

BDXC visit to Woofferton – October 2017



Aerial masts at Woofferton transmitter site, viewed from the east

Some twenty British DX Club (BDXC) members gathered at the gates of the Woofferton Transmitting Station at 11am on Friday 13th October 2017 for our much anticipated tour. Once inside the perimeter fence, we were met by BDXC members and former Senior Transmitter Engineers at the site, Dave Porter and Glyn Jones, who were to be our guides for the visit.

The Woofferton station, now the UK's only active shortwave broadcast site, covers some 320 acres of farmland on the Shropshire/Herefordshire border, a few miles south of Ludlow. The



building itself, and many of the aerial arrays, are in Herefordshire with the northern and eastern part of site being in Shropshire, a stream across the aerial field marking the county boundary. From the outside, the buildings were certainly not as distinguished as the architecture of sites such as say Rampisham, built in the late 1930s, which some of us had visited.

The land was acquired by the BBC in WW2 and opened in 1943. Originally it was known as Overseas Station Extension No 10 (OSE-10), before being renamed Woofferton Transmitting station around 1960. The site briefly closed in 1948 due to BBC financial constraints but the Soviet blockade of Berlin resulted in it being reactivated - from 1948 until the late 1990s it served as a VOA relay station broadcasting mainly to Eastern Europe, although it continued to be operated by the BBC. Its early on-air ID was "The Voice of America Relay Station in the United Kingdom". Some BBC broadcasts were carried from Woofferton from 1990 (after the Daventry site closed), and in 1999, when the VOA lease agreement ended, the privatised Merlin Communications company took full control of the output from the station. As well as BBC World Service broadcasts, the company then brokered the facility to various other international broadcasters.

Right: Marconi transmitter with Thomson modulator valve.

Woofferton was initially installed with 6 x 50 kW RCA transmitters in WW2, supplied from the USA under the Lend-Lease scheme. In 1963 the station was re-equipped with 6 x 250 kW Marconi BD272 transmitters (while 4 of the original RCAs were retired). Two of the BD272s are still in use. In 1979-1980 the last two remaining RCA transmitters from the 1940s were removed and replaced with 4 x 300 kW Marconi BD6124 senders, all four of which are still in use today.

Between 2005 and 2008 four of the early 1960s Marconi BD272 transmitters were replaced by Croatian RIZ 250 kW transmitters installed within fireproof cells. All these are DRM-capable.



The current active transmitter line-up Woofferton is:

SW	2 x Marconi BD272 250 kW	- installed in 1963	(Senders 93, 95)
SW	4 x Marconi BD6124 300 kW	- installed in 1981	(Senders 81, 82, 83, 84)
SW	4 x RIZ 250 kW	- installed in 2005-2008	(Senders 91, 92, 94, 96)
MW	1584 kHz (300W)	- BBC Hereford and Worcester:	installed in 1985
FM	105.9 MHz (1 kW)	- Sunshine Radio:	installed in 2013

In 1997 BBC Transmission was privatised, the domestic transmitters went to Crown Castle (now Arqiva) while the external service UK transmitter facilities, including Woofferton, were transferred in a management buyout to Merlin Communications. Merlin was later acquired by VT Communications which itself was acquired by the defence company Babcock in 2010.

Nowadays Woofferton carries shortwave broadcasts from BBC World Service along with a wide variety of other stations including VOA, Radio Sawa, IBRA Radio, RFE (Radio Azadi), NHK Radio Japan, KBS World Radio, Radio Taiwan International and HCJB Reach Beyond (Radio Akbar Mufriha). At the time of our visit the station was temporarily covering for transmissions from Dhabayya (UAE) due to an outage there. Additional transmissions had been slotted into the schedule from BBC, DW, IBRA, TWR Africa and Radio Ergo, amongst others. The temporary cover was due to end on the day of our visit.

After a Health & Safety briefing in the station's canteen, we split into two groups, led by Dave and Glyn, to tour the site. A rain shower meant both groups began the visit in the transmitter hall, where some of the transmitter doors (or senders as the BBC like to call them) had been left open for our visit so we could see their innards. Our visit was timed so no transmitters were initially on air (around 1030 UTC). A screen in the transmitter hall (and later seen in the control room) displayed the current transmitter usage as well as previewing the upcoming utilisation. It was great, though surprising, to see two of the 1963 vintage Marconi transmitters (Senders 93 and 95) still in use! As mentioned above, the RIZ transmitters were in separate rooms off the main hall – one was unlocked so we could see it close up.

Outside in the aerial field the rain had passed and close to the transmitter building, we saw the impressive trunked feeders over our heads, leading out from the transmitter building to the feeder switching stations (below) then out to the distant aerials, each feeder numbered by transmitter.



Looking away from the building, it was difficult to assess how many transmitter masts with arrays hung between them there were. An on the spot estimate was 22 or 23 masts? Each array can cover one, two or four shortwave bands. Although pointing in a fixed direction, each aerial array can be electronically turned a few degrees (or slewed) to target a particular country. And certain arrays can also be reversed to target the opposite direction if necessary. Maintaining or repairing the arrays is a specialist job with high winds or ice building up on the wires a hazard. Underneath, the grass is kept cropped by sheep.



Above: our group admire part of the extensive aerial arrays at Woofferton, straddling two counties!

Behind the main transmitter building, a small locked outbuilding housed the BBC Hereford and Worcester medium wave transmitter, labelled as such, but with its former "Radio Shropshire" plate visible underneath. Later, from the narrow Park Lane to the east of the site, we would see the aerial wire for 1584 kHz sloping down from the easternmost HF tower (visible on the photo of aerial masts from the east above)



Back inside the Woofferton building, we also visited the "Sunshine Radio Transmitter Room" where a rack of equipment for their 105.9 MHz channel, was deemed not nearly as impressive as the shortwave transmitters we'd seen outside!

Prior to lunch in the canteen, we were shown the impressive automated control room used to link programming to transmitters and then feed onwards to the aerial arrays. Most programming nowadays is downloaded from satellite and in an adjacent room we saw the many satellite receivers used, fed from a multitude a satellite dishes on the ground outside.



Above: Martin Goulding, 2E1EKX explains the various screens in the Woofferton Control Room



Left: Screen showing current status and future preview of all the transmitters.

Many thanks to Dave Porter, G4OYX and Glyn Jones, G4AIJ for showing us around, to Martin for explaining the Control Room and to Station Manager Barrie Elding for allowing us on site. (Dave has penned an article in the 2015 World Radio TV Handbook (WRTH): "Woofferton: 70 Years on the air")



Dave Porter & Martin Goulding uploaded a 14-part series of films about the Woofferton site 3-4 years ago on YouTube: <https://www.youtube.com/user/wooffertonuk/feed>

The full schedule of broadcasts from Woofferton can be found at www.bdx.org.uk/uksw.pdf

A comprehensive history - 50 Years of BBC Woofferton 1943-1993 by Jeff Cant: http://www.bbceng.info/Operations/transmitter_ops/Reminiscences/Woofferton/woof50y-v2.pdf

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