



Radio Netherlands International Bonaire Relay Station



The most important colour in Bonaire is blue! The shades of blue on this island have to be seen to be believed, both in the crystal clear water surrounding the island and the skies above us. And it's no co-incidence that the colour blue is linked to the logo of Radio Netherlands. For over half of its existence, the Dutch International Service has had a Caribbean broadcasting base here.

Quite a few of the annual 40,000 visitors to the island know the mission of the public broadcaster on the northern tip of Bonaire. Many hundreds of thousands of people further afield rely on Radio Netherlands for reliable reports and interesting programming. Our transmission team here on Bonaire makes sure that the signal is crystal clear...just like the blue water that surrounds us!

Henry Menckeberg, Station Manager





Location

Three minutes before the start of each Radio Netherlands broadcast you will hear frequency details read out over the air. Reference is usually made to the fact that the broadcast originates from transmitters in The Netherlands, or via one of the two Radio Netherlands overseas relay stations. One facility is on the island of Madagascar, the other on the island of Bonaire in the Netherlands Antilles.

If you take a map of the world and look just north of the coast of Venezuela...around 80 kilometres in fact, you will find three islands. They are usually termed the "ABC" islands, though strictly speaking the order is ACB...."Aruba", "Curaçao" in the middle, and the island furthest to the East is called "Bonaire". Until 1986 all three islands formed part of the Netherlands Antilles. But Aruba has now been granted a separate status.

History

The idea to build a relay station in Bonaire goes back to 16 September 1953, when the first stone was laid at the Lopik short-wave transmitting centre right in the heart of Holland. Upon hearing that The Netherlands was embarking on a plan to improve its external service, the Antillian government proposed that instead of building one huge station in Holland, Radio Netherlands should consider building some of its facilities in the Caribbean. Initially there didn't seem to be the need.

But in the sixties, when Drs Lieuwe Frans Tjijmstra became the director of Radio Netherlands, the matter was considered again. He was aware of the need to transmit as close as possible to distant target areas and came across

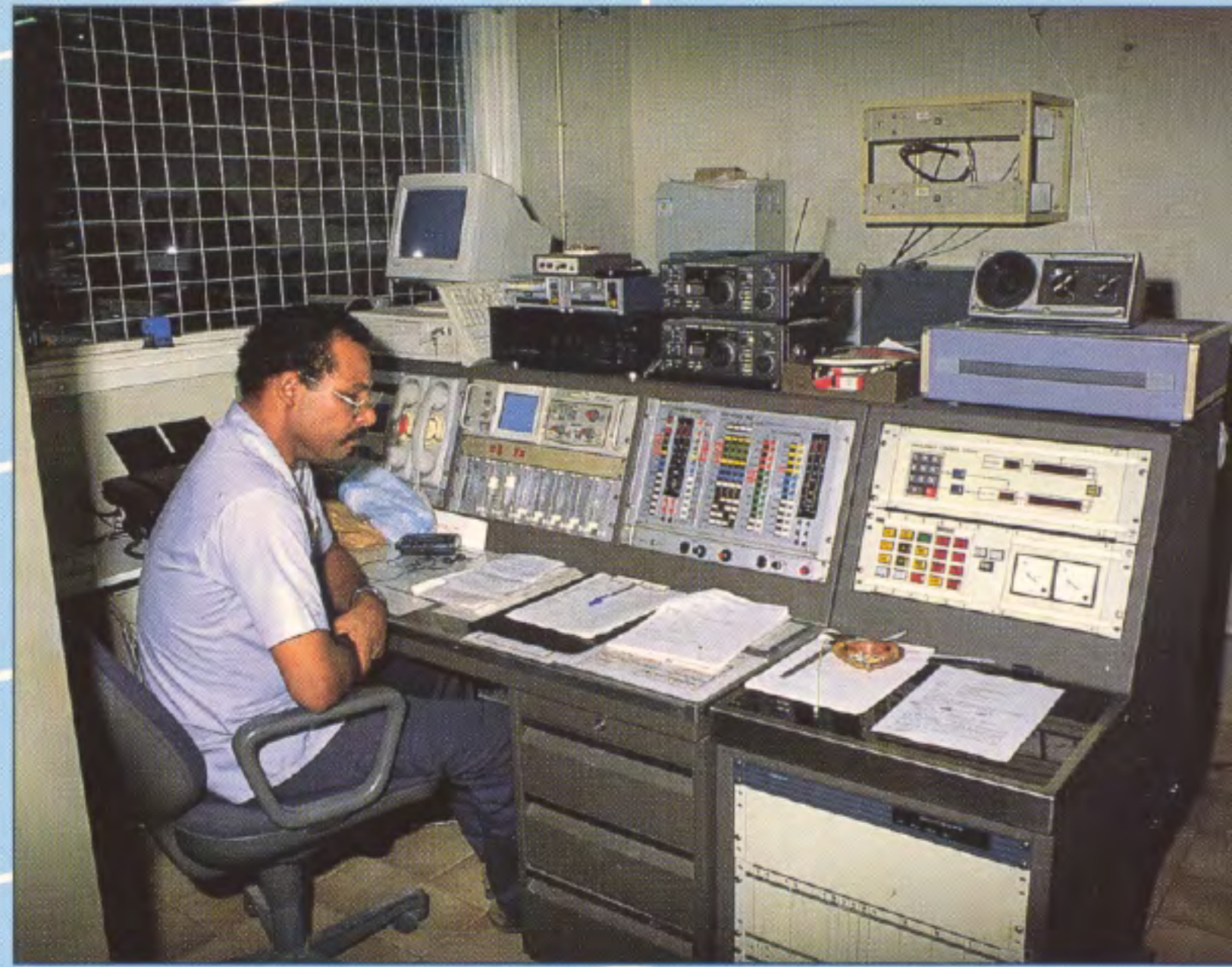
the Antillian relay proposal. Shortly afterwards, Jacques Debrot, the Antillian Minister of Culture, informed Radio Netherlands that they had signed a deal with Trans World Radio for the establishment of a medium- and short-wave radio station in the Antilles. Although only 288 square kilometres in area, Bonaire is an island of contrasts. On the north side are the hills around Slagbaai, while the south side is completely flat. From the media standpoint, the island is well served. There are four radio stations, a cable system and a television station. The combined transmitter output of the radio stations is 1,204,750 Watts, so you can imagine that Bonaire has its fair share of radio. 750 Watts are needed by the local FM radio station, "Voz di Bonaire" (*literally the "Voice of Bonaire"*), another 4000 Watts for the station "Ritmo FM", and 650,000 Watts are used on medium and shortwave by the evangelical station, Trans World Radio, situated on the southern part of the island. The remaining 550,000 Watts are radiated from Radio Netherlands' relay station on the northern part of Bonaire.

Dr Tjijmstra immediately contacted Trans World Radio to explore the possibility of hiring airtime. At the end of 1963, and the following year Radio Netherlands' programmes were being relayed by TWR Bonaire. A small team was given the task of compiling daily 50 minute broadcasts from pre-recorded material shipped from Holland and news and current affairs fed to Bonaire on short-wave via a special PTT link.

New facility with new ideas!

Hiring time from Trans World Radio was successful in building up much larger audiences, but the ultimate goal was Radio Netherlands' own facility. This was finally achieved in March 1969 when two Philips 300 kilowatt short-wave transmitters entered service, feeding a large antenna array purchased from a Swiss firm.

Radio Netherlands has always been one of the first international broadcasters to try out new technology. In 1978 the Bonaire station became one of the first short-wave relay sites fed by satellite, vastly improving the audio quality and increasing the station's competitive edge. In 1989, a new 250 kW ABB transmitter was purchased capable of transmitting in a spectrum-saving mode known as "Single Sideband". Radio Netherlands has conducted several tests with this mode to judge its suitability in the long term.



CONTINUITY-CENTRE BONAIRE

The Station Today

Just outside Bonaire's capital of Kralendijk is the Radio Netherlands' satellite receiving centre and administration offices. The signal is sent over the satellite circuit from Holland in digital form. At the satellite receiving station the signal is then converted back into an audio signal and then sent by a cable and radio link to the transmitter site some 10 kilometres to the north-west.

It is a ten minute drive from Kralendijk to the transmitter site. As you walk along the coastal road you can not only see the antenna masts, (the tallest is 103 metres high) but you can hear the constant wind blowing through the antenna rigging. The station has fourteen antennas beaming towards West Africa, the Pacific, North, Central and South America.





TRANSMISSION HALL

5000 Litres A Day

When the station was established, there was not enough power generated on the island to supply the station. So five diesel generators are currently installed, three running at any one time. These generate a total of one million Watts to power the transmitters....this is about the same energy consumption per day as forty fully equipped houses consume in one month!

The diesel engines run for nine months and then are fully dismantled for maintenance. The generator house has no doors on one side of the building...the heat has to be allowed to escape. The relay station uses around 5000 litres of gas oil per day. Fuel deliveries are made weekly, although the station keeps several days supply in reserve tanks.

Salt air is one of the biggest enemies. Special anti-corrosion paint has to be used to prevent the antennas (and the supporting towers) from collapsing. Salt water from the sea is indirectly used to cool the generators and the old Philips 300 kW transmitters.





PANAMSAT RECEIVING DISH IN BONAIRE

1992 - the start of a new era

The desire by Radio Netherlands' programme department to make more flexible use of the facilities in Bonaire led to a review of the way programming is fed from the studios in Hilversum, Holland. On April 8th 1992, Radio Netherlands was granted the first private licence from the Dutch government to own and operate an uplink facility. A satellite dish has now been mounted on the top of the studio buildings in Hilversum which beams programmes up to PanAmsat, positioned 36,000 km above Brazil. The power needed to do this is just three Watts!

The down-link on this satellite has an added bonus over the Intelsat route. Not only can the Bonaire relay be served with a second simultaneous programme feed, but radio stations in the Caribbean and South America can also receive the same studio quality signals. These stations use Radio Netherlands programme material as part of their local transmissions on FM and medium wave. Research has shown that this provides a significant addition to the total listening audience. Similar projects are being developed in Europe and Africa.

Most people listen to the radio using a portable receiver. Although satellite technology is moving fast, receiving radio signals direct in the home is beyond the budget of most individuals. The satellite dishes installed in the Caribbean area for the reception of PanAmsat cost in the region of US\$2500. In March 1992 an important World Administrative Radio Conference in Spain gave the go-ahead for digital audio broadcasting from satellites.



PANAMSAT-UPLINK HILVERSUM



INTELSAT RECEIVING DISH



Frequencies have now been allocated which permit radio signals from satellites to reach portable receivers. However, working satellite-based digital audio broadcasting systems are not expected before the second half of the 1990's. Mass production of suitable satellite receivers is still some years away and it will be well into the next century before the estimated 500 million short-wave receivers in use worldwide have been replaced.

Short-wave radio broadcasting therefore remains an important part of Radio Netherlands' multi-media approach to international broadcasting. The Bonaire relay station remains a vital link in getting Radio Netherlands programmes to listeners in the Americas, the Pacific, and especially Africa.

Keeping the transmissions running

Radio Netherlands Bonaire relay station operates for up to 20 hours a day with just few hours in the morning for maintenance. The staff therefore maintain a tight deadline when repair work has to be carried out. If you have ever experienced an electric shock from a mains appliance you can imagine how careful you've got to be when potentials of up to 28,000 Volts are used in modern transmitters. The transmitter components are expensive too.

Forty-two people currently work at the Radio Netherlands Bonaire relay station. It is a hard working team that works round the clock to make sure the programmes get to their destination!

Radio Netherlands is the international public radio and television service of The Netherlands. Its programmes are transmitted in a total of 9 languages via its own short-wave transmitters in Flevoland, The Netherlands and through relay facilities on the islands of Bonaire and Madagascar. Programmes are also distributed through other facilities around the world. Another important part of the operation is the production and distribution of radio and television programmes which are broadcast by stations abroad. The Radio Netherlands Training Centre provides courses for radio/television directors and producers from developing countries. Several media projects are conducted in the countries concerned.

Radio Netherlands English service has several transmissions per day. For a complete overview of programmes, times and frequencies please get in touch. A free schedule is available from:

*English Service,
Radio Netherlands
P.O. Box 222, 1200 JG Hilversum, The Netherlands*

*Photo's: Eddy de Wit, Jonathan Marks and
Emiel de Jong*



**Radio Netherlands
International**