

Mercy Ships – 9L5MS Sierra Leone 2011 DXpedition

"Expect the unexpected"

Arie Kleingeld, PA3A

Sierra Leone is one of the five poorest countries in the world. It was devastated by a 12 year civil war that lasted until 2002. It is a country where one of every five children will not make it to the age of 5 and where 75% of the people live on a budget of under \$2 per day.

The Mercy Ships hospital ship *Africa Mercy* visited Sierra Leone in 2011 to perform free life saving surgery for the poor.¹ To witness the good work of Mercy Ships, four Dutch radio amateurs went on a DXpedition in the spring of 2011. Our goal was beyond communicating worldwide by ham radio — we were trying to find sponsors for a charity project. We decided to adopt the Mercy Ships Vision Project in Sierra Leone. This project addresses many of the surgical and medical eye needs of the

¹Mercy Ships is a global charity that has operated hospital ships in developing nations since 1978. Mercy Ships brings hope and healing to the forgotten poor by mobilizing people and resources worldwide and serving all people without regard for race, gender or religion.



Sierra Leonean people. The primary emphasis of surgical intervention is the removal of cataracts and a reduction in the prevalence of blindness throughout the country.

Preparations

If you intend to go to Sierra Leone you have to realize that this is a country with high unemployment and no tourist accommodations whatsoever. Therefore, the first question to answer is where to go with your station? After a thorough search via the Internet we finally found a suitable location in the mountains near Freetown, 15 km (9.3 miles) from the city center. It was located 400 meters (1300 feet) above sea level, sur-

rounded by luscious green hills. Getting the radio license in time was quite another story. Sending the necessary papers in time is no guarantee for success. Luckily for us, the Advance Team of Mercy Ships was stationed near the right governmental department so the license could be arranged even before we arrived.

The preparations of the DXpedition itself went by the book. In December 2010 all materials (antennas, food and beverages, generators, and so on) were ready for shipment by freight container, all well in advance of the expected DXpedition starting date of March 14, 2011. Then Murphy struck. The transport of the container was delayed by several

Bas den Braven, PD0CAV, works on the radials of one of our vertical antennas. >



One of the Spiderbeams, just outside the garden. >



weeks and it arrived in Freetown March 8, far too late to clear the customs process before the 14th. The team decided to execute plan B: delay the DXpedition for two weeks. Many e-mails and phone calls followed. Within a few days all was arranged and the final starting date was set for March 28.

Improvising

Four days before the new departure date we got an urgent message from the Mercy Ships Advance Team: The container would be in the customs process for at least one extra week. The impact was huge: We had to go to Africa without generators, antennas and all other stuff you need for a DXpedition. There was no way to accelerate the process. The team felt uncomfortable about this, especially since the point of no return had already passed. We were going to Africa one way or another.

The risk of having to stay in Sierra Leone for three weeks without ham radio made us decide to go to the next level and draw up a brand new plan C. This meant that in the first week we would work as volunteers on board one of the world's largest hospital ships, the MV *Africa Mercy* in the port of Freetown. After this first week we would try to get on the air with some simple antennas and start the DXpedition with a borrowed Mercy Ships generator and food that we would try to buy locally. We quickly gathered a few fishing rods (5, 8 and 10 meters long), some coax, 400 meters of copper wire and other supporting materials. All were packed in an extra suitcase we soon called the "Magic Siegfried and Roy" suitcase. It contained so many different unexpected things. "Need this or that? Just look in the Siegfried and Roy suitcase. You'll find it there."

Challenged by the adventure and still uncertain of what was to come the team boarded the plane to Africa on March 28 taking along three transceivers and light linears and the magic suitcase. The flight was comfortable and the team arrived in Freetown in the early evening. Assisted by people from Mercy Ships we went through the customs pretty quickly. Getting to the hospital ships was something else. We had to cross a 10 mile river delta over open sea in the dark with a small boat without any lights. It was definitely not comfortable with big waves and a speed of 20 knots. This was followed by a trip with a jeep to the ship. Finally, we arrived on board.

Working Volunteers

As expected the container was still half-way through the customs process. The ETA

was still unknown, which was nicely covered by the expression "This is Africa." It was time to execute plan C. The first week we worked on board the hospital ship. The *Africa Mercy* has six operating rooms and performs life-saving operations for the poor. Her crew consists of 480 volunteers. The four hams were added to the engineering staff of the ship, which was appropriate since none of us had any experience in healthcare. They had a nice job for us. The radiocommunication of the ship and Land Rovers was a mess and they had been struggling with it since their arrival in Sierra Leone in February.

Well, what are hams for? After a day of trouble shooting and testing some solutions, all radios were updated with newly configured software. To prevent future problems, we also wrote a manual on how to program the radios and how to use them effectively. That week we also made repairs on electrical pumps, serviced some fire detectors and advised on which radios to use in Mercy Ships' onshore activities.

Plan C in Operation

By the end of the first week there was still no news about our container so we decided to start the radio expedition. Fortunately Mercy Ships had a spare generator that we could use for a few weeks. With our transmitters, fishing rods, two cans of gasoline, normal luggage and the Siegfried and Roy suitcase we left for our house in the mountains. With the generator inside the jeep's cabin and all suitcases securely tied down on the roof it was a two hour drive through the horrible traffic of Freetown.

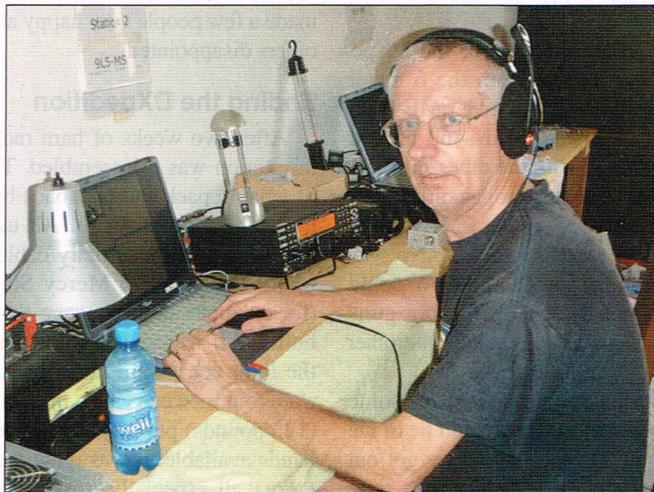
The rented house had a nice garden. Nice means in this case big enough for the three verticals we planned including the radials on the ground. The idea was to activate 40 to 10 meters. All verticals were supplied with 16 quarter wave radials for the lowest band and 6 quarter wave radials for the other higher bands. So we ended up with a 40-17-10 meter vertical, another for 30-15 meters and one for 20-12 meters.

The way to operate them was simple: Just connect one radiator and keep the other(s) rolled up along the fishing rod. Changing bands takes just an instant: take the fishing rod down, disconnect the used radiator, roll it up along the fishing rod, lower the new radiator, connect it to the coax and restore the vertical. After a while we could change bands within a minute even in the pitch dark African night.

The radio shack was set up in the garage. This way we kept the station operating noise away from the house so that other guests were not bothered by an overly enthusiastic style of SSB operation. The three simple verticals performed reasonably well on all bands. There was one challenge, though. The verticals were pretty close to each other and station interference was sometimes hard to overcome when linears were used. For that reason, many times operators ran barefoot.

A blessing was the absence of man-made electrical noise at our location. Within a range of at least 500 meters (1640 feet) the only electricity generated and used was ours! So there was no noise whatsoever. That's probably why we got so many compliments that the operators had such good ears. Those fine words were probably spoken by the hams we actually worked. But it is a fact that we heard a lot of stations on

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The author manages one of the CW pileups.

those simple verticals. We had many pileups with maximum S-3 signals sounding loud.

Hurray, the Equipment is Available!

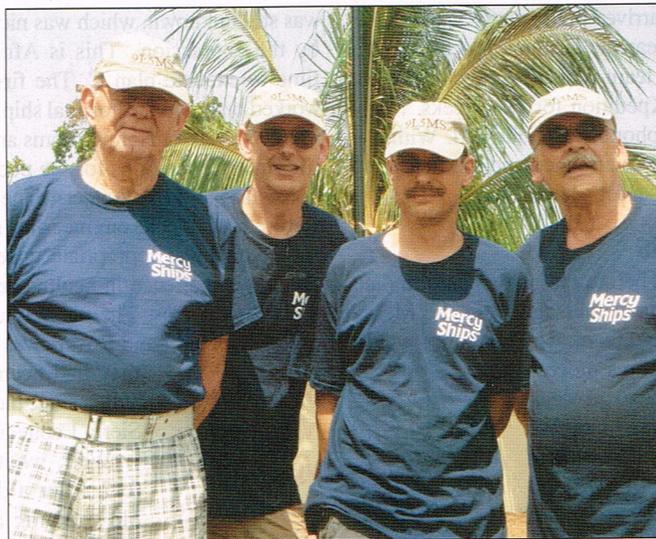
By the end of the second week we got the long awaited message that the container could be opened. On Friday evening we collected our gear and transported it to our house the same evening. It took several hours on Saturday to unpack and rebuild the station. The new antenna setup became as follows: one 5 band Spiderbeam and two monoband verticals for 40 and 30 meters in the garden, another 3 band Spiderbeam and a 17 meter long loaded vertical outside the garden on a dead end road. There was no more space for another large vertical plus radials. Because of this we decided to use only one large vertical and split the use in 3 nights on 80 meters and 4 nights on 160 meters. For the same reason we also could not build our planned directional receiving antennas for 160-40 meters (a homebrew receiving 4-square for 160/80 meters and two DHDLs for 40 meters).

The typical tropical noise on 160 meters and 80 meters was S-8 to S-9+10 dB. Despite this we were able to work DX. Of course a QSO with another continent is always DX but working Japan on 160 meters (14,500 km/9000 miles) with 300 W gave us a lot of satisfaction. With the new antennas we were also able to use the short openings on 10 and 12 meters to the Pacific (VK and KH6) and Asia in the early morning. The DX cluster helped us a lot. Start CQing on a completely quiet band, then send your spot to the DX cluster and presto...a pileup. You see, solar spots and CQs don't open up a band — a DX cluster does!

6 Meter EME

Not long before the start of the DXpedition we got a request from the 6 meter EME community to try 6 meter EME from Sierra Leone. Well, we did send an old 6 meter beam along with the other stuff just in case of good 6 meter propagation. Why not give EME a try? Six meter EME is quite another thing, the experts told us. No way that our 5-el (short) Yagi and 500 W could pull this off, not even with the big guns (4x8 el long Yagis and 2 kW) on the other side.

Nevertheless we were invited for some skeds. The best opportunity would be in the last week of the DXpedition so we got our 6 meter beam just in time. The best time was forecast at moonrise and moonset. Point



From the left: Arie, PA3AN; the author; Ad van Ginneken, PA8AD and Bas den Braven, PD0CAV.

the beam to the horizon in the direction of the moon and hope that the ground lobe (15 dBi gain under 13° elevation) would help us. What made it more complicated is that our location was in the mountains with hills around us, so we had no nice flat sea surface under our antenna. At moonrise in the afternoon our signals were blocked by a hill and we were unable to work or hear any station.

To the west at moonset we really were lucky. Around 03:30 AM we were able to work two stations, the first-ever

6 meter EME from Sierra Leone. We also kept an eye (and ear) out for terrestrial openings. About 50 stations from Southern Europe found their way into our log. We probably could have worked more stations there but most signals were probably blocked by one of the hills. In any case, we made a few people very happy and left many others disappointed.

Ending the DXpedition

After two weeks of ham radio activities the station was disassembled. The question of what to pack and take back by plane was in our case not difficult. All usable things like generators, electricity cables and tools found their way to Mercy Ships projects (for example, an orphanage that was being built). All transceivers and antennas and the light coax were taken back home. We were four men carrying a maximum of 56 kg (123 pounds) per person but had only eight hands available. It was quite a challenge to carry it all, especially crossing the river delta that was again a rough ride.

We contributed directly to a good cause and at the same time got about 23,500 contacts in the log.

After one more night onboard the *Africa Mercy* we said goodbye to a lot of new friends we met during the first week working onboard. It is a unique community serving on the world's largest hospital ship. There are 480 volunteers working onboard. Many of them stay for several years serving the mission to improve the life of the less fortunate in this world. These volunteers deserve our respect and support. We are happy that we could support them with our DXpedition.

After three weeks in Africa, this DXpedition came to an end. It was an experience that was completely different than any of us had had before. We contributed directly to a good cause and at the same time got about 23,500 contacts in the log.

All sponsoring and surplus for the QSL request by hams will be donated to the Mercy Vision charity project, www.mercyships.org. For more about the DXpedition, see www.sierraleone2011.com.

Photos by the author.

International ARRL member Arie Kleingeld, PA3A, has been a licensed radio operator since 1977 and was a member of the 5L2MS and 9L5MS DXpedition teams. He is an active contesteer and an Elmer to many Dutch radio amateurs in the southwest Netherlands. Arie holds a master's degree in Telecommunications and works as a freelance consultant. He and his wife Marian, PD1AEG, can be reached by e-mail at pa3a@xs4all.nl.

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