Now if for $D$ be substituted $M =$ distance one way in miles instead of feet.

and for $W$ be substituted $K =$ kilowatts delivered instead of watts.

and for $E$ be substituted $\varepsilon = E \div 1000 =$ line voltage divided by 1000.

and for $K^1$ be substituted $Z =$ a constant $= 1080$

the above formulæ become

$$(1)\ C.M. = \frac{(M \times 5280) \times (K \times 1000) \times Z}{P \times (\varepsilon \times 1000)^2}$$

$$= \frac{M\,K\,Z}{P\,\varepsilon^2} \times \frac{5280000}{1000000}$$

$$= \frac{M\,K}{P\,\varepsilon^2} \times 5702.4$$

and (2) total weight $= W = \dfrac{(M \times 5280)^2 \times (K \times 1000) \times Z \times A}{P \times (\varepsilon \times 1000)^2 \times 10^6}.$

$$= \left(\frac{M}{\varepsilon}\right)^2 \times \frac{K}{P} \times \left(\frac{5280}{1000}\right)^2 \times \frac{1000}{10^6} \times Z \times A$$

$$= \left(\frac{M}{\varepsilon}\right)^2 \times \frac{K}{P} \times \frac{27.8784}{1000} \times 1080 \times 9.06$$

$$= \left(\frac{M}{\varepsilon}\right)^2 \times 272.7846.$$

Allowing 2.65% for sag, etc., these formulæ become

$$(1)\ C.\ M. = \frac{M\,K}{P\,\varepsilon^2} \times 5854$$

$$(2)\ \text{Total weight} = W = \left(\frac{M}{\varepsilon}\right) \times \frac{K}{P} \times 280$$

and the weight of copper per kilowatt delivered

$$(3)\ = L = \left(\frac{M}{\varepsilon}\right)^2 \times \frac{280}{P}$$

and the weight per mile of a single wire ($l$) is obtained by substituting $3l \times M$ for $W$ in formula (2), thus:

$$W = 3\ M\ l = \left(\frac{M}{\varepsilon}\right)^2 \times \frac{K}{P} \times 280$$

$$\text{or}\quad (4) = l = \frac{M}{(\varepsilon)^2} \times \frac{K}{P} \times 93,$$

and $(5) = 3\,l = L \times \dfrac{K}{M}$ by substitution in equations (3) and (4).