

# 9G2DX – 4X DXPedition to Ghana

March 2019

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As in a typical legend, this amazing adventure began about 2 years ago. Innocently enough, I took the challenge to handle the importation and installation of DMR repeaters being donated by an “unknown” radio ham in Africa.

The donator was Haim Lewy, an Israeli Ham based in Accra Ghana and the owner of SkyLinks, communication company doing business in Africa.

My close friend, Dov Gavish 4Z4DX, ham extraordinaire, immediately recognized the opportunity to operate in a rare QTH.

An additional plus was to include locations in the WWFF (Flora and fauna, national parks), and to be the first one worldwide to operate in Ghana on 30/60/80 meter.

Initially, it looked like a weird vision, but fortunately, Haim took the challenge to arrange this DXPedition.

It turns out that getting to Ghana, as well as importing radio equipment, is not a trivial task. Haim arranged for us to get the visas, purchased most of the heavy and costly equipment such as: an IC-7300 transceiver, ALS-500 Solid State Linear, Spider Beam antennas, poles, cables, ropes, tools and so on.

Getting a visa for entry into Ghana is a challenge. You must have a local invitation as well as the yellow International Certificate of Vaccination with at least a proof of recent Yellow Fever vaccination, 8 photographs and substantial fee in cash.

Haim worked with the NCA (the local communication authority), to get approval and a special call sign – 9G2DX – for this special event. As a point of reference, you can count more fingers on your hand than the number of local hams in Ghana. Actually, we met 100% of them, ... Two.

Dealing with the difficulties in setting dates for the 4X DXPedition, a heterogeneous and well-balanced group was formed that consisted of people who were willing to invest their free time, efforts and money.

Among the group was Dov Gavish, 4Z4DX, a well-known figure in the ham community with over 50 years of seasoning. 4Z4DX has ham radio experience on all modes, and has participated in delegations to Himalayas and meeting King Hussain in Jordan. Joining 4Z4DX was Simon Heger 4Z1SH, a mature senior citizen with personal passion for rag-chewing on SSB. Zeev Stadler 4X5ZS, “the youngster” in the group, is a man with fire in his eyes and the determination to be dedicated and to perfect his tasks. The last member of the group was Zvika Segal 4Z1ZV (that’s me), acting as problem creator and problem solver. I

was also charged with managing communications issues supervisor especially at the personal level (which is one of the challenges with such a unique group...).

On the start date we landed at Accra's new and modern international airport. A VIP service was offered as part of our welcome mat. Once we collected our luggage, we were ushered through friendly immigration and customs and loaded up two 4X4 vehicles that waited for us and our belonging.

The first evening we spent in Accra, the capital, in high class hotel and had top notch dinner with Haim and his family at the Rokefeler sushi restaurant.



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Early in the morning, we moved to Haim's facility to pack and load the equipment. With the help of the local drivers, we moved two fully loaded off road cars to the first operating site; a new beach resort, still under construction, that was opened especially for us. We got a whole section facing the Atlantic Ocean and few local guys to take care of us, as well as having a dedicated driver and car 24/7.

The way to the beach was a real adventure. We were introduced to an interesting trade system, "the mobile supermarket". Local people, the majority of them females, carry whatever you can imagine on their heads. This includes bread, ice, drinks to sewing machines or gas containers. They approach and offer their merchandize (a process through which you can try to improve your negotiation skill). Fifty-percent off "list price" is usual result.



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At the beach resort we started the installation of our gear. Every electrical and lighting pole was turned into an antenna tower. With the gracious help of the local people, we secured a block and line as the basic mechanism to haul up and lower down wire antennas.



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The first installed antenna was a simple END FED, a 9:1 one transformer (AKA 9:1 balun) and 22 meters of wire with no radials. Performance of this basic antenna were impressive. We achieved a reasonable VSWR down to 60 meters and were rewarded with QSOs from all over the globe. This helped us get Dov operating CW, and simultaneously removed him from hounding us so we could continue install other antennas without "supervision". The first station used an IC-7300 transceiver, an ALS-500 (about 400W solid state linear), an MFJ manual antenna tuner, and Dov's favorite log software – the old and stable version of MIXW.

Our plan was to install the "Compact and Portable" Spider Beam antenna. I must say that other than the name and stated performance (up to 9 dBi gain) there is nothing there to justify the term "Designed for DXPedition". If the intention is to have a long stay at the same location (and you have some engineers

on the team), then the antenna would be practical. Once you open the box, you realize that the manual was correctly titled – “Fabrication Instructions”. Actually, you get a KIT, with a Bill of Materials (i.e. poles, screws, rolls of ropes and wires, epoxy glue, uncut Velcro stripes, etc.).



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Even the 1:1 Balun is a kit that need to be “fabricated”. A good knowledge of reading complex and unclear instructions, as well as the ability to measure and to cut wires to specific lengths, and good soldering skills are all needed.

It required very gentle handling to avoid breaking the carbon support poles and tangling the wires (which were everywhere). However, once the antenna was set up and running (at least for that one day), the performance was beyond our expectations. Unlike the Cob Web or Hex Beam, this is a real 5-band 3 elements Yagi (4 elements on 10 meters).



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Once we understood the complexity of building the Spider antenna, we started to install other wire antennas, such as: a multi-band commercial antenna by Icom, a 40 meter dipole, and last but not least, the 80/160 meters Inverted V antenna recommended by Pop, YU7EF. This antenna was constructed of 30 meters of copper wire and an 8.5-meter vertical on an African bamboo pole. Loading coil for 160 meters was fabricated using empty mineral water plastic bottle and a tuning capacitor for 80 meters was a piece of open ended RG58 coax.

Performance of the antenna made Dov very happy as well as about 80 hams who were rewarded with their first Ghana QSO's. Thank you, Pop.

Later on, we tested also a short version of a 20-meter wire dipole antenna with loading coils built by Shimon. The center was supported by an African pole (i.e. a piece of a tree). We were surprised and delighted as this setup yielded many QSOs to North America and Japan.

Operating conditions from the beach resort were excellent. It is widely open to south America, and provided good conditions to the USA, especially on 20 meters during evening and night time. It also gave us good conditions to Europe and Japan. We even made a few QSO's with Antarctica.



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The ongoing challenge was pacifying Dov who was very upset with Simon's SSB operating method. As a user of LOG4OM log S/W, Shimon transmitted to each ham his name as well as sharing with him the weather condition in Ghana. This drove Dov crazy, who's focus was to serve the global community with as much as possible QSOs.





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We also sacrificed time during some of our meals in that it required driving for a total of one hour to get to a western style restaurant. Dov kept calculating the hundreds of “lost QSOs” due to eating and driving. In response, we decided to change the culinary process by leaving Dov to have fun with the rig while the rest of the team headed out for a meal. Even the pizza that was ordered for Dov was a waste of time and food, as Dov needs only one

apple per 8 hours of continuous operation.

One event that made me extremely happy was once when Haim was staring at the radio station, we encouraged him to step in and operate. In few seconds he started to manage the pileup in most professional way. Haim was a member of the known “4X4HQ” club in Tel Aviv over 30 years. For him it was like riding a bicycle following a long period of time. Just like that...

We set up 3 radio stations: IC-7300 with the SS Linear, IC-7000 with the LDG IT-100 antenna tuner, and the IC-718 which operated as the FT8 station. Most of the QSOs on FT8 made by the Zeev – “the youngster” (over 1,000), which through his IT skills and dedication, perfectly met the requirements of such computer to computer digital communication technology.

Part of operating characteristics in Africa is the time domain and constant. Everything takes longer than planned, looks different than expected, and is subject to weird electrical stability. One evening there was a sudden power outage whereby all the nearby village lights started blinking like a hazard signal. When the village power came back and ours was still down, we learned the magic of the “pre-paid” electricity meter which sometimes resets itself after power failure. Our host needed to drive to the nearby office, pay the bill, and hope that it would propagate through the slow network. We continued to operate on batteries until they were also exhausted. Unfortunately, nobody was able to operate the generator since it was mysteriously not onsite.



Our next two destination were national parks: Kakum National Park (WFF004), about 3 hours drive west of Accra and Shai Hills Resources National Park (WFF007) about a one hour drive north of Accra.

At both parks the hospitality was warm and the park management, rangers and local people went above and beyond the call of duty to support us in any way they could. This included helping us to turn every tree into antenna pole, carry our equipment, and providing the best locations for operating. No need to explain that “best” is a relative term.



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General lodging conditions in the parks do not meet western standards. There is a lack of hot water and low pressure to no water flow at all. Some of us slept on inflatable mattresses either in a tent or on the ground and had to shower using a bucket and a bottle like in the good old days.



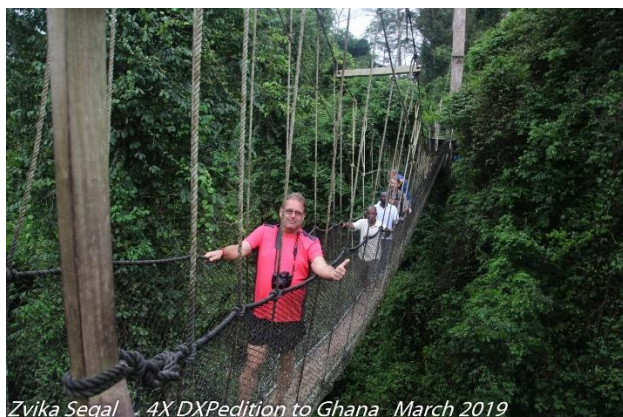
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During one of the nights we stayed in Shai Hills Park, a thunderstorm began, so the team had to rush and pack the radio equipment into the cars.

We also learned the hard way that wet trees are like a Faraday Cage. They effectively block propagation and radio conditions were just dead.



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Following the adventure in the parks we went back to “civilization;” a high-class hotel in Accra which means clean rooms, hot water, and breakfast.

The last few days we went back to the beach resort and set up for the fourth time, all the stations and antennas. With the good sea shore conditions, the “harvest” was above 1,000 QSOs per day.

Early the next morning, the driver knocked on my door and was happy to share with me that he took down and re-packed all the antennas other than the Spider Beam. It turns out that he misunderstood the requirements to leave all antennas as is other than the Spider Beam. The Spider Beam was going to be relocated to near Haim’s office. Hence, we had to set up all the antennas for a fifth time.

One of our tasks was to leave Haim with a well installed radio station. Part of the challenge was to take apart the Spider Beam and transfer it and re-install it on two containers at Haim’s office.

Zeev did a fantastic job in marking each and every piece of the spider parts and elements using color masking technology. As suspected the re-setup of the antenna took a while due to its huge size (over 10X10 meters) and limited available space.



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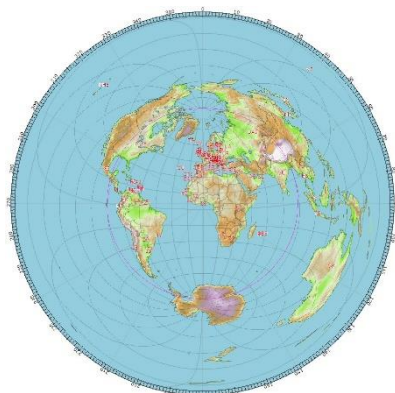
The local metal shop owner who was hired by Haim to supply a multi-pipe telescopic poles, gave us some additional insight to the way things work in Africa. There needed to be at least one dedicated Western guy attached to him, otherwise he would go to sleep. The welding machine was a real museum piece complete with a rusted transformer which was probably older than us. In addition, there was a magnificent extension cord which came equipped with neither plugs nor sockets. I will leave it to your imagination to guess how it worked.

Before departing Ghana, we had a meeting with NCA, the Ghana Communication Authority. A professional presentation was delivered by Haim to the manager and his 20 engineers, some of whom had taken part in our operation.



Ghana was also a great place to celebrate birthdays of 3 team members – Dov, myself and Haim who will soon celebrate a round number of years. Last night in Ghana, in the Chinese restaurant, we were exposed to the African version of “happy birthday song” along with fireworks and ice-cream cake.

Overall, we made in a net of 5 days of operation (3 locations and 4 setup and take down jobs), all combined with a lot of fun and adventures, over 5,200 QSOs. Over 50% CW by Dov and the balance divided between SSB and FT8. We worked over 80 countries including Antarctica and over 30 QSO with 4X stations back at our home in Israel.



All QSOs were logged into digital log s/w, at least once per day uploaded to eQSL and then screened of duplicates and errors. A corrected ADIF file was sent once per day to Mark Rosenberg 4X1KS, who supported us in setting up QRZ.COM, LoTW and clublog.com. He also acted as our focal point for all issues and on a daily basis reviewed and uploaded the QSOs to clublog.com. This helped to maintain very low level of errors (probably 2 complaints out of our over 5,200), and looked quite professional.



I would like to take this opportunity to thank the dedicated team, to Dov for his vision, to Mark for his support as well as reviewing and editing this article, to Charles Wilmott M0OXO who is still acting as our QSL manager, to NCA management, to all of the local people who helped us succeed and did their best to give us warm hospitality, and last but not least, to Haim Lewy who made our dream come true with a lot of effort and investment.



*Next DXPedition to come....*