



Society of Antiquaries
of **Scotland**

Radar in Scotland

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Introduction

‘The atomic bomb may have ended the war, but radar won it.’ So claimed radar scientists at the Massachusetts Institute of Technology Radiation Laboratory at the end of the Second World War (Brown, 1999: x).

Radar was a relatively new technology at the start of the war. British research only began in earnest in 1935, a mere four years previously. Yet, radar was to be used in every theatre of the war and play a central role in the conflict. Its use was so widespread that no single work can cover the whole history of the development and use of radar in any meaningful detail.

This book tackles one small aspect of the overall radar story, namely ground radar in Scotland during the Second World War. It does not include gun-laying radar used at anti-aircraft gun sites by Anti-Aircraft Command. Such radars were too numerous, and the historical records are too fragmentary, to produce a worthwhile account on a site-by-site basis.

In addition to the ground radar stations, however, this book includes the radio navigational aids operated by the Air Ministry. Although these were not, strictly speaking, radar stations, in many cases they used exactly the same equipment, were manned by personnel who had previously served on radar sites and were the responsibility of the same Royal

Air Force (RAF) formation: No 60 (Signals) Group. Perhaps most importantly of all, many of the navigational aids were located within the compounds of existing radar stations. It is for these reasons that the radio navigational aids are included here.

This may seem a strange assortment of various different types of signals installations. However, with the exception of the Coast Artillery (CA) radars which were purely Army bases, all the other sites listed here were to some degree the responsibility of No 60 (Signals) Group, RAF. Even the Army Coast Defence/Chain Home Low (CD/CHL) stations would eventually be transferred to Air Ministry responsibility, as would the Admiralty’s Coast Defence U-boat (CDU) stations. The CA fire control radars have, however, been included because they were the successors of the CD/CHL stations and it would be absurd to exclude them.

This, then, is primarily the story of No 60 Group and the Wings within that Group which were responsible for the stations in Scotland: Nos 70, 71 and 72 (Signals) Wings. They were an odd mix of service personnel and civilian scientists, but they played a vital role in maintaining Britain’s warning and control systems in peace and war and we all owe them a huge debt of gratitude.

The source material for this book is drawn mainly from the official records of the stations, held at The National Archives (TNA) in Kew, supplemented by additional original documents held by the Historical Radar Archive (HRA). These records have been humanised by first-hand accounts from numerous men and women who served on these stations all across Scotland, many of whom were sent from Commonwealth countries to help defend the UK. Radar was secret and photographing radar stations or equipment was a serious offence for both military and civilian personnel. It is amazing, then, that so many photographs exist, mostly drawn from private collections held by former radar servicemen and -women and now in the HRA. Most of the photographs reproduced in this book are not official ones taken by professional photographers, and sometimes they are not the highest quality images. However, the decision has been taken to include them because of their historic value in recording these secret sites.

Also included in this book are a very few site plans for some of the radar and radio navigational aid stations. Sadly, there are only a few because there are not many that survive. Almost every single UK airfield has one or more site plans preserved in the RAF Museum in London, but with radar stations these have mostly been destroyed. Some surviving radar site plans only show drainage installations and are not included as they add little to an understanding of the role and layout of the radar station. Most of the others are included here to show how these sites were laid out, and perhaps help with interpreting remains at those sites for which no plan survives.

The radar stations in Scotland were, of course, only part of a wider chain, which at the start of the Second World War in September 1939 covered most of the east and south coasts

of the UK and by the end of the war provided almost unbroken coverage around the entire UK coastline. There is not space here to look at the history of the entire UK radar chain, which has already been outlined in considerable detail both in the official history (Air Ministry, 1950 (1)) and a more recent, exhaustively researched book (Bragg, 2002).

This book is divided into two parts. Part I consists of this introduction and three chapters, with Chapter 1 giving an overall history of the development of the radar chain in Scotland and the part it played during the Second World War. This is followed in Chapter 2 with a description of the Control and Reporting System in Scotland, explaining how the radar information was used. It was the integrated use of radar information within the air defence system of the UK that made radar so valuable, and this chapter looks at how this information was used and where it went to, both for air defence and the vital protection of shipping.

Chapter 3 describes each of the different radar systems, including the architecture of their structures, how they were built and what the stations themselves looked like. This should help with an understanding of surviving remains when visiting (with the landowner's permission) any of these sites.

Part II is the main body of this book, containing histories of each individual radar station, radio navigational aid station and research establishment in Scotland. The entries all begin with a summary, giving the type of site and types of radar which were installed at the station, by name and type number where relevant; the pre-1975 local authority area within which the station was located, or the island within this local authority area where relevant (and the current local authority area as at 2020); the national grid map reference, accurate to 100 metres where a six-figure

reference and to 10 metres where an eight-figure reference; the National Monuments Record of Scotland (NMRS) site number, which can be used to access further information about the site and its current state via the Trove database at <https://www.trove.scot/>; and lastly the dates the station opened and closed where known. Some of this information will be repeated within the site history, but a quick-reference summary may be useful.

The aim of this book is to provide a detailed and accurate description of the radar stations, radio navigational aid stations and radar research establishments in Scotland between 1938 and 1946, with an obvious focus on the Second World War. It is hoped this book will be of value to military historians, local historians, genealogists, historians of technology, historians of the Second World

War and historians of modern Scottish history. All will, it is hoped, find something of interest within this book, the first to tell the story of each individual radar station in Scotland based mainly on primary sources and first-hand accounts, and illustrated with many photographs of these stations, most of which have never been published before. This book was written as a result of 35 years of research into this subject, prompted by almost every book on the subject having numerous errors, due to lack of primary research. It is hoped this book finally tells an accurate story of British radar during the Second World War, in this case in the context of sites located in Scotland, and that it will be of interest even to those whose curiosity on this subject is not limited to the geographical area of Scotland.