



HISTORIC
ENVIRONMENT
SCOTLAND

ÀRAINNEACHD
EACHDRAIDHEIL
ALBA

Property in Care (PIC) ID:	PIC271
Designations:	Scheduled Monument (SM90303) (stone circle only)
Taken into State care:	2005 (Guardianship)
Last Reviewed:	2023

STATEMENT OF SIGNIFICANCE

ROYAL OBSERVER CORPS BUNKER (part of TOMNAVERIE STONE CIRCLE)



We continually revise our Statements of Significance, so they may vary in length, format and level of detail. While every effort is made to keep them up to date, they should not be considered a definitive or final assessment of our properties.



© Historic Environment Scotland 2023

You may re-use this information (excluding logos and images) free of charge in any format or medium, under the terms of the Open Government Licence v3.0 except where otherwise stated.

To view this licence, visit <http://nationalarchives.gov.uk/doc/open-government-licence/version/3> or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: psi@nationalarchives.gov.uk

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

Any enquiries regarding this document should be sent to us at:

Historic Environment Scotland
Longmore House
Salisbury Place
Edinburgh
EH9 1SH

+44 (0) 131 668 8600
www.historicenvironment.scot

You can download this publication from our website at www.historicenvironment.scot

Cover Image: © Crown Copyright HES.

HISTORIC ENVIRONMENT SCOTLAND STATEMENT OF SIGNIFICANCE

THE ROYAL OBSERVER CORPS BUNKER

Contents

1	SUMMARY	2
1.1	Introduction	2
1.2	Summary of Significance	4
2	BACKGROUND	4
2.1	Origins of the ROC to 1945	4
2.2	The Cold War	5
2.3	1968-1991	6
2.4	The Posts	6
2.5	Equipment	7
2.6	The Post in Use	10
3	MAJOR GAPS IN UNDERSTANDING	10
4	ASSOCIATED PROPERTIES	11
5	KEYWORDS	12
	BIBLIOGRAPHY	12
	APPENDIX: TIMELINE	13

Please note, the research for this document was undertaken during 2020-2022 with limited access to archives and resources, as a result of Covid-19. While every attempt was made for accuracy throughout the statement, errors or omissions may remain. Please direct comments or suggestions to CRTenquiries@hes.scot.

1 SUMMARY

NOTE: This document should be read in conjunction with the HES Statement of Significance for Tomnaverie Stone Circle. The Royal Observer Corps bunker became part of the HES estate when the Guardianship Agreement for the Tomnaverie Stone Circle was renewed in 2005 which increased the area in care. This and its proximity to the stone circle mean it is interlinked with the wider history of the Tomnaverie Stone Circle and its surroundings.

1.1 Introduction

The following report is an abbreviated version of an unpublished HES report commissioned from Dr Gordon J. Barclay detailing the significance and background history of the underground Royal Observer Corps (ROC) post which is approximately 50 yards (45.7m) south-west of the Tomnaverie stone circle. The post is known as 'Tarland' and is recorded on the Subterranea Britannica (SubBrit) website, which lists 1510 individual bunkers in Britain.

The existing Tarland ROC underground bunker was commissioned in 1960 and was closed in 1991. It was one of around 1500 posts fairly evenly distributed across the UK. The number of posts was cut in 1968, due to public spending cuts. Tarland survived.



Figure 1: Exterior view of Tomnaverie ROC post with recumbent stone circle in background. © Crown Copyright HES.

The main purpose of the post was to determine the location and strength of nuclear explosions and to monitor the location, direction and strength of radioactive fallout. It

communicated its observations by landline telephone. As a 'master post' Tarland probably had VHF radio communication also.

The Tarland/Tomnaverie post replaced (on an immediately adjacent site) an above-ground ROC observation post, probably built in the early 1950s. This in turn had replaced a 1939-vintage post some 1300m to the north-west on the edge of the village.

The bunker is currently (2022) not designated, but it was taken into State care when the Guardianship Agreement for the Tomnaverie Stone Circle was renewed in 2005 which increased the area in care to include both the ROC bunker and a newly created car park. This included its interior features and contents. Visitors can enter the fenced area to view the above-ground features of the bunker which include the entrance hatch, ventilation shafts and the remains of the ground zero indicator and fixed survey meter. The interior is not accessible, and the entry hatch is locked. The installation of an interpretation panel is planned which will include first-hand testimonies of the ROC personnel, on watch for nuclear disaster.

The UK response to the nuclear threat was strong on planning but limited in construction.¹ There was, for example, no large-scale construction programme for public shelters. Construction outwith military installations was limited to such structures as regional seats of government and other infrastructure intended to maintain the continuity of government.

The ROC bunkers are an unusual class, in being very widely distributed across the landmass as part of a national network, but with a very local connection, through the uniformed volunteers. They were built to the same plan and exhibit hardly any variation. Any local modifications were superficial and related to security/locking/fences and the comfort of the crews.

Of the approximately 327 bunkers built in Scotland, only two are currently Listed Buildings, and none are Scheduled Monuments.² Tomnaverie/Tarland is the only example in the direct care of the national heritage agency in Scotland; English Heritage have taken the ROC bunker at York into Guardianship in 2000,³ while it has not been determined if any lie with CADW properties. Other examples may lie on public land in Scotland or within the boundaries of publicly owned bodies, for example Forestry and Land Scotland, or the National Trust for Scotland. It was beyond the scope of the Barclay report to determine this.

To establish some context, the Report estimated the number of surviving bunkers in North-East Scotland, and whether they were extant or demolished/very badly damaged based on data available from SubBrit. This superficial analysis shows that of the 40 known sites in the former counties of Aberdeenshire, Banffshire and Kincardineshire, only 18 survive. Some of these are open and vandalised.⁴

¹ Bennett 2018.

² Listing information available on the HES Portal: [LB52217 - Dun 25, Former Royal Observer Corps \(ROC\) Underground Monitoring Post, Mains of Edzell, Edzell](#) and [LB51858 - Elliot, North of A92, Former Royal Observer Corps Underground Monitoring Post](#) (both accessed: 10 January 2023).

³ For more information on the site, visit English Heritage website: [Places to Visit - York Cold War Bunker \(english-heritage.org.uk\)](#) (accessed: 18 May 2022).

⁴ Information gathered from Subterranea Britannica: [www.subbrit.org.uk/](#) (accessed: 18 May 2022).

1.2 Summary of Significance

- The Tarland bunker is one of 327 in Scotland and one of only 18 surviving in the North-East of Scotland.
- Since abandonment in 1991, perhaps around half of Scottish underground ROC posts have been demolished.
- Only two ROC posts in Scotland are currently Listed and none are Scheduled.
- Only two posts in Scotland are formally opened to the public.
- Some local heritage organisations have ROC-related collections.
- Tarland is the only recorded ROC bunker in the care of HES.
- The Tarland bunker appears to be in good condition and is secure.
- Survival of a myriad of different types of artifacts left behind in-situ when the ROC stood down in 1991. A careful photographic survey was taken of the bunker before some items were removed for assessment, conservation and safe storage. Oral history in form of an interview with a former ROC Observer who was stationed at Tarland/Tomnaverie was also obtained.

In summary, Tarland/Tomnaverie, while neither unique nor (currently) the best preserved of its kind, may have a more assured long-term future than other examples by virtue of its being held in State Guardianship. As time takes its toll on other surviving posts, Tarland/Tomnaverie will become increasingly rare and important as a curated example of this kind of structure. As part of the limited 'voucher sample' of a class of structure, with its contents kept safely stored, this value will likely increase.

2 BACKGROUND

2.1 Origins of the ROC to 1945

The most comprehensive accounts of the history of the Royal Observer Corps are *Attack Warning Red: The Royal Observer Corps and the Defence of Britain 1925 to 1992* by Derek Wood⁵ and 'Cold War Ruralism: Civil Defense Planning, Country Ways, and the Founding of the UK's Royal Observer Corps' Fallout Monitoring Posts Network' by L. Bennett.⁶

The origins of the Royal Observer Corps lay in attempts to deal with the air raid threat, mainly to London, in the First World War, from both Zeppelins and fixed wing aircraft. This led to the formal establishment of the Observer Corps in October 1925, with observers at that time appointed as Special Constables of the relevant local

⁵ Wood 1992.

⁶ Bennett 2018.

police forces. Over time their sphere of operations expanded from southern England to cover all vulnerable areas of the UK as the range of bomber aircraft increased.

The Head Quarter of Scottish Area was established in Edinburgh.

Recognition of the value of the Corps during the first years of the Second World War led to it becoming, in 1941, the Royal Observer Corps. In the same year women were admitted to the ranks although they inevitably faced resistance from some 'small close-knit bands of men'.⁷ The ROC stood down from the end of the war in Europe, on 12 May 1945.

2.2 The Cold War

A post-war ROC was established at the beginning of 1947, and in 1948, the year that Russian intentions in eastern Europe became clear and the 'Iron Curtain' descended, serious preparations were made for air defence and the renovation of the radar defence system. However, ROC observers continued to work often in very bad conditions, with inadequate shelter and rickety equipment.

The increase in speed and flight ceiling of Soviet aircraft and the increased capacity of radar detection saw the role of the ROC in tracking aircraft movements begin to diminish. However, the need to respond to the threat of nuclear war gave the ROC a new purpose.

A 1954 study to determine the effects of nuclear explosion suggested radiation released by a 10 megaton H-bomb would affect an area of 5000–6000 square miles (12,950–15,540 square km), with a central zone 270 square miles (699 square km) in which radiation would extinguish all life. A fallout plume might be 170 miles (274km) long and 20 miles (32km) wide, in average wind conditions.

It had been recognised that evacuation of the civilian population was no longer a viable response, and that sheltering indoors until the worst of the plume had moved away and radiation levels had subsided was the most practicable response. The ROC was tasked with providing a warning and monitoring service of such fallout. In 1956 the UK Warning and Monitoring Organisation was established, with the ROC as its field arm.

The Home Office identified needs that would have to be met for the Corps to fulfil its new role: to be issued with appropriate equipment; to undergo special training; to be housed in protected accommodation; and to have more fully protected means of communication.

The years 1959-61 saw the ROC turn inexorably away from its earlier heritage of aircraft spotting. Its priorities were now:

- a) the reporting of nuclear bursts;
- b) low-level aircraft recognition over a designated area of eastern England (from Durham to the Thames), covering the area in which the UK's nuclear bomber bases lay;

⁷ Wood 1992, 124.

c) reporting of fall-out.

Equipment to effectively undertake tasks (a) and (c) only gradually became available. Experiments were conducted to find out how the posts could be worked closed down in wartime conditions. The low-level aircraft recording role was finally abandoned in the summer of 1965.

The Tarland underground observation post is recorded as having become active in 1960.

2.3 1968-1991

Between 1968 and stand-down in 1991 the ROC saw improvements to equipment, improved insulation for posts, and further roles in relation to civil defence. However, a review of UK early warning and monitoring needs suggested a future in which automatic instruments would undertake the core observations and the Royal Observer Corps was stood down on 30 September 1991.

2.4 The Posts

The Home Office specified the protected ROC posts as to be 19ft x 8ft 6in x 7ft 6in (5.8m x 2.6m x 2.3m) high, divided into three parts: a ladder well leading down 15 ft (4.6m) from the entrance hatch, with sump at its base; a small toilet; a main room combining working space and sleeping accommodation for a four-person crew. It would be built in an excavated hole and covered by 3ft (0.9m) of soil. The walls and roof would be over 6in (15cm) thick. A protected underground bunker was trialled at Farnham in 1956 and, with minor changes, was adopted. 1563 posts and 31 group centres had to be built. The programme was completed in 1965. Existing posts had to be surveyed to see if the sites were suitable for the new structures, and if they were not, had to be re-sited. By mid-1958 94 of the new posts were in use, with 110 under construction. The same period saw the extension of the system into the far north-west of Scotland.

The construction of Tarland involved, as we know from the Ministry of Works file, blasting of the hard rock into which the bunker was sunk.⁸

⁸ NRS, DD27/1955, 'Stone Circle, Tomnaverie, Aberdeenshire', 1959.



Figure 2: Reconstructed cutaway drawing of Tomnaverie ROC Post showing ROC observers at work.
© Crown Copyright HES

2.5 Equipment

The nuclear reporting role required new equipment, and this only became available gradually. The key items from about 1960 were:

- The Radiac Survey Meter and Fixed Survey Meter, which recorded radiation in the vicinity of the post. These were replaced in the 1980s by a new lightweight radiation meter.
- The Bomb Power Indicator and the Ground Zero Indicator, which recorded, respectively, the power, location and type of nuclear explosion. These two instruments remained in use at stand-down in 1991.
- Reporting over telephone landlines was supplemented by VHF radio.
- Facilities were provided in the form of sirens and flares to allow posts to alert the public in the immediate area of the posts to a fall-out danger.

Posts would, in wartime conditions, have to be staffed for long periods and facilities were provided for heating food. There were no heating facilities within the bunkers and they could become very cold for ROC crew who were often seated for long periods. Many crews tried to insulate their bunkers to improve the situation. A chemical toilet was provided, its toxic operating chemicals being only one of the number of hazards in working in the posts. Light was provided by a battery pack and generally observers used torches for reading equipment. Bunk and single beds were supplied for the four (reduced to three in the late 1960s) crew. Sometimes crew added a curtain to provide some privacy for those using the beds.



Figure 3: Interior view of ROC post. ©Crown Copyright HES

Upon entering State care, some items within the bunker were removed for their assessment and conservation. The images provided by HES Collections team show that Tarland when emptied had what appears to be a typically random collection of domestic items, stationery, documents and magazines. The rope nets are not commonly mentioned in contents lists. Are they perhaps to aid the transfer of equipment and supplies down the ladder/hatch?



Figure 4: Image of entrance area to ROC post showing the 'shower tray' and hand-pump. © Crown Copyright HES.

The item listed as 'shower tray' (E3092) is visible on some of the photographs of the interior as covering the sump, into which water was to drain, to be pumped out using the hand-pump attached to the wall (both shown in figure 4). It is of the same pattern as a relatively rare security grille of a kind illustrated on page 113 of Dalton,⁹ which were designed to prevent unauthorised access from the surface while the hatch was open for ventilation. Elsewhere, Dalton provides an image of a grille used to cover the sump for water to drain into, but this was of a simpler pattern.

The asbestos fire blanket box visible on some images of Tarland is for a type introduced in 1976 and noted specifically for removal on stand-down because of the safety problems associated with asbestos.¹⁰ The blanket itself still seems to have been in situ when the SubBrit report was created in 2001.

None of the monitoring equipment was recorded in the papers available. Clarke notes that items of equipment are in demand, often for the curation and display of post, and may command high prices.¹¹

⁹ Dalton 2017, 113.

¹⁰ Dalton 2017, 129.

¹¹ Clarke 2016.

2.6 The Post in Use

The ROC would be put on alert if the deteriorating political situation suggested that the risk of attack was growing. However, a surprise attack was always a possibility. Dalton describes the operating procedures. After 1968 the crew of a post was reduced to three, allocated roles as Observer No. 1, No. 2 and No. 3 as they arrived. Each had a different role in preparing the post and in its subsequent operation.¹²

Observer No. 1 would be in charge and would check the communications equipment and report that the post was staffed. Observer No. 2 would prepare the below-ground instruments, the maroon and siren. Observer No. 3 was responsible for setting up the above-ground equipment, removing blanking plates and so on. Once these preliminary tasks had been completed, the post was reported as being 'stage-one operational'. Once a shift pattern had been established and fuel, water and food supplies were adequate, the post would be reported as 'stage-two operational'.¹³

The crews would go into a stand-to period, regularly checking the instruments and communications. Food, water and fuel would be replenished.¹⁴

On receiving the 'attack warning red' message Observer No. 3 had to go above ground to sound the warning siren. If the post was a master post, connected by radio, then the radio mast had to be retracted and laid on the ground.¹⁵

The instruments could detect the pressure changes caused by a blast. The crew would be warned of approaching fallout via the 'fallout warning black' message. Fallout readings would be taken every 5 minutes. A warning maroon would be fired. Measurements would continue until the radiation levels fell below 0.1 rph (roentgens per hour) when the 'attack message white' would be sent and a 'white' signal on the siren would be sounded.¹⁶

3 MAJOR GAPS IN UNDERSTANDING

Gaps in knowledge and opportunities for further research were identified in relation to the ROC bunker. Some would involve more extensive research in files held at the National Records of Scotland and the National Archives at Kew. Kew, in particular, holds a wide range of post-specific, group and higher command files.¹⁷

- More work might be done in the context of the decisions regarding which sites to keep and which to close in 1968.
- It may be useful to check HES and other archives for images of Tomnaverie in the 1950s, even those captured by tourists, which might show either the construction work for the underground post or the pre-existing ROC post.

¹² Dalton 2011, 81.

¹³ Dalton 2011, 81.

¹⁴ Dalton 2011, 81.

¹⁵ Dalton 2011, 81-82.

¹⁶ Dalton 2011, 82.

¹⁷ For a full list of possible sources see Barclay 2022 (unpublished HES report).

- The limited amount of work on the posts of the North-East exposed some problems in the way ROC posts are logged in national and local Historic Environment Records (HER). First, Canmore appears to record only three ROC posts in the North-East: Tarland and two entries for Pitcaple. A superficial check suggests that Canmore records fewer than half of the ROC posts in Scotland. The Local Authority (LA) HER covering the historic counties of Aberdeenshire, Banff and Kincardineshire records all the ROC underground posts and the majority of known Second World War posts, citing the Defence of Britain database as its main source. It is possible that Wood (1992) has also been consulted although this is not explicit. It is possible that the Subterranea Britannica website has been consulted in some cases.¹⁸ What is clear is that all the sources contain errors. Wood (1992) is indeed prone to error and internally inconsistent, for example between a list of all posts (1972) and a list of posts at stand-down; it also misses out changes of site (as in Tarland). The LA HER presently lists Second World War and Cold War ROC posts separately and does not reliably use the ROC post name, nor does it categorise them consistently.¹⁹ Current condition information is erratically recorded and indeed may conflict between sources. A relatively short project could collate all the accessible sources in Scotland to ensure accuracy and consistency. Most importantly, it could ensure that Canmore would include records for all the known ROC posts.

4 ASSOCIATED PROPERTIES

The following ROC posts are curated posts:

- Arbroath ROC Post Museum, Arbroath, Angus (LB51858)
- Skelmorlie ROC Post Museum, North Ayrshire

The following ROC post is the only other designated example in Scotland:

- Dun 25, former ROC underground monitoring post, Mains of Edzell, Edzell (LB52217)

The Royal Observer Corps Association website lists preserved posts and museum collections for Scotland, England and Northern Ireland.²⁰ It is not known whether the information given is still accurate.

Material from the Alford Post in Aberdeen Group is, according to Subterranea Britannica, displayed in a ROC room at Alford heritage Centre.

¹⁸ Accessible online: www.subbrit.org.uk/ (accessed: 18 May 2022).

¹⁹ The HER can be searched on the website: [Archaeology Service Historic Environment Record \(HER\) \(online.aberdeenshire.gov.uk\)](http://Archaeology Service Historic Environment Record (HER) (online.aberdeenshire.gov.uk)) (accessed: 09 January 2023).

²⁰ Accessible online: www.roc-heritage.co.uk/scotland (accessed: 09 January 2022).

5 KEYWORDS

Tomnaverie, Guardianship, Recumbent Setting, Recumbent Stone, Recumbent Stone Circle, Royal Observer Corps, ROC, observer post, bunker, Cold War, Tarland.

BIBLIOGRAPHY

Barclay, G. 2022 Contribution to the Statement of Significance for Tomnaverie Stone Circle: The 'Tarland' underground Royal Observer Corps post (unpublished).

Bennett, L. 2018 Cold War Ruralism: Civil Defense Planning, Country Ways, and the Founding of the UK's Royal Observer Corps' Fallout Monitoring Posts Network. *Journal of Planning History* 17 (3), 205-225.

Clarke, R. 2016 *Landscape, memory and secrecy: the Cold War archaeology of the Royal Observer Corps*. PhD Thesis submitted to the University of Exeter.

Dalton, M. 2011 (2017) *The Royal Observer Corp Underground Monitoring Posts* (Folly Books: Monkton Farley).

NRS, DD27/1955, 1959, *Stone Circle, Tomnaverie, Aberdeenshire*.

TNA, AIR 2/20118, *Royal Observer Corps (ROC): 29/55 post, Tarland, Aberdeenshire*, 1939 July 1 – 1964 Feb 29.

Welfare, S. 2014 *Home Front: Aboyne & Tarland 1914-18* (Tarland: Cromar History Group).

Wood, D. 1972 (1992) *Attack Warning Red: The Royal Observer Corps and the defence of Britain 1925 to 1992* (Carmichael & Sweet: Portsmouth).

Further Resources

Canmore ID: 120140
Site Number: NJ40SE 69
NGR: NJ 4858 0345

Canmore entry: <https://canmore.org.uk/site/120140/tomnaverie-roc-observation-post>

For the entry on SubBrit, see: <https://www.subbrit.org.uk/sites/tarland-roc-post/>

Further information on the Royal Observer Corps can be found at: <http://www.roc-heritage.co.uk/>

APPENDIX: TIMELINE

This appendix is available within the HES Statement of Significance for Tomnaverie Stone Circle as Appendix 2. The timeline outlines key dates in the history of the entire site which cover both the stone circle and the ROC bunker. The Tomnaverie Stone Circle Statement of Significance can be downloaded from our website: [Tomnaverie Stone Circle - Statement of Significance - Archive and Research - Publications \(historicenvironment.scot\)](https://www.historicenvironment.scot/publications/tomnaverie-stone-circle-statement-of-significance-archive-and-research-publications).

Alternatively, you can request a copy from Historic Environment Scotland Cultural Resources Team.

Please contact: crtenquiries@hes.scot