ADDENDA

1. G. A. Deschamps, "New Chart for the Solution of Transmission-Line and Polarization Problems," Trans. IRE Professional Group on Microwave Theory and Techniques, vol. 1, no. 1, pp. 5-13; March, 1953:

    In his article, "Die Anwendung der Riemannschen Zahlenkugel und ihrer Projectionen in der Wechselstromtechnik," (Radiowelt, vol. 1, pp. 23-26; October, 1946), F. Steiner obtained the representation of impedances by points on a sphere by the use of stereographic projection of the complex numbers plane. He then considered the orthogonal projection of this sphere on an equatorial plane which gives, in effect, the projective chart. An application of that chart to the determination of impedance by the 3-probes method, anticipating part of the results in the section titled,"Problems on Power," is also described.

2. M. C. Harp, M. H. Kebby, and E. J. Rudisuhle, "Application of Compandors to FM Radio Systems with Frequency Division Multiplexing," Ibid., vol. 2, no. 1, pp. 36-40; April, 1954:

    In the printing of the above article, the illustrations numbered 2-6 were inadvertently omitted. We are therefore reproducing them on the following pages to rectify the omission.
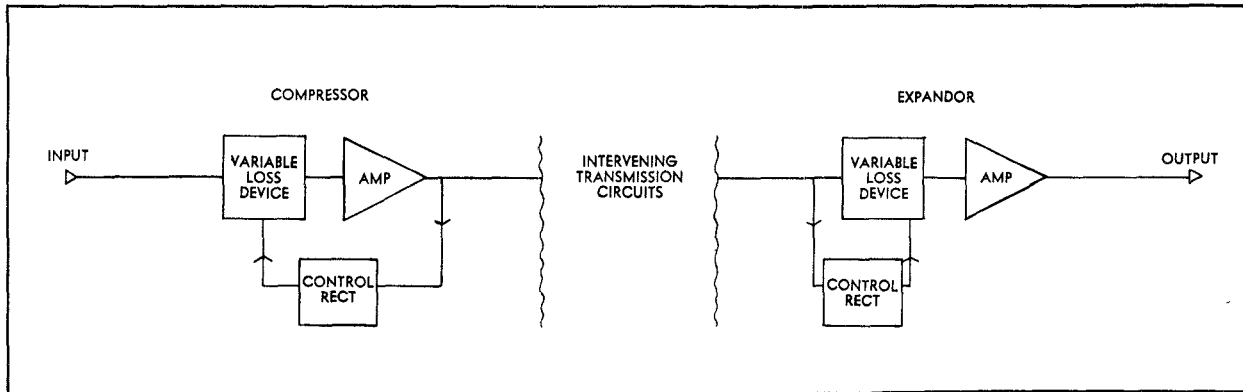
Fig. 2 - Block diagram of type 5090 A compandor. Both compressor
and expandor consist of a variable loss device, an amplifier and a
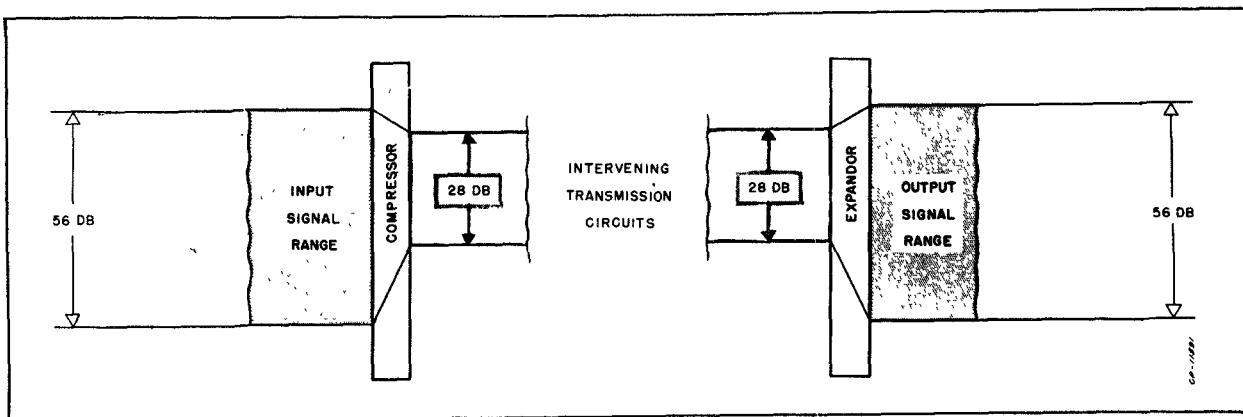control rectifier.

Fig. 3 - Intensity range of input signals is reduced by the compressor
and restored to the original range by the expandor.

TOLL SWBD — HYB — CXR TERM — TRANSMISSION MEDIUM WIRE LINE, CABLE OR RADIO LINK — CXR TERM — TO TOLL SWBD

0 DB LEVEL   −16 DB LEVEL   +17 DB LEVEL   −23 DB LEVEL   +7 DB LEVEL

+17 DBM
+7 DBM
0 DBM
−16 DBM
−14 DBM
−31 DBM
−47 DBM
−23 DBM
−21 DBM
−24 DBM
−51 DBM
NOISE
−54 DBM

FIGURE 7A—NO COMPANDOR

TOLL SWBD — HYB — COM-PRES-SOR — CXR TERM — TRANSMISSION MEDIUM WIRE LINE, CABLE OR RADIO LINK — CXR TERM — EX-PAN-DOR — TO TOLL SWBD

+19½ DBM
+9½ DBM
+7 DBM
+4 DBM
0 DBM
−6 DBM
−13½ DBM
−16 DBM
−20½ DBM
−21 DBM
−24 DBM
−31 DBM
−29 DBM
−36 DBM
−47 DBM
−51 DBM
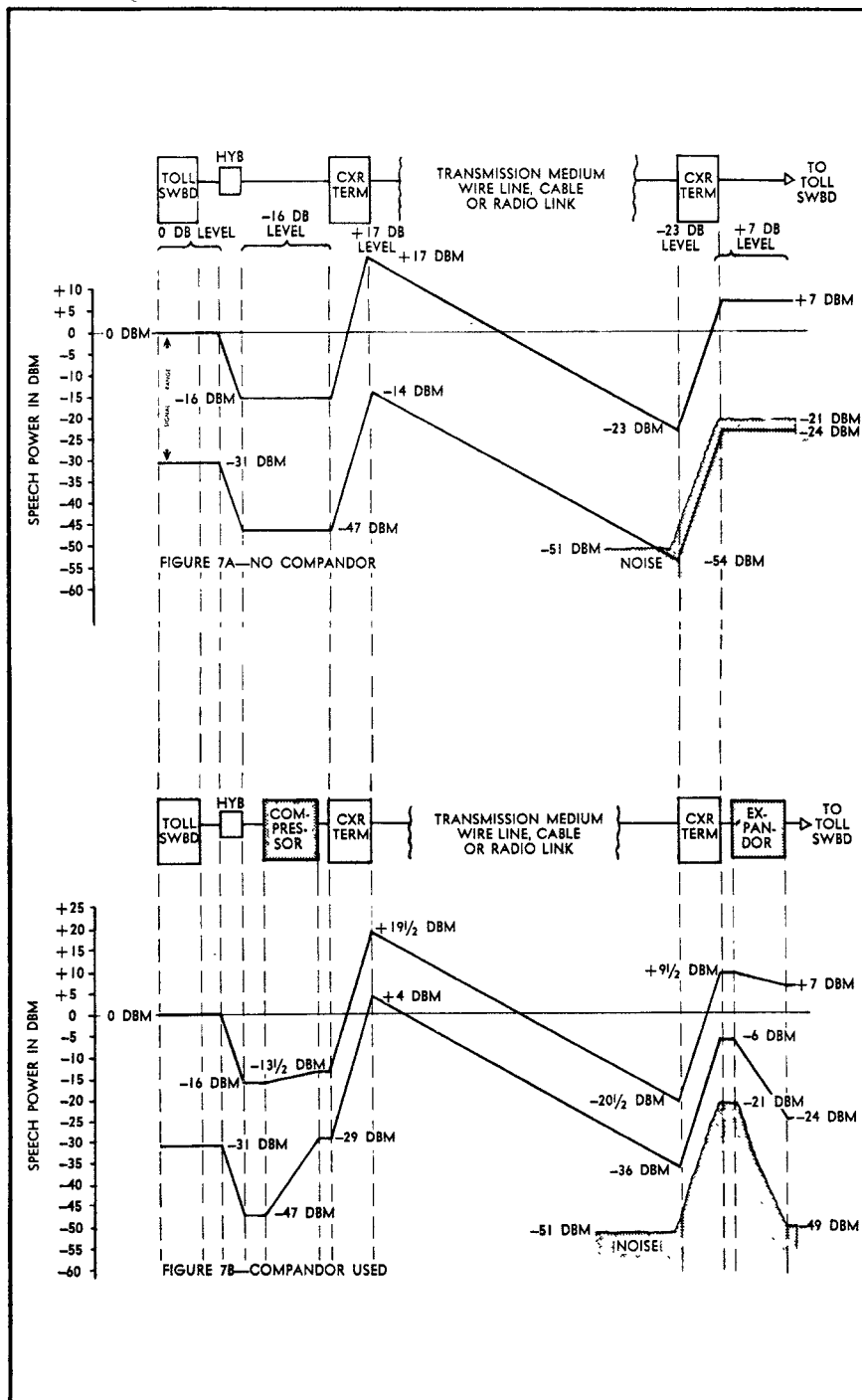NOISE
−49 DBM

FIGURE 7B—COMPANDOR USED

Fig. 4 - An illustration of the manner in which a compandor permits operation of a carrier channel over a circuit otherwise unsuitable because of noise.
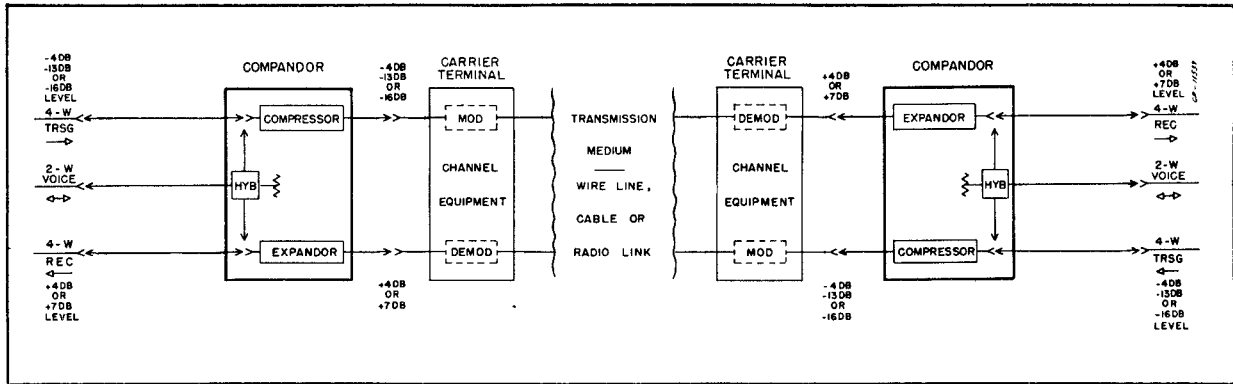
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COMPANDOR   CARRIER TERMINAL   CARRIER TERMINAL   COMPANDOR

-4DB
-13DB
OR
-16DB
LEVEL

4-W
TRSG
→

2-W
VOICE
←→

4-W
REC
←

+4DB
OR
+7DB
LEVEL

COMPRESSOR

HYB

EXPANDOR

-4DB
-13DB
OR
-16DB

+4DB
OR
+7DB

MOD

CHANNEL

EQUIPMENT

DEMOD

TRANSMISSION

MEDIUM
——
WIRE LINE,

CABLE OR

RADIO LINK

DEMOD

CHANNEL

EQUIPMENT

MOD

+4DB
OR
+7DB

-4DB
-13DB
OR
-16DB

EXPANDOR

HYB

COMPRESSOR

+4DB
OR
+7DB
LEVEL

4-W
REC
→

2-W
VOICE
←→

4-W
TRSG
←

-4DB
-13DB
OR
-16DB
LEVEL

Fig. 5 - Typical compandor application to a carrier telephone channel.

14 KC CHANNEL

300KC CHANNEL

UNWEIGHTED SIGNAL-TO NOISE RATIO - DB
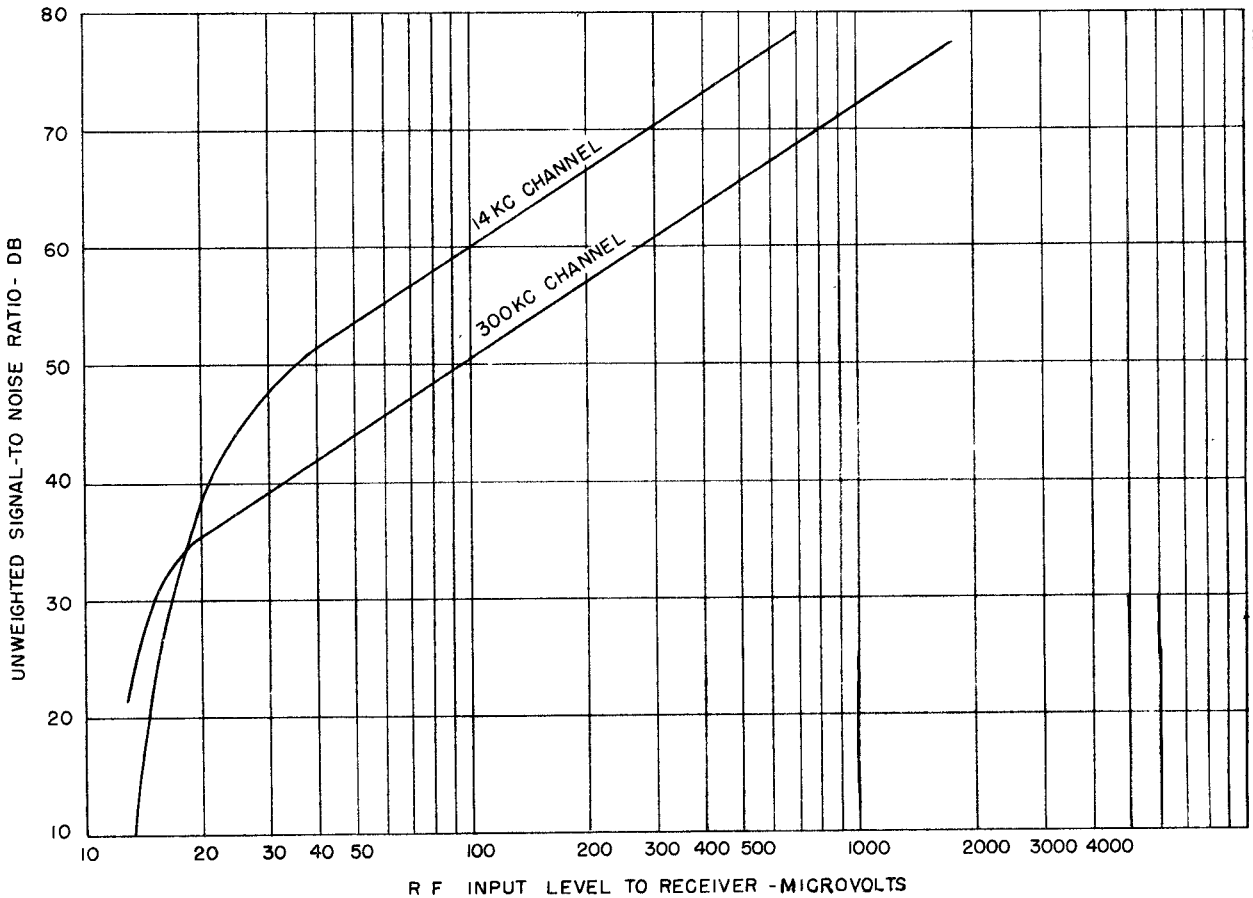
R F   INPUT LEVEL TO RECEIVER -MICROVOLTS

GP-13355

Fig. 6 - Relationship between signal-to-thermal noise ratio and receiver rf
signal strength.

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