



## **RESEARCH DEPARTMENT**

# **The Service Area of the Temporary Television Transmitter at Redmoss, Aberdeen**

**Report No. K-102**

**(1955/8)**

**THE BRITISH BROADCASTING CORPORATION  
ENGINEERING DIVISION**

RESEARCH DEPARTMENT

THE SERVICE AREA OF THE TEMPORARY TELEVISION  
TRANSMITTER AT REDMOSS, ABERDEEN

Report No. K-102

( 1955/6 )

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THE SERVICE AREA OF THE TEMPORARY TELEVISION  
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## SUMMARY

This report shows that the temporary transmitter at Redmoss, near Aberdeen, provides the city of Aberdeen with a reasonable television service using an effective radiated power of 3 watts.

It is shown that the service will, in general, be similar to that expected from the final transmitter at Meldrum.

## 1. INTRODUCTION.

The television transmitter was installed at the medium wave site at Redmoss to give a temporary service to the city of Aberdeen while the main transmitter at Meldrum is being built.

The effective radiated power from the vision transmitter has been restricted to 3 watts (peak white) so that the average field strength in Aberdeen will be of the same order as expected from the permanent station at Meldrum.

## 2. GENERAL.

The frequency allocated to the N.E. Scotland vision transmitter is 61.75 Mc/s, Channel 4 (horizontal polarisation).

The same frequency channel and polarisation has, therefore, been adopted for the temporary service from Redmoss.

The sound and vision transmissions are radiated from separate aerials on the same mast and are elevated 80 ft (24.5 m) and 120 ft (37 m) respectively above ground level. Both aerials are simple half-wave horizontal dipoles having a figure eight horizontal radiation pattern with the directions of maximum radiation at  $140^\circ$  and  $320^\circ$ . The output powers of the vision and sound transmitters are 150 watts and 40 watts respectively and a feeder loss of 17 dB to each aerial gives an E.R.P. of 3 watts and 0.8 watts in the direction of maximum radiation.

### 3. RESULTS OF FIELD STRENGTH SURVEY.

The field strength of the vision transmitter was measured initially using an E.R.P. of 75 watts in the maximum direction. For this E.R.P. the field strength in Aberdeen was approximately five times that expected from the permanent transmitter at Meldrum. It was therefore necessary to reduce the E.R.P. to 3 watts in order to get approximate equality of field strength.

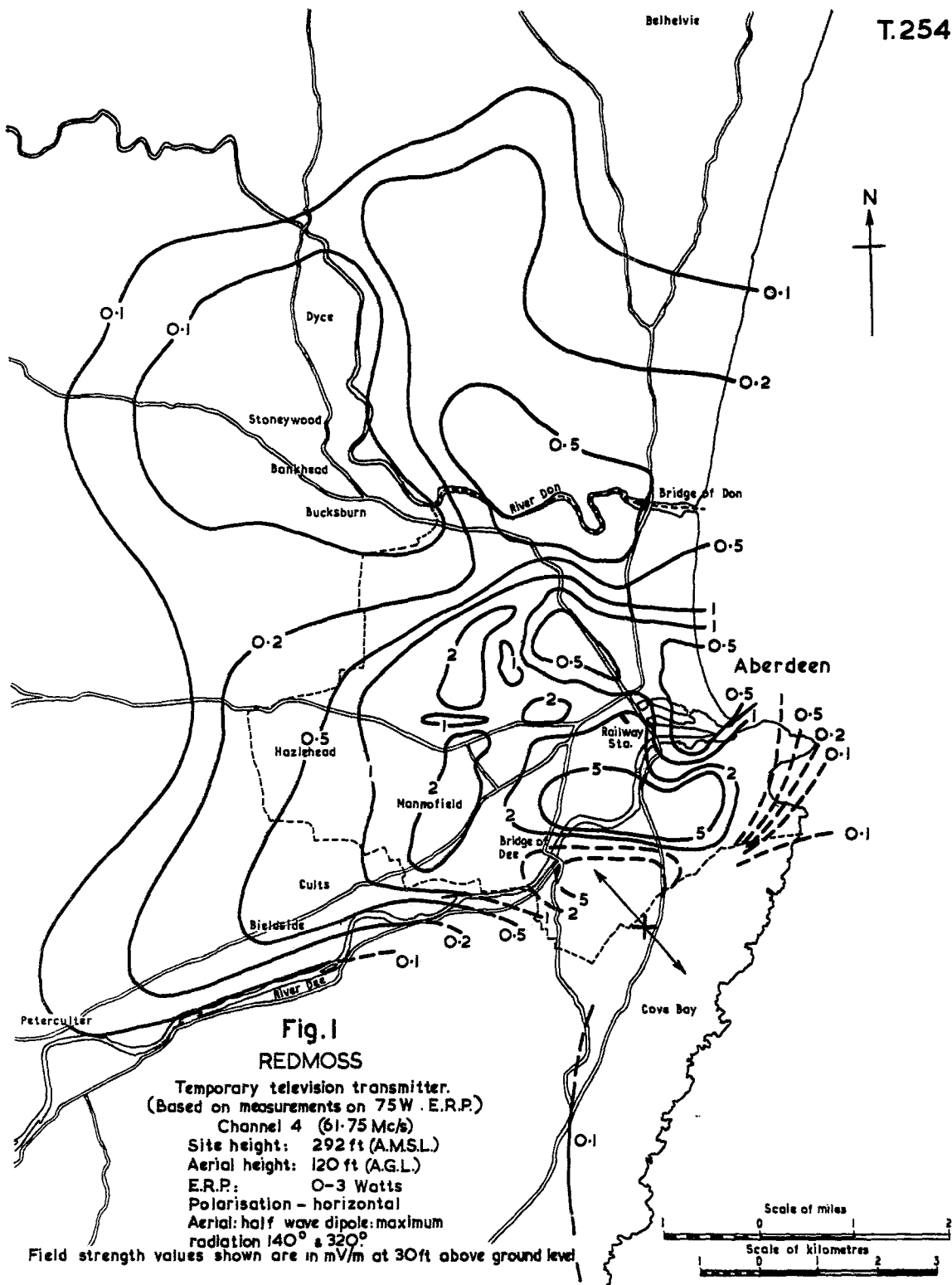
The service area of the temporary vision transmitter for an E.R.P. of 3 watts is shown in Fig. 1. This can be compared with the service area expected in Aberdeen from the permanent transmitter at Meldrum, as shown in Fig. 2.

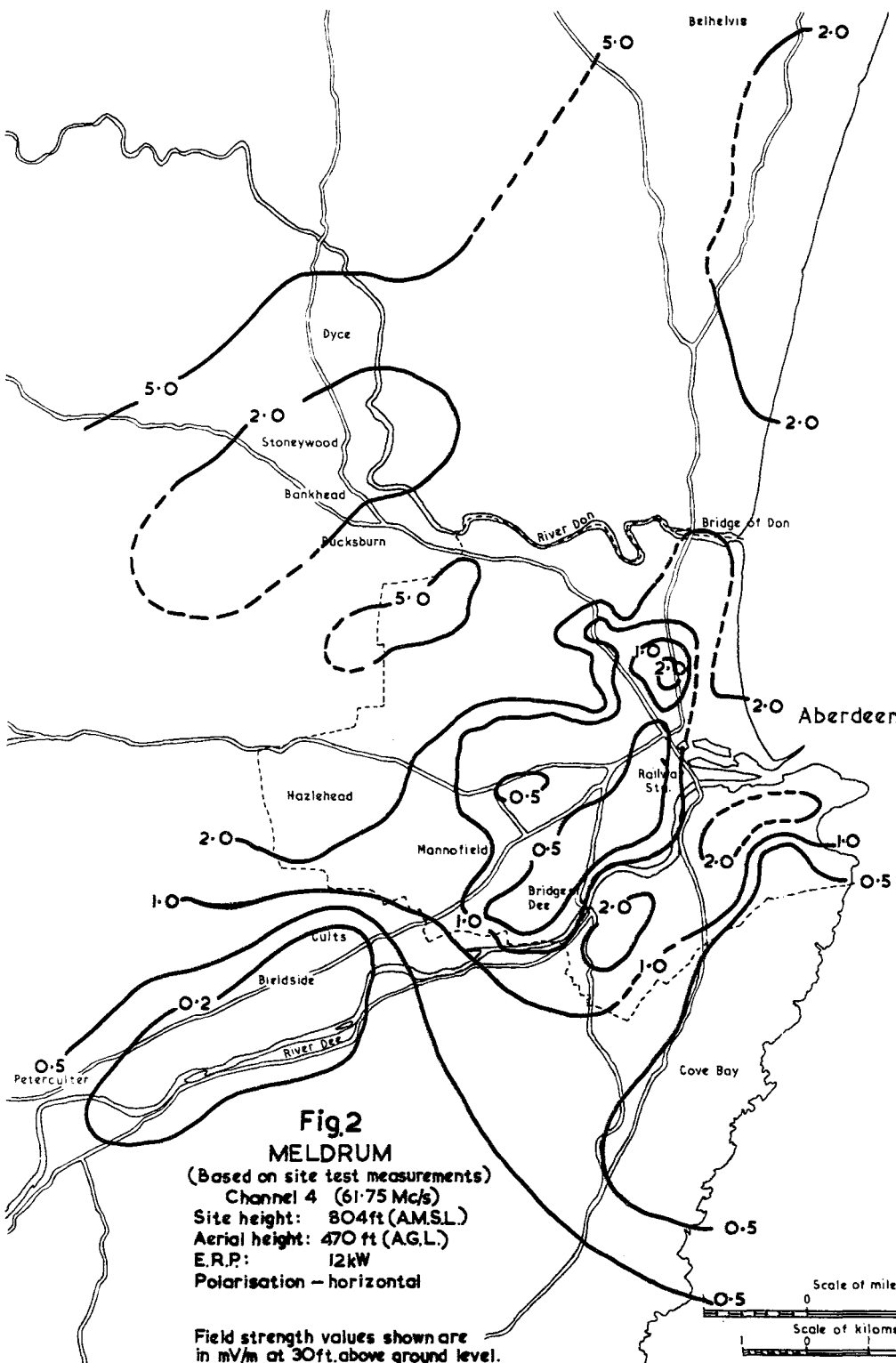
At any one location, it is fortuitous if the field strengths from the two sites are exactly the same. In some parts of Aberdeen the field strength is higher from the temporary transmitter and in other parts it is lower. This is inevitable since the transmitters are at different sites. The temporary transmitter at Redmoss is only 2 miles (3 km) south of Aberdeen and this accounts for the much higher field strength in the Torry area. The Deeside suburbs of Aberdeen at Cults and Bieldside receive a relatively strong signal from Redmoss since they are badly screened from Meldrum.

### 4. CONCLUSIONS.

The temporary transmitter at Redmoss can be expected to give a reasonable service to Aberdeen with a maximum E.R.P. of 3 watts.

When the changeover from the temporary transmitter at Redmoss to the permanent transmitter at Meldrum takes place, it can be expected that the service in the northern part of the City will be improved but some deterioration in the southern area, especially in parts of Deeside, must be expected.





**Fig 2**  
**MELDRUM**  
 (Based on site test measurements)  
 Channel 4 (61.75 Mc/s)  
 Site height: 804ft (AMSL.)  
 Aerial height: 470 ft (AG.L.)  
 E.R.P: 12kW  
 Polarisation - horizontal

Field strength values shown are in mV/m at 30ft. above ground level.