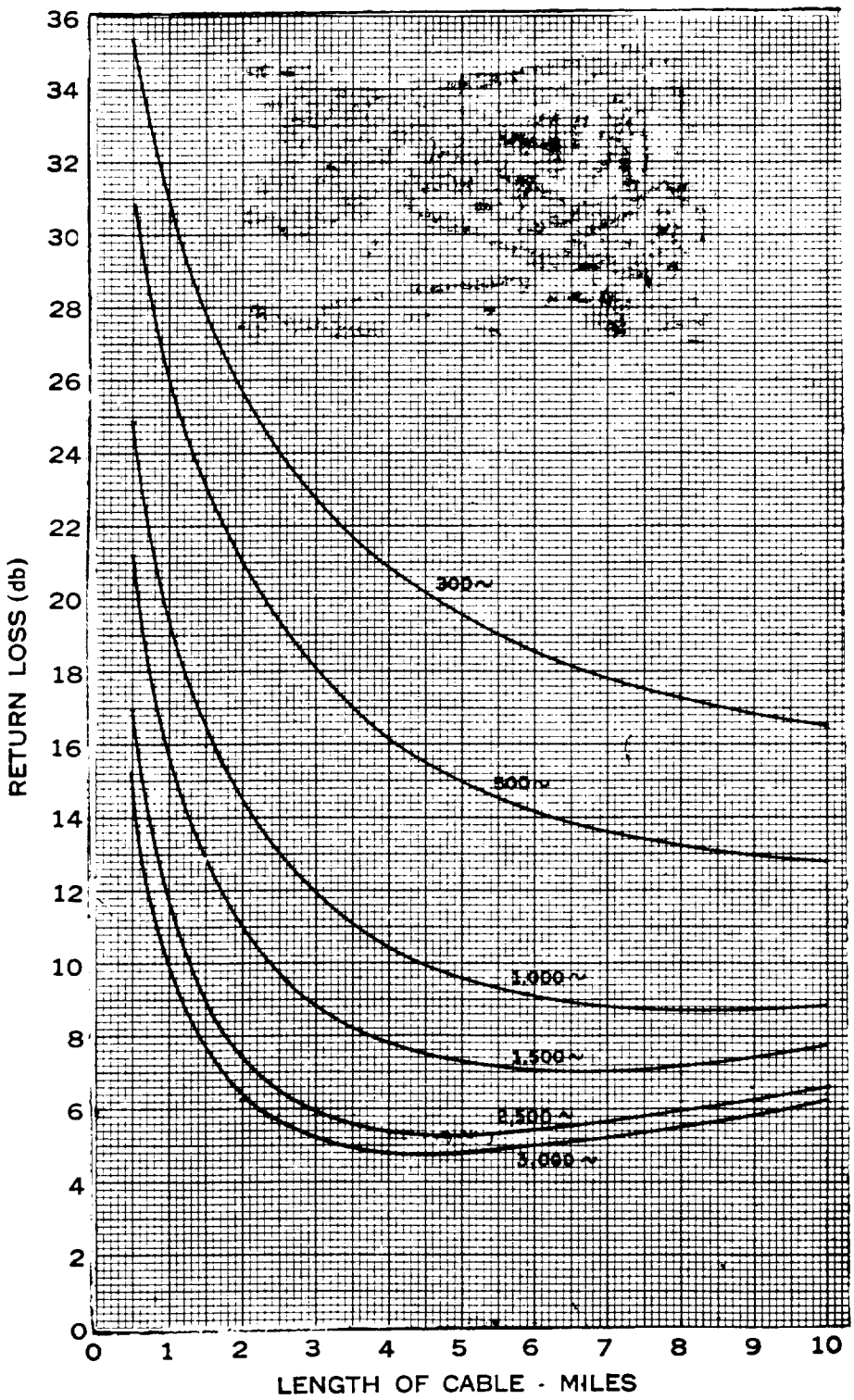
Intermediate Line Irregularity Return Loss

NON-LOADED CABLE IN OPEN WIRE



(OVER)

Notes: (1) The return losses given in this Section are those due to inserting 19-gauge non-loaded cable (.062 mf. per mile) in 104-mil side or phantom circuits, but can be applied with close enough accuracy to other gauges of cable and open wire. Computations for the exact condition may be advisable if the irregularity is controlling or if the open wire conductor is iron, copper-steel, or 80-mil copper.

(2) To apply the curves to cable having a different capacitance, multiply the actual length of cable by the ratio of the actual capacitance per mile to .062 mf., and use the resultant length in reading the curves.

(3) The effects of shorter lengths of cable than those given in the Section can be computed on the basis of the cable capacitance only. The return loss is that corresponding to the impedance ratio:

$$\frac{Z_x}{Z_o} = \frac{Z_c}{Z_c + MZ_o}$$

where:

Z_x = Sending end impedance
Z_o = Open wire circuit impedance
Z_c = Impedance of capacitance of 1 mile of cable
M = Miles of cable

The following values so computed for .062 mf./mi. cable in 128 mil, 12 inch spaced, circuits may be used generally:

Cable Length (Feet)	Insertion Return Loss (Sides or Phantom) at the Indicated Frequencies			
	200 cycles	500 cycles	1500 cycles	2500 cycles
100	40+	40+	40+	40
500	40+	40	35	30
1000	40+	38	29	24
2000	37	32	23	18
3000	34	28	19	15