The LongPath

January 2023 — Volume 47 Issue 1 A North Alabama DX Club Publication

Contents:

Contributors:
AC4G
K8KI
N4NM
NG3K

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From the President

By Bruce Smith, AC4G

Happy New Year! The 2023 New Year seems to bring in good things including a new slate of officers to lead the North Alabama DX Club (NADXC). I would be remiss if I did not thank the outgoing officers for their efforts in the past several years leading the NADXC. My sincere thanks to Bob DePierre, K8KI for leading this group as outgoing President NADXC, Steve Molo, KI4KWR (outgoing Vice-President), and Chris Reed, AI4U (outgoing Secretary-Treasurer). I look forward to working with the new officers Mic Bell, N8AU (Vice-President), and Barry Barton, WA4HR (Secretary-Treasurer). A new slate of officers usually breeds new ambitions, new goals, and new ideas. I look forward to working with each of you and hope 2023 will be a prosperous year for all of us. Thanks to Fred Kepner, K3FRK who has agreed to continue to be the editor of the Longpath newsletter. I also am appreciative that Mr. Mark Bendickson will allow us to continue to meet at his museum. I ask for the help of each NADXC member to have patience with us new officers as we learn our roles in NADXC.

NADXC has approximately 100 members, with many members chasing DX daily, many inactive, and many emeritus members still on the NADXC roster. I ask that each member check their contact information of the web page to determine if it is still accurate. Dues need to be submitted soonest, so Barry Barton (WA4HR) will be processing those who pay via PayPal and/or with check or cash. Club dues continue to be $20 for single members and $25 for family membership which is not a bad deal.

I checked my information on the web site to find my email address to be inaccurate. I have not used that email address in a few years. That might explain why I missed out on any announcements dealing with excess equipment, antenna raising parties, etc. We would like for your information to be correct, so that any member can contact any other member to ask questions or get help as hams often do. Our club has many old-timer members with a multitude of knowledge that can help newer members as “elmers”. Mentoring new hams can be very gratifying if we can just take time to do so.

As President, I want to begin thinking about several things that propel the NADXC. I plan to establish committees with members who can help me make decisions. I do not want to be the sole decision maker, but believe that members should be empowered to

From the President (continued)

help in decision making. I hope that, if asked, each and every member would be willing to help me in this manner. Of the subjects that I and the committees will consider this year are the annual budget (to include funding Dxpeditions), NADXC Banquet & Banquet Speaker, NADXC Picnic to name a few subjects. With respect to the budget, I will always try to keep a budget in the "green". This will require us to monitor each budget line item and make smart decisions on what the club can do in 2023

Getting to the crux of the club charter, we all share an interest in working DX and are members to help each of us work new DX entities. There are many DXpeditions taking place this year post-pandemic with many hams traveling the world to put on Dxpeditions like we all are used to seeing. Most recently, I was able to QSO FT8WW on Crozet Island for a new band and mode, specifically 30 meters. I heard and saw several NADXC members in the FT8WW logbook. At the end of January 2023, I look forward to 3Y0J Bouvet Island to gain some long-needed bands and modes. This DXpedition cost around $750,000 and will probably be another few decades before it is active again. I encourage all members to make some QSOs with 3Y0J, who plan to be on the air for about 3 weeks.

NG3K's web site also maintains a list of future, planned DXpeditions to keep us all busy chasing that new DX entity or that new DX band and/or mode. Please monitor the NADXC Longpath newsletter and other outlets to stay abreast of upcoming Dxpeditions. Please shout-out any DX on the club's repeater at 147.90/30 Mhz. There are some who still monitor the club's repeater and often discuss active DX on-the-air.

Lastly, I look forward to seeing and meeting everyone at our next meeting, Tuesday night at the MIE Museum on University Drive in Huntsville. Our guest speaker is none other than AG4W discussing his experience as team member of the J28MD Djibouti Dxpedition. This should be an exciting presentation with many pictures, videos, sound clips, etc. Please do not miss this one.

I hope my health is improving to where I am no longer hindered from making the club meetings. I encourage you all to please make an effort to join every second Tuesday of each month for the club meeting. Each meeting can be viewed on ZOOM. Specific details will follow in a separate email. If you can write an article for the newsletter this year, many readers would much appreciate you sharing some of your knowledge with other members. If you have a topic for a presentation that you would like to present, please let Mick Bell (N8AU) or myself know. May we all work much DX in 2023! 73, Bruce/AC4G

2023 NADXC Officers and Directors

President	Bruce Smith, AC4G
Vice-President	Mick Bell, N8AU
Sec./Treasurer	Barry Barton, WA4HR
Directors:	Fred Kepner, K3FRK
	Bob De Pierre, K8KI
	(Ex-Officio)

How to Join

Come to a club meeting or send in an application by mail (form on www.NADXC.org)

Monthly Meetings

Meetings are held at the Museum of Information Explosion at 6:30pm on the 2nd Tuesday of each month. Participants can also join the meeting virtually via Zoom.

This edition of The LongPath published by: Fred Kepner, K3FRK

The Fleming Valve

By Bob De Pierre, K8KI

The Fleming Valve was a thermionic valve (vacuum tube) invented in 1904 by English physicist John Ambrose Fleming as a detector for early radio receivers used in electromagnetic wireless telegraphy. It was the first practical vacuum tube and the first thermionic diode - a vacuum tube whose purpose is to conduct current in one direction and block current flowing in the opposite direction. The thermionic diode was later widely used as a rectifier — a device which converts alternating current (AC) into direct current (DC) — in the power supplies of a wide range of electronic devices, until beginning to be replaced by the selenium rectifier in the early 1930s and almost completely replaced by the semiconductor diode in the 1960s. The Fleming valve was the forerunner of all vacuum tubes, which dominated electronics for 50 years. The IEEE has described it as "one of the most important developments in the history of electronics" and it is on the List of IEEE Milestones for electrical engineering.

By 1906, several inventors began to insert a grid into the Fleming Valve (the Audion tube), at which point the Fleming Valve's importance began to shift. But it did evolve into what was called the Tungar tube, which was a half-wave rectifier. This was a gas tube having a heated thoriated tungsten filament serving as cathode and a graphite disk serving as anode in an argon-filled bulb at a low pressure. These were used chiefly as rectifiers in battery chargers. Tungar is a contraction of tungsten and argon.

A popular Tungar tube was invented in 1914 by General Electric. In some respects, it looks like a light bulb with a plate over the filament. When you turn on a Tungar charger, the bulb does light up like a light bulb. The Tungar bulb has the ability to handle a large amount of current and was relatively immune to shorted battery cells which makes it the ideal battery charger. Tungar chargers were used to charge radio storage A batteries and car batteries. The Tungar Bulbs were used in many high current applications until the late 1940's, when selenium rectifiers became practical. Today, battery chargers use silicon rectifiers with short circuit protection and voltage regulation circuit that in many ways work like Tungar chargers, but are a lot smaller, lighter weight and more efficient. Typical Tungar tubes had filaments that ran at 2.2v and got very hot.

We have several working Tungar tubes here in the museum.

The Fleming Valve (continued)

The oscilloscope shot below shows its operating conditions using a 60-cycle source. It is running from a very low AC voltage of 1.34V_{RMS} at 2.0 amps. The bulb was bright and hot, and care was taken to keep from burning it out. The pink marker at the left of the screen is at zero volts for both traces, with the yellow trace centered around it. The pink trace is the output. It is always negative. The tube only conducts on the negative half-cycle, thus making it a half-wave rectifier. The mean output voltage is -742mV DC as shown. As you can see, the input voltage goes a little more negative than the output.

In the photo to the left, you can see that the Tungar tube has a lot of capacitance already in it. The pink trace should be flat at zero volts when the yellow trace goes positive, but it barely makes it to zero. This tube won't go very high in frequency, but it's just great as a rectifier at 60Hz.

Rare DX on HF Amateur Bands in January 2023

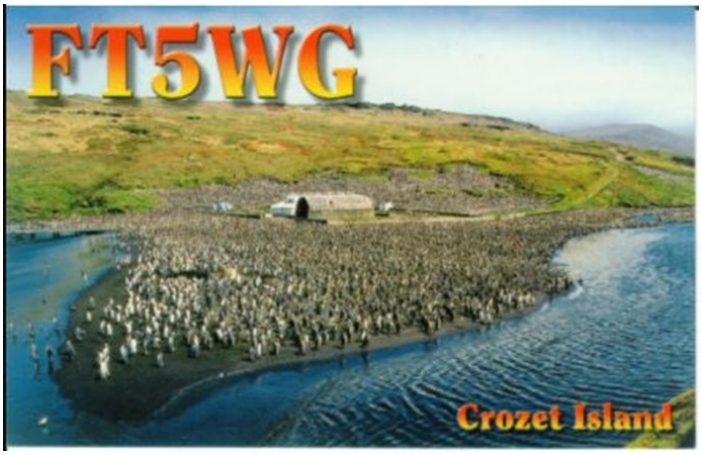
By Bruce Smith, AC4G

If you have not been active on Amateur Radio HF bands, amazingly, there are two rare, DXCC entities currently active and soon to be active on the HF bands in January 2023. These DXpeditions can both be seen scheduled on the NG3K webpage, in ham radio publications, and on each entities' own web site. These rare entities are Crozet Island and Bouvet Island.

Currently active and worked by local NADXC club members is Crozet Island, FT8WW. Crozet Island (FT5/W) is currently on the worldwide MOST WANTED List maintained by CLUBLOG.org. Crozet Island sits at number 3 on the DXCC MOST WANTED LIST. Crozet lies in the southern Indian Ocean about 2600 km from Durban South Africa. It is a level of difficulty to typically "work" them. It is approximately 10,100 miles from Southern Tennessee/Northern Alabama. France claims Crozet, one of its seven sub-Antarctic islands. A few NADXC members in the NADXC club worked Crozet Island back in 1991 (FT4WC) and again in February 1998, although there have been about six Dxpeditions to Crozet with the first DXCC credit starting in 1964. The last opportunity was with FT5WO in November of 2009 and I assume NADXC members worked this

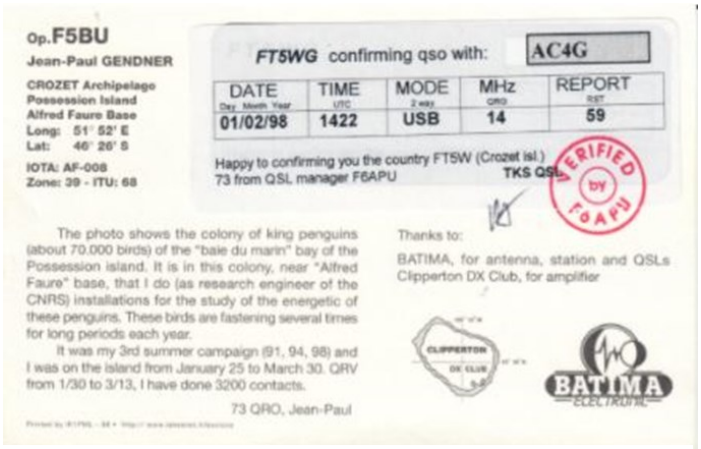
Rare DX on HF Amateur Bands in January 2023 (continued)

Dxpedition – unfortunately I was off the air at this time. See Picture 1 below of the 1991 FT5WG Crozet operation QSL card.



Picture 1: Crozet Island FT5WG QSL card February 1991

In the past few weeks in January 2023, many NADXC club members have made one or multiple QSO(s) with FT8WW on 20m CW, 20m FT8, 30m CW, and 30m FT8. This operator has spent almost all of his time thus far making QSOs on these bands/modes. On the morning of January 4, 2023, the signals of FT8WW operator were copied by AC4G on 14.085 FT8 with signal strengths at +11 and +12 on each digital stream as this operator "worked" NA and JA operators. Perhaps the Crozet operator should have been working CW vice FT8 with such a strong signal. If memory serves me correctly, back in 1991, it was extremely difficult to copy the FT5WG station, since most of the time we just did not have propagation at my QTH in southern Tennessee. Picture 2 depicts my (AC4G) QSL card confirming a QSO made with FT5WG (Crozet Island) via the longpath on 20m one morning. What about the current Crozet operation? What does this mean to you and I as ham radio DXers? We need to be radioactive, get on the air and make that long-desired QSO and add this to our "Worked DXCC list", especially since the current FT8WW station is extremely strong most of the time, different from my previous Crozet chasing experience.



Picture 2: FT5WG confirms QSO w/ AC4G in 1998

Most DXers are aware of another major Dxpedition occurring in late January 2023. This is the DXpedition to Bouvet Island, 3Y0J. Bouvet Island (3Y/B) sits at number 2 on the Clublog MOST WANTED LIST. Bouvet Island is located at the southern end of the Mid-Atlantic ridge i.e., southern Atlantic/Indian Ocean and is a territory of Norway. It is considered "the most remote uninhabited place on Earth" per 3Y0J.no website. The last successful major Ham Radio Dxpedition to Bouvet was in January 1990, almost thirty-three (33) years ago. However, there have been some individual operations since then. See Picture 3 and Picture 4 of the QSL card confirming N4GAK's (currently AC4G) success on only one band and one mode with the 3Y5X, last Bouvet Dxpedition in 1990.

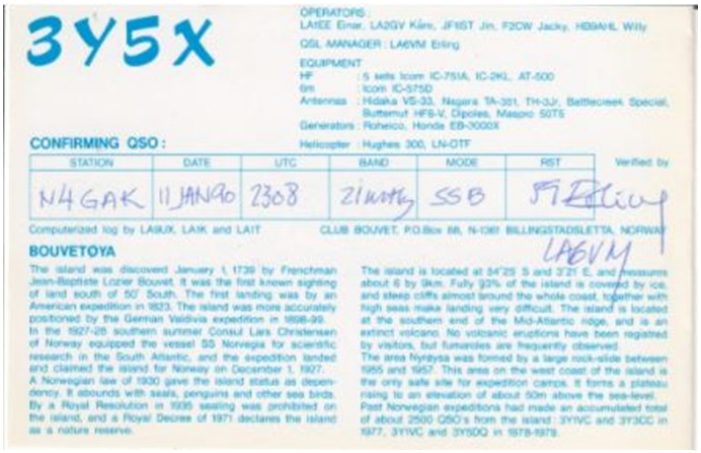
The current team is going all out to activate Bouvet Island this month (January/February 2023). With the callsign 3Y0J, this team is expected to be on the air (QRV) in late-January for 22 days on all HF bands and modes (no six meter, EME or satellite). With a budget of approximately

A DANGER with HIGHER OUTPUT Modern RIGS - EXPLOITED (continued)

$750,000 dollars, all funding has been raised, making this one of the most expensive ventures ever taken by a ham radio DXpedition. The team is led by Norwegian ham operators, but many countries are represented, especially the USA, on this team. Since there have been a few unsuccessful attempts in the past several years to activate Bouvet Island, it would behoove all NADXC club members to make every effort to work this team, especially since activation is few and far between. I am looking forward to attempting to make QSOs with 3Y0J on as many bands & modes as possible.

Good luck to all working these rare DXCC entities. I trust that all of the preparation taken this past summer on our home stations will pay off. The warm weather the past few days in January 2023 here in southern Tennessee has allowed me to make some antenna adjustments. I hope we all can add another one to our logbook. CU in the pileups - 73 & Good DX! Bruce/AC4G.

Picture 3: Bouvet Island Dxpedition in January 1990



Picture 4: QSL Confirming N4GAK (currently AC4G) January 1990 QSO

2022 End of Year Financial Statement

By Bob De Pierre, K8KI

We collected a lot of data from our 2022 activities. PayPal may be an expensive way to go, but it gives you a lot of data. We seated 100 people, and ultimately sold 100 tickets. But only 80 of the people who bought tickets actually came. Trying to plan all this ahead, with the help of the club board of directors, we decided to buy 104 meals from Bubba's, but ultimately had to give away 20 tickets for free, mostly to the kind vendors who donated prizes - that was a good idea, and we only wasted 4 meals (club members did bring the extra food home). But we had enough meals. There were 60 local families who attended. There were 53 visitors who attended, although some lived locally. Some 48 of the visitors bought tickets, but not all of them attended. I had calculated the price of the tickets based on my estimates and had thought the supply-demand curve was elastic - such that a lower price would attract more patrons. It didn't. For our purposes, the supply-demand situation is inelastic - the same number of people will come regardless of the ticket

2022 End of Year Financial Statement (continued)

price (within some limits).

Here is the budget we enacted at the beginning of the year. It was my intent to "drive the train" toward a neutral ending (a bank delta of close to zero from the beginning to the end of the year). As you can see, some of my estimates were far off, but now at least we have some good data for preparing next year's budget. We collected 36% more dues than anticipated. How did that ever happen? The club must have grown by that amount. And this was before we raised the dues. Our recurring expenses went way low. We were lucky enough to have two members each contribute $300 donations! Previously we were spending $1850 to rent a hotel for the event, whereas the Elks' Lodge only cost $753 (including insurance). We conducted a banquet raffle this year and collected $700 as a result. Was it worth it - a question we can debate over the next year? We'll host the banquet in the museum this year, and that may cost even less. Unfortunately, the museum doesn't have space for audience growth, but I think it's well worth it to have the banquet there. In the end, our bank account actually went up by $844.65, so I suppose I failed at achieving a neutral budget.

		end December 2022	
Budget Category	Targets	4 month Activity	Year to Date
Year Start	7,521		
September Start		7,882.50	
Dues In	720	46.41	978.70
Recurring Exp	-668		-216.88
Sales	300		650.00
Discretionary Exp	-1,000		-1,000.00
DX Banquet	650		755.48
venue		*-753.00*	
food		*-2,326.00*	
speaker		*-384.36*	
tickets		*300.00*	
raffle		*700.00*	
grand prize		*-384.36*	
gift from Hamfest		*300.00*	
Bank Delta	2	483.15	844.65
Year End		8,365.65	8,365.65

Upcoming DX Contests

By Chuck Lewis, N4NM

YB DX Contest, (SSB), 80-10 meters

Jan. 14, 0000Z to 2359Z

Exchange: RS plus serial number

See page 74, Jan. QST and www.ybdxcontest.com

EUCW 160 Meter Contest, (CW), 160 meters

Jan. 7, 2000z to Jan. 8, 0700Z

Exchange: RST, Name, Member or "NM"

See page 74, Jan. QST and www.eucw.org

NRAU-Baltic Contest (SSB), 80 & 40 meters

Jan. 8, 0630Z to 0830Z

Exchange: RS, Serial #, region/province/ Fylke/lan

See page 74, Jan. QST and www.nraubaltic.eu

NRAU-Baltic Contest (CW), 80 & 40 meters

Jan. 8, 0900Z to 1100Z

Exchange: RS, Serial #, region/province/ Fylke/lan

See page 74, Jan. QST and www.nraubaltic.eu

DARC 10 Meter Contest, (CW/SSB), 10 meters

Jan. 8, 0900Z to 1059Z

Exchange: RS(T) plus serial No., DOK code

See page 74, Jan QST and www.darc.de

HA DX Contest, (CW/SSB), 160-10 meters

Jan. 21Exchange: RST + S.N.; HA sends County

See page 74, Jan QST and www.ha-dx.com/en

BARTG RTTY Sprint, (DIG), 80 -10 meters

Jan. 28, 1200Z to Jan 29, 1200Z

Exchange: Serial no.

See: page 74 Jan. QST & www.bartg.org.uk

CQWW 160 Meter Contest, (CW), 160 meters

Jan 27, 2200Z to Jan 29, 2200Z

Exchange: RST + State/province; DX send RST + CQ zone

See page 74, Jan. QST and www.cq160.com

REF French Contest, (CW), 80-10 meters

Jan 28, 0600Z to Jan 29, 1800Z

Exchange: RST plus serial no. (F stns. give Dept. ID)

See page 74, Jan. QST and

http://concours.r-e-f.org

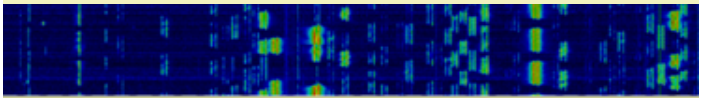
UBA (Belgium) Contest (SSB), 80-10 meters

Jan 28, 1300Z to Jan 329, 1300Z

Exchange: RS(T) plus serial no.; ON sends province

See page 74, Jan. QST and www.uba.be/en

Upcoming DX Contests (continued)

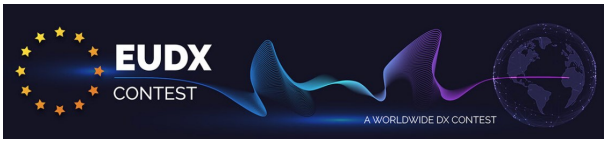


Eurasia HF Championship (SSB/CW), 160-10 meters

Feb. 4, 0600Z to 1800Z

Exchange: RS(T) plus 6-Character Grid Square

See http://www.eurasia-contest.com



European Union DX Contest, (SSB/CW), 160-10 meters

Feb. 4, 1900Z to Feb. 5, 1900Z

Exchange: RS(T) plus ITU zone; EU send EU region (4 char.)

See https://www.eudx-contest.com/rules

COMING UP SOON - Winter Field Day

January 28th & 29th

https://winterfieldday.com/

Upcoming NADXC meeting:

Tuesday, January 10th, 2023

5:45 PM Doors Open / 6:30 PM Meeting

Location: Museum of Information Explosion, 1806 University Drive NW, Huntsville, AL 35801 and via Zoom

Announcement: It's time to pay 2023 membership dues

Dues can be paid electronically at the NADXC website. Contact Barry, WA4HR (treasurer@nadxc.org) for information about other payment options.

DXpeditions in January 2023

Reprinted by permission of Bill Feidt, NG3K

December					
2022 Dec22	2023 Jan20	Senegal	6W	WA3DX Direct	By WA3DX as 6W1/WA3DX, 6W6/WA3DX, 6W9/WA3DX; mainly 20m, but also 40-10m; SSB FT8; spare time operation
2022 Dec24	2023 Jan14	Crozet	FT8WW	LoTW	By F6CUK; 30 20 17m; QSL via Club Log OQRS or F6EXV Buro; see Web for direct options; end date unclear
2022 Dec26	2023 Jan08	French Guiana	FY	eQSL	By F4GPK as FY/F4GPK fm Kourou (@FY5KE); HF; holiday style operation
2022 Dec29	2023 Jan22	Ecuador	HC1FIT	N9EAJ Direct	By N9EAJ fm nr Otavalo; 40-10m; SSB CW
2022 Dec29	2023 Mar15	Gabon	TR8CR	F6AJA (B/d)	By F8EN; 30-10m; CW
January					
2023 Jan01	2023 Jan15	Wallis & Futuna	FW	VK4MAP Direct	By VK4MAP as FW/VK4MAP; 80 40 20 15 10m; SSB; dipole; holiday style operation
2023 Jan02	2023 Jan31	Montserrat	VP2MDX	LoTW	By W2APF; HF; CW SSB 10m_FM; 100w; operation to continue until March 31
2023 Jan03	2023 Jan21	Cape Verde Is	D44TWO	LoTW	By DF2WO fm IOTA AF-045 (HK85fa); HF + 6m; FT8, some SSB CW; QSL via M0OXO OQRS or DF2WO direct
2023 Jan06	2023 Jan18	Cape Verde Is	D4CW	DJ5QW Buro	By DJ5QW; also using D44DX; 80-10m; CW SSB
2023 Jan05	2023 Jan13	Bonaire	PJ4	DD0VR	By DD0VR as PJ4/DD0VR; CW SSB; 15w on SSB, 5w on CW
2023 Jan06	2023 Jan07	Guadeloupe	FG	IZ7KHR (B/d)	By IZ7KHR as FG/N7KHR; HF; SSB FT8; QRP
2023 Jan06	2023 Jan21	Congo	TN8K	LoTW	By OK1BOA OK1FCJ OK1CRM OK1GK OK2ZA OK2ZC OK2ZI OK6DJ; 160-6m; SSB CW RTTY FT8 FT4 PSK; QSL via OK6DJ
2023 Jan07	2023 Jan15	Br Virgin Is	VP2V	N2TSR	By N2TSR as VP2/N2TSR; 20 10m
2023 Jan08	2023 Jan08	US Virgin Is	KP2	IZ7KHR (B/d)	By IZ7KHR as KP2/N7KHR; HF; SSB FT8; QRP

DXpeditions in January 2023 (continued)

2023 Jan09	2023 Jan09	Sint Maarten	PJ7	IZ7KHR (B/d)	By IZ7KHR as PJ7/N7KHR; HF; SSB FT8; QRP
2023 Jan10	2023 Jan10	Antigua	V2	IZ7KHR (B/d)	By IZ7KHR as V2/N7KHR; HF; SSB FT8; QRP
2023 Jan10	2023 Feb08	Aruba	P4	VA3QSL B/d	By VA3QSL as P4/VA3QSL; SSB CW; 40-6m; 100w; Buddipole
2023 Jan11	2023 Jan11	Dominica	J7	IZ7KHR (B/d)	By IZ7KHR as J7/N7KHR; HF; SSB FT8; QRP
2023 Jan12	2023 Jan12	Martinque	FM	IZ7KHR (B/d)	By IZ7KHR as FM/N7KHR; HF; SSB FT8; QRP
2023 Jan13	2023 Jan13	Guadeloupe	FG	IZ7KHR (B/d)	By IZ7KHR as FG/N7KHR; HF; SSB FT8; QRP
2023 Jan13	2023 Jan13	Guadeloupe	FG	IZ7KHR (B/d)	By IZ7KHR as FG/N7KHR; HF; SSB FT8; QRP
2023 Jan13	2023 Jan20	Palau	T8	See Info	By JA6EGL as T88SM, JH6WDG as T88AQ, JR6DRH as T88RH; 160-10m; CW SSB + digital; QSL per operator instructions
2023 Jan13	2023 Jan25	Barbados	8P9CB	LoTW	By WA7RAR fm Ocean City, St. Phillip Parish; 20-10m; SSB, perhaps CW; vertical; QSL: PO Box 1383, Shady Cove, Oregon, 97539, USA
2023 Jan14	2023 Jan21	Ethiopia	ET3AA	N2OO	By K4ZW W9XY EY8MM; HF
2023 Jan15	2023 Mar15	Martinique	FM	LoTW	By F6BWJ as FM/F6BWJ; 80-10m; CW PSK RTTY; 100w; dipoles
2023 Jan18	2023 Feb02	Aruba	P4	DL4MM	By DL4MM as P4/DL4MM; 160-10m; focus on JA; QRV for CQ 160 CW using P40AA call sign
2023 Jan23	2023 Jan27	Palau	T8	Home Call	By JH3LSS (T88DK), JA3HJI (T88DN), JA3IVU (T88ED), JA3ARJ (T88EF) JA3AVO (T88MB); 160-10m; all modes
2023 Jan23	2023 Feb28	Bouvet I	3Y0J	LoTW	By LA7GIA LA7THA LB1QI + team; 160-10m; CW SSB FT4/FT8 RTTY; QSL: M0OXO; about 22 days; dates tentative
2023 Jan27	2023 Jan29	Jersey	MJ5E	LoTW	By GU4YOX fm IOTA EU-013; QRV for CQ 160m CW Contest; QSL via GU4YOX (B/d)
2023 Jan31	2023 Feb15	St Kitts & Nevis	V47JA	LoTW	By W5JON fm Calypso Bay; 160-6m; SSB FT8; yagi, verticals; QSL also OK via W5JON direct

BOUVET ISLAND