

# Type S600 Mobile Radar

(NEDAD.2013.162.001)



A S600 Radar deployed along with its control cabin and mobile power supply. This gives the Radar the ability to operate in the field at remote sites. (NEDAD.2013.146)



Air transportable, the S600 Radar and cabins could be airlifted into place. Here a Chinook prepares to lift the S600 from Mount Kent in the Falklands Islands after it was withdrawn from service in August 1997. (NEDAD.2014.001.007)



Junior Technician Andy Horton of 303 SU services the S600 Transmitter on Mount Kent, Falkland Islands in late 1986. (NEDAD.2013.184.001)

The S600 Radar was developed by Marconi in the late 1960's as a modular system which could be air-lifted by helicopter, by transport aircraft such as the C130 Hercules or towed by a Land Rover. Both Surveillance and Height-finding antennas were developed at the same time. The picture below right shows the Surveillance Radar on the left with the Height-finder Radar on the right behind the staff.

The prototype Radar we have here at the Museum is the S Band variant and was built around 1967. It spent its early years at the Marconi Test and Development site undertaking various trials for both the MoD and the company. While closely meeting Air Staff Requirement (ASR 1514) for a rapid deployment radar, the RAF decided that, with the increasing threat of jamming, a new and even more advanced Radar was required and so the RAF decided not to purchase the S600 system.

However, the S600 Radar system proved to be very popular with international sales to over 20 countries and is still in use today. During the Kosovo air war in 1999, the the 3rd Battalion of the 250th Air Defence Missile Brigade of the Army of Yugoslavia, managed to track and shoot down a USAF F117 "Stealth" Fighter on 27th March 1999 while it was flying over Serbia as part of NATO operations in the area. Unconfirmed reports from some of those involved in Serbia indicate that the aircraft was tracked by the S600 until it was shot down by ground-to-air missiles. The exact details of the event are still a Serbian Secret!

The Falklands Islands conflict in 1982 meant additional mobile Radars were desperately needed by the RAF once the Islands had been recaptured by British forces. The RAF purchased an L Band S600 in addition to this S Band variant and moved both Radars to the Islands. The L Band version was deployed at Mount Kent to provide air surveillance over East Falkland after the conflict, our Radar being held at Port Stanley in reserve. In 1985 our Radar was returned to the UK where it was better utilised for RAF training, radar evaluation and for exercises. Its L Band sister radar (Type 97) continued active service at Mount Kent until August 1997, being superseded by a more modern Plessey 3D radar.

Our Radar was to see "action" yet again during the Balkans crisis in 1998/99. It was deployed to help with the development of anti-radar tactics to neutralise this type of Radar. How ironic this was given the success of the S600 in that operational theatre against the USAF F117 "Stealth" fighter! The RAF eventually retired the Radar and it was returned for long term storage in Essex until BAE Systems moved the Radar to its' final home here at the Museum. The successors to the S600, the Martello Type 90 and 91 Radars, were bought by the RAF in 1982 paving the way for a whole new generation of mobile phased array Radars which now form the backbone of UK Air Defence system.



This publicity photo was taken as Marconi Radar employees discuss the deployment of an S600 system at an Essex Test Range during the 1970's. A heightfinding S600 can be seen in the background. (NEDAD.2013.183)

## RADAR SPECIFICATIONS - TYPE S600

Years in use (approx)	- 1967 - 2000
Range	- 250 miles
Aerial size	- 18 feet by 6 feet
Scanning speed	- Up to 6 rev/min
Horizontal beam width	- 1.2°
Vertical beam width	- 12.0°
Frequency (Wavelength)	- 2.7 - 3.1 GHz (11 - 9 cm)
Pulse width	- 5 μS
Power output	- 1000 kW peak
Pulse frequency (PRF)	- 300 pulses per second