

Concerning the proposed LF transmitter in Norway.

If we take a look at the ground-wave results in the paper from C. T. Jones Corporation, there is something which is not quite logical. For instance the distance from the proposed transmitter site in Norway to London is about 870 km and mostly sea with high conductivity, as the distance from Monte Carlo to London is longer, about 1000 km, and mostly land with lower conductivity, and the difference in radiated power is less than 1 dB. We should therefore expect higher ground-wave field strength values from Norway in London than from Monte Carlo.

The calculation results given in this paper are based on the methods proposed and recommended by the ITU. For the ground-wave calculations the curves and the method (Millington's method) given in the ITU Atlas of Ground Conductivities (or in R-Rec. 368) are used, and for the ionospheric calculation the Cairo curves in R-Rec 435 are used. The sea gain curve is also given in that recommendation.

In the Atlas the conductivity map for England is given. France has not done new conductivity measurements, and therefore we have to use the old values. For most of the countries new measurements have shown lower conductivities than the old measurements.

| Point | GW field from Norway | GW field from Monte Carlo | Ionospheric field from Norway | Ionospheric field from Monte Carlo |
|-------|----------------------|---------------------------|-------------------------------|------------------------------------|
| A | 1.6 mV/m | 0.56 mV/m | 4.5 mV/m | 4.5 mV/m |
| B | 2.0 mV/m | 0.22 mV/m | 4,5 mV/m | 2.8 mV/m |
| C | 2.5 mV/m | 0.11 mV/m | 5.0 mV/m | 2.5 mV/m |
| D | 8.9 mV/m | 0.09 mV/m | 7.1 mV/m | 1.8 mV/m |
| E | 2.0 mV/m | 0.45 mV/m | 5.6 mV/m | 4.0 mV/m |
| F | 2.2 mV/m | 0.30 mV/m | 5.0 mV/m | 3.6 mV/m |
| G | 1.8 mV/m | 0.22 mV/m | 3.5 mV/m | 2.5 mV/m |
| H | 6.3 mV/m | 0.10 mV/m | 6.3 mV/m | 2.5 mV/m |

As shown in the results, the ground-wave reception (day-time reception) from Norway should dominate over the signal from Monte Carlo in England. It is ionospheric reception (night-time reception) that will cause problems. However, we have to remember that all the LF (and MF) stations in Europe have large ionospheric interference problems. Even if the ITU LF/MF conference in 1975 did clear up most of the serious ground-wave reception problems, the ionospheric reception problems are still there.

Billingstad, Norway, 28.09.01.

Knut N. Stokke.

Knut N. Stokke