

SHORTWAVE BULLETIN

Issue no. 2069, Dec 8, 2024

Deadline e-mail next issue: 1000 UT, Dec 22, 2024

Time again for yet another SWB

As usual we have a nice log in this issue. Interesting to note that another station from Fionland now has started broadcasting. Th effect is only 20 W which makes it difficult to catch. The frequency of 6095 kHz is also used by KBS, Korea and China which makes it even more difficult.

Also it seems that there is a growing interest for Utility stations. If you hear something interesting or get a nice QSL, please share.

Hans Östnell living near Stavanger in Norway has written a very interesting article about his experience building a small Flag Antenna suitable for the house where he lives now. It started as a MicroFlag but ended up in a somewhat bigger Flag. The name of the article says all:

The story of The Growing FLAG - Less is More? No, not really, but...

Many thanks for this interesting article showing exactly what to do and what to expect.

Please note that the article is copyrighted.

Ronny - thanks a lot for compiling the DX-Nostalgia column for each issue.

Keep on

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SWB-info

SWB info:

<https://www.dxinfo.se>

Dateline Bogotá 1993-1998: <https://www.hard-core-dx.com/swb/Dateline.htm>

SWB latest issue/archive: <https://www.hard-core-dx.com/swb/archive.htm>

QSL, comments, etc.

Christer Brunström: SM Radio Dessau (via Nauen) 6095 kHz eQSL, Reach Beyond Australia 15320 informative eQSL.

Hans Östnell: Utility är inte huvudintresset i gruppen, men vill ändå "flasha" ett QSL som kom för ett par minuter sedan: **PJC Curacao Radio** vars DSC-sändning jag knep på 2187,5 kHz den 24 november 0449 UTC. Man anropade då fartyget "Hohebank". Ett riktigt revligt svar från JRCC Curacao / Curacao Radio, som inte är en vanlig hörighet på denna sidan av "pölen".

Att monitorera DSC och Navtex ger många gånger en god indikation på rådande konditioner - och dessutom en bekräftelse på att min lilla FLAG funkar utmärkt!



Dutch Caribbean Coast Guard

QSL CARD



Dear Hans ,

Hereby we would like to acknowledge your reception of our transmission on the 2187.5 Khz (MF DSC)



With kindest regards,
JRCC Curacao



GLENN HAUSER LOG ROUNDUPS. Please note and spread the word - for those not on a list where my almost-daily all-band but mainly SW log reports appear -- or for those who are but find this a more convenient archive, weekly merged roundups of all these reports in their original form are posted early every Thursday via WOR:

<http://www.worldofradio.com/Hauserlogs.html>

The latest ones direct: https://www.w4uvh.net/ghlogs_2024_1128_1204.txt

Previous issue: https://www.w4uvh.net/ghlogs_2024_1121_1127.txt

Useful log links:

WOR: <https://groups.io/g/WOR>

WWDXC Top News: <https://www.wwdxc.de/topnews.shtml>

DXplorer: <https://groups.io/g/DXplorer/messages>

Shortwave Central radio blog: <https://mt-shortwave.blogspot.com/>

DX Fanzine: www.dxfanzine.com (also pirate stations)

Liangas: <https://zliangaslogs.wordpress.com/2022/> (mostly using KIWI's around the world)

Pirates: <https://shortwavedx.blogspot.com/> <https://betajbk.blogspot.com/>

<https://ukdxe.wixsite.com/my-vxw-site-di06oi>

Here are some pirate tips links that might be worth spreading. /Per Eriksson, Sweden:

Achim Bruckner: <https://www.achimbrueckner.de/>

Lars Jeppesen, active listener: <http://lhu-dx-log.blogspot.com/>

Rick, Finland: <http://pirateradiolog.blogspot.com/>

Irish Paul: <https://irishpaulsradioblog.blogspot.com/>

3310	Dec 1	0002	Radio Mosoj Chaski, Cotapachi, Quechua, comments. (Méndez)
3900	Dec 2	2251	Hulun Buir PBS, Hailar. Mand, tks. 2 (CG)
3955	Dec 3	2000	KBS World R., German, good. (FB)
3955	Dec 2	2254	Channel 292, Rohrdorf. Pops. 3 (CG)
3975	Nov 27	0030	World of Radio, English, fair. (FB)
3975	Nov 30	1928	Weekend Music R via Shortwave Gold, Winsen. E, pops, tks. 2 (CG)
3990	Dec 1	2249	Xinjiang PBS, Urumqi. Uighur, tks, mx. 2 (CG)
3995	Nov 26	2219	HCJB, Weenermoor. G, tks. 2 (CG)
4650	Nov 29	1416	From West Pittston, PA I heard a strong signal at frequency 4650 of a man preaching at 14:16, later followed by a clear ID that this was coming from the Wilkins Radio Network. Looking at their web site and Google search did not show any mention of a shortwave broadcast. They are not in the HFCC, Eibi, or Aoki databases. Just curious if anyone else has heard Wilkins on shortwave? I am attaching a Google drive link to my brief video recording of my screen while listening to it. https://drive.google.com/file/d/17tn0K3EAB-PgyOnzzow1zjRZmCOeUqKcA/view?usp=sharing (Whelan H via WOR)

Monitoring on a remote SDR in Dureya, Pa. This must be a 3rd harmonic from WITK on 1550 kHz in Wilkes-Barre (Arthur Pozner via WOR)			

Found the following reference online: <i>"Wilkins Radio Network broadcasts international radio programming on shortwave from WRMI in central Florida.</i>			
<ul style="list-style-type: none"> • WWCR-1: 15.825 MHz during the day, 3.215 MHz at night, and 6.115 MHz during critical hours • WWCR-2: 12.160 MHz during the day, 7.49 MHz in the morning, 9.35 MHz in the evening, and 5.935 MHz at night • WWCR-3: 13.845 MHz during the day and 4.84 MHz at night • WWCR-4: 9.98 MHz during the day, 7.52 MHz in the evening, and 5.89 MHz at night" (Ron Howard, San Francisco)			
4755	Dec 2	1310	VOI, via Morley, W. Australia remote SDR; "Commentary," Gaza humanitarian efforts; patriotic song "Bagimu Negeri" (For You, Our Country);

1317: "Today In History" (Dec 2)

1949 - UN approved the United Nations Convention for the Suppression of the Traffic in Persons and of the Exploitation of the Prostitution of Others resolution, which marked the beginning of the International Day for the Abolition of Slavery.

1988 - Benazir Bhutto, became the first woman to lead a modern Islamic nation (Pakistan).

2010 - Russia won the rights to host the 2018 World Cup.

(Ron Howard, San Francisco)

thanks Ron: *Cimanggis outlet measured on upper flank 4755,026 on Nov 28, strong signal noted in KIWI SDRs in Bandung and Jakarta INS, as well as on Perseus remotely in Hiroshima JP, or Doha Qatar ME. Next door 4750even BGD powerhouse at same time.*
(73 wolfie df5sx, wwdxc)

4905	Nov 27	1636	"Xizang Radio and Television Station"/"Hello Xizang". Good reception via remote SDR at Dimapur, India; English program "Eyes on Xizang." My remote audio – https://app.box.com/s/y5d225eujuwe3yqwa6pitgnvbdkl6ucvm . (Ron Howard, San Francisco, Calif.)
4940	Dec 1	0542	Estación 4940, religious comments and songs, Spanish, id. "Somos Estación 4940". (Méndez) + (CG)
4965	Nov 30	1745	Voice of Hope Africa, Lusaka, religious songs and comments, music. (Méndez)
4985	Dec 1	0541	Radio Brasil Central, Goiania, Brazilian songs. Teletype QRM. // 11815. (Méndez)
5020	Dec 3	1357	SIBC, checking Dec 4, found off the air; whereas Dec 3, herald with non-stop pop songs at 1357 & 1553, via remote SDR at Wanganui, NZ. (Ron Howard, San Francisco)
5050	Dec 4	1513	Beibu Bay Radio; heard via remote SDR at Dimapur, India; "Let's start it, English Show-time," "One Word, One World" segment; today's program in English about "Lancang-Mekong Media Tourism Promotion Cooperation Initiative," which was part of the Chongqing International Travel Agent Conference 2024, with the symposium being held in Southwest China. Today's English program taken almost verbatim from the news story - https://global.chinadaily.com.cn/a/202411/27/WS674732f8a310f1265a1cff1a_1.html . My remote audio - https://app.box.com/s/phhqsbs5uwxcoa2e49z9hrzzis4jw6bd2 . (Ron Howard, San Francisco)
5815	Dec 1	1728	UnID. Asian lang., mx, tks 2 (CG)
5895	Nov 31	2103	Radio Northern Star, Bergen, country and pop. (Méndez)
5915	Dec 3	-1400*	Myanmar Radio, as usual with pop songs at 1257 and later 1400*, via Udon Thani, Thailand remote SDR. (Ron Howard, San Francisco)
5920	Dec 1	0649	HCJB Germany, Weenermoor, German, religious songs and comments. (Méndez)
5930	Dec 1	2304	World Music R, Bramming. Mx & songs. 3 (CG) + (Méndez)
5939.8	Dec 3	2249	R.Voz Missionária, Camboriú SC. Natl. nx magazine A Voz do Brasil. // 9665.015, 11739.878. 3 (CG) + (Méndez)
5955	Dec 1	0550	Radio Veronica, Westdorpe, music, Dutch, comments, news. (Méndez)
5970	Dec 1	0545	Radio 208, Hvidovre, rock songs, id. "Radio 208". (Méndez)
5985	Nov 29	1432	Myanmar Radio (5985) from 1432, with the "Friday Night Live Show"; good reception via SDR remote at Bangkok, Thailand; music program with audience applauding. My remote audio - https://app.box.com/s/rjvqh2iqwtn1df5joho05n6686rld5cq . (Ron Howard, San Francisco)
5995	Dec 1	0548	Radio Mali, Bamako, African songs, at 0559 interval signal, id. "Radiodiffusion TV du Mali emettant de Bamako...", Vernacular, comments. (Méndez)
6005	Dec 1	1440	Radio Slovakia, German, fair. (FB)
6010	Dec 1	0548	Radio Inconfidencia, Belo Horizonte Brazilian songs, comments, program "Memoria Nacional". (Méndez)
6030	Nov 30	1733	Radio Oromiya, Addis Ababa, Vernacular, comments, East African songs. 14322.
6050	Dec 1	0401	HCJB, Pichincha, songs and comments in Spanish. (Méndez)
6050	Dec 1	0557	ELWA Radio, Monrovia, English, religious comments and songs. (Méndez)
6055	Dec 1	0741	Radio Nikkei 1, Chiba-Nagara, Japanese, comments, Very weak. (Méndez)
6070	Dec 1	0756	CFRX, Toronto. Strong QRM from Channel 292 on the same frequency. (Méndez)
6075	Dec 1	*0800-	KNLS, Anchor Point, interval signal, English, religious songs. Very weak. (Méndez)
6094.95	Dec 6	1000	Tent. R Ambiente, Nuijamaa quite weak, music + ann. At 1100 covered by another weak carrier. (<i>The QTH is only a few hundred meters from the Russian border. https://sv.wikipedia.org/wiki/Nuijamaa Kari Kallio via nordx</i>). (<i>Mauno Ritola: WRTH Web App has tesla18@hotmail.com</i>) TN
6115	Dec 1	-0759*	Radio Nikkei 2, Chiba-Nagara, Japanese, comments. (Méndez)
6140	Dec 1	0610	Radio Onda, Borculo Brazilian songs, id. in French, "Ici Radio Onda". (Méndez)
6150	Dec 1	0547	Radio Saturno, Belo Horizonte, Brazilian songs, id. "Radio Saturno". (Méndez)
6150	Dec 1	0703	Europa 24, Datteln, pop songs, German. id. "Europa Vierundzwanzig". (Méndez)
6170	Dec 7	1900	Vo Korea, German, good. (FB)

6170	Dec 1	0701	Radio Delta International, Elburg, English, comments, pop songs, id. "Radio Delta International". (Méndez)
6180	Dec 1	0754	Radio Nacional da Amazonia, Brasilia, Brazilian songs. // 11780. (Méndez)
6185	Dec 1	0539	Radio Educación, Ciudad de México, Mexican songs, comments, at 0805 Andean flute music, Latin American songs. (Méndez)
7370	Dec 1	*0759-	KNLS, Anchor Point, Interval signal, Mandarin, comments, songs. (Méndez)
7405	Nov 24	1531	R.Piepzender, Zwolle. Du/E, pops. 3 (CG)
9425	Dec 4	1600	Voice of Korea, German, poor. (FB)
9635	Nov 30	1705	Radio Mali, Bamako, Vernacular, comments, African songs. (Méndez)
9665	Dec 3	2251	R.Voz Missionária, Camboriú SC. Natl. nx magazine A Voz do Brasil. // 5939.762, 11739.878. 4 (CG)
9818.6	Nov 30	2040	Radio 9 de Julho, Sao Paulo, religious comments and songs. (Méndez)
9960	Dec 6	0559	Radio Vanuatu, 0559+, via Wanganui, NZ remote SDR; promo for "Christmas in the Park"; ID and frequencies (3945, etc.); "News Update," also with sports and weather, in Bislama; Vanuatu and Pacific Nations Advance Fisheries Treaty with the USA with new Memorandum of Understanding to strengthen regional fisheries management (news story - https://vbtc.vu/vanuatu-and-pacific-nations-advance-fisheries-treaty-with-the-usa/). My remote audio - https://app.box.com/s/4zsigyau72sfyykxwoio32ilz9ghjjq . It was back on Dec 2, that RV first changed their schedule and I noticed 9960 still on till 1104*. Hi Manuel - Nice to find we were listening at the same time! (Ron Howard, San Francisco) + (Méndez)
11620	Dec 7	0800	CPBS-5 Cross Strait R., Chinese, fair. (FB)
11780	Nov 30	1955	Radio Nacional da Amazonia, Brasilia, soccer, live match, Copa Libertadores final, Botafogo vs Atlético Mineiro, id. "Radio Nacional". (Méndez)
11815	Nov 30	2000	Radio Brasil Central, Goiania, identification song, Brazilian songs. (Méndez)
12084.5	Dec 1	*0900-	Voice of Mongolia, Ulaanbaatar, interval signal, id., English, Mongolian songs.
15160	Dec 1	0846	Ifrikya FM, Ourgla, French, id. "Ifrikya FM", African songs. // 17600. (Méndez)
15250	Dec 7	1500	RRI Bucharest, German, good. (FB)
15700	Nov 30	1621	World Music Radio, Randers, "World Music Radio", Brazilian songs. // 25800. (Méndez)
15700.1	Dec 1	1717	World Music R, Randers. Mx & songs. 3 (CG)
17600	Dec 1	0838	Ifrikya FM, Bechar, English, comments, African songs, "Ifrikya FM, the Voice of Africa", at 0845 French, comments. (Méndez)

CLANDESTINE & TARGET BROADCASTING

3480	Dec 4		Voice Of The People (cland.), Goyang. Kor to KRE, tks. 1 (CG)
3910	Nov 26	2215	Voice Of The People (cland.), Goyang. Kor to KRE, tks. Jammed. 2 (CG)
3930	Dec 4	2212	Voice Of The People (cland.), Goyang. Kor to KRE, tks. 2 (CG)
3985	Dec 5	2206	R.Echo Of Hope (cland.), Gyengi-do. Kor to KRE, tks. 3 (CG)
4560	Dec 5	2208	Voice Of The People (cland.), Goyang. Kor to KRE, tks, mx. 3 (CG)
4885	Dec 6	2213	R.Echo Of Hope (cland.), Nowong-gu. Kor to KRE, pops, tks. Jammed. 4 (CG)
5995	Dec 6	1740	R.Echo of Hope (cland.), Gyengi-do. Kor to KRE, pops, tks. Jammed. 2 (CG)
6045	Dec 7	0748	Voice of Freedom, tuned in at 0748, to check on VOF's usual *0753 start, but found them already on the air, so a new schedule? Via Oita, Japan SDR remote. The N. Korean pulsating noise jamming and also super noise jamming was still down on ex: 5920, whereas on Dec 8, heard strong super jamming on 6045 and 5920 was a clear frequency. Clear reception of VOF is only possible for a very short time immediately after changing frequencies. Moderate QRN. 0748-0800: Program "Aneun geos-i him-ida" (Knowing is power). 0800: Single tone; "Jayu-e solibangsong-eseo ohu 5 (daseos) sileul allyeodeulibnida" (Voice of Freedom announces 5 PM); "Bodo Gwangjang" (News Plaza) program. My remote audio - https://app.box.com/s/5zt2ixh0ium1lmu5ch5jpfcku249s7jl . (Ron Howard, San Francisco)
6230	Nov 23	2146	Sound Of Hope R Int'l., unk. site. Mand to CHN, tks. 1 (CG)
6250	Dec 1	1918	Echo Of Hope (cland.), Hwaseong. Kor to KRE, tks, mx. Adj. uty. QRM. 4 (CG)
6340.2	Nov 29	2223	Sound Of Hope R Int'l., unk. site. Mand to CHN, tks. Adj. uty. QRM. Meas. 6340.184. 2 (CG)
6350.1	Dec 4	2149	R.Echo Of Hope (cland.), Hwaseong. Kor to KRE, tks. Occ. covered by strg. uty. QRM. 2 (CG)
6370	Dec 6	1907	Sound Of Hope R Int'l., unk. site. Mand to CHN, tks. Meas. 6369.986. 2 (CG)
6520	Dec 2	1919	Voice Of The People (cland.), Goyang. Kor to KRE, tks, seemingly a radioplay. Jammed. 4 (CG)

6600 Dec 2 1921 Voice Of The People (cland.), Goyang. Kor to KRE, tks, seemingly a radioplay. Jammed. 3 (CG)
6900 Nov 29 2227 Sound Of Hope R Int'l., unk. site. Mand to CHN, tks. Meas. 6900.046. 2 (CG)
7720 Dec 1 1559 R.Echo Of Hope (cland.), Hwaseong (?) . Kor to KRE, songs, ann., jingle, nx (p). 3 (CG) + (FB)
9119.8 Dec 4 2151 Sound of Hope R Int'l., unk. site. Mand to CHN, tks. Meas. 9119.847. 1 (CG)
11149.9 Dec 1 1603 Sound Of Hope R Int'l., unk. site. Mand to CHN, mx, tks. Meas. 11149.939. 2 (CG)
11170.1 Dec 1 1605 Sound Of Hope R Int'l., unk. site. Mand to CHN, mx, tks. Meas. 11170.116. 2 (CG)

VOLMET & UTILITY STATIONS

3485 Dec 4 2224 VFG Gander Volmet, NL. Met rpt. 2 (CG)
4405 Dec 4 1836 TAH İstanbul R. E, ocean wx. // 13128 unusually poor, // 8812 fair. 2 (CG)
6230 Dec 4 2146 VMW Marine Weather Station. Wx warnings, s/off ann. 2 (CG)
6501 Dec 1 2325 NMN Chesapeake R, VA. Ocean wx. 4 (CG)
6507 Dec 1 1851 VMC Marine Weather Station, Charleville QLD. Wx warnings. 1 (CG)
6676 Nov 23 1902 VKA-930 Australian Volmet, Alice Springs NT (?) Met rpt. Vy. faint. 1 (CG)
6676 Dec 1 1853 9VA-40 Singapore Volmet. Met rpt, s/off ann. 1 (CG)
6676 Dec 5 2256 AWB Bombay Volmet. Met rpt. 2 (CG)
6676 Dec 6 1713 HSD Bangkok Volmet. Met rpt, s/off ann. 2 (CG)
6676 Dec 6 1716 ARA Karachi Volmet. Met rpt. 1 (CG)
6679 Dec 4 1916 VRK Hong Kong Volmet. Met rpt. 2 (CG)
6754 Dec 1 2323 CHR Trenton Volmet, ON. Met rpt. 3 (CG)
6765.1 Dec 1 1916 HSW Bangkok Meteorological R. Ocean wx. Uty. QRM. 3 (CG)
7906 Nov 26 2235 XVI Quy Nhon R. Ocean wx. 1 (CG)
7906 Nov 29 2337 XVA Ca Mau R. Ocean wx. 1 (CG)
7906 Nov 30 2356 XVN Nha Trang R. Ocean wx. 2 (CG)
7906 03/12 2312 XVQ Hon Gai R. Ocean wx. 2 (CG)
7906 Dec 5 2221 XVK Kien Giang R. Ocean wx. 1 (CG)
7906 Dec 5 2252 XVD Hue R. Ocean wx. 2 (CG)
8113 Dec 1 1847 VMW Marine Weather Station. Wx warnings. 2 (CG)
8176 Dec 1 1848 VMC Marine Weather Station, Charleville QLD. Wx warnings. 2 (CG)
8743 Dec 1 1914 HSW Bangkok Meteorological R. Ocean wx. 3 (CG)
8764 Dec 4 2208 NMN Chesapeake R. Ocean wx. 3 (CG)
8812 Dec 4 1838 TAH İstanbul R. E, ocean wx. // 13128 unusually poor, // 4405 poor to fair. 3 (CG)
8828 Dec 2 1912 JIA Tokyo Volmet. Met rpt. Vy. faint. 1 (CG)
8828 Dec 6 1717 VRK Hong Kong Volmet. Met rpt, s/off ann. 1 (CG)
8828 Dec 6 1723 ZKAK Auckland Volmet. Met rpt. 2 (CG)
10051 Dec 1 1554 VFG Gander Volmet, NL. Met rpt. 1 (CG)
11387 Nov 29 2342 HSD Bangkok Volmet. Met rpt. Occ. uty. QRM. 3 (CG)
12356 Nov 29 0931 ZLM Taupo Maritime R, Taupo. Ocean wx. 2 (CG)
12362 Dec 1 1843 VMW Marine Weather Station. Wx warnings. 2 (CG)
12365 Dec 1 1845 VMC Marine Weather Station. Wx warnings. 2 (CG)
12788 Nov 29 0940 NMG New Orleans R, GA. Ocean wx. Vy. faint. 1 (CG)
13089 03/12 2255 NMC Point Reyes R, CA. Ocean wx. 2 (CG)
13089 Dec 6 1726 NMN Chesapeake R. Ocean wx. 2 (CG)
13128 Nov 29 1000 TAH İstanbul R. Ocean wx. 2 (CG)
13270 Dec 1 1556 VFG Gander Volmet, NL. Met rpt. 3 (CG)
13282 Dec 4 2143 JIA Tokyo Volmet. Met rpt. Vy. faint. 1 (CG)
13282 Dec 6 1715 VRK Hong Kong Volmet. ID, met rpt. 3 (CG)
13282 Dec 6 1720 ZKAK Auckland Volmet. ID, met rpt. 3 (CG)
15034 Dec 5 1939 CHR Trenton Volmet. Met rpt. 2 (CG)
16528 Nov 29 0933 VMW Marine Weather Station, Wiluna WA. Wx warnings. Via west path. 1 (CG)
16531 Nov 29 0935 ZLM Taupo Maritime R, Taupo. Ocean wx. Vy. faint. 1 (CG)
17314 Dec 6 1728 NMN Chesapeake R, VA. Ocean wx. 2 (CG)

Contributors to the log:

wb, Wolfgang Büschel, DF5SX, wwdxc BC-DX TopNews, DXLD, DXplorer, A-DX Glenn Hauser, Enid, OK, USA (also WOR/DXLD) Ron Howard, Asilomar State Beach, Calif. FB, Franz Bleeker, Germany	(CG)/(CGS), Carlos Gonçalves, Lissabon/SW Coast, Portugal Manuel Méndez, Lugo, Spain Whelan H USA, via WOR Arthur Pozner, USA, via WOR
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Station news

AUSTRIA. Mit großer Freude darf ich euch hier in unserer A-DX Gruppe berichten, dass es eine Abschiedssendung des Kurzwellensenders Moosbrunn bei Wien geben wird:

Als Abschiedssendung am 31.12.2024, 9 - 12 Uhr UTC, ist auf 6055 kHz mit 100 kW Sendeleistung ist folgendes Programm geplant:

- Kurzwellen-Panorama von Herbert Richard Leutgeb und Charlotte Trnka anlässlich 50 Jahre Radio in Österreich
- Wiederholung vom 6.10.24 – Wolf Harranth Interview anlässlich 100 Jahre Radio in Österreich
- Radiokolleg „Hallo Welt, hier Radio Österreich International!“

Es ist eine schöne Geste der Stationsmitarbeiter, dass diese an ihrem letzten Arbeitstag dieses Programm ermöglicht haben. Besonders freue ich mich, dass Wolf Harranth nochmals auf den kurzen Wellen aus Moosbrunn zu hören ist. Ein würdiger Abschied.

(Christoph Ratzler via A-DX FERNempfang)

CONGO Dem. Rep. UPDATE: Re: Still No News about Radio Kahuzi Return to SW

This message received from Richard & Kathy McDonald of Radio Kahuzi -- I post here only information related to my followup question to them about a potential return to shortwave. There seems at least to be a determination to resume on shortwave:

Hello Dan !

Thanksgiving Blessings to you and Yours ! We Thank the Lord to be able to be here again, and Trusting Him for Solutions ! . . .

. . . We have a real up hill effort this time, as we are more alone than ever before.

The Tech, Jean Marie, seldom returns to Bukavu from medical rehab cures elsewhere to finish our SW Installation. That is a Priority, but the one of the many that goes slower because of our dependence on him.

(Dan Robinson via WOR)



EGYPT. Radio Cairo asking for reception reports

Radio Cairo is asking for reception reports from target areas. Reports to email: freqmeg@yahoo.com
(73, Mauno Ritola via WOR)

FINLAND. To magazine editors: <https://sdx1.fi/itsenaisyyspaivana-radio-ambience/>



Radio Ambience is the next licensed Finnish SW station operating in Lappeenranta. Station will start in Independence Day, December 6th 2024, with a 20 W carrier power. The frequency is 6120 kHz.
73 jln, Jari Lehtinen)

Has received a new frequency: 6095 kHz.
(73, Mauno Ritola via nordx)

Den nya stationen kommer att se dagens ljus nu på fredag, **den 6 december 2024** (Finlands självständighetsdag) -betitlad **Radio Ambience** baserad på rykten. Operatören hör hemma i Villmanstrand och frekvensen är gissad till 6120 kHz och 6095 kHz... alltså du borde vara vid radion imorgon!

(Mvh, Kari Kallio via nordx)

FINLAND. Arctic 252. The online station Laser558 is working with Arctic 252 to provide programming on the planned longwave station based in northern Finland. <https://laser558.live/arctic-252/>

In a message to digitalspy on 20 November, Matt King writes "Arctic 252's low power transmitter for Inari went bang last weekend so that was very gutting. The 1kW is still in the workshop having work done on it so my hands are tied. I'm not a transmitter engineer so I have to rely on the goodwill of others. Everything is very slow and very delayed but we will get there." (WOR via nordx)

SYRIA. Damascus, Syria, ``freed`` breaking. It looks like the final program of Radio Damascus English Service is on SoundCloud and aired on Friday, December 6th. The volume is a bit low but the program seems to be a mix of news and music. Who knows if this was only heard online or if this was broadcast on any actual stations.

<https://soundcloud.com/syrianforeignradios/friday-06-12-2024>

(All the best, John Jurasek via WOR)

U.K. "RADIO DARC" will be broadcasting from England from January 2025.

For almost 10 years, RADIO DARC used the ORS transmitter in Moosbrunn near Vienna for its shortwave broadcasts on the ORS transmitter in Moosbrunn near Vienna on Sunday mornings. At the end of 2024, the station will be shut down.

All attempts to save the station have failed; Oesterreichischer Rundfunk broadcasting company wants to close the allegedly no longer suitable "shortwave" business field on December 31, 2024 finally and completely.

The view is apparently somewhat different in Woofferton, England, about 50 km southwest of Birmingham U.K.

The broadcasting complex of the British broadcasting company BBC, which still exists there BBC is operated by its subsidiary ENCOMPASS MEDIA and has a total of ten transmitters and just as many antennas.

"RADIO DARC" announces that with effect from January 1, 2025, a new broadcasting contract with the shortwave station ENC Woofferton with effect from January 1, 2025 could be concluded. Corresponding contract negotiations were successful and the DARC General Assembly approved the budget item requested for this at its meeting on November 16, 2024.

Our program will therefore be broadcast for the first time on Sunday, 5 January 2025 on the already used frequency 9670 kHz from ORS Woofferton England. 125 kW transmission power will be used on a 4 x 4 curtain antenna direction 105 deg azimuth to Germany. With this selection, an effective power of just under 4 MW is achieved.

The well-known transmission on shortwave 6070 kHz in the 49 m band will continue, where the DARC program will in future be transmitted with 10 kW transmission power from "Channel_292" near Ingolstadt in Bavaria.

The continuation of the club's own radio program on shortwave is thus secured for the time being.

We would like to thank the employees of ORS GmbH & Co. KG, especially Mr. Ernst Vranka, OE3EVA, for the many years of very support and wish them all the best for their upcoming retirement.

(DARC e.V., Deutschland-Rundspruch 48th week 2024, Nov 28)

DF5SX@dar.de

Other radio news

DXing.info website

The DXing.info website (<https://www.dxing.info>) is now hosted by a new company. The reason for changing the web hosting service was a sharp decline in the customer service of the previous host, which began charging 160 euros/hour for customer support. I guess they wanted to get rid of all their non-corporate clients.

This has resulted in a couple of changes. First of all, DXing.info is now SSL-protected, so your browser will no longer warn that connecting to this website could be somehow risky. Of course, accessing DXing.info has always been safe and secure, as there is no web store and nobody is asking for your credit card details, but now we finally got rid of that pointless warning. The only risk in visiting DXing.info is that your addiction to the hobby will rise to a whole new level...

Secondly, some files have a new URL. The new host doesn't support files ending with .dx, so all HTML files have now been renamed with the extension .html

If you have linked to or bookmarked some older articles or DXpedition reports, which have originally been published with the extension .dx (or .htm) please update your links and bookmarks by replacing .dx with .html

Just as an example, a profile article of DXer Martti Karimies used to be at <https://www.dxing.info/about/dxers/mka.dx>, but can now be found at <https://www.dxing.info/about/dxers/mka.html>

Just one file has a completely different URL. An article about the famous DXpedition site Aihkiniemi can now be found at <https://www.dxing.info/dxpeditions/aihkiniemi.html>

This change of extension does not affect files in other formats, such as PDF or Microsoft Word files. For example, the URL of a recent DXpedition report from Lapland at <https://www.dxing.info/dxpeditions/lem482report.pdf> remains the same. DXing.info is the go-to place if you've ever dreamed of going after MW/AM stations on a DXpedition. On this website you will find hundreds of inspiring reports and articles about all aspects of the DXing hobby, but most of the new stuff deals with DXpeditions.

(73's, Mika Mäkeläinen, Editor of DXing.info)

100 kW Christmas Marathon Broadcast

On 26 December 2024, seven German "radio stations" have joined forces to produce a marathon broadcast running from 09.00 until 15.00 UTC on 6070 kHz. This will be one of the last transmissions from Moosbrunn in Austria. This station will be closed for good at the end of the year.

This 100 kW Shortwave Marathon will start with Radio DARC at 09.00 UTC and end with Radio Power Rumpel at 14.00 UTC. It is likely to be the very last arrangement of this kind. Reports of welcome are welcome and can be e-mailed to 100kwqsl@jake-fm.de.
(Christer Brunström)

Reuter RSR200 Software Defined Radio, Dezember 04, 2024



Reuter Elektronik, der Hersteller der exzellenten RDR-Empfängerfamilie, beschreitet einen neuen Weg und präsentiert uns den RSR200 SDR. Der RSR200 ist ein Direct Sampling SDR mit zwei ADC 16 Bit / 200 MHz. Die beiden ADC können unabhängig die Signale von zwei HF-Eingängen 0 - 71 MHz verarbeiten und über zwei Schnittstellen an einen oder an 2 unterschiedliche PC weiterleiten. Zusätzlich ist ein VHF-Eingang 70 - 250 MHz vorhanden.

Full story at: <https://fenuradio.blogspot.com/2024/12/reuter-rsr200-software-defined-radio.html>
(A-DX Fernempfang)

Klingenfuss radio database products 2025 arrived yesterday Dec 7.

Many thanks to you again this year after 57 years of service for the continuous production in the usual accurate manner and for sending your products 2025 SFL Super Frequency List and 2025 SFG Shortwave Frequency uide, which copies arrived safely here in Stuttgart Hoffeld Germany yesterday.

Packed with information related to the radio spectrum and also from year to year new special hobby aspects and details are added in today's world of data, as I realised again last night during my first check of the 2025 book issue.

And the WWDXC veterans have once again been honoured on page # 210 of the 2025 SFG book. 👍

Many thanks for everything and nice weekendle after all your production and dispatch stress

(de Wolfgang df5sx)

wwdxc gang – with Sir Mike & Co and Horst in the Amateur Radio for over 50 years now.

[nordx] MW Info - Radio Archives

Dear MW enthusiasts,

I would like to announce a [video](#) presenting the current state of the open source/open data project [COHIRADIA](#) in an illustrative and lively manner. The video is addressing people interested in historic AM broadcasting, in particular collectors of radio receivers, organizers of radio museums and organizers of related exhibitions. As reported in the past, COHIRADIA provides a unique platform for the playback of whole, original broadcasting bands like MW, LW or SW on analogue AM radios so that all contained stations at the time of recording can be tuned through and listened to. COHIRADIA is hosting software, hardware recommendations and a steadily growing archive of freely accessible recordings back to 2006 in a universally readable digital IQ format. The archive is open for any interested person, so feel free to visit the [COHIRADIA webpage](#) and do not hesitate to contact me in case of questions (email see CONTACT section on the [webpage](#)).

In order to increase the diversity of the collection, we are interested in finding international radio amateurs from all over the world, who possess similar historic broadband IQ recordings and who are willing to share their 'treasures' with the community. So if you possess such recordings and/or know people who do so, please contact me. If I could make you curious, please watch the [video](#), recommend it to others who might be interested and leave a 'thumb up' if you like it.

Best regards, many 73 and have fun,

(*Hermann Scharfetter* (2024-12-07) MW Info)

Vilket är det mest uppmärksammade radioprogrammet i historien?

Utan tvekan är det Orson Welles dramatisering av H.G. Wells roman The war of the worlds som sändes över CBS-nätet vid Halloween 1938.

Programmet ingick i en serie dramatiseringar men för att skapa en känsla av autenticitet hade Orson Welles valt en presentation i form av radionyheter. Och somliga trodde verkligen att marsianerna anfallit jorden. På sina håll utbröt panik, folk flydde från sina bostäder, vilket setts som ett bevis på "hur korkat det amerikanska folket är."

Orson Welles bad efteråt om ursäkt för att han varit så realistisk att folk blivit lurade. Någon rättslig påföljd blev det dock inte.

En spefågel har anmärkt att det faktum att utomjordingar inte kommer hit till Tellus beror på att de aktar sig noga för att ha något med så idiotiska varelser att göra!

(Ullmar Qvick via Svensk DX-historia)

APRILSKÄMT

En liknande grej gjordes som ett aprilskämt på radiostationen Far East Network i Japan strax efter kiriget. Då handlade det om en eldsprutande drake som hade siktats till sjöss och var på väg mot Tokyo. Man hade lagt på väldigt avancerade ljud effekter och fejkade livesändningar från platsen. I Tokyo rensade polisen gatorna och många trodde det var på fullaste allvar.

Till slut kom det fram vad som pågick och polisen slog till mot stationen. De två skämtarna bakom sändningen fick sparken men mannen bakom ljudeffekterna fick visst jobba kvar...
(Ronny Forslund via Svensk DX-historia)

[nordx] New Web-888 SDR devices

Public Device List: <https://www.rx-888.com/web/rx.html#public-device-list-refresh-every-15-minutes>

(Refresh every 15 minutes)

(via nordx)

Short list of Greek pirates

If you are interested I have made: <https://app.box.com/s/bepgkwr5b6y1ts8mmg3bowblhz8h9k39> A very incomplete list of greek pirates from Macedonia, GR. Two pages only.

(Zacharias Liangas)

Updated QSL-list from DX Fanzine

<https://app.box.com/s/vb2wtlss6bolnqa7vbkg05h9rdcl7rvh>

Completed a QSL listing from a long series of issues from DX-Fanzine.

(Zacharias Liangas)

[WOR] International Radio Report

The November 24th 2024 edition of the International Radio Report that aired on CKUT 90.3 FM in Montreal is now available on our YouTube channel. Please subscribe if you love our show! <https://youtu.be/l8h-6x-tDuU>

Hosts: Sheldon Harvey, Gilles Letourneau. Every Sunday at 10:30 EST 1530 UTC on CKUT 90.3 FM Montreal (viaq WOR)

2024 Master Program Schedule

Date (UT)	Time (UT)	Freq (kHz)	Target	Program
Dec 7	2200	3955	Eur	
Dec 8	0200	9670	NAm (East)	Music of Jimmy Dean
	0400	9670	NAm (West)	
	1300	9670	Eur	
Dec 15	0200	Mixcloud	Worldwide	2022 Varied Merry Christmas (Reprise)
Dec 25	0300	TBA	NAm	2024 Texas Christmas
	0300	Mixcloud	Worldwide	
	1100	6070	Eur	
	1400	9670	Eur	
	1800	3955	Eur	

2025 Program Schedule (Jan-Mar)

Month	Date	Freq (kHz)	Design
Jan	4, 5	3955, 9670	Big Bend National Park Snowfall
Feb	1, 2	3955, 9670	Roadrunner
Mar	1, 2	3955, 9670	Spindletop Oil Field
Apr	5, 6	3955, 9670	White-tailed Deer Fawn
May	3, 4	3955, 9670	Longhorn Cavern
Jun	7, 8	3955, 9670	Guadalupe Mtns. Hail Storm
Jul	5, 6	3955, 9670	Inks Lake
Aug	2, 3	3955, 9670	The Alamo
Sep	6, 7	3955, 9670	Texas Brown Tarantula
Oct	1, 5	3955, 9670	West of the Pecos Rodeo
Nov	1, 2	3955, 9670	Santa Elena Canyon
	28	3955, 6070, 9670	TRSW Sixth Anniversary
Dec	6, 7	3955, 9670	Hueco Tanks Pictograph
	25	3955, 6070, 9670	2025 Texas Christmas

This schedule (2025) is subject to change without notice.

The 0300 UT December 25 program will be aired from Woofferton, UK, with 250 kW. The frequency will be announced closer to the date.

Please credit Texas Radio Shortwave as the source of this information. Thank you.

Radio Center No. 7 with a Soviet-era "jammer" continues to be demolished near Irkutsk.

The Federal State Unitary Enterprise "Russian Television and Radio Broadcasting Network" (RTRS) has announced another tender for the demolition of equipment from Radio Center No. 7 in the city of Angarsk in the Irkutsk Region. In Soviet times, it was used to jam Western radio stations in the country. A Telesputnik correspondent found the relevant data in the government procurement database.

Information about the next tender in electronic form appeared in the database on November 14. The deadline for submitting applications is December 2. The initial (maximum) contract price was 117.1 million rubles.

According to the technical part of the accompanying documentation, two technical buildings, an engineering building, buildings for administrative and management personnel, a club-canteen, a carpentry workshop, three non-residential buildings, an antenna pavilion building, a communication and signaling cable, an artesian well with an ECV-6-10-80 (DES) pump will now be demolished.

In addition, the contractor will dismantle the checkpoint and guardhouse, the territory fence, the switchgear building, an on-site improved dirt road, several sections of the adjacent road, three cable lines, a complete transformer substation and a sawmill.

Details in Russian: <https://telesputnik.ru/materials/trends/news/pod-irkutskom-prodolzayut-snosit-radiocentr-7-s-glusilkoi-sovetskogo-perioda> (<https://telesputnik.ru/> (RUS-DX #1317)

Das Internet ist wirklich eine große Hilfe bei wichtigen Fragen. (Christoph Ratzer)



Frage von Beste1979
vor 4 Monaten, 88

Wie konnte die Titanic ohne WLAN Nachrichten schicken?

Als die Titanic den Unfall mit dem Eisberg hatte, wurden angeblich Nachrichten geschickt. Laut Google war die Titanic 1912 unterwegs und mitten auf dem Meer gibt es ja kein WLAN oder Telefonleitung. Auf Youtube gibt es Videos in denen die Titanic angeblich Nachrichten verschickt an andere Schiffe zB "cqg this is titanic". Wie hätte das bitte funktioniert vor über hundert Jahren ohne WLAN/Mobile Daten mitten auf dem Meer?

Wer mehr darüber wissen möchte. **SOS von der 'Titanic' - Chronologie einer Tragödie:**

<https://www.dokufunk.org/amate.../contributions/index.php...>

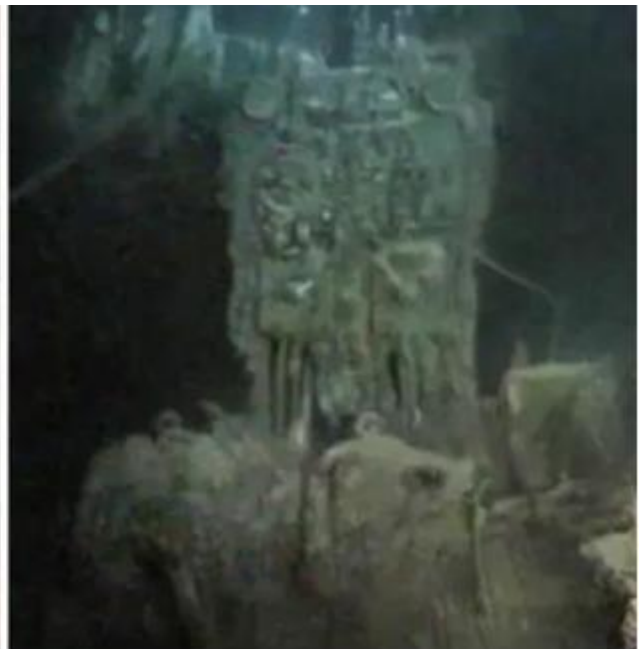
(Veit Pelinski)

Ob es geborgen wurde habe ich nicht gefunden:

<https://www.nzz.ch.../funkgeraet-der-titanic-soll...>

Was kann uns die Stimme der «Titanic» heute noch sagen?

Dank dem Funkgerät des Italieners Guglielmo Marconi konnten 1912 beim Untergang der «Titanic» über 700 Menschen gerettet werden. Jetzt will man den Apparat aus der Tiefe bergen. Doch es gibt Widerstand, denn das Wrack ist auch ein Grab.



«Wir sinken schnell»: Der Funkraum der «Titanic» in seinem ursprünglichen Zustand (Computersimulation) und nach über 100 Jahren unter Wasser, aufgenommen von einem Tauchroboter.

«Kommt sofort! Wir haben einen Eisberg gerammt.» So lautet einer der bekanntesten Funksprüche, die jemals abgesetzt wurden. Doch die zwei jungen Männer, die am 15. April 1912 im Funkraum der «Titanic» saßen und diese Worte kurz nach Mitternacht in die Dunkelheit schickten, hatten den Ernst der Lage noch nicht erkannt.
(Andreas Zell via A-DX Fernempfang)

[WOR] Top 10 DX of the year contest

The TOP DX RADIOCLUB invite you to the annual TOP 10 DX OF THE YEAR contest. Start 1 December 2024.

All details can be found on the club website:

<https://topdx-radioclub.com/top10dx.html>

(Mike Terry via WOR)



Don Moore's Photo Album: Albania Part One Finding Radio Tirana



More of Don's traveling DX stories can be found in his book [Tales of a Vagabond DXer](#) [SWLing Post affiliate link]. Don visited Albania in March 2024.

Of all the places that I've been to but wouldn't have imagined visiting forty years ago, Albania is definitely at the top of the list. Yet here I am wandering around in Tirana's coolest and most trendy neighborhood. I walk by an Argentine steak house, several Italian trattorias, a Texas cowboy-themed hamburger restaurant, and several sports bars with huge TVs tuned to football games (or soccer if you prefer). Boutique hotels, fashionable clothing stores, and shiny office buildings complete the scene. It's just another upscale neighborhood in the global village. And it's in Albania.

Read the full story here: <https://swling.com/blog/2024/12/don-moores-photo-album-albania-part-one/>
(The SWLing Post)

Thank you for sharing these incredible photos and for a very interesting travelogue. Looking forward to Part Two! (TN)

Millen 91201 from the late '40's



[K9YA Telegraph](#) Bob, W0YVA, sent us this photo of his Millen 91201 from the late '40's, 3-4 prototypes, no production. Bob said it was "too expensive" to produce. *Wow! Thanks for sharing, Bob.* (via SWLing Post)

Eddystone EC958



The Eddystone EC958 is a high stability high performance communications receiver first manufactured in 1972.

There are a number of variants becoming more sophisticated as time went on.

DX nostalgia by RFK

Listening to shortwave and mediumwave radio stations has become increasingly challenging in recent years, thanks to the proliferation of cheap electronics and the lack of regulation on electrical interference. The once-clear airwaves are now cluttered with a cacophony of noise, making it difficult to tune in to distant stations.

One of the main culprits is the influx of low-quality electronics, particularly those manufactured in China. These devices often lack proper shielding and filtering, allowing them to emit a wide range of electromagnetic interference. From cheap LED lights to poorly designed chargers, these products flood the market and contribute to the growing problem of radio frequency interference.

Even in remote, sparsely populated areas, the threat of man-made interference looms large. Wind farms, with their towering turbines and powerful generators, can create significant disturbances on the radio bands. As renewable energy becomes more prevalent, the number of wind farms is increasing, further encroaching on the once-pristine radio environment.

The environmental movement, while focused on reducing carbon emissions and promoting sustainable energy, often overlooks the impact of these technologies on the radio spectrum. Wind turbines, solar panels, and other green energy solutions, while beneficial for the planet, can wreak havoc on radio reception.

So, how can we solve this issue and restore the clarity of the airwaves? There are a few potential solutions:

Stricter regulations on electronic devices: Governments could implement stricter standards for electronic products, requiring manufacturers to include proper shielding and filtering to minimize interference. This would help reduce the overall noise floor on the radio bands.

Better planning for renewable energy projects: When planning the location of wind farms and solar arrays, planners should consider the impact on radio reception.

Advocacy and awareness: Radio enthusiasts and environmentalists need to work together to raise awareness of this issue. By educating the public and policymakers about the importance of preserving the radio spectrum, we can garner support for solutions.

Innovative technologies: Researchers could develop new technologies to mitigate interference, such as advanced filtering systems.

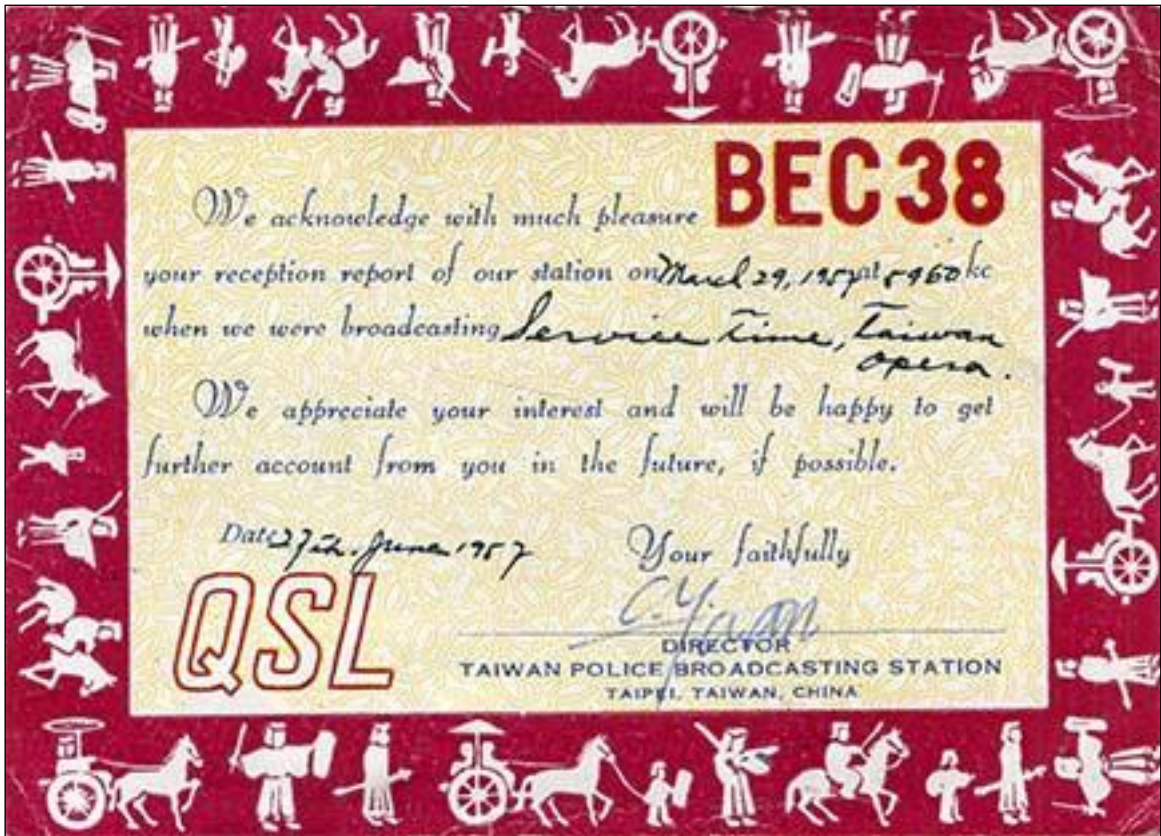
By addressing these challenges and working together, we can find a balance between progress and preservation, ensuring that future generations can continue to enjoy the magic of shortwave and mediumwave radio. The airwaves are a precious resource, and it's up to us to protect them for the benefit of all.

Maybe all this is a futile hope? Does anyone really care if some wavebands they don't use themselves are blocked by man-made interference? As it is, electromagnetic interference is just increasing by each year. So what? some may argue. Is this really such a big deal?

Well, man-made interference may have some impact on emergency communications when the Internet is blocked. It can be a hazard to international broadcasting. Maybe such interference can even affect scientific research in areas like monitoring weather patterns, studying the ionosphere and tracking wildlife migration.

We should not forget amateur radio hobbyists and DXers. There are still quite a few of us around and each year our hobby is affected by electronic noise. It could affect military and diplomatic communications. Yes, I think it is time to take this threat seriously. Right now it seems like nobody can be bothered. But the day may come sooner than we expected when we need to rely on this form of communication. Just give it a thought, will you.

With that, my friends, let's go back in time and indulge in some DX nostalgia. Of course there were sources of interference also back then. During the days of the cold war powerful jammers destroyed much of the reception on shortwave and very high powered transmitters blocked weaker stations on medium wave. But quite a lot of interesting stations have been heard over the years anyway. Here is a QSL card from 1957 which Bengt Dalhammar BD received for his reception report to BEC38 Taiwan Police Broadcasting Station on 5960 kHz.



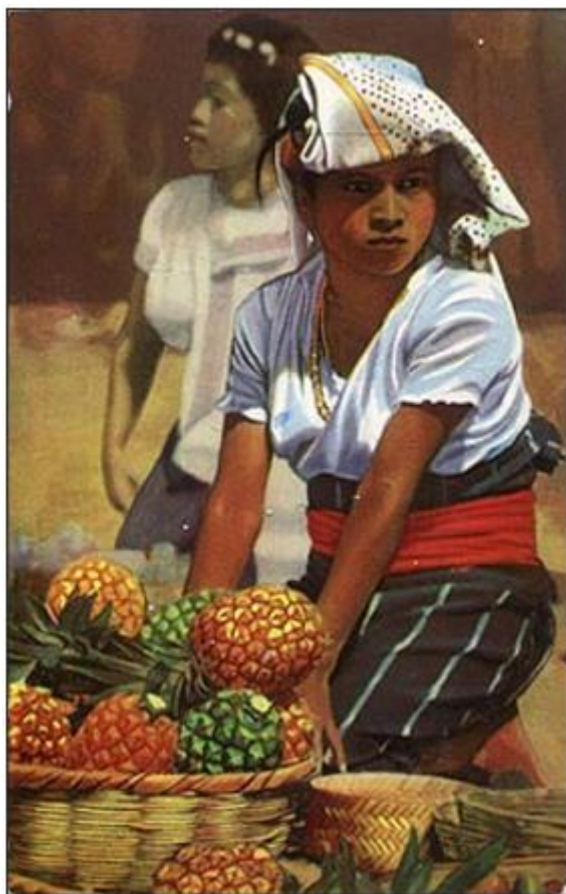
The next QSL card comes from the collection of Jan Edh JE. Costa Rica has had quite a few SW station over the years and one of them was La Voz de La Victor. Received on 9615 kHz in 1964.



Many QSL cards are small pieces of art. Here is an example from my own collection: the Austrian radio ORF. They used to broadcast from Moosbrunn and according to reports this site will be closed at the end of 2024. However, this card verifies my reception of the small 1 kW outlet at Aldrans on 6000 kHz.



A country which has housed a multitude of SW stations over the years is Guatemala. This QSL card from TGW Radiodifusora Nacional shows Guatemalan pineapple vendors and was received by Lars Rydén LR in 1954.



So my friends, let's conclude this column of DX nostalgia by a folder which Olle Alm OA received from Radio Clube de São Tomé. This country became an easy catch as VOA opened a relay station here but it closed down this summer. Another SW country gone....



Not all of you celebrate Christmas but in any event I wish you a great holiday. May we hope for a more peaceful New Year? Should you want to contribute to DX nostalgia, please mail me at info@rock.x.se . You are most welcome to do so. Take care and stay safe, 73 & GOOD DX!

The story of The Growing FLAG

(Less is More? No, not really, but...)

By Hans Östnell (HR), LB6GG, barentsdx@gmail.com, © Arctic Radio Club, ARC & SWB

Version 1.0, December 7, 2024

For a very long time I have been curious about trying a FLAG antenna. My DX-friend and colleague Thomas Nilsson in Ängelholm, Sweden, has been using a pair of reversible FLAG antennas for more than 10 years with success, which made me even more interested in trying one out. Until recently, I was using three 34 x 8,5 meter Super-KAZ antennas in different directions. All of them were capable of bringing in some quite impressive catches on the Mediumwave band, but in the first half of 2024 my life situation dramatically changed and I had to move to another location. A much smaller spot with no access to areas of the size that I would need for Beverages, BOG:s or KAZ-antennas. Quite naturally, I started to look at smaller versions of the FLAG antenna – to be more precise, the rotatable FLAG's. The problem was, however, that I couldn't even erect a “normal size” rotatable FLAG (which is about 7-8 meters long in the horizontal part and the vertical segments is approx. 3-4 meters). I had to start thinking about a smaller design, which was still useable for serious DX-ing on the medium-wave band. I have a small patio, with enough room for a tripod with a rotator, which is 5-6 meters away from the house I live in. Luckily enough, I don't have much local noise or QRM here, which is making things a lot easier and keeps the level of frustration at a minimum. That was the starting point of my project, inspired by Thomas Nilsson's quote “Look at your surroundings. What are your possibilities? Make the best out of it and keep it simple”. Hence, the first version of my very small rotatable FLAG was born – I called it the “microFLAG” or “μFLAG”.

Version I, the microFLAG (μFLAG)

I started with defining three minimum criteria, all three of them a definite must:

- The antenna must fit on a small patio or in a very small garden.
- The antenna and its support must be constructed using very strong and sturdy materials to survive the quite harsh wind and weather conditions here on the Norwegian North Sea shore.
- The antenna must be easy to take down for maintenance or in case of extreme winds and weather, and (quite obviously) it has to be just as easy to erect again.

The support frame

In order to make a robust construction, capable of “taking a punch” by the elements of nature, as well as “rough handling” (by me) without deformation, I opted for fiberglass tubing as my construction material of the support frame. Here in Norway, we are lucky because we have an excellent supplier of fiberglass tubes with extreme quality: PneumaBeam/Eidolon. This is not “fishing poles”, but very high quality tubes with 2 mm thickness, delivered in lengths of 2,38 metres. I have used these tubes for many different purposes and projects during many years. I'm not sure if PneumaBeam/Eidolon is shipping outside of Norway, but I will give you the URL to their home page in the bill of materials in the end of this document, in case you like to find out yourselves. Otherwise, I'm sure you have a more local supplier of high-quality fiberglass tubes. At least one closer to your location. Hence, I ordered tubes in three different diameters:

- 1 x 2,38 m Ø38mm for the vertical support tube
- 2 x 2,38 m Ø16mm for the upper and lower horizontal support tubes
- 1 x 2,38 m Ø11mm for the end pieces/sections for the upper and lower horizontal support tubes

Besides being very light and strong, the fiberglass tubes don't affect the antenna construction electrically. They also admit a little bit of flexibility, which I took advantage of in the final assembly of the FLAG antenna. More about that later. I also ordered 2 Cross clamps from Wimo in Germany, which is used to attach the two horizontal support tube assemblies to the vertical support tube.

"microFLAG" Support Frame

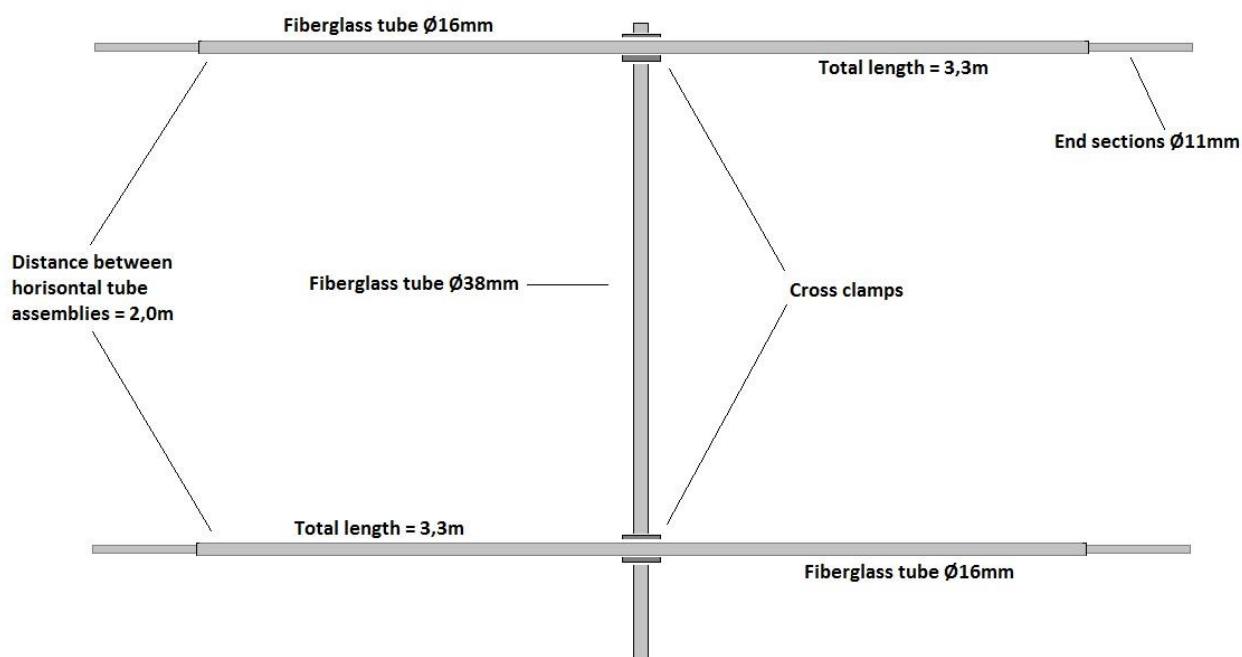


Fig.1: No it's not a 2 element beam for 6 meters, it's the "microFLAG" Support Frame

Assembly of the Support Frame is very easy. The two 2,38 m, Ø16mm horizontal support tubes are attached to the 2,38 m, Ø38mm vertical support tube by means of the Cross clamps ordered from Wimo. Be very careful when centering the horizontal tubes in the Cross clamps. We want to end up with a rectangle, not a parallelogram or any other "funny" geometrical shape. The distance between the two Cross clamps should be approx. 2 metres. This will be adjusted later on in the "Grande finale" of constructing the antenna. Now, the Ø11mm fiberglass tube is to be cut in four equally long pieces (hint: 595 mm). These four pieces will serve as end sections on the two horizontal support tubes to make each horizontal tube assembly exactly 3,3 meter long. They will slide into the Ø16mm tubes easily, but do not fit the Ø11mm tubes into the Ø16mm tubes yet. Instead, put a mark at 135mm on each of the Ø11mm tubes. This is the length of each Ø11mm tube that will be inserted in each end of the Ø16mm tubes, respectively. Hence, 460 mm will protrude from each end of the Ø16mm tubes, and you will have two 3,3 meter long horizontal support assemblies. Again: do NOT insert the Ø11mm tubes into the Ø16mm tubes yet. Wait. Go and have a cup of coffee or something, and while doing that find the antenna wire that you want to use.

Antenna wire

You can use whatever antenna wire you have at hand, as long as the outer diameter (including insulation) isn't larger than the inner diameter of the Ø11mm fiberglass tubes, which is 4mm. The really neat thing with this construction is that the horizontal segments of antenna wire go *inside* the two horizontal support tube assemblies. The wire I'm using is Messi & Paoloni Diploflex wire, ordered from Wimo in Germany. This wire has a diameter of 3,1 mm and slides easily into Ø11mm fiberglass tubes, without getting stuck. Wimo's own description: "*The Diploflex stranded conductor has another advantage, since it consists of 19 individual copper wires (19 x 0.29 mm), which is far more than is usually the case with comparable antenna wires. The large number of stranded wires creates a larger surface area, which plays a major role in the conduction of high-frequency signals (skin effect)*".

Now, cut two 5,6 meter pieces of your antenna wire. Each piece is 30 centimeters "too long", because we need to save 15 centimeters in each end of each wire, which will be used to make four small loops later on. If you have finished your coffee, you can now take the two 5,6 meter wires with you and return to the antenna Support Frame. Feed one 5,6 meter wire into each of the two 2,38 m Ø16mm horizontal support tubes. When finished, approx. 161 centimeters of wire is hanging out from each end of the two horizontal Ø16mm tubes. Now you can return to the four Ø11mm 595 mm long fiberglass

tubes. Wind some electrical tape at the 135 mm marking on each tube. This will make it impossible to slide each Ø11mm tube more than 135 mm into each end of the Ø16mm horizontal tubes in the Support Frame. Slide each end of antenna wire into the “135 mm end” of each Ø11mm tube, and then slide the “135 mm ends” of each Ø11mm tube into its corresponding end of the two horizontal Ø16mm tubes. Adjust the antenna wires so exactly 115 centimeters of antenna wire is hanging out from each end of the two horizontal fiberglass tube assemblies. It's a good idea to fix the Ø11mm tubes into the Ø16mm ones with shrinking tube. Do **NOT** use glue! If the antenna wire breaks, or you need to replace it for whatever reason, you will have a fun weekend trying to feed new wire into the horizontal tube assemblies, if the Ø11mm tubes are glued into the Ø16mm ones. Don't. Do. That. It's also a good idea to secure the antenna wire into each tip of the Ø11mm tubes, using small diameter shrinking tube. Make sure that exactly 115 centimeters of antenna wire is hanging out from each end before doing that. And no glue.

The 3,3 x 2,0m "microFLAG" in all it's Glory

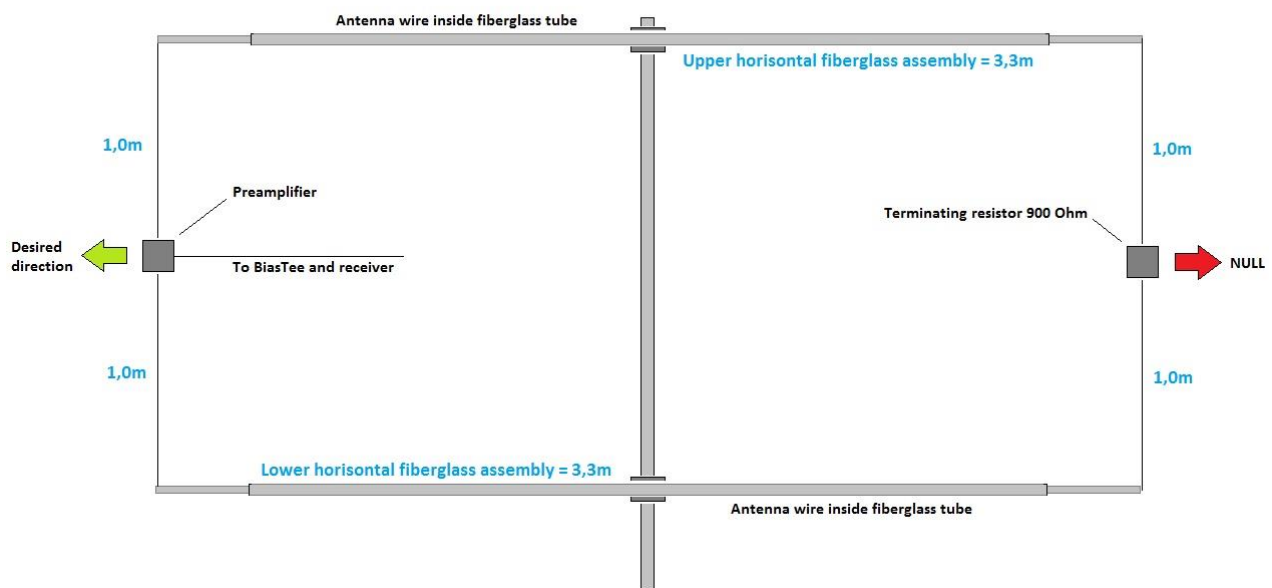


Fig.2: The complete “microFLAG”

Now it's time to tie the two “antenna halves” together. On each of the four ends of antenna wire, make a little loop at 15 centimeters. Secure the loops with cable ties. I'm also using cable ties to tie the “antenna halves” together, but if you like to use dogbone insulators or something else, please go ahead! In that case, you fit the insulators before making the loops, quite obviously. What's important here, is that each of the two vertical segments of the antenna is 2 metres long (or high). When everything is secured, you will have four “loose ends” of wire. We are soon going to populate them, but first we're going to do something fun: microFLAG stretching! Lay the microFLAG antenna flat on the ground, and carefully loosen the lower Cross clamp from the Ø38mm vertical support tube. You only need to loosen up enough to allow you to slide the Cross clamp approx. 15-20 centimeters down on the vertical support tube. This will put some tension on the two horizontal tube assemblies and also on the antenna wire, preventing the vertical wire segments from flexing around too much in the wind. When everything looks parallel, symmetrical, nice and beautiful – tighten the lower Cross clamp again.

Again it's time for a coffee break, and maybe a sandwich. We also need to find the preamplifier that we're going to fit into the front of the antenna, the terminating resistor for the rear end, and some nice and fresh coaxial cable, prepared with a connector that fits the preamplifier of your choice.

Preamplifier

The premium preamplifier for an antenna of this kind, would be the Wellbrook ALA100FLG, which was designed for FLAG antennas. Unfortunately, as we all know Wellbrook is no more and its founder and constructor Andy Ikin went “Silent Key” a while ago. You may find an original ALA100FLG on the used market, or maybe “New old stock”, but be prepared to pay an arm and a leg plus maybe one of your kidneys for it. Beware of Chinese made poor quality clones! People are asking “collector prices” for Wellbrook units these days, and I understand why. However, there are alternatives. You just need to find them...

The preamplifier that I'm currently using comes from Larry / W6LVP and is part of his “Antenna Experimenter's Kit” (see picture to the right). It's delivered with a Bi-asTee, for supplying the little amplifier with DC via the coax, and a “wall wart” PSU. Larry kindly removed the “wall wart” from my order, to save shipping costs. I know some people have said that this preamplifier is noisy on low frequencies, and easily overloads on the mediumwave band. I can honestly say that I have noticed none of the above. I think it works excellently in the microFLAG. It's small and totally waterproof. However, I have nothing to compare with, so I have ordered another little preamplifier from the United Kingdom:



Cross Country Wireless in the UK is offering what seems to be a sweet little preamplifier for experimenters. Not surprisingly, they are labelling it the “Experimenter's Antenna Amplifier”. This amplifier is the replacement of their now discontinued FLAG antenna amplifier, and it offers possibilities to connect a number of different antenna designs, such as loops, flags and beverages. Gain is 25dB and the Noise Figure (NF) is as low as 0.79dB, which is excellent! CCW offers this little amplifier on their sales-page on eBay. It will be fun to try this one out to see if there is any difference from the one from Larry / W6LVP.



I'm a **big** fan of all equipment and units from Remote-QTH.com since many years. Jan Sustr is truly a brilliant engineer! I was using Jan's preamplifiers and BiasTees in my Super-KAZ antennas, connected via 16:1 baluns. The quality and performance of the units from RemoteQTH is no less than exceptional! Now RemoteQTH also offers a Feed Point Preamplifier, delivered together with a multi-purpose terminating resistor box. Hence, the combination can be used with several antenna designs, such as loops, flags and beverages. It would be the perfect preamplifier, but I think that the preamplifier box is way too bulky for my little microFLAG. I think this amplifier is designed for fixed loops and flags, since it for sure needs to be mounted on a support pole. Nevertheless, with no doubt at all, this will be my preamplifier of choice if I again will have the opportunity to erect big loop antennas, such as the Super-KAZ.



Now it's time for you to connect the preamplifier to the two "loose ends" in one of the vertical segments. This will become the front side of the antenna, i.e. the desired listening direction. Use cable ties to fix/secure the little amplifier into the other cable tie (the one used to tie together the two loops of antenna wire) and connect the wires to the banana binding posts or wing nuts. Connect the coaxial cable. Don't forget to seal the coax connection with self-amalgamating tape.

Terminating resistor

The terminating resistor should be a non-inductive one with a value around 900 Ohm's. Mine measures 920 Ohm's, which is fine. These can be found on eBay, ready made in weatherproof boxes. It's, however, an easy task to fit the resistor in your own weatherproof box, add two banana binding posts or wing-nut binding posts if you prefer that. Homebrew is always more fun, Right? Connect the little terminator box on the other side of the antenna, and fix/secure it the same way as the preamplifier – and voilà, the antenna/loop circuit is now complete!

Common Mode Chokes

FLAG antennas, and especially smaller ones are notorious for picking up noise from "civilisation" via the coax shield. A couple of CMC's in the coax feed is always a good idea. I use three CMC's with my microFLAG; The first one in connection with (or as close as) the preamplifier, the second one right before the coax is entering the house, and the last one right before the signal distributor (active splitter) and my receivers. The two outdoor CMC's are PNC100's, which are manufactured and sold by SV2CZF. These are "plug-and-play" CMC's with BNC-connectors, and they work fine. All connectors are sealed with self-amalgamating tape, of course. The indoor CMC is a CCMC 30 from NTI, sold by Bonito Hamshop in Austria. It is a little bit expensive but performs flawlessly. NB: The preamplifier from Cross Country Wireless has a CMC already built in, right before the BNC output.

Final assembly, rotator and tripod

First of all, you don't need a fancy USD 1000,00 Yaesu rotator to swing this little antenna around. A small TV-rotator, such as the HyGain AR-500, which is available from Wimo in Germany, is more than enough. However, to protect the rotator and keep the whole installation erected in strong wind gusts, you need a thrust bearing mounted on the Ø38mm vertical support tube over the rotator.

The Yaesu GS-050 is a good choice, and it's available from a number of ham radio shops, including Wimo in Germany and Christech in Norway. The GS-050 fits tube diameters up to 50 mm, which makes it ideal for this construction. Don't sacrifice the thrust bearing in order to save funds. That will make you sorry.

Most likely very sorry. I'm securing the whole installation via the thrust bearing with 5 mm polyester cord line, which you will find in almost any hardware store. In Norway and Sweden you will find it at Biltema, Clas Ohlson, Jula and a number of other hardware suppliers.



My choice of tripod is perhaps a little bit "overkill". However, my location is windy. Very windy to be honest, especially during the autumn and winter seasons. I wanted something heavy and robust, which would make a solid base for my rotator and microFLAG antenna. I also wanted the possibility to crank the antenna up and down vertically for maintenance and/or protection purposes. Hence, I opted for the Adam Hall SWU400T wind-up stand, which is commonly used by stage-workers in order to attach stage lights or loudspeakers on it. With a weight of 27 kg, the SWU400T is extremely sturdy and robust, and it allows up to 80 kg(!) vertical load. It's supplied with a so called "T-bar" (used for stage lights). Instead of fitting the T-bar, I attached the AR-500 rotator in its place, and the AR-500 fits perfect! The SWU400T allows the rotator to be cranked up to a height of 4 meters. I found out that 3 meters is enough for my purposes. The whole thing can be cranked down to 2 meters, which makes maintenance easy, when standing on a step ladder. It also makes it easy to take the whole antenna assembly down, in case of really bad weather and violent wind gusts.



Mounting the rotator and microFLAG on the tripod is quite easy. Here's how you do it with a HyGain AR-500 rotator: after attaching the rotator to the tripod or another base of your choice, you need to calibrate it. The manual calls this process "INITIAL". Just follow the rotator manual, and you will be all good. When this is done, turn the rotator via the control unit until the display says "18" which means 180 degrees, i.e. due South. After securing the coaxial cable to the vertical support tube with cable ties (you need to make a "half loop" of coax around the rotator to allow it to fully rotate from end to end position, without stressing the coax), put the antenna assembly on the rotator, and tighten the mast clamps just enough to hold it in place. Now, using a compass, turn the front side (the side with the pre-amplifier) until it points 180 degrees. Now the antenna is directed due South, and the rotator control is indicating the correct direction. Tighten the mast clamps. If you have a crank-up tripod, such as the SWU400T, crank it up to the height of your choice and then secure the installation by tightening the polyester cord lines hanging down from the thrust bearing. Congratulations, you're done! Connect the coaxial cable to the BiasTee and the coax from the BiasTee to your receiver and start enjoying your microFLAG.

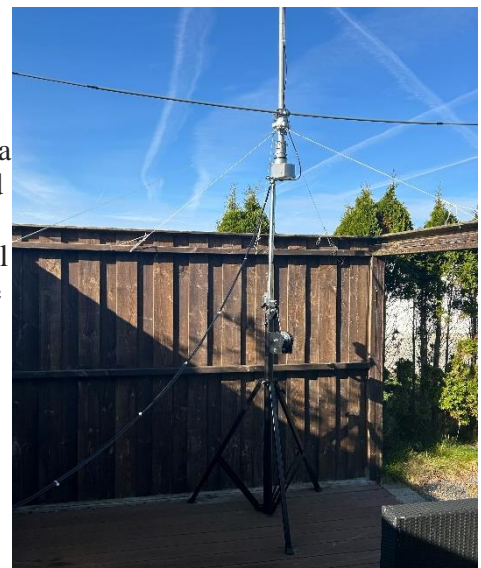


Fig.3: The "microFLAG" with rotator and thrust bearing on my small patio.

Some may ask "do I really need a hefty tripod and a rotator?" The answer to both questions is "no, you don't". If you like to rotate the antenna by hand (so called "Armstrong rotor"), by all means, go ahead. But you need some kind of means to prevent the antenna from "rotating spontaneously" in the wind. Furthermore, you need something better than an umbrella stand as base for the antenna assembly. Something heavier, such as a parasol foot which you fill with sand or water. That should be good enough to serve as a base for the construction.

However, and I say it again:

Do not sacrifice the thrust bearing!



Performance – does it work?

First of all, FLAG antennas – as well as all different flavours of loop antennas are low gain antennas. Hence, making an even smaller FLAG or loop means even less gain. That's why the preamplifier probably is the most important unit in the antenna circuit. It needs to provide high gain (more than 20dB) and have a low noise-figure (NF). However, gain is not the most important parameter when it comes to receiving antennas. Signal-to-noise factor (S/N) is! As long as you hear increased noise in your receiver when you connect your antenna at daytime in your most noise-free direction, you're all good. You've got enough gain. Now it all comes to the antenna's ability to detect readable signals over the noise. Of course, living in a low-noise environment helps a lot, and if one is as lucky as me – living close to the sea shore helps a little bit more.

But yes, the microFLAG works, and it works great. It has actually delivered some very surprising transatlantic DX on mediumwave the last months or so, and here I'm talking about US AM-stations that I never heard before, not even with my huge Super-KAZ antennas at my previous location. Actually this little “thingy” has stunned me more than once lately. Keeping in mind that we right now are in the “epicenter” of the sunspot maximum, makes it all more or less breathtaking. To be honest: I didn't expect the microFLAG to perform even close as well as it does. Not for a single minute! The receivers I'm using, a couple of Airspy HF+ Discovery, which are VERY sensitive, is of course also a factor which is important to have in mind.

To test the front-to-back ratio in my microFLAG, I directed the back side of the antenna towards BBC Radio Scotland on 810 kHz. This is “The Ultimate Crash Test” of all directional antennas that I construct. The station is on the other side of the North Sea from here, and it is always a huge signal 24/7. The rejection turned out to be better than 20 dB, which I think is as good as it gets for such a small antenna. The rejection of the other strong “daytime UK-stations” on 693, 909, 1053, 1071 and 1089 kHz is even better! So yes, the antenna works. I'm more than satisfied with its performance.

The microFLAG is also performing with excellence on the NAVTEX-frequencies 490 and 518 kHz, as well as the DSC frequency 2187,5 kHz, which has resulted in a number of really nice NAVTEX and DSC-catches.

Did I mention that it shines on the Shortwave bands too? Well, it does. By directing the antenna in 330 degrees, I was able to get a readable signal from CJFX on 6070 kHz, while – if not “rejecting” but at least “attenuating” the signal from the “always too strong” Channel 292 in Germany on the same frequency. Radio Educación in Mexico City on 6185 kHz, and ELWA Liberia on 6050? Easy. Radio Vanuatu on 7260 kHz, oh yes that one too, to mention a few. The microFLAG really shines on the lower shortwave bands. It also works fine on higher shortwave bands, but with increasing frequency the antenna is becoming more and more omnidirectional – just as expected.

To summarize: The 3,3 x 2,0 m microFLAG has been a really pleasant surprise for me. For its size, it performs very well and holds its own against (much) larger antennas, and I would like to say that it is a good allround antenna for the DXer with a small lot. Why not try it out?

But... We're not finished yet...

There is more to come!

Version II, the microFLAG on steroids

One day when I was outdoors, looking at and admiring my creation, I started to think “what if?”. Guess it's quite natural for any antenna experimenter to start thinking about modifications and improvements of their antennas. So, I started to think about ways to make my little microFLAG a somewhat bigger, and I found out that it was not only possible, but also “doable”.

I found out that it would be physically possible to lengthen the two horizontal support tubes to 5 metres each and increase the vertical distance between the horizontal support tubes to about 2,5 metres, provided that I also extended the vertical support tube a little bit and cranked up the whole antenna assembly another half a meter or so. By doing this, I would end up with a rotatable FLAG antenna measuring 5 x 2,36 metres. So... did I? Of course, I did – but what I didn't think about at that time was that two rather small increases of the height and width of the loop would make quite some difference - “gain-wise”.

Now, when we are discussing loop antennas and gain, we are often using the loop area, rather than the wire length, or circumference, as kind of a “starting point”. The first version of my little Flag, the “microFlag” was 3,3 x 2 metres, which equals a loop area of 6,6 square metres. The modified “microFLAG” is 5,0 x 2,36 metres = 11,8 square metres! Now, that's quite a significant increase of the loop area, isn't it? That would give my antenna a bit more gain, wouldn't it? Yes, it would. But do you remember what I said about gain vs. Signal-to-noise ratio? Of course you do. A good S/N ratio is much more important than antenna gain. So, if an increase of antenna gain doesn't give at least a corresponding improvement of signal-to-noise ratio, all the time and effort making this modification would be a waste of time, now wouldn't it? Well, I was willing to take the risk and came up with the design below, and yes – the antenna works excellent!

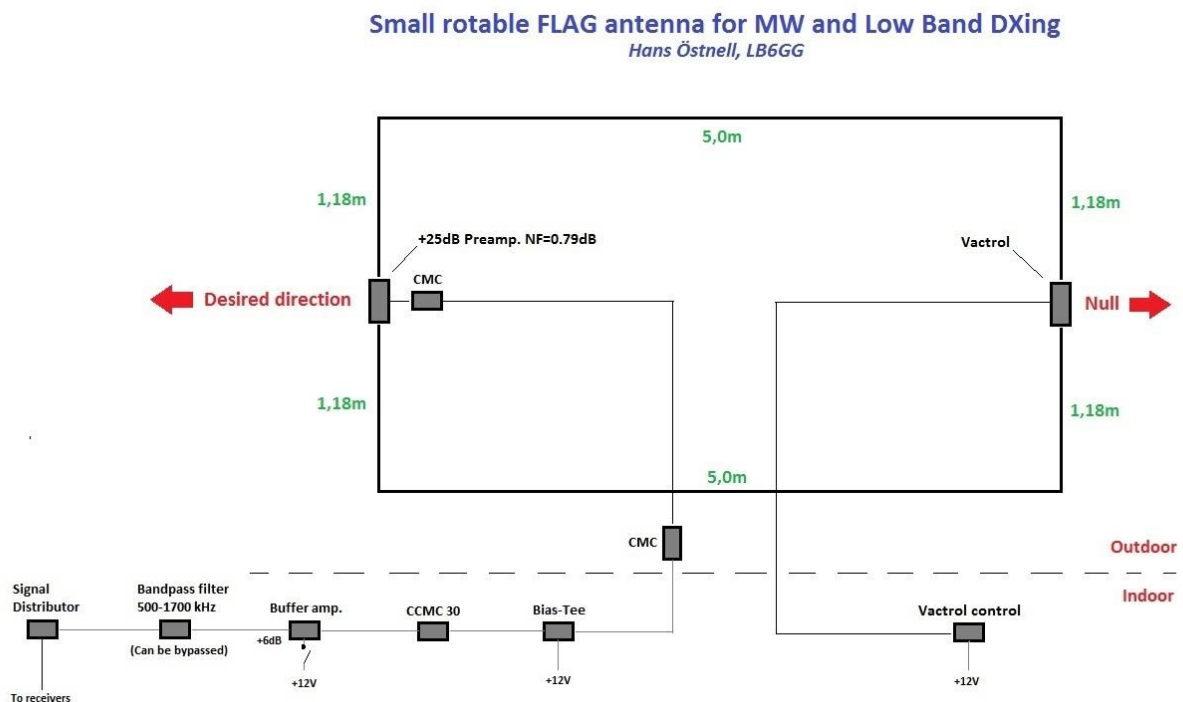


Fig.4: Small rotatable FLAG antenna fully loaded with “extras”

Now, this antenna can't hardly be mentioned as the “microFlag” anymore, so from now on I will refer to it as the “small rotatable FLAG”. I remember reading a very good article by Dan / N3OX about his small rotatable FLAG project. It was very inspiring and as it turned out, my small rotatable FLAG is a little bit bigger than his. This, however, ends all “FLAG-measuring” in this article! However, I recommend you to read Dan's excellent article about his small rotatable FLAG. There is good stuff to learn. He has had some great success with it on 160 metres, and I will publish the link in the reference list in the end of this paper.

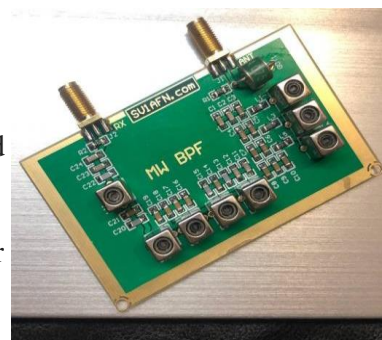
The only additional materials I had to order was another two 2,38 m Ø16mm fiberglass tubes, and some other minor stuff from PneumaBeam/Eidolon, in order to do the mechanical modification of the antenna. I already had most of the materials that I needed. The mechanical work was done using exactly the same techniques as described in the building instructions for the “microFLAG”, including cutting new antenna wire lengths, etcetera. However, I decided to add a few other “goodies” into the antenna system to “spice it up” even more: A vactrol controlled terminating resistor, a mediumwave bandpass filter, a 6 dB buffer amplifier and a new (passive) antenna splitter since my current (active) antenna splitter/signal distributor seems to show some early signs of ageing, maybe dementia.

The Vactrol – Why?

Well, as you know, the value of the terminating resistor in a FLAG antenna is somewhere around 900 Ohm's. However, this is a compromise which is selected to “fit” somewhere “mid-band” in the mediumwave band. It's only optimal somewhere around 1000 kHz (but “good enough” for the whole spectra 500-1700 kHz). In most cases, it will work just fine – but why not try to make it even better? The remotely controlled Vactrol kit is produced by Colin Newell in BC, Canada, and more information about this brilliant solution, as well as some great videos, is found at dxer.ca. By varying the termination resistance and optimizing it to the frequency that you currently are monitoring, you will be able to create some very deep nulls – in some cases up to 60 dB(!), completely rejecting signals which are coming from behind the antenna. It's nothing less than stunning! The Vactrol is of course optional. The FLAG antenna will perform great also with the fixed termination resistance of 900-940 Ohm's.

MW bandpass filter

The bandpass filter is also optional, but I can highly recommend it for use with any kind of serious MW DXing antenna. It helps keeping the MW signals clean from “out of band stuff and artefacts”. SV1AFN is offering a very good 500-1700 kHz MW bandpass filter. It costs around 50,00 EUR for a built and tested PCB, and around 70,00 EUR for the encased, built and tested. It's worth every Cent! You need, of course, to disconnect or bypass the bandpass filter when you are listening to LF or HF frequencies. See bill of materials.



Passive signal distributor/splitter and buffer amplifier

Also, optional equipment. However, a signal distributor, either it is active or passive, is a very handy piece of equipment if you want to use more than one receiver, and it becomes a must if you are using more than one receiver simultaneously. In a passive splitter, there is a 6 dB signal loss on each output and you may want to compensate for this loss, using a 6 dB buffer amplifier. In most cases this is not necessary. If you are using an active signal distributor, the buffer amplifier is already built into the circuit. SV1AFN is offering a very nice and well-built passive splitter. See bill of materials.

Bill of materials

Version I, the 3.3 x 2.0m “microFLAG”:

- Fiberglass tubes: 1 x 2,38 m Ø38mm (vertical support tube)
 2 x 2,38 m Ø16mm (upper and lower horizontal support tubes)
 1 x 2,38 m Ø11mm (cut to 4 equally long pieces. End sections for the upper and lower horizontal support tubes)
 (or use lengths/dimensions from your local supplier. In Norway: (www.eidolon.no))
- Cross clamps: 2 pcs. of 20 x 20 mm cross clamps. (Add some duct tape around the middle of the Ø16mm support tubes to make them fit the 20 x 20 mm clamps). Clamps available at www.wimo.de
- Antenna wire: 11m Messi & Paoloni Diploflex 3.1 mm from www.wimo.de, or use whatever you have, as long as the cable diameter (including insulation) doesn't exceed the inner diameter of the end sections of the upper and lower horizontal support tubes.

Preamplifier: W6LVP Antenna Experimenter's Kit (www.w6lvp.com) or Cross Country Wireless "Experimenter's Antenna Amplifier" found at <https://www.crosscountrywireless.net>. Both amplifiers are delivered with a BiasTee for DC-feed via coax to the preamplifier.

Terminating resistor: 900-940 Ohm non-inductive resistor. Make your own weatherproof box, or order from https://www.ebay.com/usr/mins_radio

Thrust bearing: Yaesu GS-050 from www.christech.no or www.wimo.de

Rotor (optional): Small TV-rotor, such as HyGain AR-500, from www.wimo.de

Base/Tripod: Parasol foot or something similar with a heavy base (if so, you need additional tubes to get the lower antenna wire up to 3-4 metres over ground). I'm using an Adam Hall SWU400T crank up tripod from <https://sound-storex1.no/>.

Coax: H-155 low loss coax from www.wimo.de

Common mode chokes: 2 x PNC100 (<https://www.sv2czf.com/pnc100.html>), 1 x NTI CCMC 30 (<https://bonito.net/hamradio/common-mode-noise-filter-ccmc30/>)

Additional stuff: Self-amalgamating tape, shrinking tube, cable ties, polyester cord line, coffee and sandwiches from your local hardware and food supplier.

Version II, 5.0 x 2.36m "Small rotatable FLAG":

The materials that you need for building the larger version of the rotatable FLAG antenna is the same as for the "microFLAG", with the following exceptions:

Fiberglass tubes: You need an additional:
 1 x 2,38 m Ø44mm fiberglass tube (to make a longer vertical support tube)
 2 x 2,38 m Ø16mm fiberglass tube (to make longer upper and lower horizontal support tubes)
 2 x 2,38 m Ø11mm fiberglass tube (joint pieces and new "end sections")

Antenna wire: 15m Messi & Paoloni Diploflex 3.1 mm

Vactrol / Control unit (Optional): Designed by Colin Newell - <https://dxer.ca/index.php/vactrol>

Bandpass filter (opt.): www.sv1afn.com

Buffer amp. (optional): Any low noise 6 dB amplifier will do. It compensates for the 6 dB signal loss in a passive signal distributor/splitter. In most cases you won't need it.

Passive signal distr. (opt.): www.sv1afn.com

Additional stuff: More self-amalgamating tape, shrinking tube, cable ties, coffee and sandwiches, and poly-line from your local hardware and food supplier.

References

Thomas Nilsson: Antenna compendium <https://www.dxinfo.se>
 Dan / N3OX: Small Rotatable Flag <http://www.n3ox.net/projects/flag/>
 Martin / OK1RR: Flag and pennant antennas <https://ok1rr.com/>

Postscript

I'm not a RF-engineer nor a scientist. The intention with this document is to give building instructions for a small rotatable FLAG antenna, with a mechanical construction that gives the antenna a chance to survive the harsh Nordic autumn, winter and early spring weather conditions. This is not "re-inventing" the FLAG antenna or even the rotatable FLAG. It's just a description of how I constructed my rotatable FLAG antenna to fulfill my needs. Perhaps it will inspire other DXers, who doesn't have the possibility to erect huge loops or build long beverage antennas. Small antennas work! And sometimes they even work much better than expected!

Never give up and Good DX!