

RECORD OF STATE HERITAGE PLACE

Description and notes with respect to a place entered in the South Australian Heritage Register in accordance with the *Heritage Places Act 1993*

NAME: Former RAAF No 10 Radar Station (Yankalilla) **FILE NO.:** 20963
ADDRESS: Rarkang Road Cape Jervis, via Delamere

Physical Description

The former Radar Station is dramatically sited on the summit of Campbell Hill. Its principal relic is an oblong concrete building which housed the operators and supported the radar antenna, with smaller structures nearby which housed generators. Extensive remains of the camp site are about a kilometre east of the radar station. All the structures show evidence of camouflage to resemble farm buildings.

Statement of Heritage Significance

The former RAAF No 10 Radar Station (Yankalilla) is a rare surviving example of the measures adopted for the defence of Australia from coastal attack during World War II, and one of the two best-preserved wartime RAAF radar station sites in South Australia. It is the more intact of the two Light Weight Air Warning (LWAW) radar stations to be brought into operation during the war, using the newly developed lighter and more portable LWAW radar systems, which also had longer range. The station provided protection to the sea approaches to Adelaide and the industrial cities of Spencer Gulf.

Relevant Criteria under section 16 of the *Heritage Places Act 1993*

- (a) It demonstrates important aspects of the evolution or pattern of the State's history, in retaining substantial infrastructure which illustrates significant aspects of South Australia's wartime history.
- (b) It has rare, uncommon or endangered qualities that are of cultural significance, as being one of only two sites of its kind surviving in South Australia.
- (d) It is an outstanding representative of a particular class of places of cultural significance, as the best-preserved Light Weight Air Warning (LWAW) radar station site in South Australia.

Extent of Listing

The components which are critical to the heritage significance of Former RAAF No 10 Radar Station (Yankalilla) include:

- Two conjoined concrete buildings (former Radar Station operators' building)
- Remains of two small generator buildings
- Remains of residential camp, including extensive concrete building foundations, chimney, fireplaces, kitchen range and stone garden and path edging

History of the Place

After the opening of the Pacific War, the immediate fear in Australia was of attack by Japanese carrier aircraft. The response was to duplicate the British coastal air defence system. Plans were drawn up for a national chain of Advanced Chain Overseas (ACO) coastal radar stations, including sites at Ceduna, Elliston, Cowell, Whyalla, Victor Harbor and Robe in South Australia. However, by the time of the Japanese defeat at the battle of Midway in June 1942 it was apparent that Japanese naval air power would not stretch to South Australian waters, and half of these stations were never begun. Three radar stations were built at Robe, Cowell and Victor Harbor in early 1942, but never put into service.

Instead, the priority turned back to the threat to coastal shipping from German sea raiders and Japanese submarines, and a new generation of radar defences was designed to cover the sea approaches to Adelaide and the industrial cities of Spencer Gulf. By now the Chain Home stations with their timber towers were obsolete. Faced with the pressures of the Pacific war, the Council for Scientific and Industrial Research (CSIR) in Australia had undertaken a rapid and drastic development program to produce lighter and more portable radar sets with longer range.

The resulting Light Weight Air Warning (LWAW) system was recognisably like modern radar sets. It had a relatively small rotating antenna and could be carried by trucks or aircraft and installed quickly in remote locations. The image it showed the operator was an easily-interpreted map view on a circular oscilloscope. (Mellor 1958, pp. 430-431; Ross 1978 p. 195) The definitive history of radar in the Second World War described it as "surely one of the most remarkable pieces of radar equipment to emerge from World War II." (Brown 1999, p. 221) The term radio direction finding (RDF) was dropped and the American name radar - short for Radio Direction and Ranging - was officially adopted to describe these systems in September 1943.

Two new LWAW radar stations were strategically located to cover the entrances to Gulf St Vincent and Spencer Gulf. No. 7 Radar Station on Wedge Island was approved in May 1942. It was sited to cover the entrance to Spencer Gulf, where all shipping to and from Port Pirie and Whyalla passed. Operated by the RAAF, it was not operational until May 1943. No. 10 Radar Station was sited to cover Backstairs Passage and the approaches to

Gulf St Vincent and Port Adelaide. It was named after the nearest town, Yankalilla, although it was actually sited nearer to Cape Jervis and sometimes known by that name. It became operational in April 1943. Both Yankalilla and Wedge Island had unobtrusive LWAW sets, camouflaged to look like ruined cottages. (Ross 1978, p. 196; Fenton 1990-1999)

The radar station was built on the bare summit of Campbell Hill, a prominent peak overlooking Cape Jervis, 308m above sea level. It consisted of a single concrete splinter-proof shelter which housed the transmitting and receiving sets, with the rotating antenna mounted on its roof, and several smaller ones housing diesel generators. There were living quarters built in a gully about a kilometre to the east. Everything was disguised to look like farm buildings from the air.

The Yankalilla radar station functioned uneventfully in terms of enemy operations for about sixteen months. The majority of the operators were Women's Australian Auxiliary Air Force personnel (WAAAFs), who were much in demand for social activities in the surrounding district, and trips by RAAF truck to dances, socials and cinema nights at Delamere, Second Valley and Rapid Bay feature prominently in reminiscences of service at No. 10 Radar Station. At the station itself, there was not much to do for recreation but shoot rabbits.

The radar station ceased operation in September 1944, but was briefly made operational again in December 1944 after the German submarine U-862 appeared off the South Australian coast. The radar stations were finally disbanded in November 1945 and their property was disposed of. (Fenton 1994, p. 25; 1999)

The former Yankalilla Radar Station remains stand just south of the Talisker Conservation Park, in a sheep paddock on top of Campbell Hill, overlooking Cape Jervis 8km to the west. Passengers disembarking from the Kangaroo Island ferry can see the ruined radar station silhouetted on the skyline, but probably think it is a farm water tank. The site has a breathtaking panoramic view of Backstairs Passage, Kangaroo Island and lower Gulf. St Vincent

The form of the LWAW station is very different from the ACO stations at Victor Harbor and Cowell. There is one principal structure remaining on the site, actually two conjoined concrete buildings which housed the operators and supported the rotating antenna on its roof. Remains of two small generator buildings and other infrastructure are nearby. The remains of the residential camp are about a kilometre to the east. There are extensive concrete building foundations, fireplaces, a kitchen range, and elaborate stone garden and path edging. The camp remains are far more substantial than those at Victor Harbor, having been intensively occupied for nearly two years, and are also recommended for entry in the South Australian Heritage Register.

An interesting feature of the building ruins is their camouflage. The concrete operators' building is rendered to resemble rubble stonework, and a standing concrete chimney at the camp is treated the same way. The camp was laid out to look like a complex of

farm buildings, and the radar station itself was intended to look like a ruined house. From the ground, the large antenna made its appearance incongruous, but the antenna would not have been conspicuous in an aerial photograph. The outer "ruinous" walls have collapsed, so that the building looks a much less convincing ruin today than it did in wartime photographs.

Of the five coastal radar stations built in South Australia during the Second World War whose remains survive, three are the ACO stations built in 1942 at Victor Harbor, Robe and Cowell. The other transportable LWAW radar installed at Wedge Island has left relatively little evidence on the ground today. The stations planned for Ceduna, Elliston and Whyalla were never begun. Yankalilla is among the best-preserved of these stations, and one of the two which actually saw service. Enough of its evidence remains intact to tell part of the story of the great wartime defence emergency. The site is particularly interesting for the camp remains, which demonstrate something of the lifestyle of the operators, and the evidence of camouflage, something which rarely took a form as durable as concrete, and almost never survives today.

REFERENCES:

This Record has been adapted from the assessment report in:

Bell, P, *et al*, *Twentieth Century Heritage Survey Stage Two (1928-1945)*, Vol 2, 2008

Refer to the survey for a more detailed historical description and a list of references.

SITE RECORD

Former RAAF No 10 Radar Station (Yankalilla)
Rarkang Road Cape Jervis, via Delamere

FILE NO.:20963

FORMER NAME: Yankalilla Radar Station

DESCRIPTION OF PLACE: Large concrete building, the remains of two generators, and an extensive camp site

DATE OF COMPLETION: 1943

SA HERITAGE REGISTER STATUS: **Description:** Confirmed
Date: 10 May 2013

LOCAL HERITAGE STATUS: n/a

CURRENT USE: **Description:** Sheep paddock
Dates: 1946+

PREVIOUS USE(S): **Description:** Radar Station
Dates: 1943-1945

ARCHITECT: **Name:** n/a
Dates: n/a

BUILDER: **Name:** n/a
Dates: n/a

LOCAL GOVERNMENT AREA: **Description:** DC of Yankalilla

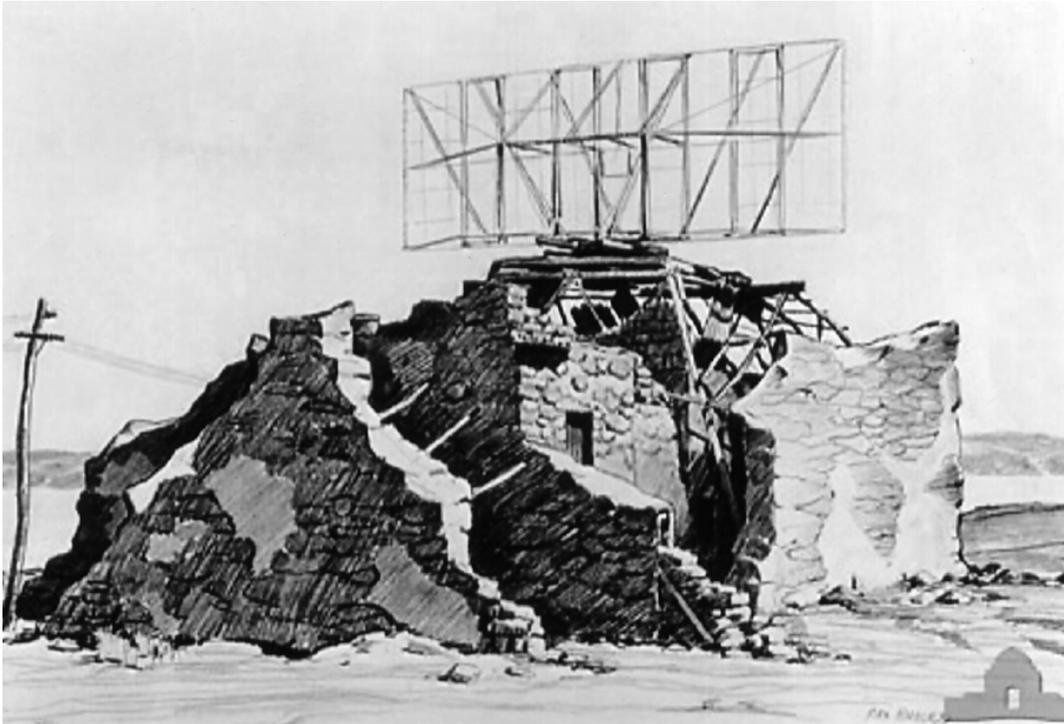
LOCATION: **Unit No.:** -
Street No.: -
Street Name: Rarkang Road
Town/Suburb: Cape Jervis
Post Code: 5204

LAND DESCRIPTION: **Title Type:** CT CT CT
Volume: 5343 5721 5132
Folio: 856 789 163
Lot & Plan No.: A14 - A6
F40092 D37141
Section: 310
Hundred: Waitpinga

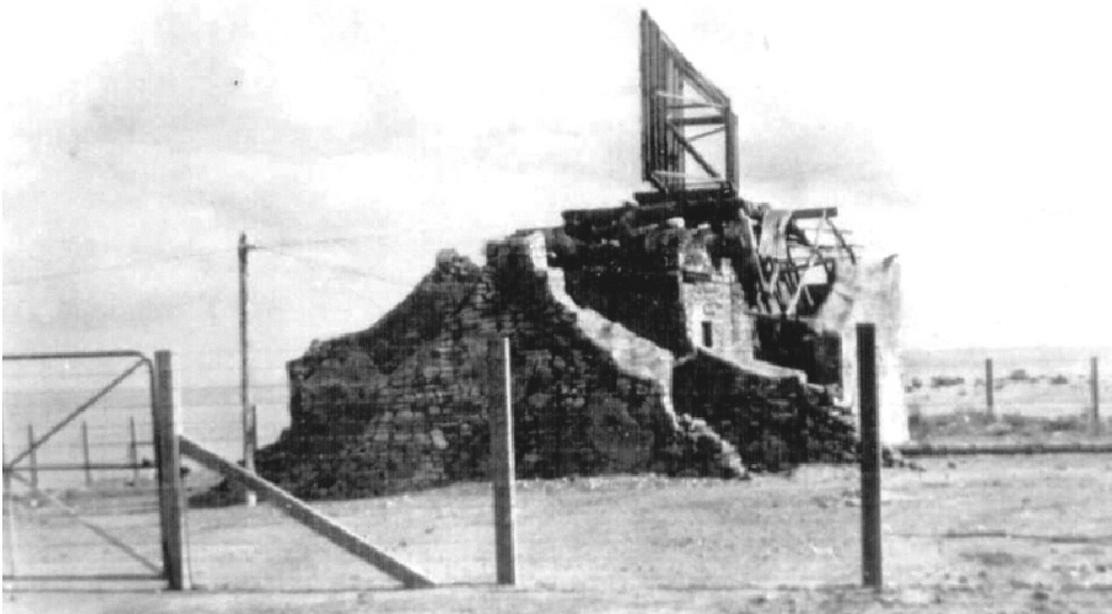
PHOTOS

Former RAAF No 10 Radar Station (Yankalilla)
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FILE NO.:20963



Drawing by Max Ragless of Cape Jervis radar station in 1944 (AWM ART30198)



Photograph of Cape Jervis radar station and fence (Fenton 1999, p. 9)

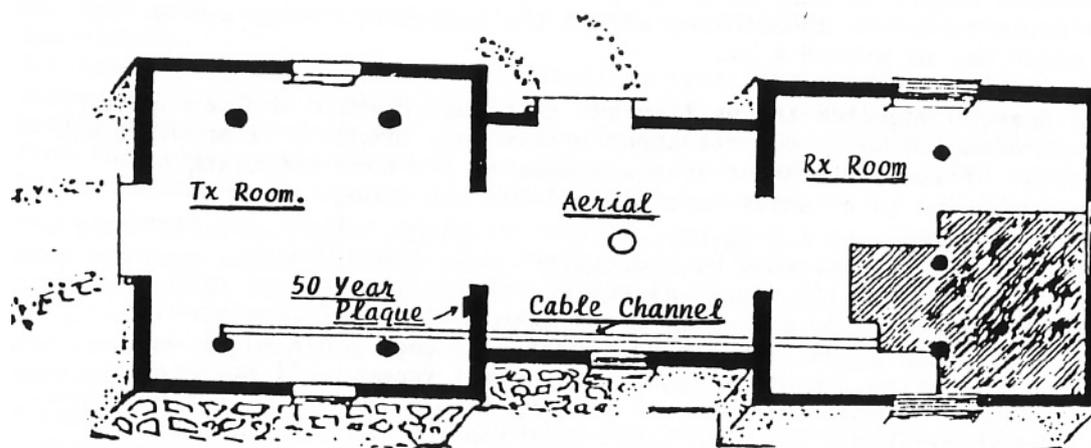
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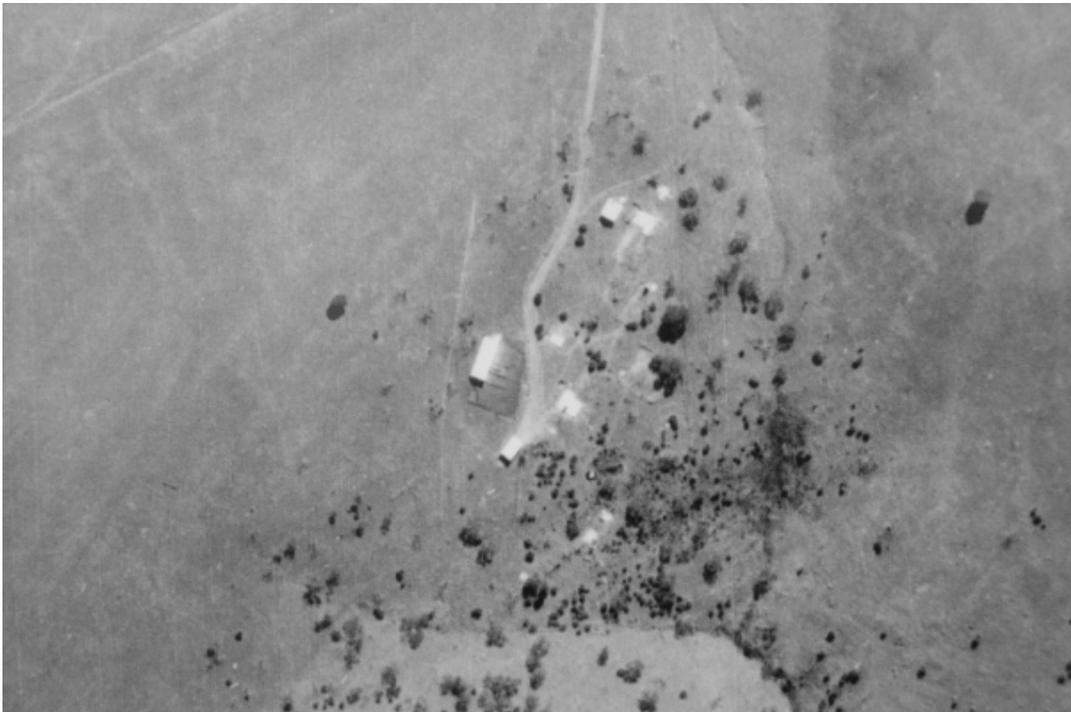


Aerial photo of Cape Jervis Radar Station (at left) and camp (at right), 1949
(Shirley McLean)



Plan of Cape Jervis Radar Station building (Fenton 1999, p.32)

PHOTOS



Aerial photo of Cape Jervis Radar Station camp site, 1949
(Shirley McLean)



Reunion of Cape Jervis Radar Station operators, 1995
(Fenton 1999, p. 47)

PHOTOS

Former RAAF No 10 Radar Station (Yankalilla)
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Transmitter & receiver building, Cape Jervis Radar Station



Transmitter & receiver building, Cape Jervis Radar Station

PHOTOS

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Remains of generator, Cape Jervis Radar Station



Camp site, Cape Jervis Radar Station

SITE PLAN

Former RAAF No 10 Radar Station (Yankalilla)
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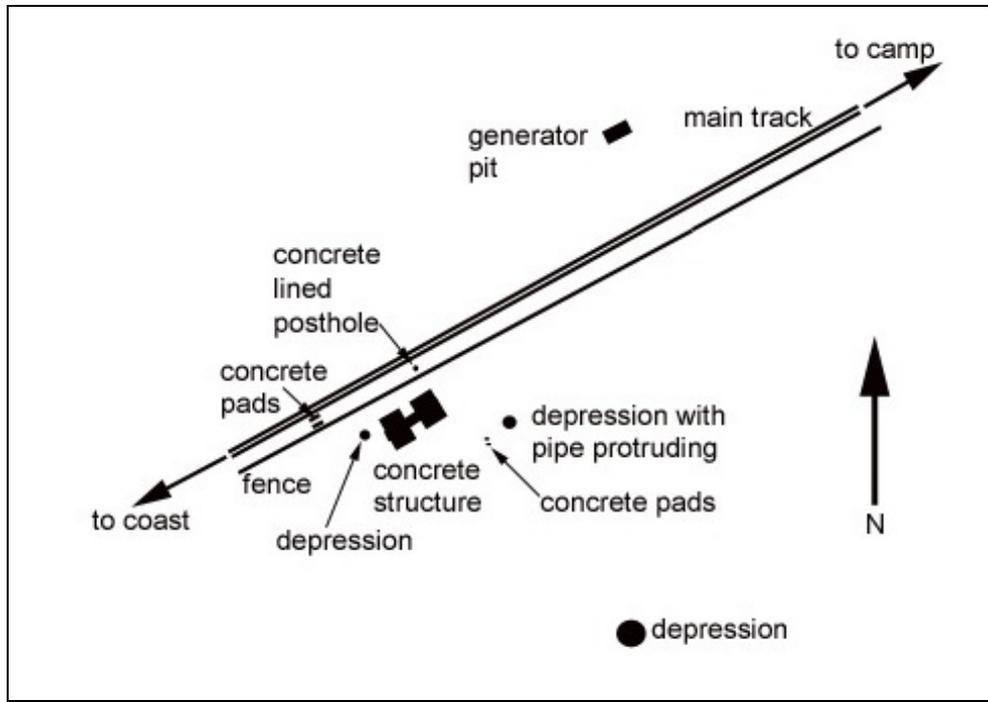


Location of former Cape Jervis Radar Station (CFS map book region 1)

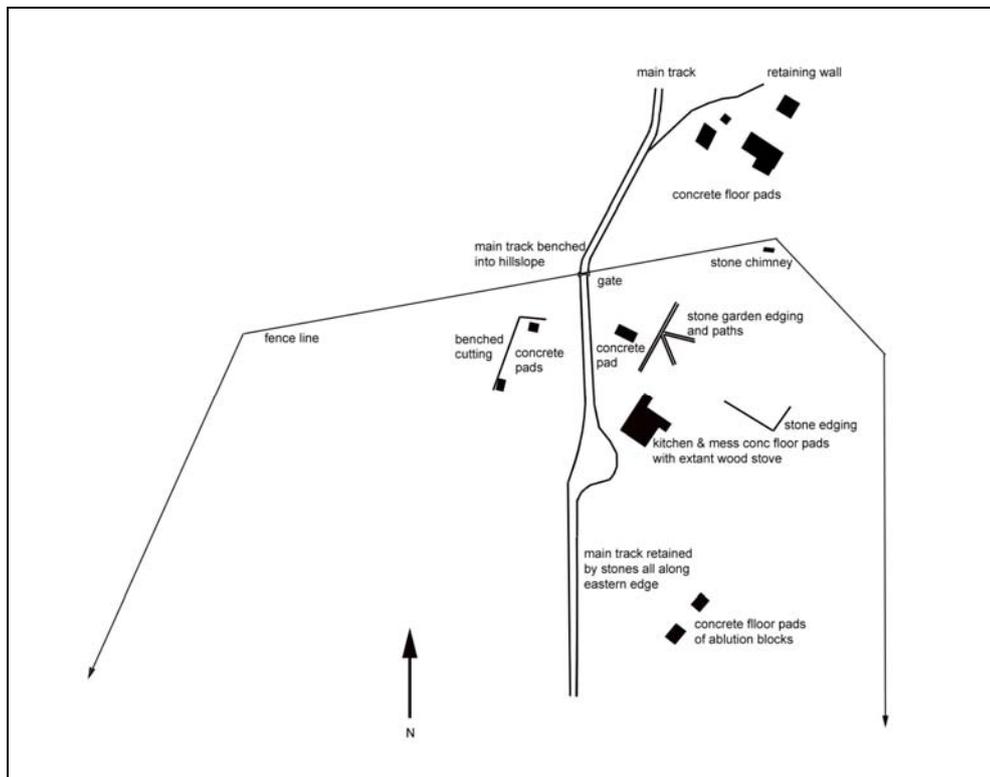
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Former RAAF No 10 Radar Station (Yankalilla)
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Detail Plan of Cape Jervis Radar Station Site, 2007

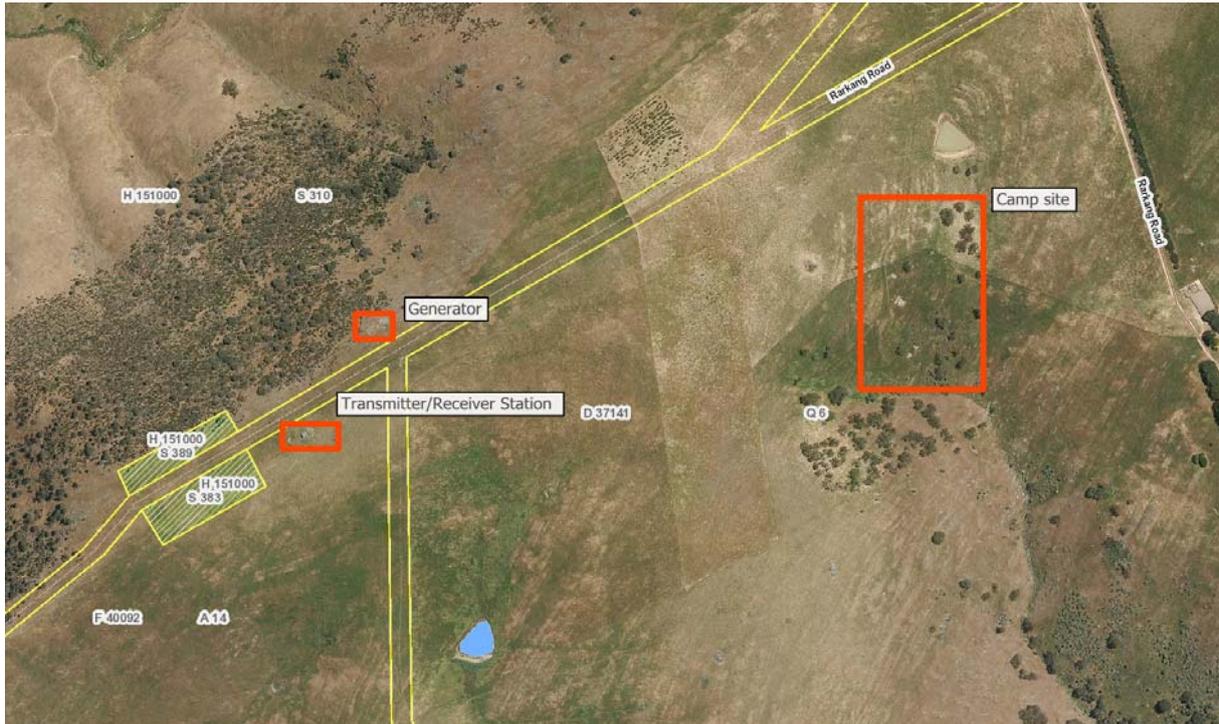


Detail Plan of Cape Jervis RAAF Camp Site, 2007

SITE PLAN

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Former RAAF No 10 Radar Station, showing location of Generator, Transmitter / Receiver Station and former Campsite (envmaps 7 Feb 2012)