All the above are for three-phase 100% P. F. on basis of watts lost. These formulæ are therefore applicable to practical cases, when miles, kilowatts, and kilo volts are used.

The various symbols used have the following meanings:

l = Weight per mile of one of the three conductors used,
or = weight per mile per phase.
M = Length of line (one way) in miles.
K = Kilowatts delivered at receiver end of line.
P = Per cent. loss of power K in line.
ε = Delta line voltage at receiver end ÷ 1000 = kilo volts.
Z = A constant = 1080 for three-phase 100% p. f.
A = A constant = 9.06 for three-phase all power factors.
W = Total weight of copper in all conductors.
L = Pounds of copper per kilowatt delivered = $W \div K$.
$C.\ M.$ = Circular mils area of copper in each phase.

On the basis of watts loss being fixed, the constant Z being equal to 1080 for unity power factor, its value for lower power factors will increase inversely as the square of the power factor $\left(\text{since the copper for watts loss fixed increases as } \frac{1}{(\text{power factor})^2}\right)$ therefore the values for the five equations for various power factors are as shown below:

No.	Equation	For power factors of 100%	90%	80%	70%
1.	$C.M. = \frac{MK}{P\varepsilon^2} \times$	5854	7200	9140	11950
2.	$W = \left(\frac{M}{\varepsilon}\right)^2 \times \frac{K}{P} \times$	280	344	437	571
3.	$L = \left(\frac{M}{\varepsilon}\right)^2 \times \frac{1}{P} \times$	280	344	437	571
4.	$l = \frac{M}{\varepsilon^2} \times \frac{K}{P} \times$	93	114	145	190
5.	$3l = L \times \frac{K}{M}$	—	—	—	—

On the basis of volts loss being fixed, the value of Z will increase inversely as the power factor (since the copper for volts loss fixed increases as $\frac{1}{\text{power factor}}$). Therefore the values of the