

## **K4M - Midway Atoll 2009**

**Joe Pater, W8GEX, Tom Harrell, N4XP and Janet Pater, W8CAA**

**(Bearbeitet von Dr. Lutz D. Schmadel, DK8UH)**

Midway Atoll, a US possession in the mid Pacific, is a National Wildlife Refuge administered by the US Fish & Wildlife Service (USFWS). Amateur radio operations were plentiful while the US military occupied Midway from before World War II until the early 1990's. However, after 1993 when the island was transferred to the US Department of the Interior, requests by amateurs to activate the Atoll were not approved.

In January 2009, the US Fish and Wildlife Service announced radio operation would be allowed in October 2009. The USFWS announced the DXpedition operators would be W6OSP, N7CQQ, N6HC, N4XP, K9CT, I8NHJ, WB4JTT, DJ9ZB, W8GEX, N4PN, AA4NN, KH7U, 9V1YC, ND2T, K6TD, WA7NB, W6KK and N1DG. The DXpedition leaders would be N4XP and WB4JTT.

Planning continued for 8 months. N4XP & WB4JTT established a management team for five specific areas. N1DG, IT, W6OSP, finance, KH7U and WB4JTT, transportation and logistics and W8GEX, radios/amps/antennas. Managers selected other team members to assist his duties. For six months SKYPE™ calls and emails were used for all details.

The USFWS set the DXpedition dates to be October 9, to 19, 2009. This is because of the bird migration which brings about 1.5 million birds to the island on or about October 19. Transportation was next but boats were not accepted so an airplane charter was set. The only aircraft available was one that could carry only 17. With the team being 19 members, we decided two team members would fly on a USFWS charter flight on October 4<sup>th</sup>, the day before, and the rest of the team on our charter scheduled for October 5<sup>th</sup>. A weight restriction meant all of our personal belongings, all equipment and supplies, including the radio equipment, would have to be shipped in a container on a USFWS supply barge to Midway in August.

There was a lot of work to be done. KH7U, had worked with many DXpeditions to the Pacific Islands and because he had worked with USFWS before, he understood their procedures. Therefore, he worked with the USFWS for the team. He had amassed a large inventory of equipment from earlier DXpeditions and we used some of that equipment. He would also provide the staging area in Hawaii, and coordinate all logistics.

N1DG, who had also worked on the BS7H Scarborough Reef operation with N4XP, coordinated the shipping of supplies to N6HC in California shipped the equipment to Hawaii via boat. Once in Hawaii, KH7U picked up the equipment, added

his items, tagged and inventoried everything and then loaded it on skids and arranged for shipment via container to Midway.

N1DG suggested that our equipment should be standardized and interchangeable. This was done for numerous reasons, such as set up and ease of maintenance and familiarity by all concerned. He programmed all station controls and hardware at his QTH prior to arrival on Midway. Once on Midway, setup was fast and efficient. All six positions were then set up identically, with each position capable of CW, SSB, or RTTY. Equipment was Icom IC-7600s and Acom amps using Rig Experts interfaces. Computers were also standardized for ease of use.

W6OSP oversaw finances. A past treasurer of NCDXF and now their President, he had also been on several DXpeditions. W6OSP was also assisted by Margaret Blackwell, XYL of AA4NN who helped to track income and expenditures. DL9RCF assisted by DJ9ZB coordinated the European donations. W8CAA also assisted W6OSP in raising funds and contacted clubs and associations for financial assistance. She also managed all team personal records. WB4JTT would be responsible for the power and physical parts of the operation. He also handled all legal responsibilities.

The management team also asked OK1KT to assist with the QSL requirement and to serve as the team liaison with ELLI Print, who as a sponsor would be supplying QSLs. W8GEX was in charge of daily operations such as transmitting and receiving, i.e. radio position setup and tear down, cable requirements and needs dealing with positions, on-going maintenance, antennas, radio prep prior to shipment, etc. For the operating scheduling, W8GEX and N1DG worked together to make sure the positions were manned as required.

It was decided K4M would use two separate operating positions with each having its own antenna field. Planning included where each station would be set up, where the antennas would be placed including coax runs, connectors needed, plus electric service and other logistics. W8AEF and N7CQQ provided a set of SVDA's (switchable vertical dipole arrays) for each antenna field. Arrangements were also made for the use of KH7U's two Titanex verticals the loan of a Battle Creek Special from the Battle Creek Group. A vertical for 30 meters would complete the antenna requirements for 10 through 160 meters.

With October 9<sup>th</sup> set as the departure date for Midway, the team started to arrive in Hawaii with the arrival of WB4JTT,

W6OSP and N4XP. At this time we learned our plans had started to fall apart, with news that the aircraft that was taking us to Midway was broken. Soon others arrived on the 6<sup>th</sup> and the remaining members had arrived by Wednesday evening. However, the airplane problem continued and we were put into a hold position. We continued to be told the aircraft would be fixed "soon"! At least the equipment had arrived on Midway and was waiting for our arrival, and we were together as a team.

With the aircraft broken we did not leave as scheduled. As this went on until Sunday morning, we were all very frustrated. While they were trying to fix it, we started searching for another aircraft. One of our team members, WA7NB suggested we go to the airport and look around for other possible aircraft that could take us. So WA7NB, N1DG and KH7U went to the airport and talked airplane owners. They all said no and we knew we had to wait for our aircraft to be repaired.

We had originally scheduled a team meeting at the hotel on Thursday for planning purposes. Even though we were delayed, we continued with the meeting and studied our plans for staging, unpacking and repacking of equipment, setup, flagging of the antennas, lodging, scheduling, and most importantly, teardown, and the cleanup.

On Wednesday, the Midway Refuge Manager offered to add one more person to the team. The first person who could go was NF4A and after even after being told he had 24 hours to get to Hawaii, he was very happy to be invited and eagerly accepted. He secured flights, packed some clothes, and was off. And 23 hours later NF4A was picked up at the Hawaii airport, a bit disheveled, but still glad to be a part of the team. So we settled into a waiting game with Friday and Saturday passing with no signs of the aircraft being repaired.

On Sunday morning, we received a call from the pilot telling him they had fixed the problem and we would depart at 3pm. The team went to the airport with hopes we could all go on the initial flight but as we had been told previously, the plane was not big enough to accommodate us. W6OSP and NF4A would go on the USFWS charter flight Tuesday. The initial team departed on Sunday at 3:30 pm.

During our flight, Art WA7NB, N1DG and K6TD operated K4M aeronautical mobile. This was our opportunity to let the DX community know we were airborne, and that the Dxpedition was going to happen and we arrived at 8:30pm Midway time.

Upon arrival on Midway, we were met by Matt Brown, the refuge manager. We were attended a class about Midway Atoll given by USFWS personnel to familiarize us with the island and most importantly, about the wildlife. We then went to the barracks for the night and slept.

At 0630 the next morning, we were met at the barracks by USFWS Manager Matt Brown for breakfast. After we ate he took us to the warehouse where our equipment had been stored. It was then moved to the area at the beach where we

would be operating. We also were given bicycles for our personal transportation, the only transportation on Midway!

As planned, the operation was separated for the CW and SSB camps by about 500 feet. The SSB station was in a tent and the CW station was located inside the tavern used by the Midway staff.

Finally we were under way. While N1DG, K6TD and KH7U started station setup, the remainder of the team - W8GEX, AA4NN, N6HC, WA7NB, W6KK, N4PN, K9CT, N7CQQ, I8NHJ, DJ9ZB, 9V1YCV and ND2T started the big task of assembling both antenna fields. All boxes were unpacked and equipment placed where it needed to be. W8GEX and several others surveyed the beach area for exact placement of the antennas. WB4JTT started tent erection as well as checking to make sure the main electrical source was ready. This all happened simultaneously and went smoothly and quickly. It was not perfect, but pretty close. Two meter handhelds were used to communicate.

USFWS was worried about the birds and restricted the antennas to verticals only. The SVDA's proved to be sturdy but had to have flapping ribbons added to alert the birds. All the other antennas had flapping ribbons added also. Because of the large number of antennas and the extreme heat, the antenna fields were not fully erected till late the next afternoon. We had planned for the antennas to be placed on the water line but the USFWS would not permit this because of the Hawaiian Monk Seals. Most antennas were placed 100 to 200 feet from the water line.

Because there was no electric power service outside the buildings, KH7U had worked with USFWS to installation of 110v and 220v junction boxes prior to our arrival. From those boxes we used large electric cords to run the power to our stations. Midway 2009 paid for the electrical source and it is being left for other Dxpeditons.

Our plan was to have all stations QRV at the same time but because of our 3 day delay, we decided to put each station on as it became operational. The first CW Q was 13 October at 06:07 with ZL2IFB on 20 meters and the first SSB Q was 13 October at 06:33 with JE1AON on 20 meters. Five stations were operational within the first 13 minutes of operation. And once we were up and running, everything went smoothly. Following an operating schedule made by N1DG each operator worked three hour shifts and then had six hours off.

Conditions were very good almost 24 hours a day with Europe coming through on at least one band at any given time with good signals.

Even though the stations were about 500 feet apart and we had stubs and band pass filters, the stations still suffered intermodulation. We were able to eliminate much of this by lowering the output of the CW amplifiers.

In addition to CW, SSB and RTTY, our operating plan called for 6M and EME but we learned quickly the antennas were not bird friendly and we were not allowed to set them up.

Before the DXpedition, AB6RM, contacted W6OSP, to set up a schedule with the Aircraft Carrier USS Midway, now a museum in San Diego. It was learned their station would be manned by amateur radio operators who are Midway Museum volunteers. The QSOs turned out good with W6OSP, a former US Navy Communications Technician, as our operator. At the time of the schedule we had to QRT the regular operation pileups moved to the assigned frequency and established contact with NI6IW on the USS Midway. All was successful and the special event went well.

The only motorized vehicles on Midway were a fire truck and an ambulance with all other persons using either a bicycle or golf cart. While we were there our team used bikes.

Our sleeping rooms were in a former US Navy barracks and were quite comfortable. All meals were served in Clipper House, the island cafeteria which had good food. We would relieve the five operators on duty during "dining time" in order for them to eat, and then they would go back and finish their shift.

Most buildings are gone but some remain for USFWS use that included a bowling alley, a grocery store, an internet café, a movie theater, and a tavern. These buildings are used during reduced hours. Many of the other buildings were in disrepair with no plans to repair them. The runway was repaved earlier this year and was in good condition.

While there, some team members went on a tour of Easter Island, the original "Midway Island". They reported that virtually all buildings are gone, but the runway is still there, in poor condition and overgrown.

The weather on Midway was pleasant though hot at times. It was extremely hot the first two days while we were building antennas, but it cooled off with beautiful, sunny weather the remaining time. As luck would have it, the last day while we tore down the weather was windy with blowing but warm rain. On Sunday morning before we started to tear down, the wind blew down one of the Titanex verticals.

Our operating plan called for removing one station at a time so we would be on the air as long as possible. The last CW Q was 19 October at 19:00 on 30 meters with NH7CU with I8NHJ the operator. The last SSB Q was 19 October at 19:10 on 17 meters with AA1V and N1DG the operator. In the end 60,739 QSOS were made with over 18,465 uniques. QSOs by continent were Africa – 171 (.1%), Asia – 17,449 (29%), Europe – 12,677 (21%), North America – 28,251 (47%), Oceania – 1,348 (2%) and South America – 833 (4%).

We left Midway for Honolulu on schedule on Monday, again with 17 team members. This time N7CQQ and WB4JTT remained behind for the USFWS flight on Friday. While waiting, they would close out the operation and package the equipment for return, either on an upcoming flight, or on the USFWS supply vessel.

The three day delay in transportation to Midway reduced the on-air time to six and one half days, but still 61,000 QSO's were made. Propagation proved to exceed all expectations

with conditions open to many areas of the world 24 hours a day. Much emphasis was put on working Europe, and afterward, we were happy with the number of European contacts.

This operation came about like no other that has ever taken place. With no leader and no team in place prior to arrival, it developed into an effective operation with highly skilled operators using good solid planning and proven operating practices and reliable equipment. The backgrounds and DXpedition experiences of these operators reads like the ARRL Country list with operations from 1A0, 3A, 3B7, 3B9, 3C0, 3DA, 3X, 4O, 4W, 4X, 5U, 6Y, 7P, 6O, 7O, 9A, 9M6, 9M0, 9U, 9V, 9X, 9Y, A2, A5, A6, BQ7, BS7, BV, BY, C5, C6, C9, CY9, D6, DL, E2, E3, EL, ET, FG, FO0, FO8, FT5, G, GD, GW, H40, HA, HB0, HP, HR, HV, I, J2, J3, J5, J7, J8, JT, JY, KH2, KH4, KH5, KH5K, KH6, KH7K, KH8, KH9, KH0, KL7, KP2, KP4, ON, P4, PJ0, PJ2, PJ4, PJ9, PY0, PY0S, SM, SO, ST0, OD, OE, OK, T30, T33, T7, T9, TA, TG, TI, TI9, TN, TO5, TT, TX5, UA, UA9, V2, V4, V7, VK9Z, VP2E, VP2K, VP2M, VP4, VP8, VP8G, VP8S, VP9, VS6, VU4, VU7, VY, XE, XR0, XU, XY, ZK1N, ZL7, ZL8C, ZF and ZS3. One cannot beat experience and this operation was fortunate to have available the skills to make it a success.

One of the goals of the Midway 2009 team was to ensure that those who are preserving Midway Atoll were left with a positive feeling toward ham radio. Our goal was to make more operations take place. This operation produced no problems for the local birds, and many positive comments were received while we were there. We are confident ham radio will again soon be heard from Midway Atoll.

We would like to thank the DX community for their patience and their financial support. Without that help, this trip would not have been possible. The team tried very hard to give you a very professional DXpedition. We are most grateful to you.

Of course, our gratitude also goes to the US Fish and Wildlife Service and especially the Midway Refuge Manager, Matt Brown, and his staff for the support provided in making the operation happen, but most of all for allowing our DXpedition to take place. We also wish to thank NCDXF, the Colvin Foundation, INDEXA, GDXF, SWODXA, SEDXC, the Swiss DX Foundation, EUDXF, the Lone Star DX Association, OZDXF, RSGB, the Carolina DX Association, the Clipperton DX Club, ACOM, Rig Expert, Heil Sound, WX0B, Davis RF, WriteLog, Vibroplex, Autek, the Battle Creek Group, ELLI print, W8AEF, and W6SZN, all of whom were principal sponsors of this DXpedition. We also want to thank those other clubs, associations, and the many DXers who provided additional financial support to help make this operation a success. The team also wishes to thank those who provided IT, electronic, financial, logistical, and QSL support throughout the operation – AA1V, DL9RCF, W5DNT, W6XA, Margaret Blackwell, W8CAA, OK1KT, AH6NF, WH6GS and AH6OZ

# K4M pictures - I



The K4M logo



SSB tent



K4M Team



Titanex with flags to warn the birds



Erecting the Titanex



One of the antenna fields

## K4M – pictures – II



Midway “with tern” They were every where



Both antenna fields



Franz, DJ9ZB



Equipment on the truck waiting for us to unload



Franz assembling the SVDAS



Franz, DJ9ZB and Tom, N4KP