



NCDXF newsletter

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Spring 2023 - Special Edition

3YØJ: The 2023 DXpedition to Bouvetøya *A voyage to the world's most remote island*

by Cezar Trifu, VE3LYC and
Kenneth Opskar, LA7GIA

Approaching Bouvet Island.

LOCATED ABOUT 1,200 MILES FROM South Sandwich Islands, 1,150 miles from Gough Island, approximately 1,400 miles from Tristan da Cunha, and 1,050 miles from Antarctica's coast, Bouvetøya — Bouvet for DXCC — is a solitary, volcanic island annexed by Norway in 1928. Discovered in 1739 and later named for Captain Bouvet de Lozier, it lies east of the triple junction between the African, South American and Antarctic plates.

The island is 93% covered by

glaciers and battered by intense storms. Bouvetøya is not just a protected nature reserve since 1971, but the world's most remote one. However, as long as regulations are followed, no permit is needed to go onshore by boat and camp overnight.

The 3YØJ project

The challenge to re-activate Bouvet was picked up in 2020 by Amateur Radio DXpeditions (ARD), a not-for-profit organization established in

Norway by Ken Opskar, LA7GIA; Rune Øye, LA7THA, and Erwann Merrien, LB1QI, who became co-leaders of the 3YØJ project. Apart from them, the team included Gjermund Bringsvor, LB5GI; Adrian Ciuperca, KO8SCA; Cezar Trifu, VE3LYC; Otis Vicens, NP4G; Bill Straw, KO7SS; Pete Meyer, NØFW; Axel Schernikau, DL6KVA; Mike Crowover, Jr., AB5EB; Dave Jorgensen, WD5COV, and Peter Madej, our guide.

There were very few places to safely set up camp, as it would be exposed to the elements. Landing of a DXpedition at the location of the weather station on the west side of the island is not permitted since that region is protected. Therefore, based on an in-depth analysis, we found that the only place to attempt landing and camp safely was at Cape Fie, on the southeast side of the island.

Departure from Port Stanley

The team decided to meet in London, UK, from where they departed aboard a RAF military supply plane to Port



The team ready for the voyage aboard Marama.

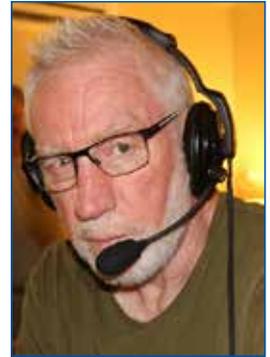


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From the President's desk

WELCOME TO THE 2023 IDXC (VISALIA) CONVENTION. Finally, I get to talk with many of you in person. The convention organizers have a great program. Go to the sessions that interest you. I have a request — take the time to seek out and talk with fellow DXers who you haven't seen recently. A fist bump, conversation, and seeing each other brings a perspective we've not had in too long. We need to re-bond with each other.



The newsletter you are reading is a special edition devoted to an article about the 3YØJ Bouvet DXpedition. It's co-authored by Cezar, VE3LYC, a well-known traveler and member of the 3YØJ team, and one of the 3YØJ team leaders, Ken, LA7GIA. In the creation of this article, I learned an interesting thing about Cezar — I'll let you seek him out at the convention and discover that secret. Our thanks to both authors for this article.

As noted previously, we all wanted more. While this article isn't a "tell all," it's a great read and covers the adventure well. The photos are outstanding. In the coming months, more of the story will be told.

There is also a copy on our webpage, so please share it with your fellow DX'ers. I want to express thanks and appreciation to Lee, KY7M, and Debi for producing this special edition newsletter. The article and the work to pull this newsletter arrived "out of cycle" for the staff. There were certain challenges. They did an outstanding job.

Kevin J. Rowett

Kevin Rowett, K6TD
 NCDXF President

The mission of NCDXF is to provide necessary support for well-organized DXpeditions to desirable DXCC entities and to support advances in DXpeditioning skills, technology and infrastructure.

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Unloading the container in Port Stanley.

Stanley, in the Falklands. There, the 101-foot yacht *Marama* was anchored at Camber Dock, and Captain Olivier, along with his crew of Charles and Nina, welcomed us on board.

Loading of the vessel appeared well coordinated. Every item had to be stored according to a pre-established loading plan which had been developed during the vessel inspection we conducted in advance. The project consisted of a stepwise plan. Anticipating the difficulties associated with bringing all the equipment onshore, we split it into four distinct steps. Thus, we could operate the camp even if only a small part of the equipment was brought ashore in Step 1; the following steps would then expand the camp. The vessel was loaded accordingly, allowing us to timely retrieve any item once we arrived at Bouvet. All equipment had to be well strapped to prevent its shifting during rough sailing, and it was extremely important to do this correctly. Attempting to speed up the loading process, we worked in parallel to store components in the cabins, washrooms, and the saloon below deck, as well as in various places on and above deck.

Unfortunately, several components did not make it onto our flight — some were parts of the safety, sailing and climbing equipment, and we could not leave without them. Additionally, three amplifiers were missing. This caused a delay as we waited for them to arrive on the next flight — four days later. Several local hams assisted us with last-minute supplies and helped us get our delayed equipment from the airport

to the boat. Their support was really appreciated, and we truly made new friendships during those days.

Sailing on the high seas

Before leaving Port Stanley, Captain Olivier briefed us on the status of a storm developing in South Georgia — which was the reason he chose to not only delay our departure a bit longer, but also take a slightly southern route, giving the storm time to die off. Finally, on 17 January 2023 at 1430 hours *Marama* lifted anchor.

A few days into the voyage, we started seeing icebergs. While the larger ones could be spotted on the radar, the smaller ones were difficult to see under fog and most certainly at night. As a result, Olivier adjusted the boat's direction a little bit to the north,

trying to avoid them by sailing through a relatively calmer zone between two stormy weather fronts.

During our first week at sea, we took turns on 1½-hour watches, in pairs, every 15 hours. It was an interesting change after the time spent in our cabins or the saloon. Piloting the boat on engine, under low wind, was a relaxed experience. However, at sail, particularly in very windy conditions, was far more challenging.

Almost all the team members experienced seasickness to various degrees. Some had mild symptoms, while others were more severe, despite various medications used to keep it under control. Most managed to get used to it and were able to spend extended hours socializing and eating meals.

Between 23-30 January we operated /MM using our home call signs. We installed a 20M dipole antenna and tuned it to various bands using the Elecraft K3S internal tuner. The combined log had almost 5,600 contacts from different grid squares. Numerous callers attempted to contact as many of us as possible, and from as many grid squares as possible.

After two weeks at sea, on 30 January after sunset, *Marama* anchored off Bouvet Island. The weather was relatively calm, and the forecast suggested that we might be able to attempt landing the next day. As such, we went to bed dreaming about what we would do next.



Evening entertainment aboard Marama.

Aboard Marama, Ken (left), Cezar and Erwann installed a 20M dipole for the /MM activity.



First landing

Everyone was up at 0500 the following morning, excited to see the steep, rocky shores of Bouvet only a few hundred meters away. On the port side was Cape Fie, our intended landing site. We worked below and above deck to prepare the components associated with Step 1 of the camp build-up plan. Unstrapping various packages had to be done carefully, lining up the necessary components for this step, and parking the rest aside, ensuring that everything remained secured.

Ken and Peter went on a scouting mission to measure the water's depth so *Marama* could be placed in a good position for us going ashore. The survey indicated shallow water, after which Olivier positioned the boat, and we were ready to go ashore with a small team to set up access to the camp and establish a loop system consisting of a buoy and rope. We had planned two different ways of going ashore: one consisted of reaching the beach directly

by Zodiac and could only be used with low surf; the other was unmanned, for difficult surf, and incorporated a buoy anchored at sea, roughly 300 feet from shore, with a rope going through a few rings at the beach and back to the buoy in such a way that the rope could run freely between those points by being dragged. The weather forecast for the following days was difficult, so it was important to install the loop system to land gear if we went ashore.

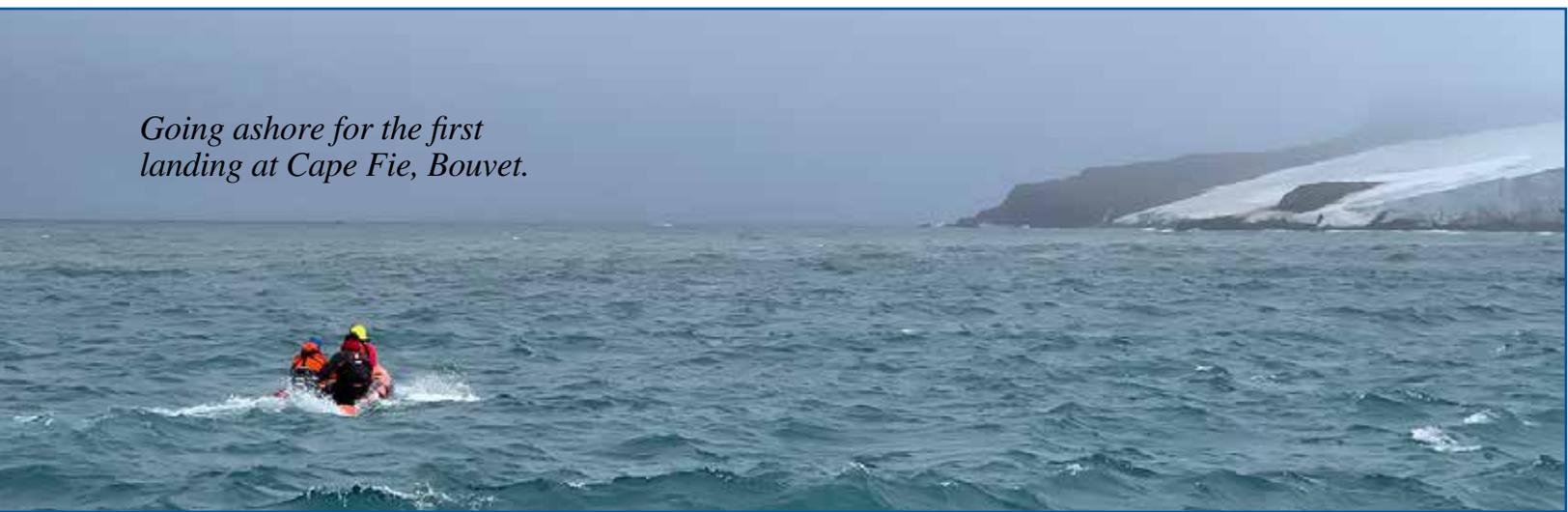
A small team consisting of Peter, Ken, Mike and Dave landed safely, and no traditional climbing involving protection equipment was required to reach the top of the hill. It was critical for the project to use our larger Zodiac, which had been stored on the boat inside the lazarette, a small compartment below deck in the aft end. Unfortunately, the ocean swell and high waves made it risky to open the lazarette, and so the process was delayed for hours. By the time our Zodiac was finally on the water,

the weather and sea conditions had changed, making further gains difficult. The boat crew worked tirelessly though to ensure that the land team received it before darkness. The changing weather conditions caused the surf to increase, so no additional supplies could be landed that day — leaving the small team to overnight on the island with very few supplies.

Throughout the following day, the boat crew managed to deliver personal bags with clothing and sleeping bags, food, water, and one of the large tents. However, due to the rough sea, some items, which were temporarily placed on the beach during unloading, were taken away by the waves — that is what happened with the tent and its anchors, which were lost at sea. We were, however, able to get a small tent for two safely ashore, in which Mike, Dave and Peter spent a crowded second night in their respective sleeping bags, tucked inside a ravine to shield them from the elements. Ken had planned to sleep outdoors and brought a special protective tarp, which allowed him to materialize his dream.

By the third day it was apparent that the communication between the team on land and the one on the boat was inefficient, and that there was a need to regroup and rethink our entire strategy. However, the land team was reluctant to give up what they considered gains, and kept working on the installations to prepare for bringing more equipment ashore. In addition, our Zodiac had been punctured the previous day when it hit a beach anchor. Although we did manage to temporarily fix it on the beach — in unfavorable conditions — we had to take it back to *Marama* to properly fix it so it could still be

Going ashore for the first landing at Cape Fie, Bouvet.





Mike, Dave and Peter spent a crowded second night in their respective sleeping bags, tucked inside a ravine to shield them from the elements.

used. In addition, because a 60-knot storm was predicted to hit the island a few days later, it was necessary to return to the vessel during the first possible weather window in order to fix the Zodiac, and reset our strategy for going ashore in difficult conditions.

Second landing and building camp

The new plan was based on transporting operators, equipment and supplies on the loop system, and required a minimum of six operators on the island to be feasible. The equipment had to be scaled down to a minimum to ensure that we could land within a short break in the weather. Because of the forecasted storm, the camp had to be set up before conditions made it impossible. If we didn't, we would have to wait another week or so, which could have hampered the DXpedition. Given the constantly changing weather conditions, we wanted to avoid taking components that might be left stranded on the beach or not make it into the camp, so we removed any items considered non-essential for operating the radio and survival on the island.

Eight operators were ready to land, and were subsequently divided in two groups of four. The radio equipment consisted of two transceivers, several vertical and dipole antennas, three Spiderpoles, and one DX Engineering aluminum mast; a Honda 2kW gas

generator would power the transceivers. And since we decided to go lightweight, no amplifiers would be employed due to their high fuel consumption. We planned to operate with 100W. For camping, we would take only one of the remaining tents, several mats, a heating unit and two paraffin stoves — no chairs or tables. Aside from the water and food supplies, we also decided to take 50 liters of gas and 20 liters of paraffin. This phase had been branded a “proof of concept” because, if we managed to deploy it successfully, more components could be brought in.

Peter explained in detail how the landing process would unfold. First, he would pick up four team members (Ken, Mike, Erwann, and Bill), take them in the Zodiac to the buoy where they would jump in the water, one at a time, in survival suits and wearing harnesses, 30 feet or so apart. Each operator would be attached to the loop line with a carabiner and have to pull himself, hand-over-hand, approximately 300 feet to shore. The suit would keep their bodies warm, dry and afloat. Once the operator reached the shore, he would have to stand up and hold steady to prevent the receding waves from pulling him back to sea. After the first group successfully landed, Peter would pick up the second group of Rune, Axel, Adrian and Cezar,

who would follow suit.

With all operators ashore, Peter would use the Zodiac to transfer various camp and radio components, as well as supplies to the buoy, attach them to the loop line, while operators pulled them to shore. It was determined that this process wouldn't take any longer than if we had beached the Zodiac directly, unload and pull the Zodiac out. Even though a beach landing was possible, we needed to prove the concept, so that we would be able to get more materials in later. This was not only a very safe landing, but it would allow future resupplies. The other operators would then transport the materials to the edge of the cliff, then gradually to the camp site, starting with the tent.

As all this unfolded, four operators went to install the tent, but by then wind gusts had increased to over 40 knots. It took a few hours to drill holes into rocks and install 12mm diameter anchors, tie-up ropes to them to secure the frame, and place several hundred pounds of rocks on the outside tent skirt to hold it firmly in place and to prevent water from coming into the tent. The last part of the tent installation was carried out under pouring rain — by the time we finished, it was dark, we were all tired and soaking wet.

Inside the tent, the little paraffin stove worked wonders, providing us



From left, Adrian, Axel, Cezar, Mike and Rune, still in their survival suits after a successful landing on Bouvet.



Clockwise, from top left: Cezar and Mike operating inside the tent. Crowded sleeping quarters. Erwann, in the center, preparing a hot meal for the team, while Ken works the pileup in the background. A view of the camp toward the glacier, with our clothes drying on the line.

with a well-deserved hot meal in no time. Shortly after that the sleeping bags came out and, one-by-one, we prepared ourselves for sleep. The tent barely offered sufficient space for nine people, so we kept adjusting our places until we fell asleep.

Setting up the radio stations

We woke up early and, after a hot breakfast, half of us worked on installing three vertical antennas, while the other half worked on checking and reinforcing the tent, as well as housekeeping. We first installed a 15M vertical antenna, followed by a 12M

vertical using telescoping fiberglass masts, after which we put up a 30M vertical using a telescoping aluminum mast. The next day, the 12M vertical was changed to a 17M vertical to take advantage of the much wider propagation window on that band.

The two K3S transceivers were also set up, and we began running two-hour shifts. Each operator had to decide which mode to use during his shift. During daytime, we normally operated on 15M and 17M. The 17M band continued to stay open until dark, but at night we only ran one shift, on 30M. All operators ran CW, but only

five ran SSB, while the FT8 contacts were logged by six.

The pileups were fierce, at times as wide as 50 kHz in SSB and 30 kHz in CW. Since we used simple antennas and only 100W in CW and SSB, our signals were generally weak, which required us to repeat the correspondent call signs before being able to log them, sometimes as many as three or four times. Additionally, we became quickly aware of intense intentional interference, jamming, and tuning on our frequencies by some of those who were either unable to copy our signals, couldn't log us, or for reasons known

only by themselves. Furthermore, some operators decided to pirate our call sign, creating unnecessary difficulties for those who fought hard to get into our log. We remained composed against these adversities, trying to give out as many contacts as possible.

The gas generator operated very well during daytime but, after sunset, when the temperature started to drop, it ran into problems. Whether because of the rain, humidity or condensation (or all of the above), water droplets made it into the reservoir, which then froze after dark, forming little crystals, impeding the normal running of the generator. We opened and cleaned the carburetor numerous times, and each time, the generator would start for a few seconds and stop again. This was why we were unable to operate over the last four nights on the island.

Camping on the island

We remained on the island for 10 days, during which we withstood two consecutive storms. Wind gusts of up to 55 knots pounded the tent, shaking it violently at times. Every day we had to

ensure that the tent anchors held well, tighten up the ropes, and add more rocks all around the outside of the tent. Additionally, all antenna guy wires and radials were periodically checked to keep their tension balanced and avoid fluttering. Despite the high winds, we decided to leave all the masts standing, and they performed admirably.

Since the space inside the tent was limited, all our personal belongings — other than sleeping bags, tools, supplies and toiletries — were placed outside, either in a sealed drum or under a tarp. At times, clothing was dried using the wind or occasional sunlight. Those not on shifts, took turns with housekeeping as well sightseeing, either hiking the volcanic landscape or walking toward the fur seal and chinstrap penguin colonies for photos. We also encountered macaroni, gentoo and king penguins, in addition to skuas and giant petrels, which were the most common birds.

We constantly kept an eye on the surf, waiting for it to subside and allow us to bring more equipment from the boat. However, the ocean swell remained

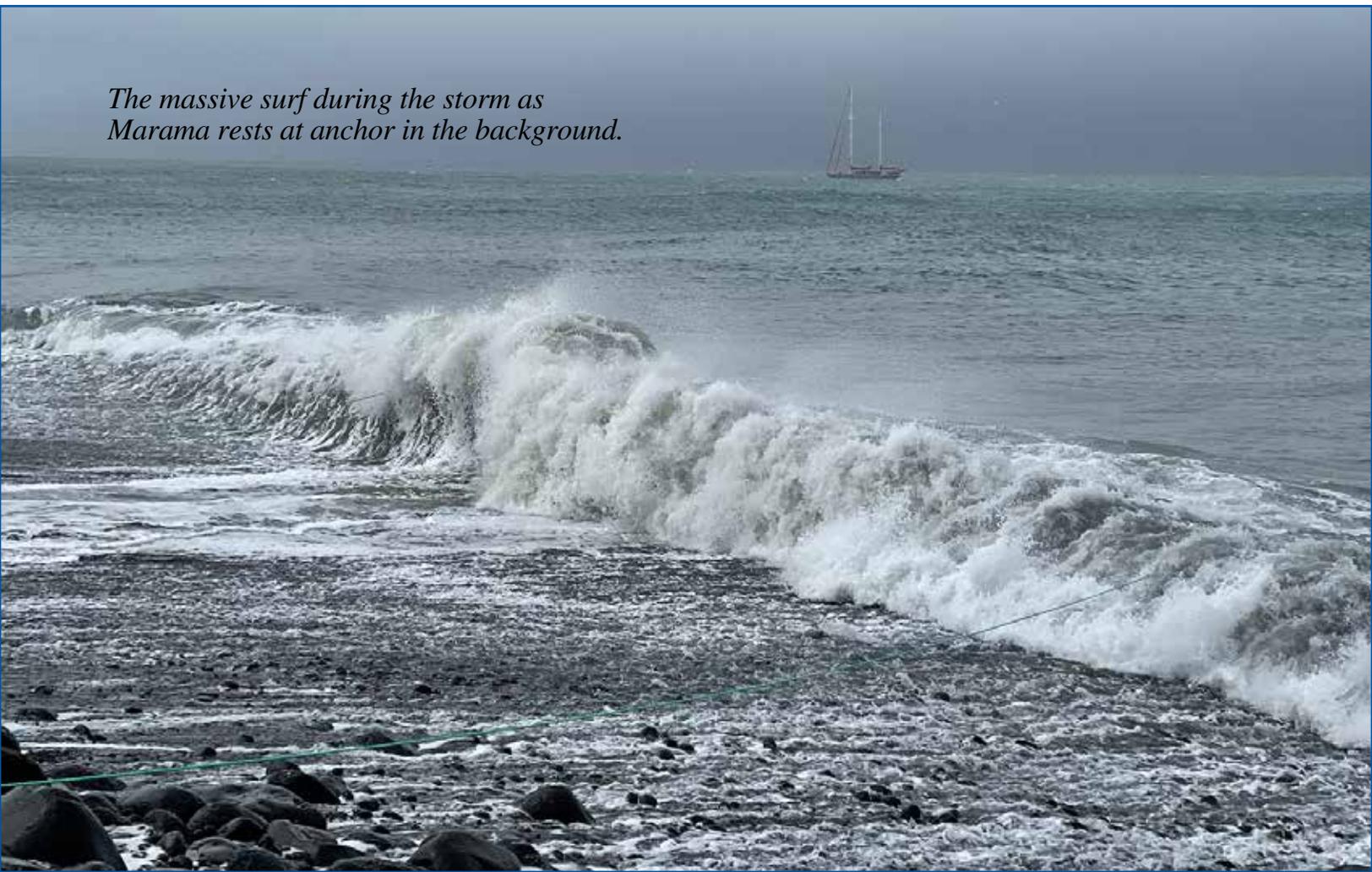
between 12 feet and over 15 feet throughout the storms. Interestingly, a large section of a glacier (15 to 30 feet wide and about 500 feet long) broke off the cliff and landed on the beach, reducing its width and changing the entire landscape significantly.

The temperature on the island was generally between 3°C and 5°C during daylight hours — occasionally higher when the sun shone through the clouds — however, at night it dropped to -3°C and even -5°C. Below the camp, a rapid stream of glacier water 5 to 6 feet wide would often be found partially frozen in the morning, over a width of at least 1 foot on each of its rocky sides. It snowed often, but rarely lasted during the day. Some mornings we would find everything covered by a thin layer of snow, which required us to walk very carefully to avoid slippage or taking a wrong step.

Leaving the island

As the last storm subsided, the weather forecast received from *Marama's* Captain Olivier mentioned that the ocean's swell would gradually

The massive surf during the storm as Marama rests at anchor in the background.





From left: Cezar, Ken, Rune, Bill, Mike, Axel and Adrian, flying the NCDXF flag. Photo by Erwann

decrease to 6 feet over the next two to three days, giving us good window to transport more supplies from the boat. However, a few of the island operators indicated their intention to return to the boat, which required a decision to be made whether to use the upcoming window to either bring in more components — including a diesel generator, two transceivers, two amplifiers, more vertical antennas, food and water, as well as diesel and paraffin — or take down the camp, pack up everything and leave.

The total weight of the components that were transferred to the camp during the second landing was about 1,500 pounds. The components and supplies considered for the continuation of the project were estimated to be about 1,100 pounds. It was a critical decision to make and all team members were asked to weigh in.

The result was split, with six wanting to bring in more equipment and continue the operation until the next window of extraction, while six were opposed; the latter group concerned with the difficulties required to transport additional equipment into the camp. They were also worried about the uncertainty of a future extraction, how long it would take to materialize, and the potential significant delay associated with it.

Not to be outdone, the Captain announced that another 60-knot storm was in the forecast, and he

recommended that we return to the vessel before it arrived. Considering all aspects, it was decided to terminate radio operations and plan for the camp takedown. Radio transmissions ended on 13 February 2023 at 18:51 UTC, and the following morning we began to disassemble the antennas, carefully pack everything up and move our cargo to the beach. Thankfully the surf was sufficiently low enough to allow us to repeatedly beach the Zodiac while team members worked in sync to pull it to shore each time and load it.

What we learned

With the project now ended, the team members had mixed feelings about it. On the one hand, we were grateful that everyone made it back safe and sound after a challenging trip. We were also happy that we were able to bring this DXCC back on the air and

make more than 18,000 contacts, of which almost half were with unique stations. On the other hand, we couldn't be satisfied with the results in terms of number of contacts.

During extensive planning, we discussed various scenarios that could unfold once we arrived at Bouvet. Therefore, we had prepared the equipment, tools, packing, and methods that enabled us to adapt to the changing local conditions as needed. We also had the means, knowledge, as well as skilled and experienced people in the group who knew when and how to go ashore. We demonstrated that safe landing at Cape Fie is possible through direct beaching, but also by using our unmanned system.

Such a project demands that all the participants be physically fit. This requires a genuine preoccupation from each operator to observe that, since any compromise can undermine the viability of the project. We further learned that besides good technical abilities and operator skills, such a remote and extreme location requires people with substantial experience in extreme conditions and survival skills. The survival skill and ability to adapt to the wilderness is likely more important than the radio operating and technical skills.

Acknowledgements

The cost of the project came to \$705,000, of which the largest share was allocated to retain the services of the yacht *Marama* and its crew. While 34% of this was shared by the team, the remaining 66% was obtained through fundraising, from donations



Leaving Cape Fie, Bouvet behind.

The Log

The team logged 18,623 QSOs, of which 8,657 or 46.5% were with unique stations in 133 DXCCs. Of the total contacts, 11,750 (63.1%) were on CW, 2,229 (12.0%) on SSB, and 4,644 (24.9%) on FT8. Band statistics are presented in the next table, showing that almost 95% of all contacts were on 15M, 17M and 30M.

Band	QSO	%
10M	666	3.6
12M	177	1.0
15M	6,156	33.1
17M	6,785	36.4
20M	229	1.2
30M	4,610	24.7

The list of the top 10 DXCCs by the number of contacts and stations logged is given below. They correspond to 73.1% and 70.2% of each total, respectively. Each list is topped by the stations from Japan, followed by those in the United States.

DXCC	QSOs	DXCC	Stations
JA	5,876	JA	1,986
K	2,623	K	1,556
I	1,272	I	616
DL	902	DL	508
UA	611	UA	340
EA	602	EA	265
F	598	SP	249
SP	433	F	247
PY	403	PY	164
OH	299	G	150



Chinstrap penguins near the camp.



Residents of the nearby fur seal colony.

Continental distribution of contacts is shown in the following table. Among the most operated bands, the propagation conditions favoured Europe on 15M, Asia on 17M, and North America on 30M. The relatively lower percentage of contacts on 30M, which is also partly responsible for the relatively lower percentage of contacts with North America, was due to the team not being able to use the generator during the last few nights on the island.

QSOs by Continent	30M	20M	17M	15M	12M	10M	Total	%
AF	45	8	119	131	1	7	311	1.7
AS	999	165	2,962	2,101	6	390	6,623	35.6
EU	1,450	12	2,385	3,414	170	266	7,697	41.3
NA	1,864	12	769	253	0	2	2,900	15.6
OC	14	11	263	84	0	0	372	2.0
SA	238	21	287	173	0	1	720	3.9

made by various radio amateur foundations, associations, clubs, and numerous individuals. Each team member incurred additional expenses related to the project, including airfare, accommodation, clothing, and training sessions bringing their personal contribution to about \$25,000.

The team expresses its gratitude to numerous groups and individuals who generously supported this project. In

particular, our thanks go to our lead sponsor, the Northern California DX Foundation. We also wish to thank DX Engineering, German DX Foundation as well as other clubs, organizations, and corporate sponsors. Please see the full list at www.3YØJ.no.

We also thank all those individuals who contributed to the success of this DXpedition, especially the local hams in Falkland Islands. Finally, we would

like to express our deep appreciation to Peter Madej of Arctic Yacht, who assisted us in this project. His dedication and hard work were second to none in providing us with reliable logistical support throughout this trip. Captain Olivier is acknowledged for his expertise and professionalism, while Charles and Nina for their navigation skills, as well as the latter's culinary talents and brightening smile. 🌟

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