individual pieces of apparatus are arranged in rows approximating, as far as possible, the actual physical arrangement of the equipment as viewed from the wiring side.

2. READING AIRLINE WIRING DIAGRAMS

2.1 See Figure 1 for an explanation of the reading of airline wiring diagrams.

3. ADDITIONAL INFORMATION (Not Shown on Figure 1)

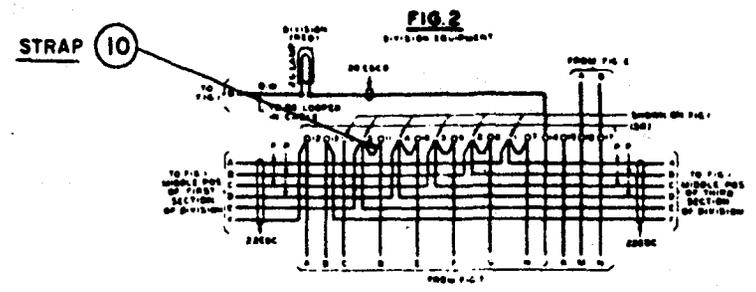
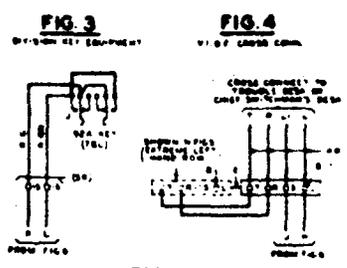
3.1 Each piece of apparatus is designated with an identification number. In general, these numbers are assigned consecutively from one up for the entire drawing, from left to right, and top down for each figure. Miscellaneous apparatus, such as cord fasteners, terminals punchings, etc., are not assigned individual identification numbers, but instead are arranged in groups and the extent of each group indicated by a bracket. Each bracketed group is considered as one piece of apparatus and given one identification number.

3.2 Where more than one diagram is made from the same schematic, connections between apparatus on separate drawings of the set are made direct, from point to point, without the use of brackets, through assignment of identification numbers to each drawing; for example: 1 to 99 assigned to first drawing, 100 to 199 to the second drawing, etc. The same method is used between figures on the same drawing except in those instances where the bracket method is more feasible.

3.3 As a rule, each row of terminals of a terminal strip (perpendicular to the fanning strip) is regarded as a single piece of apparatus and given an identification number.

3.4 The identification number is placed to the left and above the piece of apparatus it identifies. For conditions such as where two numbers are needed to indicate which leads break out at two stitches, the second number may be placed at the right or in the center as is convenient.

3.5 Feed lines of a particular figure terminating on terminal punchings forming a part of the same figure, are understood to end at that point.



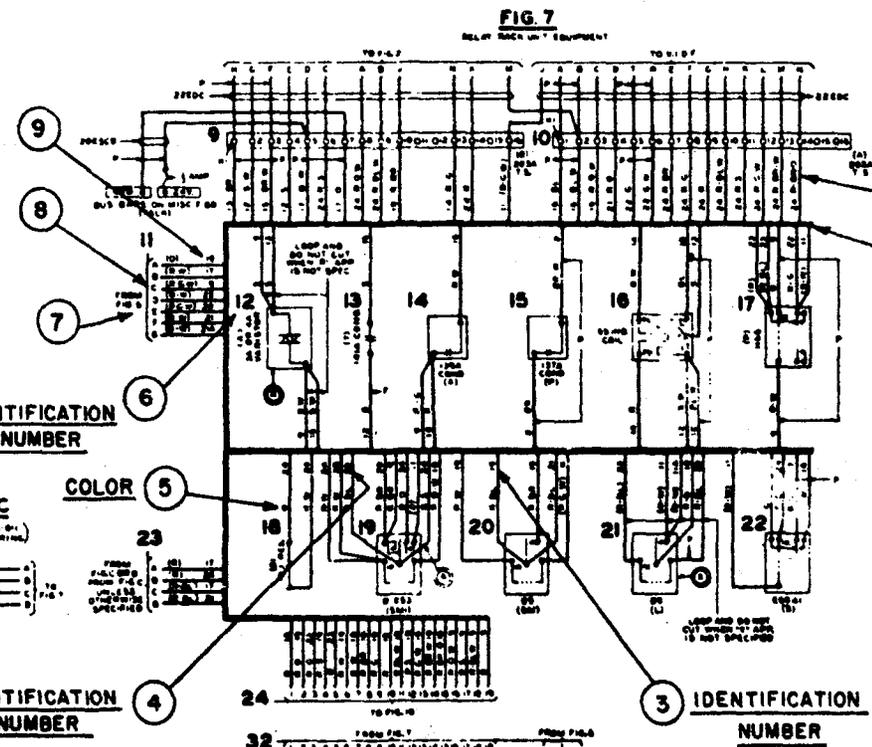
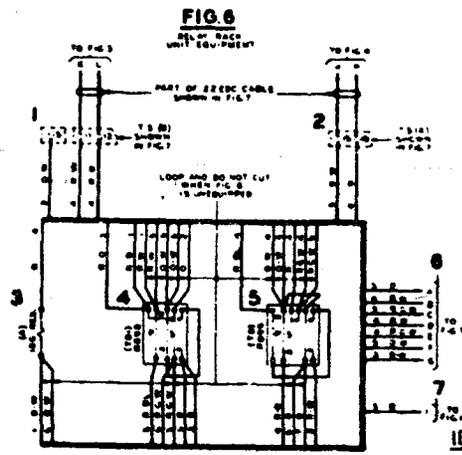
MANUFACTURING NOTES

CONVENTIONS

1. DENOTES CABLE
2. DENOTES FEED
3. DENOTES FROM CABLE FROM AT SEPARATE SWITCH
4. DENOTES TERMINAL NEAREST DATE OF TERMINAL STRIP
5. DENOTES ADJACENT REAR OF TERMINAL
6. DENOTES LOOP AND DO NOT CUT WHEN POSITION IS INDICATED
7. DENOTES TOP OR LEFT TERMINAL ON STRIP
8. DENOTES TOP OR LEFT SIDE OF KEY LOOKING AT TERMINAL STRIP
9. DENOTES FROM CONDUCTOR JUMPER STRIP
10. DENOTES LIVE LEADS TO BE INDICATED WHEN NOT CONNECTED AS FOLLOWS:

APPARATUS	COLOR	APPARATUS	COLOR
1 (DND OR DCL)	1 (DND OR DCL)	2 (DND OR DCL)	2 (DND OR DCL)
3 (DND OR DCL)	3 (DND OR DCL)	4 (DND OR DCL)	4 (DND OR DCL)
5 (DND OR DCL)	5 (DND OR DCL)	6 (DND OR DCL)	6 (DND OR DCL)

11. CABLES IN SEPARATE CABLE FROM WIRE TO OUTSIDE OF SIGNAL CABLE FROM FOR ELECTRICAL REASONS.



1. **FEED LINE**

2. **BASE LINE**

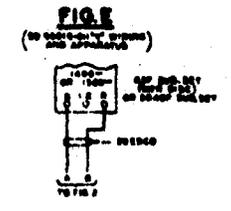
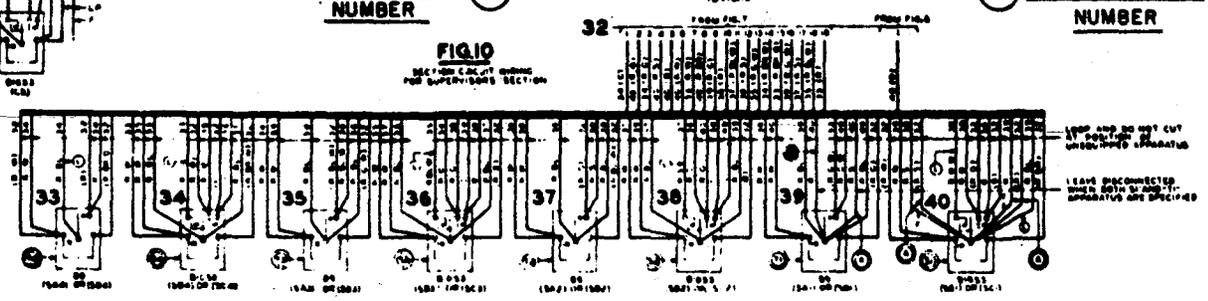
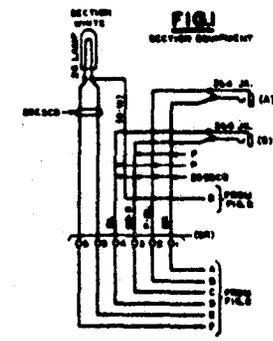
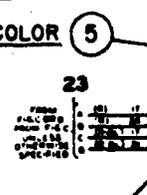
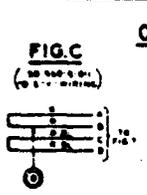
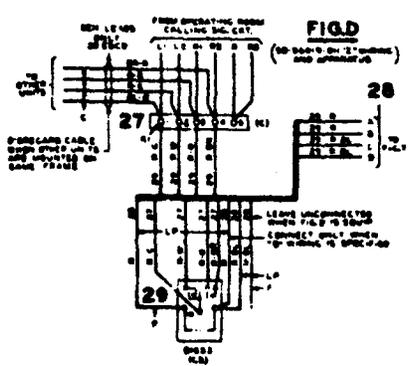


FIGURE 1

(RP-15756)

AIRLINE WIRING DIAGRAMS

- A. A single wire is represented by two FEED LINES, one at the originating end and the other at the terminating end.
- B. FEED LINES ① are carried a short distance and terminated at a BASE LINE ②. Relatively small and simple figures do not have base lines. (See Figure 1.)
- C. The IDENTIFICATION NO. of the apparatus or bracket where a wire terminates is shown on the feed line at a point where it joins the base line ③. Likewise at the terminating end of the wire, the identification number of the apparatus or bracket where it originates is shown ④.
- D. The color of the wire is shown at each feed line at a point between the base line and the apparatus or bracket ⑤. (See Paragraph 2.36.)
- E. All apparatus except resistances, keys, lamps etc are enclosed in rectangles.
- F. Each piece of apparatus and most brackets (see Paragraphs 2.31 and 2.33) are given an identification number ⑥. This number is placed to the left and above the item it identifies. (See Paragraph 2.34.)
- G. Connections between figures are made either by the "Bracket" method ⑦ or by direct reference to the terminating apparatus identification number ("Baseline" method). In the "Bracket" method ⑦ feed lines start at the baseline or apparatus if no baseline is present and are extended and bracketed. These feed lines are given identification numbers corresponding to the terminating apparatus within that figure ⑨. In addition, arbitrary numbers or letters are assigned to aid in locating the associated feed line at the brackets in the other figure ⑧. These arbitrary designations appear at the end of the feed lines ⑧.
- H. Straps and Pigtail leads between terminals of the same or adjacent apparatus are run direct ⑩.

3.6 Colors are shown on each feed line and are enclosed in parentheses on the noncontrolling end of those leads running between figures on the same drawing or different drawings.

3.7 Information showing type and gauge of wire, pairing, shieldings, etc., when necessary, is shown at both ends of the individual wires and interconnecting leads. An exception is made in the case of

No arrows are shown due to extensive changes.

split, paired or tripled leads where P or T is shown at the unsplit end only. Cable conventions appear only at one end, the end designated "TO".

3.8 Cable conventions, or information showing type, gauge, pairing, shielding, etc., for wire run in lieu of cable, are shown only on the controlling end connection.

Manager, Engineering Practices

Reason for Reissue:

As part of the general updating of wiring diagram information.

Replaces Section 3C dated 8-19-65.