

# ENIGMA 2000 NEWSLETTER



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## Bletchley Park on a winter's day

Note antennae terminated in National Radio Centre [RSGB]

Rotating HF antenna, Dipole [MF] and satellite tracking antenna.

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# Editorial

Our New Year celebrations have passed and its now much of the same as one sixth of 2019 disappears.

One joyful note was 'Happy New Year' from GCHQ to the Chinese.

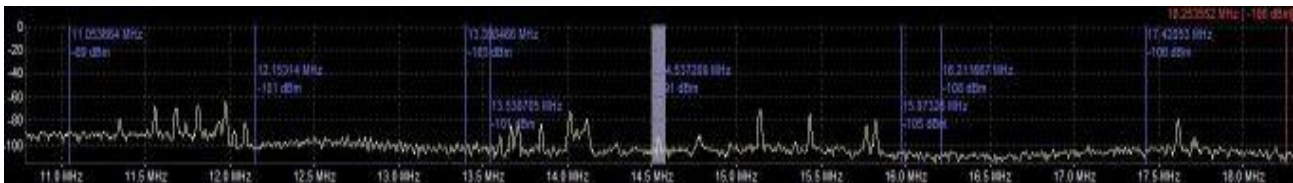
One must ask if that is extended to Huawei Technology Co,Ltd, its founder Ren Zhengfei, a former engineer in the People's Liberation Army and his grafting work force, its Board Chairman Ling Hua and vice-chairpersand CFO Meng Wanzhou, apparently arrested in Canada for US Sanctions against Iran busting.

Huawei is a busy Company indeed; for those of you interested in exactly how 'busy' Huawei can get are advised to search out and read the 27 page document from Her Majesty's Government 'Intelligence and Security Committee' [Chaired by Rt Hon Sir Malcolm Rifkind MP] entitled 'Foreign Involvement in the Critical National Infrastructure *The implications for national security.*'

It is one good read and given that BT has some of this 'equipment installed' and the US, never slow on banning something for their national security, did just that for Huawei's telecoms equipment that caught the industry buyers eyes some years back and warned the UK too. I understand that BT are now working hard to update this slight error of cost before security as they 'update' this *possibly* affected equipment.

And don't forget, the buggers also have a good range of affordable Moby's too! Whilst Huawei deny all this as nonsense I recall Mandy Rice – Davies comment, 'He would say that wouldn't he'

Radio conditions remain as ever, very poor. In the UK we've had rain, sleet, snow, sunshine and Storm Eric.



Pretty dire conditions 11000 to 18000kHz as XPA2 m transmits at 1429z 17/02

Most of the number station schedules have survived into 2019, a notable exception appears to be the first + third Saturdays S06 2000 + 2100 UTC which has not been found when searched for on a couple of occasions in January and February.

Perhaps it is not "making the trip" due to poor propagation, but it is unusual not to find one transmission in a schedule where there are two sendings separated by one hour. If it has gone, as many other S06 schedules have over the past few years, this leaves just the first + third Fridays 2000 or 2100 UTC or 1900 + 2000 UTC as the sole regular representative of this once prolific number station. Signals from this schedule have been unusually weak so far this year, no doubt due to poor propagation but on the plus side came up with a "full message" transmission on the third Friday in February.

The E07 English Man station continues to be heard with high levels of full message transmissions, as have the related E07a Friday and Saturday schedules in February.

**Reading The Spectre's Newsround suggest a lot of arrests have been made recently, related to spying, along with increased tension between the United States, China and Russia.**

**Does this in part give a solution for the discovery of the increase in some Number Station activity? The 1410z schedule Thursday repeat of the E07 Sun/Sat 0700z Schedule or the noticeable increase of Polytones intercepts that have been reported .... It's worth a thought indeed.**

[Thanks 'The Spectre' for your coverage here]

## Not number station but possibly interesting

M51 CW in its various versions continued to be busy in January and February, heard with a strong signal on 3881 kHz at most times of the day – not so much on the parallel 6825, it always used to be the other way round but in recent weeks it has often appeared that 6825 was not being used and when there was CW on this frequency it was way down in the noise. Also noted some CW on another frequency which had similar characteristics to M51:- 16-Feb-19, Saturday:- 1656 UTC, 5762 kHz - point something, perhaps - strong CW which appeared to be groups of five letters with occasional numbers and punctuation symbols, had also been heard earlier in the day, exact time not noted but was around 1000 - 1100 UTC. Still on when checked at 1716 UTC and at 1732, much weaker. This frequency checked on several days during the following week following but nothing further heard. However, it seems that this is used at weekends because it showed up again on the following Saturday and Sunday and the link with M51 was confirmed:- 23-Feb-19, Saturday:- 1617 UTC, 5762 kHz, strong CW, also CW on the M51 frequency 3881 and a check using two receivers showed that these

were running in parallel. 5762 still on at 1713 UTC but nothing audible on 3881.

24-Feb-19, Sunday:- 0804 UTC, 3881 kHz, slow CW, 5 letter groups, strong signal, the more usual parallel 6825 kHz being used here, much weaker. 1039 UTC, 5762 kHz, strong fast CW, still on when checked at 1200, 1325, 1410, 1545 UTC, nothing heard on 3881.

Update:- It turns out that 5762 is not just for weekends:-

25-Feb-19, Monday:- 1604 UTC, fast CW similar to that heard on Saturday and Sunday, nothing found on 3881 or 6825 if it comes to that; perhaps there is another parallel frequency.

26-Feb-19, Tuesday:- 0918 UTC, 5762 kHz, fast CW in progress, strong signal, noted around 0931 UTC that the speed of the Morse had slowed right down and was sending the FAV22 identification usually heard later on in the day, "VVV VVV VVV DE FAV22 FAV22 FAV22 QLH 3881/6825 kHz", no mention of 5762 here, still a strong signal, was also on 3881, weaker, and 6825, weaker still, so three frequencies in use here.

The daily CW transmission from Kaliningrad at 1700 UTC has continued on 5179 kHz in January and February, lasting for a couple of hours or so with short breaks before starting up again with the "REO DE RMP QTC" routine, usually a good signal. This station has also been heard in the morning time, around 0900 UTC, on 8191 kHz with the same start-up routine but with much shorter transmissions.

Agitated Ukrainians on 40 metres:- Noted many times in 2018 on 7050 or 7055 kHz in the 40 metre amateur band, using LSB mode, a "rant" in a Slavic language assumed to be Ukrainian, usually a strong signal which has continued in 2019 and on a couple of occasions has been heard sounding off in English which confirmed the Ukrainian connection:-

2-Jan-19, Wednesday:- 0737 UTC, 7055 kHz, a YL voice in English, when tuned in was saying something about Ukraine and was finishing off with, "against the forces of Muscovy", not strong, nothing further heard, but the same was heard later in the day:-

1434 UTC, 7055 kHz, same voice as heard earlier, in full flow, just caught what appeared to be the end of the statement, ".....defending the Ukrainian land against the Nazi invaders of Muscovy." Not much doubt about the origins of that, then. Was followed by voices in Slavic language.

Heard a few days later with some strong opinions on what is presumably the Russian equivalent of the RSGB or ARRL:-

7-Jan-19, Monday:- 1302 UTC, 7050 kHz, LSB signal, OM voice in English with a distinct American accent, ".....the Federation of Radio Sport in Russia is engaged in propaganda. We ask all radio amateurs to announce ... (something unreadable).....to the Russian stations on the radio not to conduct communications and competitions with them. Ukraine and its people chose the free democratic world. Supporters cannot work with the Russian Federation. We must stop the propaganda on the radio."

[Thanks PoSW]

### **More RMP!**

Our Russian Linguist writes on the term Radio Prognoz, "Perhaps a bit pedantic, but I'm going to suggest Propagation prediction or forecast might be more accurate - though I guess most readers would understand it as this.

Reason being is that I have encountered the word Prognoz on TV and radio there when they mean weather forecast. They don't usually say weather, it seems to be understood, though on TV the (usually) pretty girl standing in front of a big map of Russia with symbols etc on it is a pretty big giveaway."

[Thanks Sgy and friends!]

## **Recommended Reading**

We start with a short video of Morse being sent by a member of WW2 Dutch Resistance sent by Gert who found this interesting Dutch article about a WW2 secret agent that sends a message in morse to England after 75 years.

In the video you see the OM sends a message with a WT8 key (with the casting ridge et al).

<https://nos.nl/artikel/2251313-geheim-agent-stuurt-75-jaar-later-weer-morsebericht-naar-engeland.html>



### **Article Translation:**

"I was with Piet Hoekman. Together we were taken to an airport. We got the last instructions there.

In the plane we drew a match, for whom the first had to jump.

Bram Grisnigt remembers the night of 19 to 20 September 1943. As a resistance fighter he was dropped at the age of 20 in the Netherlands.

He could not bear the German occupation and had left for England earlier. But he came back as a secret agent with transmitting equipment.

The goal: to maintain contact between the Ordedienst and the Dutch government in London.

Now, exactly 75 years later, Bram Grisnigt (95) is the last living Dutch MI6 agent from the Second World War and sends a morse message again over the North Sea.

The equipment of today is exactly the same as before, "the same case too". The speed then was 16 to 18 words per minute.

"With one such piece of paper you had been busy for about 10 minutes."

Today Grisnigt takes longer. "The tension was just a little too big and only a part of the message has come over."

Grisnigt mainly attributes to the presence of all press. It is not the Morse, he still knows it from his head.

"Do not forget anything after 75. It's all in my head, well, in my fingers."

Ninety-five hundred of the 180 secret agents have been killed. That is a lot.

Grisnigt

The message that Grisnigt attempted to send today is a tribute to his fallen fellow cops and to the RAF pilots who brought the Dutch secret agents to the occupied Netherlands with great danger to their own lives. "95 of the 180 secret agents have been killed, that's a lot."

"But," continues Grisnigt, "all agents needed civilian support, for shelter, for example, and in addition to all those agents, many more civilians were likely to have helped them."

And many pilots have not survived. "Many were shot by night fighters," Grisnigt explains. "There have been more airmen from Tempsford than secret agents, a dramatic thing."

Back to that night

That night in 1943 the agents landed at Beugen, twenty kilometers further than where they actually had to go.

The equipment ended up in a garden of a farm. "It was exciting, we had received an assignment from England and were faced with the question: are we going to the farm to get the things and get it back, or are we leaving? When we leave, the end is mission. "

The men decided to go anyway. "We heard men talking in the garden, so we pulled our gun and stepped on them."

Are you good or bad? "We asked them, a very stupid question, of course," laughs Grisnigt. They turned out to be 'good'. "Then we were back in possession of our material."

A day later he left for Amsterdam, after his two signal addresses on the Prinsengracht. "It was just as difficult as today," Grisnigt says about the creeps.

"Connecting to England was very difficult, and it was also a great danger to the citizens of whom the house was, who took great risks."

The information that Grisnigt had to send to England via the morse alphabet was delivered to him. "I had a contact address and a contact man, I did not know his real name.

" The two messages exchanged via a bulletin board in a restaurant. "They did not know my address, and I did not have that from them."

You are the connection between the resistance and Bureau Intelligence. That gave a great kick.

Bram Grisnigt

They could be messages about supplies, or military data. "A lot of messages were already encrypted, then I myself did not know what was there," Grisnigt recalls.

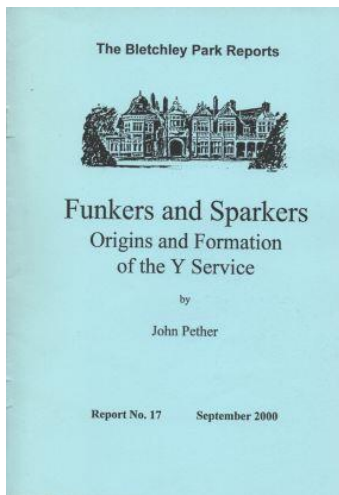
"We often found that these messages were too long, too long, and especially because we had to repeat it a bit, so please get repeat, please repeat."

"Every time I had contact with the island, it gave me a great kick", says Grisnigt. "You are the connection between the resistance and Bureau Intelligence."

Grisnigt has been able to send morse messages to England for a few months. On February 2, 1944, his radio signal was picked up by the Germans. "Then we were arrested."

The Sicherheitsdienst brought him to camp Ravensbrück. There he was liberated in April 1945 by the Russians.

*Many thanks to Gert for finding and sending this splendid article and for translating the article itself.*



In keeping with Gert's offering we include John Pether's 26 page report on behalf of Bletchley Park 'Funkers and Sparkers.'

'Funkers and Sparkers' were the respective nicknames give to the wireless operators on each side and who provided Bletchley Codebreakers and those of Room 40 in WW1 with the wireless message content to work on.

This little A5 book is a wealth of information on the subject and cost just £2.50 in the year 2000 when I purchased it.

A worthwhile read indeed for those of us with an interest of spy, SIGINT and other like interception.

No idea if it is still available though, a check in the BP shop 25/01/2019 suggests not.

## Morse Stations

All frequencies listed in kHz. Freqs are generally +/- 1k

This is a representative sample of the logs received, giving an indication of station behaviour and the range of times/freqs heard. These need to be read in conjunction with any other articles/charts/comments appended to this issue.

## Morse - Number Stations

### UNID CW

We start with this report from 'E'. No group count, so not M14. Most likely Russian military?

4890	2306z	20 Jan	Double grps BTx2 349 x2 ends 5 dashes	CW	'E'	SUN
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**M01/1** XIV MCW, hand (197 sched for Nov - Feb). Will change to M01/2 sched ID 463 for Mar - Apr.

Variant formats continue to be used on an irregular but frequent basis. There are four variant formats currently in use:

Standard Format:	197 (R4m) 117 117 30 30 == 93447 .... 20478 == 117 117 30 30 000	(Still the most used format)
Variant Format 1:	197 (R4m) 147/30 147/30 78902 ... 86083 147/30 000	(Not seen for some time now)
Variant Format 2:	197 (R4m) 521=30 == 521=30 == 46547 ... 88305 = 521=30 == 521=30 0=0=0	(Not seen for some time now)
Variant Format 3:	463 (R4m) 127 30 == == 84820 ... LG 82607 == == 127 127 30 30 000	(Used numerous times in Jan & Feb)
Variant Format 4:	197 (R4m) 589 589 = 30 30 == 40728 .... 58918 == 589 589 = 30 30 000	(Used numerous times in Jan & Feb)

### January 2019:

4490	2000z	01 Jan	'197' 791 30 == 05999 ... 73140 ==	Good, med-fast. Errors in last 3 grps & ending GC	BR	TUE
	2000z	08 Jan	NRH - Strong STANAG signal on freq. No M01 audible if present.		BR	TUE
	2000z	10 Jan	'197' 771 = 30 == 65773 ... 12104 ==	Good/Strong, slow. Numerous errors. Format 4	BR	THU
	2000z	15 Jan	'197' 987 30 == =81255 ... . . . ==	Good, fast. Mostly obscured by heavy STANAG QRM	BR	TUE
	2000z	17 Jan	'197' 321 30 == 64589 ... 44400 ==	Fair, fast. Brisker than 1800z sched. No errors noted	BR	THU
	<b>1959z</b>	22 Jan	'197' 251 30 == 07727 ... 75788 ==	Good, fast. Excellent Morse. No errors.	BR	TUE
	2000z	24 Jan	'197' 312 30 == 24206 ... 25626 ==	Strong, fast. A couple of short pauses - Otherwise perfect	BR	THU
	2000z	29 Jan	'197' 121 30 == 21161 ... 13006 ==	Strong, fast. Excellent Morse. No errors	CB	TUE
	2000z	31 Jan	'197' 301 30 == 36505 ... 59058 ==	Strong UK / Fair France. Fast. Excellent Morse - No errors	BR/CB	THU
5320	1800z	01 Jan	'197' 251 30 == 44507 ... 49559 ==	Fair, med-fast. Several errors noted, (Incomplete grps)	BR	TUE
	1800z	03 Jan	'197' 511 30 == 48712 ... 50751 ==	Weak, med-fast. QSB present. Unsure of DK	BR	THU
	1800z	08 Jan	'197' 921 30 == = 16942 ... 33993 == =	Numerous errors inc. incomplete grps. Format 3	BR	TUE
	1800z	10 Jan	'197' 118 = 30 == 84452 ... 25587 ==	Weak/Fair, slow. Two errors. Format 4	BR	THU
	1800z	15 Jan	'197' 678 30 == 84370 ... . 9618 ==	Weak, fast. Weaker as msg progressed. Difficult copy	BR	TUE
	1800z	17 Jan	'197' 527 30 == 38788 ... 64134 ==	Good, fast. Excellent Morse. Two grps sent once only	BR	THU
	1800z	22 Jan	'197' Very weak with high noise - No useful copy		BR	TUE
	1800z	24 Jan	'197' 352 30 == = 32093 ... 14967 == =	Good, fast. Some hesitation in parts. Format 3	BR	THU
	1800z	29 Jan	'197' 219 30 == 34628 ... 74239 ==	Fair, med-fast. Error grp13 38975 975	BR/CB	TUE
	1800z	31 Jan	'197' 721 30 == 05760 ... 84159 ==	Fair, fast. Copy difficult at times due to high noise	CB	THU
5465	0700z	06 Jan	'197' 271 = 30 == 84116 ... 53007 ==	Fair/Good, slow. Grp03 34223 32333. Format 4	BR	SUN
	0700z	13 Jan	'197' 142 30 == 98913 ... 35262 ==	142 142 30 30 000	AB	SUN
	0700z	20 Jan	'197' 970 30 == = 15869 ... 12962 == =	Fair, fast. No errors noted. Format 3	BR	SUN
	0700z	27 Jan	'197' 207 30 == 39272 ... 31558 ==	Fair, fast. Good, steady Morse. No errors	BR	SUN
5810	1500z	05 Jan	'197' 321 30 == 09676 ... 24022 ==	Fair, med-fast. Error grp24 46220 46330	BR	SAT
	1500z	12 Jan	'197' 123 30 == = 77041 ... 78922 == =	Good, med-fast. Dropped to weak for msg. Format 3	BR	SAT
	1500z	19 Jan	'197' 404 30 == 03592 ... 96912 ==	Fair, V.fast, Excellent Morse. No errors	BR	SAT
	1500z	26 Jan	'197' 731 30 == 15095 ... 70089 ==	Fair, fast. Moderate STANAG QRM. No errors	BR	SAT



**February 2019:**

4490	2000z	05 Feb	'197' 931 30 == == 22981 ... 44329 == == =	Fair, slow. Many errors & jumbled grps.	Format 3	CB	THU
	2000z	07 Feb	'197' 145 30 == 67414 ... 45691 ==	Fair, fast. Excellent Morse. No errors. Perfect delivery		BR/CB	THU
	2000z	12 Feb	'197' 961 30 == 75847 ... 78144 ==	Fair, fast. Error at grps06-07, otherwise good		CB	TUE
	<b>2001z</b>	14 Feb	'197' 118 30 == 48387 ... .. ==	Good, severe STANAG during msg. Ended 2009z 20 grps?		BR	THU
	2000z	19 Feb	'197' 530 = 30 == 68858 ... 09191 ==	Strong. OK to grp07 then several errors noted.	Format 4	CB	TUE
	2000z	21 Feb	'197' 276 30 == == 40360 ... 44983 == == =	Strong. Rapid, faultless delivery	Format 4	CB	THU
	2000z	26 Feb	'197' 171 30 == 78994 ... 94631 ==	Strong, fast. Errors noted		CB	TUE
	2000z	28 Feb	'197' 669 30 == 07464 ... 75190 ==	Strong, med-fast. Error in grp28 95707 9577		BR/CB	THU
5320	1800z	05 Feb	'197' 914 30 == == 78747 ... 38855 == == =	Weak, Slow. Many errors / jumbled grps.	Format 3	CB	THU
	1800z	07 Feb	'197' 282 30 == 73777 ... 13215 ==	Fair, fast. Excellent Morse. Weak sig part-way. Poor copy		BR/CB	THU
	1800z	12 Feb	'197' 062 30 == 24554 ... 60935 ==	Fair, fast. Numerous errors including strings of 9999		CB	TUE
	1800z	14 Feb	'197' 554 30 == 43879 ... .. ==	Weak, fast. Very poor signal. Little useful copy		BR/CB	THU
	1800z	19 Feb	'197' 147 = 30 == 88967 ... 08132 ==	Strong, good snappy delivery some hesitation.	Format 4	CB	TUE
	1800z	21 Feb	'197' 291 30 == == 12240 ... : .... == == =	Weak, fast. Continuous 'foghorn' on freq.	Format 3	BR/CB	THU
	1800z	26 Feb	'197' 721 30 == 72448 ... 38216 ==	Fair, fast. Errors noted		CB	TUE
	1800z	28 Feb	'197' 273 30 == 00636 ... 22121 ==	Strong, med-fast. Excellent Morse. No errors		BR/CB	THU
5465	0700z	03 Feb	'197' 131 30 == 09919 ... 02071 ==	variations in speed & timing/spacing (Via SDR Eschede)		E.SMITH	SUN
	0700z	10 Feb	'197' 741 = 30 == 47724 ... 96156 ==	Good, slow. Several errors noted.	Format 4	BR/E.SMITH	SUN
	0700z	17 Feb	'197' 778 30 == == 68219 ... 95318 == == =	Fair / Weak. Several errors noted.	Format 3	BR/E.SMITH	SUN
	0700z	24 Feb	'197' 521 30 == 50415 ... 80543 ==	Fair, fast. Several errors noted		BR/E.SMITH	SUN
5810	1500z	02 Feb	'197' 317 30 == 20126 ... 39290 ==	Fair, fast. Good start but with several errors later		BR	SAT
	1500z	09 Feb	'197' 764 30 == == 54351 ... 35699 == == =	Fair, fast. STANAG QRM.	Format 3	BR/CB/E.SMITH	SAT
	1500z	16 Feb	Present but weak & unreadable in Southern France. NRH in West Sussex			BR/CB	SAT
	1500z	23 Feb	'197' 561 = 30 == 36059 ... 53944 ==	Fair, slow. Good. Grp20 sent once only.	Format 4	BR/CB/E.SMITH	SAT

**M01a** (From Feb 2016 M01a has been redefined to cover all M01 variants - excepting M01b)

No logs

**M01b**

M01b has again proved to be a difficult station to log in the UK, due mainly to the poor signal strengths received at present. Even when the carrier is good, the low level of modulation used makes copy problematic.

**January 2019:**

2470//3545	1932z	24 Jan	'910'	Weak sig. on 3545kHz	Carrier only on 2470kHz	BR	THU
3545	1932z	17 Jan	Carrier only. No modulation heard		2470kHz NRH	BR	THU
2485//3160	2040z	03 Jan	Carrier both freqs. Weak modulation heard on 3160kHz - No useful copy			BR	THU
	2040z	17 Jan	Carrier both freqs. No modulation heard.			BR	THU
	2040z	24 Jan	'382'	Weak sig. on both freqs. No useful copy		BR	THU
3180	2110z	18 Jan	'610'	Weak - No useful copy	2405kHz NRH	BR	FRI
3205	2015z	07 Jan	'375'	Weak - No useful copy	2427kHz NRH	BR	MON
	2015z	14 Jan	'375' 573 34 =			ER	MON
	2015z	21 Jan	'375' 573 34 =			ER	MON
3520	1910z	14 Jan	'853' 573 34 =			ER	MON
	1910z	21 Jan	'853' 573 34 =			ER	MON

**February 2019:**

2405//3180	2110z	15 Feb	Weak carrier both freqs. No modulation heard		BR	FRI
2425//3205	2015z	11 Feb	XJT QRM on 2425kHz. Weak carrier on 3205kHz		BR	MON
2435//3520	1910z	25 Feb	#carrier on 2435kHz. Weak sig. on 3520kHz - No useful copy		BR	MON
2470//3545	1932z	07 Feb	Weak carrier both freqs. No modulation heard		BR	THU
	1932z	14 Feb	Weak carrier both freqs. No modulation heard		BR	THU
2485//3160	2040z	07 Feb	Weak carrier both freqs. No modulation heard		BR	THU
	2040z	14 Feb	'382'	Carrier on 2485kHz. Weak sig. on 3160kHz	BR	THU
2655//3195	2002z	01 Feb	'866' .76	Weak//Weak - No useful copy	BR	FRI
	2002z	08 Feb	'866'	Very weak carrier on 2655kHz. Weak sig. 3195kHz	BR	FRI
	2002z	15 Feb	Weak carrier both freqs. No modulation heard		BR	FRI

**M08a** XVIII ICW / CW, some MCW

First, our usual comprehensive log from Anon US, our Man in America;

**January 2019:**

7554	2000z	03 Jan	[66762 70101 83522]	AnonUS	THU
	2000z	08 Jan	[11722 24142 37471]	AnonUS	TUE
	2000z	10 Jan	[- - - - 68302 72631] Up late in progress	AnonUS	THU
	2000z	17 Jan	[24251 37582 51821]	AnonUS	THU
	2000z	22 Jan	[- - - - 63661 76002] Up late in progress	AnonUS	TUE
	2000z	24 Jan	[- - - - - - - 03622] Up very late in progress	AnonUS	THU
	2000z	29 Jan	[60332 72762 85181]	AnonUS	TUE
8009	2300z	07 Jan	[05881 18312 22641]	AnonUS	MON
	2300z	14 Jan	[17311 21632 34062]	AnonUS	MON
	2300z	28 Jan	[27822 31351 44671]	AnonUS	MON
8096	1400z	02 Jan	[- - - - 13631 26162] Up late in progress	AnonUS	WED
	1400z	03 Jan	[40772 52522 66531]	AnonUS	THU
	1400z	04 Jan	[72322 84641 07172]	AnonUS	FRI
	1400z	07 Jan	[00402 23731 36252]	AnonUS	MON
	1400z	08 Jan	[87022 01441 14772]	AnonUS	TUE
	1400z	09 Jan	[63302 76731 88151]	AnonUS	WED
	1400z	10 Jan	[33372 46601 50032]	AnonUS	THU
	1400z	11 Jan	[66081 78322 82641]	AnonUS	FRI
	1400z	14 Jan	[14411 27841 30272]	AnonUS	MON
	1400z	15 Jan	[42322 54152 66481]	AnonUS	TUE
	1400z	16 Jan	[80402 02132 24551]	AnonUS	WED
	1400z	17 Jan	[- - - - 21501 34832] Up late in progress	AnonUS	THU
	1400z	18 Jan	[- - - - 12701 25132] Up late in progress	AnonUS	FRI
	1400z	21 Jan	[44142 67471 71701]	AnonUS	MON
	1400z	22 Jan	[37541 41062 53301]	AnonUS	TUE
	1400z	23 Jan	Present but too weak to copy	AnonUS	WED
	1400z	24 Jan	[51071 62611 75042]	AnonUS	THU
	1400z	25 Jan	[- - - - 05022 18341] Up late in progress	AnonUS	FRI
	1400z	28 Jan	[- - - - 62521 75852] Up late in progress	AnonUS	MON
	1400z	29 Jan	[37331 41652 64181]	AnonUS	TUE
	1400z	30 Jan	[10132 23451 36781]	AnonUS	WED
	1400z	31 Jan	[72642 04382 17711] Very weak	AnonUS	THU
8135	2300z	03 Jan	[47812 51341 64662] Extremely weak	AnonUS	THU
	2300z	08 Jan	[75182 86832 02852] All 3 call-ups end with 2	AnonUS	TUE
	2300z	11 Jan	[32331 45762 58182]	AnonUS	FRI
	2300z	15 Jan	[36212 47842 53862] All three call-ups end in 2. Very weak	AnonUS	TUE
	2300z	18 Jan	[63121 76442 80871]	AnonUS	FRI
	2300z	22 Jan	[37142 41471 14621]	AnonUS	TUE
	2300z	24 Jan	Present but too weak to copy	AnonUS	THU
	2300z	25 Jan	Present but too weak to copy	AnonUS	FRI
	2300z	29 Jan	[26102 30432 43851]	AnonUS	TUE

**February 2019:**

7554	2000z	05 Feb	[- - - - 34051 46382]	AnonUS	TUE
	2000z	06 Feb	Present but too weak to copy	AnonUS	WED
	2000z	07 Feb	[- - - - 62251 75682]	AnonUS	THU
	2000z	12 Feb	[- - - - - - - 15512] Up very late	AnonUS	TUE
	2000z	14 Feb	[- - - - 03802 15331]	AnonUS	THU
	2000z	19 Feb	[- - - - 60001 73332]	AnonUS	TUE
	2000z	21 Feb	[48112 50712 63141]	AnonUS	THU
8009	2300z	04 Feb	[63332 76761 80182]	AnonUS	MON
8096	1400z	01 Feb	[10862 32502 45022]	AnonUS	FRI
	1400z	04 Feb	[04611 17032 81272]	AnonUS	MON
	1400z	05 Feb	[06332 17062 22082]	AnonUS	TUE
	1400z	06 Feb	[75001 06741 12762]	AnonUS	WED
	1400z	07 Feb	[31252 52882 65311]	AnonUS	THU
	1400z	08 Feb	[11802 24221 37652]	AnonUS	FRI
	1400z	11 Feb	[68311 72731 84162]	AnonUS	MON
	1400z	12 Feb	[64551 77881 80212]	AnonUS	TUE
	1400z	13 Feb	[70771 83112 06531]	AnonUS	WED
	1400z	14 Feb	[66872 77512 81031]	AnonUS	THU
	1400z	15 Feb	[- - - - 31651 44172] Up late in progress	AnonUS	FRI
	1400z	18 Feb	[45252 58572 62811]	AnonUS	MON
	1400z	20 Feb	[20062 33401 46722]	AnonUS	WED
	1400z	21 Feb	[- - - - 32131 55552]	AnonUS	THU
	1400z	22 Feb	[51612 64031 77462]	AnonUS	FRI
	1400z	25 Feb	[23422 46851 50271]	AnonUS	MON

8135	2300z	05 Feb	[78382 82721 04142]		AnonUS	TUE
	2300z	07 Feb	Present but too weak to copy		AnonUS	THU
	2300z	08 Feb	[87072 11301 16422] Something odd here, 2 call-ups begin with 1		AnonUS	FRI
	2300z	12 Feb	[44022 57341 71672]		AnonUS	TUE
	2300z	19 Feb	[11152 24471 37712]		AnonUS	TUE

#### Additional M08a logs from Edward (ER);

8096	1355z	24 Jan	51071 62611 75042		(Via SDR USA)	ER	THU
	1355z	31 Jan	72642 04382 17711	Very weak signal	(Via SDR USA)	ER	THU
	1354z	06 Feb	75001 06741 12762			ER	WED
	1354z	08 Feb	11802 24221 37652			ER	FRI
	1355z	11 Feb	68311 72731 84162			ER	MON
	1355z	13 Feb	70771 83112 06531			ER	WED
	1355z	15 Feb	Weak signal - Present but unreadable			ER	FRI
	1354z	20 Feb	20062 33401 46722		(Via SDR USA)	ER	WED
	1354z	25 Feb	23442 46851 50271		(Via SDR KD4HSO)	ER	MON

#### Finally, some full transcript M08a logs from Ary, (AB);

8096	1354z	07 Jan	M08a		CW	AB	MON
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TTUTN NDIDA DRNWN TTUTN NDIDA DRNWN TTUTN NDIDA DRNWN

TTUTN TTUTN TTUTN TTUTN TTUTN == =  
ADIAA AGURD TUTUD GIWAI GUIWG RRRRU UAWGI RIWIG IRURD WNUGD  
WRWDT WUUDW DTDWG UUNUT RWDRN TNDDA NAAAN GTRUI NDUTD WTIDR  
RGRRN UGUGT GIIGW NAUGI RNDAW UWIUG ANNAI RGUTR AIRDD WGTWA  
GWDWT DIUWI GTRII NGRID RTNGW RRGDA GDAAG TUDGA DNDGG DUDWN  
IDDIN GGWGW AIANU IATUG RUNWG WGAWG UATRR WDNUR NTIAT WWUTD  
DGTGG DNDTN UNAGI NUTUD WIUNI IUDDR IAAUI IWGGI WRUNG NGINA  
TGRWD WIDAR DAGGW GAUWR AAATG AAIAT UTTIW WNIII NGGAN UTWRW  
GTND DNTGT WUGAR WGDNW RAAGU URIDD UUIAN NTRWD UARNA TNNAW  
DWRIN UUDID NAWTT NURAR INWGD WDUII WUDTT ATRIN TATAI GURTN  
IRIUA UDDND IAWWW DATIA WDATD DNGIU TNNGD NTNGU UGNUA NDUUN  
TNNGD UTRGT RINII IIDRU RATUW GUIWN GTNTD GTDTR ITUWU TTAHD  
IDNDR RTRDW TDNWG RGIIR ANLAR TGIRG NNWAR IININ IRDND UDUGG  
WITWN DUGGI DANUU GDTUD NGNUI UDDNG TDURW GGTA A NUAAG DRRRW  
AGIDW GNARD TNWAT AWTAD UIIAT UAWNI RUDUR GTNIA WDNDG WGRUD  
IIDI TDTAU AINTT WNDND GDWTD DANTT NAAWW GWND D WINTI GWAGD  
+ + +

NDIDA NDIDA NDIDA NDIDA NDIDA == =  
RARUU DADWI AWUAW TUGNI RTWAT TARAT AARTT AUTUG ATDIT RGGUU  
DIAGU INDRR ANDAA AIDRD IGIGN TNUNN GUTUR IRTIA NUIUW NNGDD  
DNGGD UAAANR WDDRR TDWNG TUTGT GTRID TUDTN IDTIN NIINT AADWU  
UNIRA TNRDW ITNWR RTNRD IIDWW UIGTG UGNNT RTWDW DRTWI INIDD  
NAAUR GUAWG UNTRD DTGRA WUATT TARIG NAWAD UATRA WNADU WDGGD  
RURDD RAGAD NWUGG IAGW RAGIA RRNIW WUUG RRAAA DANIW TANGR  
WAATN WWAII GTDAW IADR RUGIW UANIG DTUGA WDGRI RDIAR TWUWW  
GANIR UGUNT DIINT ATUAW WDAID IUTDG IAAGR IHWRT ANIDG ANDRU  
IGRRN WDUAR DDUUA AGDAD IDWTI RRUIU TUWIN DUADA NAGRT NDRNU  
TGUWU NGDRR UWWRT WGTIU GDRIU WDNII GGITN NND AU NUIGT AGNNG  
GUTRD GUTTG DRIUR IRTUR DUNTU DDDND IUDGT GWGWG WIRTN DARTN  
NINWI GTWTI AINIG TWRUA DUUWU TGNIR RRRNG UATGG RATAU TGTUN  
GGIGU DGRNA TTGDR GNARR WRDAD ADATT DRWWU NRDDR UTWDG RGITN  
RRRRU RTGIT WUAW IDIRN RNUIN IGNGT RTWGA RWGGI IDATA AGWUR  
RIIAR WIITI ARAAI TIAIT AGUGT RDANI TRNND AWNAA DIRNA RAGUU  
+ + +

DRNWN DRNWN DRNWN DRNWN DRNWN == =  
GITUT TTWUG RGTNN DNIGT UTTUR NAAUD RIGGT IDAWI AWTRU DINRG  
WDTND DWIWW DNNWU NNUIU RDTRN AGAWU IDRGD UGAIW UNGGR IAAUW  
TNUII ITWRW RDTWD NAWAT RTUDT DWTUT WINUW TGGIR TIAR UIRNN  
GTADT GAWGD NNUNA TTNNI DNIAW WRWTD UGNRR ATTTW TRDDA AWDNU  
WUTAA DUTWU WDNWI DIUGU INUWN RRNDI WAURA RGDGU WAWIR RRIWT  
GTNNA GNRNG NDDWG DAUND RRTTW DRRRR RGWDU WUWIG TWGGW UGDAI  
RITTN GNTAD RTWIA TTRTT TIUNT ATUGI TGDDW NTRGA GDTIU GDUAN  
WARGI DANWW DDNGI TTNAT UUGDN NNTIG TTWRN RRDIU WRTNU TGNWT  
IRWDI WDRDA NIGNU GGRUR WRUAW NUGNN RUAAU AUTUW NNDGT ANIUU  
GWGUU TWUAD UADNI ATTUU URIUN WNWN IWWNN UWGGI NDNRW DDWNN  
UUTWW WWUTU IWRRU RIRWN UWTAT DTIRR GUADW AAIRD GGTRR NDITT  
AGIDN DDING TNTGI NWWUT DADWT WTGAU TUGII WDURI WRUTT NNTTT  
UWTTI GUUUU IWNNT RADU NDDTR AAARN TIUNR IWATD IDUII IRGGN  
RIRTW ADDR RDDNI NAWAU ADADU RRTTW RIWNT UAADW NUWUW ADRDR  
WUNII TIINI WDAAW IURR IRNRU WDAWR TNDIN NTNTI ARNRG NNDGN  
+ + + SK





8096	26 Dec	1354z	M08a	Via SDR USA	CW	AB	WED
AGUGA DNGNA UWNUN AGUGA DNGNA UWNUN AGUGA DNGNA UWNUN  AGUGA AGUGA AGUGA AGUGA AGUGA == = GATNR ARRAR AIRUT AIDDR RTITI NDWUG TNGTW RRRNR UIWWW ANDUG ..... TIUNW UADRR GANUD WUDWT ANTIT RWUIG NDIIG DNTAD IWAIR GUNRW + + +  DNGNA DNGNA DNGNA DNGNA DNGNA == = GAUNG DUWWW DNNWT NIAGG URAWT ADRAI RUNGT DDRAU WGDWN UITTN ..... GNWGG AWIWA GTTNI GDNIT DWUGA WNAWI AUGRN INGGT TWTTU TARNI + + +  UWNUN UWNUN UWNUN UWNUN UWNUN == = TGDAARAU TDNUNRA WAGRG DUNUI UURRR IGRRU GDIIN UUUDW GNNUG ..... DITAD WDGNN AUAGN URWWI DWAIW RRTWA TTWUN NIWRG NAWUW NINTW + + + SK							
8096	1359z	28 Jan	M08a	Via SDR USA	CW	AB	MON
The first message was already in progress when the transmission started IGGDT RDGTU DINRD IGTAU AWIUU NUGRN TGTIR NIUIT IDNUR ..... DNDGW INDGI UGGTT UGNDD DDRAR DWAIU AWAIA WUGNT UWUTT NNAUN + + +  RNWNA RNWNA RNWNA RNWNA RNWNA == = NGUGN NGDIN UIWDA UGAAR GUAUW GWARG TWGTG UTUTD GIAGD NGRNN ..... TWNRT RGADT IGDND IUUNT NGAUA NWUDT WRTGI WWRGA WUUTG RTUGA + + +  IWGWN IWGWN IWGWN IWGWN IWGWN == = DTUTI TRWUD GGTIG GNDAT RITGR IUDNR IAATN GNNIG TADDD WTIWD ..... TNNUR AAURN DAIDA IDGGW NUTWA TDUTN UTWNR IGGTD TDADN WTNIT + + + SK							
8096	1354z	01 Feb	M08a	Via SDR USA	CW	AB	FRI
ATGRN DNWTN UWTNN ATGRN DNWTN UWTNN ATGRN DNWTN UWTNN  ATGRN ATGRN ATGRN ATGRN ATGRN == = UGWUN RDUWD WNWTN DGUWU DNRND UIIIR NTATA RAIHU AIGGI NURIR ..... WTUIN NGARA NANDN NNWDW GIGTA WRGDI IUUGR IUWDD TRUUT UITRT + + +  DNWTN DNWTN DNWTN DNWTN DNWTN == = WIDTU GITDG DDADD ANRAR RRUDU NNWGR NDNUG GUNRW UNWTW DTANN ..... TDTUW TRWNN IGNAN NRGAG IUNRU RIWIT DTUUD IAWRT WAGGG NRANT + + +  UWTNN UWTNN UWTNN UWTNN UWTNN == = WUDTW RGNUU TUNTU ATRUR TRAGN RIGTW UWAID TDRAG DDNTD RITGD ..... AARAT GRTDR GDRIR ANURA WTDTG RRGGR TGRUW WAGNG WGIUA UNUWA + + + SK							
8096	1354z	11 Feb	M08a		CW	AB	MON
RGDAA INIDA GUARN RGDAA INIDA GUARN RGDAA INIDA GUARN  RGDAA RGDAA RGDAA RGDAA RGDAA == = AINWT ITDAU AIUTD TIWAG GAIWU UNIGG GWUWI TTIDI WWRTA IAAWG ..... WARRN UDRDI UIUAW AWAUA AIARI GNRNN AGUUU WNDGI DAWAW ARDDA + + +  INIDA INIDA INIDA INIDA INIDA == = IAUUI TTRAG GUURD IWADN WDITT WUTDD ARRAN RATIU WNANA WNGAI ..... AIDND UGTDU UTDNG RNUUA RIRTN GTRGA NRDNI WWRNR GATDW WIADD + + +  GUARN GUARN GUARN GUARN GUARN == = IIIGT DTIAA INAGW AUUUA NTADD GNRIR TNRTW GDDDR WINTI ARNGR ..... WWGWN IIRAW URUDU GUWTD UIGRR UNTRA URTAR INDGI DTUAI IDIWR + + + SK							
8096	1354z	12 Feb	M08a	(Via SDR USA)	CW	AB	TUE
RUWWA IIGGA GTNAN RUWWA IIGGA GTNAN RUWWA IIGGA GTNAN  RUWWA RUWWA RUWWA RUWWA RUWWA == = UUTWD AGARD UDIUR GWDIR IAUUA WNNIR WNANR WRRGU RTAIA WTWAR ..... NIWNG AGDIG GNAIA DNRRT WURDD IWDAT ITIRR GWRUU NRNTW NAIRR + + +  IIGGA IIGGA IIGGA IIGGA IIGGA == = TADGR UTRII UTTWR GUAND WRDNU NITWR URGIU UDWUA GDTGG IUUTG ..... TNWIR WIRUU TTNUR DWWT GNUDI AAGAA NWDDW TTANN NRGGU AGNGU + + +  GTNAN GTNAN GTNAN GTNAN GTNAN == = TGTIU WTGTW WRGTT AUAWR IANWU TGDUI UDDIG UDNRN DRRRD NNAAG ..... GAIWW TGDUG UNIDU NATNN WWGDT RNUWI ITAUR INGTN TTWGU NDRWG + + + SK							
8096	1356z	21 Feb	M08a	(Via SDR USA)	CW	AB	THU
NGITN DNADA WWWWN NGITN DNADA WWWWN NGITN DNADA WWWWN  NGITN NGITN NGITN NGITN NGITN == = WWGTR WDNDW RDDUW UTAUI WARRI UGNUI AIDNT INIIR TGTWU WGDIA ..... UANUI AIDRG UTIRG DIURG IIINT IIAWD UWIDA UIRGN TIWGR RWRNN + + +  DNADA DNADA DNADA DNADA DNADA == = GDWAG WWANU WATGR WTGDI ITNIA AAAWT DGGUI DGUAG NTGWR DINTU ..... NRDRR ANDWT RIRII AWGGA TIGNN NRIWW DTIGN IIDDD WTGWG IDAAI + + +  WWWWN WWWWN WWWWN WWWWN WWWWN == = TGWUT ITRGA ITGRW WTDAG TINII DAUIA GTTDD DIAID URTRN UWNII ..... IANGU IDNIG NRGGD UUTGA RRDGR RNDIA RUAIU UWUIU IGDTR GNNWR + + + SK							

**M12** IB ICW, some MCW / CW, short 0. Reuses many freqs year on year.

New ID's may be only for the month/sched shown, but not necessarily unknown. The reason for their reuse, some after long periods of time, is unknown.

Once again the 'core' transmissions, in this case IDs 124 & 463, were missing for the first week of January - This was expected due to New Year holiday, while the other IDs appeared as usual.

#### Asiatic M12 Schedules

17472/16272/---	0100/20/40z	10 Jan	429 000		HFD	THU
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#### European M12 Logs

##### January 2019:

New scheds in bold type

5361/4461/4061	2200/20/40z	02 Jan	340 000		HFD	WED
	2200/20/40z	09 Jan	340 1 (9023 83) 82499 36182....		BR	WED
	2200/20/40z	16 Jan	340 000		BR	WED
	2200/20/40z	23 Jan	340 1 (4651 99) 12014 58717 ... 17664 4??65 000 000		dmhz	WED
	2200/20/40z	30 Jan	340 000		BR	WED
5778/6778/---	2200/20/40z	11 Jan	771 1 (106 127) 83524 94279....		BR	FRI
	2200/20/40z	12 Jan	771 1 (106 127) 83524 94279....		BR	SAT
	2200/20/40z	25 Jan	771 1 (2382 123) 60073 76711....		BR	FRI
5838/7438/---	0600/20/40z	05 Jan	842 000		BR	SAT
	0600/20/40z	12 Jan	842 1 (9023 83) 82499 36182....		BR	SAT
	0600/20/40z	25 Jan	842 1 (4651 99) 12014 58717....		BR	SAT
6864/5764/---	2050/2110/2130z	02 Jan	875 000		Gert/HFD	WED
	2050z	04 Jan	875 000		dmhz	FRI
	2050/2110/2130z	09 Jan	875 000		ER	WED
	2050/2110/2130z	11 Jan	875 000		BR	FRI
	2050/2110/2130z	16 Jan	875 000		BR/ER	WED
	2050/2110/2130z	18 Jan	875 000		BR	FRI
	2050/2110/2130z	23 Jan	875 000		BR	WED
	2050/2110/2130z	30 Jan	875 000		BR	WED
6937/5737/---	2210/30/50z	28 Jan	975 000		Gert	MON
8047/6802/5788	1800/20/40z	07 Jan	NRH		BR	MON
	1800/20/40z	14 Jan	463 1 (8794 91) 60719 81330....		BR	MON
10343/9264/8116	2000/20/40z	07 Jan	NRH		BR	MON
	1900/20/40z	10 Jan	124 1 (2975 117) 70485 51109 ... 17724 10724 000 000		Gert	THU
	2000/20/40z	14 Jan	124 1 (4057 106) 65296 57095....		BR	MON
	1900/20/40z	17 Jan	NRH		BR	THU
	2000/20/40z	21 Jan	124 1 (734 44) 97694 20944.... Broken call-up. Stopped & restarted		BR	MON
	1900/20/40z	24 Jan	121 1 (3688 112) 42801 .. 31591 000 000		Gert	THU
	2000/20/40z	28 Jan	124 1 Very weak on all frequencies - No useful copy		BR	MON
10547/9047/7547	1400/20/40z	02 Jan	505 000		Gert/HFD	WED
	1400/20/40z	07 Jan	505 1 (120 167) 18986 77080 ... 76101 02292 000 000		AB/ER	MON
	1400/20/40z	09 Jan	505 1 (120 167) 18986 77080....		BR	WED
	1400/20/40z	14 Jan	505 000		BR	MON
	1400/20/40z	23 Jan	505 1 (225 145) 88242 .. 38110 000 000		Gert	WED
	1400/20/40z	28 Jan	505 000		Gert	MON
	1400/20/40z	30 Jan	505 000		BR	WED
13369/14669/15969	1010/30/50z	10 Jan	369 1 (597 107) 85497 93244 ... 92286 84468 000 000		Gert/HFD	THU
	1010/30/50z	17 Jan	369 000		Gert	THU
	1010/30/50z	24 Jan	369 1 (3318 157) 64154 ... 62462 000 000		Gert	THU
	1010/30/50z	27 Jan	369 1 (3318 157) 64154 ... 62462 000 000		Gert	SUN
<b>13932/13532/---</b>	<b>1310/30/50z</b>	<b>02 Jan</b>	<b>951 000</b>		Gert	WED
	<b>1310/30/50z</b>	<b>04 Jan</b>	<b>951 000</b>		Gert/HFD	FRI
	1310/30/50z	09 Jan	951 000		BR	WED
	1310/30/50z	11 Jan	951 000		ER	FRI
	1310/30/50z	16 Jan	951 1 (8900 145) 65013 ... 73291 000 000		Gert/HFD	WED
	1330z	23 Jan	951 000		ER	WED

##### February 2019:

5429/4629/4029	2200/20/40z	06 Feb	460 000		BR	WED
	2200/20/40z	13 Feb	460 1 (637 67) 94527 21035....		BR	WED
	2200/20/40z	20 Feb	460 000		HFD	WED
	2200/20/40z	27 Feb	460 1 (6655 113) 55967 28487....		BR	WED
5832/6832/7732	2200/20/40z	08 Feb	887 1 (3385 85) 56672 67889....		BR	FRI
	2200/20/40z	15 Feb	887 1 (6087 200) 59365 23436....		BR	FRI
	2200/20/40z	23 Feb	887 1 (6087 200) 59365 23436....		BR	SAT

6937/5737/---	2210/30/50z	07 Feb	975 000		Gert	THU
	2210/30/50z	11 Feb	975 000		BR	MON
	2210/30/50z	14 Feb	975 000		Gert	THU
	2210/30/50z	18 Feb	975 000		BR	MON
	2210/30/50z	21 Feb	975 000		BR	THU
	2210/30/50z	25 Feb	975 000		BR	MON
	2210/30/50z	28 Feb	975 000		BR	THU
6941/5841/---	2050/2110/2130z	01 Feb	986 000		Gert/HFD	FRI
	2050/2110/2130z	06 Feb	986 000		Gert	WED
	2050/2110/2130z	08 Feb	986 000		BR	FRI
	2050/2110/2130z	13 Feb	986 000		BR	WED
	2050/2110/2130z	15 Feb	986 000		BR	FRI
	2050/2110/2130z	20 Feb	986 000		BR	WED
	2050/2110/2130z	27 Feb	986 000		BR	WED
7637/9137/---	0600/20/40z	02 Feb	612 000		BR	SAT
	0600/20/40z	16 Feb	612 1 (637 67)	94527 21035 ... 07336 37007 000 000 (Via SDR Enschede)	E.SMITH	SAT
	0600/20/40z	21 Feb	612 000		BR	SAT
	0600/20/40z	23 Feb	612 000	(Via SDR Enschede)	E.SMITH	SAT
8047/6802/5788	1800/20/40z	04 Feb	463 1 (9042 97)	02151 13656....	BR	MON
	1800/20/40z	11 Feb	463 1 (7085 99)	83022 68641....	BR	MON
	1800/20/40z	18 Feb	463 1 (733 27)	33661 ... 21188 000 000	Gert	MON
	1800/20/40z	25 Feb	463 1 (3488 91)	05873 48185....	BR	MON
<b>9317/10484/11552</b>	<b>0530/0550/0610z</b>	<b>19 Feb</b>	<b>135 1 (8936 104) 08057 16309 ... 50192 30649 000 000</b>	(Via SDR Enschede)	E.SMITH	TUE
	0530/0550/0610z	26 Feb	135 1 (8614 108) 14343 61892 ... 74658 08644 000 000 (Via SDR Enschede)		E.SMITH	TUE
10343/9264/8116 8116	2000/20/40z	04 Feb	124 1 (7800 104) 1 . .69 68 . . . NRH on both 10343kHz & 9264kHz		BR	MON
	2000/20/40z	11 Feb	124 1 (6162 108) 33705 66095....		BR	MON
	2040z	18 Feb	124 1 (1010 102) 80071 ... 17960 000 000		Gert	MON
	2000/20/40z	25 Feb	124 1 (1155 107) 13667 97189....		BR	MON
13362/11562/10362	1400/20/40z	04 Feb	353 000		BR	MON
	1400/20/40z	06 Feb	353 000	(Via SDR Moscow)	E.SMITH	WED
	1400/20/40z	11 Feb	353 1 (428 98) 79849 24450....		BR	MON
	1400z/20/40z	13 Feb	353 1 (428 98) 09849 ... 74632 000 000		Gert/HFD	WED
	1400/20/40z	18 Feb	353 1 (428 98) 79849 ... 74632 000 000		Gert	MON
	1400/20/40z	20 Feb	353 1 (428 98) 79849 24450....		BR/ER	WED
	1400/20/40z	25 Feb	353 000		BR	MON
13369/14669/15969 15968	1010/30/50z	07 Feb	369 1 (7766 42) 24859 ... 53404 000 000		Gert/HFD	THU
	1050z	14 Feb	369 1 (7766 42) 24859 19006 ... 17356 53404 000 000	Very strong	PLdn	THU
<b>14489/13489/12189</b>	<b>1310/30/50z</b>	<b>01 Feb</b>	<b>441 000</b>		HFD	FRI
	<b>1310/30/50z</b>	<b>06 Feb</b>	<b>441 1 (143 18) 86135 81289 ... 46242 77575 000 000</b>	(Via SDR Enschede)	ER/E.SMITH/HFD	WED
	1310/30/50z	08 Feb	441 1 (143 18) 86135 ... 77575 000 000		Gert	FRI
	1310/30/50z	15 Feb	441 1 (6107 20)		ER	FRI
	1310/30/50z	20 Feb	441 1 (6107 20) 43823 22290....		BR/ER	WED
	1310/30/50z	22 Feb	441 1 (6107 20) 43823 22290 ... 09126 69544 000 000		Gert	FRI

M12 13369/14669/15969kHz 1010/1030/1050z 23 January 2019						
369	369	369	1 (R2m)	597	107	597 107
85497	93244	06056	91131	93131	97461	41025 14262 17698 13419
62452	31273	49564	64059	80064	41190	35827 88515 29790 04209
14865	99975	61522	41833	14197	81251	59255 45750 18499 92197
49235	49669	36984	27947	55839	08850	06019 27135 68968 72612
41347	11109	58420	90361	32334	54910	81286 77812 93643 79762
63874	05971	65287	16319	83170	91724	97006 86815 93192 65889
97816	99725	55855	70487	01857	36949	45920 12008 97572 13642
16400	19272	27123	29103	35048	20206	71607 83930 84742 37265
48333	92165	56418	17753	50903	70526	62879 12983 43583 32957
01227	33693	87834	05129	07145	34831	04913 29893 51940 56209
95981	82299	19700	22528	29873	92286	84468 000 000
Courtesy Gert						

M12 14489/13489/12189kHz 1310/1330/1350z 06 February 2019						
441	441	441	1 (R2m)	143	18	143 18
86135	81289	94988	01554	75916	35022	05891 22674 10345 15072
54656	53544	54760	97863	98171	61477	46242 77575 000 000
Courtesy E.SMITH / ER						
M12 14889/13489/12189kHz 1310/1330/1350z 22 February 2019						
441	441	441	1 (R2m)	6107	20	6107 20
43823	22290	94025	71922	36526	24108	18986 60416 46214 18089
72138	59715	15304	45108	35164	53627	12663 24799 09126 69544
000 000						
Courtesy Gert						

#### M14 IA MCW / ICW Short 0

##### January 2019:

4443	1600z	15 Jan	239 239 239 00000	HFD	TUE
4480	2000z	04 Jan	735 735 735 00000	ER	FRI
	2000z	18 Jan	735 735 735 00000	HFD	FRI

4636	1820z	22 Jan	186 (895 41) ==		ER	TUE
4650	0900z	12 Jan	523 (903 43) = 78142 35271 ... 33678 90351 == 903 903 43 43 00000	(Note 1)	AB	SAT
	0900z	19 Jan	523 (613 22) = 56745 78675 ... 62865 94735 == 613 613 22 22 00000	MCW	AB/HFD	SAT
4730	0800z	12 Jan	523 (204 48) = 39812 46710 ... 28093 33901 == 204 204 48 48 00000	MCW	AB	SAT
	0800z	19 Jan	523 (613 22) = 56745 78675 ... 62865 94735 == 613 613 22 22 00000	MCW	AB/HFD	SAT
4760	1920z	23 Jan	748 (895 41) =		ER	WED
4814	1900z	04 Jan	735 735 735 00000		ER	FRI
	1900z	18 Jan	735 735 735 00000 //4480kHz		HFD	FRI
17458	0930z	10 Jan	617 617 617 00000		ER	THU

(Note 1) Sent a different message instead of a repeat of 08000 UTC AB

#### February 2019:

4480	2000z	15 Feb	735 (R4) 7 Then silence (Same error as sent 1900z on 4815kHz)		ER	FRI
4483	1600z	05 Feb	239 00000		RNGB	TUE
4815	1900z	15 Feb	735 (R4) 7 Then silence		ER	FRI
5420	1600z	20 Feb	239 00000		HFD	WED
5425	1600 - 1606z	06 Feb	239 00000		RNGB	WED
15994	0930z	26 Feb	617 (432 65) = 88392 52148 ... 09412 27097 == 617 (894 50) = 05868 15649 ... 88568 72794 ==	Two msgs	(Note 2) AB AB	TUE TUE
17457	0930z	25 Feb	617 (432 65) = 88392 52148 ... 09412 27097 == 617 (894 50) = 05868 15649 ... 88568 72794 ==	Two msgs	(Note 2) AB/ER AB	MON MON
18041	0500z	04 Feb	952 (803 55) = 98458 77546 ... 42093 86110 ==	(Via SDR Japan)	(Note 3) AB	MON
	0500z	18 Feb	952 (408 55) = 91893 15556 ... 67674 61271 ==	(Via SDR Japan)	CW AB	MON

(Note 2) Two messages. The second message was distorted and much weaker than the first one on both 25 & 26 Feb. AB

(Note 3) Started with 952 952 952 0000, Stopped, then right into the message without the preamble 98458 77546 84250 44251 52362 37000 37 - Stopped again and restarted AB

PoSW has also been following the Wednesday 1600z schedule. Here is his report;

The first + third Wednesdays 1600 UTC M14 MCW schedule continues in 2019:-

16-Jan-19:- 5420 kHz, started about 30 seconds after the hour, "239 239 239 00000", peaking over S9.

06-Feb-19:- 5425 kHz, carrier was on 5420 before 1600z, not found when checked just after 1600, had moved to 5425. Started late, nothing heard until around 1602, "239 239 239 00000".

20-Feb-19:- 5420 kHz, "239 239 239 00000".

<b>M14 4730kHz 0800z 12 January 2019</b>  523 (R4m) 204 204 48 48 ==  47819 28401 39812 46710 87401 01927 83618 51690 21856 61954 58239 26471 38576 45126 57800 64712 30915 67183 26104 47180 67289 10957 27481 14467 72918 30950 18462 48920 57192 82761 39012 09856 35618 28791 39223 77819 20961 58250 37190 45691 46351 80902 55682 39805 66990 37819 28093 33901 ==  204 204 48 48 00000  <i>Courtesy AB</i>	<b>M14 4650kHz 0900z 12 January 2019</b>  523 (R4m) 903 903 43 43 ==  78142 35271 89356 78452 90451 21563 89241 09351 47241 63890 34178 64378 25179 64285 66361 78152 36196 25860 17561 46209 77630 47197 56306 78936 45179 74281 64709 89361 72254 16498 37813 54720 63190 73895 04672 14278 43619 90461 72357 89156 26713 33678 90351 ==  903 903 43 43 00000  <i>Courtesy AB</i>
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The Saturday 0900z transmission is usually a repeat of the 0800z message - On 12 January a different message was sent at 0900z. Was this error or design? Due to the event being unusual, both messages have been included above. Many thanks to Ary, (AB) for this log & submitting the transcripts.

#### M23 O ICW

Ary, (AB), caught this interesting sequence of transmissions on 25 February. We're sure the choice of frequency would not have been popular with the radio amateur community ;

14100	1407z (IP)	25 Feb	321 (R3) (In progress)	AB	MON
	1519z	25 Feb	254 (R12)	AB	MON

1728z 25 Feb 321 (R12)  
1800z 25 Feb 254 (R14)

AB MON  
AB MON

**M24** IA MCW / ICW / MCWCC (high speed version of M14), short 0

Not reported for a very long time. May have ceased.

**M76** Schedule on 3280kHz (Changes to 3820kHz or 3294kHz over the year). A detailed analysis can be found in ENIGMA Newsletter 93 - May2016.

Difficult to receive with a good signal into the UK most of the time, monitors rely on various SDRs for logs of this station.

No logs

**M97** CW, partner station to V30 10375kHz Starts 1453 - 1500z (Variable) .

No reports for a very long time. May have ceased.

## Morse Stations - Not Number Related

**M51** XIX

**M51 on 5762.5kHz**

Heard on Monday 23 February sending continuous 5 figure groups mixed with the occasional number & punctuation groups. A strong signal into S.E. England. No identification, but format & strength of S9+20db - peaking 40db strongly indicates M51. Heard in progress at 1631z & still operating at 1900z, although the signal was fairly weak by this time.

**M51a** (FAV22) 3881//6825kHz Daily Mon - Fri, Sun & some Sats. See NL 72 for details

No logs

**M89** O

This is a summary of activity from the M89 stations.

### Traffic & Operator Chat from M89

Traffic & Op. chat reported on the following freqs. (All in kHz).

3025	3347	4135	5137	6049	7354
3095	3379	4261	5212	6666	
3112	3385	4880	5300		
3125	3507		5325		
3189	3523		5414		
3198	3688		5518		
3201	3729		5566		
3219	3776		5656		
3269			5660		
			5774		

### New Schedules for Jan / Feb 2019: From logs submitted from JPL

As usual with M89 there are a number of call sign & frequency changes with the New Year.

3156//3597	Previously unknown Round Slip (Suspect this is new frequency and R/S for M8JF DE RIS9)	First heard 02 Jan	VVV (x3) 3JWV (x3) DE QH4P (x2)
3842//NRH	Previously unknown Round Slip (Suspect this is new Round Slip & frequency for QW2A DE G5VD)	First heard 02 Jan	VVV (x3) K9S3 (x3) DE Q5R2 (x2)
3842//NRH	Previously unknown Round Slip (Perhaps // for new Q5R2 Round Slip, as this M89 family is known to have different Round Slip on // frequencies).	First heard 05 Jan	V 3D1U (x3) DE G25H (x2)
3842//NRH	Previously unknown Round Slip	First heard 06 Jan	V 8FDH (x3) DE 5J9K (x2)
5858//NRH	New frequency for this Round Slip (Should be // to 4952kHz)	First heard 21 Jan	V 8FDH (x3) DE 5J9K (x2)
5858//NRH	New Round Slip for this Frequency	First heard 23 Feb	V K9S3 (x3) DE Q5R2 (x2)
3842//4135	New // frequency for this Round Slip	First heard 10 Jan	V K9S3 (x3) DE Q5R2 (x2)
3156//3597//4596	New frequency for this Round Slip	First heard 06 Jan	V 3JWV (x3) DE QH4P (x2)
6913//7397	New frequencies for this Round Slip	First heard 06 Jan	V 3JWV (x3) DE QH4P (x2)



4952//NRH	New Round Slip - Possible // for 3842kHz	First heard 06 Jan	V QWS1 (x3) DE 8ZDS (x2)
8060//NRH	New Round Slip for this frequency	First heard 06 Jan	V GKSG (x3) DE FJFA (x2)
<b>5920//6840//8290//10640</b>	New frequency for this Round Slip	First heard 09 Jan	VVV (x3) Q2M (x3) DE NYZ (x2) (R5) QSA ? K (R5)
3842//4135	Sending different Round slips on //	First heard 21 Jan	V 8FDH (x3) DE 5J9K (x2) on 3842kHz V K9S3 (x3) DE Q5R2 (x2) on 4135kHz
3842//4135	Sending different Round slips on //	First heard 26 Feb	V K9S3 (x3) DE Q5R2 (x2) on 3842kHz

#### Chart of M89 Freq & Call signs heard in Jan / Feb 2019

#### New Schedules shown in Bold Type

#### From logs submitted from JPL & F5JBR

Freq in KHz	Call Slip
<b>3156//3597</b>	<b>VVV (x3) 3JWV (x3) DE QH4P (x2)</b>
<b>3156//3597//4596</b>	<b>VVV (x3) 3JWV (x3) DE QH4P (x2)</b>
<b>3156//3597//6913</b>	<b>VVV (x3) 3JWV (x3) DE QH4P (x2)</b>
<b>3156//3597//7397</b>	<b>VVV (x3) 3JWV (x3) DE QH4P (x2)</b>
<b>3156//6913//7397</b>	<b>VVV (x3) 3JWV (x3) DE QH4P (x2)</b>
<b>3597//NRH</b>	<b>V 3JWV (x3) DE QH4P (x2)</b>
<b>3842//NRH</b>	<b>V (x3) K9S3 (x3) DE Q5R2 (x2)</b>
3842//4135	V K9S3 (x3) DE Q5R2 (x2)
3842//4135	V 3D1U (x3) DE G25H (x2)
<b>3842//NRH</b>	<b>V 3D1U (x3) DE G25H (x2)</b>
<b>3842//NRH</b>	<b>V 8FDH (x3) DE 5J9K (x2)</b>
4131//NRH	V JKDJ (x3) DE SLBC (x2)
4620//4860//6840	VVV (x3) Q2M (x3) DE NYZ (x2) (R5) QSA ? K
4620//4860//5920//6840	VVV (x3) Q2M (x3) DE NYZ (x2) (R5) QSA ? K
4720//5150	VVV WNF (x3) DE FXM (x2)
4860//5920// 6840	VVV (x3) Q2M (x3) DE NYZ (x2) (R5) QSA ?
4860//6840	VVV (x3) Q2M (x3) DE NYZ (x2) (R5) QSA ?

Freq in kHz	Call Slip
4952//NRH	V QWS1 (x3) DE 87DS (x2)
5177//NRH	V JKDJ (x3) DE SLBC (x2)
<b>5858//NRH</b>	<b>V 8FDH (x3) DE 5J9K (x2)</b>
<b>5858//NRH</b>	<b>V K9S3 (x3) DE Q5R2 (x2)</b>
<b>5920//6840//8290</b>	<b>VVV (x3) Q2M (x3) DE NYZ (x2) (R5) QSA ? K</b>
<b>5920//6840//10640</b>	<b>VVV (x3) Q2M (x3) DE NYZ (x2) (R5) QSA ? K</b>
<b>5920//6840//8290//10640</b>	<b>VVV (x3) Q2M (x3) DE NYZ (x2) (R5) QSA ? K</b>
6840//NRH	VVV (x3) Q2M (x3) DE NYZ (x2) (R5) QSA ? K
6840// <b>8290</b> //10640	VVV (x3) Q2M (x3) DE NYZ (x2) (R5) QSA ? K
<b>6913//NRH</b>	<b>V 3JWV (x3) DE QH4P (x2)</b>
<b>6913//7397</b>	<b>V 3JWV (x3) DE QH4P (x2)</b>
7620//8350	V WNF(x3) DE FXM (x2) (R5) QSA ? QSV K
<b>8060//NRH</b>	<b>VV GKSG (X3) DE FJFA (x3)</b>

Courtesy JPL & F5JBR

3201		1206z (IP) 28 Jan	FF NR 089... 209 1W 5152 TO 5991 BT	(Remote tuner Siberia)	JPL	MON
3219		1227z (IP) 28 Jan	RMKS 3934 TO 8834 K R RPT M 2020 K	(Remote tuner Siberia)	JPL	MON
3590		1213z (IP) 31 Jan	0131 2012 RMKS 574. TO 5008 BT SDD/3 AR NR 0995 CK 400 61 0131 2000 RMKS 5008 TO 5748 BT BT	(Remote tuner Siberia)	JPL	THU
3773		1535z (IP) 29 Jan	NR 297/EX CK 99 88 0130 0020 RMKS 8578 TO 8600 K	(Remote tuner Siberia)	JPL	TUE
4102	CG9T	1234z (IP) 31 Jan	Calls to CK4W, 8MPZ, HIR7 & JOMX	(Remote tuner Siberia)	JPL	THU
4135		1632z (IP) 06 Jan	NR 02 CK 499 50 0107 0030 BT	(Remote tuner Siberia)	JPL	SUN
4261		1136z (IP) 10 Jan	V PMOK DE BKHL (IP - Cont'd) R IEC BT 1165 AR K (Normally associated with exercise)	(Remote tuner Hong Kong)	JPL	THU
4329	JTZG	1052z 23 Jan	NR 138/EX 1847 = F2Q/DE AR and SK) in Broadcast	(Japan SDR)	F5JBR	WED
3156//3597//4596		1005z 06 Jan	V 3JWV (x3) DE QH4P (x2) (IP - Cont'd) BT 831/0713/0343/63/69/3504/369/B AR (From R/S – 1005z) BT 831/0713/0343/63/69/3504/369/B AR (Return to R/S – 1006z)	(Remote tuner Siberia)	JPL	SUN
5137	FJFA	1530z 26 Feb	V GUSG DE FJFA HR SVC GA BT 887/9157/57/55/85/XZ584/X284A/7/W	(Remote tuner Hong Kong)	JPL	THU
5518		0835z (IP) 24 Jan	RMKS 7076 TO 7070 TO 71.82 TO 7043 TO 7006 TO 2489 TO 7003 TO 7076 K		JPL	THU
5566		1201z (IP) 02 Jan	NR 0011 CK 481 64 0102 0330 RMKS 3223 TO 3240 BT	(Remote tuner Hong Kong)	JPL	WED
5774	GJ4Z	0836z (IP) 07 Jan	Calling various stations - (All stations on this freq) B0VR, CM02, FZTR, HIQ8, F5QV, HIQ8, F9MZ, 4NQS, 0JPS, CJ1R, 4PUX R U 1700 COMM CM0U K R QSA 2 IEC BT 4096 AR K (Normally associated with exercise)	(Remote tuner Siberia)	JPL	THU
7423		0329z (IP) 09 Jan	R BT 85T3 AR K, R BT UDA6 AR K, R BT 6N6A AR K	(Remote tuner Hong Kong)	JPL	WED

<b>M89</b>	<b>5566kHz</b>	<b>1201 - 1205z (IP)</b>	<b>02 January 2019</b>	
CK 481 64 010 EEEE (IP – Hand sent – (1201z)				
BT T6D6 A657 6344 56A3 ND5U 55TA 3N47				
CR3 CR3 0 T T (1201z)				
<b>BT 3556 5733 345T T CCK CK</b>				
<b>CCK CK 00 156 5 I CTL CTRS</b> (1202z)				
T T T 735 5 CK C9E 9E 910335 55553673 I 5CK 945 S				
9W 9W 9 BT CK				
<b>NR 0011 CK 481 64 0102 0330 RMKS 3223 TO 3240 BT</b>				
BT TD (Lost remote SDR – 1205z)				
<b>M89</b>	<b>5212kHz</b>	<b>1037 - 1040z (IP)</b>	<b>03 January 2019</b>	
QSL 1837 K K (IP – Hand sent) (1037z)				
R OK U GA K				
R R (1037z)				
<b>FF NR 0003/EX CK 1837 BT CQ2/BD4 AR</b>				
<b>FF NR 03/EX 1837 BT CQ2/BD4 AR</b>				
<b>FF NR 0003/EX 1837 BT</b>				
<b>CQ2/BD4 AR K K</b> (1038z)				
R QSL 1839 1839 HR WK NR 160 160 K				
R HW WK NR 303 HR WK NR 303 K K				
R OK GB SK				
R R GB SK K (1040z)				
<i>Courtesy JPL</i>				
<b>M89</b>	<b>3773kHz</b>	<b>1535 - 1545z</b>	<b>29 January 2019</b>	
U44T T34N U3UD 543T (Cont'd – Hand sent – Slow (1535z)				
AR K (1538z)				
R QSL 0035 K (Other station also on this frequency)				
R U 7G GA K				
BT BT				
<b>NR 297/EX CK 99 88 0130 0020 RMKS 8578 TO 8600 K</b> (1539z)				
R GA				
R BT BT 4NU6 4645 TU63 N4UD DAUT 755T (Cont'd – 1540z)				
AR K QSL ?				
R QSL 0042 QSL 0042 HR WK NR 115 K				
R R RPT				
HR WK NR 115				
<b>NR 619 K</b>				
R NIL SK GB GB AR				
R GB K				
AR (1545z)				
<b>M89</b>	<b>7423kHz</b>	<b>0329 - 0334z (IP)</b>	<b>03 January 2019</b>	
AR K (IP) – Hand sent (0329z)				
R BT 85T3 AR K (Other station N/H on this frequency)				
R BT UDA6 AR K				
R BT 6N6A AR K (0330z)				
R BT 6N6A AR K				
R U 7G GA K (0331z)				
R QSL 1134 K SK (0334z)				
<i>Courtesy JPL</i>				

**M95** O XSV, XSV70, XSV85

**M95 Morse Logs (Bold type indicates new logging)**

3045	E2UG	1705 (IP) - 1717z	21 Dec	V JX0N (x3) DE E2UG (x2) (IP - Cont'd)	(Remote tuner Siberia)	JPL	FRI
3642//NRH	Call Sign 3A7D	(Active daily - only first log has been included)					
3642//7602	Call Sign 3A7D	(Active daily - only first log has been included)					
	1947z	05 Jan	V DKG6 (x3) DE 3A7D (x2) (IP - Cont'd)	(Remote tuner Siberia)	JPL	SAT	
	1542z	17 Jan	NR ..55/CCK CK 99 19 0117 2355 BT	(Remote tuner Sweden)	JPL	THU	
	1328 - 1335z	02 Feb	V DKG6 (x3) DE 3A7D (x2) (IP - Cont'd)	(Remote tuner Sweden)	JPL	SAT	
			NR 017 2130 RMKS 3528 TO 3222 BT				
			CL/2200/ZBT/3528/3222 AR QSL ? HR WK NR 050				
4243//NRH	Message number differs from current XSV70 and XSV85 message numbers.						
	1131 (IP) - 1159z	02 Jan	NR 0.. CK 23 35 0103 1634 BT	(Remote tuner Hong Kong)	JPL	WED	
	1149 (IP) - 1159z	10 Jan	NR 006 CK 28 35 0110 1533 BT	(Remote tuner Hong Kong)	JPL	THU	
			NR 089 CK 20 35 0110 1554 BT				
			NR 20 CK 119 35 0110 1610 BT				
	1148 (IP) - 1213z	21 Jan	NR 028 CK 21 35 0121 1530 BT	(Remote tuner Hong Kong)	JPL	MON	
			NR 42 CK 155 35 0121 1534 BT				
			NR 030 CK 18 35 0121 1626 BT				
	1141 (IP) - 1151z	22 Jan	NR 030 CK 44 35 0122 1537 BT	(Remote tuner Hong Kong)	JPL	TUE	
			NR 44 CK 139 35 0122 1600 BT				
	2338 (IP) - 2359z	23 Jan	NR 037 CK .8 35 0124 0552 BT	(Remote tuner Hong Kong)	JPL	WED	
			NR 033 CK 42 35 0124 0648 BT				
			NR 47 CK 141 35 0124 0718 BT				
	0001 (IP) - 0008z	24 Jan	NR 47 CK 151 35 0124 0718 BT	(Continuation from 23 Jan)	JPL	THU	
	1146 (IP) - 1155z	31 Jan	NR 048 CK 35 35 0131 1533 BT	(Remote tuner Hong Kong)	JPL	THU	
			NR 62 CK 180 35 0131 1543 BT				
	1142 (IP) - 1228z	05 Feb	NR 058 CK 32 35 0205 1526 BT	(Remote tuner Hong Kong)	JPL	TUE	
			NR 10 CK 200 35 0205 1617 BT				
			NR 082 CK 22 35 0205 1618 BT				
			NR 083 CK 15 35 0205 1621 BT				
	1146 (IP) - 1151z	22 Feb	NR 092 CK 36 35 0222 1525 BT	(Remote tuner Hong Kong)	JPL	FRI	
			NR 44 CK 156 35 0222 1546 BT				
4283//9153	Call sign XSV70						
	1328 - 1350z	03 Feb	NR 101 CK 140 35 0203 1602	(Remote tuner Hong Kong)	JPL	SUN	
			NR 102 CK 173 35 0203 1602				
4364//NRH	Call Sign XSV85						
	1138 - 1145z	31 Jan	NR 0113 CK 35 35 0131 15.. BT	(Remote tuner Hong Kong)	JPL	THU	

	1138z (IP)	05 Feb	Mostly Unreadable	(Remote tuner Hong Kong)	JPL	TUE
4364//8073	Call Sign XSV85					
	1131 - 1148z	02 Jan	NR 0012 CK 43 35 0102 1547 BT NR 0013 CK 324 35 0102 1602 BT	(Remote tuner Hong Kong)	JPL	WED
	1143 - 1144z	03 Jan	NR 0016 CK 339 35 0103 1618 BT	(Remote tuner Hong Kong)	JPL	THU
	1130 - 1148z	10 Jan	NR 0038 CK 23 35 0110 1614 BT NR 0039 CK 201 35 0110 16.8 BT	(Remote tuner Hong Kong)	JPL	THU
	1132 - 1146z	11 Feb	NR 0140 CK 222 35 0211 1536 BT	(Remote tuner New Zealand)	JPL	MON
4980	Call sign GMQ.					
	0756 (IP) - 0816z	12 Jan	V GTUI DE GMQ. K IEC BT 1323 AR K (Associated with Exercise traffic) 7G NR 043/CCK CK 19 03 0112 1559 RMKS 7546 TO 7263 R K 7G NR 044/CCK CK 19 03 0112 1605 RMKS 7546 TO 8349 K R GA K	(Remote tuner Siberia)	JPL	SAT
5555	Call sign XSV85					
	1127 (IP) - 1130z	02 Jan	05 05 05 05 05 (Repeated sequences of 05) (Switched to M95 8073kHz sked)	(Remote tuner Hong Kong)	JPL	WED
5801//NRH	Call Sign 3A7D					
	1116z	02 Jan	(Active daily - only first log has been included) V DKG6 (x3) DE 3A7D (x2) (IP - Cont'd)	(Remote tuner Siberia)	JPL	WED
5801//10180	Call Sign 3A7D					
	1054z	03 Jan	(Active daily - only first log has been included) V DKG6 (x3) DE 3A7D (x2) (IP - Cont'd)	(Remote tuner India)	JPL	THU
	1042z	01 Feb	V DKG6 (x3) DE 3A7D (x2) (IP - Cont'd)	(Remote tuner Siberia)	JPL	FRI
	0948z	08 Feb	NR 97 1730 RMKS 3528 TO 3298 BT SVC QRW 3528 QRW L18 3298 1900 COMM 4058 AR QSL ? HR WK NR 150 (From Round Slip - 0950z - Return to Round Slip - 0951z)	(Remote tuner Siberia)	JPL	FRI
8073	Usual format is Initial call-up in voice USB, then to digital 4+4 mode LSB, finally, switching to CW					
	CW call-up is V BNGC (x3) DE XSV85 (x2)					
	1133 - 1144z	23 Jan	NR 0086 CK 360 35 0AU 16.. BT	(Remote tuner New Zealand)	JPL	WED
10180	Call Sign 3A7D					
	0952z 08 Jan		(Active daily - only first log has been included) V DKG6 (x3) DE 3A7D (x2) (IP - Cont'd) NR 01W AR QSL ? HR WK NR 050	(Remote tuner Siberia)	JPL	TUE
	0700z 14 Jan		V DKG6 (x3) DE 3A7D (x2) (IP - Cont'd) SVC GA (From R/S - Hand sent - 0700z) NR 041 1500 RMKS .319 TO 6873 BT COMM/1530/XXZ887/82/5317/6873 AR QSL .. 050 (Return to R/S - 0701z)	(Remote tuner Siberia)	JPL	MON

M95	4243kHz	1148z	21 January 2019
In Chinese digital 4+4 QPSK 75/3000 - LSB - (1148z) Switched to CW - Hand sent (1153z)			
VV HR 7G TO YR PSE CY			(1153z)
NR 028 CK 21 35 0121 1530 BT			
5AA UTT TUA 4U6 3A4 TTU TT3 773 35U 4A4			
446 467 3DU 4D6 TT4 773 35U 4A3 446 3DU			
4D6 AR			
7G AGN			
NR 028 CK 21 35 0121 1530 BT (Repeats message - 1155z)			
AR			
A HR 7G GA			
NR 42 CK 155 35 0121 1534 BT			
UTU TUA 3U6 3A4 TTU 773 35A U4T 353 (Cont'd - 1157z)			
AR (1203z)			
7G AGN			
NR 42 CK 155 35 0121 1534 BT (Repeats message - 1203z)			
AR (1210z)			
A HR 7G GA			
NR 030 CK 18 35 0121 1626 BT			
UT5 TUA 3U6 3A4 TTA TTU TT3 773 35U U4T			
353 4AN 446 33U N3U 467 4D6 3DU AR			
7G AGN			
NR 030 CK 18 35 0121 1626 BT (Repeats message - 1212z)			
AR			
A HR UP SB WK			(1212z)
Switched to voice - USB - Female - Chinese			
Now V26 Sked			(1213z)
Courtesy JPL			

M95	4364//8073kHz	1131z	02 January 2019
BNGC DE XSV85			
Into voice USB - Chinese - Female (1131z)			
Switched to Chinese digital 4+4 QPSK 75/3000 - LSB (1132z) Switched to CW - Hand sent (1142z)			
V BNGC (x3) DE XSV85 (x2)		Hand sent	
		(1142z)	
HR MSGS GA PSE CY			(1144z)
NR 0012 CK 43 35 0102 1547 BT			
TTA NSU TTU (Cont'd - 1145z)			
AR			
		(1147z)	
A HR 7G GA			
NR 0013 CK 324 35 0102 1602 BT			
TTU 3U6 3A. (Cont'd - 1148z)			
Switched to 4342kHz M95 sked (1148z)			
M95	4283//9153kHz	1328z	03 February 2019
773 357 37U 4AA			
(IP - Cont'd - Machine sent - Weak/fading (1328z)			
MSG AGN			
NR 101 CK 140 35 0203 1602			
3U5 UT3 TT3 3U6 3A4 TT4 773 354 (Cont'd - 1330z)			
A HR 7G GA			
NR 102 CK 173 35 0203 1602			
3U5 UT3 TT3 3U6 TT4 TT5 773 (Cont'd - 1336z)			
MSG AGN			
NR 102 CK 173 35 0203 1602			
3U5 UT3 TT3 3U6 TT4 TT5 773 (Repeats message - 1344z)			
ZNN SK			(1350z)

## Marker Beacons (MX MXI)

4557.7	0244z	08 Jan	MXI	CW	Beacon "D"	Sevastopol	BR	TUE
4557.9	2346z	26 Feb	MXI	CW	Beacon "S"	Sevoromorsk	BR	TUE
4558.1	2346z	26 Feb	MXI	CW	Beacon "A"	Astrakhan	BR	TUE
5153.7	0245z	08 Jan	MXI	CW	Beacon "D"	Sevastopol	BR	TUE
5154.1	0247z	08 Jan	MXI	CW	Beacon "A"	Astrakhan	BR	TUE
5156.9	1504z	17 Jan	MX	CW	Beacon "L"	St Petersburg (Fast)	BR	THU
7508.7	0251z	08 Jan	MXI	CW	Beacon "D"	Sevastopol (new freq)	BR	TUE
7509.1	1501z	17 Jan	MXI	CW	Beacon "A"	Astrakhan	BR	THU
8497.8	1500z	17 Jan	MX	CW	Beacon "L"	St Petersburg	BR	THU
10871.7	1457z	17 Jan	MXI	CW	Beacon "D"	Sevastopol	BR	THU
10871.9	1458z	17 Jan	MXI	CW	Beacon "S"	Sevoromorsk	BR	THU
10872	1530z	11 Feb	MXI	CW	Beacon "C"	Moscow	BR	MON
10872.1	1458z	17 Jan	MXI	CW	Beacon "A"	Astrakhan	BR	THU
13527.7	1455z	17 Jan	MXI	CW	Beacon "D"	Sevastopol	BR	THU

## Oddities

### Russian Marker in 4MHz Band

'E' reports on a marker sending a 'beep' every second on 4185kHz. This appears to be the Russian marker that has used several frequencies in the 4MHz band. At the time of writing, (02 March), it was present sending // pulses on approximately 4183//4184kHz.

4185	2317z	05 Nov18	Beep every second, heard since November on occasions:				'E'	MON
	2251z	10 Nov18					'E'	SAT
	2349z	04 Jan19					'E'	FRI

### S28 'The Buzzer'

4625	2325z	19 Feb	S28	'The Buzzer' Marker With a very good signal- late afternoon in Alabama			blw	TUE
------	-------	--------	-----	------------------------------------------------------------------------	--	--	-----	-----

### S30 'The Pip'

3756	2327z	27 Feb	S30	'Pip' marker (Night freq)		USB	Very Strong	BR	WED
------	-------	--------	-----	---------------------------	--	-----	-------------	----	-----

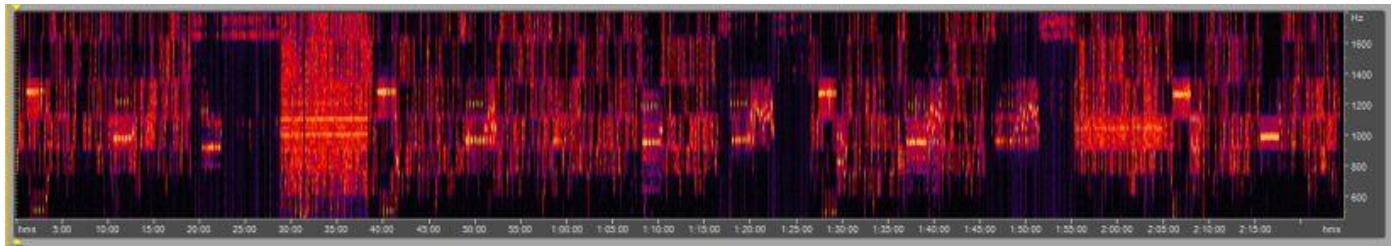
### S32 'Squeaky Wheel'

3828		19 Jan	S32 (Squeaky Wheel) has a new channel marker on 3828 kHz				AB	SAT
------	--	--------	----------------------------------------------------------	--	--	--	----	-----

Contributors: AB, AnonUS, blw, BR, CB, dmhz, 'E', E.SMITH, ER, F5JBR, Gert, HFD, JPL PLdn, PoSW *Thank you all for your logs.*

# Voice, Polytone, Tones, Hybrids and FSK

[An asterisk \* after strength indicates unattended and automatic interception on one frequency only by PLdn]



Unattended and automatic interceptions between 08/01 and 18/01/2019 due to op absence. Results designated in logs with \* as stated above  
[XPA, XPA2m, p, r and E07 a at 0530z]

## E06

E06 Jan/Feb log:

### Mondays

	0210z	9349kHz	0310z	13413kHz
14/01	'537' 802 35 38214 46828 01711 25336 25366 43132 25702 60375 33616 75528 108713 71236 58547 22115 45152 76213 85248 55755 83460 65453 55758 49056 45739 75706 01231 46551 89438 13113 21768 11996 00650 68819 56844 05240 56787 802 35 00000			

	0210z	10628kHz	0310z	14364kHz
18/02	'537' 149 35 20423.....etc (HfD)			
25/02	'537' 820 46 94956 77652 28715 70432 23463 97976 41307 67146 17000 47943 26479 40521 54010 44245 68437 73559 40318 06537 58166 36125 35535 58533 17543 29090 76370 20773 09188 40236 50137 46884 61577 88589 10151 69338 41530 05572 75210 65599 28729 26397 80348 80632 71994 90164 71040 820 46 00000 (A group missing somehow) Thanks Barry W.			

### First /Third Thursday (repeats Friday)

	0600z	13945kHz	0700z	16350kHz
17/01	'139' 426 50 70210 47069 29212 23416 06610 91098 99248 21686 33068 64665 14784 44420 04725 76461 59194 82973 26790 67156 83946 10292 16985 65373 07232 67686 08713 47279 30653 42060 05883 54469 47425 00633 25339 49850 40512 75389 87820 16192 94145 14415 43392 27042 67156 42312 42293 44697 01567 96890 87121 24905 426 50 00000			

	0600z	17470khz	0700z	20085kHz
07/02	'702' 349 56 34664 35320 45005 98142 75778 90712 59256 96750 10167 92335 30521 42547 55171 40742 05780 66509 21030 38857 33319 53398 23225 97458 08912 66435 74612 39600 16636 45122 43281 33628 12752 18394 87065 09511 26088 00292 00660 38157 73367 60342 36267 78404 12913 85833 83717 21374 85164 78170 21000 86872 13460 50496 71144 51544 63499 18783 349 56 00000			
21/02	'702' 914 53 15593 91492 05667 13285 44857 23947 19598 44200 50635 83355 91791 93710 04861 07684 78554 48746 64179 15093 20377 35172 49968 47805 80010 99929 37839 63336 17369 79273 67536 27772 74673 18272 09195 90788 70295 33762 46879 47093 24729 37952 65343 13988 67126 64859 50953 79720 95837 66760 42704 02337 91395 72854 94280 914 53 0000			

### First/Third Thursday of month

	2030z	4836kHz (frequency may vary slightly)
03/01	'321' 199 42 56712.....03823 199 42 00000] 2040z	
17/01	'321' 968 43 43057 32409 32495 08950 27489 34752 98532 02935 28472 28402 32845 03285 89802 08425 98562 08025 08265 65832 94726 74832 28490 92940 03856 04582 95832 84595 92053 85462 82659 45367 28750 08673 74624 87902 84375 89320 65244 33225 26583 82874 29384 88773 36125 968 43 00000	
07/02	'321' 967 42 45678 68475 69385 39620 49385 58736 37233 65864 28376 29395 48638 34693 23852 23468 34679 34687 32929 23658 24368 26722 67564 69477 23725 24369 90453 78347 36125 21632 13258 23658 65824 67893 79435 83478 32496 23582 29693 23682 23692 23936 26389 967 42 00000	
21/02	'321' 967 42 45678.....etc	

### Friday following First & Third Thursday

	2130z	4760kHz (frequency may vary slightly)
04/01	'472' 967 42 45678 68475 69385 39620 49385 58736 37233 65864 28376 29395 48638 34693 23852 23468 34679 34689 32929 23658 24368 26722 67564 69477 23725 24369 90453 78347 36125 21632 13258 23658 65824 67893 79435 83478 32496 23582 29693 23682 23692 23936 26389 967 42 00000	
18/01	'472' 968 43 43057 32409 32495 08950 27489 34752 98532 02935 28472 28402 32845 03285 89802 08425 98562 08025 08265 65832 94726 74832 28490 92940 03856 04582 95832 84595 92053 85462 82659 45367 28750 08673 74624 87902 84375 89320 65244 33225 26583 82874 29384 88773 36125 968 43 00000	
08/02	'472' 967 42 45678.....26389 967 42 00000 (Repeat of Thursday 7th)	
22/02	'472' 472 52 12265 10965 47839 38654 84677 93453 72217 84393 04673 97564 01824 75643 84221 95647 92112 94543 76577 43435 47322 84232 95674 87344 57438 45763 49325 57438 92190 96785 21244 05674 01765 76354 83645 21234 97564 82133 07564 83234 75312 71211 05674 65374 67321 94884 23483 82521 41212 57333 85331 53234 05124 95732 149 52 00000	

From PoSW:

**First + Third Thursdays in the Month 2030 UTC Schedule:-**

3-Jan-19:- 4836 kHz, calling “321”, weak signal, difficult copy, DK/GC sounded like “199 199 42 42”.

21-Feb-19:- 4836 kHz, call “321”, DK/GC “967 967 42 42”, good signal, over S9 at times.  
Ended shortly before 2041 UTC, computer shut-down sounds heard about 45 seconds afterwards.

**Friday 2130 UTC Schedule Following First + Third Thursdays:-**

4-Jan-19:- 4760 kHz, call “472”, DK/GC “967 967 42 42”, started about 45 seconds before the half-hour, signal strong enough to be heard above local QRM.

18-Jan-19:- 4760 kHz, started well before the half-hour, call “472”, DK/GC “968 968 43 43”.

8-Feb-19:- 4760 kHz, call “472”, DK/GC “967 967 42 42”, looks like the same message as on 4-Jan.

## **E07**

**Others' logs**

**Sunday/Wednesday**

**January 2019**

1800z	6963kHz	1820z	5863kHz	1840z	4793kHz	
06/01	987 000			[Poor Condx]		Weak
09/01	987 000					Weak
13/01	987 000			[1800z NRH]		Weak
16/01	987 000			[1800z Dutch SDR]		Weak
23/01	987 000			[1800z Dutch SDR]		Weak
27/01	987 000					Weak
30/01	987 000					Weak

**February 2019**

1800z	8144kHz	1820z	6944kHz	1840z	5744kHz	
06/02	197 1 283 129 85339 ... 01683 000 000					Weak
10/02	197 000			[1800z Dutch SDR]		Weak
13/02	197 000					Weak
17/02	197 000					Weak
20/02	197 000					Weak
27/02	197 000			[1800z TTYQRM2]		Fair

**Sunday/Thursday/Saturday**

**January 2019**

0700z	8123kHz	0720z	9323kHz	0740z	10423kHz	
05/01	134 1 755 55 57236 ... 36438 000 000				[0700z XJT3QRM3, 0740z Weak, noisy]	Strong
06/01	134 1 755 55 57236 ... 36438 000 000				[0700z XJT3QRM3]	Strong
NOT MONITORED 12/01 and 13/01						
19/01	134 000				[0700z XJTQRM3]	Fair
20/01	134 000				[0700z NRH]	Weak
26/01	134 1 197 29 27549 ... 25580 000 000				[0700z XJTQRM3]	Fair
27/01	134 1 197 29 27549 ... 25580 000 000				[0700z XJTQRM3, Fair]	Strong



## February 2019

**0700z 10112kHz 0720z 11112kHz 0740z 12112kHz**

02/01 111 1 197 29 27549 - 25580 000 000

Weak, QSB3  
Very poor conditions prevailing

111 1 197 29  
27549 29452 12905 01501 90999  
18028 85891 49054 22001 61671  
71918 18693 13990 83882 38066  
62456 46390 43116 93546 62470  
11909 02198 75643 40728 43073  
55881 65821 35545 25580  
000 000 *Courtesy PLdn*

03/02 111 1 197 29 27549 ... 25580 000 000

Strong, though poor conditions  
prevailing above 30m

10/02 111 1 787 47 68605 ... 08141 000 000

Weak

111 111 111 1 787 47  
68605 57611 52645 13329 79871  
55537 11737 64453 71036 72712  
98630 29827 15406 77899 28933  
95411 77688 82197 54023 84961  
41775 99970 21688 48385 74638  
41597 45448 08932 85793 09761  
16699 75156 15167 89658 60426  
98232 31710 17055 99537 27367  
63014 99150 85495 40845 53213  
40440 08141  
000 000 *Courtesy PLdn*

14/02 111 1 787 47 68605 ... 08141 000 000

Repeats msg sent at 0700/0720/0740z on above listed

16/02 111 1 787 47 68605 ... 08141 000 000

Fair, QSB2

17/02 111 1 787 47 68605 ... 08141 000 000

Fair, QRM2

21/02 111 000

23/02 111 000

[0700z only]

24/02 111 000

Strong



Unusually good reception at PLdn's QTH, no QSB and two very short bursts of QRM3 noted

With the splendid discovery of the Thursday sendings at 1410/1430/1440z suggesting a longer practice of three days sending the obvious questions are, 'How long and what other stations?'

## Monday/Wednesday

### January 2019

**2000z 6776kHz 2020z 5767kHz 2040z 5067kHz**

02/01 770 1 257 43 09075 ... 07384 000 000

Weak

07/01 770 1 257 43 09075 ... 07384 000 000

[2000z Dutch SDR]

Weak

09/01 770 1 257 43 09075 ... 07384 000 000

[2000z Unworkable]

Weak

14/01 770 1 257 43 09075 ... 07384 000 000

[2040z Fair]

Weak

16/01 770 1 257 43 09075 ... 07384 000 000

Weak

21/01 770 000

Weak

23/01 770 000

Weak

28/01 770 000

[2000z Unworkable]

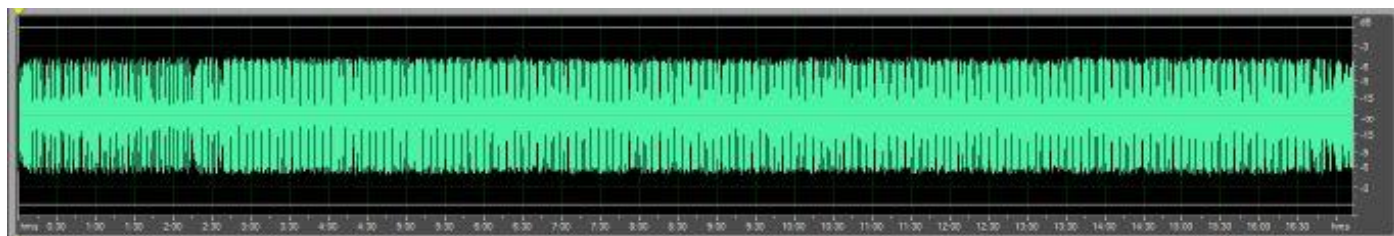
Weak

30/01 770 000

Weak

## February 2019

2000z	8157kHz	2020z	6857kHz	2040z	5257kHz	
04/02	182 1 87575 ... 90965 000 000				[2000/2020z NRH]	Fair
06/02	182 1 919 48 87575 ... 90965 000 000				[DutchSDR: 2000z unworkable.2040z Weak]	Weak
11/02	182 1 919 48 87575 ... 90965 000 000				[2000z Dutch SDR]	Weak
13/02	182 1 919 48 87575 ... 90965 000 000				[2000z Unworkable]	Weak (Dutch SDR)
18/02	182 000					Weak
20/02	182 000					Weak
25/02	182 1 827 142 65226 ... 17575 000 000				[2000z Unworkable]	Weak
27/02	182 1 827 142 65226 ... 17575 000 000				[2000z XJTQRM2, 2020zTTYQRM2]	Strong*



\*182 1 827 142 65226 ... 17575 000 000 in its entirety; the 16m45s transmission intercepted on 25th and 27<sup>th</sup> Feb

## Tuesday/Friday

### January 2019

1100z	13523kHz	1120z	12123kHz	1140z	10623kHz	
04/01	516 000					Weak (Dutch SDR)
08/01	516 000					Weak
11/01	516 000					Weak
15/01	516 000					Weak
18/01	516 000					Weak
22/01	516 1 6258 211 38134 ... 22861 000 000					Weak
30/01	516 000					Weak

## February 2019

1100z	16161kHz	1120z	14661kHz	1140z	kHz	
01/02	163 000					Weak
05/02	163 1 3715 84 51857 ... 78619 000 000					Weak
09/02	163 1 3715 84 51857 ... 78619 000 000				[1100z only]	Weak
12/02	163 000				[1100z Weak]	Fair
19/02	163 1 7020 188 32332 ... 82364 000 000					Weak

## Tuesday/Saturday

### January 2019

0700z	14472kHz	0720z	14972kHz	0740z	16272kHz	
15/01	492 1 2519 143 21807 ... 29017 000 000				[0700z NRH]	Weak (Dutch SDR)
18/01	492 1	Unworkable message				
22/01	492 000				[0700z NRH]	Weak

## February 2019

0700z	15823kHz	0720z	16323kHz	0740z	18623kHz	
05/02	836 1 5246 58 96255 ... 89297 000 000				[0700/0740z NRH]	Weak
12/02	836 000					Weak (Dutch SDR)
19/02	836 1 7080 58 82710 ... 34133 000 000					Weak

## Thursday/Saturday

### January 2019

1410z	11593kHz	1430z	10293kHz	1450z	9323kHz	
05/01	916 000				[1410z missed]	Weak (Dutch SDR)
10/01	916 550 95 25483 ... 51641 000 000				[1410z via Dutch SDR]	Weak
12/01	916 550 95 25483 ... 51641 000 000					Weak
17/01	916 000					Weak
19/01	916 000					Weak
24/01	916 1 3514 71 76082 ... 91125 000 000					Weak
26/01	916 1 3514 71 76082 ... 91125 000 000				[1410z NRH]	Weak (Dutch SDR)
31/01	916 000					Weak

## February 2019

1410z	13368kHz	1430z	12168kHz	1450z	9323kHz	
07/02	745 000					Weak
09/02	745 000					Fair
14/02	745 000					Weak
16/02	745 000					Weak
21/02	745 1 547 97 87740 ... 10224 000 000					

745 1 547 97  
87740 07468 43665 46621 40413 74848 01134 27045 19382 01961  
06376 98082 75079 23331 17602 76033 64329 37331 28855 89776  
77677 93543 07790 45574 63805 96538 30991 48181 56873 24215  
03627 69927 85107 95298 13956 48389 57978 84492 03238 38132  
01845 41145 30083 75651 29603 54024 91315 61836 44113 85168  
51240 04845 12463 72959 50899 96600 89893 39147 70665 65831  
78309 15552 07350 03975 73516 30043 67492 03693 14272 67842  
16705 84320 61818 25464 29631 19290 82595 47115 58701 04792  
23579 10472 14479 17954 08606 64481 06461 26638 07961 27927  
82806 00184 21186 19012 87638 38252 10224 000 000  
*Courtesy Ary*

## And from PoSW we have these logs and comment:

### Sunday + Wednesday Schedule, 1800 UTC Start:-

It took a while to find this schedule in the New Year, not having the advantage of referring to last years log because it changed from AM to SSB in mid-2018 and also the frequencies from those used for several years. Despite a lot of tuning around not found until the second week of January:-  
13-Jan-19, Sunday:- 1800 UTC, 6963 kHz, found about one minute in, a reasonable S7, surprised not to have found it before; “987 987 987 000”.  
1820 UTC, 5863 kHz, second sending, weaker.

16-Jan-19, Wednesday:- 1800 UTC, nothing readable heard on 6963. Much better signal from the second sending:-  
1820 UTC, 5863 kHz, “987 987 987 000”, peaking S9 at times although with deep fading.

20-Jan-19, Sunday:- 1800 UTC, 6963 kHz, very weak signal, could just hear the “zeroes”  
of a “no message”.  
1820 UTC, 5863 kHz, “987 987 987 000”, much better signal, S6 to S7.

27-Jan-19, Sunday:- 1800 UTC, 6963 kHz, “987 987 987 000”, weak.  
1820 UTC, 5863 kHz, stronger.

6-Feb-19, Wednesday:- 1820 UTC, 6944 kHz, unable to find a transmission at 1800z, this must be the second sending of the new frequencies for February, “197 197 197 1”, DK/GC  
“283 129”, reasonable signal, up to a “7” on the S-meter.  
1840 UTC, 5744 kHz, S7 with QSB.

10-Feb-19, Sunday:- 1800 UTC, 8144 kHz, “197 197 197 000”, weak signal.  
1820 UTC, 6944 kHz, much stronger.

13-Feb-19, Wednesday:- 1800 UTC, 8144 kHz, and 1820 UTC, 6944 kHz, both up to S7 with fading, “197 197 197 000”.

17-Feb-19, Sunday:- 1800 UTC, 8144 kHz, “197 197 197 000”.  
1820 UTC, 6944 kHz, up to S9.

24-Feb-19, Sunday:- 1800 UTC, 8144 kHz, indicating around S7, and 1820 UTC, 6944 kHz, weaker, “197 197 197 000”.

#### **Monday + Wednesday Schedule, 2000 UTC Start:-**

2-Jan-19, Wednesday:- 2000 UTC, 6776 kHz, “770 770 770 1”, DK/GC “257 43” x 2, peaking around S8 at times but with deep fading.  
2020 UTC, 5767 kHz, second sending, weak signal.  
2040 UTC, 5067 kHz, third sending the strongest, peaking over S9.

7-Jan-19, Monday:- Unable to hear anything at 2000 and 2020 UTC, could just about make out the E07 OM at 2040:-  
2040 UTC, 5067 kHz, very weak signal, could just make out the “770....1” call-up routine of a “full message” transmission.

9-Jan-19, Wednesday:- 2000 UTC, 6776 kHz, very weak, unreadable.  
2020 UTC, 5767 kHz, much better signal here, S8 and even S9 at times, “770” and “257 43” again.  
2040 UTC, 5067 kHz, S7 with deep fading.

14-Jan-19, Monday:- 2000 UTC, 6776 kHz, still “257 43”, good signal.  
2020 UTC, 5767 kHz, and 2040 UTC, 5067 kHz, repeats with good signal strengths.

16-Jan-19, Wednesday:- 2000 UTC, 6776 kHz, “257 43” yet again, repeats 2020 UTC, 5767 kHz and 2040 UTC, 5067 kHz, all good signals.

21-Jan-19, Monday:- 2000 UTC, 6776 kHz, “770 770 770 000”, the message which has been running all this month has finally got through.  
2020 UTC, 5767 kHz, second sending, both S6 to S7.

23-Jan-19, Wednesday:- 2000 UTC, 6776 kHz, and 2020 UTC, 5767 kHz, both S7 to S8, “770 770 770 000”.

28-Jan-19, Monday:- 2000 UTC, 6776 kHz, very weak signal, unreadable.  
2020 UTC, 5767 kHz, second sending much stronger, S7 with deep fading, “770 770 770 000”.

6-Feb-19, Wednesday:- 2000 UTC, 8157 kHz, very weak signal on the predicted frequency for the 2000z sending, unreadable; much better signal at 2020:-  
2020 UTC, 6857 kHz, “182 182 182 1”, DK/GC “919 48” x 2, S6 with deep fading.  
2040 UTC, 5257 kHz, weaker.

11-Feb-19, Monday:- 2000 UTC, 8157 kHz, very weak, unreadable.  
2020 UTC, 6857 kHz, very weak, could just hear the “182...1”.  
2040 UTC, 5257 kHz, only just readable, DK/GC “919 48” again.

#### **Saturday + Sunday Schedule, 0700 UTC Start:-**

5-Jan-19, Saturday:- 0700 UTC, 8123 kHz, “134 134 134 1” for a “full message”, DK/GC “755 55” x 2, strong “XJT” churning away on frequency.  
0720 UTC, 9323 kHz, S7.  
0740 UTC, 10423 kHz, third sending, slightly weaker signal.

6-Jan-19, Sunday:- 0700 UTC, 8123 kHz, “134” and “755 55” again, interference from “XJT”.  
0720 UTC, 9323 kHz, and 0740 UTC, 10423 kHz, repeats, both S6 to S7.

13-Jan-19, Sunday:- 0700 UTC, 8123 kHz, “134 134 134 000”, “XJT” as strong as ever.  
0720 UTC, 9323 kHz, S8 on a clear frequency.

19-Jan-19, Saturday:- 0700 UTC, 8123 kHz, “134 134 134 000”, “XJT” very strong this morning.  
0720 UTC, 9323 kHz, up to S9 at times.

26-Jan-19, Saturday:- 0700 UTC, 8123 kHz, “full message” this morning, “134 134 134 1”,  
DK/GC “197 29” x 2, short message, total transmission time around 5 minutes and 25 seconds, strong enough to over-ride the noise-maker still in residence on this frequency.  
0720 UTC, 9323 kHz, and 0740 UTC, 10423 kHz, repeats both peaking around S8 with QSB.

2-Feb-19, Saturday:- 0700 UTC, 10112 kHz, “111 111 111 1”, DK/GC “197 29”, same message as heard at the end of January.  
0720 UTC, 11112 kHz, second sending, S7 to S8.  
0740 UTC, 12112 kHz, peaking S9, strongest of the three transmissions.

9-Feb-19, Saturday:- 0700 UTC, 10112 kHz, “111 111 111 1”, DK/GC “787 47” x 2, signal up and down, inside the 30 metre amateur band, fast CW on a close frequency.  
0720 UTC, 11112 kHz, peaking S9.  
0740 UTC, 12112 kHz, over S9.

10-Feb-19, Sunday:- 0700 UTC, 10112 kHz, “111” and “787 47” again.  
0720 UTC, 11112 kHz, and 0740 UTC, 12112 kHz, the repeats, all transmissions around S7.

16-Feb-19, Saturday:- 0700 UTC, 10112 kHz, “111” and “787 47” yet again, signal indicating around S8.  
0720 UTC, 11112 kHz, S6, and 0740 UTC, 12112 kHz, back up to S8 to S9.

23-Feb-19, Saturday:- 0700 UTC, 10112 kHz, and 0720 UTC, 11112 kHz, both strong signals, “111 111 111 000”.

24-Feb-19, Sunday:- 0700 UTC, 10112 kHz, and 0720 UTC, 11112 kHz, both around S7, “111 111 111 000”.

# E07a

## Wednesday

### January 2019

2100z	5877kHz	2120z	5277kHz	2140z	4577kHz	
02/01	825 000					Very strong
09/01	825 000					Strong
16/01	825 000				[2100z Fair]	Very strong
23/01	825 000					Very strong
30/01	825 000					Very strong

### February2019

06/02	825 1 69154 4680 67 57624 ... 37287 000 000					Weak/fair
13/02	825 1 69154 4680 67 57624 ... 37287 000 000				[2000/2020z QRM3]	Strong
20/02	825 1 39659 4193 65 12286 ... 25173 000 000					Very strong
27/02	825 1 39659 4193 65 12286 ... 25173 000 000					Very strong

## Thursday

### January 2019

0530z	5111kHz	0550z	5811kHz	0610z	6911kHz	
03/01	189 000					Very strong
10/01	189 000					Strong*
17/01	189 000					Very weak
24/01	189 000					0530z Weak, 0550z Fair
30/01	189 000					Very strong

### February 2019

07/02	189 1 69154 4680 67 57624 ... 37287 000 000					Fair to strong
14/02	189 1 69154 4680 67 57624 ... 37287 000 000					Strong
21/02	189 1 39659 4193 65 12286 ... 25173 000 000					Very strong
28/02	189 1 39659 4193 65 12286 ... 25173 000 000					Very strong

## Friday

### January 2019

1610z	7632kHz	1630z	6832kHz	1650z	5832kHz	
04/01	688 000					Fair, noisy
11/01	688 000					Weak (Dutch SDR)
25/01	688 000					Fair

**February 2019**

1610z	9347kHz	1630z	8147kHz	1650z	6847kHz	
01/02	318 000					Fair
08/02	318 1 66124 6035 59 26691 ... 03739 000 000				[1610z DutchSDR]	Weak
15/02	318 1 66124 6035 59 26691 ... 03739 000 000				[1610z NRH ok Dutch SDR]	Weak, QRM2

**Saturday****January 2019**

0900z	11123kHz	0920z	12123kHz	0940z	13423kHz	
05/01	114 000					Strong
12/01	114 000					Weak
19/01	114 000				[0920z NRH]	Very strong
26/01	114 000					Weak

**February 2019**

0900z	11053kHz	0920z	12153kHz	0940z	13553kHz	
02/02	Unworkable, poor conditions					
09/02	015 1 66124 5035 59 26691 ... 03739 000 000				[0900z Txfail grp11 restart at 0904z to end]	Fair
16/02	318 1 66124 6035 59 26691 ... 03739 000 000					Fair

PoSW's logs, comment and analysis:

**Friday Schedule, 1610 UTC Start:-**

11-Jan-19:- 1610 UTC, 7632 kHz, very weak signal, could just make out the “zeroes” of a “no message” transmission.  
1630 UTC, 6832 kHz, “688 688 688 000”, weak but clear.

18-Jan-19:- 1610 UTC, 7632 kHz, and 1630 UTC, 6832 kHz, both good signals, “688 688 688 000”.

25-Jan-19:- 1610 UTC, 7632 kHz, “688 688 688 000”, S6 to S7.  
1630 UTC, 6832 kHz, also around S6 to S7.

1-Feb-19:- 1610 UTC, 9347 kHz, “318 318 318 000”.  
1630 UTC, 8147 kHz, second sending, both transmissions S6 to S7.

8-Feb-19:- 1610 UTC, 9347 kHz, a “full message” at ten minutes past four on a Friday afternoon, very weak signal, could just about make out “318 318 318 1 66124”.  
1630 UTC, 8147 kHz, second sending much stronger, DK/GC “6035 59” x 2.  
1650 UTC, 6847 kHz, strongest of the three transmissions, S8 to S9.

15-Feb-19:- 1610 UTC, 9347 kHz, very weak, could hear, “318...1 66124”, same as last time.  
1630 UTC, 8147 kHz, much stronger, DK/GC “6035 59” so confirmed as being the same as on the 8<sup>th</sup>.  
1650 UTC, 6847 kHz, good signal.

22-Feb-19:- 1610 UTC, 9347 kHz, “318 318 318 1 35013”, another – different - full message, DK/GC “540 71” x 2. Good signal on this frequency for a change, S7 to S8.  
1630 UTC, 8147 kHz, and 1650 UTC, 6847 kHz, the repeats, both good signals.

**Saturday Schedule, 0900 UTC Start:-**

5-Jan-19:- 0900 UTC, 11123 kHz, “114 114 114 000”.  
0920 UTC, 12123 kHz, second sending, both good signals.

12-Jan-19:- 0900 UTC, 11123 kHz, and 0920 UTC, 12123 kHz, “114 114 114 000”.

19-Jan-19:- 0900 UTC, 11123 kHz, “114 114 114 000”.  
0920 UTC, 12123 kHz, both strong signals, over S9 at times.

2-Feb-19:- 0900 UTC, 11053 kHz, “015 015 015 000”.  
0920 UTC, 12153 kHz, second sending, both S7 to S8.

9-Feb-19:- 0900 UTC, 11053 kHz, “015 015 015 1 66124”, DK/GC “6035 59” x 2, so the same message as sent by yesterday's 1610 UTC schedule, as has always been the case in the past on the relatively rare occasions when the Friday and Saturday schedules have been “full message”.



The transmission failed and went off air around 0903:30s UTC, came back with the “015...” start-up routine for a short while then went into 5Fs, presumably picking up from where the break had occurred.  
0920 UTC, 12153 kHz, second sending.  
0940 UTC, 13553 kHz, all three transmissions strong signals.

16-Feb-19:- 0900 UTC, 11053 kHz, “015...1...66124” and “6035 59” again.  
0920 UTC, 12153 kHz, and 0940 UTC, 13553 kHz, the repeats, good signals on all three.

23-Feb-19:- 0900 UTC, 11053 kHz, “015 015 015 1 35013”, DK/GC “540 71” x 2; as expected, the same message as sent by yesterday's 1610z schedule.  
0920 UTC, 12153 kHz, and 0940 UTC, 13553 kHz, the repeats, all around S6 to S7.

### **Wednesday Schedule, 2100 UTC Start:-**

2-Jan-19:- 2100 UTC, 5877 kHz, “825 825 825 000”, S9 signal.  
2120 UTC, 5277 kHz, S9+, very strong.

9-Jan-19:- 2100 UTC, 5877 kHz, and 2120 UTC, 5277 kHz, both strong signals, “825 825 825 000”.

16-Jan-19:- 2100 UTC, 5877 kHz, and 2120 UTC, 5277 kHz, “825 825 825 000”.

30-Jan-19:- 2100 UTC, 5877 kHz, strong signal, “825 825 825 000”.  
2120 UTC, 5277 kHz, also strong.

6-Feb-19:- 2100 UTC, 5877 kHz, this schedule coming back to life with a “full message” this evening; “825 825 825 1 69154”, DK/GC “4680 67” x 2.  
2120 UTC, 5277 kHz, second sending.  
2140 UTC, 4577 kHz, “full message” means a third sending, all three transmissions strong signals.

20-Feb-19:- 2100 UTC, 5877 kHz, another full message, “825 825 825 1 39659”, DK/GC “4193 65” x 2, good signal.  
2120 UTC, 5277 kHz, and 2140 UTC, 4577 kHz, repeats, both good signals.

## **E11 log Jan/Feb**

### **E11 log Jan/Feb**

4505kHz	0710z	05/01 [496/00] Out 0713z S2	Malc	SAT
	1605z	08/01 [237/00] Out 1608z S2 QRM	Malc	TUE
	1605z	13/01 [230/00] Out 1608z S3	Malc	SUN
	1605z	15/01 [237/00] Out 1608z S4	Malc	TUE
	1605z	22/01 [237/00] Out 1608z S3	Malc	TUE
	1605z	27/01 [233/00] Out 1608z S2	Malc , E	SUN
	1605z	05/02 [235/00] Out 1608z S2	Malc, B Williams	TUE
	0710z	09/02 [491/00]	Malc	SAT
	1605z	10/02 [238/00] Out 1608z S3	Malc	SUN
	0710z	16/02 [492/00] Out 0713z S2	Malc	SAT
	0710z	17/02 [496/00] Out 0713z S4	Malc	SUN
	1605z	26/02 [233/00]	B Williams	TUE
4909kHz	0820z	03/01 [432/00] Out 0823z S2	Malc	THU
	0820z	14/01 [435/00] Out 0823z S3	Malc	MON
	0820z	17/01 [430/00] Out 0823z S2	Malc	THU
	0820z	21/01 [439/00] Out 0823z S2	Malc	MON
	0820z	24/01 [434/00] Out 0823z S3	Malc, RNGB	THU
	0805z	26/01 [314/00] Out 0805z S2	Malc	SAT
	0820z	28/01 [439/00] Out 0823z S2	Malc, RNGB	MON
	0820z	31/01 [435/00] Out 0823z S2	Malc	THU
	0805z	02/02 [319/00] Good	RNGB	MON
	0820z	04/02 [432/00] Out 0823z S2	Malc, RNGB	MON
	0820z	07/02 [431/00] Out 0823z S2	Malc, RNGB	THU
	0805z	09/02 [314/00] Out 0808z S2	Malc	SAT
	0805z	10/02 [310/00] Out 0808z S2	Malc	SUN
	0805z	16/02 [313/00] Out 0808z S2	Malc, RNGB	SAT
	0805z	17/02 [310/00] Out 0808z S2	Malc	SUN
5149kHz	0820z	11/02 [431/00] Good	RNGB	MON
	0820z	14/02 [435/00]	RNGB	THU
	0820z	18/02 [439/00] Out 0823z S2	Malc	MON
5409kHz	1530z	03/01 [266/00] Out 1533z S3	Malc	THU
	1530z	17/01 [269/00] Out 1533z S5	Malc	THU
	1530z	24/01 [267/00] Out 1533z S4	Malc	THU
	1530z	07/02 [269/00] Out 1533z S3	Malc	THU
	1530z	14/02 [266/00] Out 1533z S4	Malc	THU

5779kHz	1730z	03/01 [414/00] Out 1733z S3	(Dutch SDR)	Malc	THU
	1730z	10/01 [418/00] Out 1733z S2		Malc	THU
	1730z	17/01 [425/00] Out 1733z S2		Malc	THU
	1730z	31/01 [414/00] Out 1733z S3		Malc	THU
	1730z	07/02 [412/00] Out 1733z S3		Malc, Gary H	THU
6433kHz	1205z	19/02 [463/00] Out 1208z S2		Malc, RNGB	TUE
	1205z	20/02 [463/00] Out 1208z S2		Malc	WED
6804kHz	0700z	08/01 [574/00] Out 0703z S3		Malc	TUE
	0700z	15/01 [571/00] Out 0703z S4		Malc, RNGB	TUE
	0700z	29/01 [575/00] Out 0703z S3		Malc	TUE
	0700z	19/02 [575/00] Good		RNGB	TUE
	0700z	26/02 [570/00] Good		RNGB	TUE
6849kHz	1900z	03/01 [644/00] Out1903z S3	(Dutch SDR)	Malc	THU
	1900z	07/01 [640/00] Out1903z S2	(Dutch SDR)	Malc	MON
	1900z	10/01 [640/00] Out1903z S2		Malc	THU
	1900z	14/01 [649/00] Out 1903z		Malc	MON
	1900z	17/01 [649/00] Out 1903z S2		Malc	THU
	1900z	21/01 [649/00] Out 1903z S2		Malc	MON
	1900z	24/01 [649/00] Out 1903z S2		Malc	THU
	1900z	04/02 [640/00] Out 1903z S2	(Dutch SDR)	Malc, B Williams	MON
	1900z	07/02 [641/00] Out 1903z S2		Malc, RNGB	THU
	1900z	11/02 [642/00] Out 1903z S6		Malc	MON
	1900z	14/02 [648/00] Out 1903z S6		Malc	THU
	1900z	18/02 [641/00] Out 1903z S2		Malc, RNGB	MON
	1900z	21/02 [643/00]		RNGB	THU
7317kHz	1205z	02/01 [462/00] Out 1208z S3		Malc	WED
	1205z	08/01 [460/00] Out 1208z S3		Malc	TUE
	1205z	15/01 [461/00] Out 1208z S2		Malc	TUE
	1205z	16/01 [469/00] Out 1208z S2	(Dutch SDR)	Malc	WED
	1205z	23/01 [464/00] Out 1208z S2		Malc	WED
	1205z	05/02 [460/00] Out 1208z S4	(Dutch SDR)	Malc, RNGB	TUE
	1205z	06/02 [466/00] Out 1208z S2		Malc	WED
7377kHz	0805z	05/01 [314/00] Out 0808z S5		Malc	SAT
7840kHz	0645z	17/01 [514/00] Weak		RNGB	THU
	0646z	05/02[518/00]		E	TUE
7984kHz	1045z	02/01 [693/00] Out 1048z S3		Malc	WED
	1045z	07/01 [696/00] Out 1048z S5		Malc	MON
	1045z	09/01 [696/00] Out 1048z S2		Malc	WED
	1045z	21/01 [697/00] Out 1048z S4		Malc	MON
	1045z	23/01 [691/00] Out 1048z S2		Malc	WED
	1045z	28/01 [697/00] Out 1048z S3		Malc	MON
	1045z	30/01 [696/00] Out 1048z S2		Malc	WED
	1045z	11/02 [697/00] Out 1048z S2		Malc	MON
	1045z	13/02 [694/00] Out 1045z S2		Malc	WED
	1045z	18/02 [697/00] Out 1048z S3		Malc	MON
	1045z	20/02 [690/00] Out 1048z S2		Malc	WED
8180kHz	0930z	02/01 [270/00] Out 0933z S3		Malc	WED
	0930z	16/01 [270/00] Out 0933z S5		Malc	WED
	0930z	17/01 [270/00] Out 0933z S3		Malc	THU
	0930z	24/01 [278/00] Good		RNGB, Malc	THU
	0930z	30/01 [270/00] Out 0933z S3		Malc	WED
	0930z	31/01 [277/00] Out 0933z S3		Malc, RNGB	THU
	0930z	06/02 [275/00] Out 0933z S2		Malc, RNGB	WED
	0930z	07/02 [276/00] Out 0933z S3		Malc	THU
	0930z	13/02 [277/00] Out 0933z S3		Malc	WED
	0930z	14/02 [279/00] Out 0933z S2		Malc	THU
	0930z	20/02 [276/00] Out 0933z S3		Malc, RNGB	WED
8545kHz	1730z	02/01 [402/00] Out1733z S2	(Dutch SDR)	Malc	WED
	1730z	05/01 [409/00] Out 1733z S2	(Dutch SDR)	Malc	SAT
	1730z	16/01 [408/00] Out 1733z S2	(Dutch SDR)	Malc	WED
	1730z	19/01 [406/00] Out 1733z S3		Malc	SAT
	1730z	23/01 [405/00] Out 1733z S2	(Dutch SDR)	Malc	WED
	1730z	30/01 [402/00] Out 1733z S2		Malc	WED

	1730z	06/02 [403/00] Out 1733z S2		Malc	WED
	1730z	09/02 [408/00] Out 1733z S3		Malc	SAT
	1730z	13/02 [405/00] Out 1733z S2		Malc	WED
	1730z	16/02 [409/00] Out 1733z S3		Malc	SAT
	1730z	27/02 [400/00]		Gary H	WED
8597kHz	0900z	02/01 [536/00] Out 0903z S3		Malc	WED
	0900z	07/01 [538/00] Out 0903z S4		Malc	MON
	0900z	09/01 [536/00] Out 0903z S2		Malc	WED
	0900z	14/01 [536/00] Out 0903z S3		Malc	MON
	0900z	16/01 [532/00] Out 0903z S3		Malc	WED
	0900z	21/01 [537/00] Out 0903z S3		Malc, RNGB	MON
	0905z	23/01 [537/00] Out 0908z S2 (5 minutes Late)		Malc	WED
	0900z	04/02 [534/00] Out 0903z S3		Malc, RNGB	MON
	0900z	06/02 [534/00] Out 0903z S2		Malc	WED
	0900z	11/02 [533/00] Good		RNGB	MON
8800kHz	1000z	08/01 [305/00] Out 1003z S2		Malc	TUE
	1000z	15/01 [305/00] Out 1003z S4		Malc	TUE
	1000z	18/01 [309/00] Out 1003z S4		Malc	FRI
	1000z	22/01 [309/00] Out 1003z S2		Malc	TUE
	1000z	25/01 [304/00] Out 1003z S5		Malc	FRI
	1000z	29/01 [304/00] Out 1003z S2		Malc	TUE
	1000z	01/02 [300/00] Good		RNGB	FRI
	1000z	05/02 [304/00] Out 1003z S2		Malc	TUE
	1000z	08/02 [305/00] Out 1003z S2		Malc, RNGB	FRI
	1000z	19/02 [308/00] Out 1003z S2		Malc	TUE
	1000z	22/02 [302/00] Weak		RNGB	FRI
	1000z	26/02 [302/00]		RNGB	TUE
9130kHz	0715z	15/01 [633/00] Out 0718z S3		Malc	TUE
	0715z	18/01 [637/00]		RNGB	FRI
	0715z	22/01 [636/00] Out 0718z S4		Malc, RNGB	TUE
	0715z	29/01 [630/00] Out 0718z S5		Malc	TUE
	0715z	15/02 [637/00]		RNGB	FRI
	0715z	19/02 [631/00] Out 0718z S3		Malc, RNGB	TUE
	0715z	26/02 [637/00] Good		RNGB	TUE
9443kHz	1705z	02/01 [393/00] Out 1708z S2 (Dutch SDR)		Malc	WED
	1705z	05/01 [392/00] Out 1708z S2 (Dutch SDR)		Malc	SAT
	1705z	09/01 [395/00] Out 1708z S4		Malc	WED
	1705z	23/01 [394/00] Out 1708z S2 (Dutch SDR)		Malc	WED
	1705z	13/02 [392/00] Out 1708z S3		Malc	WED
	1705z	16/02 [394/00] Out 1708z S4		Malc	SAT
10213kHz	0745z	07/01 [262/00] Out 0748z S8		Malc	MON
	0745z	14/01 [262/00] Out 0748z S4		Malc	MON
	0745z	21/01 [262/00] Out 0748z S5		Malc, RNGB	MON
	0745z	04/02 [266/00] Out 0748z S6		Malc	MON
	0745z	11/02 [260/00] Out 0748z S4		Malc	MON
	0745z	18/02 [267/00] Out 0748z S4		Malc	MON
10448kHz	1625z	02/01 [978/00] Out 1628z S3 (Dutch SDR)		Malc	WED
	1625z	16/01 [974/00] Out 1628z S2 (Dutch SDR)		Malc	WED
	1910z	11/01 [618/00] Out 1913z S2 (Dutch SDR)		Malc	FRI
	1625z	13/02 [974/00] Out 1628z S2		Malc	WED
	1625z	17/02 [978/00] Out 1628z S4		Malc	SUN
	1625z	20/02 [976/00] Out 1628z S3		Malc	WED
	1625z	27/02 [972/00]		Gary H	WED
10487khz	1910z	11/01 [618/00] Out 1913z S2 (Dutch SDR)		Malc	FRI
	1910z	09/02 [611/00] Out 1913z S3		Malc	FRI
11104kHz	0845z	01/01 [150/00] Good		RNGB, Malc	TUE
	0845z	03/01 [152/00] Out 0848z S5		Malc	THU
	0845z	08/01 [157/00] Out 0848z S4		Malc	TUE
	0845z	10/01 [154/00] Out 0848z S5		Malc	THU
	0845z	15/01 [154/00] Out 0848z S5		Malc	TUE
	0845z	17/01 [152/00] Out 0848z S5		Malc	THU
	0845z	29/01 [151/00] Out 0848z S5		Malc	TUE
	0845z	31/01 [152/00] Out 0748z S3		Malc	THU
	0845z	12/02 [150/00]		RNGB	TUE

	0845z	14/02 [156/00] Out 0848z S4		Malc	THU
	0845z	19/02 [154/00] Out 0848z S4		Malc	TUE
	0845z	21/02 [150/00] Strong		RNGB	THU
	0845z	26/02 [155/00] Strong		RNGB	TUE
11116kHz	1300z	10/01 [587/00] Out 1303z S3		Malc	THU
	1300z	12/01 [587/00] Out 1303z S2	(Dutch SDR)	Malc	SAT
	1300z	17/01 [580/00] Out 1303z S5		Malc	THU
	1300z	19/01 [581/00] Out 1303z S3		Malc	SAT
	1300z	24/01 [585/00] Out 1303z S4		Malc	THU
	1300z	31/01 [581/00] Out 2303z S3		Malc	THU
	1300z	16/02 [589/00] Out 1303z S2		Malc	SAT
	1300z	21/02 [583/00]		RNGB	THU
11450kHz	0640z	21/01 [949/00]		RNGB	MON
	0640z	18/02 [946/00]		RNGB	MON
11493kHz	1645z	03/01 [33? NRH]		Malc	THU
	1645z	08/01 [337/00] Out 1648z S4 QSB3		Malc	TUE
	1645z	10/01 [338/00] Out 1648z S2		Malc	THU
	1645z	15/01 [337/00] Out 1648z S1	(Dutch SDR)	Malc	TUE
	1645z	31/01 [338/00] Out 1648z S6		Malc	THU
	1645z	05/02 [335/00] Out 1648z S2		Malc	TUE
	1645z	07/02 [333/00] Out 1648z S3 QSB2		Malc	THU
	1645z	14/02 [331/00]		Barry W	THU
	1645z	26/02 [337/00]		Gary H	TUE
12067kHz	1925z	03/01 [553/00] Out 1928z S3	(Dutch SDR)	Malc	THU
	1925z	10/01 [553/00] Out 1928z S2		Malc	THU
	1925z	24/01 [558/00] Out 1928z S2	(Dutch SDR)	Malc	THU
12924kHz	1745z	06/01 [24? NRH]		Malc	SUN
	1745z	07/01 [24? Too weak to copy msg]		Malc	MON
	1745z	04/02 [246/00] Out 1748z S2	(Dutch SDR)	Malc	MON
	1745z	25/02 [242/00] Weak	(South Africa SDR)	RNGB	MON
14611kHz	0820z	01/01 [135/00]		RNGB	TUE
	0820z	02/01 [138/00] Out 0823z S2		Malc	WED
	0820z	23/01 [135/00]	(Russian SDR)	RNGB	WED
	0820z	29/01 [131/00] Out 0823z S2	(Dutch SDR)	Malc	TUE
	0820z	30/01 [138/00] Out 0823z S2	(Dutch SDR)	Malc	WED
	0820z	05/02 [136/00] Out 0823z S2		Malc, RNGB	TUE
	0820z	12/02 [136/00] Good	(Qatar SDR)	RNGB	TUE
	0820z	13/02 [133/00]		RNGB	WED
	0820z	19/02 [135/00] Out 0823z Strong		RNGB, Malc	TUE
	0820z	20/02 [135/00] Out 0823z S3		Malc, RNGB	WED
14666kHz	1345z	05/01 [912/00] Out 1348z S2	(Dutch SDR)	Malc	SAT
	1345z	08/01 [915/00] Out 1348z S4	(Dutch SDR)	Malc	TUE
	1345z	22/01 [910/00] Out 1348z S2	(Dutch SDR)	Malc	TUE
	1345z	29/01 [914/00] Out 1348z S2	(Dutch SDR)	Malc	TUE
	1345z	09/02 [910/00] Out 14348z S2	(Dutch SDR)	Mal	SAT
16335kHz	1650z	04/01 [926/00] Out 1653z S2	(Dutch SDR)	Malc	FRI
	1650z	18/01 [92?/00] Out 1653z S1	(Dutch SDR)	Malc	FRI
	1650z	09/02 [926/00] Out 1653z S4	(Dutch SDR)	Malc	FRI
17378kHz	0745z	18/01 [347/00] Weak		RNGB, Malc	FRI
	0745z	20/02 [349/00] Out 0748z S2	(Dutch SDR)	Malc	WED

## E11a log Jan/Feb

4505kHz	1605z	01/01 [236/39 10721.....30578] Out 1615z S4		Malc	TUE
	1605z	06/01 [236/39 10721.....30878] Out 1615z S3		Malc	SUN
	0710z	19/01 [495/32 09339 75288 04948 11256 23738 16962 77303.....30902 72649] Good		RNGB	SAT
	0710z	02/02 [498/37 05254 80190 74514 91647 99680 67628 85765 19137.....95181 25656]		RNGB	SAT
	1605z	12/02 [230/34 70812 53848 56998 97863 38373 59810 90388 43519.....96502 87944] Fair		RNGB	TUE
	1605z	17/02 [230/34 70812.....etc] Repeat of Tuesday		Malc	SUN

4909kHz	0820z	07/01 [439/32 18592.....12737] Out S3	Malc	MON
	0820z	10/01 [439/32 18592.....12737] Out 0829z S2	Malc	THU
	0805z	19/01 [314/35 87559 00345 14382 32738 22042 61657 42375 45090.....87542 07802]	RNGB	SAT
	0805z	23/02 [312/32 70574 03958 98662.....etc] Very weak	RNGB	SAT
5409kHz	1530z	31/01 [264/35 09669.....61534] Out 1541z S5	Malc	THU
5779kHz	1730z	24/01 [411/37 52277.....80893] Out 1740z S3	Malc	THU
	1730z	14/02 [412/33 13399 84015 15160 11698 68934 32741 32035.....09756 01504] Out 1733z S3	Gary H, Malc	THU
6433kHz	1205z	12/02 [465/40 35841 78181 90793 41433 07589 21338 64555 13790.....44070 21161]	Ary	TUE
	1205z	13/02 [465/40 35841.....etc] S3 Repeat of Tuesday	Malc	WED
6804kHz	0700z	22/01 [570/37 43433 03294 56274 18309 13320 57603 83393.....86607 00868] Out 0710z S2	RNGB, Malc	TUE
	0700z	05/02 [575/32 77094 30869 24560 06592 80363 83261 71103 18977.....34168] Good	RNGB, E	TUE
6849kHz	1900z	31/01 [644/31 60744.....53923] Out 1909z S2	Malc	THU
7317kHz	1205z	29/01 [464/31 08427.....9898] Out 1215z S2	Malc	TUE
7840kHz	0645z	26/02 [514/31 17756 26964 24118 72370 69459 57961 49972.....25167 68420] Out 0654z	RNGB	TUE
7984kHz	1045z	14/01 [698/26 54809.....02613] Out 1053z S2	Malc	MON
	1045z	16/01 [698/26 54809.....etc] Repeat of Monday	Malc	WED
	1045z	04/02 [692/23 23902.....58567] Out 1052z S2	Malc	MON
	1045z	06/02 [691/23 23902.....etc] Repeat of Monday	Malc	WED
8180kHz	0930z	09/01 [275/31 43357.....85328] Out 0940z S2	Malc	WED
	0930z	10/01 [275/31 43357.....etc] Repeat of Wednesday S2	Malc	THU
	0930z	28/02 [273/35 72179 68627 29145 60510 97217 53576 28426 11442.....30119 77333]	RNGB	THU
8545kHz	1730z	09/01 [400/33 01222.....63652] S3	Malc	WED
	1730z	20/02 [405/36 46864 05444 66641 28752 35825 00187 50815 05016.....31012 54433]	Gary H, Malc	WED
8597kHz	0900z	28/01 [530/40 90498.....77036] Out 0911z S3	Malc	MON
	0900z	30/01 [530/40 90498.....etc] Repeat of Monday	Malc	WED
	0900z	18/02 [535/34 86466.....89342] Out 0910z S3	Malc	MON
	0900z	20/02 [535/34 86466.....etc] Repeat of Monday	Malc	WED
8800kHz	1000z	01/01 [308/32 62927.....07800] Out 1009z S2	Malc	TUE
	1000z	04/01 [308/32 62927.....etc] Repeat of Tuesday	Malc	FRI
	1000z	12/02 [308/40 35 35 66 Attention Attention 4455 99 55 07 07 44 99 1111 33 Attention Attention /7 /7 11 33 00 // 99 99 99 66 Attentio Attention 4400 53 53 7777 1111 3737 5566 55 8822 Attention Attention 23/ 23/ 5536 36 22 Attention 335 6 Attention 45 9507 49113 Attention /7 13 0/ 9 9 9 6 Attention 4 0 53 77 1 37 565 82 Attention 23/ 536 2 Out (GOSH – What a load of rubbish!)	Ary	TUE
	1000z	15/02 [308/40 91242 51800 61241 69562 98127 62490 94780.....16439 25713] Out 1011z S2	RNGB, Malc	FRI
9130kHz	0715z	08/01 [630/38 78121.....71011] Out 0725z S3	Malc	TUE
	0715z	05/02 [637/35 00832 37290 04713 17107 42645 72372 778793.....12951 89779] Out 0724z S4	RNGB, Malc	TUE
9443kHz	1705z	16/01 [390/35 43005.....55079] Out 1715z S2 (DSDR)	Malc	WED
	1705z	19/01 [390/35 43005.....etc] Repeat of Wednesday	Malc	SAT
	1705z	06/02 [399/32 23086 20099 32566 87132 98216 71962 19004.....031254 54676] Out 1714z S3	Barry W, Malc	WED
	1705z	09/02 [399/32 23086.....etc] Repeat of Wednesday	Malc	SAT
10213kHz	0745z	28/01 [264/35 09669.....61534] Out 0755z S6	Malc	MON
10448kHz	1625z	09/01 [975/34...ATTENTION 66068...28159 ATTENTION single repeat ]OUT1635z 3	Malc	WED
	1625z	13/01 [97? Too weak to copy msg]16?? S1 (Dutch SDR)	Malc	SUN
10487kHz	1910z	25/01 [614/34.....ATTENTION too weak to copy msg] S1 (Dutch SDR)	Malc	FRI
	1910z	15/02 [614/38.....ATTENTION too weak to copy msg] (Dutch SDR)	Malc	FRI
11104kHz	0845z	22/01 [156/37 78420.....08148] Out 0855z S4	Malc	TUE
	0845z	24/01 [156/37 78420.....etc] Repeat of Tuesday	Malc	THU
	0845z	05/02 [157/24 24963 15943 35638 83396 08588 00207 89681.....11719 08967] Out 0852z S5	RNGB, Malc	TUE
	0845z	07/02 [157/24 24963.....etc] S4 Repeat of Tuesday	Malc	THU
11107kHz	2005z	05/01 [36? too weak to copy msg] (Dutch SDR)	Malc	SAT
11116kHz	1300z	03/01 [580/33 18561.....21207] Out 1309z S3	Malc	THU

1300z	05/01 [580/33.....etc] Repeat of Thursday	Malc	SAT
1300z	07/02 [585/31 83560 68688 77986 77375 88646 48054 62268 20865.....62907 55144]	RNGB	THU
11493kHz 1645z	24/01 [338/40 too weak to copy msg due fading]1656z S2 QSB2 (Dutch SDR)	Malc	THU
12924kHz 1745z	13/01 [24? Too weak to copy msg] (Dutch SDR)	Malc	SUN
14611kHz 0820z	15/01 [136/34...ATTENTION 97796.....72173 ATTENTION single repeat ]OUT0830z S2 (DSDR) Malc		TUE
16335kHz 1650z	11/01 [92? Too weak to copy msg] S1 (Dutch SDR)	Malc	FRI
1650z	13/01 [92? Too weak to copy msg]1659z S1(Dutch SDR)	Malc	SUN
1650z	15/02 [922/00] Out 1653z S2 (Dutch SDR)	M8 FRI	
17378kHz0745z	09/01 [34? Too weak to copy msg]	Malc	WED
0745z	16/01 [34? Too weak to copy msg]	Malc	WED

## E17z

### Thursday

#### January 2019

0800z	11170kHz	0810z	9820kHz	
03/01	674 923 5 16945 80744 86200 84703 42227 923 5 00000			Weak (Dutch SDR)
10/01	674 923 5 16945 80744 86300 84703 42227 923 5 00000			Weak (Dutch SDR)
17/01	674 303 5 33699 39998 30667 35947 83964 303 5 00000		[0800z Dutch SDR]	Weak
24/01	674 203 5 33699 39998 30667 35947 83964 203 5 00000			Weak
31/01	674 00000			Weak

#### February 2019

07/02	674 305 8 87478 40557 43565 40760 53544 46640 47493 49734 305 8 00000	[0810z Dutch SDR]	Weak
14/02	674 205 8 87478 40657 42565 40760 53444 46640 47493 49734 205 8 00000	[0810z Dutch SDR]	Weak

## E25

Not heard

## G06

We start with PoSW's logs and analysis and valid comment re QRM on lower frequencies:

#### Second + Fourth Thursdays in the Month. 1830 UTC Schedule:-

10-Jan-19:- 4519 kHz, call "271", DK/GC "968 968 43 43", somewhat weak signal, local interference a problem at these lower frequencies.

24-Jan-19:- 4519 kHz, call "271", DK/GC "967 967 42 42", both "one down" on last time; seems a bit contrived.

14-Feb-19:- 4533 kHz, not the usual 4519, started about 55 seconds after the half-hour, call "271", DK/GC "968 968 43 43". Same 5Fs as heard from E06 on 18-Jan.

#### Friday 1930 UTC Schedule Following Second + Fourth Thursdays:-

11-Jan-19:- 4792 kHz, call "436", DK/GC "968 968 43 43", as yesterday's 1830z sending.

25-Jan-19:- 4792 kHz, call "436", DK/GC "967 967 42 42", again as heard on the previous day's 1830z sending.

15-Feb-19:- 4792 kHz, "436", DK/GC "272 272 62 62".

**First + Second Mondays in the Month, 1700 + 1800 UTC Schedule:-**

14-Jan-19:- Unable to find a transmission at 1700 UTC, second sending found in progress:-  
 1801 UTC, 4528 kHz, "145 145 145 00000", weak signal, stopped at approx 1802:35s UTC  
 so running early as is often the case. Computer shut-down sounds heard shortly after voice stopped.

4-Feb-19:- 1700 UTC, 3619 kHz, the first sending found in progress about 30 seconds after the hour, "145 145 145 00000", weak signal, voice  
 stopped 1703:35s UTC so probably started well before 1700.  
 1800 UTC, 4528 kHz, second sending, appeared to have started late, nothing heard at 1800z, tuned up and down in case it was on another frequency  
 but was up and running on returning to 4528 around 1801z. Weak signal, stopped 1805z, computer shut-down sounds heard shortly after.

11-Feb-19:- 1700:40s UTC, 3619 kHz, started late, "145 145 145 00000", peaking S9.  
 1800 UTC, 4528 kHz, started about 20 seconds before the hour, peaking over S9.

**Onto others' logs:****Monday****January/February 2019****0800z 5320kHz**

07/01	329 968 43 43057 ... 36125 968 43 00000	Weak
21/01	329 00000	Weak
04/02	329 00000	Weak

**1700z 3619kHz 1800z 4528kHz**

07/01	145 00000	[Ary]	
14/01	1700z sent on 3624kHz [Ary]	1759z	145 00000 Weak
04/02	145 00000		[Sent 111 000 1608, 1613, 1620 & 1704z] [Windows shut down hrd at 1803z] Weak
11/02	145 000		[1804z: Windows Shut Down] Weak

**Wednesday****January 2019****1200z 4920kHz 1300z 4042kHz**

Nil Reports

**February 2019****1158z 4897kHz 1258z 4034kHz**

06/02	145 00000	Weak (Polish SDR)
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**Thursday****January 2019****1258z 4460kHz**

10/01	329 000	Weak (Dutch SDR)
07/02	NRH	

**February 2019****1830z 4533kHz**

14/02	271 968 43 43057 ... 36125 968 43 00000	Weak
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**Friday****January 2019****1930z 4792kHz**

11/01	436 968 43 43057 ... 36125 938 43 00000	Weak ['E' also]
25/01	436 967 42 45678 ... 26389 967 42 00000	Weak

# S06

## PoSW's S06 and S06s Russian logs with analysis and comment:

Unable to find the long-standing first + third Saturdays in the month 2000 + 2100 UTC S06 Russian Man schedule when searched for on 19-Jan-19. Frequencies used in the last two months of 2018 were 3897 + 3317 kHz so would expect to find something in this part of the short-wave spectrum in early 2019. Maybe the poor propagation is to blame or perhaps this schedule has now gone; if so this leaves only one regular S06 in the UK evening time:-

## First + Third Fridays in the Month 2000 + 2100 UTC Schedule:-

4-Jan-19:- Unable to find a transmission at 2000 UTC but the 2100 UTC was strong enough:-  
2100 UTC, 5091 kHz, "627 627 627 00000", S9 with QSB.

18-Jan-19:- 2100 UTC, 5091 kHz, "627 627 627 00000", weak signal, still no sign of a 2000z sending presumably 1 to 2 MHz higher in frequency.

This schedule has previous for shifting by one hour which is what it did in February:-

1-Feb-19:- 2000 UTC, 5091 kHz, "627 627 627 00000", strength around an indicated "7". In anticipation of a possible time-shift a search had been made at 1900 UTC for the first sending but nothing found.

15-Feb-19:- 1903 UTC, 7309 kHz, the elusive first sending, very weak signal, unreadable but no "nulls" heard so a "full message" - most unusual!  
2000 UTC, 5091 kHz, second sending also very weak, difficult copy.

16-Feb-19, Saturday:- The expected "next day repeat":-

1900 UTC, 7309 kHz, just a little bit stronger signal than twenty-four hours earlier, call "627", DK/GC "589 589 34 34".  
2000 UTC, 5091 kHz, also just a bit stronger – but not by much, still difficult copy.

## S06s, YL Voice:-

A selection of some of the stronger transmissions heard from S06s:-

## Monday 0830 + 0840 UTC Schedule, Call "371":-

7-Jan-19:- 0840 UTC, 8530 kHz – missed the 0830z which would have been on 8057 kHz -  
DK/GC "940 940 5 5", weak signal, "07931 97755 84683 45752 64655".

28-Jan-19:- 0830 UTC, 8057 kHz, DK/GC "249 249 5 5", S7, "40639 33180 48007 37230 46446".  
0840 UTC, 8530 kHz, second sending, also around S7.

4-Feb-19:- 0830 UTC, 8057 kHz, speed of delivery seemed somewhat slower than usual, DK/GC not reached until around 0835 UTC, "894 894 5 5",  
"37867 86001 33032 38334 44613".  
0840 UTC, 8530 kHz, also slow but picked up to normal speed about one and a half minutes in.

## Tuesday 0730 + 0740 UTC, Schedule, Call "427":-

8-Jan-19:- 0730 UTC, 7410 kHz, S9 signal, DK/GC "509 509 6 6", "40614 77249 40678 17976 21816 42997".  
0740 UTC, 11532 kHz, second sending, S9 with QSB, strong BC station on the LF side which has every right to be there because this is the 25 metre broadcast band.

22-Jan-19:- 0730 UTC, 7410 kHz, DK/GC "831 831 5 5", strong signal, "37931 35379 30130 30905 76148".  
0740 UTC, 11532 kHz, also strong.

5-Feb-19:- 0730 UTC, 7410 kHz, DK/GC "819 819 5 5", "62795 74228 54551 43685 64655".  
0740 UTC, 11532 kHz, both transmissions strong signals.

19-Feb-19:- 0730 UTC, 7410 kHz, DK/GC "506 506 8 8", "34338 42143 30344 36112 30694 89898 43760 49471", strength S6 to S7.  
0740 UTC, 11532 kHz, weak signal and side-band splash from a broadcast station on 11530,  
difficult copy.

## Tuesday 0800 + 0810 UTC Schedule, Call "352":-

8-Jan-19:- 0800 UTC, 11945 kHz, DK/GC "419 419 6 6", "88146 57856 98835 46186 16945 80744".  
0810 UTC, 13195 kHz, second sending, both transmissions S6 to S7.

29-Jan-19:- 0800 UTC, 11945 kHz, fifth Tuesday in this month so, "352 352 352 00000".  
0809 UTC, 13195 kHz, started about one minute early, weak signal.

5-Feb-19:- 0800 UTC, 11945 kHz, DK/GC "471 471 6 6", weak signal, "62795 74228 56551 44999 47773 55580".  
0810 UTC, 13195 kHz, stronger.

19-Feb-19:- 0800 UTC, 11495 kHz, DK/GC "481 481 6 6", "46280 33187 33334 39342 38303 44206".  
0810 UTC, 13195 kHz, both around S6.



### Wednesday 0820 + 0830 UTC Schedule, Call “471”:-

23-Jan-19:- 0820 UTC 8417 kHz, DK/GC “863 863 5 5”, “32154 34746 34053 30738 56847”.  
0830 UTC, 9262 kHz, very weak, difficult copy.

30-Jan-19:- 0820 UTC, 8417 kHz, as expected the “no message” routine at the end of the month, “471 471 471 00000”, weak signal.  
0829 UTC, just after, 9262 kHz, second sending, as usual starts about a minute early when  
“no message”.

### Wednesday 0830 + 0840 UTC Schedule, Call “745”:-

2-Jan-19:- 0830 UTC, 11535 kHz, DK/GC “260 260 8 8”, S9 with QSB, “33584 40485 46170 42206 27796 85258 28203 48833”.  
0840 UTC, 11830 kHz, also a strong signal.

16-Jan-19:- 0830 UTC, 11535 kHz, DK/GC “831 831 6 6”, “43090 84663 83473 33599 30743 37625”.  
0840 UTC, 11830 kHz, both S6 to S7.

23-Jan-19:- 0830 UTC, 11535 kHz, “831 831 6 6” and 5Fs as on the 16<sup>th</sup>.  
0840 UTC, 11830 kHz, second sending, both strong signals.

6-Feb-19:- 0830 UTC, 11535 kHz, “283 283 6 6”, over S9, “37888 32451 33983 42283 32618 31250”.  
0840 UTC, 11830 kHz, also over S9.

20-Feb-19:- 0830 UTC, 11535 kHz, DK/GC “813 813 6 6”, peaking S9, “44999 47773 55580 95638 45555 66625”, a lot of repetition there.  
0840 UTC, 11830 kHz, S9 again.

### Wednesday 1000 + 1010 UTC Schedule, Call “729”:-

23-Jan-19:- 1000 UTC, 12365 kHz, DK/GC “806 806 5 5”, “33584 40485 46170 43306 37796”, strong signal, over S9.  
1010 UTC, 14280 kHz, second sending inside the 20 metre amateur band, also a strong signal.

30-Jan-19:- 1000 UTC, 12365 kHz, fifth Wednesday in the month so “no message”, “729 729 729 00000”, S9 with QSB.  
1009 UTC, 14280 kHz, S6 with QSB.

20-Feb-19:- 1000 UTC, 12365 kHz, DK/GC “453 453 6 6”, S8 to S9, “76458 59421 21677 15542 36059 49385”.  
1010 UTC, 14280 kHz, second sending, very strong amateur SSB on the exact same frequency, 4O9KOM in Montenegro calling CQ and working many stations; he must have heard S06s, said “going ten up” and did a QSY to 14290 and continued calling CQ.

### Friday 0930 + 0940 UTC Schedule, Call “516”:-

18-Jan-19:- 0930 UTC, 11780 kHz, DK/GC “923 923 7 7”, “34806 32963 31716 81515 30841 48007 53588”, very strong signal with a distinct background buzz.  
0940 UTC, 12570 kHz, also very strong with a background buzz.

25-Jan-19:- 0930 UTC, 11780 kHz, “923 923 7 7” and 5Fs as on the 18<sup>th</sup>. S7 with QSB.  
0940 UTC, 12570 kHz, second sending weak in contrast with last time.

1-Feb-19:- 0930 UTC, 11780 kHz, DK/GC “842 842 7 7”, over S9, “17301 88554 82045 36717 24042 75956 31670”.  
0940 UTC, 12570 kHz, also over S9.

### First Saturday in the Month 0800 + 0810 UTC Schedule, Call “251”:-

5-Jan-19:- 0800 UTC, 8680 kHz, DK/GC “809 809 6 6”, “25163 57057 48288 02507 53571 37181”, S9 with QSB.  
0810 UTC, 8260 kHz, second sending, slightly weaker.

2-Feb-19:- 0800 UTC, 8680 kHz, DK/GC “908 908 6 6”, “65906 66610 20336 17301 88554 82045”.  
0810 UTC, 8260 kHz, both S7 to S8.

## S06 log January 2019

**Daily Mon- Fri      0400z      15721kHz**

**Thursdays      0830z      16243kHz      0930z      13469kHz**  
24/01      ‘842’ 961 43 84111 88567 00037 60948 96550 20830 53753 02021 16610 55851 08645 06147 39400 49633 28931 20535 81501 62788 60225 71002  
10473 ?????? faded out, ended 34327 75543 12204 43567 51424 96 43 00000

31/01      ‘842’ 907 35 18272 63339 21933 26616 60774 71144 75025 53194 39564 18717 01799 32821 86138 69480 23480 72648 02836 43003 52530 81226  
43122 35216 86539 11223 68939 23867 29466 33485 64784 57682 31162 03399 13214 52645 62534 907 35 00000

**Fridays (1st & 3rd)      2000z      7309kHz      2100z      5091kHz (frequencies may vary slightly)**  
18/01      ‘627’ 00000

### **S06s January log:**

#### **Monday**

7th/14th      0630/0640z      13470/16515      ‘524’ No reports  
21st/28th      ‘524’ 938 6 85518 83939 48340 30054 40909 39394

7th/14th	0830/0840z	8057/8530	‘371’ 940 5 07931 97755 84683 45752 64655
21st/28th			‘371’ 249 5 40639 33180 48007 37230 46446
7th/14th	0900/0910z	14675/12830	‘872’ 960 5 33584 40485 36170 43306 37796
21st/28th			‘872’ 901 5 35861 33432 89319 32494 37142
7th/14th	1300/1310z	8420/10635	‘831’ 924 5 83404 43347 36198 89786 80083
21st/28th			‘831’ 269 5 44475 30322 36034 45445 44008
<b>Tuesday</b>			
1st/8th	0600/0610z	16145/14240	‘438’ 270 5 46062 68672 97478 39685 30485
15th/22nd			‘438’ 952 6 30130 30905 31181 39971 35743 35931
1st/8th	0700/0710z	5250/6320	‘374’ 809 5 11171 64385 80707 06123 22536
15th/22nd			‘374’ 590 6 37137 90406 36113 31107 31405 39883
1st/8th	0730/0740z	7410/11532	‘427’ 509 6 40613 77249 40678 17976 21816 42997
15th/22nd			‘427’ 831 5 37931 35379 30130 30905 76148
1st/8th	0800/0810z	11945/13195	‘352’ 419 6 88146 57856 98835 46186 16945 80744
15th/22nd			‘352’ 981 6 83964 40774 45983 48882 31151 32860
1st/8th	1000/1010z	6440/5660	‘893’ 216 5 39534 17228 15636 47891 23247
15th/22nd			‘893’ 542 6 44008 38453 38324 38335 31830 34645
1st/8th	1100/1110z	5035/5975	‘754’ 928 6 88620 58069 61732 74537 57440 10597
15th/22nd			‘754’ 819 6 43079 32154 34746 34053 30738 56864
1st/8th	1500/1510z	6845/9170	‘537’ 821 6 65806 66610 20336 17301 88554 82035
15th/22nd			‘537’ 948 6 43337 89153 46544 36478 31315 36184
<b>Wednesday</b>			
2nd/9th	0820/0830z	8417/9262	‘471’ 205 6 39177 25257 89341 66092 53711 89898
16th/23rd			‘471’ 863 5 32154 34746 34053 30738 56847
2nd/9th	0830/0840z	11535/11830	‘745’ 260 8 33584 40485 46170 42206 27796 85258 28203 48833
16th/23rd			‘745’ 831 6 43090 84663 83473 33599 30743 37625
2nd/9th	0830/0840z	7062/10532	‘464’ 986 7 57364 98722 32349 20096 13598 42531 44892
16th/23rd			‘464’ 839 5 37545 20989 41691 43753 32543
2nd/9th	1000/1010z	12365/14280	‘729’ 518 6 27194 36129 33982 82221 85246 32992
16th/23rd			‘729’ 806 5 33584 40485 46170 43306 37796
<b>Thursday</b>			
3rd/10th (E17z)	0800/0810z	11170/9820	‘674’ 923 5 16945 80744 86200 84703 42227
17th/24th			‘674’ 203 5 33699 39998 30667 35947 83964
3rd/10th	0930/0940z	8812/9540	‘314’ 982 5 84090 09531 88430 33240 61135
17th/24th			‘314’ 290 5 35861 33432 89319 32494 37142
3rd/10th	1200/1210z	12155/10920	‘425’ 903 6 96111 10544 98003 68909 45279 09531
17th/24th			‘425’ 807 6 57634 12317 89645 34217 80945 55317
<b>Friday</b>			
4th/11th	0900/0910z	5765/6315	‘624’ 985 7 17976 21816 42997 94187 47374 47154 08531
18th/25th			‘624’ 879 5 67331 45907 40406 31867 40228
4th/11th	0930/0940z	11780/12570	‘516’ 240 7 37833 30024 32958 32235 87855 43367 99630
18th/25th			‘516’ 923 7 34806 32963 31716 81515 30841 48007 53588
<b>Saturday</b>			
5th	0800/0810z	8680/8260	‘254’ 809 6 25163 57057 48288 02507 53571 37181

With thanks to RNGB, Malc, Ary, HfD

## S06 log February 2019

Daily Mon- Fri	0400z	15721kHz	No reports			
Thursdays		0830z	17440kHz	0930z	15614kHz	
07/02	‘842’ 165 38 22909 50080 01856 24538 02992 75578 40622 03941 73853 29112 54302 51909 59085 20006 21429 95647 42439 80679 47333 53007 44099 41712 08236 96661 60322 23809 79801 40650 14891 88841 61105 03969 95835 17160 29958 30906 75830 03368 165 38 00000					
14/02	‘842’ 370 42 74657 98981 99689 93035 05600 06593 72479 81727 28127 91433 41982 77125 51481 74686 63989 82582 89368 84624 53577 17009 28999 95548 48527 75735 54123 36737 22847 41854 20516 63609 11321 52747 07342 08279 31041 51465 92823 51694 10844 77669 27685 84543 370 42 00000					
21/02	‘842’ 956 41 90653 18224 65411 85172 13744 83792 86718 73371 34845 48695 02649 82283 86552 47175 15748 56255 23687 93734 75551 03092 60929 15084 57091 80352 73066 95083 04349 06355 18757 37358 62083 13078 73780 75275 44479 83138 84694 83980 14047 38044 78836 956 41 00000					
Fridays (1st & 3rd)		1900z	7309khz	2000z	5091kHz	(frequencies may vary slightly)
01/02	‘627’ 00000					
15/02	‘627’ 589 34 09657 82456 08231 55674 68587 81308 71138 74986 26983 71417 49219 35824 76584 34545 56716 05712 76643 35168 63798 96210 23769 14337 59729 38993 99857 99220 73285 75416 43294 15414 74116 92349 23139 20000 589 34 00000]					2011z

**S06s February log:****Monday**

4th/11th	0630/0640z	13470/16515	‘524’ 801 6 16091 29043 25258 25060 22063 16106
18th/25th			‘524’ 908 6 35861 33432 89319 32494 37142 32842
4th/11th	0830/0840z	8057/8530	‘371’ 894 5 37867 86001 33032 38334 44613
18th/25th			‘371’ 296 5 33699 39998 30667 35947 83964
4th/11th	0900/0910z	14675/12830	‘872’ 436 5 31467 36997 80093 41312 30694 436
18th/25th			‘872’ 916 5 32617 41322 86067 25487 44036
4th/11th	1300/1310z	8420/10635	‘831’ 467 5 33886 33334 32917 37524 37715
18th/25th			‘831’ 926 5 33701 46632 30233 36973 38084

**Tuesday**

5th/12th	0600/0610z	16145/14240	‘438’ 251 6 84354 62795 74228 56551 44999 35489
19th/26th			‘438’ 216 5 35861 33432 89319 32494 37142
5th/12th	0700/0710z	5250/6320	‘374’ 910 5 84583 30085 40901 45985 49471
19th/26th			‘374’ 289 5 36914 46467 36973 37968 89762
5th/12th	0730/0740z	7410/11532	‘427’ 819 5 62795 74228 54551 43685 64655
19th/26th			‘427’ 506 8 34338 42143 30344 36112 30694 89898 43760 49471
5th/12th	0800/0810z	11945/13195	‘352’ 471 6 62795 74228 56551 44999 47773 55580
19th/26th			‘352’ 481 6 46280 33187 33334 39342 38303 44206
5th/12th	1000/1010z	6440/5660	‘893’ 571 6 32441 35786 83110 38611 33218 45503
19th/26th			‘893’ 502 6 26184 26128 22982 82231 85246 22772
5th/12th	1100/1110z	5035/5975	‘754’ 813 6 81235 32469 33311 37642 86212 37367
19th/26th			‘754’ 260 8 27283 26128 22892 83331 85346 22883 22529 28407
5th/12th	1500/1510z	6845/9170	‘537’ 482 6 37184 36129 33983 83321 85246 32993
19th/26th			‘537’ 426 8 42990 22000 32968 25332 36880 35820 44060 22600

**Wednesday**

6th/13th	0820/0830z	8417/9262	‘471’ 932 5 07931 98755 84638 45752 64655
20th/27th			‘471’ 962 5 12444 38625 89532 52814 95931
6th/13th	0830/0840z	11535/11830	‘745’ 283 6 37888 32451 33983 42283 32618 31250
20th/27th			‘745’ 812 6 44999 47773 55580 95638 45555 66625
6th/13th	0830/0840z	7062/10532	‘464’ 903 5 12444 38625 89531 52814 95931
20th/27th			‘464’ 971 5 37833 30023 32953 32235 87855
6th/13th	1000/1010z	12365/14280	‘729’ 463 5 31467 33351 43533 35211 33212
20th/27th			‘729’ 453 6 76458 59421 21677 15542 36059 49385

**Thursday**

7th/14th (E17z)	0800/0810z	11170/9820	‘674’ 205 8 87478 40657 42565 40760 53544 46640 47493 49734
21st/28th			‘674’ 831 5 37888 43451 33983 42283 46280
7th/14th	0930/0940z	8812/9540	‘314’ 925 6 90406 36113 31107 37806 37137 31405
21st/28th			‘314’ 927 5 98058 44593 07628 61154 94511
7th/14th	1200/1210z	12155/10920	‘425’ 968 7 70414 62694 84843 81185 08844 75117 96122
21st/28th			‘425’ 871 6 95931 64155 50525 02465 48955 47183

**Friday**

1st/8th	0900/0910z	5765/6315	‘624’ 980 5 88280 84116 53718 78927 34694
15th/22nd			‘624’ 875 9 38453 43033 39394 38367 36184 43475 38836 32030 44036
1st/8th	0930/0940z	11780/12570	‘516’ 842 7 17301 88554 82045 36717 24042 75956 31670
15th/22nd			‘516’ 837 9 94476 30322 40639 85518 42227 37218 35861 34917 99211

**Saturday**

2nd	0800/0810z	8680/8260	‘254’ 908 6 65906 66610 20336 17301 88554 82045
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With thanks to RNGB, Malc, Ary, HfD

## S11a log Jan/Feb

**S11 log Jan/Feb**

5815kHz	1955z	02/01 [372/00] Konyetz] 1958z S7	Malc	WED
	1955z	04/01 [372/00] Konyetz 1958z S9	Malc	FRI
	1955z	16/01 [379/35 08693.....11868] Konyetz 2006z S9	Malc	WED
	1955z	09/01 [376/00] Konyetz 1853z S5	Malc	WED
	1955z	11/01 [378/00] Konyetz 1958z S9	Malc, E	FRI
	1955z	18/01 [379/35 08693.....11686] Konyetz 2006z S4	Malc	FRI
	1955z	23/01 [377/00] Konyetz 1958z S2	Malc	WED
	1955z	30/01 [379/00] Konyetz 1958z S6	Malc	WED
	1955z	06/02 [378/00] Konyetz 1958z S3	Malc, RNGB	WED
	1955z	08/02 [379/00] Konyetz 1959z S5	Malc	FRI
	1955z	13/02 [371/37 32261.....54459] Konyetz 2006z S7	Malc	WED

7600kHz	1020z	01/01 [420/00] Konyetz 1023z S2	Malc	TUE
	1020z	04/01 [426/00] Konyetz 1023z S2	Malc	FRI
	1020z	08/01 [427/00] Konyetz ]1023z S3	Malc	TUE
	1020z	11/01 [425/00] Konyetz 1023z S3	Malc	FRI
	1020z	15/01 [429/00] Konyetz 1023z S2	Malc	TUE
	1020z	18/01 [42?/00] Konyetz 1023z S1	Malc	FRI
	1020z	22/01 [425/36 00359.....71889] Konyetz 1031z S2	Malc	TUE
	1020z	25/01 [425/36 00359.....71889] Konyetz 1031z S3 QSB2	Malc	FRI
	1020z	29/01 [420/00] Konyetz 1023z S3	Malc	TUE
	1020z	05/02 [427/00] Konyetz 1023z S3	Malc, RNGB	TUE
	1020z	09/02 [422/00] Konyetz 1023z S2	Malc	FRI
	1020z	19/02 [422/00] Konyetz 1023z S2	Malc, RNGB	TUE
	1020z	26/02 [425/00]	RNGB	TUE
10728kHz	1540z	02/01 [562/00]? Konyetz 1543z S1	Malc	WED
	1540z	05/01 [561/00] Konyetz 1543z S3	Malc	SAT
	1540z	09/01 [565/37 27561...17565] Konyetz 1552z S3	Malc	WED
	1540z	12/01 [565/37....etc] Repeat of Wednesday	Malc	SAT
	1540z	16/01 [567/00] Konyetz 1543z S2	Malc	WED
	1540z	06/02 [564/00] Konyetz 1543z S2	Malc	WED
	1540z	09/02 [561/00] Konyetz 1543z S5	Malc	SAT
	1540z	13/02 [561/00] Konyetz 1543z S5	Malc	WED
	1540z	16/02 [560/00] Konyetz 1543z S5	Malc, Barry W	SAT
	1540z	20/02 [560/37 22077.....76603] Konyetz 1552z S2 QSB1	Malc	WED
	1540z	27/02 [566/00]	Barry W	WED
11486kHz	1850z	02/01 [28? NRH]	Malc	WED
	1850z	05/01 [28? too weak to copy msg] (Dutch SDR)	Malc	SAT
	1850z	09/01 [28?/00] Konyetz 1853z S1 (Dutch SDR)	Malc	WED
	1850z	12/01 [28? NRH]	Malc	SAT
	1850z	16/01 [286/00] Konyetz 1853z S2 (Dutch SDR)	Malc	WED
	1850z	19/01 [28? NRH]	Malc	SAT
	1850z	23/01 [285/33..unable to copy msg due fading] S2 QSB2	Malc	WED
	1850z	06/02 [280/00] Konyetz 1853z S2 QSB1 (Dutch SDR)	Malc	WED
	1850z	20/02 [288/00] Konyetz 1853z S2 (Dutch SDR)	Malc	WED
11559kHz	1015z	03/01 [478/00] Konyetz 1018z S3	Malc	THR
	1015z	07/01 [472/00] Konyetz 1018z S4	Malc	MON
	1015z	10/01 [477/00] konyetrz 1018z S3	Malc	THR
	1015z	14/01 [470/34 90367.....12971] Konyetz 1025z S6	Malc	MON
	1015z	21/01 [475/00] Konyetrz 1018z S3	Malc	MON
	1015z	24/01 [476/00] Konyetz 1518z S2 (Dutch SDR)	Malc	THU
	1015z	28/01 [471/00] Konyetz 1018z S4	Malc	MON
	1015z	31/01 [474/37 64620.....49645] Konyetz 1026z S5	Malc	THU
	1015z	04/02 [474/37 64620 13840 00612 29886 55399 01441 52993 65371.....80373 49645] Good	RNGB, Malc	MON
	1015z	11/09 [471/34 22203.....41604] Konyetz 1026z S2	Malc	MON
	1015z	14/02 [471/34 22203.....etc] Repeat of Monday	Malc	THU
	1015z	18/02 [471/00] Konyetz 1018z S2	Malc, RNGB	MON
14753kHz	0735z	01/01 [385/00] Good (Qatar SDR)	RNGB	TUE
	0735z	03/01 [387/00] Konyetz 0738z S1	Malc	THR
	0735z	15/01 [382/00] Konyetz 0738z S2 (Dutch SDR)	Malc	TUE
	0735z	17/01 [383/00] Konyetz 0738z S2 (Dutch SDR)	Malc	THU
	0735z	24/01 [385/00] Konyetz 0738z S2 (Dutch SDR)	Malc	THU
	0735z	31/01 [381/00] Weak	RNGB	THU

## V02 a

Nil Reports

## V07

Sunday

January 2019

0100z	0120z	14963kHz	0140z	13893kHz	
06/01	868 000				Weak
13/01	868 1 720 41 20316 ... 68593 000 000				Weak
20/01	868 000				Weak
27/01	868 000				Weak

February 2019

0100z	15874kHz	0120z	14774kHz	0140z	13874kHz	[Thanks to Priyom.org for frequencies data via DanAr]
04/02	Unworkable					
10/02	878 1 7657 20 59025 ... 71135 000 000					Weak
17/02	878 1 7774 20 84997 ... 01269 000 000 [Venezuelan crisis?]					Weak
24/02	878 1 197 24 25448 ... 60566 000 000					Weak

## V15 North Korean Intelligence via Radio Pyongyang

657, 3250, 3320, 6400kHz Listed in DATE ORDER

657kHz1445z	05/01 AM North Korean intelligence via PBS Pyongyang Pansong. Message in Korean on 657//3320 kHz	AB	SAT
3220kHz1445z	05/01 AM North Korean intelligence via PBS Pyongyang Pansong. Message in Korean on 657//3320 kHz	AB	SAT
657kHz1545z	24/01 Perseus net- Japan //	SR	THU
6400kHz1545z	07/02 Perseus net- Japan	SR	THU

## V26

4243kHz1159z	02/01 [(From M95 sked - USB - Chinese - Female - // N/H) (Remote tuner Hong Kong)]	JPL	WED
4243kHz1213z	21/01 [(From M95 sked - USB - Chinese - Female - // N/H) (Remote tuner Hong Kong)]	JPL	MON
4243kHz1228z	05/02[(From M95 sked - USB - Chinese - Female - // N/H) (Remote tuner Hong Kong)]	JPL	TUE

## Polytones

XPA2 New

Monday

0910z	14977kHz	0930z	13971kHz	0950z	nnnnnkHz	
21/01	06190 00001 00000 ... 31667					Fair [Ary]

Tuesday/Saturday

[Thanks SR]

1600z	12173kHz	1620z	10373kHz	1640z	9373kHz	
10373kHz 1420z?	14/02	Perseus net- Netherlands				SR THU
26/02	09934 00139 95277 ... 60673	1600z errors, 1640z heavy QRM from VOA Deewa R., Thailand	Perseus net			SR TUE

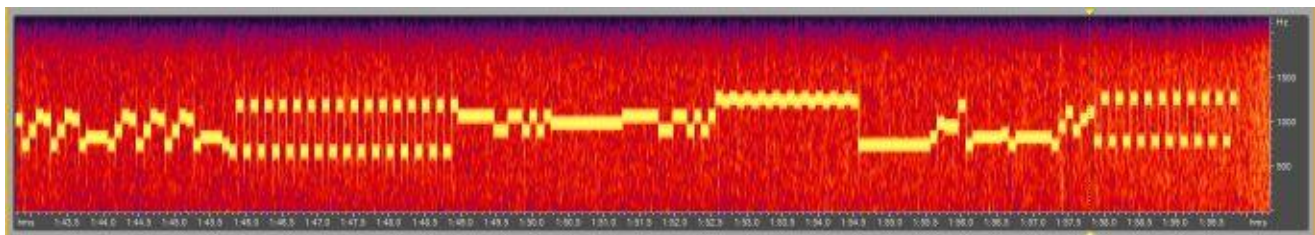
09934 00139 95277 13099 61242 69736 86861 00565 08751 96923  
71358 76052 58725 25315 26762 66932 65020 05399 68293 75276  
55638 40186 50533 96177 09224 92539 89549 67982 25503 99726  
94542 71919 06383 99435 92658 31482 86704 70219 94640 86961  
71638 09702 17765 68764 38971 05183 42851 78300 88013 94259  
24431 07631 23821 21306 10254 77164 58781 31025 73528 07811  
30574 21283 41803 37529 81406 89343 95511 82624 95841 96078  
36565 33070 26899 58237 87438 26157 89720 81185 16619 03892  
36313 76057 58829 55185 75923 37813 02425 52210 76799 37994  
67163 56834 41514 77108 27489 12619 93814 41812 62063 81469  
30844 76268 15694 01197 91912 97527 06069 63350 38295 23756  
75579 91991 59446 86387 68804 96191 31393 94766 94638 77599  
69242 98444 15592 49010 23352 27032 37287 90619 67195 77260  
10036 97860 28360 91316 89364 81303 73481 91449 63988 18366  
34889 60673

Courtesy SR

### Others:

?19261kHz1620z	16/02	Perseus net-Germany	SR	SAT	
?10261kHz1620z	23/02	01659 00001 00000 40656.	Perseus net- Germany.	SR	SAT

# XPA



13462kHz 0830z 01/01/2019 Fair signal

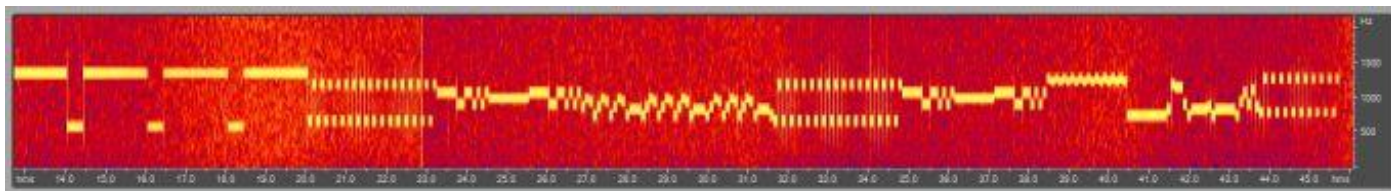
### Monday/Wednesday

### January 2019

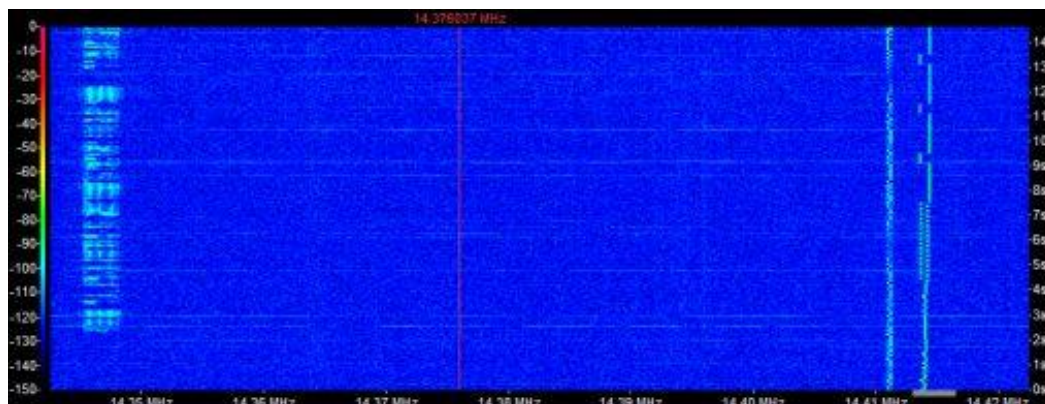
0810z	12157kHz	0830z	13462kHz	0850z	14374kHz		
01/01	265 000 04339 00001 00000 ... 37257					[0850z Weak]	Fair
03/01	265 000 01880 00001 00000 ... 35261					[0850z Very weak]	Weak, QSB to nil
08/01	265 000 01897 00001 00000 ... 40662						Fair
10/01	265 000 05772 00001 00000 ... 35664						Strong*
15/01	265 1 00619 00071 02776 ... 36110						Very strong*
17/01	265 1 00619 00071 02776 ... 36110					[0830z Strong, QSB3]	Very strong
265 265 265 1 265 265 265 1 265 265 265 1							
00619 00071 02776 52457 95448 26452 46630 61026 14568 30900 37975 70290 66259 10004 33830 43360 65968 79647 54732 62682 27176 62056 66780 81024 17352 16241 39600 85004 71116 32559 12660 19831 84162 23103 96979 53196 49400 35333 92457 49408 34121 44803 41700 89064 18787 24689 73188 63075 72948 58021 04608 05545 45824 04682 28160 95334 97157 52440 04688 78405 88326 46222 61867 95351							
17857 57783 16602 88976 78855 19444 10969 28642 89694 36110 <i>Courtesy PLdn</i>							
22/01	265 000 09252 00001 00000 ... 33266						Very strong
24/01	265 000 04918 00001 00000 ... 41655					[0850z Weak]	Strong
29/01	265 1 00616 00065 64279 ... 42101					[0810z Weak]	Strong
265 265 265 1 265 265 265 1 265 265 265 1							
00616 00065 64279 18406 04092 97164 62396 86000 10242 01586 08825 84686 62168 06634 48623 84481 25315 19483 03564 62170 87198 59797 37736 85252 20151 16078 93219 23675 28973 10574 13438 08486 53108 59845 91419 68353 10660 90075 38323 89159 37636 10109 92668 57598 74401 24348 69399 69714 52233 77875 11736 00372 19553 21982 29913 55772 66322 99060 82042 95194 58607 07485 17557 57929							
41575 69218 79227 42101 <i>Courtesy PLdn</i>							
31/01	265 1 00616 00065 64279 ... 42101					[0810z QSB2]	Strong

February 2018

0810z 13397kHz 0830z 14413kHz 0850z 15972kHz



Strong signals at 0810z 05/02 13397kHz



Close proximity of data station to 0830z sending

05/02	243 000 09882 00001 00000 ... 36271	[Local PulseQRM3 0850z]	Strong*
07/02	243 000 03669 00001 00000 ... 40661	[0810z Strong]	Fair*

\*243? Possible error by PLdn

12/02	143 1 00435 00200 02987 ... 43371		Very strong
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143 143 143 1 143 143 143 1 143 143 143 1

00435 00200 02987 86080 01213 56543 93700 83392 32868 03215  
75313 24528 21051 43633 63852 12930 05757 49921 75356 63871  
22917 48514 65340 94599 07676 46781 51755 02119 14272 08850  
21310 83535 44930 24041 25552 11985 71523 36686 37795 11255  
98301 09936 05740 89301 02677 04167 31719 06006 10811 10629  
99059 12437 44175 13701 32808 62277 81325 82057 54528 39150  
16273 58769 10060 24832

77745 94760 58370 49268 39662 04506 04674 35137 15267 89249  
59309 30831 13294 69512 89992 94909 01245 58214 25763 80087  
69627 54332 63049 74819 05415 41350 83202 98138 74631 75792  
61438 34580 36582 71717 48960 84311 92524 13479 40591 36799  
64704 06979 37971 17060 83144 78716 45446 62205 13989 39142  
97711 59922 14909 82692 63393 00366 21838 46326 02696 26448  
59308 30428 77226 03023

46580 89306 58701 82296 49459 71268 00379 33421 55285 86910  
45080 15219 04269 45931 85072 40562 98244 47763 28056 19752  
58092 91858 48471 90690 49925 09996 65292 89388 69621 73162  
25713 99017 09776 53410 84650 73286 23305 79094 52084 35335  
47026 85686 73481 76227 46268 72099 25847 58355 46868 30920  
05934 23491 07892 49781 93601 75747 94390 27690 43974 06379  
98780 55353 13880 30435

86307 96951 75962 91010 74116 33844 40451 57156 75237 84894  
43371  
Courtesy PLdn

14/02	143 1 00435 00200 02987 ... 43371		Very strong
19/02	143 1 00435 00200 02987 ... 43371		Strong
21/02	143 1 00435 00200 02987 ... 43371	[0830z Fair]	Very strong
26/02	143 000 08432 00001 00000 ... 34263		Very strong
28/02	143 000 05870 00001 00000 ... 35264		Very strong



# XPA2 m

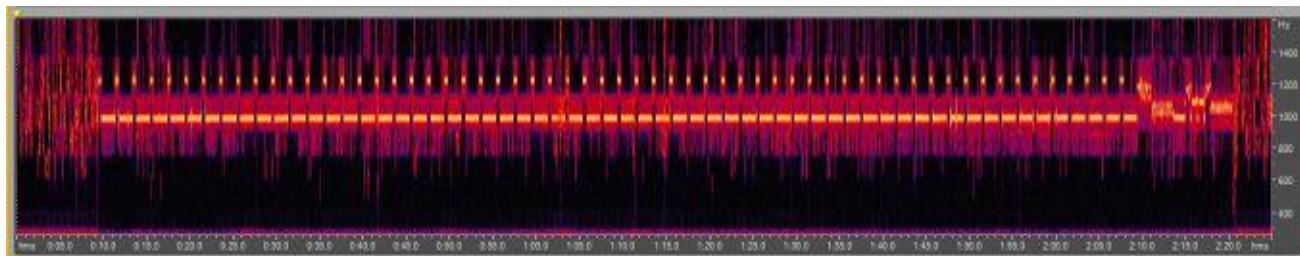
Sunday/Tuesday

January 2019

1300z	16138kHz	1320z	14438kHz	1340z	13438kHz		
01/01	07175 00001 00000 ... 34266					[1300z Very strong]	Fair
06/01	05369 00001 00000 ... 37263					[1340z Not monitored]	Very strong UK,vy weak Argentine
08/01	06086 00001 00000 ... 34266					[1300z only]	Strong
13/01	05302 00001 00000 ... 33655						Very strong*
15/01	00309 00121 75106 ... 73504						Very strong*
20/01	00309 00121 75106 ... 73504					[1300z missed]	Very strong UK, weak Argentine

00309 00121 75106 13854 30539 67220 54258 29156 93229 35900  
 73395 83013 75080 56491 35455 42907 10802 51089 87929 54709  
 86439 31265 11500 86055 01830 00110 49888 44455 22885 58511  
 89254 65444 40126 44726 70465 88901 98209 50399 03711 58244  
 03467 67483 78039 91306 88618 06001 43712 75599 94439 38702  
 65717 74792 95836 90934 15074 52078 66786 05256 12692 63386  
 34706 34685 46532 32011 55795 75017 26539 94964 70144 78449  
 48375 56723 88954 13410 15164 64457 86008 87247 29821 42255  
 50249 36920 83395 90804 89378 56461 88792 15379 69345 12581  
 16329 43029 30796 60277 25012 74809 33787 39739 96745 30415  
 81203 08109 93487 56464 49239 27841 21686 90025 99278 67363  
 53508 04842 75912 61243 80166 94906 02987 11759 09154 49723  
 79435 43828 26904 73504 *Courtesy PLdn*

22/01	00309 00121 75106 ... 73504 Auto intercept as below:					[1300z only]	Very strong
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27/01	05724 00001 00000 ... 36657						Fair QSB2 UK, Weak Argentine
29/01	01246 00001 00000 ... 35255					[1300z Unworkable]	Strong

February 2019

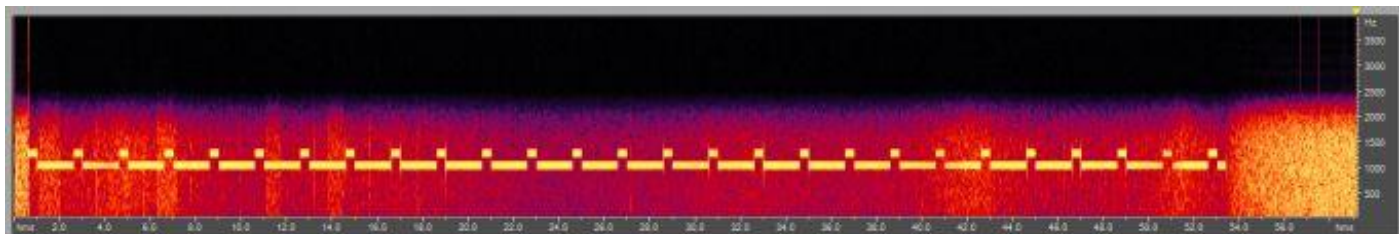
1500z	16338kHz	1520z	14538kHz	1540z	13538kHz		
03/02	03325 00076 01567 ... 75233					[1520/1540z Unworkable] [All unworkable UK]	Weak, Argentine.
05/02	06292 00001 00000 ... 33267					All unworkable UK.	Twente SDR
10/02	03377 00064 97346 ... 76717					[1540z Weak]	Fair UK Weak Argentine

03377 00064 97346 08892 14757 85736 80402 90740 50040 22002  
 86396 43695 93875 90184 93958 41978 95506 91119 20713 91610  
 93678 33404 75394 63093 16879 49561 41350 34820 86269 53322  
 00964 22454 81696 19951 43654 42097 30654 90560 61735 28103  
 72978 90136 19742 63429 58953 94888 44276 49564 52692 12360  
 39090 15981 12255 87149 57761 00980 13576 06555 24656 22251  
 63418 04508 63452 03055 05620 93256 76717 *Courtesy PLdn*

12/02	03377 00064 97346 ... 76717					[1540z Fair]	Strong
17/02	04192 00062 74400 ... 13245					[1500z Unworkable]	Fair
19/02	04192 00062 74400 ... 13245					[1500z Strong]	Weak

04192 00062 74400 46799 20835 93604 69727 05953 97964 88923  
 07335 77258 80468 93902 44422 22652 79543 97180 18918 16069  
 61050 64073 27106 70865 20614 62654 02114 21371 98498 74172  
 81871 18550 22912 62796 10029 33412 00238 26631 93412 15789  
 35201 19958 65917 62311 72240 14733 90946 74589 45817 52171  
 41552 27715 60762 26799 94230 47449 70766 38629 98835 39622  
 00445 03057 37268 18494 13245 *Courtesy PLdn*





\*1500z 52.78s of intro only

24/02                      02381 00060 13081 ... 35326                      [1500z 52.78s of intro\*, tx stops] Very strong

02381 00060 13081 20974 97480 45037 60860 26214 26903 98545  
 92002 62306 72897 41127 67357 11756 95898 56866 74056 77268  
 66313 18351 53814 75756 15091 57557 74289 72497 19942 42014  
 71293 73953 23061 26101 65630 62703 55291 55503 93284 24233  
 94352 66591 37230 62580 89983 22118 77231 12790 55562 06025  
 07928 23697 47404 29754 89234 26697 46202 25140 33411 46134  
 59250 18374 35326                      *Courtesy PLdn*

26/02                      02381 00060 13081 ... 35326                      Very strong

# XPA2 p

Monday/Wednesday

January 2019

0800z	11493kHz	0820z	13393kHz	0840z	14793kHz		
02/01	02434 00001 00000 ... 35255					[0840z Strong]	Fair
07/01	08625 00001 00000 ... 36662					[0700z QSB to nil at end]	Fair
09/01	06592 00001 00000 ... 34667						Fair*
14/01	03180 00201 84140 ... 17525						Very strong*
16/01	03180 00201 84140 ... 17525						Strong, QSB3*
21/01	03109 00001 00000 ... 36253					[0800z Fair]	Strong
23/01	02747 00001 00000 ... 40256						Strong
28/01	03585 00172 28330 ... 20020					[0840z Fair, QSB3]	Strong, QSB3
30/01	03585 00172 28330 ... 20020					[0800z Weak]	Fair

03585 00172 28330 11949 71971 15145 58347 40512 49161 95870  
 59154 99376 71397 89943 89477 48164 12387 71582 89335 27588  
 53009 54119 20875 80698 41258 97960 97424 06732 86621 10098  
 48830 70682 99947 22375 11224 50277 98778 87882 69320 50606  
 68880 37484 18484 37327 29235 90042 49538 07451 71009 40623  
 57285 22817 70797 25739 83639 14862 92774 36838 13205 23957  
 48073 16261 23987 58596 55600 06578 65912 50532 66484 76619  
 92356 12048 83784 03200 18949 39803 70278 58758 03392 75445  
 71816 62747 72066 20419 92024 46503 38366 91892 92346 14960  
 18619 77678 12453 14333 69242 91195 95298 25941 55644 74372  
 87195 43036 47868 48987 68504 74466 44568 00884 22282 03445  
 47466 31283 32056 91918 18178 76039 25287 51361 01156 49801  
 87978 20183 77405 93184 89120 50489 88527 66296 90168 40995  
 90797 67507 19908 60653 66851 85864 12623 27694 65159 42614  
 35221 42209 18452 78266 52768 35413 16766 38249 62581 27359  
 05180 60614 46042 70333 39196 04806 57980 29555 30060 59290  
 44195 36833 88051 13162 36265 80101 79468 78929 37883 78635  
 55746 32150 92504 37946 20020                      *Courtesy PLdn*

## February 2019

**0800z 12137kHz 0820z 13937kHz 0840z 14737kHz**

04/02 Missed

06/02 01837 00150 81106 ... 73107

Strong

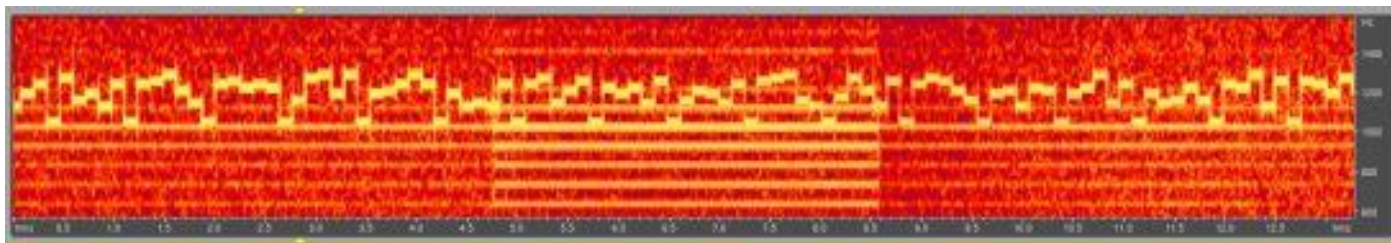
01837 00150 81106 01395 10379 92480 72867 36617 44614 56788  
66516 21585 25164 46886 11140 36636 76819 48348 93666 11521  
09605 10101 73755 93724 92885 04941 98648 43726 19329 35107  
49680 33859 08386 01008 17621 15328 47236 79588 72143 06496  
86517 64717 93880 41492 87754 50758 72264 92490 27334 64820  
79362 13768 63338 67180 81876 59703 91709 03987 08694 11751  
31464 29018 74194 11787 90731 31046 50475 97721 01323 18120  
90666 39031 04917 48393 99165 64841 96993 78707 39531 44772  
70697 59029 04769 85157 40867 26835 17481 25566 53960 67712  
59745 90839 18537 48110 61819 36943 10513 83651 93240 92306  
16591 17584 64610 44279 56506 66379 15720 63369 80764 74840  
20061 91582 60343 25251 14866 97602 60068 15215 51135 54519  
26970 19160 09289 51023 36631 31591 41378 72913 78833 87179  
06487 33341 64859 17991 74431 82389 39145 11918 55486 84691  
91481 56046 86881 65587 99670 66472 54252 42222 70934 88668  
64663 73663 73107

11/02 00582 00180 89772 ... 27571

Very strong

00582 00180 89772 12584 18537 12032 27532 76121 41908 92603  
14931 62400 37562 73467 73613 39951 01269 17602 45663 87370  
41738 37606 50265 81188 13833 66273 34613 83685 44558 27255  
51083 94888 99340 11433 34462 17749 36541 66076 59568 00113  
85688 26554 01788 97837 54065 04871 56990 60174 18197 03753  
41511 14400 90138 21699 85477 12990 50245 34402 40572 19463  
28219 42430 48977 35494 43672 86996 55515 48947 44091 40036  
81336 67940 67565 18939 34696 33006 68047 53507 14306 78911  
28447 68741 34454 35906 30151 65997 76385 32363 74647 76058  
42351 39130 14374 10834 70619 28270 69747 77339 42230 43996  
78216 62052 20745 15483 50276 53630 08661 40338 37492 68984  
12063 09578 96136 74600 08702 78090 78338 58757 51588 47856  
35330 24662 22469 53969 12823 71755 68310 76245 32792 11043  
24086 63700 22319 67049 48435 34780 62393 98778 25480 69251  
60816 82228 01895 47557 34572 17685 14701 13947 73115 67405  
40067 68931 67426 11881 10266 86526 23152 05542 47704 48389  
27433 48659 29104 19578 56616 61936 12234 77444 19993 56836  
66839 74427 76881 92785 21044 37063 18547 85763 53649 41720  
28937 05501 27571

*Courtesy PLdn*



Local QRM3/4 from central heating boiler. 3.8s section shows Phase noise remover switched off briefly, allowing noise to rise.

13/02 00582 00180 89772 ... 27571

[0800z Local QRM3/4 fm central heating boiler, removed]

Fair

18/02 00582 00180 89772 ... 27571

Strong

20/02 00582 00180 89772 ... 27571

Very strong

25/02 03077 00001 00000 ... 34662

Very strong

27/02 09814 00001 00000 ... 37262

Fair

## XPA2 r

### Friday/Saturday

### January 2019

**1400z 16167kHz 1420z 14663kHz 1440z 13923kHz**

04/01 02452 00001 00000 ... 34257

[1400z Weak]

Fair

05/01 03616 00001 00000 ... 37254

[1440z Fair, QSB3]

Very strong UK, Weak Argentine

11/01 00285 00091 36230 ... 34277

Weak (DanAr) Very strong\* (PLdn)

12/01 00285 00091 36230 ... end lost in noise

Weak, QSB to nil\*

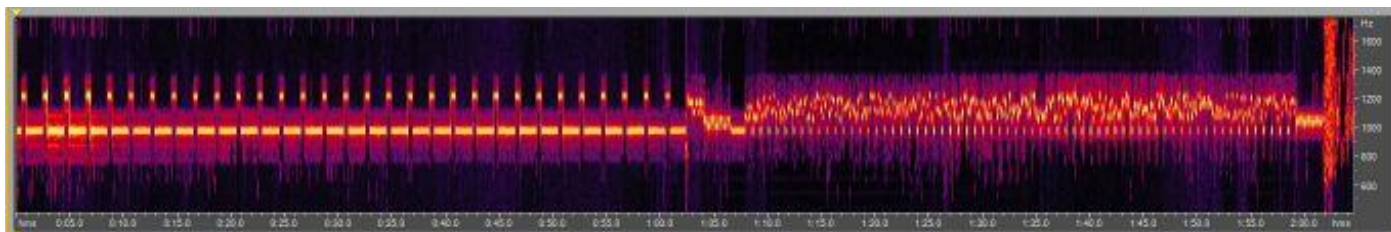
18/01	06331 00001 00000 ... 33261	[1420z Strong]	Weak, QSB3
19/01	01987 00001 00000 ... 41261	[1420z QSB3]	Strong
25/01	05827 00077 81363 ... 42550	[1400/1420z Unworkable]	Strong
26/01	05827 00077 81363 ... 42550	[1400/1440z Unworkable] [1400z Weak, workable Argentine]	Fair, QSB3

05827 00077 81363 04341 83323 37931 81273 27034 89248 45471  
62780 67110 03026 88865 78111 55291 66774 27844 86997 83904  
32309 85913 78471 76623 11848 44562 64484 44054 12428 15163  
80333 19071 51823 90118 82003 98496 08850 15458 36771 55086  
93810 13517 61873 08870 42326 55344 11183 83872 94689 70308  
16994 32995 45993 80838 52645 22512 11511 10709 56839 43997  
18636 50355 89201 62960 17017 53889 58650 36090 83124 89902  
53803 44259 59758 26404 41901 30765 37141 20682 81222 42550  
*Courtesy PLdn*

## February 2019

**1400z      18667kHz                  1420z      17419kHz                  1440z      16212kHz**

01/02	NRH, poor condx	Very poor conditions prevailing, very little above 20M
02/02	NRH, Poor condx	Very poor conditions prevailing, very little above 20M
08/02	00404 00064 08134 ...06726	[1400z NRH 1420z Unworkable] Weak, readable UK [Weak Argentine]

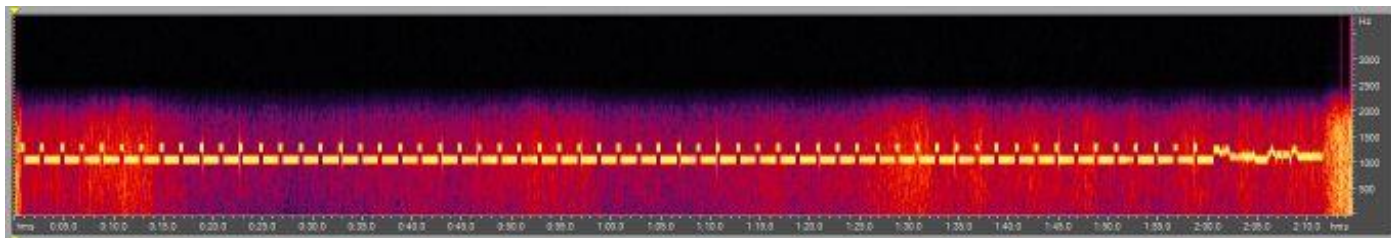


16212kHz 1440z      08/02 transmission as automatically received

08/02	00404 00064 08134 ... 06726	1400z NRH, 1420z Unworkable, 1440z Weak, readable
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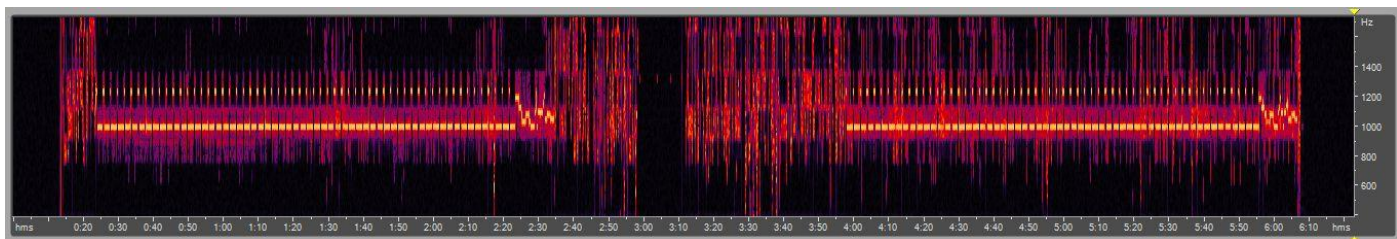
00404 00064 08134 82391 62242 04362 82526 26880 55749 83085  
91387 17887 34561 42217 90230 39893 29731 62391 60425 52713  
53754 99167 55911 39321 95461 76166 70298 32687 60116 52060  
76804 31760 93324 03268 75129 93002 01137 57880 88972 86869  
97206 74769 66434 99418 05072 41026 79581 05154 62343 05050  
95896 31407 35491 08590 50362 94757 58652 04303 14910 99209  
28881 13883 58772 71687 79554 16863 06726 *Courtesy Ary*

09/02	Unworkable
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17419kHz1420z      15/02 good strength [16212kHz 1440z too] for a welcome change.

15/02	03762 00001 00000 ... 35661	[1400z SDR Twente Unworkable] All freqs heard in Argentine	Strong UK
16/02	03680 00001 00000 ... 34263	UK: 1400z NRH [copied SDR Twente] Weak 1420z Occluded by data Tx 1440z 50s of intro only Argentine:1400/1420z, weak.	
22/02	08284 00001 00000 ... 35251	Very strong UK Weak Argentine	
23/02	01206 00001 00000 ... 35251	Very strong UK Weak Argentine Automatic recording, tertiary freq only, both days See below:	



16212kHz 1440z as automatically intercepted on 22 and 23/02, unattended.

## Tones and Hybrids

## X06 Mazielka (1c) logs section

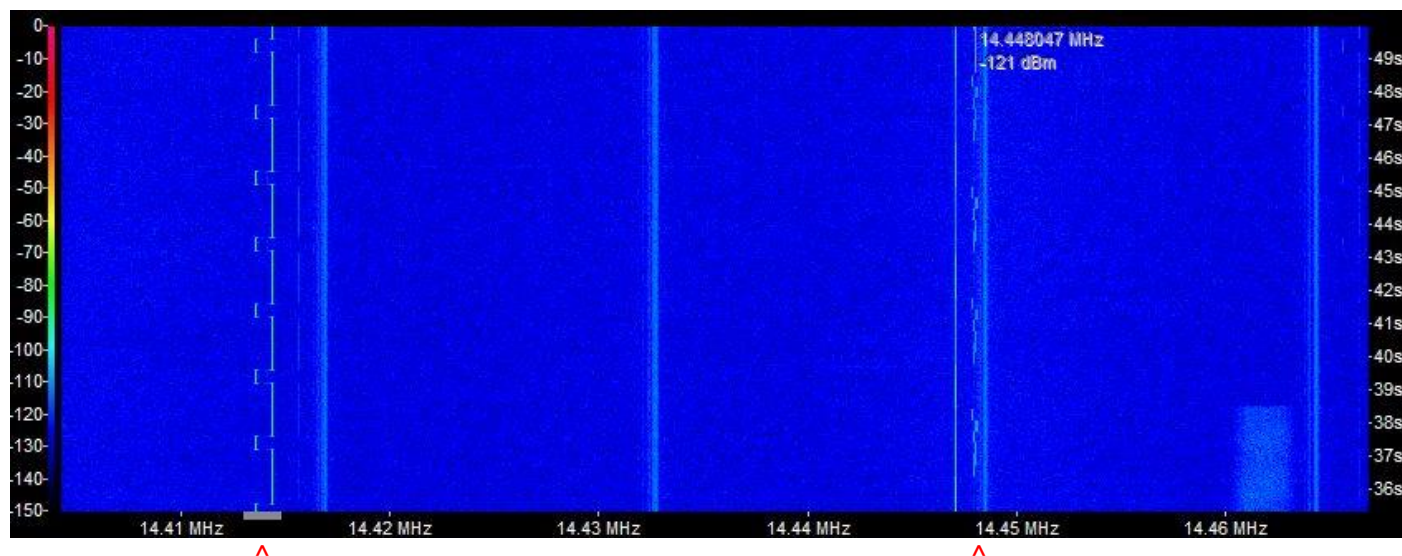
X06 Mazielka (1c) logs section

Date	Day	UTC	Freq	Scale	Monitor	Comments
20190106	Sun	1158	16138	1--6--	LU5EMM	Weak X06b before XPA2m
20190106	Sun	1203/1208	16138	1--6--	LU5EMM	Weak X06b again before XPA2m
20190110	Thu	0806-0807	12133	153624	Ary/NL	I. p., TX to Damascus, G249
20190111	Fri	1307	16167	1--6--	LU5EMM	Weak X06b before XPA2r
20190111	Fri	1313/1315	16167	1--6--	LU5EMM	Weak X06b before XPA2r again
20190118	Fri	1256	16167	1--6--	LU5EMM	Weak X06b before XPA2r
20190127	Sun	1206/1210	16138	161-61	Ary, LU5EMM	X06b before XPA2 (weak in AR)
20190127	Sun	1207	14438	161-61	Ary	X06b before XPA2
20190127	Sun	1208	13438	161-61	Ary	X06b before XPA2
20190127	Sun	1211	14438	6--1--	Ary	X06b before XPA2
20190127	Sun	1212/1220	13438	161-61	Ary	X06b before XPA2
20190127	Sun	1216	13438	6--1--	Ary	X06b before XPA2
20190205	Tue	1024-1034	12149	154263	Ary	TX to Rome, G7 (via Ary's friend)
20190210	Sun	1412/1413	16338	1--6--	LU5EMM	Weak X06b before XPA2m
20190212	Tue	1020	13510	612534	(ANON)	TX to Ashgabat, G89
20190215	Fri	1300/1303	18667	1--6--	LU5EMM	Fair X06b before XPA2r
20190216	Sat	1311/1316	18667	1--6--	LU5EMM	X06b with S1 before XPA2r
20190216	Sat	1321	18667	1--6--	LU5EMM	X06b with S1 before XPA2r
20190222	Fri	1315/1318	18667	1--6--	LU5EMM	Fair X06b before XPA2r

Many thanks to all contributors to this compact logs section

Best regards till next report

Jochen Schäfer, Numbers-, X06 Database and Teamkopf



Note X06 some 30kHz higher from XPA 0830z transmission

14448kHz0832z

07/02

No values; see image

PLdn

THU



# HM01

HM01 started the year with the same callups that had been present since early November, they finally changed on 15/1 then remained the same for a few more days before changing once again. The callups this time contained an unusual number sequence as one callup contained a 9 and ended with a 0. A few anomalies occurred as is expected with HM01 with broadcast stations coming up before the transmissions on a few occasions and also Windows XP dings being heard on the 16<sup>th</sup> and 20<sup>th</sup> of January. On the 20<sup>th</sup> the transmission also began with a repeated "Uno". Files with an F1x extension were transmitted 58233 = 36815823.F1G, 46157 = 50504615.F1C and 50631825.F1C as usual file names beginning 36 had extension F1G and those beginning 50 had extension 50.

## Logs

HM01 11435kHz 1600z 1/1 [86423 20048 70305 81001 03627 64881] Same callups as yesterday. TUE  
HM01 11435kHz 1600z 2/1 [86423 20048 70305 81001 03627 64881] Same callups as yesterday. WED  
HM01 11435kHz 1600z 3/1 [86423 20048 70305 81001 03627 64881] Same callups as yesterday. THU  
HM01 11435kHz 1600z 4/1 [86423 20048 70305 81001 03627 64881] Started with Spanish broadcast station. Same callups as yesterday.  
HM01 11435kHz 1600z 5/1 [86423 20048 70305 81001 03627 64881] Up late, same callups as yesterday. SAT  
HM01 11435kHz 1600z 6/1 [86423 20048 70305 81001 03627 64881] Same callups as yesterday. Some transmitter problems. SUN  
HM01 11435kHz 1600z 7/1 [86423 20048 70305 81001 03627 64881] MON  
HM01 11435kHz 1600z 8/1 [86423 20048 70305 81001 03627 64881] TUE  
HM01 11435kHz 1600z 9/1 [86423 20048 70305 81001 03627 64881] WED  
HM01 11435kHz 1600z 10/1 [86423 20048 70305 81001 03627 64881] THU  
HM01 11435kHz 1600z 11/1 [86423 20048 70305 81001 03627 64881] FRI  
HM01 11435kHz 1600z 12/1 [86423 20048 70305 81001 03627 64881] SAT  
HM01 11435kHz 1600z 13/1 [86423 20048 70305 81001 03627 64881] SUN  
HM01 11435kHz 1600z 14/1 Spanish Broadcast station came up briefly but no HM01 to follow. MON  
HM01 11435kHz 1600z 15/1 [58233 88133 85374 86847 62615 47728] New callups for the first time since 10/11! 58233 = 36815823.F1G, 88133 = 21328813.TXT, 85374 = 78618537.TXT, 86847 = 38178684.TXT, 62615 = 07226261.TXT, 47728 = 17224772.TXT. TUE  
HM01 11435kHz 1600z 16/1 [58233 88133 85374 86847 62615 47728] Windows XP ding heard at end of callups, same callups as yesterday. WED  
HM01 11435kHz 1600z 17/1 [58233 88133 85374 86847 62615 47728] Up late, same callups as yesterday. THU  
HM01 11435kHz 1600z 18/1 [58233 88133 85374 86847 62615 47728] Same callups as yesterday. FRI  
HM01 11435kHz 1600z 20/1 Came up with repeated "Uno" faint windows XP ding heard. SUN  
HM01 11435kHz 1600z 21/1 [66012 17241 10803 16171 10125 67090] New callups note, callup 6 contains a 9 and ends with 0. 66012 = 54016601.TXT, 17241 = 20511724.TXT, 10803 = 46251080.TXT, 16171 = 01041617.TXT, 10125 = 74061012.TXT, 67090 = 57856709.TXT. MON  
HM01 11435kHz 1600z 22/1 [66012 17241 10803 16171 10125 67090] False starts and transmitter problems. Same callups as yesterday. TUE  
HM01 11435kHz 1600z 23/1 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. WED  
HM01 11435kHz 1600z 24/1 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. THU  
HM01 11435kHz 1600z 28/1 [66012 17241 10803 16171 10125 67090] Same callups as Thursday. MON  
HM01 11435kHz 1600z 29/1 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. TUE  
HM01 11435kHz 1600z 30/1 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. WED  
HM01 11435kHz 1600z 21/1 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. THU  
HM01 11435kHz 1600z 1/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. FRI  
HM01 11435kHz 1600z 2/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. SAT  
HM01 11435kHz 1600z 3/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. SUN  
HM01 11435kHz 1600z 4/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. MON  
HM01 11435kHz 1600z 5/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. TUE  
HM01 11435kHz 1600z 6/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. WED  
HM01 11435kHz 1600z 7/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. THU  
HM01 11435kHz 1600z 8/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. FRI  
HM01 11435kHz 1600z 9/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. SAT  
HM01 11435kHz 1600z 10/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. SUN  
HM01 11435kHz 1600z 11/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. MON  
HM01 11435kHz 1600z 12/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. TUE  
HM01 11435kHz 1600z 14/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. THU  
HM01 11435kHz 1600z 15/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. FRI  
HM01 11435kHz 1600z 16/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. SAT  
HM01 11435kHz 1600z 17/2 [66012 17241 10803 16171 10125 67090] Same callups as yesterday. SUN  
HM01 11435kHz 1600z 18/2 [24078 46157 55101 83882 28552 23033] All new callups, 24078 = 87752407.TXT, 46157 = 50504615.F1C, 55101 = 04445510.TXT, 83882 = 22748388.TXT, 28552 = 76652855.TXT, 23033 = 47352303.TXT. MON  
HM01 11435kHz 1600z 19/2 [18251 46158 55101 83883 28553 23034] New callup position 1. 16251 = 50631825.F1C. TUE  
HM01 11435kHz 1600z 20/2 [18251 46158 55102 83884 28554 23035] WED  
HM01 11435kHz 1600z 21/2 [18252 65311 55103 83885 28555 23036] New callup position 2, 65311 = 74016531.TXT. THU  
HM01 11435kHz 1600z 22/2 [18253 65311 55104 83886 28556 23037] Same callups as yesterday. FRI  
HM01 11435kHz 1600z 23/2 [18253 65311 55104 83886 28556 23037] Same callups as yesterday. SAT  
HM01 11435kHz 1600z 24/2 [18253 65311 55104 83886 28556 23037] Same callups as yesterday. SUN  
HM01 11435kHz 1600z 25/2 Hum only, no transmission. MON  
HM01 11435kHz 1600z 27/2 [18253 65311 55104 83886 28556 23037] Same callups as yesterday. WED

## Others' logs:

9330kHz0658z	18/02	24077 46156 11518 83881 28551 23032	Files sent: 87752407.TXT 50504615.F1C 67861151.TXT 22748388.TXT 76652855.TXT 47352303.TXT	(First since 25/01)	Ary	MON
10715kHz2227z	06/02	66012 17241 10803 16171 10125 67090	(Alberta SDR)		HS	WED
11435kHz1557z	04/01	HM01 on air early with SS radio broadcast & cut into header info in progress.				FRI
1559z	24/01				SR	THU
1558z	28/01	Tone found at 1556z				MON
1605z	30/01				SR	WED
11435kHz1600z	07/02	SS BC stn, then HM01 at 1603z				THU
1559z	09/02	HM01 on 1 minute early				SAT
1604z	14/02	HM01 in progress with very weak signal				THU

11530kHz1658z	09/01	startup	SR	WED
1659z	23/01	Started early. Music heard before start up. Weak signal	SR	WED
1703z	30/01	In progress	SR	WED
11530kHz1703z	04/02		SR	MON
1700z	09/02	HM01	SR	SAT
1658z	26/02		SR	TUE
11635kHz1808z	30/01	In progress	SR	WED

#### PoSW's excellent UK logswith most valid comment:

Reception of the Mixed-Mode station from Cuba remains very variable, but perhaps that is no surprise considering the distance the signal has to travel.

2-Jan-19, Wednesday:- 0858:30s UTC, 9240 kHz, starting up after the break, "86423 20048 70305 81001 03627 64881", these are the same 5F groups first noted in early November.

S8 with the deep fading which is always a feature of HM01, data sounds at approx 0902 UTC.

4-Jan-19, Friday:- 1001 UTC, 9155 kHz, start-up routine in progress when tuned in, same 5F groups as on Wednesday.

7-Jan-19, Monday:- 1000 UTC, 9155 kHz, in progress with, "86423 20048 70305 81001 03627 64881" - still. Peaking S9 with deep fading.

9-Jan-19, Wednesday:- 0858:35s UTC, 9240 kHz, same 5F groups, S7 with deep fading, data sounds at 0901:55s UTC approx.

13-Jan-19, Sunday:- 0858:30s UTC, 9240 kHz, "86423 20048 70305 81001 03627 64881" yet again. Up to an indicated S9 with the usual deep fading, data sounds at 0901:50s UTC.

16-Jan-19, Wednesday:- 0929 UTC, 9240 kHz, start-up after the break in progress when tuned in, and unlikely as it may seem, the 5Fs have changed:- "58233 88133 85374 86847 62615 47728" S9 with deep QSB.

18-Jan-19, Friday:- 0858:30s UTC, 9240 kHz, same 5F groups, data at 0901:52s UTC.

20-Jan-19, Sunday:- 0859 UTC, 9240 kHz, was repeating, "Uno" over and over when tuned in, stopped shortly before the hour, plain carrier only, no voice heard, gave up on it approx 0905 UTC.

25-Jan-19, Friday:- 0839 UTC, 9065 kHz, transmission in progress, S8 with deep QSB; the 5Fs have changed at some time in the past few days, "66012 17241 10803 16171 10125 67090". Voice had stopped when checked again at 0852z, carrier went off approx 0854:40s. 0858:29s UTC, 9240 kHz, 5Fs as earlier, weak signal sinking into noise.

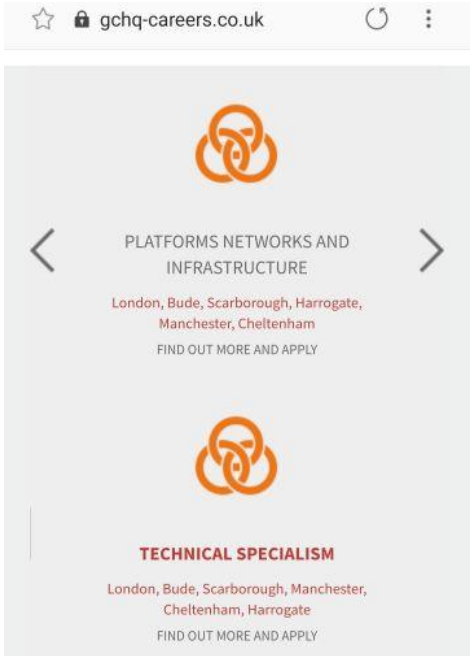
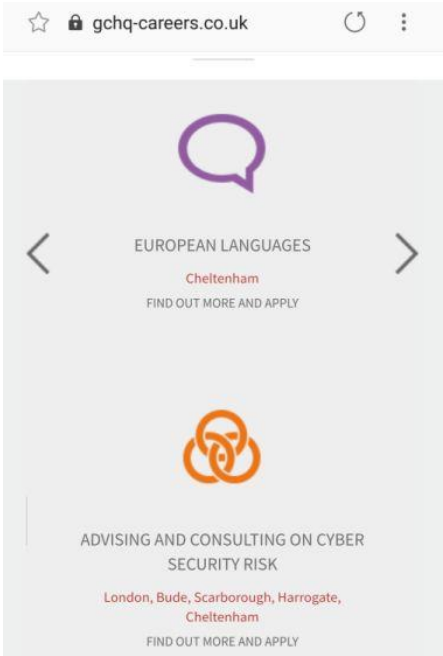
1-Feb-19, Friday:- 0858:15s UTC, 9240 kHz, "66012 17241 10803 16171 10125 67090", S9 with fading, data at 0901:35s UTC.

17-Feb-19, Sunday:- 0859 UTC, 9240 kHz, call-up in progress, best signal from HM01 for over a fortnight, "66012 17241 10803 16171 10125 67090", data at 0901:20s UTC.

18-Feb-19, Monday:- 0858 UTC, 9240 kHz, change of 5F groups this morning, "24077 46156 11518 83881 28551 23032", peaking S9 with deep QSB.

Thanks PoSW.

Gizza Job .....





Here is an interesting advert from 'E' .... Remember 'only US citizen' and the NSA ad above.

## An interesting snippet:



With Manchester allegedly suffering the constant and legendary metrological precipitating disaster of 1 metre/hour of rain 24/7 one has to ask if any external equipment will be encased in pressurised enclosures better than IP66 proof and where all the underwater cables will come ashore lol?

One seriously has to think 'why Manchester?'

## PoSW's Items of Interest in the Media:-

Back in the day of the Soviet Union it was Leonid Brezhnev who said that the USSR had the ambition to control the world's two great treasure houses, the mineral treasure house of Africa and the oil treasure house of the Middle East. It seems that Lenny's successors still have plans with regard to the first of these according to an article in The Times of 11-January. With the headline, "Russia welcome to open African base", and written by Tom Parfitt in Moscow, it goes on to say, "Russia could open a permanent military base in the Central African Republic as it seeks to expand its influence in the continent."

Marie-Noelle Koyara, the CAR defence minister, told the Russian state news agency Novosti that there had been no specific discussions on creating a base but that 'such a possibility cannot be excluded'.

Russia and the CAR signed a deal in August to develop military ties. About 175 Russian military personnel are in the country to train security units.

There have also been reports of private military contractors from a Kremlin-linked group called Wagner operating in the country. The CAR has rich deposits of gold, diamonds and uranium and the mercenaries are said to be protecting the mines where Russian companies have interests.

Three Russian journalists were killed in the CAR last year after visiting Berengo and trying to investigate the activities of Wagner.

Ms Koyara said that Berengo could not be considered a Russian base, even though it was perceived as such. 'If our presidents, as commanders in chief and heads of our nations, take a decision to set up a base ..... then we as ministers will realise the plan,' she said. Andrei

Kemarsky, head of the Russian foreign ministry's Africa department said last month that western countries were 'jealous' of Russia's success in helping to quell insurrection in CAR.

The republic has been plagued by fighting since mostly Muslim rebels forced President Bozize from power in 2013. Even though there is an arms embargo, the United Nations gave Russia permission to deliver light weapons to the government in 2017.

The Kremlin is boosting security and economic ties with African countries after a lull following the collapse of the Soviet Union. This week there were reports of Wagner fighters supporting state security forces in Sudan, which borders the CAR."

It is pretty much the case that whenever one buys a serious newspaper such as The Times there is bound to be a story portraying Russia in a bad light. Such was the case on 12-February which contained a short news item with the headline, "Norway accuses Russia of jamming GPS signals", which says, "Norwegian intelligence officials have accused Russia of blocking GPS signals in the far north of the country, often during NATO and Trident exercises. They said that the incidents, most recently during British attack helicopter training last month, blocked not only military manoeuvres but also civilian air traffic and the police. Russia has denied the allegations."

Television news:- Do those in charge at certain TV stations read these pages? The question is asked because a few months back I commented that as far as I was aware the Ring of Spies film, a portrayal of the Portland spy case, had not been shown on any British TV channel for many years, but as if in response to this statement it has turned up on the Talking Pictures TV channel, "supporting film history", several times in the past few month, a couple of times in November of last year and again in early February.



Talking Pictures is one of the better TV channels and shows a lot of little known films from decades past, some of their stuff from the fifties and sixties is very good, such a refreshing alternative to the predictable format of the main BBC and commercial channels and the standard fare of Harry Potter, Back to the Future, Lord of the Rings, and all the other programming aimed at attracting the attention of the all-important late teens to mid-thirties demographic.

Ring of Spies was shown on Talking Pictures TV on the early evening of 3-February and when it had ended a quick trip around the channels was made, not seriously expecting to find anything other than the usual mainstay of British TV, something with a title like, "Celebrity Baking Midwife Chefs Go Dancing On Ice", perhaps – again, all to cater for a certain audience – but there was another espionage themed film showing on the Movies 4 Men channel, Triple Cross, in which, to quote the Radio Times Guide to Films, "Christopher Plummer is in jail in Jersey when the Nazis invade. He promptly secures a job in the Intelligence Service, leaving viewers to wonder if he's a traitor..... it's based on the allegedly true exploits and autobiography of Eddie Chapman."

There is some interest for us radio buffs in this film; there is a scene where Christopher Plummer is sending Morse on what appears to be an example of the "Paraset", a small CW transmitter-receiver, three metal octal valves – that's vacuum tubes to some – two of which form a receiver of the regenerative type plus a third used as a quartz crystal oscillator/power amplifier, about four or five watts up the antenna, perhaps, and complete with built-in key.

Point to ponder:- "If Winter comes, can Spring be far behind?", Percy Bysshe Shelley, "Ode to the West Wind".

"00000"

"Peter of Saffron Walden"

As mentioned by Peter; DVD available via Amazon UK and presumably other outlets, a first rate film:



## The Spectre's News articles

[See page 2 also].

The Japan Times 06/01/2019

<https://www.japantimes.co.jp/news/2019/01/06/world/fbi-arrests-russian-exports-defense-restricted-goods/#.XH4UeT7TtU>

### **FBI arrests Russian over exports of defense-restricted goods**

Moscow calls case of arrested American Paul Whelan 'very serious'

MOSCOW - Russia demanded an explanation from the United States on Saturday over the arrest of one of its nationals, amid tensions between the two countries after Moscow held a U.S. citizen for alleged espionage.

FBI agents arrested Dmitry Makarenko on Dec. 29 on Saipan, the largest of the Northern Mariana Islands, a U.S. commonwealth in the Western Pacific. A federal arrest warrant indicates he has since been taken to Florida.

While still a fugitive, Makarenko was indicted in June 2017 along with fellow Russian national Vladimir Nevidomy for money laundering and attempting to export defense-restricted goods — military grade night-vision rifle scopes, monoculars and ammunition primers — without obtaining the necessary licenses.

Nevidomy has since been tried and convicted. He was sentenced to 26 months in prison with three years of supervised release.

The Russian foreign ministry said U.S. authorities had failed to provide information about Makarenko's arrest to Moscow, which only found out from his family.

Meanwhile, a top Russian diplomat said the case of Paul Whelan, the U.S. national detained in Moscow, was very serious.

Whelan, a security official at a U.S. auto parts company and former U.S. Marine, was arrested on December 28 “while carrying out an act of espionage,” the FSB security service announced.

“The situation around Mr. Whelan is very serious,” Deputy Foreign Minister Sergei Ryabkov told RIA Novosti news agency.

“He came to Russia, as we understand, to take measures to carry out intelligence activities in violation of Russian law,” he said, indicating that Whelan had not yet been formally charged.

But Whelan’s lawyer Vladimir Zherebenkov told RIA Novosti on Thursday that his client had been charged — with espionage.

Whelan’s family said he was visiting Moscow for a friend’s wedding and U.S. security experts have raised doubts that he was a spy, given a reportedly checkered history in the U.S. military.

Some observers say his arrest came in retaliation for last year’s arrest in the United States of a Russian woman named Maria Butina.

Butina was indicted and pleaded guilty to acting as an unregistered agent of the Russian government — a legal charge sometimes used against foreign intelligence agents.

Analysts have speculated that Moscow might be hoping to swap Whelan for Butina or another Russian held by the United States.

Ryabkov said that given the fact that Whelan has not yet been charged, it was too early to talk about his possible release in a spy swap.

Although Whelan entered Russia on his U.S. passport, he also holds British, Irish and Canadian citizenships.

Ryabkov said the question of which country’s diplomats would have access to Whelan would be decided on a case-by-case basis, based on conventions on consular relations.

The Telegraph 09/01/2019

<https://www.telegraph.co.uk/news/2019/01/09/kremlin-dismisses-swapping-american-spy-russian-agent-butina/>

### **Kremlin denies it is holding British 'spy' as a political pawn**

Vladimir Putin's spokesman has dismissed suggestions that Paul Whelan, an American and British citizen arrested on suspicion of spying in Moscow, could be exchanged for Russian agent Maria Butina.

Asked about speculation of a prisoner swap for Ms Butina, who last month pled guilty in the United States to conspiring to act as a foreign agent, Dmitry Peskov said he had “not heard these statements,” but maintained that this could not be a reason for Mr Whelan's arrest.

“In Russia people are never used as pawns in a diplomatic game,” he told reporters. “In Russia counter-intelligence activities are conducted against those who are suspected of spy activities. This yes, this is done on a regular basis.”

He referred to statements by Russia's FSB security agency, which said it had detained Mr Whelan while he was “conducting espionage activities”.

On Saturday, the foreign ministry argued that it was premature to discuss any exchange.

A trade appears unlikely given the difference in sentences expected for the two prisoners.

In Russia, where trials almost always result in a guilty verdict, Mr Whelan faces 10 to 20 years.

The conspiracy charge against Ms Butina, who built relationships with the National Rifle Association and Republican Party officials on behalf of the Russian government and met Donald Trump Jr, carries up to five years. Sentencing guidelines, however, suggest she will do no more than six months before being deported.

Several other Russians are serving US prison sentences criticised by Moscow, including convicted arms dealer Viktor Bout, drug smuggler Konstantin Yaroshenko and hacker Roman Seleznev, the son of a parliamentarian.

A former US Marine who now works as head of security for a Michigan auto parts company, Mr Whelan holds US, British, Canadian and Irish passports as a result of his family's emigration.

He travelled to Russia several times beginning in 2006 and was in Moscow for a wedding, his relatives said.

The well-connected news site Rosbalt claimed that he was arrested in the Metropole hotel near the Kremlin after receiving a USB stick with a list of employees of a state agency.

He is being held in Lefortovo pre-trial detention centre, a former KGB prison that is still known for its harsh conditions.

Although Mr Whelan corresponded with many young men with military or IT backgrounds on the Russian social network VK, two of his friends there told The Telegraph that he had never asked them for any security or defence information and was mainly interested in practicing Russian and learning about the culture.

He sent postcards and Marine Corps medals to one of them and met with him during a trip to southern Russia.

Former CIA officials have argued that the United States would not send an agent to Russia without diplomatic cover.

<https://www.japantimes.co.jp/news/2019/01/11/world/crime-legal-world/poland-arrests-two-spying-allegations-including-huawei-employee/#.XHZ6BeT7TIU>

### **Poland arrests two over spying allegations, including Huawei employee**

WARSAW - Poland has arrested a Chinese employee of Huawei and a Polish national involved in cyberbusiness on allegations of spying, Polish media reported on Friday, deepening the controversy over Western criticism of the Chinese telecoms equipment maker.

U.S. intelligence agencies allege Huawei Technologies Co. is linked to China's government and that its equipment could contain "backdoors" for use by government spies.

No evidence has been produced publicly and the firm has repeatedly denied the claims. But the criticism has led several Western countries and companies to look into whether they should allow Huawei's equipment to be used in their telecoms networks, straining relations with Beijing.

Polish public TV channel TVP said security services had searched the local offices of Huawei, as well as the offices of telecoms firm Orange Polska, where it said the Polish national works.

China's foreign ministry said it was "greatly concerned" by the reports, and urged Poland to handle the case "justly."

"We are aware of the situation, and we are looking into it. We have no comment for the time being," Huawei said in a statement.

"Huawei complies with all applicable laws and regulations in the countries where it operates, and we require every employee to abide by the laws and regulations in the countries where they are based," it added.

Orange Polska said in a statement the security agency had on Tuesday gathered materials related to an employee, whom it did not identify. The company added it did not know if the investigation was linked to the employee's professional work, and that it would continue to cooperate with the authorities.

TVP said the security services also searched the offices of Poland's telecoms regulator, the Office of Electronic Communications, but the regulator denied this.

In December, Canadian authorities arrested a top Huawei executive, Meng Wanzhou, at the behest of U.S. authorities as part of an investigation into alleged violations of U.S. trade sanctions, raising tensions with China at a time when Washington and Beijing are engaged in a broader trade war.

The West's security concerns surrounding Huawei, and fellow Chinese telecoms equipment firm ZTE Corp., centre around China's National Intelligence Law. Approved in 2017, the law states that Chinese "organizations and citizens shall, in accordance with the law, support, cooperate with, and collaborate in national intelligence work."

This has sparked fears Huawei could be asked by the Chinese government to incorporate "backdoors" into their equipment that would allow Beijing access, for spying or sabotage purposes. Some experts also see a risk that Chinese intelligence may develop an ability to subvert Huawei's equipment.

Norway said on Wednesday it was considering whether to join other Western nations in excluding Huawei from building part of the country's new 5G telecoms network.

"The Chinese national is a businessman working in a major electronics company ... the Pole is a person known in circles associated with cyberbusiness," Maciej Wasik, the deputy head of Poland's special services, told state news agency PAP.

The arrested pair will be held for three months, PAP reported, citing the spokesperson for Poland's head of special services.

TVP said the Polish national was a former agent of the internal security agency. The agency did not immediately respond to Reuters' requests for comment.

<https://www.japantimes.co.jp/news/2019/02/07/world/gop-nra-operative-dating-russian-agent-butina-charged-wheelchair-assisted-living-scams/#.XHZ2DOT7TIU>

### **GOP and NRA operative dating 'Russian agent' Butina charged over wheelchair and assisted living scams**

WASHINGTON - An American who was dating jailed alleged Russian agent Maria Butina was charged with fraud Tuesday, adding a new twist in the sprawling investigations into Moscow's meddling in U.S. politics.

Republican and National Rifle Association operative Paul Erickson was charged with one count of fraud for cheating investors in companies he controlled that purported to be running assisted living facilities and building homes in North Dakota.

He also allegedly cheated investors in a wheelchair design and production company, according to the indictment.

In all three cases, he took hundreds of thousands of dollars from investors and used some of it for his personal needs, the indictment said.

In addition, he was charged with seven accounts of money laundering for transfers he made using the fraudulently raised funds.

Erickson opened the door to conservative circles for Butina, who built a network of high-level Republican and NRA contacts between 2013 and 2017 before her arrest last year.

With her, he arranged for a high-level delegation from the NRA to visit Russia in December 2015, where they met with senior Russian officials.

That visit has come under scrutiny in investigations into possible collusion between President Donald Trump's election campaign and Russia.

In Washington, Erickson helped Butina gain admission to American University's graduate school and they lived together while she studied and wove her way through Washington's Republican circles.

According to the charges against her and her guilty plea last December, Butina worked for powerful Russian central banker and Vladimir Putin crony Alexander Torshin on an explicit mission to "establish unofficial lines of communications with Americans who having power and influence over U.S. politics."

"Butina sought to use those unofficial lines of communication for the benefit of the Russian Federation," the Justice Department said.

Meanwhile, based on the Russian connections he made through Butina, in 2016 Erickson offered to set up contacts between the Kremlin and the Trump campaign.

According to U.S. media reports, those actions have raised the possibility that he could be charged with illegally acting as an agent for Moscow, and with conspiracy for his work with Butina.

The indictment Wednesday made no direct mention of his relationship to Butina, who is in jail awaiting sentencing.

But there were hints of a connection: money transfers to American University, and to “M.B.,” which could be her initials.

The Guardian 15/02/2019

<https://www.theguardian.com/world/2019/feb/15/belgian-spy-scandal-reveals-security-fears-for-eu-and-nato>

### **Senior Belgian spy accused of sharing secrets with Russia**

Major in intelligence service under investigation amid fears over EU and Nato security

A senior Belgian intelligence officer is under investigation over allegedly sharing secrets with the Russians, in a case that exposes fears about spying in the European Union and Nato.

An unnamed major who is the head of division at the general intelligence and security service (GISS), the equivalent of M16, is accused of having exchanged confidential information with a Serbian woman believed to be a Russian agent.

In another blow to the agency, it emerged that Clement Vandenborre, the head of counter-intelligence at GISS, was suspended from his post at the end of last month. He is alleged to have shredded confidential documents, according to the Flemish daily De Morgen, which broke the story on Vandenborre and the Russian spying allegations.

A spokesperson for Belgium’s defence ministry confirmed that an investigation was under way. “In order not to hinder this investigation, we will not comment on this subject,” the spokesperson said.

Die Welt reported earlier this week that, according to a confidential assessment prepared by the EU’s foreign affairs service, about 250 Chinese and 200 Russian spies were working in the Belgian capital, which is also home to Nato headquarters.

The latest allegations against the GISS will deepen long-standing concerns about infighting, low morale and rogue missions in the feuding organisations that make up Belgian intelligence.

The Dutch-language public broadcaster VRT reported this week that two senior officers from Belgium’s intelligence service had travelled to Damascus in 2016 to negotiate with the regime of Bashar al-Assad, without the knowledge of the then defence minister.

The officers were believed to have gone to Syria in the hope of developing contacts and gaining information about Europeans in the country who had joined jihadi groups, although nothing was gained, according to media reports. The defence minister at the time, Steven Vandeput, has denied any knowledge of the operation. Some analysts believe the French intelligence may be involved, doubting Belgium would act alone.

After the Brussels attacks in 2016, Belgium’s warring intelligence services were urged by politicians to work together, but the latest reports suggest problems persist.

Bart Eeckhout, a senior writer at De Morgen, said the GISS was adept at espionage, “especially from each other”. In a comment article for the paper he described a service in the grip of permanent “office war”, characterised by mistrust, lack of direction and low morale among officers who believe resources are inadequate.

One source told the paper the service was in such disarray that it struggled to gather up-to-date information after the disputed elections in the Democratic Republic of the Congo, a key country of interest for Belgium as the former colonial power.

Neither Vandenborre nor the unnamed officer have commented on the allegations, although sources close to them have said the charges are baseless.

The allegations will fuel concerns about spying before the European parliament elections in May, which are already seen as a target for hostile powers.

The EU foreign service was even reported to have advised EU diplomats to avoid a popular Brussels steakhouse close to the European commission’s Berlaymont headquarters, prompting flabbergasted denials from the restaurant that any useful spying could be done in the noisy dining room.

The EU’s deputy Brexit negotiator, Sabine Weyand, made front-page news in the UK last summer when it was reported that she had raised the alarm about M16 spying on the Brexit negotiations. It emerged later that she had been joking.

The Japan Times 21/02/2019

<https://www.japantimes.co.jp/news/2019/02/21/asia-pacific/politics-diplomacy-asia-pacific/pyongyang-purge-kim-seen-shuffling-nuclear-talks-team-defections-alleged-spying/#.XHZ08OT7TIU>

### **Pyongyang purge: Kim reportedly shuffling team for nuclear talks following defections and alleged spying**

SEOUL - Veteran North Korean diplomats are being sidelined from nuclear talks ahead of the second summit with the United States as recent defections and allegations of spying undermine the trust of leader Kim Jong Un, South Korean officials and experts say.

Kim has purged and replaced many top diplomats and officials who served his father and grandfather with new, younger advisers as he gears up to meet U.S. President Donald Trump in Vietnam next week.

Among the most significant changes, Kim has appointed little-known Kim Hyok Chol to spearhead working-level talks with U.S. nuclear envoy Stephen Biegun.

A former ambassador to Spain who was expelled in 2017 after North Korean nuclear and missile tests, he has been working at the State Affairs Commission, a top governing body chaired by the young leader, a South Korean official said.

He replaced Vice Foreign Minister Choe Son Hui, who led negotiations in the run-up to the first Trump-Kim summit in Singapore in June.

“It’s a big boys’ game, and many diplomats are being neglected, as they face fierce inter-agency rivalry and questions about their ideological faithfulness given their experience in richer, capitalist nations,” the South Korean official said, asking to remain anonymous due to the sensitivity of the issue.

“Kim Hyok Chol is a career diplomat too, but he apparently has passed a loyalty test to become the point man in the negotiations.”

The promotion of Kim Hyok Chol, believed to be in his late 40s, was partly influenced by the 2016 defection of Thae Yong Ho, a former deputy ambassador to Britain, and the recent disappearance of Jo Song Gil, a senior diplomat in Italy, the official said.

Adding to Kim Jong Un’s mistrust in veteran diplomats, Han Song Ryol, who was vice foreign minister in charge of U.S. relations until early last year, has been purged on charges of spying for the United States, two sources said.

Han was one of the best-known and highly respected North Korean diplomats in the United States, having for years manned the “New York channel,” a key diplomatic conduit between Pyongyang and Washington, before returning home in 2013.

But Han has been out of the public eye for the past year, with state media last mentioning him in February 2018.

South Korea’s Unification Ministry removed his name in its annual “Who’s Who” in North Korea, released last month.

A diplomatic source in Seoul, citing North Korean officials, said Han was purged last year after being accused of spying for the United States and pocketing funds.

Michael Madden, a North Korea leadership expert at the Washington-based Stimson Center who regularly speaks with sources inside the country, said two people told him Han faced “espionage charges” and disappeared last July.

Thae also said Han had been purged, which means he was likely to have been sent to a labor camp for re-education or possibly had been executed.

South Korea’s Chosun Ilbo newspaper also reported last month, citing an unnamed source, that Han was sent to a labor camp after making an unspecified proposal on the nuclear talks against the guidelines from the ruling Workers’ Party.

An official at the Unification Ministry said the information on Han could not be confirmed.

The first source said: “There were financial problems, but the biggest thing was his spy allegation. Several other diplomats, especially those who were close to Han, were investigated.”

In a 2017 report based on interviews with 20 elite defectors, the North Korea Strategy Center, a defector-run think tank in Seoul, said more than 70 officials had been executed since Kim took power in late 2011.

Thae said at least 10 diplomats were killed under Kim, replaced by younger aides and loyalists. Many other diplomats and officials have been sidelined.

In a Facebook post last week, the Russian Embassy in North Korea confirmed Kwon Jong Gun was the new director of the foreign ministry’s North America Department, a post that has been vacant since Choe became a vice foreign minister.

Choe’s boss, Foreign Minister Ri Yong Ho, a former nuclear envoy who was widely expected to be U.S. Secretary of State Mike Pompeo’s counterpart, has never had a chance to show his credentials because Kim continued to rely on Kim Yong Chol, a former spymaster specialized in inter-Korean affairs.

Thae, the former diplomat in London, said the unorthodox new breed of negotiators was aimed at driving a wedge between the free-wheeling Trump and his team of technocrats, who are mostly cautious and skeptical about North Korea’s claims of pursuing denuclearization.

“North Korea’s diplomacy has taken an unprecedented tactical course, which is tailor-made for Trump,” Thae told a news conference in Seoul on Tuesday. “By appointing Kim Hyok Chol, Kim Jong Un was trying to give the impression that there’s no one between them, so that Trump will talk to him and shut his ears to his own staff.”

# Chart Section Index

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March 2019

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Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC	wk	Stn	Fam	Mar kHz, ID, ...	Apr kHz, ID, ...
		x	x				0315		E11	03	7850 25#	5779 25#
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			x				0430/0450/0510		E07A	01B		6788/ 7488/ 9322 741
x							0450		E11	03	5371 41#	5371 41#
	x			x			0455		S11A	03	5358 32#	5358 32#
x	x	x	x	x	x	x	0500		V13	0	11430	11430
x		x		x		x	0500		HM01	18	10860	10860
	x		x		x		0500		HM01	18	11462	11462
x	x	x	x	x			0500		M14	01A	18041 952	18041 952
					x		0500/0520/0540		M12	01B		8176/ 9376/10476 134
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	x						0530		M01A	14	9441 751	9441 751
		x					0530		M01A	14	9129 498	9129 498
			x				0530/0550/0610		E07A	01B	6922/ 8122/ 9322 913	
			x				0540		M01A	14	7692 536	7692 536
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	x		x		x		0600		HM01	18	14375	14375
	x						0600/0610		S06S	01A	15855/16485 438	15855/16485 438
					x	x	0600/0620/0640		E07	01B		9064/10264/11464 024
					x		0600/0620/0640		M12	01B	8158/ 9258/10658 126	
			x	x			0600/0700	1/3	E06	01B	16230/19325 864	
	x			x			0620		M01A	14	10233 354/458	10233 354/458
		x					0620		M01A	14	9421 135	9421 135
	x			x			0630		M01A	14	9447 143/792	9447 143/792
			x				0630		M01A	14	8111 902	8111 902
x							0630/0640		S06S	01A	22185/20050 524	22185/20050 524

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x		x		x		x	0657		HM01	18	9330	9330
	x		x		x		0657		HM01	18	13435	13435
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						x	0700		M01	01B	6510 463	6510 463
	x						0700/0710(15)		S06S	01A	5760/ 6930 374	5760/ 6930 374
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	x		x				0735		S11A	03	14975 38#	14975 38#
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x		x		x		x	0757		HM01	18	9065	9065
	x		x		x		0757		HM01	18	11365	11365
x	x	x	x	x	x	x	0800		V13	0	15250	15250
x							0800	1/3	G06	01A	6810 329	6810 329
			x				0800/0810		E17Z	01A	14260/12930 674	14260/12930 674
	x						0800/0810		S06S	01A	11635/10420 352	11635/10420 352
					x		0800/0810	1	S06S	01A	10350/ 8520 254	10350/ 8520 254
					x		0800/0820/0840		E07A	01B		12218/13418/14418 244
x		x					0800/0820/0840		XPA2p	01B	12192/13892/14892	
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		x					0820/0830		S06S	01A	8630/ 9255 471	8630/ 9255 471
x							0830/0840		S06S	01A	9220/ 8270 371	9220/ 8270 371
		x					0830/0840		S06S	01A	9082/ 9952 464	9082/ 9952 464
		x					0830/0840		S06S	01A	11530/12140 745	11530/12140 745
				x			0830/0840		S06S	01A	10855/11160 352	10855/11160 352
			x	x			0830/0930		S06	01A	19415/16268 842	19078/16318 842
	x		x				0845		E11	03	10246 15#	10246 15#
x		x		x		x	0857		HM01	18	9240	9240
	x		x		x		0857		HM01	18	11462	11462
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x							0900/0910		S06S	01A	14580/13165 872	14580/13165 872
				x			0900/0910		S06S	01A	5744/ 6524 624	5744/ 6524 624
					x		0900/0920/0940		E07A	01B	11133/12133/13433 114	
x		x					0910/0930/0950		XPA2	01B	search	search
			x		x		0910/0930/0950		XPA2	01B	search	search
x	x	x	x	x	x	x	0930		M14	01A	17458/15994 617, only 10., (11.), 25., (26)	17458 617, only 10., (11.), 25., (26)
		x	x				0930		E11	03	6807 27#	6807 27#
			x				0930/0940		S06S	01A	9081/10514 314	9081/10514 314
				x			0930/0940		S06S	01A	12140/13515 516, search	12140/13515 516, search
x		x		x		x	0957		HM01	18	5855/ 9155	5855/ 9155
	x		x		x		0957		HM01	18	12180	12180
	x			x			1000		E11	03	7840 30#	7840 30#
	x						1000/1010		S06S	01A	6410/ 7340 893	6410/ 7340 893
		x					1000/1010		S06S	01A	13365/14505 729	13365/14505 729
			x			x	1010/1030/1050		M12	01B	14769/16269/18169 721	

Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC	wk	Stn	Fam	Mar kHz, ID, ...	Apr kHz, ID, ...
x			x				1015		S11A	03	x11493 47#, <b>search</b>	x11493 47#, <b>search</b>
	x			x			1020		S11A	03	7469 42#	7469 42#
x		x					1045		E11	03	7317 69#	7317 69#
	x						1100/1110		S06S	01A	6190/ 7230 754	6190/ 7230 754
	x			x			1100/1120/1140		E07	01B	19118/17418/15918 149	20574/19074/17474 504
x	x	x	x	x	x	x	1200		V13	0	9276	9276
		x					1200/1300	1/2	G06	01A	x5903, 5422 145, <b>search</b>	x5903, 5422 145
x							1200/1210		S06S	01A	9145/11460 831	9145/11460 831
			x				1200/1210		S06S	01A	12415/14212 425	12415/14212 425
	x	x					1205		E11	03	7727 46#, <b>check</b>	7727 46#
x				x			1210/1230/1250		M12	01B		<b>search</b>
x				x			1225		E11	03	20286 52#	20286 52#
x	x	x	x	x	x	x	1300		V13	0	9276	9276
			x				1300	1/3	G06	01A	4598 329	4598 329
			x		x		1300		E11	03	10302 58#, <b>check</b>	10302 58#
x				x			1310/1330/1350		M12	01B	<b>search</b>	
	x				x		1345		E11	03	13046 91#	13046 91#
x	x	x	x	x	x	x	1400		M08A	18	8096	8096
x		x					1400/1420/1440		M12	01B	16276/14876/13376 283	18524/17424/15824 548
				x	x		1400/1420/1440		XPA2r	01B	18667/17419/16212	
			x		x		1410/1430/1450		E07	01B	<b>search</b>	<b>search</b>
					x		1500		M01	14	6260 463	6260 463
	x						1500/1510		S06S	01A	6464/ 7242 537	6464/ 7242 537
	x					x	1500/1520/1540		XPA2m	01B	16138/14438/13438	
			x		x		1510/1530/1550		E07	01B	<b>search</b>	
				x			1510/1530/1550		E07A	01B		12174/11074/10274 102
			x				1530		E11	03	10330 26#	10330 26#
		x			x		1540		S11A	03	10800 56#	10800 56#
x	x	x	x	x	x	x	1557		HM01	18	11435	11435
	x	x					1600	1/3	M14	01A	x5740 (tue)/ x6780 (wed) 725 <b>check</b>	x5740 (tue)/ x6780 (wed) 725
	x					x	1605		E11	03	6397 23#	6397 23#

Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC	wk	Stn	Fam	Mar kHz, ID, ...	Apr kHz, ID, ...
				x			1610/1630/1650		E07A	01B	11473/10173/ 9373 413	
		x				x	1625		E11	03	10448 97#	10448 97#
	x		x				1645		E11	03	10800 33#	10800 33#
				x		x	1650		E11	03	13873 92#	13873 92#
x							1700/1800	1/2	G06	01A	x4645, 5362 938, <b>search</b>	x4645, 5362 938
x	x	x	x	x	x	x	1657		HM01	18	11530	11530
		x				x	1700/1720/1740		E07	01B		x14603/13403/ 12103 641, <b>search</b>
				x			1700/1800	1/3	M14	01A	5945/ 5477 382	5945/ 5477 382
		x			x		1705		E11	03	10213 39#	10213 39#
		x			x		1730		E11	03	5844 40#	5844 40#
			x				1730		E11	03	7864 41#	7864 41#
		x					1740/1840	3	E06	01A	2015: 13433/10166 634, <b>search</b>	
x						x	1745		E11	03	13470 24#	13470 24#
	x		x				1800		M01	14	5475 463	5475 463
x	x	x	x	x	x	x	1757		HM01	18	11635	11635
		x				x	1800/1820/1840		E07	01B	x13419/12139/ 10739 417, <b>search</b>	
	x					x	1800/1820/1840		XPA2m	01B		14538/13538/12138
x							1810		M01B	14	3535, 4590 420 (summer time)	3535, 4590 420
	x						1820	2/4	M14	01A	5945 346	5945 346
			x				1830	2/4	G06	01A	5934 579	5934 579
			x				1832		M01B	14	3510, 4605 201 (summer time)	3510, 4605 201
	x			x			1840/1850/1900	1	F01	01A		12194/10581/ 8112
		x			x		1850		S11A	03	10213 28#	10213 28#
x			x				1900		E11	03	7317 64#	7317 64#
x		x					1900/1920/1940		E07	01B		15819/14419/12219 842
		x					1900/1920/1940		M12	01B	8047/ 6802/ 5788 463	8047/ 6802/ 5788 463
x			x				1900/1920/1940		M12	01B	10343/ 9264/ 8116 124	10343/ 9264/ 8116 124
				x	x		1900/1920/1940		XPA2r	01B		17462/16114/14828
				x			1900/2000	1/3	M14	01A	5275/ 4875 735	5275/ 4875 735

Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC	wk	Stn	Fam	Mar kHz, ID, ...	Apr kHz, ID, ...
				x			1900/2000	1/3	S06	01A		x9047/ 6769 627, <b>search</b>
					x		1900/2000	1/3	S06	01A		x4491/ 3815 263, <b>search</b>
				x			1902		M01B	14	3625, 4941 153 (summer time)	3625, 4941 153
				x		x	1910		E11	03	8530 61#	8530 61#
x							1910		M01B	14	3625, 4440 153 (winter time)	
x							1915		M01B	14	3645, 4455 771 (summer time)	3645, 4455 771
		x					1920	2/4	M14	01A	5464 537	5464 537
	x		x				1925		E11	03	10620 55#?	10620 55#?
				x			1930	2/4	G06	01A	5442 947	5442 947
			x				1932		M01B	14	3510, 4605 201 (winter time)	
	x			x			1940/1950/2000	1	F01	01A	10467/ 8094/ 6779	
			x				1942 (1940 ?)		M01B	14	3715, 4570 477 (summer time)	3715, 4570 477
		x		x			1950/2010/2030		M12	01B		13453/12153/10453 414
		x		x			1955		S11A	03	4016 37#	4016 37#
	x		x				2000		M01	14	5020 463	5020 463
x	x	x	x	x	x	x	2000		M08A/ V02A	18	7554	7554
x							2000/2020/2040		M12	01B	10343/ 9264/ 8116 463	10343/ 9264/ 8116 463
		x					2000/2020/2040		E07A	01A		8144/ 6944/ 5744 147, <b>search</b>
x		x					2000/2020/2040		E07	01B	10651/ 9151/ 7651 616	
				x			2000/2100	1/3	S06	01A	x9047/ 6769 627, <b>search</b>	
					x		2000/2100	1/3	S06	01A	x4491/ 3815 263, <b>search</b>	
				x			2002		M01B	14	3625, 4941 153 (winter time)	
					x	x	2005		E11	03	8186 36#	8186 36#
				x			2010		M01B	14	3520, 4585(4940) 582 (summer time)	3520, 4585(4940) 582
x							2015		M01B	14	3645, 4455 771 (winter time)	
			x				2030	1/3	E06	01A	5186 891	5186 891
			x				2042 (2040 ?)		M01B	14	3715, 4570 477 (winter time)	

## M01 FREQUENCY LIST

Frequencies may vary by a few kHz

**JAN FEB NOV DEC**

**M01/1**

**197**

DAY	TIME UTC	FREQ kHz
TUE / THU	1800	5320
TUE / THU	2000	4490
SAT	1500	5810
SUN	0700	5465

**MAR APRIL SEPT OCT**

**M01/2**

**463**

DAY	TIME UTC	FREQ kHz
TUE / THU	1800	5475
TUE / THU	2000	5020
SAT	1500	6260
SUN	0700	6510

**MAY JUNE JULY AUG**

**M01/3**

**025**

DAY	TIME UTC	FREQ kHz
TUE / THU	1800	5280
TUE / THU	2000	4905
SAT	1500	6435
SUN	0700	6780

Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC	wk	Stn	Fam	Jan kHz, ID, ...	Feb kHz, ID, ...	Mar kHz, ID, ...	Apr kHz, ID, ...	Remarks
		x	x				0315		E11	03	5779 25#	5779 25#	7850 25#	5779 25#	since 01/14, last log 12/18
x							0450		E11	03	4909 41#	4909 41#	5371 41#	5371 41#	since 02/10, last log 01/19 2nd transmission Thu 1730z
	x		x				0455		S11A	03	4828 32#	4828 32#	5358 32#	5358 32#	since 09/14, last log 01/19
x			x				0600		E11	03	9200 18#	9200 18#	13470 18#	13470 18#	since 07/15, last log 01/19
x		x					0640		E11	03	11450 94#	11450 94#	12153 94#	12153 94#	since 07/17, last log 01/19
	x		x				0645		E11	03	7840 51#	7840 51#	10800 51#	10800 51#	since 07/09, last log 02/19
	x			x			0700		E11	03	6804 57#	6804 57#	8180 57#	8180 57#	since 01/12, last log 01/19
					x	x	0710		E11	03	4505 49#	4505 49#	8102 49#	8102 49#	since 07/15, last log 02/19
	x			x			0715		E11	03	9130 63#	9130 63#	9963 63#	9963 63#	since 02/11, last log 02/19
	x		x				0735		S11A	03	14753 38#	14753 38#	14975 38#	14975 38#	since 01/18, last log 02/19
x							0745		E11	03	10213 26#	10213 26#	10213 26#	10213 26#	since 03/14, last log 02/19 2nd transmission Thu 1530z
		x	x				0745		E11	03	17378 34#	17378 34#	17410 34#	17410 34#	since 06/17, last log 02/19
					x	x	0805		E11	03	4909 31#	4909 31#	9200 31#	9200 31#	since 07/14, last log 02/19
x			x				0820		E11	03	4909 43#	4909 > 5149 43#	5371 43#	5371 43#	since 10/09, last log 02/19
	x	x					0820		E11	03	14611 13#	14611 13#	13#	13#	since 12/18, last log 02/19
	x		x				0845		E11	03	11104 15#	11104 15#	10246 15#	10246 15#	since 07/17, last log 02/19
x		x					0900		E11	03	8597 53#	8597 53#	8180 53#	8180 53#	since 10/05, last log 02/19
		x	x				0930		E11	03	8180 27#	8180 27#	6807 27#	6807 27#	since 02/14, last log 02/19
	x			x			1000		E11	03	8800 30#	8800 30#	7840 30#	7840 30#	since 11/16, last log 02/19
x			x				1015		S11A	03	11559 47#	11559 47#	x11493 47#	x11493 47#	since 04/10, last log 02/19
	x			x			1020		S11A	03	7600 42#	7600 42#	7469 42#	7469 42#	since 02/10, last log 02/19
x		x					1045		E11	03	7984 69#	7984 69#	7317 69#	7317 69#	since 03/18, last log 02/19
	x	x					1205		E11	03	7317 46#	7317 > 6433 46#	7727 46#	7727 46#	since 03/10, last log 02/19 2nd transmission Mon 0450z
x				x			1225		E11	03	20167 52#	20167 52#	20286 52#	20286 52#	since 05/15, last log 02/18
			x		x		1300		E11	03	11116 58#	11116 58#	10302 58#	10302 58#	since 02/16, last log 02/19
	x				x		1345		E11	03	14666 91#	14666 91#	13046 91#	13046 91#	since 10/15, last log 02/19
			x				1530		E11	03	5409 26#	5409 26#	10330 26#	10330 26#	since 06/14, last log 02/19 2nd transmission Mon 0745z
		x			x		1540		S11A	03	10728 56#	10728 56#	10800 56#	10800 56#	since 03/16, last log 02/19
	x				x		1605		E11	03	4505 23#	4505 23#	6397 23#	6397 23#	since 11/15, last log 02/19
		x			x		1625		E11	03	10448 97#	10448 97#	10448 97#	10448 97#	since 02/15, last log 02/19
	x		x				1645		E11	03	11493 33#	11493 33#	10800 33#	10800 33#	since 06/17, last log 02/19
				x		x	1650		E11	03	16335 92#	16335 92#	13873 92#	13873 92#	since 05/16, last log 02/19
		x			x		1705		E11	03	9443 39#	9443 39#	10213 39#	10213 39#	since 02/14, last log 02/19
		x			x		1730		E11	03	8545 40#	8545 40#	5844 40#	5844 40#	since 06/16, last log 02/19
			x				1730		E11	03	5779 41#	5779 41#	7864 41#	7864 41#	since 03/10, last log 02/19 2nd transmission Mon 0450z
x					x		1745		E11	03	12924 24#	12924 24#	13470 24#	13470 24#	since 04/18, last log 02/19
		x			x		1850		S11A	03	11486 28#	11486 28#	10213 28#	10213 28#	since 06/17, last log 02/19
x			x				1900		E11	03	6849 64#	6849 64#	7317 64#	7317 64#	since 05/16, last log 02/19
				x		x	1910		E11	03	10487 61#	10487 61#	8530 61#	8530 61#	since 04/17, last log 02/19
	x		x				1925		E11	03	12067 55#	12067 55#	10620 55#	10620 55#	since 07/15, last log 02/19
		x		x			1955		S11A	03	5815 37#	5815 37#	4016 37#	4016 37#	since 02/14, last log 02/19
					x	x	2005		E11	03	11107 36#	11107 36#	8186 36#	8186 36#	since 03/14, last log 01/19 <b>d e l e t e d ?</b>

Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC	wk	Stn	Fam	Jan kHz, ID, ...	Feb kHz, ID, ...	Mar kHz, ID, ...	Apr kHz, ID, ...	Remarks
x							0800	1/3	G06	01A	5320 329	5320 329	6810 329	6810 329	since 07/10, last log 02/19 repeat at Thu 1300Z
	x						1200/1300	1/2	G06	01A	<b>4897/ 4034</b> <b>145</b>	4897/ 4034 145	x5903, 5422 145, <b>search</b>	x5903, 5422 145	since 10/14, last log 02/19 yearly changing frequencies + id
		x					1300	1/3	G06	01A	4460 329	4460 329	4598 329	4598 329	since 09/11, last log 02/19 repeat from Mon 0800Z
x							1700/1800	1/2	G06	01A	<b>v3619/ 4528</b> <b>145</b>	v3619/ 4528 145	x4645, 5362 938, <b>search</b>	x4645, 5362 938	since 04/10, last log 02/19 yearly changing frequencies + id
		x					1830	2/4	G06	01A	4519 271	4519 271	5934 579	5934 579	since 05/01, last log 02/19 repeat at Fri 1930Z
			x				1930	2/4	G06	01A	4792 436	4792 436	5442 947	5442 947	since 04/01, last log 01/19 repeat from Thu 1830Z

**XPA and XPA2[Sched m, p, r ] Russian Intelligence and/or Diplomatic Multitone Systems**  
**[Radiogramma] Transmission Schedules.**

Zulu >	XPA Tuesday/Thursday H+10      H+30      H+50 0710 / 0810z			XPA2 Sched m Various Sun/Tue H 00      H+20      H+40 1300,1500,1800,2000,2100			XPA2 Sched p Monday/Wednesday H 00      H+20      H+40 0700 / 0800z			XPA2 Sched r Various      Fri/Sat H 00      H+20      H+40 1400, 1900, 2100		
Month v												
Jan	12157	13462	14374	16138	14438	13438	11493	13393	14793	16167	14663	13923
Feb	13397	14413	15972	16338	14538	13538	12137	13937	14737	18667	17419	16212
Mar	12132	13453	14576	16138	14438	13438	12192	13892	14892	18667	17419	16212
Apr				14538	13538	12138	11167	12167	13567	17462	16114	14824
May				14538	13538	12138	11541	13441	14941	17462	16114	14824
June				14738	13438	12138	10324	11524	13524	16167	14663	13923
July				14538	13538	12138	11167	12167	13567	15967	13884	12217
Aug				14738	13438	12138	10278	12178	13478	16167	14663	13923
Sept				14538	13538	12138	10324	11524	13524	16167	14663	13923
Oct	12167	13437	14972	16338	14538	13538	12192	13892	14892	17462	16114	14828
Nov	13978	14859	15871	18328	16238	14438	13427	14627	15827	17462	16114	14828
Dec	11531	12137	13932	14538	13538	12138	10278	12178	13478	15967	13884	12217

**Notes:**

XPA Under construction due to change/end of old c schedule. Usually as strong as previous schedule.. [ID does not match freq 100kHz]

XPA2 m Repetitive frequency triplets, appears robust, generally strong into UK

XPA2 r Schedule appears robust; generally very strong signals to UK

XPA2 p Schedule revised from 6 day to two day [Oct2017]. Sigs to UK variable.

Null Message: Long tones used in place of repeat character [15Hz below 0 ] whilst ending of 10140 is now variable. [First seen 11/12/2017 XPA2 t]

Updated: 03012019



## SPECIAL MATTERS

### Thanks to all our contributors:

Ary, Edd, BR, CC, Danix, DanAr, E, F5, HH, HJH, JkC, Jochen, KW, Malc, MaleAnon, PoSW, PLdn, RNGB, tiNG  
Apologies to anyone missed.



## MESSAGES:

**E:** Thanks E = = sri re QRM, problem in SE too. 4185kHz, no idea but copied in Scotland and SW also. Gd lck with Hosp. My noise also bad.

## RELEVANT WEBSITES

ENIGMA 2000 Website:

<http://www.enigma2000.org.uk>

Frequency Details can be downloaded from:

<http://www.cvni.net/radio/>

More Info on 'oddities' can be found on Brian of Sussex' excellent web pages:

<http://www.brogers.dsl.pipex.com/page2.html>

Time zone information:

<http://www.timeanddate.com/library/abbreviations/timezones/>

Encyclopedia of Espionage, Intelligence, and Security

<http://www.espionageinfo.com/>

EyeSpyMag!

<http://www.eyespymag.com>

2019											
Source: Vertex42.com											
<b>January</b>				<b>February</b>				<b>March</b>			
Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th
		1	2	3	4	5				1	2
6	7	8	9	10	11	12	3	4	5	6	7
13	14	15	16	17	18	19	10	11	12	13	14
20	21	22	23	24	25	26	17	18	19	20	21
27	28	29	30	31			24	25	26	27	28
										29	30
										31	
<b>April</b>				<b>May</b>				<b>June</b>			
Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th
	1	2	3	4	5	6					1
7	8	9	10	11	12	13	5	6	7	8	9
14	15	16	17	18	19	20	12	13	14	15	16
21	22	23	24	25	26	27	19	20	21	22	23
28	29	30					26	27	28	29	30
										31	
<b>July</b>				<b>August</b>				<b>September</b>			
Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th
	1	2	3	4	5	6					
7	8	9	10	11	12	13	4	5	6	7	8
14	15	16	17	18	19	20	11	12	13	14	15
21	22	23	24	25	26	27	18	19	20	21	22
28	29	30	31				25	26	27	28	29
										30	
<b>October</b>				<b>November</b>				<b>December</b>			
Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th
		1	2	3	4	5					
6	7	8	9	10	11	12	3	4	5	6	7
13	14	15	16	17	18	19	10	11	12	13	14
20	21	22	23	24	25	26	17	18	19	20	21
27	28	29	30	31			24	25	26	27	28
										29	30
										31	

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