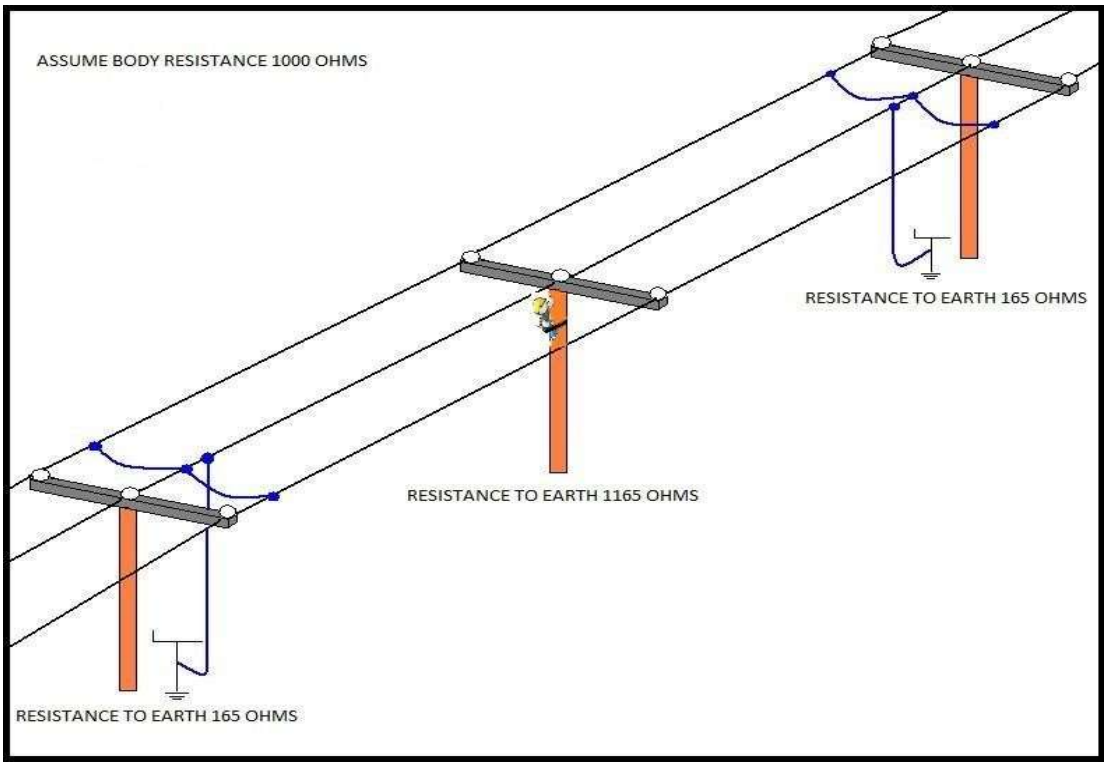
MYTHS AND ILLUSIONS NO. 2

Should you trust your life to a wet or aged conductive wooden pole?



In the above sketch there are three parallel resistances that form current paths to earth.
The total resistance to earth is calculated as follows: the worker on pole plus 2 earthed poles.

$$\frac{1}{R_{tot}} = \frac{1}{165^{**}} + \frac{1}{1165} + \frac{1}{165} = 0.006 + 0.00086 + 0.006 = \frac{1}{0.01285} = 77.82 \text{ Ohms}$$

1000 volts* will facilitate the following current flow to earth.
I = V/R = 1,000/77.82 Ohms = 12.85 Amps.
Possible current flow at earthed poles I =V/R = 1,000/165 = 6 Amps.
Possible current flow through worker on pole: I = V/R = 1,000/1165 = 0.85Amps.

The current safety earthing procedure in Ireland is based on the mistaken belief that a wooden pole is always an insulator therefore dangerous current cannot flow through the worker on the pole.

Electrocution has occurred while climbing a wet wooden pole on a faulted line.

€10,000 awaits anybody who can scientifically prove that dangerous cannot flow through the worker on the pole and that the worker is protected from death and injury.

Note: Resistance values for wooden poles may not be included as there is no way of ascertaining the exact resistance of a wooden pole that is wet or has become conductive with age. (Ref. Swedish Study).
*L-E (line to earth) voltage appearing on 20 kV networks may be up to 11.6kV.
165 Ohms = Measured resistance to earth at pole locations**.