

WIRING DIAGRAMS

HIGHWAY 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 highway system.

1.2 General Description

1.21 The highway system represented the first step in the improvement of the original full line plan of preparing wiring diagrams and was used to a limited extent. It was replaced by the airline system.

1.22 In the highway system, the lines representing the individual wires for each piece of apparatus (called feed lines) are carried a short distance and then merged into a heavy common line, called a highway. The feed lines merge into the highway at an angle of  $60^\circ$  and in such a manner as to indicate the direction of travel through the highway. The feed lines are arbitrarily numbered, the same number appearing at the two feed lines representing the originating and terminating ends of a particular wire. By observing the color and identification number as well as the direction in which the feed lines merge into the highway a wire may be followed from beginning to end via the highway. No apparatus identification numbers are used for the various apparatus conventions.

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 OF HIGHWAY WIRING DIAGRAMS

2.1 Symbols, Conventions and Abbreviations

2.11 Wiring symbols and apparatus conventions found on wiring diagrams are defined in this handbook in the section containing general information on wiring diagrams.

2.12 See Figure 1 for an explanation of the reading of highway wiring diagrams.

2.2 Additional Information (Not Shown in Figure 1)

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

2.22 An arbitrary designation is used in place of the color designation on feed lines on certain power drawings where there is no color difference between wires.

2.23 Information showing type and gauge of wire, pairing, shielding, etc., is shown at both ends of the individual feed lines and interconnecting leads and as close to the apparatus as possible. Cable conventions appear only at one end, that end designated "TO." F stitch designations are included on wires as required, and are placed as near the apparatus as possible.

2.24 At points where the colors ordinarily would not be shown because of common figure arrangements, they will appear in parentheses for soldering information. In general, where this occurs between figures on the same or different drawings, parentheses are omitted at the controlling end and included at the non-controlling end of wires represented as feed lines and interconnecting leads.

2.25 Feed lines and interconnecting leads, when terminating in brackets, are given number or letter designations as required, in addition to such color and identification numbers which they

may also include. This is necessary for the proper association of leads between figures on the same or different drawings. Such designations appear at the ends of these leads.

➔ Arrowed lines indicate new or changed information

Manager, Engineering Practices

ATTACHMENT  
Figure I on Pages 3 and 4.

Reason for Reissue:

- (1) To limit the scope of the Section to Highway System Wiring Diagrams.
- (2) Minor Editorial Changes.

Replaces Section 3B dated 8-19-65

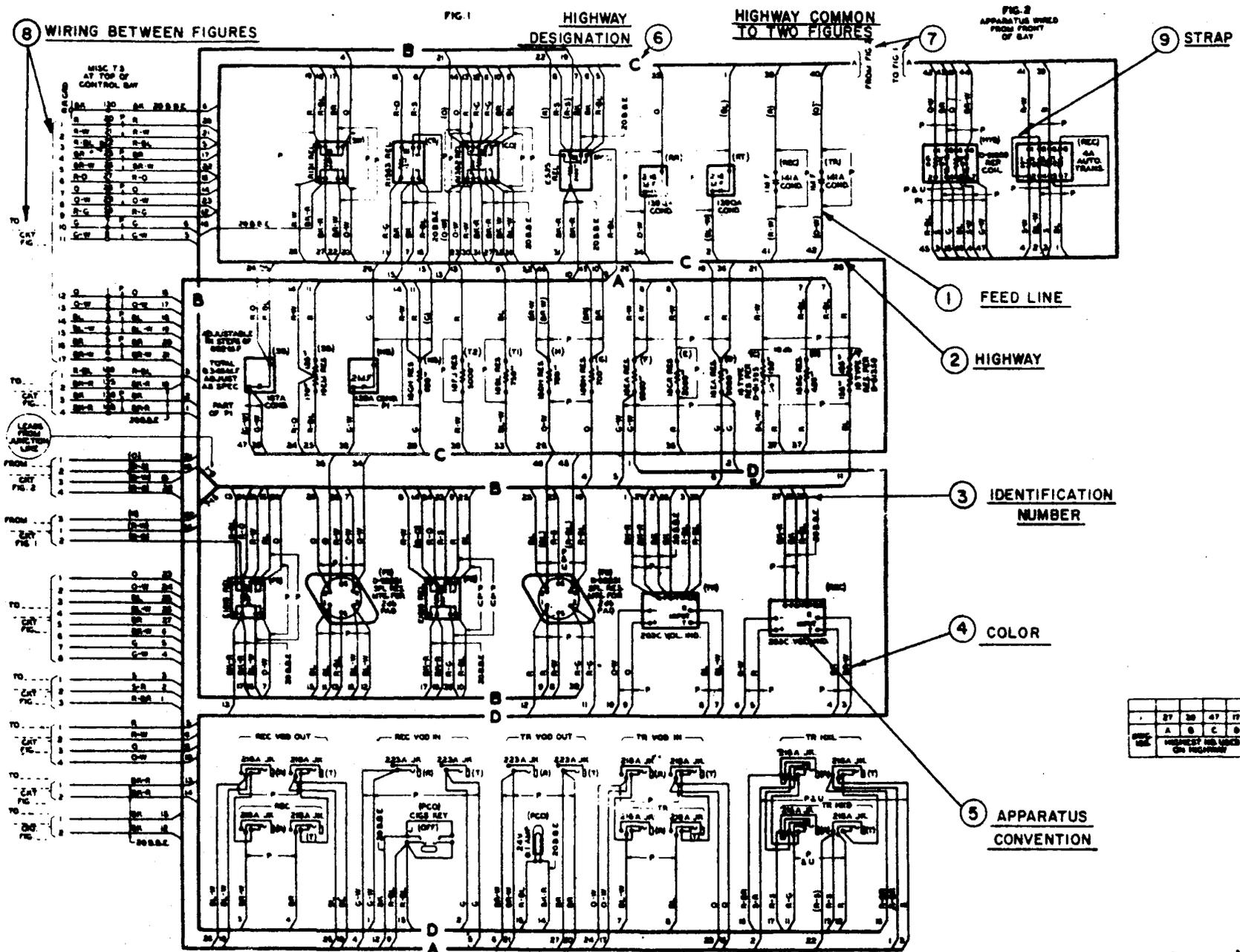


FIGURE 1

(RP-11701)

## HIGHWAY WIRING DIAGRAMS

1 - 3B

- 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 merge into a HIGHWAY ② at an angle of  $60^{\circ}$ . This angle of entrance indicates the direction of travel thru the highway. Likewise the angle of departure when feed lines leave the highway indicates the direction from which they came.
- C. Feed lines are arbitrarily numbered with an IDENTIFICATION NUMBER ③ that is placed at a point nearest the highway. This number appears at the two feed lines representing the originating and terminating ends of the wire.
- D. The wire COLOR ④ is shown at each feed line at a point between the highway and the piece of apparatus or bracket (see Paragraphs 2.32, 2.34).
- E. All APPARATUS CONVENTIONS ⑤ except for resistances, keys, jacks, etc. are enclosed in rectangles.
- F. When more than one highway per figure is used, the highways are designated A, B, C etc. (see ⑥).
- G. When a highway is common to two figures, its continuity is broken and the open ends are assigned an arbitrary letter designation and bracketed (see ⑦). The highway destination is indicated.
- H. For wiring between figures of different drawings, feed lines depart from the highway, are carried a short distance, bracketed, and designated (see ⑧). The destination of the feed lines is indicated. Wiring between figures of the same drawing may also be indicated in this manner.
- I. STRAPS ⑨ between terminals of the same or adjacent pieces of apparatus are run direct.

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FIGURE 1 (Cont.)