E6GG – Niue – 2015

The Early Planning

That drink at the 2013 RSGB Convention has a lot to answer for. The team that is now the "6-G's" first mooted the idea of working together on a DXpedition at that Convention, and that spawned the TX6G operation of March 2014. Pulled together in a matter of a few weeks, we made some 78k QSOs from the Austral Islands. We had so much fun that it was inevitable that we'd want to do it again. In late 2014, we started to research possible locations for 2015, narrowing it to a small handful of "possibles". A Skype conference at the time agreed that it was not a matter of where do we go next, but of "in which order do we do all these?". We set a number of criteria for our next destination – it had to be wanted in Europe, accessible by air (without significant limitations of baggage weight), with favourable propagation at our target dates (the equinox) and, by preference, in the Pacific (whilst sunspot numbers held out some reasonable prospect of propagation to Europe for hours at a time). It needed reliable power and also should be a reasonable "holiday" location. Niue was one of the countries on our list, with a need to focus on Europe (where it remained high on the wanted lists) and on LF everywhere.

We put out a lot of feelers in connection with three possible locations. We knew how to do one easily (it had been our fall-back location for 2014) and we were pretty sure that we could do another without too much hassle. But the third – Niue – was tricky. From a visit there in 2009, Hilary, G4JKS, and I knew the topography and we also knew many people on the island. Niue has just one hotel of any significance, and that is on the wrong side of the island for propagation to Europe. No previous operations from Niue had been optimised with a sea-edge location facing Europe, but we knew a village where there was just one possible location to do this. If only we could find a house to rent there and get the use of the strategically positioned village hall (right on the cliff top).

Just as we were about to decide to go elsewhere, it all fell into place. A contact we had made whilst on Niue offered his house (he does not live all year on Niue) and it just happened to be in the village with the cliff-edge village hall. Not only that, but a separate email produced an offer of hire of the hall for the two weeks, together with catering by the village folk. This was looking good. So the detailed planning began. Our contact on NIue was the mayor of the village concerned, who also happens to work in the Niue Government on planning and statistics, as well as tourism, and he helped set up our arrangements. Extensive email and telephone traffic between Niue and the UK was necessary to get all the local arrangements in place. About this time, Don, G3XTT decided he could not arrange to be part of the team this time, so we were able to invite Mike, G3WPH, who eagerly accepted.

Niue is a 60m high island of rock known as the "Rock of the Pacific". It is roughly 19 degrees South and 170 degrees West, and the path to much of Europe passes through the Northern auroral zone. The whole island is rugged tufa, and the ground terrain is very difficult and dangerous. Antennas would prove to be the key to this operation – the location was not exactly ***AT*** the sea edge, but above it. This meant that our VDAs from TX6G would not be suitable as, at that elevation, they would not give low-angle lobes. Modelling by Mike, G3WPH and David, G3WGN suggested that high inverted Vee dipoles would work best on HF, with verticals for LF. Measurements using Google earth gave us the length of our cable runs to allow for maximum flexibility of antenna positioning. We needed long runs of low loss cable, and in the end, this took up a lot of our baggage allowances.

We decided that as the twice-weekly flights to Niue from Auckland are by Airbus 320, with few weight constraints, we would invest in some 18m Spiderpoles, and try to get an extensive antenna

farm assembled on the island. In the end, we found ourselves taking some 400 kg of baggage through a combination of Air New Zealand, BA and Emirates, each team member choosing his "favourite" routing to Auckland. Most flew business class, which offered a whopping 69 kg of checked baggage per person on Air New Zealand and BA. Hilary and I chose the direct Air New Zealand flight – 26.5 hours elapsed time. It was hassle-free and spot on time. We arrived moderately refreshed in a very wet Auckland five days before the rest of the team, choosing to take a few days in the Northlands to acclimatise to the time zone.

Making it happen

The team assembled in Auckland two days before the outbound flight to Niue. Then, on 16th September, we presented Air New Zealand with our 400 kg and boarded for the three and a half hour flight. The flight crosses the International Date Line and so we arrived at lunch time on 15th September, to be met by Frank, our on-island contact. He had a minibus and car ready and, after stopping at the supermarket for crates of water, beer and other essentials, we were on-site by mid-afternoon.

We had not planned on the pretty basic nature of our living accommodation. The owner had warned "nothing fancy" and it was a traditional island house. Three bedrooms (one used as a store), kitchen/diner and lounge, together with bathroom. It was not designed to sleep seven people so mattresses had been provided which we put on the concrete floor of the house. In the end it did not really matter – it was dry, it had the sleeping facilities, a hot shower and a washing machine. It also had mosquito nets on the louvered windows, which was essential. But the faces of some of the team when they first saw the house, showed that this was not quite what had been expected!

We had arranged for all catering to be at the operating location, which turned out to be ideal with its large sheltered veranda. We did not know what to expect in terms of food. Our St Brandon trip with Five Star had been based on a diet of fish and rice, or rice and fish. The first evening on Niue we were presented with a "banquet" with an enormous variety of meats, vegetables and desserts. We politely asked that future meals should be scaled back a bit, and had to repeat the request several times subsequently – our waste-lines suffered badly! The food was truly excellent and way above our expectations. Based on our stay in 2009, I can safely say it was above the standard of the one island hotel.

We chose a very modest target for day 1, and simply erected the HF antennas and installed all the stations and computing equipment. There was limited operation on HF that evening. The following day was the day for big LF antennas. All the dipoles went on the 18m Spider-poles and we put up verticals for 40, 80 and 160. We had planned to guy everything to rebar lengths hammered into the ground, but this was a non-starter as the ground was tufa and impossible to penetrate. So we had to make use of strategically placed palm trees to hold our guys. We even put the 40m vertical up a palm tree, to minimise guying needs. This "coconut vertical" suffered a little from rain, as the top made contact with the hanging coconuts, with the inevitable results. We used RFC400 cable for the longer HF cable runs, and were impressed by this relatively cheap and low loss cable. For LF we used Ultraflex and Aircell 5.

The Bands

Conditions were at best variable. The first day or so, things were pretty good, but then a major solar event torpedoed the bands for several days, with the A index up in the 40's. This limited our HF QSO rates enormously. We had in mind something around 50k as a target for Niue (a much more difficult path to Europe than the Australs), and with dedicated stations on 80 and 160 overnight, we carried

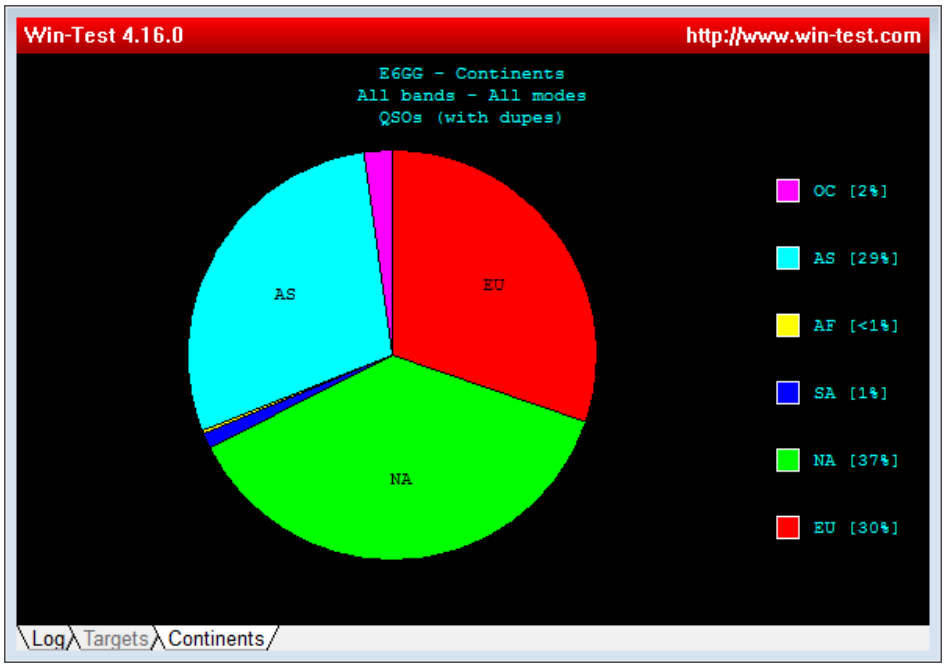
quite an overhead in terms of QSO rate. When propagation returned to “normal”, the last few days showed that our antenna plans were spot-on. The European HF signals were big, and we felt “loud” in Europe. It is just disappointing that we lost a large number of QSOs from the poor initial conditions.

Our LF performance from Raivavae on the Australs had been fairly poor and we had shared one LF antenna between 80 and 160. We resolved to have dedicated antennas for each LF band on E6, so that we could work both simultaneously. This was the right strategy – in the end we made over 1,000 QSOs on 160 and some 2,500 on 80m, with peak openings coinciding on each band, of course. Although we worked Europe extensively on 80, 160m EU QSOs were limited to the Eastern part of the continent. We tried every day to UK but it was not to be. The issues was not one of static, but simply of signal level – we heard a few “pings” on 160, but no G QSO. Our 160m operating was based on being on the band at Niue/European sunrise/sunset and on following the dawn terminator across the US. This meant about seven hours on the band each night – often more. Encouragingly the static levels were not excessive – we could hear between the crashes. Although we had planned a beverage, the land meant it was hard to implement. We tried a Pennant, but with little success. In retrospect perhaps a K9AY would have helped, but we had the clear impression that the limiting factor was probably the strength of our signal in Europe, which receiving antennas would do nothing to improve.

We took some “stick” for our focus on CW at the start, but with conditions as they were, CW offered the magic 15-20 dB advantage over SSB. SSB contacts would have been hard, and rates low in those early days, and pile-up control near impossible. Later in the expedition we ramped up the SSB activity, with large and very unruly pile-ups to Europe. 17m RTTY operation was relatively limited, reflecting the CQWW RTTY contest on our second weekend, and the fact that Chris, GM3WOJ, had offered a significant number of RTTY QSOs when he had been on the island.

The results

Our results show a total of 48,635 QSOs with an encouraging level of EU contacts:



The totals for EU very significantly by band:

Band	%age Europe
160	1
80	13
40	19
30	44
20	51
17	42
15	27
12	4
10	1

Our mode split was inevitably slanted to CW:

CW:	36.2k
SSB:	8.7k
RTTY:	1.5k

Our uniques percentage was 29%, which we regard as a good outcome.

One disappointment was our internet capability. There was nothing at the operating location, and at our house, it was very slow. It was based on the island public wi-fi which shares a single 8 Mb/s satellite link amongst all the islanders. There is another link the island, with a fibre-optic DSL, but we could not access it from our village. To upload the logs, we took an eleven mile drive to the capital, Alofi, where an internet café seemed to have a somewhat faster service. We had also planned to update the E6GG.com website during the expedition, but only managed it a couple of times. Comments on our website blog are very positive and we hope that our efforts were appreciated by the "deserving".

Reflections

Our daily operating routine was established with a five hour sleep slot each day, and six to nine hour operating periods. We had three stations active at all times, and the fourth (taken as a spare) in use when there was someone to use it. Breakfast was around 6.30, lunch at 12.30 and dinner at 18.30. We all managed short island tours, but the pressure on the QSO numbers limited our tourism. We did, however, all get the opportunity to see humpback whales as they come close in to the island and to the delight of those watching, perform their breaches out of the water. We also had a visit from the New Zealand High Commissioner on the island, who seemed genuinely interested in our expedition.

Niue will never be a mass-tourism island. Not only is it remote, but the islanders are determined not to destroy the island culture or upset the ecological balance. There are few tourist "beds" on the island and those that are available are fully booked well in advance in the main vacation seasons. Niue is far from the typical "South Seas" island, and it attracts a particular sort of tourist, looking for unspoilt savage beauty and an island culture.

Farewell

The time passed in a flash. It seemed that no sooner had we started operations it was time to close down. A cool dry day with a light breeze allowed us to complete the breakdown and packing in six hours, ready for a final farewell dinner with our island hosts. This proved to be a very light heated

and touching evening, with a fair amount of good food and New Zealand beer being consumed. Then to the airport the following day for the flight to Auckland and onward to London. Our new friends who had looked after us so well were there to say goodbye and present gifts. As ever, leaving Niue was sad - Hilary and I have a “soft spot” for Niue – a tiny island with a heart of gold. It is the people that make an island, and Niue is very special in that regard.