ENIGMA 2000 NEWSLETTER

http://enigma2000group.org

State Security Department
North Korea

Postage stamp issue depicting the capture of the USS Pueblo, an auxiliary gatherer of Intelligence
[Subject of many books and all mostly a worthwhile read]

ISSUE 98
January 2017

http://www.enigma2000.org.uk

Before we move to the logs and other newsletter content we repeat the piece on V15 with good purpose, but read on after ……

If it was thought this is a common book code, sight of the following imagery [page 7] and explantions passed to us by member Detlev, who is a known expert on the STASI and allied agencies, proves this as anything but.

You'll recall the article from the Times newspaper as well as the interception by Moomin; both are worth a read again with reference to the images we post here.

Kim brings back spying by numbers

Richard Lloyd Parry, Asia Editor
July 21 2016, 12:01am, The Times

http://www.thetimes.co.uk/edition/world/kim-brings-back-spying-by-numbers-dhhphbzdh

Kim Jong Un's regime has resumed the practice of "spy radio" - broadcasting sequences of numbers in the middle of the nightLee Jin-man/AP

They were one of the enigmas of the Cold War — sequences of meaningless numbers intoned with great solemnity over shortwave radio frequencies, containing coded messages for spies and sleeper agents. Now North Korea, the land where the Cold War never ended, has revived the craft of "spy radio".

The South Korean government reports that after a 16-year hiatus Pyongyang has restarted the sinister late-night broadcasts. The reason behind it is a mystery. Does it indicate a new effort at infiltrating agents into North Korea's many enemies? Or is it just a mind game intended to sow suspicion and confusion?

The latest broadcast was made in the early hours of last Friday, and presented itself as an exercise for distance-learning students. At 00.45 in the morning, a female voice said in Korean: "Commencing now, I will give review work for the subject of mathematics under the curriculum of a remote education university for exploration agents of the 27th bureau."

She went on: "On page 459, number 35, on page 913, number 55, on page 135, number 86, on page 257, number 2." The broadcast continued in the same way for 12 minutes.

If it is not a homework assignment for conscientious North Korean maths students, the message may be a book cypher. The recipient agent, wherever he or she is, notes down the references, which pinpoint letters or words in a specified book and spell out a message.

Such broadcasts originated in Europe in the Second World War and have been used all over the world. In 2010 similar messages broadcast in Chinese were detected in Taiwan, the breakaway island that Beijing claims as its own.

According to South Korea's ministry of national unification, which is responsible for matters relating to North Korea, it was the first such broadcast from the North since 2000, when the leaders of the fraternal enemies held their first summit.

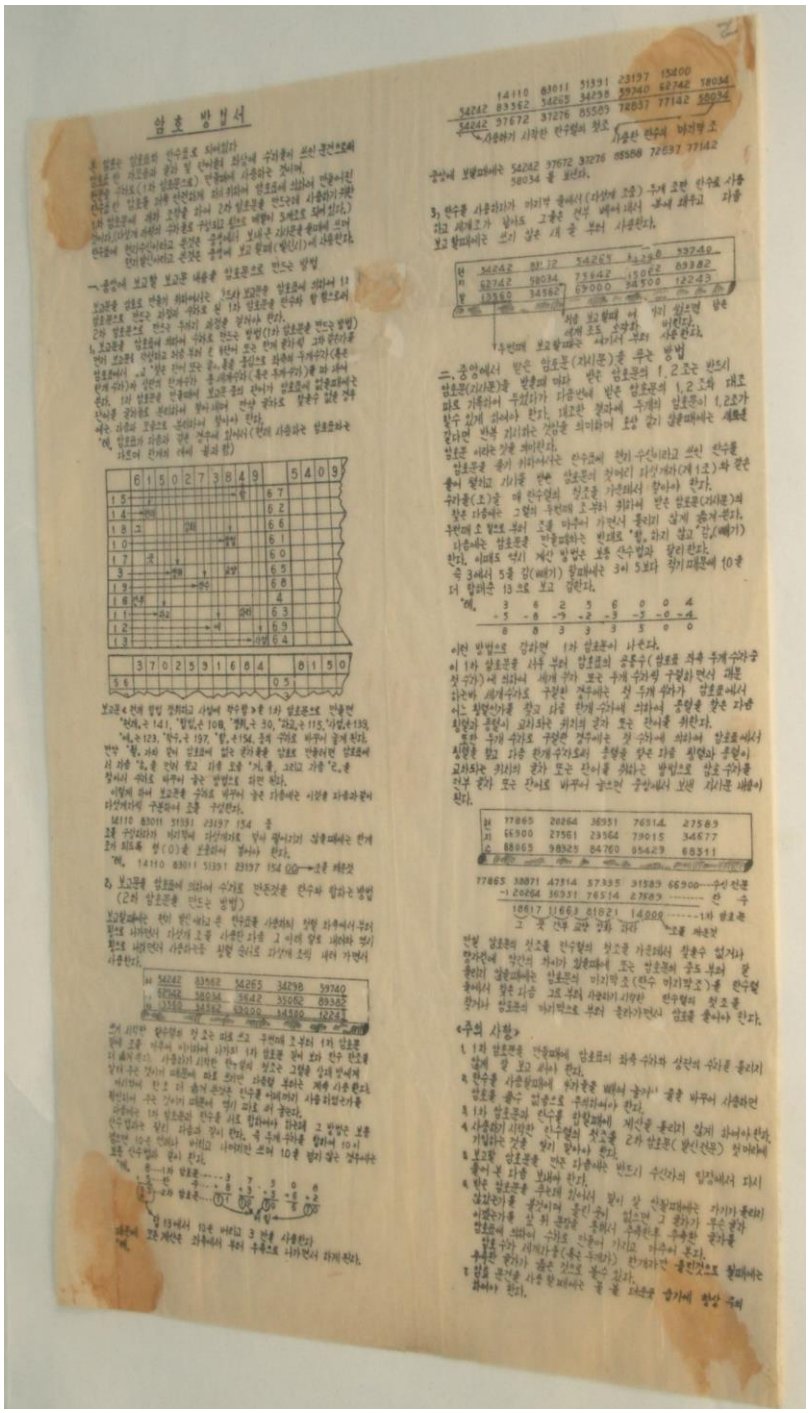
The warming of relations that accompanied the talks was one reason for the broadcasts ceasing — but with the rise of the internet it also became easier to send coded messages by email. The advantage of a radio broadcast, however, is that unlike a written message that can be found, it betrays no link to its recipient.

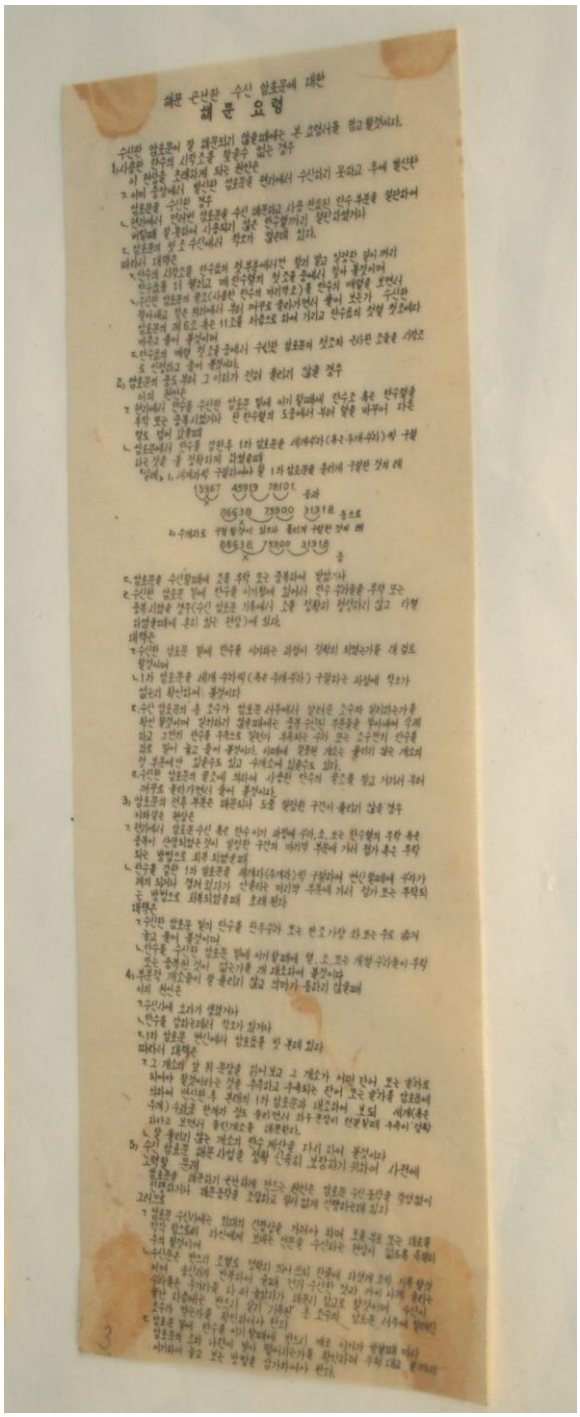
“Numbers broadcasts have been on hold for quite some time but have recently resumed, something we think is very regrettable,” Jeong Joon Hee, of South Korea’s unification ministry, said.

“We can’t speak conclusively about North Korea’s hidden intentions behind the broadcasting. But we urge North Korea to desist from such outdated practices and seek ways to improve the relationship between the Koreas.”

http://www.thetimes.co.uk/edition/world/kim-brings-back-spying-by-numbers-dhhphbzdh [Thanks ‘E’]

With the perusal of the documents; their content and training messages we demonstrate that the recently heard V15[slight variations] is not a book code and owes more to the commercial system used by financial houses ‘Bentley’s Second Phrase Code.’
Read on.





North Korean Encryption instructions; “Password Instruction Sheet” and on second sheet ‘Do not worry.’ ©DVeisleben2016

This is a translation by Detlev's Korean student of a small section of these instructions [See page 7 also]:

Korean GeheimDienst pad – Notes on Encoding and Decoding (per Detlev's Student)

1st page, left column

Amho table (O)
/
\ Nausa table (X)

1, The Amho table is used to initially convert the original clear text into a series of numbers

141 → (The present)
108 → (Legality)
175 → (Business)

If there are no words in this table, the words (in the clear text:Ed.) have to be converted to numbers using consonants and vowels present in the table.

Example: <Kor characters> = 322 + 692

The numbers must be in groups, each group contains 5 numbers.

< example with number groups and Kor characters below>
" Win now legally and start the business" (You may like to check trans with your student: Ed.)

2, Nausa table – The Nausa table is used to encode the number groups created from the original clear text.

1st page, right column

For reports the Nausa table is used for transmissions.

Example: Start (above first group in a box)
End (below 2nd group in box on next line) (The word "weg" on the next 3 groups means "Discard"

2nd Example (2 rows on groups apparently to be added)

By this method the encoded text can be transmitted to the centre.

The other number groups (3 groups) must be cut out and burned and for the subsequent text the next row is used.

3, Decoding

When the coded message has been received, it should be compared with the first and second groups of the previous coded message. If both are the same it means 'repeat and emphasis'.

2nd page, left column

For decoding of the encoded message the Nausa table is used. A number group (first group of each line) has to be found that corresponds to the first group of the encoded message.

Example: First
[77865]
[66900] last

→ Secret (encoded) message

Example: (2 rows 77865 …..... 66900 →
) 27589 → Nausa
18617 14000
Kor characters

→ strengthen the training of the officer

2nd page, right column

Method for undecodable text

1, If no first number group can be found

Cause
1
2
3

Solution
1
2
3

2, If half of the text cannot be decoded

Reason

1
2
3

Solution

3, If part of the text cannot be decoded

Reason

1
2
3

Solution

1
2

The End

Thanks to Detlev who provided the material and all translators --- Korean [one Detlev's, one Paul's] and to 'STAINED GLASS' who provided the final translation from German.[STAINED GLASS? One has to do things professionally in these matters].

This image taken from EyeSpy Intelligence Magazine Number 101[p25], the issue featuring a special feature: Intelligence Analysis 'Horizon Threats 2016 [p17] ***Used with permission.***

Next consider the previous message sent from Moomin:

Date: September 16, 2016, KST 25:15 (PYT 24:45)

Location: ROK, Gyeonggi-do

Frequency : - (You must not write the comment about the frequency.)

Receiver: SDRPlay + 303WA-2

NOTE (Example):

Before, They transmit a song, "기쁨의 노래안고 함께 가리라 (We will go together with a song of joy)".

Then, They begin to announce. "지금부터 27호 탐사대원들을 위한 원격교육대학 정보기술기초 복습과제를 알려드리겠습니다. (We will notice the repetition homework of the basic Information Technology of Distance Learning University for No.27 exploration agent.)

and they also tell, "문제를 부르겠습니다. (We will give questions.)“
At that moment, Page can be told between 100 and 999. and No. can be told from 1 to 100 inclusive.

When the transmission end, they tell, "n페지 n번'입니다'. '이상입니다.' (Page n, No. n are. That's all.)“ (Once they tell last number, they have to tell, "~페지 ~번 '입니다.'")

2016. 09. 16
V15 North Korean Numbers Station Record
We will We will notice the repetition homework of the science of Distance Learning University for No.27 exploration agent.

지금부터 27호 탐사대원을 위한 원격교육대학 과학복습과제를 알려드리겠습니다.

We will give questions.

Page 774, No. 79
Page 326, No. 2
Page 258, No. 12
Page 741, No. 58
Page 419, No. 50
Page 687, No. 84
Page 900, No. 40
Page 187, No. 38
Page 905, No. 45
Page 813, No. 48
Page 432, No. 6
Page 672, No. 55
Page 894, No. 79
Page 932, No. 48
Page 422, No. 18
Page 299, No. 62
Page 97, No. 81
Page 212, No. 2
Page 392, No. 12
Page 863, No. 19
Page 923, No. 8
Page 561, No. 96
Page 533, No. 83
Page 429, No. 60
Page 201, No. 60
Page 299, No. 18
Page 853, No. 99 are.

We will give questions again.

Page 774, No. 79
Page 326, No. 2
Page 258, No. 12
Page 741, No. 58
Page 419, No. 50
Page 687, No. 84
Page 900, No. 40
Page 187, No. 38
Page 905, No. 45
Page 813, No. 48
Page 432, No. 6
Page 672, No. 55
Page 894, No. 79
Page 932, No. 48
Page 422, No. 18
Page 299, No. 62
Page 97, No. 81
Page 212, No. 2
Page 392, No. 12
Page 863, No. 19
Page 923, No. 8
Page 561, No. 96
Page 533, No. 83
Page 429, No. 60
Page 201, No. 60
Page 299, No. 18
Page 853, No. 99 are.

That's all.

문제를 부르겠습니다.

774페지 79번
326페지 2번
258페지 12번
741페지 58번
419페지 50번
687페지 84번
900페지 40번
187페지 38번
905페지 45번
813페지 48번
432페지 6번
672페지 55번
894페지 79번
932페지 48번
422페지 18번
299페지 62번
97페지 81번
212페지 2번
392페지 12번
863페지 19번
923페지 8번
561페지 96번
533페지 83번
429페지 60번
201페지 60번
299페지 18번
853페지 99번 입니다.

다시 부르겠습니다.

774페지 79번
326페지 2번
258페지 12번
741페지 58번
419페지 50번
687페지 84번
900페지 40번
187페지 38번
905페지 45번
813페지 48번
432페지 6번
672페지 55번
894페지 79번
932페지 48번
422페지 18번
299페지 62번
97페지 81번
212페지 2번
392페지 12번
863페지 19번
923페지 8번
561페지 96번
533페지 83번
429페지 60번
201페지 60번
299페지 18번
853페지 99번 입니다.

이상입니다.

3250//3320//6400 kHz, 1615z 29/09 AM

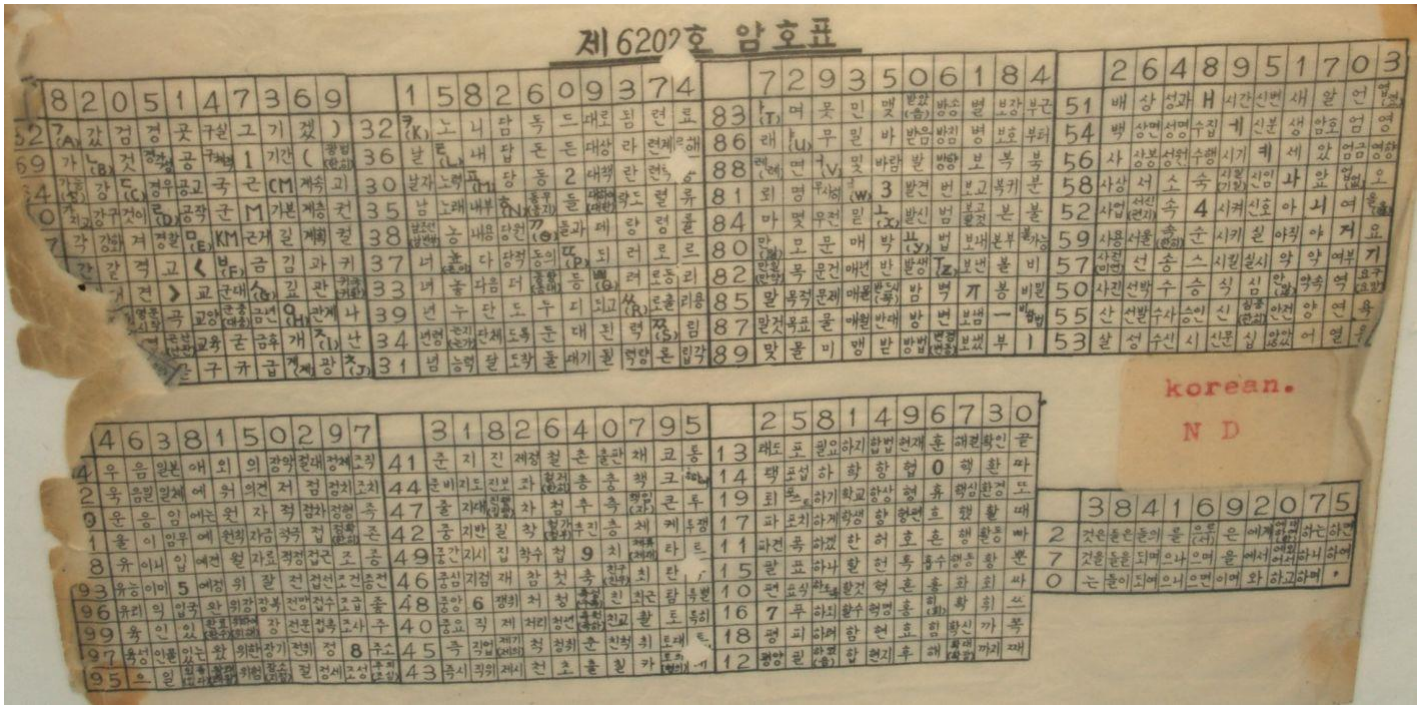
Song "gippeum-ui nolaeango hamkke galila" followed by messages in Korean .

Repeat of 15-09

Hear the transmission:

https://www.youtube.com/watch?v=wMJeSaRZhdg

Thanks Moomin and others

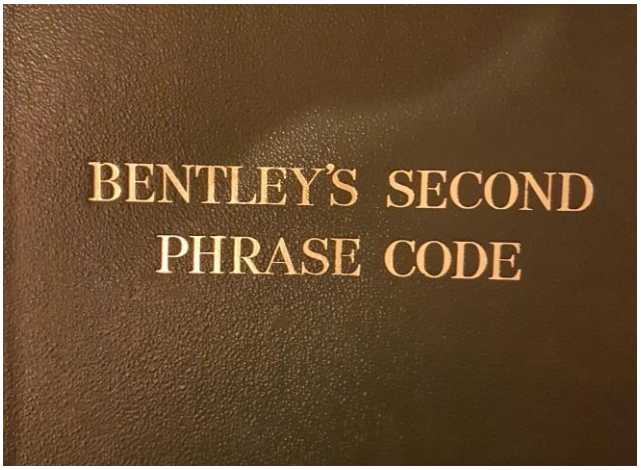


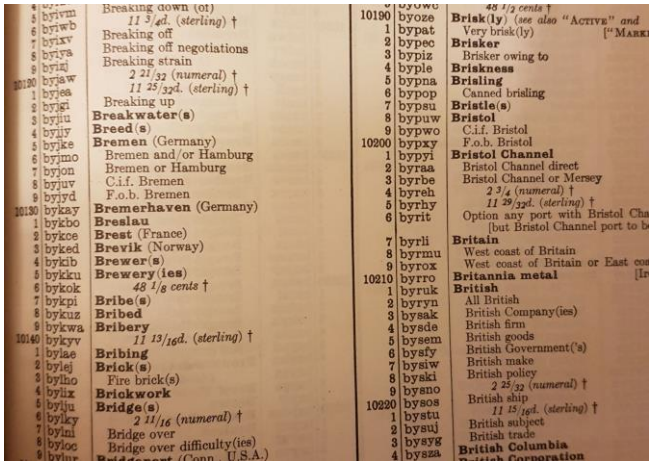
Number [or part] 6202 Table for password ©DVeisleben2016

In both instances we consider the words Codeword and Password to be synonymous.

Perusal of the above [page 6] and comparison with sheet 6202 suggests how the code sent can be decoded. I was told the Korean language consists of syllables, each represented by its own character. For instance look at the last full square horizontal run of '2581496730 [itself a somewhat random train of numbers] and see the descending train 13 14 19 17 11 15 10 16 18 12 [also random].

The square has 100 squares [product of 10^2]. Consider square produced at the intersection 13 and 7. That syllable means 'accomplished' Clearly this mirrors the old style and rather voluminous specialist telegraphic code books used by banks and industry to facilitate a secure transfer of events. Further examples were sent by Detlev via STAINED GLASS for which one interesting entry 38/1 read 'South Korea.' Another 84/8 read 'Radio' and 59/6 'Seoul.'
One example of the specialist telegraphic code books is 'Bentley's Second Phrase Book' as featured here:





Thanks to Detlev, STAINED GLASS and my Korean translator who must remain 'anon.' Note the translations by Detlev's and my own translator were consistent in their interpretation.

Finally …

Former North Korean operative reveals secret spy tactics
By Paula Hancocks, CNN
Updated 1052 GMT (1852 HKT) May 22, 2015

http://edition.cnn.com/2015/05/21/asia/north-korea-spies/

Seoul (CNN)Looking at the poison pens and torch guns, you would be forgiven for thinking you were on a James Bond set. But these weapons are real and are still part of the arsenal of North Korean spies.
Agents from the most isolated country on Earth are not a thing of the past, said one man who claims his job once was to infiltrate South Korea on missions for the Kim regime.

Chosen for the job while still in high-school, Kim Dong-shik told CNN he was sent to a specialized university for four years where he learned skills including martial arts, scuba diving, how to shoot and rig explosives. Only years later when he was fully trained was he told why he had been chosen.
"When I was told I was going to be a spy... I felt stunned," Kim said. "There have been many accidents in the past with spies. A lot who were sent to South Korea were killed, so I assumed I'd die."

The physical training was only one part, Kim said; the psychological preparation was key.
"We were taught to be ready to die for the Kim regime and if caught, to make sure we were not taken alive," he said.
Kim was shot by South Korean officials, in 1995, while on a mission in Seoul so was unable to commit suicide, he said. He claims his entire family was executed back in North Korea as punishment for him not fulfilling his destiny. CNN is unable to independently verify Kim's claims as North Korea is one of the world's most secretive countries.

Life of a spy

Kim says his first mission to South Korea in 1990 was to bring back a high-ranking agent he called Lee who had been working in the country for some time. His second was to try to recruit those with anti-government sentiments who may have sympathies towards the North.
Back then he said he communicated with HQ via short-wave radio. One program from Pyongyang that aired at midnight had an anchor reading numbers -- he said that was code to tell him his next mission. He assumes methods of communicating are far more sophisticated now.

How they're enticed

One former member of the elite, Kang Myong-do said North Korean spies are operating in countries across the world including the United States, where he estimates hundreds may be working at any one time. One of their main purposes is to try to recruit Korean-Americans who lean towards supporting North Korea, he said.
"There are three different tactics they use," he said. "First is to give them free visas to North Korea, second, to give them access to do business and make money there and third, they use women to entice them. This tactic has been widely used since the '80s."
Kang said he used to work in the Unification Development Division in 1984. One of the duties of this division was to send spies to the U.S., South Korea and Japan, he said, adding that the division still exists to this day.
He said spies and the human intelligence they provide play a big role in maintaining Kim Jong Un's regime. It's a belief shared by Kim Dong-shik who says, "North Korea treats them very well. Spies are treated on the same level as generals, their education is to a similar high level. So it's fair to say North Korea considers spies as very important."

http://edition.cnn.com/2015/05/21/asia/north-korea-spies/

Note: Excellent video with this newscast from CNN

Thanks again to all concerned with this piece.

Number Station logs and analysis

As expected, number station schedules have moved to their winter frequencies which means lower frequencies where the local RF interference from local consumer electronics is more of a problem. Loggings worthy of a mention include a S06s on 9,132 kHz heard on Friday 4-November with the "no message" format, appeared to be a "one off" and not part of a schedule.

The Thursday and Friday E06 and G06 schedules in the UK evening time continue as a general rule to start well before their presumably nominal H + 30 minutes start time. On several occasions a quick burst of music has been heard after the voice has stopped, perhaps evidence of a computer controlled system; no doubt someone more "computer literate" than me will be able to confirm it.

The HM01 mixed mode station continues despite the recent death of Fidel Castro, no winding down of Cuba's espionage communications so far. Reception in the UK is very variable, sometimes the 0800 UTC transmission on 9,065 gives reasonable copy on the days when that schedule is used but then becomes weaker a few days afterwards.

V02a has made several decent appearances and V26 and HM02 have been like logged.

No sign of the long established Tuesday/Thursday polytone station XPA. Schedule e; this is not believed to have closed and an update of the relevant chart will indicate this.

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

X2M

Jean-Paul, (JPL) heard this station in progress on three frequencies with a 5-character coded message, then calling CQ with the call X2M. JPL was listening on the on-line SDR based in New Zealand.

7920//8250//8410 0933 - 0944z 29 Dec X2M - Calling CQ & messages in 5-character code. (Remote tuner New Zealand) JPL THU

U73D4 3NT6A U3NT5 4NT6A 5A7UD N465A (IP – Cont'd – Machine sent – 0930z)
AR ZOM15 (0936z)
CQ CQ CQ DE X2M X2M VVV
CQ CQ CQ DE X2M MSG MSG ENG ENG
CQ CQ CQ DE X2M X2M VVV
CQ CQ CQ DE X2M MSG MSG ENG ENG MSG ENG
2131 CK 100 CK 100 TIME 1648 TIME 1648 DATE 2912 DATE 2912 BT
UNN5A 4UAD5 N4T63 7U43N A7UD4 (Cont'd – 0939z)

AR (0944z - Silent)

7920//8250//8410 0930 - 0948z 30 Dec X2M - Calling CQ & messages in 5-character code. (Remote tuner New Zealand) JPL FRI

CQ (x3)DE X2M (x2) VVV (x2) (In traffic - 0930z)
MSG ENG ENG
CQ (x3) DE X2M (x2) VVV (x2)
MSG MSG ENG ENG
NR 11 11 CK 110 CK 110 TIME 1631 TIME 1631 DATE 3012 DATE 3012 BT
546UT 6.NT. 4TA.. (Cont'd – Very noisy – 0932z)
AR
NR .3 NR .3 CK ..0 CK 1.0 TIME 1637 163. DATE 3012 DATE 3012 BT
T45A6 TT.7U 6.... (Cont'd - 0938z)
AR (0943z)
06 06 CK 100 CK 100 TIME 1643 TIME 1643 DATE 3012 DATE 3012 BT
T673. 73NT. 5T3A7 (Cont'd – 0944z)
AR (0948z) (Silent)

7920//8250//8410 0931 - 0945z 31 Dec X2M (Remote tuner New Zealand) JPL SAT

CQ (x3) de X2M (x2) VVV (IP – Weak - Cont'd – 0931z)
MSG MSG ENG ENG
01 01 CK 100 CK 100 TIME 32 TIME 1632 DATE 3112 DATE 3112 BT
54.UT .UNT7 4TA7. 6573A T4A6D 3.47. (Cont'd – 0932z)
AR
04 04 CK 100 CK 100 TIME 1638 TIME 1638 DATE 3112 DATE 3112 BT
D4... T6A. U 6U.3N 4NT6A DAN46 AU3NT D33T7 (Cont'd – 0938z)
AR (0943z)
.. .. CK 100 CK 100 TIME 1643 TIME 1644 DATE 3112 DATE 3112 BT
T6734 .3NT6 5T3A7 T576U (Cont'd – 0944z) (Silent - 0945z)

Ary, (AB) has previous knowledge of this call, which was found by Igor from Eastern Russia from the N&O group, on 11 June 2001, but it is VERY seldom reported. Although Ary has several logs of this station he was unable to find any further reports after July 2001. The origin of this station is still unknown.

Here is Ary's station profile from Numbers & Oddities No.38 - June 2001:-

Frequency : 8398 kHz
Call sign : X2M
Mode : Very fast Morse
Time used : UTC+19
Characteristics: callup: 'cq cq cq de x2m x2m vvv' (2 minutes)
'msg msg ch ch'; header consists of message nr sent twice, followed by 'ck100', time, date, '=' into 5 figure messages;
Ends with 'ar'.

M01/ 1 XIV MCW, hand (197 sched for Nov - Feb). Will change to M01/2 sched ID 463 for Mar - Apr.

November 2016:

4490	2000z	01 Nov		No useful copy. CW was heard at times, presumably M01 but unconfirmed			BR	TUE
	2000z	03 Nov	'197' 606 30 = =	51919...	...LG 99792 = =	Strong, fast. Numerous errors noted	BR/E.SMITH	THU
	2000z	08 Nov	'197' 604 30 = =	36884...	...LG 44842 = =	Fair, med-fast. Errors noted	BR	TUE
	2000z	10 Nov	'197' 611 30 = =	65335...	...LG 66635 = =	Fair, fast. Several errors noted	CB	THU
	2000z	15 Nov	'197' 891 30 = =	89544...	...LG 63001 = =	Good, strong. Long zero used in grp20!	BR/CB	TUE
	2000z	17 Nov	'197'	No useful copy. Weak signal mostly unreadable			BR/CB	THU
	2000z	22 Nov	'197' 871 30 = =	36766...	...LG 00565 = =	Good, fast. Excellent CW. No errors noted	BR/CB	TUE
	2000z	24 Nov	'197' 513 30 = = = =	96720...	...LG 56682 = = = =	Strong, very fast. Many errors - 3 corrected	BR/CB	THU
	2000z	29Nov	'197' 115 30 = = / /	36413...	...LG 64125 = =	Partly continuous stream. Many Errors	BR/CB	TUE
5320	1800z	01 Nov	'197' 289 30	. . . .	...LG 60096 = =	Weak, V.fast. Poor copy. No copy at start	BR	TUE
	1800z	03 Nov	'197' 337 30	31483....	...LG 13682 = =	Good, fast but irregular. No DK / GC at start	AB/BR	THU
	1800z	08 Nov	'197' 427 30 = =	19414...	...LG 46885 = =	Ended 1811z . MCW	E.SMITH	TUE
	1800z	10 Nov	'197' 193 30 = =	91690...	...LG 89874 = =	Fair, fast. Excellent CW. No errors	BR	THU
	1800z	15 Nov	'197' 329 30 = =	03183...	...LG 59717 = =	Fair, slow. Corrected error grp02.	BR/CB	TUE
	1800z	17 Nov	'197' 288 30 = =	67742...	...LG 71761??	Fair, erratic. Numerous errors. Poor copy	CB	THU
	1800z	22 Nov	'197' 131 30 = =	54422...	...LG 07918 = =	Strong, fast. Excellent CW. No errors in msg	BR/CB	TUE
	1800z	24 Nov	'197' 295 30 = =	39426...	...LG . . . . . = =	Weak, v.fast. Poor copy. Paired grps streamed	BR	THU
	1800z	29 Nov	'197' 215 30 = =	32460...	...LG 25843 = = = =	Partly continuous stream. Many Errors	BR/CB	TUE
5465	0700z	06 Nov	'197' 238 30 = =	09113....	...LG 14310 = =	Fair start. Signal dropped to weak. Poor Copy	BR	SUN
	0700z	13 Nov	'197' 345 30 = =	163	...LG 36136 = =	Weak, med-fast. Difficult copy	BR	SUN
	0700z	20 Nov	NRH	Low noise, but no trace of M01			BR/CB	SUN
	0700z	27 Nov	'197' 388 30 = =	80590...	...LG 39222 = =	Fair, v.fast. Numerous errors noted	BR	SUN
5810	1500z	05 Nov	NRH	Strong XJT from 5809 - 5816kHz - M01 probably present but inaudible			BR	SAT
	1500z	12 Nov	NRH	Strong XJT still occupying frequency.			BR/CB	SAT
	1500z	19 Nov	'197' 905 30 = =	87082...	...LG 85262 = =	Ends 1513z MCW	E.SMITH	SAT
	1500z	26 Nov	'197' 457 30 = =	26031...	...LG 84653 = =	V.fast. Via Twente on 5813kHz.	BR	SAT

December 2016:

4490	2000z	01 Dec	'197' 820 30 = =	30662...	...LG 11549 = =	Good, fast. Errors noted inc. 4-fig repeat	BR	THU
	2000z	06 Dec	'197' 175 30 = =	76175...	...LG 62253 = =	Strong, slow. Msg sent as SINGLE groups	BR/CB	TUE
	2000z	08 Dec	'197' 441 30 = =	44900...	...LG 26177 = =	Good, fast. Error grp04. R/T QRM at times	BR/CB	THU
	2000z	13 Dec	'197' 532 30 = =	03338...	...LG 52490 = =	Strong, slow. Steady delivery. Error grp05	CB	TUE
	2000z	15 Dec	'197' 373 30 = =	77914...	...LG 08814 = =	Fair, med-fast. Error in grp03. Via Twente	BR/CB	THU
	2000z	20 Dec	NRH				CB/JkC	TUE

	2000z	22 Dec	'197' 724 30 = =	10842...	...LG 47580 = =	Strong, fast. Errors noted including 4 fig grps	CB	THU
	2000z	29 Dec	'197' Active but scarcely audible - unreadable under heavy noise/QRM				CB	THU
5320	1800z	01 Dec	'197' 356 30 = =	75093...	...LG 87955 = =	Strong, fast. Numerous errors noted. 29 grps	CB	THU
	1800z	06 Dec	'197' Signal present but under strong data signal on 5321kHz - Unusable				BR/CB	TUE
	1802z	08 Dec	'197' 813 30 = =	84417...	...LG 87967 = =	Strong, fast. Good, steady delivery. No errors	BR/CB	THU
	1800z	13 Dec	'197' 320 30 = =	98427...	...LG 00148 = =	Strong, slow. Steady delivery. No noted errors	CB/HFD	TUE
	1800z	15 Dec	'197' 271 30 = =	46410...	...LG 40337 = =	Fair, med-fast. Steady delivery. Poor copy	CB	THU
	1800z	20 Dec	NRH				CB/JkC	TUE
	1800z	22 Dec	'197' 415 30 = =	98980...	...LG 71412 = =	Fair, fast. Many errors noted inc. 4 fig grps	BR/CB	THU
	1800z	29 Dec	'197' 113 30 = =	16958...	...LG 56977 = =	Fair, steady. Difficult copy at times	CB	THU
5465	0700z	04 Dec	'197' 289 30 = =	82876...	...LG 72975 = =	Fair>Weak, Fast. Difficult copy. Errors noted	BR	SUN
	0700z	11 Dec	'197' 417 30 = =	41710...	...LG 83211 = =	Fair, fast. Mostly continuous stream with errors	BR	SUN
	0700z	18 Dec	'197' 302 30 = =	94024...	...LG 55118 = =	Fair, slow. Good steady delivery.	BR	SUN
	0700z	25 Dec	'197' 312 30 = =	07000...	...LG 83194 = =	Fair, fast. Grp29 repeated twice. 31 grps sent	BR	SUN
5810	1500z	03 Dec	NRH	Strong XJT occupying frequency.			BR	SAT
	1500z	10 Dec	'197' 090 30 = =	72231...	...LG 19352 = =	Strong, slow. SINGLE grps. 29 grps. Twente	BR	SAT
	1500z	17 Dec	'197' 779 30 = =	26810...	...LG 11599 = =	Weak, slow. XJT QRM. Fair copy via Twente	BR	SAT
	1500z	24 Dec	'197' 331 30 = =	74020...	...LG 93788 = =	Fair, V.fast. Numerous corrected errors.	BR	SAT
	1500z	31 Dec	'197' 184 30 = = = =	65377...	...LG 30006? = =	Fair, fast. Poor. XJT QRM. Corrected errors	BR	SAT

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

Jim (JkC) caught this one in progress, which included a message sent at 1755. Excellent catch, Jim! It's been a while since we heard anM01a with message.

5731 1733(IP) - 1758z 20 Dec In progress at 1733z Good JkC TUE

(In Progress)

273 273 273 61742 61742 (1733-1735z)
273 273 273 62682 62682 (1736-1738z)
111 999 111 999 (1748z)
111 (1749z)
273 273 273 111 999 (1752z)
[keyplay] (1753z)

534 35 = (1755z)
45032 39366 87472 31487 40130 30905 37181 39971 35748 35931
44365 43025 39283 33578 47568 40583 31479 37953 96930 30431
37363 31429 33642 36688 32805 37450 46501 31053 44246 31824
34490 40456 88731 87386 31101 (All groups sent only once)
= 534 35 (1757z)

273 273 273 111 000 (1758z)
273 273 273 111 000 (1758z)

[Nothing further heard]

Then Brian (BR) heard this one in progress, on Wednesday 28 December. Interestingly, this one also used the 273 call at times. Part of the sequence was hand-sent & although a message was started, it stopped part-way, then after a long pause ended with 0 0 0.

5311 1953(IP) - 2039z 28 Dec In progress at 1953z Strong BR WED

(Sections shown in italic were hand-sent - very poorly!)

(In Progress)
.... 17107 (IP 1953z)
273 273 273 17107 17107
273 273 273 17107 17107 (1955z)

273 273 273 15066 15066 (Sent 6 times) (1956 - 1958z)

333 16906 16906 (2008z)
333 16906
333 16906 16906 (Sent 4 times) (2009 - 2010z)

333 15568 (2020z)
333 15568 15568
333 15568

273 273 273 16136 16136 (Sent 6 times) (2023 - 2025z)

273 273 273 111 999 (2035z)
273 273 273 111 999

561 25 =
44475 30322 36034 45445 44008
38453 48324 33885 31830 34645
35861 33432 89319 32494 37142
3 [Long pause]

0 0 0 (Short zero) (2039z)

[Nothing further heard]

Finally, Jean-Paul (JPL) logged this one in progress on Thursday, 29 December via the New Zealand on-line SDR.

4577	1553 (IP) - 1556z	29 Dec	In progress at 1553z. (Remote tuner New Zealand)	JPL	THU

333 10135 10135 (In Progress – Machine sent – 1553z)
333 10135 10135 (1554z)

0 0 0 (1556z - Short zero - Silent - Monitored until 1604z)

M01b

2470//3545	1932 - 1950z	03 Nov	'910' 709 33 = 97968 57114 ..... 26270 52464 000	MCW	E.SMITH/HFD	THU
2485//3160	2042 - 2100z	03 Nov	'910' 709 33 = 97968 57114 ..... 26270 52464 000	MCW	E.SMITH/HFD	THU
2651//3195	2002z	04 Nov	'866' 709 33 = 97967....		HFD	FRI
3205	2015 - 2034z	19 Dec	'375' 324 35 = . 0764 33459 ..... 51750 20018 000 (XJT on 2425kHz)		BR	MON
3520	1915 (IP) - 1928z	19 Dec	324 35 = ... 51750 20018 000 (XJT on 2435kHz)		BR	MON

M01b 2470//3545kHz 1932z 03 Nov16

910 (R4m) 709 709 33 33 = =

97968 57114 47658 66876 87152 04556 59425 12970 30224 16997
87143 81289 15435 19520 58588 46986 26541 11449 54588 05174
42363 81231 14276 28654 36483 93124 75231 40495 77917 00531
93493 26270 52464 = =

709 709 33 33 000

Courtesy E.SMITH

M03 III ICW, some CW

No reports. The number of transmissions decreased dramatically during 2015, leaving only the 4505kHz & 4828kHz schedules on Mon/Wed & Thu/Sun respectively. The two remaining schedules for M03 appeared in January, but apart from a report from Ary (AB) of a weak transmission on 04 February no further transmissions have been heard or reported since. **Missing now for a year. From the next issue, M03 will no longer be included in this column.**

M08a XVIII ICW / CW, some MCW

AnonUS sends us his usual comprehensive report from America:-

M08 continued unabated on its usual schedules over the past two months following its return in early September. Transmissions continued as normal around the time of Fidel Castro's death on 25 November. Some transmitter problems were noted specifically at the end of October (not reported in the last newsletter) & on 08 November when the audio was repeatedly cutting out resulting in only 0.4 seconds of audio every 3 seconds.

Of note, on 31 October two of the call-ups began with the same digit (6) this is a very unusual occurrence given our understanding of the number sequences in the call-ups. On 30 December at 1400z all three call-ups ended with 2, this is also an unusual occurrence. On 31 October and 31 December apparent test transmissions repeating 12345 67890 were heard. V02a was heard mixing with the 2000z on at least 9 occasions. Some of the weekend schedules started very late (at least 20 minutes after the hour) but started at the beginning of the transmission rather than coming up in progress.

October 2016 (Residue)

7554	2000z	30 Oct	Hum but no Morse	AnonUS	SUN
	2000z	31 Oct	[45141 58471 62702]	AnonUS	MON
8009	2300z	29 Oct	Hum but no Morse	AnonUS	SAT
	2300z	31 Oct	[43661 66101 61121] Looks like an error, two call-ups beginning with 6	AnonUS	MON
8096	1400z	29 Oct	Hum but no Morse	AnonUS	SAT
	1400z	30 Oct	Hum but no Morse	AnonUS	SUN
	1400z	31 Oct	Hum to start with but finally **12345 67890** repeated multiple times followed by **67890 67890** slight pause - then back to **12345 67890** Repeated	AnonUS	MON
8135	2300z	30 Oct	Hum but no Morse	AnonUS	SUN

November 2016:

7554	2000z	01 Nov	[41472 53701 27141] Simultaneous with V02a	AnonUS	TUE
	2000z	02 Nov	[21221 34542 47871]	AnonUS	WED
	2000z	04 Nov	[30351 43772 56112]	AnonUS	FRI
	2000z	07 Nov	[47171 68821 72241]	AnonUS	MON

	2000z	08 Nov	[- - - - - - - - - - - - - - -]	Simultaneous with V02a as 01 Nov - but only 0.4 sec of audio every 3 sec	AnonUS	TUE
	2000z	10 Nov	[21402 33731 56152]	Simultaneous with V02a	AnonUS	THU
	2000z	13 Nov	[18262 22501 35022]	Usual weekend call-ups	AnonUS	SUN
	2000z	14 Nov		Noisy carrier but no Morse	AnonUS	MON
	2000z	15 Nov	[44552 57071 70312]	simultaneous with V02a	AnonUS	TUE
	2000z	16 Nov	[- - - - - 55082 68421]	Came up 2 minutes late already in progress	AnonUS	WED
	2000z	17 Nov		Noisy carrier but no Morse	AnonUS	THU
	2000z	21 Nov	[63132 75461 88781]		AnonUS	MON
	2000z	24 Nov	[40151 53482 65711]	Simultaneous with V02a	AnonUS	THU
	2000z	28 Nov	[86871 00201 13532]		AnonUS	MON
	2000z	30 Nov	[84881 07222 10541]		AnonUS	WED
8009	2300z	02 Nov	[68031 72362 85781]		AnonUS	WED
	2300z	07 Nov	[22331 33171 47181]		AnonUS	MON
	2300z	21 Nov	[31672 44001 56331]		AnonUS	MON
	2300z	23 Nov	[-- - - - 70312 83741]	Up late in progress	AnonUS	WED
	2300z	30 Nov	[30011 43341 55662]		AnonUS	WED
8096	1400z	01 Nov	[26032 40451 52782]		AnonUS	TUE
	1400z	02 Nov	[57542 61061 74302]		AnonUS	WED
	1400z	03 Nov	[56281 60512 73842]		AnonUS	THU
	1400z	04 Nov	[43441 55762 68101]		AnonUS	FRI
	1400z	07 Nov	[63502 86831 00252]		AnonUS	MON
	1400z	10 Nov	[16052 20481 32712]		AnonUS	THU
	1400z	11 Nov	[20271 33512 54342]		AnonUS	FRI
	1400z	13 Nov	[18262 22501 35022]	Up late at 1413z with the usual weekend call-ups	AnonUS	SUN
	1400z	14 Nov		Noisy carrier but no Morse	AnonUS	MON
	1400z	15 Nov	[33582 46822 50241]		AnonUS	TUE
	1400z	16 Nov	[68172 72411 84732]		AnonUS	WED
	1400z	17 Nov	[68171 72411 84732]		AnonUS	THU
	1400z	18 Nov		Noisy carrier but no Morse	AnonUS	FRI
	1400z	21 Nov	[06852 10281 23522]		AnonUS	MON
	1400z	24 Nov	[32422 55752 68171]		AnonUS	THU
	1400z	25 Nov		Morse present but unreadable. Transmitter problems?	AnonUS	FRI
	1400z	28 Nov	[05571 28812 32331]		AnonUS	MON
	1400z	30 Nov	[18512 21041 36062]		AnonUS	WED
8135	2300z	01 Nov	[51531 64861 87282]		AnonUS	TUE
	2300z	03 Nov	[56842 60272 83601]		AnonUS	THU
	2300z	04 Nov	[12812 25341 38662]		AnonUS	FRI
	2300z	08 Nov	[54152 67481 70812]		AnonUS	TUE
	2300z	10 Nov	[35752 48181 52422]		AnonUS	THU
	2300z	11 Nov	[17101 21432 32262]		AnonUS	FRI
	2300z	13 Nov	[18262 22501 35022]	Usual weekend call-ups	AnonUS	SUN
	2300z	14 Nov		Noisy carrier but no Morse	AnonUS	MON
	2300z	15 Nov	[07182 11411 24742]		AnonUS	TUE
	2300z	17 Nov		Noisy carrier but no Morse	AnonUS	THU
	2300z	24 Nov	[54411 67742 71271]		AnonUS	THU

December 2016:

7554	2000z	02 Dec	[04642 17171 20402]		AnonUS	FRI
	20**10**z	04 Dec	[18262 22501 35022]	Started at the beginning, but 10 mins late up. Usual weekend call-ups	AnonUS	SUN
	2000z	09 Dec		Hum but no Morse	AnonUS	FRI
	2000z	10 Dec	[18262 22501 35022]	Usual weekend call-ups	AnonUS	SAT
	2000z	12 Dec	[25821 37352 41672]		AnonUS	MON
	2000z	13 Dec	[- - - - - - - - - - - - - - -]	Simultaneous with V02a - but too weak to copy	AnonUS	TUE
	2000z	15 Dec	[25541 38862 42301]	Simultaneous with V02a	AnonUS	THU
	2000z	16 Dec	[70571 01311 14642]		AnonUS	FRI
	2000z	21 Dec	[18682 21322 44742]		AnonUS	WED
	2000z	22 Dec	[- - - - - - - - - - - - - - -]	Up late in progress, simultaneous with V02a, becomes too weak to copy	AnonUS	THU
	2000z	23 Dec	[02161 24481 37722]		AnonUS	FRI
	2000z	24 Dec		Hum but no Morse	AnonUS	SAT
	2000z	25 Dec		Hum but no Morse	AnonUS	SUN
	2000z	26 Dec	[53171 76501 80832]		AnonUS	MON
	2000z	29 Dec	[87421 61661 74002]	Simultaneous with V02a	AnonUS	THU
8008	2300z	24 Dec		Hum but no Morse	AnonUS	SAT
	2300z	27 Dec	[20022 43451 56771]		AnonUS	TUE
	2300z	28 Dec		Hum but no Morse	AnonUS	WED
	2300z	31 Dec	[**12345 67890**]	Repeated continuously	AnonUS	SAT
8009	2300z	10 Dec	[18262 22501 35022]	Usual weekend call-ups	AnonUS	SAT
	2300z	12 Dec	[06882 18222 22541]		AnonUS	MON
	2300z	21 Dec	[77132 81562 04881]	Weak SS/YL voice audible presumably HM01	AnonUS	WED
8095	2300z	08 Dec		Faint hum but no Morse	AnonUS	THU
8096	1400z	01 Dec	[10211 22542 35067]		AnonUS	THU
	1400z	02 Dec	[15142 28461 31702]		AnonUS	FRI
	1400z	09 Dec		Hum but no Morse	AnonUS	FRI
	14**25**z	10 Dec	[18262 22501 35022]	Note, very late start. Usual weekend call-ups	AnonUS	SAT
	1400z	12 Dec		Hum but no Morse	AnonUS	MON
	1400z	13 Dec	[- - - - - - - - - 48331]	Up in progress at 1400z	AnonUS	TUE

	1400z	14 Dec		Hum but no Morse	AnonUS	WED
	1400z	15 Dec		Hum but no Morse	AnonUS	THU
	1400z	16 Dec		Very weak Morse audible at 1423z	AnonUS	FRI
	1400z	17 Dec		Hum but no Morse	AnonUS	MON
	1400z	20 Dec		Hum but no Morse	AnonUS	TUE
	1400z	21 Dec		Hum but no Morse	AnonUS	WED
	1400z	22 Dec	[- - - - 48612 52032]	Up late in progress	AnonUS	THU
	1400z	23 Dec	[28171 41811 54231]		AnonUS	FRI
	1400z	24 Dec		Hum but no Morse	AnonUS	SAT
	14**20**z	25 Dec	[18262 22501 35022]	Note, very late start (see 10 Dec also). Usual weekend call-ups	AnonUS	SUN
	1400z	26 Dec	[- - - - - - - - - 17842]	Very late start in progress	AnonUS	MON
	1400z	28 Dec	[48871 52211 65532]		AnonUS	WED
	1400z	30 Dec	[02732 14462 26782]	All three call-ups end in 2	AnonUS	FRI
8135	2300z	02 Dec	[68801 72332 85651]		AnonUS	FRI
	2300z	04 Dec	[18262 22501 35022]	Usual weekend call-ups	AnonUS	SUN
	2300z	06 Dec		Loud hum but no Morse	AnonUS	TUE
	2300z	08 Dec		Faint hum no Morse	AnonUS	THU
	2300z	09 Dec		Hum but no Morse	AnonUS	FRI
	2300z	15 Dec	[31801 44232 57651]		AnonUS	THU
	2300z	16 Dec	[52141 65562 71581]		AnonUS	FRI
	2300z	20 Dec		Weak hum but no Morse	AnonUS	TUE
	2300z	23 Dec	[76321 88642 02071]		AnonUS	FRI
	2300z	25 Dec	[18262 22501 35022]	Usual weekend call-ups	AnonUS	SUN
	2300z	30 Dec	[48862 51612 74031]		AnonUS	FRI

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.

Asiatic M12 Scheds (See EN97 for Token's Asiatic Schedule)

14793/13903/12205	0100/20/40z	03 Nov	792 000	(Via Hong Kong SDR)	BR	THU
	0100/20/40z	10 Nov	792 1 (631 135) 27520 48670....	(Via Hong Kong SDR)	BR	THU
	0100/20/40z	22 Nov	792 000	(Via Hong Kong SDR)	BR	TUE
14493/13393/11593	0100/20/40z	01 Dec	435 000	(Via Hong Kong SDR)	BR	THU
	0100/20/40z	06 Dec	435 1 (199 63) 39407 86819....	(Via Hong Kong SDR)	BR	TUE
	0100/20/40z	08 Dec	435 1 (199 63) 39407 86819....	(Via Hong Kong SDR)	BR	THU
	0100/20/40z	13 Dec	435 1 (535 95) 03860 49070....	(Via Manila Philippines SDR)	BR	TUE
	0100/20/40z	15 Dec	435 1 (535 95) 03860 49070....	(Via Manila Philippines SDR)	BR	THU
	0100/20/40z	20 Dec	435 1 (835 113) 98605 27133 .... 23111 000 000	(Weak via Kiwi SDR Japan)	Danix	TUE
	0100/20/40z	22 Dec	435 1 (835 113) 98605 27133....	(Via Hong Kong SDR)	BR	THU
	0100/20/40z	27 Dec	435 000	(Via Manila Philippines SDR)	BR	TUE

European M12 Logs

Regular schedules reduced
Changes to the regular schedules were expected in November, as in previous years & sure enough, several of the regular schedules failed to appear, although in contrast to previous years no replacement schedules were found to replace them.

First, two of the evening schedules ceased;

8047/6802/5788kHz 2000/20/40z ID 463 THU - Heard on Thu 03 Nov – Not heard since.
9176/6802/5788kHz 1800/20/40z ID 257 MON - Heard on Mon 07 Nov – Not heard since.

Then in December, two more of the regular schedules ceased;

8047/6802/5788kHz 1810/30/50z ID 463 MON - Heard on Mon 05 Dec – Not heard since.
9176/6802/5788kHz 1900/20/40z ID 257 THU - Heard on Thu 01 & 08 Dec – Not heard since.

M12 activity is currently at the lowest we have seen it in around the 10 or so years we have been monitoring this station.

Unusual M12 schedule - M12 testing?
Daniel, (Danix) logged this sequence of transmissions from M12 on Thursday, 22 December. The same message was sent on the same three frequencies every half-hour from 1200z until 1430z, (a total transmission time of almost 3 hours).

The spacing for each transmission was 10 minutes between each of the frequencies, which has been seen before, but not with this intense scheduling.

The format would suggest that the transmissions were most likely tests to find the best time slot using this frequency set at various times.

M12	20829/19034/17423kHz	1200 - 1500z	22 Dec	Same message repeated at 30 minute intervals	Danix	THU

20829kHz 1200/1230/1300/1330/1400/1430z
19034kHz 1210/1240/1310/1340/1410/1440z
17423kHz 1220/1250/1320/1350/1420/1450z

All with this message:

351 1 644 49
91789 87567 61961 90818 43084 24013 98808 29224 59270 10898
60934 20871 81528 83129 71166 17723 02598 17844 33908 19345
56915 21206 26309 99446 05114 41725 93254 03371 99853 72052

39510 77219 77144 05736 33881 55847 62522 00876 60911 25629
91072 00879 80741 75636 21875 53417 12116 88242 23255

November 2016: **New scheds in bold type**

5429/4629/---	2200/20/40z	02 Nov	460 000	BR	WED
	2200/20/40z	09 Nov	460 000	BR	WED
	2200/20/40z	16 Nov	460 1 (9897 83) 30019 60687....	BR	WED
	2200/20/40z	23 Nov	460 000	BR	WED
	2200/20/40z	30 Nov	460 000	BR	WED
7637/9137/---	0600/20/40z	05 Nov	612 000	E.SMITH/HFD	SAT
	0600/20/40z	12 Nov	612 000	E.SMITH	SAT
	0600/20/40z	19 Nov	612 000	E.SMITH	SAT
	0600/20/40z	26 Nov	612 000	BR	SAT
8047/6802/5788	1900/20/40z	02 Nov	463 1 (6379 145) 86350 52645....	BR	WED
	2000/20/40z	03 Nov	463 1 (9546 102) 70536 31008 ..... 36624 78335 000 000	E.SMITH/HFD	THU
	1810/30/50z	07 Nov	463 1 (3927 118) 76631 58710....	BR/HFD	MON
	1900/20/40z	09 Nov	463 1 (7534 145) 16195 54266....	BR	WED
	1810/30/50z	14 Nov	463 1 (6897 115) 48384 75210....	BR	MON
	1900/20/40z	16 Nov	463 1 (2976 147) 10031 08971....	BR	WED
	1810/30/50z	21 Nov	463 1 (4706 121) 09665 91750....	BR	MON
	1900/20/40z	23 Nov	463 1 (4023 136) 06758 32620....	BR	WED
	1810/30/50z	28 Nov	463 1 (7530 128) 53271 01752....	BR	MON
	1900/20/40z	30 Nov	463 1 (3770 136) 24324 32138....	BR	WED
8053/9178/10287	0800/20/40z	01 Nov	816 1 (5916 60) 87353 87927 ..... 45607 64831 000 000	E.SMITH	TUE
	0800/20/40z	08 Nov	816 1 (2488 53) 95650 16603 ..... 75351 93484 000 000	E.SMITH	TUE
9162/8062/7462	1310/30/50z	03 Nov	104 000	E.SMITH	THU
	1310/30/50z	05 Nov	104 000	HFD	SAT
	1310/30/50z	10 Nov	104 1 (7551 113) 28978 57011 ..... 23767 84584 000 000	E.SMITH	THU
	1310/30/50z	12 Nov	104 000	BR	SAT
	1310/30/50z	17 Nov	104 1 (732 113) 34901 79747....	BR	THU
	1310/30/50z	19 Nov	104 1 (732 113) 34901 79747 ..... 22739 25387 000 000	E.SMITH	SAT
	1310/30/50z	24 Nov	104 000	E.SMITH	THU
	1310/30/50z	26 Nov	104 000	BR	SAT
9176/7931/6904	1800/20/40z	02 Nov	257 1 (3453 148) 76168 44893....	BR/HFD	WED
	1900/20/40z	03 Nov	257 1 (7061 128) 87069 88404 ..... 67431 40487 000 000	E.SMITH/HFD	THU
	1800/20/40z	07 Nov	257 1 (2247 140) 92999 71224....	BR	MON
	1800/20/40z	09 Nov	257 1 (6914 135) 84845 26319....	BR	WED
	1900/20/40z	10 Nov	257 1 (4822 125) 88940 35122....	BR	THU
	1800/20/40z	16 Nov	257 1 Weak signal - No detail logged	BR	WED
	1900/20/40z	17 Nov	257 1 (2856 130) 63940 12653....	BR	THU
	1800/20/40z	23 Nov	257 1 (7695 148) 12443 893 .6.... (Poor sigs)	BR	WED
	1900/20/40z	24 Nov	257 1 (7901 120) 22532 33729....	BR	THU
	1800/20/40z	30 Nov	257 1 (6152 141) 53501 01351....	BR	WED
10343/9264/8116	1200/20/40z	04 Nov	124 1 (3642 55) 37885 35396 ..... 62641 90613 000 000	E.SMITH	FRI
	1200/20/40z	11 Nov	124 1 (7853 50) 05708 31056 ..... 26464 91795 000 000	E.SMITH	FRI
12205/13559/14728	1100/20/40z	07 Nov	973 1	HFD	MON
15969/17479/18169	1010/30/50z	03 Nov	941 000	E.SMITH/HFD	THU
	1010/30/50z	10 Nov	941 1 (1877 95) 96114 55093 ..... 13320 18411 000 000	E.SMITH	THU
	1010/30/50z	17 Nov	941 000	E.SMITH	THU
	1010/30/50z	24 Nov	941 000	E.SMITH	THU
16296/14796/13396	**1400/20/40z**	**02 Nov**	**273 1 (3967 107) 38316 25979 ..... 05417 87806 000 000**	E.SMITH	WED
	1400/20/40z	09 Nov	273 1 (2286 105) 06069 82779 ..... 84750 98927 000 000	E.SMITH	WED
	1400/20/40z	16 Nov	273 1 (4181 225) 87859 01209 ..... 78938 69941 000 000	E.SMITH	WED
	1400/20/40z	23 Nov	273 000	E.SMITH	WED

December 2016:

5312/4512/---	2200/20/40z	07 Dec	350 000	BR	WED
	2200/20/40z	14 Dec	350 1 **(5880 157) 28988 89642....**	BR	WED
	2200/20/40z	21 Dec	350 000	BR	WED
	2200/20/40z	28 Dec	350 000	BR	WED
5784/7584/---	0600/20/40z	03 Dec	751 000	BR	SAT
	0600/20/40z	10 Dec	751 000	BR/HFD	SAT
	0600/20/40z	17 Dec	751 1 **(5880 157) 28988 89642....**	BR	SAT
	0600/20/40z	31 Dec	751 000	BR	SAT
7741/6841/---	1310/30/50z	03 Dec	787 000	BR	SAT
	1310/30/50z	08 Dec	787 000	BR	THU
	1310/30/50z	10 Dec	787 000	BR	SAT
	1310/30/50z	15 Dec	787 1 (1159 67) 59753 87215....	BR	THU
	1310/30/50z	22 Dec	787 000	E.SMITH	THU
	1310/30/50z	24 Dec	787 1 (3310 81) 79057 69413....	BR	SAT

	1310/30/50z	31 Dec	787 000	BR	SAT
8047/6802/5788	1810/30/50z	05 Dec	463 1 (987 29) 36296 74524 30785 ... 40636 63200 000	JkC	MON
	1900/20/40z	07 Dec	463 1 (6820 142) 75782 58397....	BR	WED
	1810/30/50z	12 Dec	NRH	BR	MON
	1900/20/40z	14 Dec	463 1 (1567 145) 63449 41798....	BR	WED
	1900/20/40z	21 Dec	463 1 (9035 147) 69520 91083....	BR	WED
	1900/20/40z	28 Dec	463 1 (2373 133) 54618 25690....	BR	WED
9176/7931/6904	1900/20/40z	01 Dec	257 1 (987 29) 36296 74524....	BR	THU
	1800/20/40z	07 Dec	257 1 (5704 143) 53008 15671....	BR	WED
	1900/20/40z	08 Dec	257 1 (9820 126) 00762 80429.... (9176kHz NRH)	BR	THU
	1800/20/40z	14 Dec	257 1 (1 . .9 133)	BR	WED
	1900/20/40z	15 Dec	NRH	BR	THU
	1800/20/40z	21 Dec	257 1 (2173 145) 62882 74367....	BR	WED
	1800/20/40z	28 Dec	257 1 (8921 140) 87464 64597....	BR	WED
13371/11571/10271	1400/20/40z	14 Dec	352 1 (9631 51) 63633 71186 97358 ... 82013 63880 000 000	AB	WED
13569/14869/16269	1010/30/50z	18 Dec	582 1 (8712 177) 47454 47661 90681 ... 72383 41444 000 000	AB/HFD	SUN
	1010/30/50z	22 Dec	582 000	E.SMITH	THU
14869	1030z	25 Dec	582 000	RNGB	SUN
19034/17423/	1310/30/50z	22 Dec	351 1 (644 49) 91789 87567 ..... 88242 23255 000 000	E.SMITH	THU

M14 IA MCW / ICW Short 0

Thanks to our regular Morse monitors we have a number of intercepts logged, the contents of which have proved to be far from dull.

M14 has a bad day
M14 has had some problems & apparent breakdowns during November. Ary, (AB) logged the 1300z schedule on Thursday, 24 November where the message stopped unexpectedly & was restarted following brief pause & call-up. Then for the repeat transmission at 1330z with both Edd, (E.SMITH) & Ary monitoring the message, the message stopped again - but at a later part of the message & was again restarted following a brief pause & call-up.

Changes in format to Training Messages
M14 has a number of schedules that are believed carry training or test messages. During late November & throughout December, it was noted that as well as the expected 5 figure groups several of these messages also contained a number of 4 figure & even 3 figure groups.

Richard, (RNGB) logged the 1820z schedule in progress on Tuesday, 22 November, noting that the message contained a number of 4 figure groups mixed in with the usual 5 figure groups that are normally sent. Ary, (AB) tells us that he had previously noted this anomaly on Tuesday 05 November, where the same message was sent - complete with alterations & errors. Brian, (BR) logged a full message on Tuesday 13 December that contained both 3 figure & 4 figure groups, as well as the usual 5 figure groups expected.

Ary, (AB) logged both the early transmissions on Saturday 05 December that not only contained a number of 4 figure groups, but also had the header sequence of 22 50 51. Both transmissions failed to sent the 0000 ending & an additional sequence of 10 groups was heard at 0828z.

Peter, (PoSW) sends us this report of M14 activity:-

> An M14 schedule has been noted in the early afternoon, UK time, in November on Tuesdays at 1300 + 1330 UTC; moved to lower frequencies and changed the "call" in December:-
>
> 01-Nov-16:- 1312 UTC, 10423 kHz, M14 CW in progress, peaking S9 with QSB, ended 1316 UTC with, "= = 149 149 56 56 00000". Last 5Fs, "45096 98441 51829 70468".
> 1345 UTC, 8167 kHz, M14 CW in progress, confirmed as a repeat of the transmission on 10423kHz when it ended at 1346z
>
> 15-Nov-16:- 1300 UTC, 10423 kHz, calling "058", S9 with deep QSB, DK/GC "942 942 57 57 = =" and 5Fs.
> 1330 UTC, 8167 kHz, repeat sending, peaking S9.
>
> This "058" call seemed somewhat familiar, triggering off something in the old memory banks; this schedule has been logged in the past on these same frequencies but at a different time, was heard as a daily schedule in the last days of May and first week of June in 2014 at 1800z on 10423kHz and 1830 UTC on 8167kHz.
>
> 22-Nov-16:- 1300 UTC, 10423 kHz, call "058", DK/GC "129 129 54 54", over S9.
> 1330 UTC, 8167 kHz, second sending, also over S9.
>
> It turns out that this also runs on a Thursday:-
>
> 24-Nov-16, Thursday:- 1333 UTC, 8167 kHz, the second sending of the schedule noted on Tuesdays, "058", DK/GC "746 746 58 58".
>
> The sending of 5Fs stopped suddenly just after 1346 UTC then came back with the "058" call for a short while before continuing with the 5F groups ending around 1349 UTC.
>
> 29-Nov-16:- 1300 UTC, 10423 kHz, "058", very weak signal compared with other transmissions this month, DK/GC "392 392 60 60".
> 1330 UTC, 8167 kHz, second sending, somewhat stronger but only S5 to S6 at best.
>
> Not found on Tuesdays in December at 1300z on 10423 but M14 still active:-
>
> 06-Dec-16, Tuesday:- 1303 UTC, 8116 kHz, M14 CW calling "441", over S9, DK/GC "926 926 51 51", ended 1315 UTC with the usual, "= = DKDK GCGC 00000".
>
> Unable to find a repeat on a lower frequency; expected it to be between one and two MHz down the band.

13-Dec-16:- 1300 UTC, 8116 kHz, “441”, DK/GC “679 679 52 52”, S8 to S9.
1341 UTC, 5410 kHz, M14 CW in progress, confirmed as being the repeat sending when it ended with, “= = 679 679 52 52 00000”. Didn't tune low enough last time, then.

Continues to be active on a Thursday in December:-

15-Dec-16:- 1300 UTC, 8116 kHz, call “441”, DK/GC “238 238 54 54”.
1330 UTC, 5410 kHz, second sending very weak signal, local RF “hash” or “electronic soup” very intense, M14 signal rose out of the crud to enable a few 5F groups to be heard around 1336 UTC.

November 2016:

3721	1600 - 1604z	01 Nov	361 00000	MCW	E.SMITH	TUE
	1600 - 1604z	15 Nov	361 00000	MCW	E.SMITH	TUE
4636	1820z (IP)	22 Nov	....52727 **8621** 53712 6350 82310 **2053** 57286 61220 518 86 00000 [Note 1]		RNGB	TUE
4975	1800z	04 Nov	382 00000		HFD	FRI
5374	1700z	04 Nov	382 00000		HFD	FRI
5431	0800z	19 Nov	171 (613 82) = 76251 82420..... 76351 82240 00000 Good signal into London		RNGB	SAT
8167	1345 (IP) - 1346z	01 Nov	(149 56) In Progress		PoSW	TUE
	1343 (IP) - 1345z	03 Nov	(726 53) In Progress ..... 48813 59273 = 726 53 00000	ICW	E.SMITH	THU
	1330 - 1348z	10 Nov	058 (367 52) = 11427 14585 ..... 29525 44344 00000 [Note 2]	ICW	E.SMITH	THU
	1330z	15 Nov	058 (942 57) = Strong		PoSW	TUE
	1330z	22 Nov	058 (129 54)		PoSW	TUE
	1330 - 1349z	24 Nov	058 (746 58) = 92955 96527 ..... 30883 43775 00000 [Note 3]	ICW	AB/E.SMITH	THU
	1330z	29 Nov	058 (392 60) Weak		PoSW	TUE
10423	1305 (IP) - 1316z	01 Nov	(149 56) In Progress ..... 51829 70468 = 149 56 00000	ICW	E.SMITH/PoSW	TUE
	1300 - 1316z	08 Nov	058 (194 58) = 67555 59509 ..... 14531 91472 00000	ICW	E.SMITH	TUE
	1300z	15 Nov	058 (942 57) = Strong		PoSW	TUE
	1300 - 1316z	22 Nov	058 (129 54) = 67405 95588 ..... 18245 23123 00000	ICW	E.SMITH/PoSW	TUE
	1300z	24 Nov	058 (746 58) = 92955 96527 ..... 30883 43775 00000 [Note 4]	ICW	AB/E.SMITH/PoSW	THU
	1300z	29 Nov	058 (392 60) Weak		PoSW	TUE
17458	0930 - 0934z	10 Nov	617 00000	ICW	E.SMITH	THU

[Note 1] Caught the end of the regular 1820z M14 transmission on 4636kHz and the last few groups contained groups of **only 4** and not five figures.

[Note 2] At the Group 50 repeat, there was a short pause, the Call up restarted, then resumed from Group 46 and finished the Message.

[Note 3] Transmission ceased during grp31. After a short pause the 058 call-up was sent multiple times before the message restarted from grp26.

[Note 4] Transmission stopped after grp52. After a short pause the 058 call-up was sent multiple times before the message restarted from grp48.

December 2016:

3721	1558 - 1602z	20 Dec	361 00000 Good. Up early & ended mid-call-up		JkC	TUE
4632	1820 - 1838z	13 Dec	186 (021 77) 0553 7823 10208....70557 13156 00000 [Note 5]		BR	TUE
4761	1920	14 Dec	748 (**2222** 518 86) **3258** 53500..... 57286 61220 00000 {Note 6]		AB	WED
5382	1700 - 1702	16 Dec	382 00000		AB	FRI
5410	1341z (IP)	13 Dec	(679 52)		PoSW	TUE
	1330z	15 Dec	441 (238 54)		PoSW	THU
5430	0800z	03 Dec	171 (**22 50 51**) 52378 50126..... **6281 3265 No ending zeros** [Note 7]		AB	SAT
5560	0900z	03 Dec	171 (**22 50 51**) 52378 50126..... **6281 3265 No ending zeros** [Note 8]		AB	SAT
8116	1300 - 1316z	01 Dec	441 (780 56) = 13752 78200 ..... 69842 24463 00000		E.SMITH	THU
	1300 - 1315z	06 Dec	441 (926 51) = 39603 88139 ..... 39512 85070 00000		E.SMITH/PoSW	TUE
	1300 - 1315z	13 Dec	441 (679 52) = 23229 55347 ..... 36415 26129 00000		E.SMITH/PoSW	TUE
	1300 - 1319z	15 Dec	441 (238 54) = 47030 12577 ..... 13640 46918 00000		E.SMITH/PoSW	THU
	1300z	16 Dec	441 (238 54) = 47030 12577..... 13640 46918 **No ending zeros**		RNGB	FRI
	1300 - 1316z	20 Dec	441 (609 58) = 80323 07796 ..... 68342 22126 00000		E.SMITH	TUE
8126	1300 - 1315z	22 Dec	441 (823 51) = 25022 57712 ..... 27910 59554 00000 [Note 9]		E.SMITH	THU
8131	1300 - 1316z	08 Dec	441 (308 57) = 73972 82918 ..... 36816 31608 00000 [Note 9]		E.SMITH	THU
17458	0930z	25 Dec	617 00000		RNGB	SUN

[Note 5] Long pause before start of message. Message contained a large number of both 3 figure & 4 figure groups as well as 5 figure groups

[Note 6] Header contains extra group 2222. Long pause before message started. Contained 3 figure & 4 figure groups as well as 5 figure groups

[Note 7] Note the 3 part DK / GC sequence, also the use of some 4-fig grps in the message Also no 00000 at end of transmission
At 0828z the following was sent; 4446 12370 22431 11580 37908 62322 46339 37580 57810 2221S (AB)

[Note 8] Note the 3 part DK / GC sequence, also the use of some 4-fig grps in the message Also no 00000 at end of transmission

[Note 9] Used 8131kHz for Thu 08 Dec & 8126kHz on Thu 22 Dec, although 8116kHz used on both Thu 01 December & Thu 15 December (Edd)

M14 10423kHz 1300z 08 Nov 16

058 (R4) 194 194 58 58 = =

67555 59509 17345 80476 08983
56220 43200 93410 52775 74985
57038 67655 74185 57477 69256
40337 59503 13439 95049 94820
37542 21873 79106 77964 34661
49903 08691 59271 39262 19011
63540 74116 86696 73308 76011
18251 00519 29561 99927 85757
51022 13631 11544 67654 17003
13032 91084 53329 61683 00292
79132 13096 89747 94704 90615
63900 14531 91472 00000

194 194 58 58 00000

Courtesy E.SMITH

M14 5431kHz 0800z 19 Nov 16

171 (R4) 613 613 82 82 = =

76251 82420 63321 84762 90001
63191 53772 48291 80345 76629
37281 44882 00655 27163 85524
04072 74541 73392 56012 31062
63880 93652 61710 87201 85491
63881 42608 90701 40027 55217
63381 93671 53122 70436 62117
70239 55411 61911 63888 92441
53790 84151 39959 00466 72261
84255 05003 77282 56201 60942
52771 43902 33735 72431 88465
72209 00512 31210 62091 50544
60011 74109 62420 52883 74507
54637 23110 63908 52660 74091
52081 43309 70551 10103 40622
82146 70336 42801 63035 62091
76351 82240 = =

613 613 82 82 00000

Courtesy RNGB

M14 8116kHz 1300z 16 Dec 16

441 (R4) 238 238 54 54 = =

47030 12577 33567 28047 89439
73047 57612 54688 44463 05974
54939 23080 86516 73258 59168
96808 85950 63736 74885 75930
03668 60030 80714 56074 05382
03564 23106 41151 43929 99902
11792 64371 83091 31612 52839
97248 61365 70825 80230 51275
19096 08706 71924 01964 37442
43990 61325 89943 62586 97800
80098 78787 13640 46918 = =

238 238 54 54

No ending zeroes

Courtesy RNGB

M14 8167kHz 1330z 24 Nov 16

058 (R4) 746 746 58 58 = =

92955 96527 24140 31111 36234
66724 36231 57565 00735 61599
28621 90348 22621 79914 59836
20700 26127 58050 62835 43661
12712 09532 11360 33587 57343
00186 64512 10762 60347 01146
00485 53822 28258 86860 75394
37664 82117 70326 68149 01530
16646 92695 97287 76954 58731
09483 20729 30264 98676 40532
97092 84972

Stops - Sends the ID 058 x 21
Resumes from group 58

30264 98676 40532 97092 84972
20933 16791 67474 58572 30883
43775 = =

746 746 58 58 00000

Courtesy AB/E.SMITH

M14 4632kHz 1820z 13 Dec 16

186 (R4m) 021 021 77 77 = =

(Long Pause)

0553 7823 10208 86750 01137
10711 **235** 35677 75338 07837
5672 2186 05771 5336 88185
52202 77256 56825 32138 0065
85500 57627 38151 2702 58272
37608 55660 33710 75515 8363
7161 5635 35187 83855 5313
55163 87671 32825 2076 6158
32552 **235** 22365 **165** 2516
35777 5557 52165 11371 1216
85876 1275 51517 68368 **630**
257 55387 17531 36386 65850
57718 2030 7031 00355 80150
5255 1051 57837 1211 52768
31732 3078 57055 5357 70557
13156 **851**

021 77 00000

Courtesy BR

M14 4761kHz 1920z 14 Dec 16

748 (R4) 2222 518 518 86 86

Long Pause

3258 53500 12865 21208 51810
31717 **255** 1665 86113 **221**
58500 8532 **281** 26650 0033
51526 3366 76712 8162 58500
5115 10200 37501 2338 15271
6358 61772 5718 32551 8721
36515 **826** 33876 25237 50630
53732 11737 3850 2351 27136
5373 25850 8070 30012 5123
5815 50601 2553 27575 **173**
53850 72185 1612 51078 01276
53850 0308 2518 53500 02561
53718 5531 7816 85162 7335
6172 5161 83501 01561 73282
5200 71058 58512 63501 0207
6570 25078 80825 52727 8621
53712 6350 82310 2053 57286
61220 = =

518 518 86 86 00000

Courtesy AB

M23 O ICW

No logs

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

Edd, (E.SMITH) logged this troubled transmission on Wednesday 23 November - One of the days that its sister station M14 was experiencing similar issues. After several attempts, the Op. finally managed to complete the message! Good log Edd!

9463	1200 (IP) - 1214z	23 Nov	801 (297 53) = 74846 42600 ..... 57638 03252 = 297 53 00000	ICW	E.SMITH	WED

801 297 53 =
74846 42600 63806 41943 57803 11149 13943 12465 73964 81482
22128 80404 70902 63211 70176 88661 07234 95005 54341 08023
5952

[30 Second Pause - Restarted from grp01]

801 297 53 =
74846 42600 63806 31943 57803 11149 13943 12465 73964 81482
22128 80404 70902 63211 70176 88661 07234 95005 54341 08023
5952

[40 Second Pause - Restarted from grp17]

801
07234 95005 54341 08023
59526 47857 45387 46297 11718 40950 11660 82389 19249

[1 Minute Pause - Restarted from grp27]

801
11660 82389 19249 31050
09822 38757 65086 61382 72964 40681 49828 80908 50752 35791
83079 69955 81326 72280 68287 33133 99617 59254 98213 45466
11782 57638 03252 =
297 53 00000

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.

After the signal became too weak to receive due to the advancing summer, the signal was expected to reappear towards late autumn. Unfortunately, despite regular attempts by Guy (GD) & occasional checks by other monitors the station has not been heard. The station was regularly heard on the three known frequencies in previous years & was still using these when rediscovered early in 2016. We will continue to make checks for this station, but it does appear as if this may have gone the way that many others have over the years. Our thanks to Guy for his interest in this station over a number of years & for his continued efforts to search for this station.

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

Due to the poor reception of this signal in both the UK and Canada, GlobalTuners receivers at Hong Kong, Mojave Desert & Sydney - as well as the Twente SDR, were used frequently to confirm the msg detail

No logs. Not heard for some time now, but has previously been absent for long periods without activity before suddenly reappearing - usually with the same message!

Morse Stations - Not Number Related

M51 XlX

3881//6825 Usual unscheduled & random continuous transmissions heard throughout November & December, often ceasing just before, or commencing shortly after the daily M51a transmissions.

M51a (FAV22) Daily Mon - Fri, Sun & some Sats. See NL 72 for details

3881//6825

1230 - 1307z	21 Dec	Mercredi- Leçon	13-1/1 Codé,	13-1/2 Clair,	13-1/3 Codé,	13-1/4 Clair (720 grps/hr)	BR	WED
1230 - 1304z	23 Dec	Vendredi- Leçon	15-1/1 Codé,	15-1/2 Clair,	15-1/3 Codé,	15-1/4 Clair (960 grps/hr)	BR	FRI
1230 - 1304z	27 Dec	Mardi-Leçon	12-2/1 Codé	12-2/2 Clair,	12-2/3 Codé,	12-2/4 Clair (600 grps/hr)	BR	TUE

M89 O

Jean-Paul, (JPL) comments concerning the 2QLC schedules. [V NG3Y (X3) DE 2QLC (x2)]

'The more I monitor this Round Slip, the more convinced I am that this station is associated with the DP91 family. Like DP91, 2QLC is // on two frequencies but operating independently. Both stations were sending a message at the same time. However, on 6093kHz the message was being sent fast, while on 10414kHz, the message was sent very slow. When we look at the end of the messages sent on 6093kHz and 10414kHz, we noticed that a different message was being sent on both frequencies. When returning to Round Slip the letter A is sent, then NG3Y and then NG3Y (does not send the DE). Then the Round Slip is sent as per normal with the DE between the two call signs. This same format was used by DP91 except that the letter E was sent before the letter A. While monitoring the Round Slip on both 6093kHz and 10414kHz, they were not synchronized.'

Operator Chat from M89

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

3030 3203 3300 3333 3342 3372 3383 3394 3401 3489 3518 3531 3538 3561 3699 3726 3744 3757 3787 3800 3832	4085 4140 4236 4247 4263 4275 4302 4344 4365 4392 4539 4567 4593 4672 4772	5075 5081 5083 5158 5295 5316 5318 5358 5374 5395 5400 5477 5483 5555 5566 5656 5843 5879 5993	6111 6268 6322 6441 6668 6718 6807 6847	8043 8045 8051 8056 8082 8083 8075 8092 8148 8179 8185 8341 8346 8756	9044	10221 10233

New Scheds for Nov / Dec 2016: **From logs submitted from JPL**

4859	Previously heard on 4858kHz	First heard 12 Nov	V NG3Y (X3) DE 2QLC (x2)
6093	New frequency for this Round Slip	First heard 15 Nov	V NG3Y (X3) DE 2QLC (x2)
6093//**10414**	Finally found // for 6093kHz	First heard 28 Nov	V NG3Y (X3) DE 2QLC (x2)
4530//3777 & 8060	New frequency for this Round Slip	First heard 22 Nov	V M8JF (x3) DE RIS9 (x2)
6777	New frequency for this Round Slip	First heard 29 Nov	V M8JF (x3) DE RIS9 (x2
6777//6793//8060	Heard on all three freqs	First heard 29 Nov	V M8JF (x3) DE RIS9 (x2)
3777//4532//6793	Heard on all three freqs	First heard 22 Dec	V M8JF (x3) DE RIS9 (x2)
8350	New daytime frequency for this station	First heard 29 Dec	VVV WNF DE FXM
7802	New frequency for this Round Slip	First heard 31 Dec	V DKG6 (x3) DE 3A7D (x2)

Chart of M89 Freq & Call signs heard in Nov/Dec 2016 **New Scheds shown in Bold Type**

Freq in KHz	Call Slip
3642//NRH	V DKG6 (x3) DE 3A7D (x2)
3642//7602	V DKG6 (x3) DE 3A7D (x2)
3642//**7802**	V DKG6 (x3) DE 3A7D (x2)
3777//4530	**V M8JF (x3) DE RIS9 (x2)**
3777//4532	V M8JF (x3) DE RIS9 (x2)
4003//4859	**V NG3Y (X3) DE 2QLC (x2)**
4131//NRH	V JKDJ (x3) DE SLBC (x2)
4532//8060	V M8JF (x3) DE RIS9 (x2)
4720//NRH	VVV WNF (x3) DE FXM (x2)
4859//NRH	**V NG3Y (X3) DE 2QLC (x2)**
4860// NRH	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
6093//NRH	**V NG3Y (X3) DE 2QLC (x2)**
6093//10414	**V NG3Y (X3) DE 2QLC (x2)**
6777//8060	**V M8JF (x3) DE RIS9 (x2)**
6793//NRH	V M8JF (x3) DE RIS9 (x2)
6793//8060	V M8JF (x3) DE RIS9 (x2)
6840//10640	VVV (x3) Q2M (x3) DE NYZ (x2) (R5) QSA ? K
7602//NRH	V DKG6 (x3) DE 3A7D (x2)
8350//NRH	**V WNF (x3) DE FXM (x2)**
10180//NRH	V DKG6 (x3) DE 3A7D (x2)
10640//NRH	VVV (x3) Q2M (x3) DE NYZ (x2) (R5) QSA ? K

Courtesy JPL

M89 8341kHz 1015 (IP) - 1022z 15 Nov 2016

NR 1309/EX 1814 BT
UA6/HE7 AR
NR 1309/EX 1814 BT (1016z)
UA6/HE7 AR
NR 1309/EX 1814 BT
UA6/HE7 AR
FF NR 1310/EX 1817 BT
LN8/YE9 AR
NR 1310/EX 1817 BT
LN8/YE9 AR (1019z)
NR 1310/EX 1817 BT
LN8/YE9 AR (1020z)
FF NR 1311/EX 1820 BT
DS0/RK1 AR
NR 1311/EX 1820 BT
DS0/RK1 AR (Cont'd - 1022z)

M89 6322kHz 1009 (IP) - 1011z 17 Nov 2016

4NA5 D353 NT4T 3DA6 DTAN
(IP – Cont'd – Machine sent – 1009z)
AR AR (1009z)
VV DD3G K
R R U QSY TO NR 06 NR 06 K (1010z)
R SK
VV W3FA K
R R U QSY TO NR 10 NR 10 K
R SK
VV 7JLO K
R R U QSY TO NR 08 NR 08 K
SK (1011z – Silent)

Courtesy JPL

M89 4003//4859kHz 1312 - 1329z 29 Nov 2016

V NG3Y (X3) DE 2QLC (x2) (IP - Cont'd)

AR (IP – In tfc – 1312z)
MSG **NR 116 CK 301 70 1129 2100 BT**
UAN6 3TD7 T5D7 735T 64U5 N37T UDU7 TUDA TT7A TTTN (Cont'd – 1313z)
III BT U74U AR (1324z) (Return to R/S – 1329z)

M89 6093//10414kHz 0245 - 0256z 03 Dec 2016

V NG3Y (X3) DE 2QLC (x2) (IP - Cont'd)

5ANA D7DT NAD3
III BT 454T 7T36 354D 4T53 ADTU (Cont'd – 0246z)
III BT 5NU7 57DT 3476 5TAD (Cont'd – 0251z)
III BT 653T AR (0255z)
E A NG3Y KLC V EEE A NG3Y 2QLC V (Return to R/S – 0256z)

M89 3777//4532kHz 1641 - 1648z 06 Dec 2016

V M8JF (x3) DE RIS9 (x2) (IP - Cont'd)

7D66 4AA7 T643 7AU5
AR (1643z)
CQ 06/9202 2713 6508 MSG (T=0)
NR 1208 CK 93 40 1207 0040 RMKS 6232 TO 9202 2713 6508 BT
44T3 T7D3 6T6U UATT T5DN T4DA 7673 6D3T T3T3 TTTU T..4 (Cont'd – 1644z)
AR (Return to R/S – 1648z)

Courtesy JPL

M95 O XSV, XSV70, XSV85

Jean Paul (JPL) noted that the 8073kHz XSV85 schedule, usually very strong compared to the 4243//9054 kHz schedule, was very weak during the first part of November, but had improved on 12 November to almost its previous strength.

He was also pleased to report that after much searching he has found the simulcast frequency for the 8073kHz schedule. This turned out to be 4364kHz & JPL finally logged this on 23 November - Well done JP !

Summary of M95 messages sent for 2016:

XSV70 - 1184
XSV85 - 1217

M95 Morse Logs

3187	1400 (IP) - 1406z	24 Dec	Op. chat. including OBS -Usually Weather observations	(Remote Japan)	JPL	SAT
	1413 (IP) - 1452z	24 Dec	Coded messages & OBS - Ended 555			
3232	1111 (IP) - 1131z	16 Dec	Messages & Op. chat. Fading badly	(Remote tuner South Korea)	JPL	FRI
4243//NRH	Message number differs from current XSV70 and XSV85 message numbers. All logged via Remote tuner Hong Kong unless stated.					
	1140 - 1222z	18 Nov	NR 038 CK 21 35 1118 1530 BT		JPL	FRI
			NR 36 CK 174 35 1118 1607 BT		JPL	FRI
			NR 056 CK 33 35 1118 1654 BT		JPL	FRI
	1139 - 1158z	20 Nov	NR 042 CK 29 35 1120 1527 BT		JPL	SUN
			NR 40 CK 149 35 1120 1615 BT		JPL	SUN
	1140 - 1218z	20 Dec	NR 002 CK 23 35 1220 1530 BT	(Remote tuner South Korea)	JPL	TUE
			NR 40 CK 172 35 1220 1614 BT		JPL	TUE
			NR 08 CK 32 35 1220 1649 BT		JPL	TUE
	1150 - 1152z	21 Dec	NR 42 CK 185 35 1221 1610 BT	(Remote tuner South Korea)	JPL	WED
4243//9054	Message number differs from current XSV70 and XSV85 message numbers. All logged via Remote tuner Hong Kong unless stated.					
	0001 - 0004z	02 Nov	NR 03 CK 065 35 1102 0700 BT (From old day log – 0001z)		JPL	WED
	1145 - 1215z	02 Nov	NR 002 17 35 1102 1536 BT		JPL	WED
			NR 007 CK 17 35 1102 1553 BT		JPL	WED
			NR 04 CK 144 35 1102 1709 BT		JPL	WED
	1140 - 1219z	03 Nov	NR 009 CK 17 35 1103 1524 BT		JPL	THU
			NR 005 CK 15 35 1103 1630 BT		JPL	THU
			NR 06 CK 118 35 1103 1637 BT		JPL	THU
	2350 - 2359z	03 Nov	NR 006 CK 14 35 1104 0619 BT		JPL	THU

		NR 010 CK 20 35 1104 0635 BT		JPL	THU
		NR 07 CK 0D0D 35 1104 0705 BT		JPL	THU
0001 - 0007z	04 Nov	NR 07 CK 0D8 35 1104 0705 BT		JPL	FRI
0928 - 0932z	04 Nov	NR 008 20 35 1A04 A633 BT		JPL	FRI
1140 - 1227z	04 Nov	NR 010 CK 19 35 1104 1530 BT		JPL	FRI
		NR 08 CK 176 35 1104 1600 BT		JPL	FRI
		NR 008 CK 29 35 1104 1633 BT		JPL	FRI
1144 (IP) - 1240z	08 Nov	NR 018 29 35 1108 1537 BT	(// 9054kHz NRH)	JPL	TUE
		NR 026 17 35 1108 1621 BT	(// 9054kHz NRH)	JPL	TUE
2337 - 2359z	08 Nov	NR 027 CK 17 35 1109 0600 BT		JPL	TUE
		NR 019 CK 19 35 1109 0615 BT		JPL	TUE
		NR 170 CK 77 35 1109 0700 BT		JPL	TUE
1139 - 1216z	09 Nov	NR 020 CK 27 35 AA0N 1530 BT		JPL	WED
		NR 18 CK 147 35 AA09 16AT BT		JPL	WED
		NR 029 25 35 AATN A655 BT		JPL	WED
1139 - 1221z	10 Nov	NR 022 CK 31 35 1110 1525 BT		JPL	THU
		NR 032 CK 25 35 1110 1534 BT		JPL	THU
		NR 20 CK 150 35 1110 1610 BT		JPL	THU
1140 - 1216z	11 Nov	NR 024 CK 19 35 1111 1515 BT		JPL	FRI
		NR 22 CK 170 35 1111 1616 BT		JPL	FRI
1143 (IP) - 1203z	15 Nov	NR 032 CK 19 35 1115 15AT BT	(Remote tuner Australia)	JPL	TUE
		NR 30 CK 112 35 AAT5 A6U5 BT	(Remote tuner Australia)	JPL	TUE
		NR 047 CK 19 35 AAA5 A6UD BT	(Remote tuner Australia)	JPL	TUE
1140 - 1208z	16 Nov	NR 034 CK 17 35 1116 1513 BT		JPL	WED
		NR 050 CK 16 35 1116 1645 BT		JPL	WED
		NR 32 CK 128 35 1116 1705 BT		JPL	WED
2339 - 2359z	16 Nov	NR 051 CK 17 35 1117 0613 BT		JPL	WED
		NR 035 CK 17 35 1117 0621 BT		JPL	WED
		NR 33 CK 66 35 1117 0705 BT		JPL	WED
1140 - 1218z	17 Nov	NR 053 CK 16 35 1117 1508 BT		JPL	THU
		NR 036 CK 20 35 1117 1518 BT		JPL	THU
		NR 34 CK 128 35 1117 1610 BT		JPL	THU
0001 - 0007z	17 Nov	NR 33 CK 66 35 1117 0705 BT		JPL	THU
1155 - 1201z	21 Nov	NR 044 CK 23 35 1121 1510 BT	(Remote tuner New Zealand)	JPL	MON
		NR 42 CK 135 35 1121 1608 BT		JPL	MON
1143 (IP) - 1201z	22 Nov	NR 045 CK 22 35 1122 1516 BT	(Remote tuner New Zealand)	JPL	TUE
		NR 54 CK 151 35 1122 1615 BT		JPL	TUE
1150 (IP) - 1156z	22 Nov	NR 048 CK 20 35 1123 1518 BT	(Remote tuner New Zealand)	JPL	TUE
		NR 079 CK 13 35 1123 1612 BT		JPL	TUE
		NR 46 CK 136 35 1123 1615 BT		JPL	TUE
2345 - 2359z	22 Nov	NR 080 CK 15 35 1124 0625 BT	(Remote tuner New Zealand)	JPL	TUE
		NR 049 CK 20 35 1124 0630 BT		JPL	TUE
		NR 47 CK 96 35 1124 0... BT		JPL	TUE
1143 (IP) - 1152z	24 Nov	NR 050 CK 19 35 1124 1522 BT		JPL	THU
		NR 48 CK 138 35 1124 1620 BT		JPL	THU
1143 (IP) - 1159z	25 Nov	NR 052 CK 22 35 1125 1531 BT		JPL	FRI
		NR 50 CK 172 35 1125 1620 BT		JPL	FRI
1151 (IP) - 1207z	27 Nov	NR 54 CK 133 35 AAU7 A6A7 BT		JPL	SUN
		NR 001 CK 20 35 AAU7 A6.. BT		JPL	SUN
		NR 091 CK 20 35 AAU7 A634 BT		JPL	SUN
2350 (IP) - 2359z	28 Nov	NR 059 CK 21 35 1129 0623 BT	(Remote tuner South Korea)	JPL	MON
		NR 57 CK 81 35 1129 0703 BT		JPL	MON
0001 (IP) - 0010z	29 Nov	NR 57 CK 81 35 1129 0703 BT	(Remote tuner South Korea)	JPL	TUE
1202 (IP) - 1213z	29 Nov	NR 58 CK 169 35 1129 1618 BT	(Remote tuner South Korea)	JPL	TUE
2347 (IP) - 2359z	29 Nov	NR 098 CK 22 35 1130 0626 BT	(Remote tuner South Korea)	JPL	TUE
		NR 061 CK 26 35 1130 0631 BT		JPL	TUE
		NR 59 CK 115 35 1130 0655 BT		JPL	TUE
0001 (IP) - 0014z	30 Nov	NR 59 CK 115 35 1130 0655 BT	(Remote tuner South Korea)	JPL	WED
1144 (IP) - 1155z	30 Nov	NR 062 19 35 1130 1505 BT	(Remote tuner South Korea)	JPL	WED
		NR 60 CK 136 35 1130 164 BT		JPL	WED
1147 (IP) - 1214z	02 Dec	NR 066 CK 17 35 1202 1507 BT	(Remote tuner South Korea)	JPL	FRI
		NR 006 CK 17 35 1202 1507 BT		JPL	FRI
		NR 04 CK 110 35 1202 1557 BT		JPL	FRI
		NR 007 CK 16 35 1202 1619 BT		JPL	FRI
1208 (IP) - 1220z	06 Dec	NR 001. CK 24 35 1UT6 ..05 BT	(Remote tuner New Zealand)	JPL	TUE
		NR 0109 CK 24 35 AU ... BT			
1145 (IP) - 1152z	07 Dec	NR 076 CK 34 35 1207 1524 BT	(Remote tuner New Zealand)	JPL	WED
		NR 14 CK 192 35 1207 1557 BT		JPL	WED
1156 (IP) - 1208z	08 Dec	NR 16 CK 165 35 1208 1633 BT		JPL	THU
1152 (IP) - 1205z	09 Dec	NR 031 CK 15 35 A209 A..N	(Remote tuner Japan)	JPL	FRI
		NR 18 CK 105 35 AUTT A. A5T...		JPL	FRI

	2230 (IP) - 2235z	10 Dec	NR 035 CK 19 35 1211 0622 BT	(Remote tuner South Korea)	JPL	SAT
	2340 - 2357z	10 Dec	NR 035 CK 19 35 1211 0622 BT	(Remote tuner South Korea)	JPL	SAT
			NR 083 CK 17 35 1211 0636 BT		JPL	SAT
			NR 21 CK 056 35 1211 0705 BT		JPL	SAT
	1139 - 1157z	11 Dec	NR 084 CK 22 35 1211 1516 BT	(Remote tuner Japan)	JPL	SUN
			NR 22 CK 164 35 1211 1620 BT		JPL	SUN
	2339 - 2359z	11 Dec	NR 085 CK 29 35 1212 0619 BT	(Remote tuner South Korea)	JPL	SUN
			NR 038 CK 29 35 1212 0631 BT		JPL	SUN
			NR 039 CK 18 35 1212 0633 BT		JPL	SUN
	0001(IP) - 0015z	12 Dec	NR 23 CK 93 35 1212 0720 BT	(Remote tuner South Korea)	JPL	MON
	0935 (IP) - 0942z	12 Dec	NR 042 CK 29 35 1212 1653 BT	(Remote tuner South Japan)	JPL	MON
			NR 043 CK 16 35 1212 1654 BT		JPL	MON
	2340 - 2359z	13 Dec	NR 050 CK 28 35 1214 0610 BT	(Remote tuner South Korea)	JPL	TUE
			NR 051 CK 13 35 1214 06AU BT		JPL	TUE
			NR 089 CK 2035 1214 0640 BT		JPL	TUE
			NR 27 CK 073 35 1214 0713 BT		JPL	TUE
	0001 (IP) - 0008z	14 Dec	NR 27 CK 073 35 1214 0713 BT	(Remote tuner South Korea)	JPL	WED
	1140 - 1201z	15 Dec	NR 092 CK 33 35 1215 1509 BT	(Remote tuner South Korea)	JPL	THU
			NR 059 CK 18 35 1215 1530 BT		JPL	THU
			NR 30 CK 163 35 1215 1605 BT		JPL	THU
	2339 - 2359z	15 Dec	NR 059 CK 17 35 1216 0611 BT	(Remote tuner South Korea)	JPL	THU
			NR 059 CK 17 35 1216 0611 BT		JPL	THU
			NR 093 CK 24 35 1216 0616 BT		JPL	THU
			NR 31 CK 085 35 1216 0704 BT		JPL	THU
	0001 - 0011z	16 Dec	NR 31 CK 085 35 1216 0704 BT	(Remote tuner South Korea)	JPL	FRI
	1139 - 1154z	16 Dec	NR 094 CK 17 35 1216 1520 BT	(Remote tuner South Korea)	JPL	FRI
			NR 061 CK 21 35 1216 1615 BT		JPL	FRI
			NR 3U CK 121 35 1216 1616 BT		JPL	FRI
	1207 - 1251z	21 Dec	NR 078 CK 14 35 A221 1649 BT	(Remote tuner New Zealand)	JPL	WED
			NR 079 CK 14 35 1221 1650 BT		JPL	WED
	1158 (IP) - 1207z	24 Dec	NR 092 CK 15 35 1224 1640 BT	(Remote tuner New Zealand)	JPL	SAT
	1202 (IP) - 1215z	29 Dec	NR 015 CK 17 35 1229 1653 BT	(Remote tuner Japan)	JPL	THU
	0858 (IP) - 0911z	30 Dec	NR 022 17 35 1230 1520 BT	(Remote tuner New Zealand)	JPL	FRI
			NR 60 CK 109 35 1230 1600 BT		JPL	FRI
	1139 (IP) - 1158z	31 Dec	NR 12 CK 105 35 1231 1610 BT	(Remote tuner New Zealand)	JPL	SAT
			NR 021 CK 14 35 1231 1658 BT		JPL	SAT
4283//NRH	Call sign XSV70					
	1330 (IP) - 1347z	29 Nov	NR 1089 CK 228 35 1129 1506	(Remote tuner South Korea)	JPL	TUE
	0957 (IP) - 1001z	30 Nov	With coded traffic - No msg headers logged	(Remote tuner South Korea)	JPL	WED
	1333z (IP)		With coded traffic - Weak. No msg headers logged	(Remote tuner Japan)	JPL	TUE
4283//7553	Call sign XSV70					
	0902 (IP) - 0951z	14 Nov	NR 1043 CK 128 35 1114 1535	(Remote tuner Hong Kong)	JPL	MON
			NR 1044 CK 154 35 1114 1535		JPL	MON
			NR 1042 CK 132 35 1114 0730		JPL	MON
	0907 (IP) - 0913z	15 Nov	VVV [Switched to CW 0913z – Distorted/fading]	(Remote tuner Australia)	JPL	TUE
			NR 10.. CK ..6 35 1015 16.1 BT		JPL	TUE
			NR 1046 CK 1.. 35 1015 1..6 BT		JPL	TUE
			NR 1047 CK .5 35 1015 1.15		JPL	TUE
			NR 104. CK 173 35 1015 1516		JPL	TUE
	0931 (IP) - 0952z	17 Nov	NR 1053 CK 181 35 1117 .521	(Remote tuner Hong Kong)	JPL	THU
			NR 1051 CK 103 35 1117 0720		JPL	THU
	1006 (IP) - 1012z	19 Nov	NR 1057 CK 146 35 1119 0 .19	(Remote tuner Hong Kong)	JPL	SAT
	0901 (IP) - 0922z	21 Nov	NR 1064 CK 100 35 1121 1530	(Remote tuner Hong Kong)	JPL	MON
			NR 1065 1.4 35 1121 153.		JPL	MON
	0901 (IP) - 0950z	02 Dec	NR 1097 CK 103 35 1202 1616	(Remote tuner South Korea)	JPL	FRI
			NR 1098 CK 183 35 1202 1616		JPL	FRI
			NR 1096 CK 120 35 1202 0705		JPL	FRI
	0908 (IP) - 0917z	05 Dec	NR . 4 CK . 5 49 1205 1700	(Remote tuner Hong Kong)	JPL	MON
			NR 1106 CK 149 35 1205 1527		JPL	MON
	0914 (IP) - 0944z	15 Dec	NR 1136 CK 127 35 1215 1540	(Remote tuner South Korea)	JPL	THU
			NR 1137 CK 120 35 1215 1540		JPL	THU
			NR 1135 CK 118 35 1215 0718		JPL	THU
4342	0954 (IP) - 1009z	15 Dec	NR 6793 CK 35 49 1215 1700 RMKS 0838 TO 0560 K	(Remote tuner South Korea)	JPL	THU
4364//NRH	**Call Sign XSV85**					
	1138 - 1142z	24 Nov	NR 1046 CK 279 35 1124 1630 BT	(// 8073 N/H) (Remote tuner Hong Kong)	JPL	THU
	1145 (IP) - 1146z	31 Dec	NR 1217 CK 221 35 1231 1539 BT	(Remote tuner New Zealand)	JPL	SAT

4364//8073	**Call Sign XSV85**	**Note: Finally found the // on 4364kHz!**				
	1130 - 1142z	23 Nov	NR 1043 CK 29. 35 1123 1557 BT	(Remote tuner New Zealand)	JPL	WED
	1130 - 1148z	25 Nov	NR 1053 CK 45 35 1125 1540 BT	(Remote tuner Hong Kong)	JPL	FRI
			NR 1054 CK 292 35 1125 1543 BT		JPL	FRI
	1134 - 1150z	27 Nov	NR 1070 CK 47 35 1127 1559 BT	(Remote tuner Hong Kong)	JPL	SUN
			NR 1071 CK 345 35 1127 1600 BT		JPL	SUN
	1159 (IP) - 1206z	06 Dec	NR 1110 CK 42 35 1206 155 BT	(Remote tuner New Zealand)	JPL	TUE
	1133 (IP) - 1145z	07 Dec	NR 1113 CK 36 35 1207 1528 BT	(Remote tuner New Zealand)	JPL	WED
			NR 1114 CK 228 35 1207 1532 BT		JPL	WED
	1132 (IP) - 1155z	08 Dec	NR 1118 CK 26 35 120D8 1544D BT	(Remote tuner Hong Kong)	JPL	THU
	1157 (IP) - 1206z	21 Dec	In progress -Coded msgs - No headers logged	(Remote tuner New Zealand)	JPL	WED
	1130 - 11578	24 Dec	NR 1176 CK 5U 35 1124 1558 BT	(Remote tuner New Zealand)	JPL	SAT
			NR 1177 CK 32 35 1224 1602 BT		JPL	SAT
			NR 1178 CK 330 35 1224 1619 BT		JPL	SAT
4397	0944 (IP) - 0949z	15 Dec	05 05 05 05 (DE 3KXI) Traffic & Op. Chat	(Remote tuner South Korea)	JPL	THU
4434	0945 (IP) - 2335z	13 Dec	05 05 05 05 05 (Long zero)	(Remote tuner South Korea)	JPL	TUE
4545	1219 (IP) - 1232z	15 Dec	NR 001/CCK CK 28 42 1215 2022 RMKS 5615 TO 5665 BT	(Remote Japan)	JPL	THU
4730	2331 (IP) - 2337z	13 Dec	Coded traffic, 05 05 05 & Op. chat	(Remote tuner South Korea)	JPL	TUE
4863	1013z (IP)	22 Nov	(05) 05 05 05 (IP – Cont'd – Long zero)	(Remote tuner New Zealand)	JPL	TUE
5138	Message format suggest QV5B family - Both stations on this frequency					
	1031 (IP) - 1036z	23 Nov	NR 1123/CCK CK 19 66 1123 1831 BT	(Remote tuner New Zealand)	JPL	WED
5555	1110 - 1125z	03 Nov	NVC1 DE DFGB Traffic - No headers logged	(Remote tuner Hong Kong)	JPL	THU
	2324 - 2325z	16 Nov	Traffic - No headers logged	(Remote tuner Hong Kong)	JPL	WED
	0951 - 0952z	23 Nov	NR 3312 CK 210 56 1123 0620 RMKEEEE 3UUV BT	(Remote tuner New Zealand)	JPL	WED
5780	1542z	20 Dec	05 05 05 Long zero, hand sent. (In progress)	(Remote tuner South Korea)	JPL	TUE
5829	05 05 05	RMKS 6507 TO 8017 TO 607 III				
	0936 (IP) - 1003z	07 Nov	(In Progress) Traffic & Op. Chatter	(Remote tuner Hong Kong)	JPL	MON
6668	TD2S de RLE8	(Message format suggests QV5B family)				
	0929 - 0933z	27 Nov	MSG NR 040/CCK CK 91 05 1127 1730 RMKS CQ BT	(Remote New Zealand)	JPL	SUN
7553	Call sign XSV70					
	0901 (IP) - 0913z	22 Nov	NR 065 CK 1. 12 0. (Having keying problems)	(Remote tuner New Zealand)	JPL	TUE
	0903 (IP) - 0916z	27 Nov	Switched to CW - Signal distorted/intermittent	(Remote tuner New Zealand)	JPL	SUN
	0901 - 0914z	28 Nov	Digital 4+4 QPSK 75/3000 (Did not switch to CW)	(Remote tuner New Zealand)	JPL	MON
7553//9153	Call sign XSV70					
	0911 - 0919z	30 Dec	NR 1181 CK 83 35 1230 1535	(Remote tuner New Zealand)	JPL	FRI
	0913 - 0928z	31 Dec	NR 1184 CK 84 35 1231 1545	(Remote tuner New Zealand)	JPL	SAT
			NR 1185 CK 153 35 1231 1545		JPL	SAT
7554//9153	Call sign XSV70					
	0902 - 0920z	12 Dec	NR 078 CK 29 49 1212 1700	(Remote tuner South Korea)	JPL	MON
			NR 1127 CK 120 35 1212 1540		JPL	MON
8000	Message format indicates part of QV5B family					
	1427 (IP) - 1441z	30 Dec	NR 4U7/CCK CK 99 23 1230 2140 RMKS CQ BT	(Remote tuner New Zealand)	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)** All logged via Remote tuner Hong Kong unless stated.					
	1130 - 1139z	03 Nov	Switched to CW - Cont'd – Hand sent - 1139z (Too weak to copy)		JPL	THU
	1130 - 1138z	04 Nov	Switched to CW - Cont'd – Hand sent - 1138z (Too weak to copy)		JPL	FRI
	1130 - 1138z	11 Nov	Switched to CW - Cont'd – Hand sent - 1138z (Too weak to copy)		JPL	FRI
	1129 - 1145z	12 Nov	NR .115 CK 179 35 1112 1604 BT		JPL	SAT
	0001 - 0004z	14 Nov	Switched to CW – Hand sent - Only sent a few very weak VVV, then silent - 0004z		JPL	MON

	1130 - 1138z	20 Nov	Switched to CW - Cont'd – Hand sent - 1138z (Too weak to copy)		JPL	SUN
	1130 - 1152z	21 Nov	NR 1034 CK 55 35 1121 1554 BT	(Remote tuner New Zealand)	JPL	MON
			NR 1035 CK 305 35 1121 16.. BT		JPL	MON
	1130 - 1143z	22 Nov	NR 1038 CK 264 35 1122 1607 BT	(Remote tuner New Zealand)	JPL	TUE
	1130 - 1151z	09 Dec	NR 1121 CK 258 35 1209 1540 BT	(Remote tuner Japan)	JPL	FRI
	0018 (IP) - 0020z	15 Dec	NR 1144 CK 42 35 1215 0705 BT	(Remote tuner South Korea)	JPL	THU

(See also - 4364//8073)

9054 Call sign XSV85 All logged via Remote tuner Hong Kong unless stated

(See also 4243//9054kHz listing)

	0300 (IP) - 0301z	03 Dec	NR 009 CK 47 35 1203 1032 BT	(Remote tuner South Korea)	JPL	SAT
	0247 (IP) - 0250z	30 Dec	NR 02 . CK 32 35 1231 . . 3. BT	(Remote tuner New Zealand)	JPL	SAT

9153 Call Sign XSV70 (x2)

	0903 - 0926z	23 Nov	NR 69 CK 53 49 1123 1700	(Remote tuner New Zealand)	JPL	WED
			NR 70 CK 27 49 1123 1700		JPL	WED
			NR 0070 CK 135 35 1123 1545		JPL	WED

M95 4243//9054 kHz 1140z 03 Nov 2016

Initial call-up in voice USB 1140z Female operator.
Chinese digital 4+4 QPSK 75/3000 LSB (1141z)

Appears to be having problem with Chinese digital 4+4 QPSK 75/300 LSB mode - Restarted at 1155z

V (Switched to CW - Hand sent - 1200z)
VVV T T T T
VVV BT HR MSG TOYR PSE CY (1201z)
NR 009 CK 17 35 1103 1524 BT
5TD UTT TT3 3U6 3A4 35U 4AA U7U N4A 445
3DA TTU TT3 773 446 3D3 4D3 AR (1202z)
MSG AGN BT
NR 009 CK 17 35 1103 1524 BT
5TD UTT TT3 (Repeats message – 1203z)
AR (1204z)
A HR 7G GA
NR 005 CK 15 35 1103 1630 BT
UT5 TT3 3U6 3A4 TTA TTU TT3 773 35U DN7
353 4AA 446 4D3 3DU AR (1206z)
7G AGN
NR 005 CK 15 35 1103 1630 BT
UT5 3U6 3A4 (Repeats message – 1207z)
AR 1208z)
7G AGN
NR 005 EEEEEEE
A HR 7G GA
NR 06 CK 118 35 1103 1637 BT
UTU TT3 3U6 3A4 TTU N44 TT3 773 N44 5AA
(Cont'd)
AR (1216z)
A HR UP SB WK AR (1217z)
(Switched to voice – USB – Female – Chinese)
Now V26 sked – 1219z

Courtesy JPL

M95 8073kHz 1130z 09 Dec 2016

Initial call-up in voice USB 1130z Male operator.
Chinese digital 4+4 QPSK 75/3000 **USB** (1131z)
(Op. realized mistake & switched to **LSB)** (1136z)

V BNGC (x3) DE XSV85 (x2)

Switched to CW - Cont'd – Hand sent (1144z)
HR MSGS GA PSE CY (1148z)
NR 1121 CK 258 35 1209 1540 BT
TTN 3U6 3AN 3U7 TAU 773 (Cont'd – 1150z)

(Switched to 9054 //4243 M95 sked – 1151z)

Courtesy JPL

M95 9153kHz 0902z 12 Dec 2016

(IP) In Chinese digital 4+4 QPSK 75/3000 LSB (0902z)

V BNEC (x3) DE XSV70 (x2)

(Switched to CW 0915z)

HR 7G GA PSE CY (0916z)
NR 078 CK 29 49 1212 1700
..7 4N U76 75N (Cont'd – 0917z)
7G AGN
NR 078 CK 29 49 1212 1700
.D7 AAN U76 (Cont'd – 0918z)
A HR 7G GA
NR 1127 CK 120 35 1212 1540
5A7 UT3 TAU .TU6 3A4 TT4 TT. 773 354
(Cont'd – 0920z)

Courtesy JPL

Marker Beacons (MX MXI)

3168.5	1549z	20 Dec	MX CW Beacon "L" (Fast)	BR	TUE
3335	2355z	04 Dec	MX CW Beacon "V"	BR	SUN
3593.9	2358z	04 Dec	MXI CW Beacon "S" Sevoromorsk	BR	SUN
3594	2358z	04 Dec	MXI CW Beacon "C" Moscow	BR	SUN
3658	2013z	13 Dec	MX CW Beacon "V" Khiva	BR	TUE
4557.7	0009z	21 Dec	MXI CW Beacon "D" Sevastopol	BR	WED
5153.8	1734z	05 Dec	MX CW Beacon "P" Kaliningrad	BR	MON
5153.9	0457z	18 Oct	MXI CW Beacon "S" Sevoromorsk	BR	SUN
5154	0004z	05 Dec	MXI CW Beacon "C" Moscow	BR	MON
5156.8	0257z	05 Dec	MX CW Beacon "L" (Fast)	BR	MON

7508.7	0009z	05 Dec	MXI CW Beacon "D" Sevastopol			BR	MON
7509	2040z	05 Dec	MXI CW Beacon "C" Moscow			BR	MON
8494.7	0012z	05 Dec	MXI CW "Beacon "D" Sevastopol			BR	MON
8495	0012z	05 Dec	MXI CW Beacon "C" Moscow			BR	MON
8497.8	1417z	02 Oct	MX CW Beacon "L" (Fast) St Petersburg			BR	MON
10871.7	1422z	05 Dec	MXI CW Beacon "D" Sevastopol			BR	MON
10871.9	1424z	05 Dec	MXI CW Beacon "S" Sevoromorsk			BR	MON
10872	1424z	05 Dec	MXI CW Beacon "C" Moscow			BR	MON
13527.7	1143z	05 Dec	MXI CW Beacon "D" Sevastopol			BR	MON
13527.9	1124z	21 Dec	MXI CW Beacon "S" Sevoromorsk			BR	WED
13528	1340z	05 Dec	MXI CW Beacon "C" Moscow			BR	MON
16331.7	1427z	05 Dec	MXI CW Beacon "D" Sevastopol			BR	MON
16332.0	0715z	11Dec	MXI CW Beacon "C" Moscow			BR	SUN

Oddities

4524kHz Marker

5292kHz Marker

5292	0015z	05 Dec	Marker	'D' or 'S' - poorly spaced		BR	MON

S28 'The Buzzer'

4625	0017z	05 Dec	S28	'The Buzzer' Marker	USB	BR	MON
6998	0018z	05 Dec	S28	'The Buzzer' Marker	USB	BR	MON

S30 'The Pip'

3756	0019z	05 Dec	S30	'Pip' marker (Night freq)	USB	BR	MON
5448	0713z	11 Dec	S30	'Pip' Marker (Day freq)	USB	BR	SUN

S32 'Squeaky Wheel'

3828	0021z	05 Dec	S32	'Squeaky Wheel' marker	USB	BR	MON

To end this section we have some VLF treats from Karsten;

SAQ Grimeton - Annual Christmas Transmission on VLF

Karsten logged the Christmas transmission from the Grimeton Radio station site in Sweden from his QTH in Kretzchau, Germany. The annual on **17.2kHz** started at 08:00 UTC. The tuning procedure started around 07:40 UTC.

The message started ' CQ CQ CQ DE SAQ SAQ SAQ = This is Grimeton Radio / SAQ in a transmission using the Alexanderson 200Kw alternator on 17.2kHz '

Karsten was using an Elad FDM-S1 SDR with a mini whip at 4m height. During tuning signals were 25-30dB above noise level. The signal strength dropped to 10dB above noise level during the transmission of the Christmas message making it somewhat difficult to copy all.

Anyone interesting in finding out more about this remarkable historic station can find details on their official website here; The Alexander Association

Finally, we end this section with some Morse messages logged by Karsten (HRT) on Friday, 23 December using the Russian military naval call RDL on VLF :-

18.1kHz	1019 - 1020z	23 Dec	RDL	UU RDL RDL RDL 70996 83550 70996 83550 70996 83550 K	Strong	HRT	FRI
	1028 - 1029z	23 Dec	RDL	UU RDL RDL RDL 23230 20226 23230 20226 23230 20226 K	Strong	HRT	FRI
	1121 - 1122z	23 Dec	RDL	UU RDL RDL RDL 94153 93617 94153 93617 94153 93617 K	Strong	HRT	FRI
	1231 - 1232z	23 Dec	RDL	UU RDL RDL RDL 84453 65352 84453 65352 84453 65352 K	Strong	HRT	FRI
	1236 - 1237z	23 Dec	RDL	UU RDL RDL RDL 98013 95972 98013 95972 98013 95972 K	Strong	HRT	FRI
18.1kHz	1038 - 1039z	26 Dec	RDL	UU RDL RDL RDL 04423 60983 04423 60983 04423 60983 K	Strong	HRT	MON
	1056 - 1057z	26 Dec	RDL	UU XXX XXX ВЕГИ 72905 39339 ПЕРСИЯ 4248 8702 UU XXX XXX ВЕГИ 72905 39339 ПЕРСИЯ 4248 8702 K	Strong	HRT	MON
	1141 - 1142z	26 Dec	RDL	UU XXX XXX ВЕГИ ВЕГИ 27325 71508 ГОНЕНЪЕ 3517 0767 K UU XXX XXX ВЕГИ ВЕГИ 27325 71508 ГОНЕНЪЕ 3517 0767 K	Strong	HRT	MON
				Translation: ВЕГИ (WEGI) = Vega ПЕРСИЯ (PERSIA) = Persia ГОНЕНЪЕ (GONENIE) = prosecution			
	1415 - 1418z	26 Dec	RDL	UU UU RDL RDL RDL 11111 14638 24414 **85468 85486** 11526 17533 98130 78991 05983 91400 64130 84109 52782 82604 86259 78171 91048 78585 62130 14112 26021 K	Strong	HRT	MON

	1541 - 1554z	26 Dec	RDL	UU UU RDL RDL RDL 11111 15872 49283 **98606 98606** 67101 56890 83193 29899 17245 98476 89197 47203 79889 10421 88209 87206 92971 88423 33791 51556 17152 18313 71648 74334 30647 83918 37848 13917 30858 48156 05336 67205 60604 11154 15943 20275 96643 16530 13838 15793 62335 61209 51201 78088 03091 31359 23920 26647 25643 93756 68819 11889 84524 71645 90616 88493 60582 34113 01528 15302 30623 44032 43243 45442 25880 49207 82306 24290 77050 76544 48310 51635 72522 15540 03758 70381 60549 86660 51692 65874 99599 70122 78581 34280 09233 90679 38914 33753 39970 62343 05779 58434 56921 83404 86361 33272 37263 02652 85703 00321 62094 40078 51839 55514 75608 86873 29074 90561 60315 87397 75158 89093 35851 58095 25645 46999 14384 99381 64901 21615 20978 41641 82471 65592 26125 K	Strong	HRT	MON
18.1kHz	1229 - 1242z	RDL	31 Dec	UU UU RDL RDL RDL 11111 23368 59752 **16579 16579** 15857 15788 49563 48677 83657 90477 91632 68119 48500 46546 94927 55214 57174 57906 13983 50078 45714 58996 23015 45940 12247 03138 37231 40752 70342 42233 45807 33335 65127 79371 09785 34764 38438 95229 59297 71793 43191 02640 76714 06812 37251 53998 89104 60298 65786 75989 98940 75663 15237 12461 23282 63818 18403 64240 30440 40486 59983 91659 22235 46449 21191 23664 89870 78558 47583 54096 07955 10835 79233 35072 96436 00048 44374 89498 59053 26921 38646 58885 25869 75961 32991 71492 64452 45319 23101 28780 09332 51315 41122 83318 35332 43018 50074 89683 18437 59340 95153 06874 53418 92842 70816 67069 81415 84920 92886 62979 95948 86031 49105 44126 75245 65907 99964 61588 37709 65892 71450 40397 13022 10636 31125 K	Strong	HRT	SAT
	1528 - 1542z	RDL	31 Dec	UU UU RDL RDL RDL 11111 24306 04636 **39714 39714** 35845 14099 47403 59837 03340 66714 35665 78002 50278 87601 28327 85615 86524 59772 68455 69974 23846 82323 21566 25081 79650 93483 96428 12534 05404 88451 77230 56666 77252 31667 68049 14269 56618 63961 22978 03833 27812 80365 39664 13297 51789 40529 14055 16971 55553 29882 31851 89764 24573 10941 04627 30410 53933 67688 35097 24750 37579 92462 13656 27811 03592 28719 64680 46841 35267 20192 55408 95093 16551 37705 27985 12119 42806 07414 65396 76433 27262 91447 77332 49476 07745 02902 93659 40905 98632 95334 58084 98038 16776 67193 48337 38909 39678 50394 18101 55221 70333 73476 77878 48904 68077 97224 22657 01391 61655 08153 17499 08311 01069 06989 51827 84622 92676 79121 89589 26490 28032 40311 74497 01658 31125 K	Strong	HRT	SAT

Kirsten notes that these long messages always start with 11111 & thinks that the following two groups identify the receiver followed by the message indicator which is sent twice. The message contains 120 groups. The last group gives the transmission date & group count. *(Thanks to Kirsten & Tony for that detail.)*

Contributors: AB, AnonUS, BR, CB, Danix, E.SMITH, GD, HFD, HRT, JkC, JPL, PoSW, RNGB, Tony

Thanks to all monitors who supplied Morse logs in 2016 HYN BCNU SK

Voice Stations

E06 Nov/Dec log:

First /Third Thursday (repeats Friday) 0600z 18285kHz 0700z 20140kHz

03/11 & 17/11 '507' 396 124 95783 07499 18578 44444 32941 80838 97153 51191 50213 47133 53988 90582 65359 24259 98849 72272 66872 27904 51263 74331 22326 57033 86599 51317 68058 86096 15851 26922 41155 68658 22543 72259 39646 82146 05205 11989 21863 68390 98851 25458 80897 49664 73902 35045 55094 24889 35978 98910 60513 75709 75016 50314 56307 37118 37142 50715 78939 12315 17727 48819 06198 36496 99077 62778 36920 19256 81192 27716 97384 20290 80753 33936 95439 13621 97854 33873 44666 14381 00521 32639 79021 75776 10302 38079 84665 40880 87334 16266 17957 05370 31094 97372 13858 30745 57545 78589 20106 39660 74764 49289 03561 41384 78973 14972 88670 17902 53802 37322 76511 12849 63078 25220 73517 60103 29280 35243 84603 49969 98742 22973 83712 45068 48625 19736 396 124 00000

0600z 14575kHz 0700z 17420kHz

01/12 & 15/12 '923' 758 104 77090 17338 29170 82935 33028 83187 64125 40438 09744 68049 08828 35754 94462 77954 17933 19295 02933 77549 19228 27827 83122 02363 43755 58527 05749 05166 26341 15384 15047 03597 12474 87341 38239 21242 32470 62872 77129 39367 28860 10655 30268 01473 47933 81060 19112 37876 31384 08123 16639 02495 68992 16686 01827 39027 98269 64414 88460 18717 62031 73352 01688 16884 59796 30729 00765 20411 53988 63677 71434 83380 16853 17577 36370 73041 29034 92691 57121 73288 65748 18798 26003 37860 31500 72488 71363 10421 29261 66838 24664 53733 75062 68122 22825 55094 93942 19272 44245 00233 58167 74754 01966 32845 53679 76572 758 104 00000

First/Third Thursday of month 2030z 4836kHz

04/11 '321' 149 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 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

15/12 '321' 149 52 groups sent as G06 on 4842kHz

Friday following First & Third Thursday 2130z 4760kHz

05/11 '472' 00000

19/11 '472' 149 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

02/12 '472' 149 52 12265……etc

16/12 '472' 149 52 12265……. (same old message)

Unscheduled:-

10933kHz 0801 16-11-2016 0805z:
"901" 538 14 401.. 737.. (weak) 03367 68793 14839 23316 00035 95758 62277 65729 69010 79655 47088 51403 ....
Started again at 0808z
"910" and into last groups of text
.... 79655 47088 51403 538 14 00000

Tks Jan

E06 from PoSW:

First + Third Thursdays in the Month 2030 UTC Schedule:-
3-Nov-16:- 2029 UTC, early start as is almost early the case with these schedules, 4,836 kHz, call "321", DK/GC "149 149 52 52", S9 signal.

15-Dec-16:- 4,842 kHz, came up with the German language G06 YL voice this evening; not entirely unknown, has happened a few times in the past, for example in 2015 the Friday 2130 UTC transmission on 6-November came up with the G06 voice instead of E06. Call "321" and the DK/GC "149 149 52 52" and the 5F groups which have been used by both E06 and G06 in their respective languages many times over recent months,

Friday 2130 UTC Schedule Following First + Third Thursdays in the Month:-
18-Nov-16:- 4,760 kHz, started well over a minute before the half-hour, call "472", DK/GC
"149 149 52 52", S9 signal. Ended after 2141 UTC, a faint musical chord of some kind heard, perhaps to do with a computer operating system.

2-Dec-16:- 4,760 kHz, in progress when tuned in at approx 2129 UTC, "472" and "149 149 52 52" again.

16-Dec-16:- 4,760 kHz, started approx 2128:30s UTC, "472" and "149 149 52 52", ended after 2141 UTC.

E07

PoSW's observations and then onto other persons' logs

Sunday + Wednesday Schedule, 1800 UTC Start:-
No big surprises here, as expected E07 schedules move by one hour UTC when the clocks change for the end of summertime so as to appear at the same local time, 6 PM in this case in the UK:-
2-Nov-16, Wednesday:- 1800 UTC, 8,153 kHz:- "184 184 184 000", over S9, audio low but readable.
1820 UTC, 6,853 kHz, second sending, also over S9 with low audio.

6-Nov-16, Sunday:- 1800 UTC, 8,153 kHz, and 1820 UTC, 6,853 kHz, "184 184 184 000".

16-Nov-16, Wednesday:- 1800 UTC, 8,153 kHz, “184 184 184 000”, weak signal, difficult copy.
1820 UTC, 6,853 kHz, second sending, stronger signal, audio low in relation to carrier strength.

4-Dec-16, Sunday:- 1800 UTC, 7,464 kHz, “485 485 485 000”, S9 signal with better than usual audio, heterodyne from carrier of a BC station on 7,465.
1820 UTC, 5,864 kHz, second sending, S9+ with unusually good audio.

7-Dec-16, Wednesday:- 1800 UTC, 7,464 kHz, “485 485 485 000”, over S9, BC station on 7,465.
1820 UTC, 5,864 kHz. Second sending, weaker signal although became stronger for a few seconds.

Monday + Wednesday SSB Schedule, 2000 UTC Start:-
2-Nov-16, Wednesday:- 2020 UTC, 6,816 kHz, missed 2000Z sending, “682 682 682 1” for a “full message”, DK/GC “176 64” x 2
2040 UTC, 5,216 kHz, third sending, weak signal, much stronger “XJT” on a close frequency.

7-Nov-16, Monday:- 2000 UTC, 7,616 kHz, “682 682 682 000”, weak signal.
2020 UTC, 6,816 kHz, second sending, stronger.

9-Nov-16, Wednesday:- 2000 UTC, 7,616 kHz, and 2020 UTC, 6,816 kHz, both S9 signals this evening, “682 682 682 000”.

14-Nov-16, Monday:- 2000 UTC, 7,616 kHz, “682 682 682 000”, weak signal.
2020 UTC, 6,816 kHz, slightly stronger.

16-Nov-16, Wednesday:- 2000 UTC, 7,616 kHz, “682 682 682 000”, weak.
2020 UTC, 6,816 kHz, second sending stronger, S8.

28-Nov-16, Monday:- 2020 UTC, 6,816 kHz, 2000 transmission on 7,616 was too weak to copy, “682 682 682 1” for a full message, DK/GC “847 25” x 2, S5 at best, ended 2025 UTC.
2040 UTC, 5,216 kHz, third sending, strong signal but almost equally strong “XJT” roaring away on much the same frequency.

30-Nov-16, Wednesday:- 2000 UTC, 7,616 kHz, “847 25” again as on Monday, weak but clear copy.
2020 UTC, 6,816 kHz, second sending, S5.
2040 UTC, 5,216 kHz, third sending, strongest of the three but still competing with the
“XJT”.

5-Dec-16, Monday:- 2000 UTC, 6,823 kHz, new frequencies for December, “881 881 881 000”, S9 SSB signal.
2020 UTC, 5,823 kHz, second sending, also S9.

7-Dec-16, Wednesday:- 2000 UTC, 6,823 kHz, “881 881 881 000”, S9+, very strong.
2020 UTC, 5,823 kHz, second sending, over S9.

12-Dec-16, Monday:- 2000 UTC, 6,823 kHz, a “full message” this evening, “881 881 881 1”, DK/GC “570 39” x 2, S9+ signal.
2020 UTC, 5,823 kHz, second sending, S8 to S9.
2040 UTC, 5,123 kHz, third sending, also S8 to S9.

Thursday Schedule, 2110 UTC Start:-
3-Nov-16:- 2110 UTC, 6,777 kHz, “744 744 744 000”, over S9, reasonable audio.
2030 UTC, 5,449 kHz, second sending, noises off from the fast-talking YL with all the weather info on the HF side.

10-Nov-16:- 2110 UTC, 6,777 kHz, “744 744 744 000”, audio low but readable.
2130 UTC, 5,449 kHz, second sending, difficult copy.

24-Nov-16:- 2110 UTC, 6,777 kHz, “744 744 744 000”, carrier over S9 with low audio.
2130 UTC, 5,449 kHz, second sending, low audio, difficult to hear.
This schedule has been sending the two minute “no message” routine for a long time; looking back through the log books although not every Thursday slot has been monitored
the last time a “full message” transmission was heard appears to be over three years ago
on 16-May-2013 when the call was “553” and the DK/GC was “243 70”.

8- Dec-16:- 2110 UTC, 6,777 kHz, and 2130 UTC, 5,449 kHz, “744 744 744 000”, so no change there then.

15-Dec-16:- 2110 UTC, 6,777 kHz, “744 744 744 000”, repeated 2130 UTC, 5,449 kHz, both S9 carriers but with low audio.

Other’s logs

Sunday/Wednesday

November 2016

1800z	**8153kHz**	**1820z**	**6853kHz**	**1840z**	**5453kHz**	
02/11	184 000		[1820z weak]			Strong
06/11	184 000					Very strong
09/11	184 000					Weak
16/11	184 000					Weak
27/11	184 000					Weak

December 2016

1800z	**7464kHz**	**1820z**	**5864kHz**	**1840z**	**4564kHz**	
07/12	485 000					Fair
11/12	485 000					Weak
14/12	485 000		[1800z NRH]			Weak
21/12	485 1 598 126 88451 26221 ... 000 000				[1800z unworkable]	Fair

Sunday/Saturday

November 2016

0700z	**10112kHz**	**0720z**	**11112kHz**	**0740z**	**12112kHz**	
04/11	111 000					Fair, noisy
05/11	111 000					Fair, noisy
12/11	111 000					Fair
13/11	111 000					Weak
19/11	111 1 202 16 43080 ... 94206 000 000					Strong
20/11	111 1 202 16 43080 ... 94206 000 000					Strong, noisy

111 1 202 16
43080 10252 02330 56332 79405
20072 74587 91653 73268 67562
20527 83207 14964 89642 81792
94206
000 000 *Courtesy PLdn*

26/11	111 ..... Msg	Very weak, unworkable
27/11	NRH, possibly under high noise level.	

December 2016

0700z	**8123kHz**	**0720z**	**9323kHz**	**0740z**	**10423kHz**	
03/12	Missed, monitoring XPA c					
04/12	134 1 414 44 36910 ... 90091 000 000					Fair
11/12	134 1 414 44 39910 ... 90091 000 000					Weak
17/12	134 000		[0700zXJTQRM5]			Weak and noisy
18/12	134 000		[0700zXJTQRM5]			Weak
24/12	134 000					Weak
25/12	134 000					eak

Monday/Wednesday

November 2016

2000z	**7616kHz**	**2020z**	**6816kHz**	**2040z**	**5216kHz**	
09/11	682 000					Fair to strong
14/11	682 000					Weak
16/11	682 000					Weak
28/11	682 1 847 25 59472 ... 55311 000 000			[2000z weak u/w]		Weak/strong

December 2016

2000z	**6823kHz**	**2020z**	**5823kHz**	**2020z**	**5123kHz**	
05/12	881 000					Strong
07/12	881 000					Very strong
12/12	881 1 570 39 75230 … 81562 000 000					Very strong

14/12	881 1 570 39 ?5230 ... ?1562 000 000	[first characters unclear]	Fair
19/12	881 1 570 39 75230 ... 81562 000 000		Fair
28/12	881 000		Weak

Tuesday/Friday

November 2016

1100z	**14884kHz**	**1120z**	**13384kHz**	**1140z**	**11584kHz**

01/11 835 1 650 75 81011 ... 93231 000 000

835 1 650 75
81011 03965 75337 48416 28148 00990 10728 39584 99767 80090
38955 50454 52987 44986 26788 57835 37540 50331 06034 68988
79530 99185 33008 68430 14515 67219 16949 00300 12831 12344
45660 87756 15821 28061 83161 51529 18971 68323 56484 16080
75757 80287 92112 74615 50172 07402 70979 85825 08439 36122
80452 06702 82523 90768 55761 71038 01080 87829 74965 70758
69171 79028 19694 63902 64256 20203 77926 23398 66942 92631
81390 87540 35918 39424 93231 000 000 *Courtesy Edd*

08/11	835 000		
15/11	835 1 4054 61 84781 ... 64074 000 000		Fair
18/11	835 000		
22/11	835 000		
29/11	853 1 8453 78 42404 ... 7648 000 000]		Weak

December 2016

1100z	**11493kHz**	**1120z**	**10193kHz**	**1140z**

06/12	411 000	Weak
13/12	411 1 3196 82 18515 ... 14485 000 000 8193 kHz stopped during group 19 and restarted with 411 411 411 1 (R) then into group 9	Weak

411 1 3196 82
18515 67999 04419 02286 97402 97140 08364 02289 07769 08640
35701 19811 59623 95430 00941 51602 99380 11707 02464 06031
24520 16887 86310 94640 44025 61770 04125 28986 36620 00909
39932 61043 29343 09617 48993 55420 51594 47595 73913 73735
02937 18918 52234 14376 98770 69409 52214 95574 40971 92274
48946 59295 33490 16645 48362 92332 65140 34075 35813 27718
75931 63737 26099 03957 13658 65201 45219 85551 04564 16552
91537 22725 92948 05999 06214 59973 65519 55924 36019 09714
87118 14485
000 000 *Courtesy Ary*

16/12	411 1 3196 82 18515 ... 14485 000 000	Weak
23/12	411 000	Fair
27/12	411 000	Fair

Thursday

November 2016

2110z	**6777kHz**	**2130z**	**5449kHz**	**2150z**	**4483kHz**

03/11	744 000	Weak [USB]

December 2016

01/12	744 000		Weak
29/12	744 000	2130z only audible	Weak, noisy

E07 a

Wednesday

November 2016

2100z	**5877kHz**	**2120z**	**5277kHz**	**2140z**	**4577kHz**	
02/11	825 000					Strong
09/11	825 000					Very strong
16/11	825 000					Fair
23/11	825 1 11062 7612 75 69131 ... 92515 000 000					Strong
30/11	825 000					Very strong

December 2016

07/12	825 000					Very strong
14/12	825 1 64340 6029 53 09778 ... 72539 000 000					Very strong
21/12	825 000					Very strong
28/12	825 000					trong

Thursday

November 2016

0530z	**5111kHz**	**0550z**	**5811kHz**	**0610z**	**6911kHz**	
03/11	189 000					Strong
10/11	189 000					Very strong
17/11	189 000					Strong
24/11	189 1 11062 7612 75 69131 ... 92515 000 000					Strong

December 2016

01/12	189 000					Very strong
08/12	189 000					Very strong
15/12	189 1 64340 6029 53 09778 ... 72539 000 000				[0610z Very weak]	Very strong
22/12	189 000					Fair
29/12	189 000					Strong, noisy

Friday

November 2016

1610z	**8138kHz**	**1630z**	**7538kHz**	**1650z**	**6838kHz**	
04/11	158 000					Fair
11/11	158 000					Very strong
18/11	158 000					Strong
25/11	158 000		[1630z BCQRM3]			Fair

December 2016

1610z	**5887kHz**	**1630z**	**5387kHz**	**1650z**	**5087kHz**	
02/12	830 000					Weak
09/12	830 000					Very strong
16/12	830 000					Strong
30/12	830 000					Fair, noisy

Saturday

November 2016

0900z	**11553kHz**	**0920z**	**12153kHz**	**0940z**	**13553kHz**	
05/11	515 000					Strong
12/11	515 000					Strong
19/11	515 000					Fair
26/11	515 000					Strong, QSB3/4

December 2016

0900z	**11121kHz**	**0920z**	**12221kHz**	**0940z**	**13421kHz**	
03/12	124 000					Weak
10/12	124 000					0900zWeak, 0920zFair
17/12	124 000					Strong
24/12	124 000					Fair

The above logs seen also in PoSW's lof of E07 a:

Wednesday Schedule, 2100 UTC Start:-
2-Nov-16:- 2100 UTC, 5,877 kHz, "825 825 825 000", over S9.
2120 UTC, 5,277 kHz, second sending, S8 to S9.

9-Nov-16:- 2100 UTC, 5,877 kHz, and 2120 UTC, 5,277 kHz, both over S9, "825 825 825 000".

23-Nov-16:- 2100 UTC, 5,877 kHz, "825 825 825 1 11602" for a full message, DK/GC "7612 75" x 2, S8.
2120 UTC, 5,277 kHz, second sending, stronger signal, over S9.
2140 UTC, 4,577 kHz, third sending, also over S9.

30-Nov-16:- 2100 UTC, 5,877 kHz, "825 825 825 000", S9 signal.

7-Dec-16:- 2100 UTC, 5,877 kHz, "825 825 825 000", S9+, very strong signal.
2120 UTC, 5,277 kHz, second sending, also S9+.

14-Dec-16:- 2100 UTC, 5,877 kHz, full message, "825 825 825 1 64340", DK/GC "6029 53" x 2, over S9.
2120 UTC, 5,277 kHz, second sending, S9+.
2140 UTC, 4,577 kHz, third sending, also S9+.

Saturday Schedule, 0900 UTC Start:-
5-Nov-16:- 0900 UTC, 11,553 kHz, "515 515 515 000", peaking S9.
0920 UTC, 12,153 kHz, second sending, slightly weaker signal.

12-Nov-16:- 0900 UTC, 11,553 kHz, and 0920 UTC, 12,153 kHz, both S9, "515 515 515 000".

19-Nov-16:- 0900 UTC, 11,553 kHz, and 0920 UTC, 12,153 kHz, both pushing the S-meter over 9, "515 515 515 000".

26-Nov-16:- 0900 UTC, 11,553 kHz, and 0920 UTC, 12,153 kHz, both S9, "515 515 515 000" - again. Not much required of agent "515" in November, then.

3-Dec-16:- 0900 UTC, 11,121 kHz, "124 124 124 000", weak signal.
0920 UTC, 12,221 kHz, second sending, slightly stronger.

10-Dec-16:- 0900 UTC, 11,121 kHz, "124 124 124 000", S9 with QSB.
0920 UTC, 12,221 kHz, second sending, S7 to S8.

17-Dec-16:- 0900 UTC, 11,121 kHz, and 0920 UTC, 12,221 kHz, "124 124 124 000

E11 log Nov/Dec

4505kHz	1605z	08/11 [232/00] Out 1608z S9	Malc	TUE
	1605z	15/11 [232/00] Out 1608z S5	Malc	TUE
	1605z	20/11 [232/00]	RNGB	SUN
	1605z	27/11 [232/00] Out 1608z S9	Malc	SUN
	1605z	29/11 [232/00] Out 1608z S9	Malc	TUE
	1605z	06/12 [235/00] Out 1608z S9	Malc	TUE
	1605z	11/12 [235/00] Out 1608z S7	Malc	SUN
	1605z	20/12 [236/00] Out 1608z QSA4 QRM1 QSB1	JkC, Malc	TUE
	1605z	27/12 [233/00] Out 1608z S7	Malc	TUE

5082kHz	1730z	03/11 [416/00] Good	RNGB	THU
	1730z	01/12 [415/00] Out 1733z S6	Malc	THU
	1730z	29/12 [415/00] Strong	RNGB	THU
5409kHz	1530z	10/11 [262/00] Strong	RNGB	THU
	1530z	01/12 [269/00] Out 1533z S9	Malc	THU
	1530z	22/12 [266/00]	RNGB	THU
5779kHz	0315z	24/11 [232/00] Out 0318z	Ed Smith	THU
6304kHz	2000z	02/12 [573/00] Out 2003z S4	Malc	FRI
	2000z	16/12 [573/00] Out 2003Zz S7	Malc	FRI
7371kHz	0820z	07/11 [438/00] Fair	RNGB	MON
	0820z	10/11 [438/00] Fair	RNGB	THU
	0820z	14/11 [438/00] Out 0823z S5	Malc	MON
	0820z	17/11 [438/00]	RNGB	THU
	0820z	28/11 [438/00] Out 0823z S7	Malc	MON
	0820z	01/12 [435/00] Out 0823z S4	Malc	THU
	0820z	05/12 [438/00] Out 0823z S4	Malc	MON
	0820z	12/12 [439/00] Fair	RNGB	MON
	0820z	15/12 [436/00] Out 0823z S5	Malc	THU
	0820z	26/12 [432/00] Good	RNGB	MON
	0820z	29/12 [431/00] Fair	RNGB	THU
7840kHz	0645z	03/11 [517/00] Out 0648z	Ed Smith	THU
	0645z	24/11 [517/00] Out 0648z	Ed Smith	THU
	0645z	22/12 [514/00] Very weak	RNGB	THU
7984kHz	1205z	01/11 [469/00 Good	RNGB	TUE
	1205z	02/11 [469/00] Out 1208z S3	Malc	WED
	1205z	09/11 [469/00] Fair	RNGB	WED
	1205z	15/11 [469/00]	RNGB	TUE
	1205z	22/11 [469/00] Good	RNGB	TUE
	1205z	14/12 [463/00]	Ary, Malc	WED
	1205z	21/12 [464/00] Fair	RNGB	WED
	1205z	28/12 [469/00]	RNGB	WED
8196kHz	1450z	01/11 [441/00] Out 1453z	Ed Smith	TUE
	1450z	08/11 [441/00] Out 1453z S5	Malc	TUE
	1450z	10/11 [441/00] Out 1453z S5	Malc	THU
	1450z	15/11 [441/00] Out 1453z S2	Malc	TUE
	1450z	29/11 [441/00] Out 1453z S2	Malc	TUE
8545kHz	1730z	05/11 [405/00] Out 1733z S6	Malc	SAT
	1730z	16/11 [405/00] Out 1733z S2	Malc	WED
	1730z	03/12 [406/00] Out 1733z S9	Malc	SAT
	1730z	07/12 [402/00] Out 1733z S2	Malc	WED
8680kHz	1300z	05/11 [585/00] Out 1303z	Ed Smith, Malc	SAT
	1300z	10/11 [585/00] Out 1303z S5	Malc	THU
	1300z	12/11 [585/00] Out 1303z S3	Malc	SAT
	1300z	19/11 [585/00] Strong	RNGB	SAT
	1300z	10/12 [585/00] Out 1303z S8	Malc	SAT
	1300z	17/12 [585/00] Out 1303z S7	Malc	SAT
	1300z	22/12 [585/00] Out 1303z S2	Malc	THU
	1300z	24/12 [589/00] Out 1303z S2	Malc	FRI
	1300z	29/12 [589/00] Good	RNGB	THU
8800kHz	1000z	08/11 [306/00] Good	RNGB	MON
	1000z	15/11 [306/00] Out 1003z S5	Malc	TUE
	1000z	29/11 [306/00] Out 1003z S3	Malc	TUE
	1000z	02/12 [302/00] Out 1003z S2	Malc, RNGB	FRI
	1000z	06/12 [304/00] Out 1010z S4	Malc	TUE
	1000z	16/12 [302/00]	RNGB	FRI
	1000z	20/12 [309/00] Out 1003z S3	Malc	TUE
	1000z	23/12 [305/00] Out 1003z S4	Malc	FRI
9443kHz	1705z	09/11 [392/00] Out 1708z S2	Malc	WED
	1705z	12/11 [392/00] Out 1708z S6	Malc	SAT
	1705z	16/11 [392/00] Out 1708z S4	Malc	WED
	1705z	26/11 [392/00] Good	RNGB	SAT

	1705z	03/12 [394/00] Out 1708z S9	Malc	SAT
	1705z	07/12 [394/00] Out 1708z S2	Malc	WED
	1705z	28/12 [396/00] Out 1708z QSA4 QRM1 QSB1	JkC	WED
9446kHz	0900z	02/11 [534/00] Out 0903z S5	Malc	WED
	0900z	14/11 [534/00] Out 0903z S3	Malc	MON
	0900z	16/11 [534/00] Out 0903z S3	Malc	WED
	0900z	28/11 [534/00] Out 0903z S4	Malc	MON
	0900z	30/11 [534/00] Out 0903z S6	Malc	WED
	0900z	05/12 [534/00] Out 0903z S3	Malc	MON
	0900z	07/12 [536/00] Out 0903z S6	Malc	WED
	0900z	19/12 [533/00] Good	RNGB	MON
	0900z	26/12 [536/00]	RNGB	MON
	0900z	28/12 [537/00] Out 0903z S4	Malc	WED
9950kHz	0930z	02/11 [270/00] Out 0933z S7	Malc, Ed Smith	WED
	0930z	03/11 [270/00] Out 0933z S5	Malc	THU
	0930z	09/11 [270/00] Out 0933z S3	Malc	WED
	0930z	10/11 [270/00] Out 0933z S3	Malc	THU
	0930z	16/11 [270/00] Out 0933z S4	Malc	WED
	0930z	30/11 [270/00] Out 0933z S6	Malc	WED
	0930z	01/12 [277/00] Out 0933z S3	Malc	THU
	0930z	07/12 [278/00] Out 0933z S5	Malc	WED
	0930z	14/12 [273/00] Good	RNGB	WED
	0930z	21/12 [279/00] Good	RNGB	WED
	0930z	22/12 [279/00] Out 0933z S2	Malc	THU
10213kHz	0745z	07/11 [262/00] Out 0748z S5	Malc	MON
	0745z	28/11 [262/00] Out 0748z S5	Malc	MON
	0745z	05/12 [264/00] Out 0748z S7	Malc	MON
10429kHz	0805z	02/11 [311/00] Out 0808z S4	Malc, Ed Smith	WED
	0805z	06/11 [311/00] Out 0803z S6	Malc	SUN
	0805z	16/11 [311/00] Out 0808z S2	Malc	WED
	0805z	30/11 [311/00] Out 0808z S4	Malc	WED
	0805z	07/12 [312/00] Out 0808z S5	Malc	WED
	0805z	25/12 [315/00] Good	RNGB	SUN
	0805z	28/12 [313/00] Out 0808z S4	Malc	WED
10448kHz	1625z	02/11 [972/00] Out 1628z S2	Malc	WED
	1625z	06/11 [972/00] Fair	RNGB	SUN
	1625z	09/11 [972/00] Out 1628z S3	Malc	WED
	1625z	16/11 [972/00] Out 1628z S2	Malc	WED
	1625z	28/12 [972/00] Out 1628z QSA4 QRM1 QSB1	JkC, Malc	WED
11107kHz	2005z	12/11 [363/00] Out 2008z S2	Malc	SAT
	2005z	11/12 [363/00] Out 2008z S3	Malc	SUN
12153kHz	1045z	08/11 [576/00] Good	RNGB	TUE
	1045z	15/11 [576/00]	RNGB	TUE
	1045z	22/11 [576/00] Strong	RNGB	TUE
	1045z	29/11 [576/00] Out 1048z S6	Malc	TUE
	1045z	06/12 [577/00] Out 1048z S4	Malc	TUE
	1045z	13/12 [577/00]	RNGB	TUE
	1045z	20/12 [575/00] Strong	RNGB	TUE
12924kHz	0710z	05/11 [491/00] Out 0713z S9	Malc	SAT
	0710z	15/12 [496/00] Weak	RNGB	THU
	0710z	29/12 [492/00]	RNGB	THU
14666kHz	1345z	01/11 [911/00] Out 1348z	Ed Smith	TUE
	1345z	05/11 [911/00] Out 1348z Remote tuner - Gavonata, Italy	Ed Smith	SAT
	1345z	08/11 [911/00] S7	Malc	TUE
	1345z	12/11 [911/00] Good	RNGB	SAT
	1345z	19/11 [911/00]	Gary H	SAT
	1345z	29/11 [911/00] Out 1348z S6	Malc	TUE
	1345z	13/12 [917/00] Good	RNGB	TUE
16112kHz	0745z	15/11 [335/00] Out 0748z S2	Malc	TUE
	0745z	29/11 [335/00] Out 0748z S2	Malc	TUE
	0745z	15/12 [334/00] Weak	RNGB	THU
	0745z	22/12 [334/00]	RNGB	THU

16335kHz	1650z	02/12 [922/00] Out 1653z S5	Malc	FRI
18030kHz	1300z	09/11 [133/00]	RNGB	WED
	1300z	15/11 [133/00] Out 1303z S2	Malc	TUE
	1300z	23/11 [133/00] Weak	RNGB	WED
	1300z	30/11 [133/00] Out 1303z S2	Malc	WED
	1300z	14/12 [133/00]	Ary	WED
	1300z	27/12 [130/00] Out 1303z S6	Malc	TUE
	1300z	28/12 [131/00] Out 1303z S5	Malc	WED
20167kHz	1225z	04/11 [521/00] Out 1228z S3	Malc	FRI
	1225z	11/11 [521/00] Out 1228z S3	Malc	FRI
	1225z	21/11 [521/00] Extremely weak	RNGB	MON

E11a log Nov/Dec

4505kHz	1605z	01/11 [237/39 94305 91960 57915 04134 52258 51730 83155..... 91574 91667] Out 1615z	Ed Smith	TUE
	1605z	06/11 [237/39 94305…..etc] Fair Repeat of Tuesday	RNGB	SUN
	1605z	13/12 [233/37 62196 23735 52563 16863 39881 53430 43589 35395……5874718961] Out 1615z	RNGB, Malc	TUE
	1605z	18/12 [233/37 62196….etc] Repeat of Tuesday	RNGB	SUN
5082kHz	0450z	07/11 [410/39 96270 85998 90597 21516 94681 68503 18079.....26422 79189 OUT] 0500z	Ed Smith	MON
	1730z	10/11 [410/39 96270……..79189] Out 1740z S9	Malc	THU
	1730z	15/12 [412/37 89473……53816] Out 1740z S3	Malc	THU
5409kHz	1530z	17/11 [266/39 86172 89007 17140 38822 12454 47636 01812……39221 55602] Good	RNGB	THU
	1530z	15/12 [267/34 08997……..68893] Out 1539z S4	Malc	THU
5779kHz	0315z	03/11 [251/32 95645 21904 99942 39645 29541 66367 40180.....71979 37936] Out 0324z	Ed Smith	THU
	0315z	07/12 [250/38 40013 88293 39886 28708 47046 89954 88127 78560……68423 32795]	Ary	WED
6304kHz	2000z	04/11 [575/37 15933 88708 04212 64238 25010 47563 49989……38220 20277]	RNGB	FRI
6849kHz	0530z	24/11 [641/37 99306 91276 29030 07103 95653 05500 44683…… 14002 99261] Out 0539z	Ed Smith	THU
7371kHz	0820z	24/11 [432/32 04852 33305 87030 42777 16222 69940 72239……96993 55618] Out 0829z	Ed Smith	THU
	0820z	22/12 [463/31 95267……98652] Out 0829z S5	Malc	THU
7840kHz	0645z	10/11 [517/40 48650 36090 03257 29995 79472 53826 06047……98298 54924]	Ary	THU
7984kHz	1205z	29/11 [464/32……..ATTENTION 09841……..Faded out]	Malc	TUE
	1205z	30/11 [464/32 09841……30989]	Malc	WED
	1205z	06/12 [465/31 20826……47322] Out 1214z S4	Malc	TUE
8196kHz	1450z	22/11 [442/35 67807 22273 85223 79197 77982 31517 08609……91562 65934] Out 1459z	Ed Smith	TUE
8545kHz	1730z	09/11 [406/38 01414…….69724] Out 1739z S3	Malc	WED
	1730z	12/11 [406/38 01414.....etc] Repeat of Wednesday	Malc	SAT
	1730z	28/12 [402/31 32404 99941 31192 05408 10821 67044 60759……88527 62479]	JkC, RNGB	WED
8680kHz	1300z	24/11 [587/32 48614 22150 96987 52237 87278 43205 25921…… 97464 73292] Out 1309z	Ed Smith	THU
	1300z	26/11 [587/32 48614…..etc] Repeat of Thursday	RNGB	SAT
	1300z	01/12 [580/34 19280 13246 18904 05264 01917 12842 05666 74868……90280 45853]	RNGB	THU
	1300z	03/12 [580/34 19280……45853] Out 1310z S5	Malc	SAT
8800kHz	1009z	01/11 I.P. [42691 39386 40855 50010 02206 74320 83974 89949 00694 61513] Out 1010z	Ed Smith	TUE
	1004z	27/12 [300/31 03845 71309 38559 95488 87976 89157 69652 66395……82753 05879]	Malc, Tony	TUE
9443kHz	1705z	02/11 [393/39 02285 .....74134] Out 1715z S9	Malc	WED
	1705z	05/11 [392/00] Out 1708z S3 QSB1 THEN [393/39 03385.....74134] Out 1718z	Malc	SAT
	1705z	14/12 [394/36 08006 73962 26937 37892 74722 37257 41155 52018……08905 80163] Weak	RNGB	WED
9446kHz	0900z	07/11 [533/37 88001 67168 39173 06672 11145 44965 65115……57031 18196] Good	RNGB, Malc	MON
	0900z	09/11 [533/37 88001……etc] Repeat of Monday	Malc	WED
	0900z	12/12 [530/32 51156 98712 97789 81161 02777 01684…….77020 64382] Out 0909z S4	RNGB, Malc	MON
	0900z	14/12 [530/32 51156……etc] Repeat of Monday	Malc	WED
9950kHz	0930z	23/11 [276/33 11893 20358 58047 38255 91331 88459 03313……23710 10642] Out 0939z	Ed Smith	WED
	0930z	28/12 [273/36 43037 65208 11448 03942 99925 47502 81188……51445 83611] Out 0939z S4	Malc	WED
	0930z	29/12 [273/36 43037……83611] Repeat of Wednesday	Malc	THU

10213kHz	0745z	14/11 [266/39 86172……55602] Out 0748z S7	Malc	MON
	0745z	12/12 [267/34 08997 26440 82406 20827 49301….etc]	RNGB	MON
10429kHz	0805z	09/11 [310/39 20390……..05540] Out 0815z S6	Malc	WED
	0805z	14/12 [316/37 42643 85195 90437 47455 63709 68365 31327……96122 97536] Out 0815z S5	RNGB, Malc	WED
	0805z	18/12 [316/37 42643……etc] Repeat of Wednesday	Malc	SUN
10448kHz	1625z	07/12 [972/33 ….faded out too weak to copy msg]	Malc	WED
	1625z	11/12 [972/33……too weak to copy msg]	Malc	SUN
11107kHz	2005z	17/12[360/36 60966 06205 98184 48106 94048 33141 65184 ... 85418 28880] Out 2015z	JkC	SAT
12153kHz	1045z	01/11 [575/37 15933 88708 04212 64238 25010 47563 49989 22528.....38220 20277] Out 1054z	Ed Smith	TUE
	1045z	27/12 [570/31 70904……25836] Out 1054z S7	Malc	TUE
13046kHz	0600z	11/11 [188/36 08033 80556 44480 19072 63525 12361 26511 25120.....27882 12050]	Ed Smith	FRI
14666kHz	1345z	22/11 [912/32 61037 56113 37384 82618 90883 46863 96207 55326……09423 53263] Out 1309z	Ed Smith	TUE
	1345z	06/12 [917/39 88819…..faded too weak to copy] 1355Zz S7 QSB6	Malc	TUE
	1345z	10/12 [917/39 88819……08519] Out 1348z S8	Malc	SAT
16112kHz	0745z	10/11 [338/31 68180 41624 43980 50048 87501 40239 56982 31436……..26893 17929]	Ary	THU
	0745z	06/12 [338/35 47318 86949 16573 37576 87205 26271 93902 63090……..99704 25094]	Ary	TUE
16335kHz	1650z	16/12 [929/36 15095 15833 56922 92683 34526 67207 71619 28930……04636 32559]	Ary	FRI
18030kHz	1300z	02/11 [132/32……] 1309z QRM from Russian Air Force = unable to copy message	Ed Smith	WED
	1300z	21/12 [13?/35 24584 78212 86165 13310 83126 34285 37329 48349……52613 91944]	RNGB	WED

E17z

Thursday

November 2016

0800z 11170kHz 0810z 9820kHz

03/11	674 319 5 33370 39705 36301 37353 96930 319 5 00000	Weak
10/11	674 219 5 33370 39705 36201 37353 69630 219 5 00000	Fair
17/11	674 218 5 38034 ... 38702 218 5 00000	
24/11	674 218 5 38034 ... 38702 218 5 00000	

December 2016

01/12	674 918 5 34140 78386 91497 83963 34163 918 5 00000	Weak
08/12	674 918 5 34140 78386 91497 83963 34163 918 5 00000	Weak
22/12	674 903 5 52701 63919 92699 14600 74248 903 5 00000	Weak
29/12	674 00000	Weak

E25

6140kHz1116z 03/11 Fair KW

880 880 880 880 880 880 880 880 880 880 880
msg msg msg
2180 5001 4199 1502 0536 2310 1716 3696 9116 2180
Rebeat Rebeat Rebeat
2180 5001 4199 1502 0536 2310 1716 3696 9116 2180
EoM EoT

6140kHz0745z 06/11 Fair KW

250 250 250 250 250 250 250 250 250 250 250
msg msg msg
9144 9080 6211 2640 6313 2603 4587 6211
Rebeat Rebeat Rebeat
9144 9080 6211 2640 6313 2603 4587 6211
EoM EoT

6140kHz 11/12 AM via WebSDR Palestine Daniel

0952z Windows 7 login sound
0952-0959z Music: Enta Omri
0959z 570 (R1m) Message (x3) 6832 1026 6774 7181 2608 Rebeat (x3) 6832 (pause) 1026 6832 1026 6774 7181 2608

EOM EOT
1002z 570 (R1m) Message (x3) 6832 1026 6774 7181 2608 Rebeat (x3) 6832 1026 6774 7181 2608 EOM EOT
1005z Carrier off

G06

PoSW writes, November saw the expected seasonal changes of frequency, also as expected stays on UTC with the end of daylight-saving British Summer Time so now shows up one hour earlier by the clock.

Second + Fourth Thursdays in the Month 1830 UTC Schedule:-
10-Nov-16:- 4,519 kHz, started about one minute before the half-hour, the start-up times for these Thursday and Friday G06 and E06 schedules are somewhat flexible, calling "271 271 271 00000", i.e. "no message" format; stopped several times, plain carrier for varying times for up to approx one minute before resuming. A long pause after 1837 UTC before starting up again with "271" call for a "full message", around 1839 UTC, arriving at DK/GC "149 149 52 52" at approx 1843. Proceeded as a normal transmission ending at 1851:30s UTC. Looks like the same 5Fs sent by the related English language E06 on Thursday 3-November. A short burst of music – or perhaps a sound associated with a computer operating system - heard afterwards around 1853 UTC, carrier went off just before
1855 UTC.

24-Nov-16:- 4,519 kHz, must have started early, tuned in just after 1832 UTC – late on parade due to being engrossed in an audio version of an episode of *Doctor Who* with Tom Baker on BBC Radio 4 Extra - just caught the DK/GC "149 149 52 52", ended 1841 UTC.

8-Dec-16:- 4,519 kHz, unusually started on the half-hour, or very close to it, "271" and "149 149 52 52" again.

Friday 1930 UTC Schedule Following Second + Fourth Thursdays:-
11-Nov-16:- 4,792 kHz, started well before the half-hour, call "436", DK/GC "149 149 52 52", same 5F message as on Thursday the 10th.

25-Nov-16:- 4,792 kHz, started at 1929:15s UTC, "436" and "149 149 52 52" again.

9-Dec-16:- 4,792 kHz, early start, up and running when tuned in at 1929 UTC, call "436", DK/GC "149 149 52 52" well before 1933.

First + Second Mondays in the Month 1700 + 1800 UTC Schedule:-
7-Nov-16:- 1659 UTC, just after, 3,696 kHz, "574 574 574 00000", inside the 80 metre amateur band, weaker LSB traffic on close frequencies. Delivery of the speech more rapid than usual for this schedule – is noted for its usual slow, laid back style.
1800 UTC, 4,652 kHz, second sending, reverted back to the slow speaking mode here.
These frequencies used for this schedule in the first two months of 2016.

14-Nov-16:- 1659 UTC, 3,696 kHz, "574 574 574 00000".
1759 UTC, 4,562 kHz, second sending, had started when tuned in, stopped 1802:40s UTC.

5-Dec-16:- 1659 UTC – had started when tuned in at this time – 3,700 kHz, "574 574 574 00000", S9 signal, stopped 1702:35s UTC.
1758:25s UTC, 4,562 kHz, second sending, over S9.

12-Dec-16:- 1658:35s UTC, to be precise about the start time, 3,692 kHz, "574 574 574 00000", S7 to S8.
1759 UTC, 4,562 kHz, second sending in progress when tuned in about one minute before the hour, stopped at 1702:54s UTC. A "chime" or some kind of musical event, perhaps made by a computer running on one of Mr Gates' operating systems, heard a few seconds afterwards.

Others' Logs:

Monday

November 2016

0800z 5320kHz

07/11 NRH

1700z 3696kHz **1759z 4563kHz**

07/11	574 00000		Weak
14/11	574 00000	[1803zWindows shut off sound]	Strong

December 2016

0758z 5320kHz

05/12	329 00000		Weak
19/12	329 00000		Weak

1658z 3692kHz 1758z 4562kHz

05/12 1658z 574 00000 Fair

05/12 1714 111 111 111 00000
05/12 1732 Windows error sound, also at 1733z and 1734z
05/12 1740 5
05/12 1758 574 574 574 00000 Windows XP shutdown sound Fair

3692kHz1658z 12/12 574 00000 [Windows shut down sound 1802z Fair

Wednesday

November 2016

1200z 4912kHz 1300z 4034kHz

09/11 574 00000 [1300zWindows shut off sound]

16/11 574 00000

December 2016

07/12 574 00000 Very weak

Thursday

November 2016

1259z 4466kHz

24/11 329 00000

1830z 4519kHz

10/11 271 00000 [see below] Strong

271 271 271 00000. Started 1 min early. Pauses, restarts and Windows XP error sounds.

Then into a message:
271 149 52
12265 12965 47839 38654 84657 93453 72217 84393 04673 97564
01824 75643 84221 94647 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 95735
149 52 00000
Windows XP shut down sound *Courtesy Ary, M8*

December 2016

1258z 4460kHz

08/12 329 00000 Weak

22/12 329 00000 Weak

1830z 4519kHz

08/12 271 149 52 12265 ... 95732 149 52 00000 Fair

Windows XP error sound
271 149 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
Windows XP shut down sound at 1850z *Courtesy Ary*

Friday

December 2016

1930z 4792kHz

09/12 436 149 52 12265 … 95732 149 52 00000 Very strong

436 149 52

12265 12965 47839 38654 84677 93453 72217 84393 24673 97564
21824 75643 84221 95647 92112 94543 76577 43437 47322 84232
95674 87344 57438 45763 49325 57438 92192 96785 21244 25674
21765 76354 36455 41214 97564 82133 27564 83234 75312 71211
25674 65374 67321 94884 23483 82521 41212 57333 85331 43237
25124 95732
149 52 00000 *Courtesy HJH*

23/12 436 149 52 12265 ... 95732 00000 Strong

S06 Reports

S06 log November 2016

Daily Mon- Fri 0400z 15721kHz
No reports

Thursdays (Repeats following day) 0830z 19875kHz 0930z 16067kHz
17/11 '842'

Fridays (1st & 3rd) 2000z 7812khz 2100z 5736kHz (frequencies may vary slightly)
04/11 '761' 00000
19/11 '761' 00000

Saturdays (1st/3rd) 2000z 4031kHz 2100z 3513kHz (frequencies may vary slightly)
05/11 '614' 00000

Non scheduled:
10755kHz 9th November 0948z
'975' 482 50 26908 57206 26836 39604 21317 17999 60759 90200 34950 68231 16294 59928 94950 80425 14995 26371 13235 09110 79485 27522 79155 73044 38310 54799 68339 18007 33613 60219 22286 33585 98848 13662 78456 22404 98689 71178 55555 45243 48330 40264 23662 90459 54378 53052 13916 41171 44508 83342 47443 38629 482 50 00000

10th November 0930z
'975' 361 80 47303……]
Note - the ID 975 was being sent continuously from at least 0715z until start of message at 0930z – that's over 2 hours worth of call-up!

13397khz / 9194kHz 1500z / 1600z 16th & 17th November
'387' 402 51 50517 66491 45094 93334 43385 26585 75811 55480 83531 07516 46961 71350 01681 83176 04455 27707 92659 07772 94577 07320 02024 42638 66862 47083 35418 96840 45811 40384 89141 73725 32403 88385 25336 40614 21327 29930 40239 63831 44868 04741 98948 76253 79397 29613 35116 69564 75395 92275 39035 28402 96949 402 51 00000

A note from Daniel - A schedule that sends on a random day in March, June, and November every year, using fixed time slots, frequencies, and ID:
- March: 1500z 14913kHz, 1600z 10386kHz, ID 387
- June: 1500z 13944kHz, 1600z 11496kHz, ID 387
- November: 1500z 13397kHz, 1600z 9194kHz, ID 387

S06s November log:

Monday			
7th/14th	0830/0840z	8057/8530	'371' 460 5 30623 34306 33284 32517 38761
21st/28th			'371' 468 5 34031 33420 37536 34906 39698
7th/14th	0900/0910z	14675/12830	'872' 943 5 40194 39428 36749 36509 81313
21st/28th			'872' 495 6 63824 61329 52748 63081 62418 94026
7th/14th	1300/1310z	8420/10635	'831' 462 5 85160 35459 99931 13319 44649
21st/28th			'831' 406 5 92325 36615 36491 49588 41061
Tuesday			
1st/8th	0600/0610z	16145/14240	'438' 276 5 46062….
15th/22nd			'438' 207 5 …Too weak to copy
1st/8th	0700/0715z	5250/6320	'374' 951 6 88620 58069 61732 74537 57440 10597
15th/22nd			'374' 810 5 60768 53181 70135 16554 34031
1st/8th	0730/0740z	7410/11537	'427' 980 5 94428 17454 24011 41584 68592
15th/22nd			'427' 836 5 37345 35647 42528 45042 32392
1st/8th	0800/0810z	11945/13195	'352' 906 7 73668 49575 35325 85342 52215
15th/22nd			'352' 417 6 49294 38064 31724 37324 39316 35660
1st/8th	1000/1010z	6440/5660	'893' 415 6 61830 54635 74493 43164 54497 91414
15th/22nd			'893' 260 5 29783 35468 31373 39246 31737
1st/8th	1100/1110z	5035/5975	'754' 912 6 06445 36574 24712 46919 49548 64873
15th/22nd			'754' 829 6 groups (too weak to copy)

1st/8th	1500/1510z	6845/9170	'537' 492 6 22469 41868 20775 23735 93687 85148
15th/22nd			'537' 290 6 38105 42424 81310 46347 31249 39780

Wednesday

2nd/9th	0820/0830z	8417/9262	'471' 853 6 53181 70135 16554 34031 75922 02555
16th/23rd			'471' 583 6 39788 35468 35208 35868 49131 45326
2nd/9th	0830/0840z	11535/11830	'745' 209 6 39626 32740 46182 99077 35193 35643
16th/23rd			'745' 903 6 37947 39747 31323 31829 47694 45680
2nd/9th	1000/1010z	12365/14280	'729' 401 5 88394 49194 31911 90446 31786
16th/23rd			'729' 860 5 94428 17454 24011 41584 68592

Thursday

3rd/10th (E17z)	0800/0810z	11170/9820	'674' 219 5 33370 39705 36201 37352 96930
17th/24th			'674' 218 5 38034 37823 38240 48235 38702
3rd/10th	0900/0910z	5765/6315	'624' 953 7 35868 49131 45326 30478 39687 37977 32397
17th/24th			'624' 530 7 31393 46801 31412 96324 34793 46933 35868
3rd/10th	0930/0940z	8812/9540	'314' 268 5 38216 45764 39345 33692 38702
17th/24th			'314' 207 5 40951 35790 31868 37024 31750
3rd/10th	1200/1210z	12155/10920	'425' 816 7 40951 35790 31686 37023 31750 46556 32382
17th/24th			'425' 863 7 34464 49031 32086 48736 46387 30197 31717

Friday

4th/11th	0930/0940z	11780/12570	'516' 247 8 33379 39705 36201 37352 96930 42476 46239 32853

Saturday

5th	0800/0810z	8680/8260	'254' 930 6 49294 38064 31724 37324 39316 35660

Sunday

6th/13th	0630/0640z	13470/16515	'524' 810 6 32617 41322 86067 25487 44036 36806
20th/27th			'524' No reports

S06 log December 2016

Daily Mon- Fri 0400z 15721kHz

20/12 '480' 621 50 =#7071 00966 (hfd)

Thursdays (Repeats following day) 0830z 17435kHz 0930z 14380kHz

01/12 '842' 567 43 12679 46575 20466 37758 17445 77147 82720 74414 19745 44197 97951 61712 68096 26022 11234 67968 93801 02752 16261 01855 16271 26680 25746 58167 40619 54021 48958 99246 33490 67779 24823 14215 88043 46420 84018 23252 14034 58030 38531 19064 13929 84646 22069 567 43 00000

08/12 '842' 931 44 94047……77010 931 44 00000] 0841z S2 Malc

22/12 '842' 391 46 08277 39237 75279 35048 23496 97862 75877 49522 23900 93077 83059 66351 44061 08560 44291 44153 49497 33153 68914 69813 59585 36116 88606 82576 46754 48000 24597 27323 04130 51438 66289 66776 98822 24442 91013 98978 53051 13136 79574 53768 20282 81217 07243 66702 48580 95447 391 46 00000 RNGB

29/12 '842' 650 47 23848 09327 34595 64491 27662 16583 74604 97140 23749 10334 55544 90809 77083 02638 48626 31124 38618 37388 93994 97194 70884 37082 28331 68404 25649 09849 13732 37533 53308 15160 60038 91170 48704 11681 57819 43356 63061 35680 64172 33372 36716 83445 08561 23641 32340 96141 10844 650 47 00000 Ary

Fridays (1st & 3rd) 1900z 7812khz 2000z 5736kHz (frequencies may vary slightly)

02/12 '761' 845 39 ?????.....30283 845 39 00000] 2011z

16/12 '761' 00000

Saturdays (1st/3rd) 2000z 4031kHz 2100z 3513kHz (frequencies may vary slightly)

17/12 '614' 00000

Non scheduled:

S06s ID 967 has been found active again on its original schedule of Weds 1230z using 6943kHz. 1240z not yet found. Probably 4 or 5 mHz?

07/12 '967' I.P. ……96191 21723 94964 80933 41068 16101 40866 69751 00840 63853 61023 57209 40933 904 13 00000] 1237z

14/12 '967' 00000

21/12 '967' 00000

Some further S06s traffic found on:-

5867kHz 1820z 07/12 '459' 601 4 17658 42872 34832 49511 601 4 00000] 1830z S9 AM M8 WED (may be the second TX as not found 1835z)

5867kHz 1825z 14/12 '459' 601 4 17658 42872 34832 49511 601 4 00000] S7 USB M8 WED

5193kHz 1817z 20/12	[I/P... 167 00000] 1819z QSA4 QRM1 QSB1	JkC	TUE	
5867kHz 1825z 20/12	'459' 00000] 1828z QSA4 QRM1 QSB1	JkC	TUE	(looks like 1815/1825z schedule?)
5193kHz 1815z 21/12	'167' 00000	RNGB	WED	
5867kHz 1825z 21/12	'459' 00000	RNGB	WED	
5193kHz 1815z 28/12	'167' x 3 00000…….] 1819z S3	M8	WED	
5867kHz 1825z 28/12	'459' x 3 00000…….] 1829z S9	M8	WED	

S06s December log:

Monday			
5th/12th	0830/0840z	8057/8530	'371' 296 5 36823 38735 38209 45624 41353
19th/26th			'371' 269 5 92325 36615 36491 49588 41061
5th/12th	0900/0910z	14675/12830	'872' 933 6 31092 39190 46831 34173 32391 38632
19th/26th			'872' 590 6 41298 80740 89449 37303 88934 34302
5th/12th	1300/1310z	8420/10635	'831' 925 6 38034 37823 38230 48235 38702 89102
19th/26th			'831' 952 6 34031 33430 48536 84906 39648 45454
Tuesday			
6th/13th	0600/0610z	16145/14240	'438' No reports
20th/27th			'438' Too weak to copy
6th/13th	0700/0715z	5250/6320	'374' 906 5 94428 17454 24011 41584 68592
20th/27th			'374' 520 6 40048 43617 30343 84217 43043 48367
6th/13th	0730/0740z	7410/11532	'427' 918 5 74945 79303 44518 28216 04826
20th/27th			'427' 963 5 37596 83663 89533 30950 37014
6th/13th	0800/0810z	11945/13195	'352' 984 6 73668 49575 35325 85342 52215 64572
20th/27th			'352' 960 7 48980 48995 40333 43389 40419 30412 48343
6th/13th	1000/1010z	6440/5660	'893' 460 5 22469 41868 53181 70135 16554
20th/27th			'893' 470 5 38453 48324 33885 31830 34645
6th/13th	1100/1110z	5035/5975	'754' 208 6 8…? 68069 61732 74537 57440 10597 (first group possibly 88820)
20th/27th			'754' 219 6 83964 40774 45983 48882 31151 32860
6th/13th	1500/1510z	6845/9170	'537' 201 6 52401 53919 92699 14600 74248 48754
20th/27th			'537' 829 6 40809 39394 35083 42571 32785 37331
Wednesday			
7th/14th	0820/0830z	8417/9262	'471' 538 6 80328 32229 43306 47702 33713 48368
21st/28th			'471' 860 5 98411 38633 33885 34079 32193
7th/14th	0830/0840z	11535/11830	'745' 930 6 37391 37446 86525 89303 33244 39054
21st/28th			'745' 291 6 44365 43025 39283 33578 47568 40573
7th/14th	1000/1010z	12365/1§4280	'729' 410 5 88620 58069 61732 74536 57440
21st/28th			'729' 831 5 31896 36053 33779 32814 47565
Thursday			
1st/8th (E17z)	0800/0810z	11170/9820	'674' 918 5 34140 78386 91497 82963 24162
15th/22nd			'674' 903 5 52701 63919 92699 14600 74248
1st/8th	0900/0910z	5765/6315	'624' 805 7 33796 13577 74526 46647 79302 53516 25616
15th/22nd			'624' 539 7 09394 76011 75155 92918 97067 58604 41438
1st/8th	0930/0940z	8812/9540	'314' 926 5 68592 37637 44496 62725 40551
15th/22nd			'314' 956 7 55628 32766 40512 04454 66993 15253 27839
1st/8th	1200/1210z	12155/10920	'425' 961 7 38433 25858 25573 64485 55554 59477 25777
15th/22nd			'425' 913 6 38433 25868 25673 64485 55554 59477
Friday			
2nd/9th	0930/0940z	11780/12570	'516' 437 8 46062 68672 97478 39685 30485 96632 52537 53317
16th/23rd			'516' 492 7 13668 32805 37450 46501 31053 44246 31827
Saturday			
3rd	0800/0810z	8680/8260	'254' no reports
Sunday			
4th/11th	0630/0640z	13470/16515	'524' 963 7 34888 33661 37167 37671 43391 30643 54440
18th/25th			'524' No reports

PoSW follows with his take on S06 and S06 a:

First + Third Saturdays in the Month 2000 + 2100 UTC Schedule:-
19-Nov-16:- 2000 UTC, 4,031 kHz, "614 614 614 00000", peaking S9.
2100 UTC, 3,505 kHz, second sending, S9 inside the CW portion of the 80 metre band, not too much to bother S06 but lots of furious activity a bit higher up. Sounded like a contest, everyone giving each other 599.

3-Dec-16:- 2000 UTC, 4,031 kHz, "614 614 614 00000", a broadcast station on a close frequency, not noted on 19-November.
2100 UTC, 3,528 kHz, second sending, higher in frequency than last time, S9, amateur CW not strong enough to be a problem.

First + Third Fridays in the Month 2000 + 2100 UTC Schedule:-
18-Nov-16:- 2000 UTC, 7,812 kHz, "761 761 761 00000", weak signal down in the noise.
2100 UTC, 5,733 kHz, second sending, much stronger, S8.

2-Dec-16:- In December this schedule has performed its well-known trick of shifting by one hour:-
1900 UTC, 7,812 kHz, calling "761" for a "full message". DK/GC "854 854 39 39", S7 to S8.
2000 UTC, 5,736 kHz, second sending, strong signal peaking over S9.

3-Dec-16, Saturday:- repeat of yesterday's transmission in case “761” didn't get it the first time:-
1900 UTC, 7,812 kHz, first sending, S6 to S7.
2000 UTC, 5,736 kHz, second sending, over S9 with QSB.

16-Dec-16:- 1900 UTC, 7,812 kHz, “761 761 761 00000”, S6.
2000 UTC, 5,736 kHz, second sending, S9.

S06s, YL Voice:-
A few observations of some of the stronger signals from S06s, all in the UK daytime.
Beginning with a transmission which appeared to be not part of a regular schedule:-
4-Nov-16, Friday:- 0900 UTC, 9,132 kHz, found in progress just after the hour, “464 464 464 00000”, peaking S7 but fading down into the noise at times. Stopped just after 0904 UTC. This “no message” format from S06s is normally only heard in the last days of the month. Not found on the following two Fridays in November.

Regular schedules heard in November and December:-
Monday 0830 + 0840 UTC Schedule, Call “371”:-
14-Nov-16:- 0830 UTC, 8,057 kHz, DK/GC “460 460 5 5”, “30623 34306 33284 32517 38761”, S9 with QSB.
0840 UTC, 8,530 kHz, second sending, S9.

21-Nov-16:- 0830 UTC, 8,057 kHz, DK/GC “468 468 5 5”, “34031 33420 37536 34906 39698”, S7.
0840 UTC, 8,530 kHz, second sending, weak signal.

5-Dec-16:- 0830 UTC, 8,057 kHz, DK/GC “296 296 5 5”, “36823 38735 38209 45624 41353”, S8 signal.
0840 UTC, 8,530 kHz, second sending, S7.

Monday 0900 + 0910 UTC Schedule, Call “872”:-
7-Nov-16:- 0900 UTC, 14,675 kHz, DK/GC “943 943 5 5”, “40194 39428 36749 36509 81313”, S7 to S8.
0910 UTC, 12,830 kHz, second sending, slightly weaker signal.

14-Nov-16:- 0900 UTC, 14,675 kHz, “943 943 5 5” and same 5Fs as on the 7th.
0910 UTC, 12,830 kHz, second sending, both transmissions S6 to S7 with deep QSB.

21-Nov-16:- 0900 UTC, 14,675 kHz, DK/GC “495 495 6 6”, “63824 61329 52748 63081 62418 94026”, S8.
0910 UTC, 12,830 kHz, second sending, peaking over S9.

5-Dec-16:- 0900 UTC, 14,675 kHz, DK/GC “933 933 6 6”, S7 with deep QSB, “31092 39190 46831 34173 32391 38632”.
0910 UTC, 12,830 kHz, second sending, wide variation of signal strength with the meter swinging between S5 to S9.

Tuesday 0800 + 0810 UTC Schedule, Call “352”:-
6-Dec-16:- 0800 UTC, 11,945 kHz, DK/GC “984 984 6 6”, “73668 49575 35325 85342 52215 64572”, S8 signal.
0810 UTC, 13,195 kHz, second sending, peaking over S9.

13-Dec-16:- 0800 UTC, 11,945 kHz, “984 984 6 6” and 5Fs the same as last time in keeping with what appears to be the standard “two weeks for each message” routine. S9 with deep QSB.
0810 UTC, 13,195 kHz, second sending, peaking S9.

Wednesday 1000 + 1010 UTC Schedule, Call “729”:-
2-Nov-16:- 1000 UTC, 12,365 kHz, DK/GC “401 401 5 5”, “88394 49194 31911 90446 31786”, S9+, very strong signal.
1010 UTC, 14,280 kHz, second sending, inside 20 metre amateur band, also S9+.

9-Nov-16:- 1000 UTC, 12,365 kHz, “401 401 5 5” and same 5Fs as on 2-Nov. Much weaker signal, S6 at best.
1010 UTC, 14,280 kHz, second sending, also weaker than last time.

16-Nov-16:- 1000 UTC, 12,365 kHz, back to S9+ this week, DK/GC “860 860 5 5”,
“94428 17454 24011 41584 68592”.
1010 UTC, 14,280 kHz, second sending, also recovered from last week with an S9+ signal.

30-Nov-16:- 1000 UTC, 12,365 kHz, “729 729 729 00000”, no message, S9.
1009 UTC, just after, started early, 14,280 kHz, also S9.

7-Dec-16:- 1000 UTC, 12,365 kHz, DK/GC “410 410 5 5”, “88620 58069 61732 74536 57440”, S9 with QSB.
1010 UTC, 14,280 kHz, second sending, peaking S9, strong interference on the LF side, a wide-band “buzz” extending down to about 14,250, peak strength on 14,275.

14-Dec-16:- 1000 UTC, 12,365 kHz, DK/GC “410 410 5 5”, 5Fs as on 7-December, S9+.
1010 UTC, 14,280 kHz, second sending, also S9+, very strong signal.

Friday 0930 + 0940 UTC Schedule, Call “516”:-
4-Nov-16:- 0930 UTC, 11,780 kHz, DK/GC “247 247 8 8”, became weak and sank into the noise.
0940 UTC, 12,570 kHz, second sending much stronger, S9, 5Fs “33379 39705 36201 37352 96930 42476 46239 32853”.

18-Nov-16:- 0930 UTC, 11,780 kHz, DK/GC “283 283 7 7”, S9+ in contrast with the signal on 4-November, “37352 96930 42476 46239 32853 38109 36503”.
0940 UTC, 12,570 kHz, second sending, also S9+.

2-Dec-16:- 0930 UTC, 11,780 kHz, DK/GC “437 437 8 8”, “46062 68672 97478 39685 30485 96632 52537 53317”, over S9.
Second sending started late, nothing on the expected frequency – no carrier – when checked just before 0940 UTC, tuned up and down the band in case there had been a change of frequency, was in progress when checked again a couple of minutes later:-
0942 UTC 12,570 kHz, “516” call-up in progress, over S9, DK/GC reached at 0945:30s UTC.

9-Dec-16:- 0930 UTC, 11,780 kHz, DK/GC “437 437 8 8”, “46062 68672 97478 39685 30485 96632 52537 53317”, over S9.
0940 UTC, 12,570 kHz, second sending, slightly weaker signal.

S11a log Nov/Dec

4828kHz	0455z	01/11 [321/00] КОНЕЦ 0458z	Ed Smith	TUE
	0455z	08/11 [321/00] КОНЕЦ 0458z	Ed Smith	TUE
	0455z	15/11 [321/00]	Ed Smith	TUE
	0455z	22/11 [322/32 47319 69962 16844 95889 20850 47635 03546 39229.....18415 97027]	Ed Smith	TUE
5815kHz	1955z	02/11 [371/00] Konyetz 1958z S9+10	Malc	WED
	1955z	04/11 [371/00] Strong	RNGB	FRI
	1955z	09/11 [371/00] Konyetz 1958z S6	Malc	WED
	1955z	11/11 [371/00] КОНЕЦ 1958z	Ed Smith	FRI
	1955z	16/11 [371/00] Konyetz 1958z S9	Malc	WED
	1955z	18/11 [371/00] Strong	RNGB	FRI
	1955z	02/12 [377/00] Konyetz 1958z S9	Malc	FRI
	1955z	07/12 [379/00] Konyetz 1958z S9	Malc	WED
	1955z	14/12 [370/36 98175 95174 67121 48800 86480 70804 16894 17774……90077 22668]	Ary	WED
	1955z	16/12 [370/36 98175…..etc] Repeat of Wednesday	Malc	FRI
	1955z	23/12 [378/00] Konyetz 1958z S3	Malc	FRI
	1955z	28/12 [376/00] Konyetz 1958z S2	Malc	WED
7504kHz	0915z	01/11 [484/00] КОНЕЦ 0918z	Ed Smith	TUE
	0915z	04/11 [484/00] Konyetz 0918z S9	Malc	FRI
	0915z	08/11 [482/31 76820 49380 63014 36983 84126 50995 59755 48875……58928 17892]	RNGB	TUE
	0915z	11/11 [482/31 76820……etc] Repeat of Tuesday	Malc	FRI
	0915z	15/11 [484/00] Konyetz 0918z S5	Malc	TUE
	0915z	29/11 [484/00] Konyetz 0918z S2	Malc	TUE
	0915z	02/12 [486/00] Konyetz 0918z S5	Malc, RNGB	FRI
	0915z	06/12 [486/00]	Ary	TUE
	0915z	13/12 [483/31 16805……32177] Konyetz 0925z S5	Malc	TUE
	0915z	20/12 [486/00] Fair	RNGB	TUE
	0915z	23/12 [485/00] Konyetz 0918z S5	Malc, RNGB	FRI
	0915z	27/12 [481/00] Konyetz 0918z S3	Malc	TUE
9610kHz	1020z	01/11 [426/00] КОНЕЦ 1023z	Ed Smith	TUE
	1020z	04/11 [426/00]	Malc	FRI
	1020z	08/11 [426/32 53388 94747 72509 32796 00558 35177 30598…….68459] Konyetz 1030z S2	RNGB, Malc	TUE
	1020z	11/11 [426/32 53388……etc] Repeat of Tuesday	Malc	FRI
	1020z	15/11 [426/00] Konyetz 1023z S5	Malc	TUE
	1020z	22/11 [426/00]	RNGB	TUE
	1020z	29/11 [426/00]	RNGB	TUE
	1020z	02/12 [422/00] Konyetz 1023z S5	Malc, RNGB	FRI
	1020z	06/12 [425/36 18226……..01144] Konyetz 1030z S5	Malc	TUE
	1020z	13/12 [421/00]	RNGB	TUE
	1020z	27/12 [426/00] Konyetz 1023z S5	Malc	TUE
	1020z	30/12 [422/00] Weak	RNGB	FRI
10728kHz	1540z	02/11 [563/00] Konyetz 1543z S6	Malc	WED
	1540z	05/11 [563/00] Konyetz 1543z S9	Malc, Ed Smith	SAT
	1540z	09/11 [563/00] Konyetz 1543z S9	Malc	WED
	1540z	12/11 [563/00] Konyetz 1543z S6	Malc	SAT
	1540z	16/11 [563/00] Konyetz 1543z S5	Malc	WED
	1540z	30/11 [563/00] Konyetz 1543z S2	Malc	WED
	1540z	07/12 [566/00]	Ary	WED
	1540z	17/12 [560/00] Konyetz 1543z S1	Malc	SAT
	1530z	28/12 [566/00]1533z QSA4 QRM1 QSB1	JkC	WED
12530kHz	1015z	03/11 [475/00] КОНЕЦ 1018z	Ed Smith	THU
	1015z	07/11 [475/00] Good	RNGB	MON
	1015z	17/11 [475/00]	RNGB	THU
	1015z	28/11 [475/00] Out 1023z S8	Malc	MON
	1015z	01/12 [477/00]	RNGB	THU
	1015z	08/12 [471/00] Konyetz 1023z S9	Malc	THU
	1015z	15/12 [471/36 43912 09001 77389 08264 33389 61753 57933 87420……57597 71311]	RNGBl, Malc	THU
	1015z	22/12 [477/001 Konyetz 1018z S3	Malc, Ed Smith	THU
	1015z	29/12 [479/00] Konyetz 1018z S7	Malc	THU
19099kHz	0715z	07/11 [382/00] Barely audible – Remote tuner from Grenoble	RNGB	MON
	0715z	14/11 [382/00]	RNGB	THU

V02 a

V02a put in at least 9 appearances over the past two months, always mixing with the 2000z M08a transmissions. The voice was only readable by switching to LSB mode. Some of the transmissions were very weak so it is possible there were some more that were missed.

The number sequences in the callups match those seen with M08a for example on 10/11 we copied A86351 18081 21312
T
he jumps between the digits in the callups are as follows
First digits 8 1 2 8 to 1 is a jump of 2 (9 is not used) and 1 to 2 is a jump of 1 giving a sequence of 21
Second digits 6 8 1 using the same formula gives 22
Third digits 6 0 3 which gives 33
Fourth digits 5 8 1 which gives 32
Fifth Digits are only ever 1 or 2 so are not counted in the sequence. So the full sequence of the digits is 21 22 33 32 and we know the jumps between digits are almost always 1, 2 or 3 and less frequently 6 If the callup numbers were random we would expect the sequence for any pair of numbers to be random between 11 and 88 and this clearly is not the case.

So for the V02a transmissions heard the following sequences are seen.

A85681 16321 20652 21 13 63 33
A25521 38851 41272 11 32 33 32
A14311 37642 41161 21 33 34 32
82482 03122 26551 12 13 64 33
35822 56652 60081 21 13 73 33

Logs

V02a 7554kHz 2000z 1/11 [A85681 16321 20652] Simultaneous with M08a TUE
V02a 7554kHz 2000z 8/11 [----- ----- -----] Simultaneous with M08a as on 1/11 but only 0.4 seconds of audio every 3 seconds so no copy. TUE
V02a 7554kHz 2000z 10/11 [A86351 18081 21312] Simultaneous with M08a THU
V02a 7554kHz 2000z 15/11 [25521 38851 41272] simultaneous with M08a TUE
V02a 7554kHz 2000z 24/11 [14311 37642 41161] Simultaneous with M08a. THU
V02a 7554kHz 2000z 13/12 [----- ----- -----] simultaneous with M08a but too weak to copy. TUE
V02a 7554kHz 2000z 15/12 [82482 03122 26551] simultaneous with M08a THU
V02a 7554kHz 2000z 22/12 [----- 37312 -----] Up late in progress, simultaneous with M08a becomes too weak to copy. THU
V02a 7554kHz 2000z 29/12 [35822 56652 60081] Simultaneous with M08a. THU

V07

Sunday

November 2016

0100z	**18074kHz**	**0120z**	**15874kHz**	**0140z**	**14374kHz**	
13/11	883 1 943 53 41702 ... 33430 000 000					Weak

883 883 883 1 943 53
41702 03475 08139 23393 78373
39832 71331 58370 08542 79121
27253 81157 91530 13411 75477
94413 84518 80083 49253 42424
14442 59043 08220 53091 83379
31092 15442 43347 15239 77933
17484 19405 07858 19385 34908
18717 50744 05940 59915 43524
43303 11321 58040 13350 28232
30834 58282 73931 12107 82788
05554 30777 33430 000 000
Courtesy DanAr

20/11	883 000	[0030z Mx, hum on both tx]	Weak
27/11	883 000	[0100z NRH]	Weak

December 2016

0100z	**16037kHz**	**0120z**	**14637kHz**	**0140z**	**12137kHz**	
04/12	Unworkable, possible message					
11/12	661 1 278 79 75397 ... 51178 000 000					Weak,with hum

The pronunciation of 3 and 6 is a really mess.
The small difference between these numbers sometimes is observed in spectrogram when the signal is fair.

18/12	661 000	Weak with hum
25/12	661 000	Weak

V21

The Babbler continues to be present on 5637kHz and 6529kHz with weak signals. Only one transmission was logged however.

V21 5637kHz 1423z 3/12 in progress count to 50 ending with 0. Start 00 and count to 33 END

As mentioned in the last newsletter below is the analysis of part of the transmission sent on 5637kHz on 1/10, this is a segment lasting for 16 minutes.

Transmission as heard in full.

00 28 00 28 193 166 61 00 9 15
00 28 00 28 193 166 11 61 00 9 16
24 24 113 326 16
27 27 193 436 16
25 25 48 25 25 199 361 199 361 16
26 26 199 447 199 447 17
21 21 139 139 17
22 22 139 439 139 439 17
00 29 00 29 159 292 159 292 17
00 30 00 30 113 469 113 469 11 00 9 18
00 30 00 30 113 469 11 00 9 18
28 28 193 149 18
27 27 193 437 18
24 24 113 152 19
26 26 199 448 19
21 21 139 139 19
22 22 138 317 19
27 27 193 344 193 344 20
24 24 113 3?5 20
26 26 199 438 199 438 20
25 25 48 25 25 113 233 113 233 20
21 21 139 117 20
29 29 139 463 139 463 21
00 31 00 31 133 142 133 142 11 00 19 21
00 31 00 31 133 142 11 00 21
Time 606
24 24 113 399 113 399 21
28 28 133 ==========
27 27 193 363 193 363 21
25 25 48 25 25 193 457 193 457 22
30 30 119 318 119 318 21
31 31 133 164 133 164 22
24 24 133 321 133 321 23
26 26 193 358 193 358 5 Colar?
27 27 199 258 199 258 23
21 21 133 241 133 241 24
00 32 00 32 113 469 11 00 24
00 32 00 32 113 469 11 00 9 24
00 33 00 33 193 145 62 00 9 25
00 33 00 33 193 145 61 00 25
27 27 191 454 191 454 25
25 25 69
27 27 69
30 30 119 146 119 146 25
31 31 69
24 24 133 125 25
21 21 133 299 25
24 24 69
25 25 69
23 23 48
23 23 48
22 22 138 354 26
00 34 00 34 159 215 159 215 11 0026
00 34 00 34 159 215 11 00 26
22 22 19 53
22 22 19 53
27 27 111 228 111 228 26
30 30 119 135 119 135 27
21 21 133 134 27
21 21 69 53
32 32 69
29 29 137 299 27
31 31 43
31 31 43
31 31 133 333 28
27 27 111 151 111 151 28
30 30 119 223 119 223 28
29 29 119 499 119 499 28
33 33 193 181 29
25 25 43
25 25 43

25 25 113 294 113 294 29
32 32 43
32 32 43
32 32 116 244 116 24429
00 35 00 35 113 466 113 466 11 00 9 30
00 35 00 35 113 466 11 00 9 30
00 36 00 36 156 8 127 158 127 11 00 9 30
32 32 139 319 139 319 30
31 31 133 417 133 417 30
24 24 46
24 24 141 136 141 136 30
27 27 111 117
25 25 57 97
27 27 111 165 111 165 31
33 33 48
33 33 48
33 33 193 359 193 359 31
27 27 69 53
27 27 69 53
25 25 113 245 113 245 31
30 30 199 449 199 449 31
29 29 119 266 119 266 31
34 34 139 298 139 298 31
36 36 159 232 159 232 31
32 32 139 397 139 397 31
27 27 17 53
27 27 17 53
31 31 136 429

There appear to be two main message formats.

Short message format
21 21 139 139 17 21 = Track/Target ID number 139 139 = Coordinates or position? 17 = Minute past the hour

Long message format
00 28 00 28 193 166 61 00 9 15 00 = new track 28 = Track/Target ID number 193 166 = position/coordinates. 61 = Unknown 00 = New track repeated? 9 = Hour in Eastern Time 15 = Minute

The target coordinates don't make any sense as an X/Y as in some cases they seem to jump around. This could be due to mis-hearing the numbers or the operator mis-speaking them. One other possibility that comes to mind is that the first digit is a bearing from a known location and the second number is a distance to target although this is only speculation based on the observation that the first number is never greater than 360 (in this transmission at least).

There seems to be on other message for example 21 21 69 53 with 21 being the Track/Target ID and 69 and 53 of unknown significance. 19 53 is also seen as is 69 43. The numbers may be transmitted together or separately. Interestingly the number ending with 9 always seems to precede the number ending with 3 again there seems to be no explanation for these numbers other than they seem to come at the end of or near to the end of transmissions regarding that track identification so possibly an indication of lost track or track termination although again this is pure speculation at the moment. Hopefully some more of these transmissions can be analyzed in the future.

Messages broken down into Track/Target Identification.

21 21 139 139 17
21 21 139 139 19
21 21 139 117 20
21 21 133 241 133 241 24
21 21 133 299 25
21 21 133 134 27
21 21 69 53

22 22 138 317 19
22 22 138 354 26
22 22 19 53
22 22 19 53

23 23 48
23 23 48

24 24 113 326 16
24 24 113 152 19
24 24 113 3?5 20
24 24 113 399 113 399 21
24 24 133 321 133 321 23
24 24 133 125 25
24 24 69
24 24 46
24 24 141 136 141 136 30

25 25 48 25 25 199 361 199 361 16
25 25 48 25 25 113 233 113 233 20
25 25 48 25 25 193 457 193 457 22
25 25 69
25 25 69

25 25 43
25 25 43
25 25 113 294 113 294 29
25 25 57 97
25 25 113 245 113 245 31

26 26 199 447 199 447 17
26 26 199 448 19
26 26 199 438 199 438 20
26 26 193 358 193 358 5 Colar?

27 27 193 436 16
27 27 193 437 18
27 27 193 344 193 344 20
27 27 193 363 193 363 21
27 27 199 258 199 258 23
27 27 191 454 191 454 25
27 27 69
27 27 111 228 111 228 26
27 27 111 151 111 151 28
27 27 111 117
27 27 111 165 111 165 31
27 27 69 53
27 27 69 53
27 27 17 53
27 27 17 53

00 28 00 28 193 166 61 00 9 15
00 28 00 28 193 166 11 61 00 9 16
28 28 193 149 18
28 28 133 ============

00 29 00 29 159 292 159 292 17
29 29 139 463 139 463 21
29 29 137 299 27
29 29 119 499 119 499 28
29 29 119 266 119 266 31

00 30 00 30 113 469 113 469 11 00 9 18
00 30 00 30 113 469 11 00 9 18
30 30 119 318 119 318 21
30 30 119 146 119 146 25
30 30 119 135 119 135 27
30 30 119 223 119 223 28
30 30 199 449 199 449 31

00 31 00 31 133 142 133 142 11 00 19 21
00 31 00 31 133 142 11 00 21
31 31 133 164 133 164 22
31 31 69
31 31 43
31 31 43
31 31 133 333 28
31 31 133 417 133 417 30
31 31 136 429

00 32 00 32 113 469 11 00 24
00 32 00 32 113 469 11 00 9 24
32 32 69
32 32 43
32 32 43
32 32 116 244 116 244 29
32 32 139 319 139 319 30
32 32 139 397 139 397 31

00 33 00 33 193 145 62 00 9 25
00 33 00 33 193 145 61 00 25
33 33 193 181 29
33 33 48
33 33 48
33 33 193 359 193 359 31

00 34 00 34 159 215 159 215 11 0026
00 34 00 34 159 215 11 00 26
34 34 139 298 139 298 31

00 35 00 35 113 466 113 466 11 00 9 30
00 35 00 35 113 466 11 00 9 30

00 36 00 36 156 8 127 158 127 11 00 9 30
36 36 159 232 159 232 31

V26

4243kHz0006z 02/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL WED
4243kHz1219z 02/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL WED
4243kHz1219z 03/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL THU
4243kHz0007z 04/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL FRI
4243kHz0937z 04/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL FRI
4243kHz1227z 04/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL FRI
4243kHz2251z 04/11/16[(From Digital sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL FRI
(IP - In Chinese digital 4+4 QPSK 75/3000 - LSB - 2248z - Switched to V26 - 2251z - Silent - 2255z)
4243kHz1230z 08/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054 N/H) (Remote tuner Hong Kong)] JPL TUE
4243kHz2359z 08/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL TUE
4243kHz0001z 09/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL WED
4243kHz1116z 09/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL WED
4243kHz1221z 10/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL THU
4243kHz0011z 14/11/16[(IP - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL MON
4243kHz1203z 15/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL TUE
4243kHz0007z 17/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL THU
4243kHz1218z 17/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL THU
4243kHz1222z 18/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054 N/H) (Remote tuner Hong Kong)] JPL FRI
4243kHz1207z 27/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL SUN
4243kHz0010z 29/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner South Korea)] JPL TUE
4243kHz0014z 30/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner South Korea)] JPL WED

4243kHz1214z 02/12/16[(From M95 sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner South Korea)] JPL FRI
4243kHz0920z 05/12/16[(IP - Voice - USB - Chinese - Female - // 9054) (Remote tuner Hong Kong)] JPL MON
4243kHz1220z 06/12/16[(IP - Voice - USB - Chinese - Female - // 9054) (Remote tuner New Zealand)] JPL TUE
4243kHz1238z 08/12/16[(IP - Voice - USB - Chinese - Female - // 9054 N/H) (Remote tuner Japan)] JPL THU
4243kHz1205z 09/12/16[(FM M95 Sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Japan)] JPL FRI
4243kHz2235z 10/12/16[(FM M95 Sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner South Korea)] JPL SAT
4243kHz1235z 11/12/16[(FM M95 Sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner Japan)] JPL SUN
4243kHz0015z 12/12/16[(FM M95 Sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner South Korea)] JPL MON
4243kHz0942z 12/12/16[(FM M95 Sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner South Korea)] JPL MON
4243kHz0008z 14/12/16[(FM M95 Sked - Voice - USB - Chinese - Female - // 9054) (Remote tuner South Korea)] JPL WED
4243kHz0912z 15/12/16[(IP - USB - Chinese - Female - // 9054 N/H) (Remote tuner South Korea)] JPL THU
4243kHz0011z 16/12/16[(FM M95 Sked - USB - Chinese - Female - // 9054) (Remote tuner South Korea)] JPL FRI
4243kHz1248z 20/12/16[(FM M95 Sked - USB - Chinese - Female - // 9054 N/H) (Remote tuner South Korea)] JPL TUE
4243kHz2346z 20/12/16[(IP - USB - Chinese - Female - // 9054 N/H) (Remote tuner South Korea)] JPL TUE
4243kHz1215z 21/12/16[(FM M95 Sked - USB - Chinese - Female - // 9054) (Remote tuner New Zealand)] JPL WED
4243kHz0917z 22/12/16[(IP - USB - Chinese - Female - // 9054) (Remote tuner South Korea)] JPL THU
4243kHz1215z 29/12/16[(From M95 sked - USB - Chinese - Female - // 9054) (Remote tuner Japan)] JPL THU

4364kHz1208z 06/12/16[(IP - Voice - USB - Chinese - Male - // 8073) (Remote tuner New Zealand)] JPL TUE
4364kHz1155z 08/12/16[(FM M95 Sked - Voice - USB - Chinese - Female - // 8073) (Remote tuner Hong Kong)] JPL THU
4364kHz1207z 15/12/16[(IP - USB - Chinese - Male - // 8073) (Remote tuner Hong Kong)] JPL THU
4364kHz1206z 21/12/16[(FM M95 Sked - USB - Chinese - Male - // 8073) (Remote tuner New Zealand)] JPL WED

8073kHz1201z 10/11/16[(IP - Voice - USB - Chinese - Male) (Remote tuner Hong Kong)] JPL THU

8073kHz1208z 06/12/16[(IP - Voice - USB - Chinese - Male - // 4364) (Remote tuner New Zealand)] JPL TUE
8073kHz1155z 08/12/16[(FM M95 Sked - Voice - USB - Chinese - Female - // 4364) (Remote tuner Hong Kong)] JPL THU
8073kHz1207z 15/12/16[(IP - USB - Chinese - Male - // 4364) (Remote tuner Hong Kong)] JPL WED

9054kHz0006z 02/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL WED
9054kHz1219z 02/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL WED
9054kHz1219z 03/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL THU
9054kHz0007z 04/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL FRI
9054kHz0937z 04/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL FRI
9054kHz1227z 04/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL FRI
9054kHz2251z 04/11/16[(From Digital sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL FRI
(IP - In Chinese digital 4+4 QPSK 75/3000 - LSB - 2248z - Switched to V26 - 2251z - Silent - 2255z)
9054kHz2238z 07/11 Voice - USB - Chinese - Female (with msg) QSA1 DanAR MON
9054kHz2340z 07/11 Callup-Voice- USB-Chinese-Female QSA2 DanAR MON
9054kHz2342z 07/11 Digital Data-LSB QSA2 DanAR MON
9054kHz0004z 08/11 Voice - USB - Chinese - Female (with msg) QSA2 DanAR MON
9054kHz2359z 08/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL TUE
9054kHz0001z 09/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL WED
9054kHz1116z 09/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL WED
9054kHz1221z 10/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL THU
9054kHz2235z 11/11 Voice - USB - Chinese - Female- Call Up- QSA3 DanAR FRI
9054kHz2337z 11/11 Digital Data-LSB- QSA3 DanAR FRI
9054kHz2249z 11/11 Voice - USB - Chinese - Female -with msg- QSA3 DanAR FRI
9054kHz2340z 11/11 Voice - USB - Chinese , Female- Call Up- QSA2 DanAR FRI
9054kHz2342z 11/11 Digital Data-LSB- QSA2 DanAR FRI
9054kHz0005z 11/11 Voice - USB . Chinese - Female - with msg- QSA2 DanAR FRI
9054kHz2340z 13/11 Voice - USB - Chinese , Female- Call Up- QSA2 DanAR SUN
9054kHz0011z 14/11/16[(IP - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL/DanAr MON
9054kHz1203z 15/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL TUE
9054kHz0007z 17/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL THU

9054kHz1218z 17/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL THU
9054kHz0907z 19/11 Voice - USB - Chinese - Female -Call Up- QSA2 DanAR SAT
9054kHz1001z 19/11 Voice - USB - Chinese - Female- with msg- QSA2 DanAR SAT
9054kHz2240z 23/11 Voice - USB - Chinese - Female- MSG- several audio cuts in transmissionQSA2 DanAR WED
9054kHz2315z 23/11 Voice - USB - Chinese - Female- MSG- several audio cuts in transmission- QSA2 DanAR WED
9054kHz2338z 23/11 Voice - USB - Chinese - Female -Call up- QSA2 DanAR WED
9054kHz2343z 23/11 DATA - LSB - QSA2 DanAR WED
9054kHz2359z 23/11 Voice - USB . Chinese - Female - with msg- QSA2 DanAR WED
9054kHz1207z 27/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL SUN
9054kHz2340z 27/11 Voice - USB - Chinese - Female -Call Up- QSA2 DanAR SUN
9054kHz0007z 28/11 Voice - USB - Chinese - Female- with msg- QSA2 DanAr MON
9054kHz0010z 29/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner South Korea)] JPL TUE
9054kHz0014z 30/11/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner South Korea)] JPL WED

9054kHz1214z 02/12/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner South Korea)] JPL FRI
9054kHz0308z 03/12/16[(From M95 sked - Voice - USB - Chinese - Female - // 4243 not checked) (Remote tuner South Korea) JPL SAT
9054kHz0920z 05/12/16[(IP - Voice - USB - Chinese - Female - // 4243) (Remote tuner Hong Kong)] JPL MON
9054kHz1220z 06/12/16[(IP - Voice - USB - Chinese - Female - // 4243) (Remote tuner New Zealand)] JPL TUE
9054kHz22:47z 08/12 Voice-USB-Chinese-Female-with msg-QSA2 DanAR THU
9054kHz23:40z 08/12 Voice - USB - Chinese - Female -Call Up- QSA2 DanAR THU
9054kHzz00:07z 09/12 Voice - USB - Chinese - Female- with msg- QSA2 DanAR FRI
9054kHz1205z 09/12/16[(FM M95 Sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Japan)] JPL FRI
9054kHz2235z 10/12/16[(FM M95 Sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner South Korea)] JPL SAT
9054kHz1235z 11/12/16[(FM M95 Sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner Japan)] JPL SUN
9054kHz0015z 12/12/16[(FM M95 Sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner South Korea)] JPL MON
9054kHz0942z 12/12/16[(FM M95 Sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner South Korea)] JPL MON
9054kHz0008z 14/12/16[(FM M95 Sked - Voice - USB - Chinese - Female - // 4243) (Remote tuner South Korea)] JPL WED
9054kHz0011z 16/12/16[(FM M95 Sked - USB - Chinese - Female - // 4243) (Remote tuner South Korea)] JPL FRI
9054kHz1215z 21/12/16[(FM M95 Sked - USB - Chinese - Female - // 4243) (Remote tuner New Zealand)] JPL WED
9054kHz0917z 22/12/16[(IP - USB - Chinese - Female - // 4243) (Remote tuner South Korea)] JPL THU
9054kHz1215z 29/12/16[(From M95 sked - USB - Chinese - Female - // 4243) (Remote tuner Japan)] JPL THU
9054kHz2342z 29/12 Voice - USB - Chinese - Female -Call Up- QSA2 DanAr THU
9054kHz0000z 30/12 Voice - USB - Chinese - Female- with msg- QSA2 DanAr FRI

Polytones , FSK/M42nn and Hybrids

XPA c

Wednesday/Saturday

November 2016

0700z	**11409kHz**	**0720z**	**13509kHz**	**0740z**	**14609kHz**	
02/11	456 1 09651 00197 68782 75217					Very strong
05/11	456 000 07414 00001 00000 10140					Very strong
09/11	456 1 08530 00221 25771 75510					Strong
12/11	456 1 08530 00221 25771 75510					Very strong
16/11	456 000 04197 00001 00000 10140					Strong
19/11	456 000 03951 00001 00000 10140					Strong
22/11	456 1 07729 00171 48217 10077					Very strong

RRRRYYYYYS9S9S9S9S9S9S9S9S9S9S9S9S9S9
456 456 456 1 456 456 456 1 456 456 456 1
4444444444
4MMMMMMMMMMMMMMMMMM
07729 00171 48217 55075 86814 01886 28446 53361 73108 67621
86103 34345 57236 89030 96531 06020 16301 20936 10854 94312
61366 62152 38290 84076 58226 33185 59934 75072 92459 05656
25188 24636 37540 17309 10576 67294 39208 26478 28273 18216
78074 90395 97368 92829 10159 88713 91684 18699 24246 59680
87004 65078 50821 74226 98984 96894 30995 43093 96631 27145
75846 34070 67335 78198

53090 22555 57979 54747 12759 60147 06518 45288 76296 62815
13946 88898 81796 52639 12246 78878 12884 86490 54098 34720
00480 43436 03935 30747 59949 95034 44822 80014 84454 02019
80715 54011 11390 19935 01527 82147 28282 87952 50713 41587
15721 81627 34116 09938 19352 62681 34850 02772 04262 07983
78883 72619 05976 65486 14926 30791 46171 22921 42673 42708
77381 50076 61553 48808

96281 07835 72105 66685 15414 79729 46189 64855 62147 77288
67793 93417 66586 47974 52031 92330 12337 95930 87943 06408
16599 90373 20550 37834 59217 80096 41290 88078 09173 93355
89319 20575 41122 52581 81551 38697 27502 69254 32032 61048
98990 35543 68398 31457 81798 10077++++++++++++++++++++
Courtesy PLdn

XPA c continued …..

26/11	456 1 07729 00171 48217 10077		Strong
30/11	456 000 08094 00001 00000 10140	[0720/0740z very weak]	Strong

December 2016

0700z	**7756kHz**	**0720z**	**9056kHz**	**0740z**	**10656kHz**	
03/12	706 000 05461 00001 00000 10140					Very strong
07/12	706 1 08405 00135 37981 66577					Very strong
10/12	706 1 08405 00135 37981 66577					Strong
14/12	706 000 03419 00001 00000 10140					Strong
17/12	706 000 07514 00001 00000 10140					Strong
21/12	706 1 09634 00225 09215 70312					Very strong
24/12	706 1 09634 00225 09215 70312					Very strong
28/12	706 000 08727 00001 00000 10140					Fair
31/12	706 000 05440 00001 00000 10140					Fair

XPA e

This station remains NRH since the last transmission of 27th September, 2016

XPA2 m

Sunday/Tuesday

November 2016

1300z	**18238kHz**	**1320z**	**16238kHz**	**1340z**	**14438kHz**	
01/11	01385 00095 15339 43711					Very strong
06/11	09433 00001 00000 10140					Very strong
08/11	04871 00001 00000 10140					Very strong
13/11	06734 00001 00000 10140					Strong
15/11	04261 00001 00000 10140					Very strong
20/11	05918 00053 25042 62477					Weak
22/11	05918 00053 25042 62477			[1340z only monitored]		Very strong
27/11	06933 00001 00000 10140			[1300z Weak]		Very strong
29/11	07425 00001 00000 10140			[1320/1340z very weak]		Strong

December 2016

1300z	**14538kHz**	**1320z**	**13538kHz**	**1340z**	**12138kHz**	
04/12	05936 00001 00000 10140					Fair
06/12	02004 00001 00000 10140					Very strong
11/12	00333 00089 10288 71262			[1300z Weak]		Very strong
13/12	00333 00089 10288 71262					Strong
18/12	08108 00067 67294 34543					Very strong
20/12	08108 00067 67294 34543			[1300/1320z Weak]		Strong
26/12	06314 00001 00000 10140			[1340z Weak]		Very strong

XPA2 p

Monday/Wednesday

November 2016

0800z	**16073kHz**	**0820z**	**14973kHz**	**0840z**	**14373kHz**	
02/11	07886 00001 00000 10140					Strong
07/11	02654 00001 00000 10140					Fair, noisy
09/11	05545 00001 00000 10140					Strong, noisy
14/11	07947 00001 00000 10140					Very strong
16/11	02541 00001 00000 10140					Very strong
21/11	02975 00223 92639 70302					Very strong
23/11	02975 00223 92639 70302					Very strong
28/11	05725 00001 00000 10140			[0840z Weak]		Very strong
30/11	01171 00001 00000 10140					Very strong

December 2016

0800z	**15861kHz**	**0820z**	**14761kHz**	**0840z**	**13561kHz**	
07/12	06316 00001 00000 10140					Very strong
09/12	03143 00001 00000 10140					Very strong
14/12	03702 00001 00000 10140					Strong
19/12	03143 00001 00000 10140					0800zVery strong, 0820z Fair, 0840zQRM5
21/12	06617 00001 00000 10140			[0840zQRM5]		Fair
28/12	Poor conditions, unworkable.					

XPA2 r

Friday/Saturday

November 2016

1400z	**17462kHz**	**1420z**	**16114kHz**	**1440z**	**14828kHz**	
04/11	00188 00083 05464 37167					Very strong
05/11	00188 00083 05464 37167					Very strong
11/11	04667 00083 36909 35551					Fair
12/11	04667 00083 36909 35551					Very strong
18/11	03359 00001 00000 10140					Weak
19/11	05403 00079 24142 58437					Fair
26/11	05914 00001 00000 10140					Weak
27/11	02442 00001 00000 10140			[1420/1440z Very weak, u/w]		Very strong

December 2016

1400z	**15967kHz**	**1420z**	**13884kHz**	**1440z**	**12217kHz**	
02/12	08014 00081 02553 42554			[1420z Weak]		Strong
03/12	08014 00081 02553 42554			[1420/1440z NRH]		1400z Very strong
09/12	02450 00001 00000 10140					Very strong
10/12	04977 00001 00000 10140					Very strong
16/12	03564 00001 00000 10140					Very strong
17/12	04078 00001 00000 10140					Very strong

XPA2 r continued:

23/12	01302 00051 56481 65421	Very strong
24/12	01302 00051 56481 65421	Very strong
30/12	09329 00123 13562 06505	Very strong
31/12	09329 00123 13562 06505	Very strong

XPA2 t

Tuesday/Friday

November 2016

0700z	**14516kHz**	**0720z**	**16017kHz**	**0740z**	**17417kHz**	
01/11	Missed					
04/11	03914 00153 13524 00725					Very strong
08/11	00551 00107 80386 62413					Very strong
11/11	09937 00001 00000 10140					Very strong
15/11	05365 00001 00000 10140					Very strong
18/11	07854 00001 00000 10140					Very strong
22/11	08136 00203 65406 13611					Very strong
25/11	08136 00203 65406 13611					Strong, QSB2
29/11	04806 00143 32194 13663					Very strong

December 2016

0700z	**13393kHz**	**0720z**	**14493kHz**	**0740z**	**16293kHz**	
02/12	05790 00001 00000 10140					Very strong
06/12	02103 00065 72158 00075					Very strong
09/12	02103 00065 72158 00075					Very strong
13/12	09305 00001 00000 10140					Strong
20/12	04878 00115 10324 13500					Very strong
23/12	04878 00115 10324 13500					Very strong
27/12	01884 00001 00000 10140			[0740z Weak]		Fair
30/12	08147 00001 00000 10140			[0720z Strong]		Weak

FSK/M42nn

M42c

Daily Monday – Friday

Far Eastern schedule

0000z	**17471kHz**	**0100z**	**14421kHz**

21/12 Serial #98, Groups 245
33148 26042 27825 45781 24331 18907 40863 75347 92873 39064 52991 13289 … 98245 00000

Monday

Cuban schedule

0025/0125z 12101kHz 0035/0135z 9215kHz

07/11 No reports

14/11 No reports

21/11 No reports

28/11 Not decoded

0025/0125z 10884kHz 0035/0135z 8157kHz

05/12 Not decoded

12/12 Link ID 00117, Date 9th, Serial #54, Groups 204 (11177 00117 79638 09054 02049)
55476 56937 45254 74430 78688 43149 20689 26649 50487 17272 26106 15949 … 54202 00000

19/12 Link ID 00117, Date 16th, Serial #55, Groups 207 (11177 00117 17259 16055 02079)
81535 11401 18578 51609 12490 14432 51326 06968 08675 44605 53915 04967 … 55205 00000

26/12 No reports

No changes.

First Tuesday (repeats Friday)

1940z 8172kHz 1950z 6791kHz 2000z 4546kHz

01/11 Null message

1940z 7684kHz 1950z 5326kHz 2000z 4029kHz

06/12 NRH

This schedule moved back to 1st Wednesday in December, and apparently sent a message, which unfortunately I missed.

Friday

Cuban schedule

2230/2330z 20741kHz 2230/2340z 18702kHz

04/11 Link ID 00116, Date 4th, Serial #49, Groups 136 (11177 00116 76319 04049 01369)
15547 65693 74525 47443 07868 84314 92068 92664 95048 71727 22610 61594 … 49134 00000

11/11 Link ID 00116, Date 11th, Serial #50, Groups 194 (11177 00116 81529 11050 01949)
93636 04496 64198 04905 50160 28849 83449 17576 24255 05297 76812 03287 … 50192 00000

18/11 Link ID 00116, Date 18th, Serial #51, Groups 184 (11177 00116 39518 18051 01849)
29776 81203 28746 38049 79751 37809 52132 73323 86160 91915 09496 82465 … 51182 00000

25/11 No reports

2230/2330z 18169kHz 2240/2340z 15765kHz

02/12 Link ID 00116, Date 2nd, Serial #53, Groups 198 (11177 00116 27456 02053 01989)
69726 40754 01280 15207 16495 35110 07081 64149 86225 23___ 01506 97921 … 53196 00000

09/12 No reports

16/12 No reports

23/12 Link ID 00116, Date 23rd, Serial #56, Groups 237 (11177 00116 50241 23056 02379)
89783 97255 24806 26566 34171 30829 01081 67882 13893 54122 77914 04787 … 56235 00000

30/12 Link ID 00116, Date 30th, Serial #57, Groups 176 (11177 00116 91528 30057 01769)
10585 50738 23077 76911 90898 80370 69217 79762 71588 45656 84883 87524 … 57174 00000

No changes.

Saturday

1300z	**20374kHz**	**1310z**	**18351kHz**	**1320z**	**16249kHz**
05/11	Null message				
12/11	Null message				
19/11	Null message				
26/11	Null message				
1300z	**20562kHz**	**1310z**	**18194kHz**	**1320z**	**16107kHz**
03/12	Null message				
10/12	Null message				
17/12	Null message				
24/12	Null message				
31/12	Null message				

No changes.

Saturday

1810z	**9247kHz**	**1820z**	**7762kHz**	**1830z**	**5216kHz**
05/11	Null message				
12/11	Null message				
19/11	Null message				
26/11	Null message				
1810z	**8131kHz**	**1820z**	**6824kHz**	**1830z**	**4471kHz**
03/12	Null message				
10/12	Null message				
17/12	Null message				
24/12	Null message				
31/12	Null message				

No changes.

M42d

Daily Monday – Friday

Far Eastern schedule

0200z	**16321kHz**	**0300z**	**14881kHz**
21/12	Link ID 41018, Date 21st, Serial #40, Groups 225 (1be9 a03a 8000 d464 f5e8) a73a a197 8d1a 6d7e 0cba 2621 f9c8 7ab2 31e9 8740 a6ea ca4a … 09c2 68a0		

Sunday (repeats Monday, and also Tuesday 1650/1700/1710z)

1530z	**12224kHz**	**1540z**	**10173kHz**	**1550z**	**8137kHz**
06/11	Link ID 20501, Null message				
13/11	Link ID 20501, Null message				
20/11	Link ID 20501, Null message				
27/11 & 28/11	Link ID 20501, Date 21st, Serial #59, Groups 158 (1be9 5015 99c4 d293 acf5) 1a0b 4368 6f2e 385e f6b7 54a1 dedb cc34 9248 e80a c7e1 77e3 … 8cca a000				

1530z 11084kHz 1540z 9346kHz 1550z 7829kHz (until 18/12 inclusive)

04/12 Link ID 20501, Null message

11/12 Link ID 20501, Null message

18/12 Link ID 20501, Null message

25/12 NRH

Th e message sent on 27/11 was, very surprisingly, a repeat of a message from Tuesday 22/11 1650z, not the other way around. For the 25/12 broadcast it adopted new frequencies, but I didn't have a chance to look that day. Could this be related to the Thursday 1330z double message three days earlier, given the recent history of traffic on these two links?

First/Third Monday (repeats Wednesday 2200/2210/2220z)

0500z 7658kHz 0510z 6778kHz 0520z 5361kHz

07/11 Link ID 45079, Null message

21/11 Link ID 45079, Null message

0500z 6788kHz 0510z 5384kHz 0520z 4454kHz

05/12 Link ID 45079, Null message

19/12 Link ID 45079, Null message

The traffic levels here have fallen again after the fairly busy previous two months.

Tuesday

1400z 12158kHz 1410z 11428kHz 1420z 9439kHz (until 22/11 inclusive)
1500z 12133kHz 1510z 10274kHz 1520z 8148kHz

01/11 Link ID 16404, Date 31st, Serial #13, Groups 139 (1be9 4014 7cb1 3620 98e5)
fc5a 4ac0 4edb 3647 56b3 c961 7ef3 a768 9bf7 e3a2 26aa d708 … 7f14 837d

08/11 Link ID 16404, Date 7th, Serial #14, Groups 139 (1be9 4014 7a1c 4623 98e2)
bdaa ad38 9f5e 7979 8c3f 1762 10bd 7ca7 8773 c44c 68dc c9b8 … bf50 8d7d

15/11 Link ID 16405, Date 14th, Serial #15, Groups 139 (1be9 4015 d2d8 8c25 98e8)
afd8 8300 136c 04cc 8cdc 5de5 b9b2 8c0e 34d9 d495 7659 c25f … 8e88 977d

22/11 Link ID 16404, Date 21st, Serial #17, Groups 139 (1be9 4014 68cc d22a 98f8)
7834 38e5 b6c8 260c 5ea4 d4db b44d ac17 a7c3 35ae 1b87 ecf5 … 0a90 ab7d

29/11 Link ID 16405, Null message

06/12 NRH

13/12 NRH

20/12 NRH

27/12 Link ID 16404, Date 26th, Serial #18, Groups 273 (1be9 4014 8001 042d 29f3)
c684 20b2 7a26 25fb 16ce 039d 4e35 84e8 a990 2fd0 7372 2335 … 002d b600

This strange link 16404/16405 double has resurfaced again. I don't know if it's related to the schedule on second and fourth Wednesday at 0900z, apart from the link ID.

On this Tuesday sending, the group count has stayed mostly fixed at 139. The message format is also slightly different – the first two digits of the last group contain the serial number multiplied by 10 and with +1 or +2 added to it, while the last two digits contain a form of encoded group count. This makes it more of a direct copy of M42c.

Tuesday (repeats Wednesday)

1650z	**11441kHz**	**1700z**	**9069kHz**	**1710z**	**7648kHz**
01/11	Link ID 20501, Null message				
08/11	Link ID 20501, Null message				
15/11	Link ID 20501, Null message				
22/11 & 23/11	Link ID 20501, Date 21st, Serial #63, Groups 158 (1be9 5015 99c4 d29d acf5) 1a0b 4368 6f2e 385e f6b7 54a1 dedb cc34 9248 e80a c7e1 77e3 … 8cca a000				
29/11	Link ID 20501, Null message				
1650z	**9228kHz**	**1700z**	**7845kHz**	**1710z**	**5269kHz (until 20/12 inclusive)**
1650z	**9313kHz**	**1700z**	**7928kHz**	**1710z**	**6783kHz**
06/12	Link ID 20501, Null message				
13/12	Link ID 20501, Null message				
20/12	Link ID 20501, Null message				
27/12	Link ID 20501, Null message				

The message sent on 22/11 was not a repeat of the previous Sunday 1530z; it was repeated on the following Sunday afterwards. Unexpected frequency change at the end of December.

Tuesday (repeats Friday 0600/0610/0620z)

2300z	**8173kHz**	**2310z**	**6836kHz**	**2320z**	**5269kHz**
01/11	Link ID 40988, Null message				
08/11	Link ID 40988, Null message				
15/11	Link ID 40988, Null message				
22/11	Link ID 40988, Null message				
29/11	Link ID 40988, Null message				
2300z	**8048kHz**	**2310z**	**6789kHz**	**2320z**	**4038kHz**
06/12	Link ID 40988, Null message				
13/12	Link ID 40988, Null message				
20/12	Link ID 40988, Null message				
27/12	Link ID 40988, Null message				

No changes.

Wednesday (repeats Thursday)

Far Eastern schedule

0600z	**20082kHz**	**0610z**	**18207kHz**	**0620z**	**16141kHz**
02/11 & 03/11	Link ID 32816, Date 29th, Serial #91, Groups ~427				
09/11 & 10/11	Link ID 32816, Date 5th, Serial #92, Groups ? Link ID 3281?, Date 5th, Serial #93, Groups ?				
16/11	Link ID 3281?, Null message				
23/11 & 24/11	Link ID 32816, Date 19th, Serial #94, Groups 309 (1be9 8030 8f04 beeb 45e4) 4542 3cd9 b514 bba6 e143 cd17 eee9 b129 7341 6cf9 a003 a2ae … 0ebc 6000				
30/11 & 01/12	Link ID 32817, Date 26th, Serial #95, Groups 248 (1be9 8031 0da1 04ed 0ee9) 722b 21a3 7f43 af49 05ef 5a95 93e3 a0bb f7c3 dcc9 4935 cb63 … 1855 aa00				
	Link ID 32816, Date 26th, Serial #96, Groups 185 (1be9 8030 53f9 04f0 cae8)				
	4ad8 e7e5 85dd f897 e787 2dcd b1a2 c2b8 b951 2490 b96a 82b1 … 5494 9b00				

0600z	**20157kHz**	**0610z**	**18241kHz**	**0620z**	**16204kHz**
07/12 & 08/12	Link ID 32817, Date 3rd, Serial #97, Groups 340 (1be9 8031 1684 1ef2 72e6) 9384 b067 5eda cf47 4bf5 b94d 0879 a2e7 bcd0 3204 69ed dde3 … 13bc daa0				
14/12 & 15/12	Link ID 32817, Date 10th, Serial #98, Groups 281 (1be9 8031 19f4 64f5 2ef0) be70 8c65 4e__ d066 _33_ 01ed 3__8 f3c4 f0__ ____ ____ ____ … ____ ____				
	Link ID 32817, Date 10th, Serial #99, Groups 270 (1be9 8031 d83c 64f7 26e9) b4b5 0673 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ … 3efe 0e60				
21/12	No reports				
28/12	No reports				

No changes.

Wednesday (repeats Thursday)

0800z	**20314kHz**	**0810z**	**18183kHz**	**0820z**	**16154kHz**
02/11	Link ID 45075, Null message				
09/11	Link ID 45075, Null message				
16/11	Link ID 45075, Null message				
23/11	Link ID 45075, Null message				[0800z TX made using erroneous 200 Hz shift]
30/11	Link ID 45075, Null message				
0800z	**20838kHz**	**0810z**	**18294kHz**	**0820z**	**16313kHz**
07/12	Link ID 45075, Null message				
14/12	Link ID 45075, Null message				
21/12	Link ID 45075, Null message				
28/12	Link ID 45075, Null message				

This schedule has stopped sending messages again.

Second/Fourth Wednesday (repeats Thursday)

0900z	**20476kHz**	**0910z**	**18915kHz**	**0920z**	**16328kHz**
09/11 & 10/11 & 23/11 & 24/11	Link ID 16405, Date 8th, Serial #6, Groups 194 (1be9 4015 b998 500f d4ea) 45a0 4b92 738c fd42 da20 25a2 b86a a59f e745 2252 9592 b52b … 1cdd 29b4				
0900z	**20875kHz**	**0910z**	**18747kHz**	**0920z**	**16316kHz**
14/12 & 15/12 & 28/12 & 29/12	Link ID 16405, Date 13th, Serial #7, Groups 148 (1be9 4015 1710 8211 a2e5) 571a 4eb3 738c fcf0 63e0 bbbb b86a 994a 6750 3b52 9593 6ee7 … a93f 0479				

No changes.

Wednesday (repeats Thursday)

1000z	**20996kHz**	**1010z**	**19163kHz**	**1020z**	**17428kHz**
02/11	Link ID 49202, Null message				
09/11	Link ID 49202, Null message				
16/11	Link ID 49202, Null message				
23/11	Link ID 49202, Null message				
30/11	Link ID 49202, Null message				

1000z	**20983kHz**	**1010z**	**19139kHz**	**1020z**	**17463kHz**
07/12	Link ID 49202, Null message				
14/12	Link ID 49202, Null message				
21/12	Link ID 49202, Null message				
28/12	Link ID 49202, Null message				

No changes.

Second/Fourth Wednesday (repeats Thursday)

1015z	**20349kHz**	**1025z**	**18573kHz**	**1035z**	**16245kHz**
09/11	Link ID 20492, Null message				
23/11	Link ID 20492, Null message				
1015z	**18046kHz**	**1025z**	**16326kHz**	**1035z**	**14944kHz**
14/12	Link ID 20492, Null message				
28/12	Link ID 20492, Null message				

No changes.

First/Third Wednesday

1230z	**18191kHz**	**1240z**	**15963kHz**	**1250z**	**13436kHz**
02/11	Link ID 53277, Null message				
16/11	Link ID 53277, Null message				
1230z	**17478kHz**	**1240z**	**15838kHz**	**1250z**	**13387kHz**
07/12	Link ID 53277, Null message				
21/12	Link ID 53277, Null message				

No changes.

Thursday (repeats Friday)

1330z	**13384kHz**	**1340z**	**11428kHz**	**1350z**	**10376kHz**
03/11	Link ID 49237, Null message				
10/11	Link ID 49237, Null message				
17/11	Link ID 49237, Null message				
24/11	Link ID 49237, Null message				
1330z	**12169kHz**	**1340z**	**10364kHz**	**1350z**	**8168kHz**
01/12	Link ID 49237, Null message				
08/12	Link ID 49237, Null message				
15/12	Link ID 49237, Null message				
22/12 & 23/12	Link ID 49237, Date 21st, Serial #25, Groups 128 (1be9 c055 01fc d23e 8ce8) 4091 d7c7 2ab3 0775 cdb9 03e1 6483 b05f a415 b68f af79 6263 … 97c5 48a0 Link ID 49237, Date 21st, Serial #26, Groups 276 (1be9 c055 de74 d241 34ed) 46d1 d7c7 2ab3 07c5 0db9 03e1 6483 bcef a415 b68f af7a fe44 … 5a70 0f00				
29/12	Link ID 49237, Null message				

On 22/12, this schedule delivered 2 messages. Not only 2 messages, but both written on the same day, and they weren't repeated on Link 20501 the following Sunday either.

Second/Fourth Saturday (repeats Sunday)

0900z 15623kHz 0910z 13469kHz 0920z 11569kHz

12/11 & 13/11 Link ID 45115, Date 11th, Serial #43, Groups 167 (1be9 b03b 8b24 6e6b b6f5) 6cbe fca3 ab72 cd8d db8e eda1 5e4c adbb 2da5 2b1e 4e1b ccc3 … e87c b400

26/11 & 27/11 Link ID 45114, Date 25th, Serial #44, Groups 160 (1be9 b03a 57b4 fa6e aee8) a0d6 c0a3 ab72 ccc0 f3bf 79a1 5e4c 8e5d edb9 2b1e 4e1b 0aa8 … 6684 c800

0900z 13938kHz 0910z 12136kHz 0920z 10314kHz

10/12 & 11/12 Link ID 45114, Date 9th, Serial #45, Groups 84 (1be9 b03a 5d38 5a70 5ceb) 757e f524 ab72 cced 5b8e 75ba 5e4c 94c2 2e33 441e 4e1a 4a71 … 3ca1 5a00

24/12 & 25/12 Link ID 45114, Date 23rd, Serial #46, Groups 134 (1be9 b03a 0c9c e673 92e8) e3f0 c5a4 ab72 ccc4 dd1f 65ba 5e4c 8ef5 6db7 441e 4e1a 67df … 6099 9900

No changes.

Second/Fourth Saturday (repeats Sunday)

1000z 20868kHz 1010z 18259kHz 1020z 16113kHz

12/11 & 13/11 & 26/11 & 27/11 Link ID 45057, Date 11th, Serial #89, Groups 125 (1be9 b001 e6ac 6ede 89e4) 1245 74c7 df2e 2a82 8678 238a b412 53f6 2164 5895 cba7 9e82 … 3d14 bd21

1000z 20951kHz 1010z 18643kHz 1020z 16314kHz

10/12 & 11/12 & 24/12 & 25/12 Link ID 45057, Date 9th, Serial #90, Groups 231 (1be9 b001 3c5c 5ae1 fce1) ee83 8635 3c99 a278 8739 a8df ff47 02dd f7d9 2016 35cf ac5c … b3c0 867d

No changes.

Saturday (repeats Sunday)

1100z 16236kHz 1110z 14419kHz 1120z 12128kHz

05/11 & 06/11 Link ID 36882, Date 3rd, Serial #71, Groups 139 (1be9 9012 8580 1eb1 98f0) 379f abc8 e703 506f cd13 584f 33a8 68a0 0106 aecb 6391 e169 … 4686 c77d

12/11 & 13/11 Link ID 36882, Date 11th, Serial #72, Groups 243 (1be9 9012 ebbc 6eb4 08f2) 3477 b708 e983 5067 a543 a84f 97a8 6768 4114 aed1 a391 9025 … 9388 8000

19/11 & 20/11 Link ID 36882, Date 18th, Serial #73, Groups 71 (1be9 9012 cf6c b4b6 4eec) f5bd b528 e983 5013 eb83 8a4f 97a8 5a4b c111 aed1 a390 5dd5 … a5c1 44c0

26/11 & 27/11 Link ID 36882, Date 25th, Serial #74, Groups 191 (1be9 9012 7b6c fab9 d0ef) f15f b988 e983 5043 8d10 4c4f 97a8 6250 0128 aed1 a393 9cdd … 7136 2580

1100z 15623kHz 1110z 13854kHz 1120z 11586kHz

03/12 & 04/12 Link ID 36882, Date 2nd, Serial #75, Groups 331 (1be9 9012 8940 14bb 68ec) 6617 b169 e983 500b 8543 4e68 97a8 5983 4105 c7d1 a390 847a … c9d8 f200

10/12 & 11/12 Link ID 36882, Date 9th, Serial #76, Groups 305 (1be9 9012 cf6c 5abe 4ce9) 4597 af89 e983 5168 c543 3068 97a8 57e0 4102 c7d1a391 31f8 … e8af b4b0

17/12 & 18/12 Link ID 36882, Date 16th, Serial #77, Groups 239 (1be9 9012 9940 a0c0 04e8) a1bd b3e9 e983 5186 eb83 da68 97a8 5658 c119 c7d1a393 62e2 … e7b5 7200

24/12 & 25/12 Link ID 36882, Date 23rd, Serial #78, Groups 198 (1be9 9012 62ec e6c3 d8f2) 6f79 b849 e983 506b a6d0 3868 97a8 689b 0126 c7d1 a392 4479 … 0f14 8d60

31/12 Link ID 36882, Null message

The frequencies for this schedule have completely changed in November, for the first time since August 2015. No changes traffic-wise, although it's good to see some larger group counts again.

Saturday (repeats Sunday)

1500z	**22871kHz**	**1510z**	**20629kHz**	**1520z**	**18553kHz**
05/11	Link ID 32821, Null message				
12/11	Link ID 32821, Null message				
19/11	Link ID 32821, Null message				
26/11	Link ID 32821, Null message				
1500z	**20648kHz**	**1510z**	**18483kHz**	**1520z**	**16196kHz**
03/12	Link ID 32821, Null message				
10/12	Link ID 32821, Null message				
17/12	Link ID 32821, Null message				
24/12	Link ID 32821, Null message				
31/12	Link ID 32821, Null message				

No changes.

Logs sent by: Ary, Danix

HYBRIDS

HM01

HM01 has continued with all the usual schedules with not much out of the ordinary to report. The callups ceased to increment between 23/12 and 28/12 (Christmas holiday?) Radio Havana Cuba or some other broadcast station was heard on several occasions until the transmission eventually switched to the expected HM01. On the day of Fidel Castro's death transmissions continued as normal and there was no unexpected change in callups/messages associated with this event.

On 4/11 the last digits of the callups jumped ahead 2 instead of the expected 1. On 10/11, possibly on the 9th, the callup 6416 remained the same but the last digit reverted to 1 and the transmitted file changed. Whether this was another message for the same recipient or just a coincidence is of course not known.

Eight messages with F1* extensions were transmitted over the past two months, as always file names beginning with 36 have the F1G extension and those beginning 50 have the F1C extension. Files transmitted were 50236416.F1C, 50046133.F1C, 36432504.F1G, 50637183.F1C, 36647420.F1G, 50304226.F1C, 36867242.F1G, 50146714.F1C,

Logs

HM01 11435kHz 1600z 28/10 [86551 14413 70133 41842 32105 64113] FRI
HM01 11435kHz 1600z 29/10 [86552 14414 70134 41843 32106 64114] SAT
HM01 11435kHz 1600z 30/10 [86553 14415 70135 41844 32107 64115] SUN
HM01 11435kHz 1600z 31/10 [86554 14416 70136 41845 27161 64116] New callup position 5, 27161 = 83562716.TXT. MON
HM01 11435kHz 1600z 1/11 [86555 14417 70137 41846 27161 64117] TUE
HM01 11435kHz 1600z 2/11 [86556 14418 64161 41847 27162 64118] New callup position 3, 64161 = 50236416.F1C. WED
HM01 11435kHz 1600z 3/11 [86557 61331 64161 41848 27163 37281] New callups positions 2 and 6, 61331 = 50046133.F1C, 37281 = 30373728.TXT. THU
HM01 11435kHz 1600z 4/11 [55331 61332 64163 52771 27165 37282] They seem to have skipped to tomorrow's callups. New callups positions 1 and 4, 55331 = 68645533.TXT, 52771 = 41505277.TXT. FRI
HM01 11435kHz 1600z 5/11 [55331 61333 64164 52772 27166 37283] SAT
HM01 11435kHz 1600z 6/11 [55332 61334 64165 52773 27167 37284] SUN
HM01 11435kHz 1600z 7/11 [55333 61335 64166 52774 25041 37285] A few false starts this morning. New callup position 5, 25041 = 36432504.F1G. MON
HM01 11435kHz 1600z 8/11 [55334 61336 64167 52775 25041 37286] TUE
HM01 11435kHz 1600z 10/11[55336 61338 64161 52777 25043 30511] New callup position 6, 30511 = 10203051.TXT, Callup 3 has reverted to last digit 1 compared to 7 on Tuesday. The transmitted file has changed however. THU
HM01 11435kHz 1600z 11/11[55337 57371 64162 52778 25044 30511] New callup position 2, 57371 = 22315737.TXT. FRI
HM01 11435kHz 1600z 12/11[55338 57371 64163 71831 25045 30512] New callup position 4, 71831 = 50637183.F1C. SAT
HM01 11435kHz 1600z 13/11[71571 57372 64164 71831 25046 30513] New callup position 1, 71571 = 22857157.TXT. SUN
HM01 11435kHz 1600z 14/11[71571 57373 64165 71832 25047 30514] MON
HM01 11435kHz 1600z 15/11[71572 57374 64166 71833 25048 30515] TUE
HM01 11435kHz 1600z 16/11[71573 57375 64167 71834 23551 30516] New callup position 5, 23551 = 66852355.TXT. WED
HM01 11435kHz 1600z 17/11[71574 57376 64168 71835 23551 30517] THU
HM01 11435kHz 1600z 20/11[71577 55811 74202 71838 23554 63711] New callups since Thursday in positions 2, 3 and 6. 55811 = 73475581.TXT, 72402 = 36647420.F1G, 63711 = 10166371.TXT. SUN
HM01 11435kHz 1600z 21/11[71578 55811 74203 88471 23555 63711] Up late in progress, new callup position 4, 88471 = 74828847.TXT. MON
HM01 11435kHz 1600z 22/11[12521 55812 74204 88471 23556 63712] TUE
HM01 11435kHz 1600z 23/11[12521 55813 74205 88472 23557 63713] WED
HM01 11435kHz 1600z 24/11[12522 55814 74206 88473 23558 63714] THU
HM01 11435kHz 1600z 25/11[12523 55815 74207 88474 42261 63715] New callup position 5, 42261 = 50304226.F1C FRI
HM01 11435kHz 1600z 26/11[12524 55816 74208 88475 42261 63716] SAT
HM01 11435kHz 1600z 27/11[12525 55817 65461 88476 42262 63717] New callup position 3, 65461 = 10456546.TXT. SUN
HM01 11435kHz 1600z 28/11[12526 32471 65461 88477 42263 63718] New callup position 2, 32471 = 10833247.TXT. MON
HM01 11435kHz 1600z 29/11[12527 32471 65462 88478 42264 63719] TUE

HM01 11435kHz 1600z 30/11[12528 32472 65463 72671 42265 42031] New callups positions 4 and 6,72671 = 15887267.TXT. 42031 = 74314203.TXT. WED
HM01 11435kHz 1600z 1/12 [56411 32473 65464 72671 42266 42031] New callup position 1, 56411 = 64635641.TXT. THU
HM01 11435kHz 1600z 2/12 [56411 32474 65465 72672 42267 42032] FRI
HM01 11435kHz 1600z 3/12 [56412 32475 65466 72673 47001 42033] New callup position 5, 47001 = 55274700.TXT. SAT
HM01 11435kHz 1600z 4/12 [56413 32476 65467 72674 47001 42034] SUN
HM01 11435kHz 1600z 5/12 [56414 32477 65468 72675 47002 42035] MON
HM01 11435kHz 1600z 6/12 Present but too weak to copy. TUE
HM01 11435kHz 1600z 7/12 [56416 72421 86751 72677 47004 42037] New callups positions 2 and 3, 72421 = 36867242.F1G, 86751 = 68818675.TXT. TX started with a Spanish broadcast station. WED
HM01 11435kHz 1600z 8/12 [56417 72422 86752 72678 47005 42038] THU
HM01 11435kHz 1600z 9/12 [56418 72423 86753 03531 47006 42039] New callup position 4, 04531 = FRI
HM01 11635kHz 1800z 10/12 [67511 72424 86754 03531 47007 08631] New callups positions 1 and 6, 67511 = 77126751.TXT, 08631 = 50770863.TXT. SAT
HM01 11435kHz 1600z 11/12 [67511 72425 86755 03532 47008 08631] SUN
HM01 11435kHz 1600z 12/12 [67512 72426 86756 03533 28831 08632] New callup position 5, 28831 = 26122883.TXT. MON
HM01 11435kHz 1600z 13/12 [67513 72427 86757 03534 28831 08633] TUE
HM01 11435kHz 1600z 14/12 [67514 72428 86758 03535 28832 08634] WED
HM01 11435kHz 1600z 15/12 [67515 67141 86759 03536 28833 08635] New callup position 2, 67141 = 50146714.F1C. THU
HM01 11435kHz 1600z 16/12 [67516 67141 34251 03537 28834 08636] New callup position 3, 34251 = 05803425.TXT. FRI
HM01 11435kHz 1600z 17/12 [67517 67142 34251 66351 28835 08637] New callup position 4, 66351 = 57836635.TXT. SAT
HM01 11435kHz 1600z 20/12 [33612 67145 34254 66353 28838 02442] New callups since 17/12, position 1, 36612 = 13283361.TXT, position 6, 02442 = 51370244.TXT. TUE
HM01 11435kHz 1600z 21/12 [33612 67145 34254 66353 28838 02442] Same callups as yesterday. WED
HM01 11435kHz 1600z 22/12 Too weak to copy. THU
HM01 11435kHz 1600z 23/12 [33612 67145 34254 66353 28838 02442] Same callups as yesterday. FRI
HM01 11435kHz 1600z 24/12 [33612 67145 34254 66353 28838 02442] Same callups as yesterday. SAT
HM01 11435kHz 1600z 25/12 [33612 67145 34254 66353 28838 02442] Same callups as yesterday. SUN
HM01 11435kHz 1600z 26/12 [33612 67145 34254 66353 28838 02442] Same callups as yesterday. MON
HM01 11435kHz 1600z 28/12 [33612 67145 34254 66353 28838 02442] Same callups as Monday. WED
HM01 11435kHz 1600z 29/12 [33613 67146 34255 66354 14551 02443] New callup position 5, 14551 = 08631455.TXT. THU
HM01 11435kHz 1600z 30/12 [33614 67147 34256 66355 14551 02444] FRI
HM01 11435kHz 1600z 31/12 [33615 67148 34257 66356 14552 02445] Started with a Spanish broadcast station before switching to HM01. SAT

Others logs:

9065kHz0757z	04/12[56412 32475 65466 72673 47001 42033]	Weak, noisy	PLdn	SUN
9330kHz0730z	04/12[56412 32475 65466 72673 47001 42033]	Strong, noisy	PLdn	SUN
11635kHz1830z	08/12 voice > RDFT encrypted file (decoded with DIGTRX)		PY4ZBZ	THU

56417 > 64635641.TXT 475 bytes
72422 > 36867242.F1G 641 bytes
86752 > 68818675.TXT 791 bytes
72678 > 15887267.TXT 895 bytes
47005 > 55274700.TXT 344 bytes
42038 > 74314203.TXT 561 bytes
Courtesy Roland

HM02 - Believed variant of Russian Family 1. Station under investigation

Transmission times are variable with the carrier often appearing some time before the transmissions start.

New Frequency & Time
It was previously thought that the HM02 transmissions had ceased for the winter period. The last transmission we heard from them was on 29 September 2016. We now have news from Ary, (AB) via the UDXF forum that the transmissions have been found again - on a frequency previously unknown to us.

The newly reported frequency of 4761kHz was heard with an HM02 message on Friday, 30 December 2016, with a start time of 0520z.. This was confirmed by us on Saturday, 31 December where the station was indeed found to be active at 0520z.

There is no time for us to provide any more details at this time, with the newsletter deadline being closed in the next day or two, but we will be looking at this over the next two months & will have more details in the next newsletter. Our thanks to Ary & UDXF for the update & details.

Schedule:	**Latest:**	**Daily:**	**4761kHz**	**0520z**	**Heard on 30 / 31 December 2016 & Continuing into January 2017**
		Daily:	6261kHz	0540 - 0600z (Variable)	Up to March28
				0440 - 0500z (Variable)	From 29 March change due to Daylight Saving adjustment.
		Daily:	7351kHz	0440 - 0500z (Variable)	From 14 April - 28 September
				0410 - 0430z (Variable)	More recently has settled around an 0420z start time

X06 Mazeilka
From Jochen

Date	Day	UTC	Freq	Scale	Monitor	Comments
20161102	Wed	1148	16115	215346	MCO/US	G25
20161107	Mon	1129-1137	13547	625413	Schorschi	Monitored in progress, S9, R
20161108	Tue	1100-1102	14970	216354	EdwardSmith	I. p., G388
20161108	Tue	1246	18238	1--6--	Schorschi	X06b with S9 before XPA2
20161110	Thu	1425	11411	164532	Antonio/IT	G106
20161115	Tue	0940-0946	14358	154263	Schorschi	I. p., S9, G148
20161115	Tue	1154/1157	16238	1--6--	LU5EMM	Weak X06b with QRM before XPA2m
20161115	Tue	1155/1158	18238	1--6--	LU5EMM	Weak X06b before XPA2m
20161116	Wed	0837	9300	6--333	Schorschi	X06b with S9 and unusual scale
20161121	Mon	0835-0845	14377	432516	Ary/NL,tiNG	S9, G341
20161121	Mon	1138	10381	16-1-6	Schorschi	Short X06b with unusual scale
20161122	Tue	1004-1013	16317	612534	Edward	I. p., G234
20161122	Tue	1012-1020	17470	216354	Edward	I. p., G228
20161125	Fri	0937-0938	12177	356412	Edward	I. p., G271
20161125	Fri	1029	14884	1--6--	Schorschi	X06b with S9 before XPA2
20161128	Mon	1309-1315	10452	364152	Schorschi	New freq, QSA4, G73
20161206	Tue	1004-1008	13401	154263	Edward	I. p., S9, G7
20161209	Fri	0936-0938	12177	356412	Edward	I. p., G126
20161210	Sat	0904-0918	18177	164253	Danix	Alert 3 (R) 1
20161210	Sat	0920	13924	164253	Danix	3.2 (end time missing)
20161210	Sat	0937-0939	20334	164253	Danix	3.3
20161211	Sun	1140	15710	261453	Danix	G138 (end time missing)
20161212	Mon	1401-1407	9162	364152	Danix	Alert 2 (G73) 1
20161212	Mon	1418-1420	12177	364152	Antonio	2.2
20161215	Thu	0832-0834	14447	162543	Schorschi	S9, G175
20161216	Fri	1034	13547	625413	Antonio	Shortie (only a few secs), G193
20161220	Tue	1026	10193	164532	Antonio	G150
20161220	Tue	1157-1207	16188	325614	Danix	G400
20161221	Wed	0932	17445	362154	RNGB	I. p., G170 (end time missing)
20161221	Wed	2018/2028	4577	1--6--	Schorschi	X06b before E07a
20161222	Thu	0902-0908	9388	561243	RNGB	S9, G262
20161223	Fri	0932-0945	12177	356412	Danix	G271
20161223	Fri	1038	11493	1--6--	Ary	X06b before E07
20161225	Sun	1825-1832	6866	145632	Kopf	Fair with local QRM, G284
20161226	Mon	1005	12109	431625	Antonio	G221
20161228	Wed	0835-0852	9061	412356	Danix, Antonio	G243*
20161228	Wed	0851-0857	13419	465132	Danix	G246
20161228	Wed	0853-0903	13985	134265	Danix	G90

* With some errors, ending "134265"

Many thanks to all contributors for your logs. I wish you all the best for 2017, when the ENIGMA2000 Newsletter will present its 100th edition in summer; there I will report about the work of E2Kde.

Jochen, the Numbers- and X06 Teamkopf

Many thanks to our contributors:

Ary, Edd, BR, DanAr,Daniel, DoK, E, HH, HJH, JkC, KW, Jochen, Malc, MaleAnon, MNSDB, PoSW, PLdn, RNGB, tING

Apologies to any missed.

Items of Interest in the Media:-
"Gizzajob" news:- from *The Times* newspaper of 2-November, written by Mark Bridge, Technology Correspondent under the headline, "Cyberforce seeks 50 elite brains" which says:-
"Workers with no background in Technology will be recruited to an 'elite' force to defend the nation against cyber attacks through a ten week boot-camp.

As part of a £1.9 billion National Cyber Security Programme announced yesterday, the government will launch the free training course in London next year to turn people looking for a career change into codebreakers.
In a move reminiscent of the War Office's use of a *Telegraph* cryptic crossword to recruit for Bletchley Park in 1942, the government will use psychometric tests to identify 50 brilliant brains. Once selected, they will complete exercises including dealing with a nationwide cyber attack. They will also study the mindset of hackers.
The government said that, if successful, the GCHQ-certified scheme would later be introduced nationwide. According to the SANS Institute, the private company running the boot camp, it will cram two years worth of training into the ten-week schedule.
Students on the course would be tracked by leading cyber security employers and would be ready to secure jobs on completion.
It added that the programme was targeted at 'high-aptitude people' looking to retrain - including soldiers, doctors and nurses.
Matt Hancock, the minister for digital and culture said: 'This new academy will give students the skills the nation needs to fight cyber attacks and help us achieve our ambition of making the UK the safest place to live and do business on line.'
The course is part of a package of measures including the creation of a cyber security research institute and funding for start-ups working on novel security tools. In its National Cyber Security Strategy document, the government identified 'Russian language organised criminal groups' in eastern Europe and state and state sponsored groups as major threats.

Speaking at a technology conference, Philip Hammond, the chancellor, spoke in dramatic terms about the risks if Britain did not prepare adequately to meet the threat from cyber attacks that could potentially bring down the power network. He said: 'We would be left with the impossible choice of turning the other cheek, ignoring the devastating consequences or resorting to a military response.'
David Emm, principal security researcher at the Kaspersky Lab, said: 'The steps taken by the government to educate individuals across different job disciplines are indeed positive. However, as the government has very specific national security needs in mind, they are in the best position to determine what level of training is sufficient.' "

Britain's spooks must try harder; this seems to be the conclusion of a piece in *The Times* of 2-November, written by Sean O'Neill, chief reporter, with the headline, "MI5 has been caught on the back foot once again", which goes on to say:-
Russia, the head of MI5 warned yesterday, is using the 'whole range of state organs and powers to push its foreign policy in increasingly aggressive ways'
A decade after the state-sponsored murder of the anti-Putin dissident Alexander Litvinenko in London, Andrew Parker used the first newspaper interview given by a serving MI5 director-general to deliver this statement of the blindingly obvious.
Perhaps it would have been better if Mr Parker had admitted that the Security Service has been largely barking up the wrong tree for the past ten years and underestimated the threat from Putin's regime.

Over that period, MI5 has put pretty much all of its resources into spying on Islamists. That, of course, was a threat it also discovered late.
Before 2001 little heed was paid to the threat from Osama bin Laden and his al-Qaeda
network. MI5 and their friends in Special Branch engaged in a little gentle spying on the jihadists taking refuge in what French intelligence called Londonistan.
The 9/11 attacks were a wake-up call to MI5, which spent the next five years striking out at 'the crocodiles nearest the boat' as al-Qaeda made repeated attempts to attack Britain.
They soon got the better of the new enemy but continued to alarm the public with gloom-laden talk of extremists at large.
The reality is that most Islamists convicted of plotting terror attacks are halfwits who would struggle to blow up a balloon never mind the Houses of Parliament. One group from Luton wanted to attach a bomb to a remote-controlled car and attack a Territorial Army barracks. Another from Birmingham wanted to make a chemical device out of the contents of thousands of sports injury ice packs (until one of the cell lost all their cash gambling on the currency markets).
Our spooks have talked up the threat from these clowns while appearing to miss the resurgence of Russia, which has been deploying its espionage resources around the world, mounting black propaganda exercises, developing a powerful cyber capability – not to mention invading countries.
One problem is that MI5 is perpetually led by insiders who have spent their entire career
inside the organisation. Such people have a tendency to focus on the future of the institutions they love and engage in a constant quest for more staff, money and powers.
This instinct for self-preservation has left MI5 behind the curve far too often. So perhaps we should be a bit concerned that it recently removed all references to the threat posed by China from its official website.

Lots of negative views with regard to Russia in general and Mr Putin in particular in the British media at the moment, rapidly becoming a general-purpose scapegoat being blamed for every upset for The West's elites from the result of the American Presidential Election - let's hear it for The Donald - to the unexpected outcome of the EU referendum in the UK earlier this year. If we are on the receiving end of a bad winter in the New Year no doubt some way will be found to blame that on old Vladimir. A more positive report on something to do with Russia appeared in our local paper, the *Saffron Walden Reporter* of 1-December with the headline, "Large cargo plane makes Stansted stop-off which says:-
"One of the world's largest planes, an Antonov AN-124, called at Stansted Airport over the weekend.
The huge cargo aircraft flew in to pick up four Wildcat helicopters for onward transport to South Korea.
The aircraft, operated by Volga-Dnepr Airlines, took off again at lunchtime on Saturday November 26 bound for Korea's second largest city, Busan, in Alaska, USA.
The An-124 is often used for carrying oversized and unusual cargo."

Setting aside the suspicion that the *Reporter's* reporter got the name of the Korean city wrong – can't find a "Busan" in the gazetteer section of the Pears Cyclopaedia, but there is a sizeable city called "Pusan" listed, being the main port of South Korea - it seems that
there are still some tasks which require Russian participation.

Point to ponder:- "All modern revolutions have ended in a reinforcement of the State" - Albert Camus, French novelist.

[*Ah! Busen … whilst wasting time in Thailand last August I saw the S Korean film 'Train to Busen..' A Zombie film it was actually very entertaining in the plush cinema at Siam Paradigm, Bangkok - PLdn*].

Spectre 3000's News Articles

<u>Spy chief warns of cyber attack threat from Russia</u>

1st November 2016

http://www.telegraph.co.uk/news/2016/10/31/spy-chief-says-british-intelligence-has-foiled-12-terror-plots-s/

Russia is being "increasingly aggressive" and is willing to use "propaganda, espionage, subversion and cyber-attacks" against countries including the UK, the head of MI5 has said.

In comments made in the first ever newspaper interview given by a serving MI5 boss in the 107 years since the security agency was founded, Andrew Parker said that although the fight against Isil could last a generation, it is vital not to ignore the growing threat from Russia.

Mr Parker's comments came in an interview with the Guardian, which could prompt criticism given his previously criticism of the newspaper for publishing the leak by CIA spy Edward Snowden of thousands of GCHQ files.

In the interview, Mr Parker warned that Russia is "at work" in the UK.

Russia has been a covert threat for decades. What's different these days is that there are more and more methods available
Andrew Parker
He said: "It is using its whole range of state organs and powers to push its foreign policy abroad in increasingly aggressive ways – involving propaganda, espionage, subversion and cyber-attacks.

"Russia is at work across Europe and in the UK today. It is MI5's job to get in the way of that."

Mr Parker said Vladimir Putin's Russia appeared to be defining itself ever more by "opposition to the west", in a policy that could be seen on the ground in Ukraine and Syria, but also increasingly in the threat of cyber attack.

He added: "Russia has been a covert threat for decades. What's different these days is that there are more and more methods available."

Mr Parker also warned about the threat posed by home-grown terrorists.

He said there were about 3,000 "violent Islamic extremists in the UK, mostly British".

In a speech on Monday, the director general of the Security Service warned that Britain's police and intelligence agencies had thwarted 12 UK plots in the past three years.

He said: "Isil is an enduring threat, here to stay, and is at least a generational challenge."

The official threat level for international terrorism in the UK has stood severe for the past two years, meaning an attack is "highly likely".

Mr Parker said MI5 and the intelligence agencies had "good defences", but would not be able to stop every attack.

He said: "We will find and stop most attempts to attack us, but not all."

Mr Parker has previously been critical of the Guardian's decision to publish the leaks by Snowden.

Speaking in 2013 he said that the exposing of intelligence techniques by the newspaper through had given fanatics the ability to evade the spy agencies.

He said: "It causes enormous damage to make public the reach and limits of GCHQ techniques.

"Such information hands the advantage to the terrorists. It is the gift they need to evade us and strike at will.

"Unfashionable as it might seem, that is why we must keep secrets secret, and why not doing so causes such harm."

Addressing those comments in his interview with the Guardian, Mr Parker said: "I spoke out at the time about the damage that was done to the work of British and allied intelligence agencies, about having so much about how we operate revealed to our adversaries.

"Secrecy is not something we need for its own sake."

My father's double life as a British spy

10th November 2016

http://www.bbc.co.uk/news/world-australia-37892878

Many sons have difficulty deciphering their father, but few more than Mark Colvin.
As a boy in the 1950s and 1960s, Colvin knew his dad as a dedicated British diplomat whose job took their family all over the globe.

The pair had a strong bond, but there were unanswered questions. John Colvin worked long hours, shared few details about his job and sometimes kept his family at arm's length.

Colvin and his sister, Zoe, sometimes joked their father might be a spy.

Only years later, in 1976-77, did they learn he worked for MI6.

A double life

John Colvin was posted to Malaysia in 1957 after diplomatic postings in Norway and Austria, where his real mission had been to undermine Soviet imperialism.

With a young family in tow, he began running counter-insurgency troops during the Malayan Emergency.

"When we went to live in Kuala Lumpur, I believed he was straight-out diplomat," Mark Colvin said.

"I went out into the jungle one time with him and reviewed a troupe of jungle fighters - hill tribesmen - but I thought that was part of his normal work. I thought he was a colonial diplomat. I didn't realise that was essentially part of his intelligence work."

Family life ran parallel with espionage as the Cold War continued.

But the stresses of the job eventually contributed to the breakdown of John's marriage to Mark's mother, Anne Manifold. In time it also strained the relationship with his children, who remained in the dark about his work.

Later, during Mark's teenage years, his father left to be British Consul-General in Hanoi, then capital of North Vietnam. The perilous post thousands of miles from his family came amid Operation Rolling Thunder - a massive US-led bombing campaign.

John remarried and was appointed ambassador to Mongolia in 1974, before leaving to take up his final post in America.

"I had a very good relationship with my father but it was sometimes very distant," Mark Colvin remembers.

"He was often not there and a couple of assignments that he took meant being a very long way from civilisation."

Learning the truth

Mark was in his 20s and working as a journalist for the Australian Broadcasting Corporation when his mother first revealed the truth about his father.

Suddenly incongruous details about John, such as warning his children not to travel to the Soviet Union, began to make more sense.

Mark found it was beneficial to keep the secret.

In the paranoid atmosphere of 1970s Australia, the young journalist did not want to be pigeonholed as "the son of an MI6 officer".

But having not seen John for five years, Mark arranged to meet him in New York on the first leg of an around-the-world trip.
It was there, over lamb cutlets and claret at the Knickerbocker Club, that his father finally admitted his work.

What was revealed could not be divulged to anyone. His position as a political counsellor at the British embassy in Washington was a "cover". In reality, he was the head of station for MI6. He had replaced Kim Philby, a double agent who famously defected to the Soviet Union.

In the wake of the Cambridge Spies scandal, John's job was to liaise between British intelligence agencies ("The Friends") and the CIA ("The Cousins").

He ultimately retired from the intelligence service in 1980, and took up a position with Chase Manhattan Bank in Hong Kong. There he reviewed books for British newspapers and wrote a memoir and a series of books on military history. He died in 2003.

Reconciling the past

Mark Colvin, now a veteran journalist and radio presenter for the ABC, began taking a deeper look at his father's life when he sat down to write his new autobiography, Light and Shadow.

By writing the book, he came to a realisation that their lives were bound by the Cold War. As one waged war covertly as a secret agent, the other covered it as a foreign correspondent.

While he knew his father so well, in other ways he didn't know him at all.

"He was an absent father some of the time and a present father a lot of the rest of the time," he said.

"It was a very good relationship but then he would just not be there for unexplained reasons."

China Publicly Displays New Killer Drone for 1st Time

16th November 2016

http://thediplomat.com/2016/11/china-publicly-displays-new-killer-drone-for-1st-time/

Chinese aircraft maker China Aerospace Science and Technology Corporation (CASC) has for the first time publicly displayed a prototype of its latest and most capable attack and reconnaissance unmanned aerial vehicle (UAV). The Caihong 5 (CH-5), or Rainbow 5, was showcased during this year's 11th China International Aviation & Aerospace Exhibition held in Zhuhai from November 1 to 6, IHS Jane's Defense Weekly reported on November 7.

According to a senior CASC official, the medium-altitude long-endurance (MALE) CH-5 has a wingspan of 21 meters and can carry a payload of up to 1,200 kilograms (previous reports indicated 900 kilograms), which is 2.6 times more than previous combat drones of the CASC CH series. In total, the CH-5 can carry up to 16 air-to-ground weapons including Lan Jian 7 (Blue Arrow 7) laser-guided air-to-surface missiles, TG100 laser/INS/GPS-guided bombs, and AR-1/HJ-10 anti-tank missiles. The UAV has a maximum take-off weight of more than three tons.

The drone's operating range is up to 250 kilometers via line-of-sight datalink, or 2,000 kilometers when satellite communication is used, IHS Jane's Defense Weekly reports. However, other reports indicate that the maximum range of the UAV is 6,500 kilometers and will eventually be increased to 10,000 kilometers. The flight time of the CH-5 will also be expanded from the current 60 hours to 120 hours.

IHS Jane's Defense Weekly also reveals that the CH-5 is equipped with a "330 hp heavy-fuel engine (HFE) that provides it with an operating endurance of up to 60 hours with high reliability, although this can be substituted with a 300 hp gasoline engine that offers up to 39 hours of endurance… the HFE option enables the CH-5 to achieve a loiter speed of 180-220 km/h and a maximum speed in excess of 300 km/h, with a service ceiling of 30,000 ft (7,000 m)."

Furthermore, the CASC official confirmed that the drone will be able to operate autonomously using pre-programmed waypoint navigation. According to the chief designer of the CH series at the China Academy of Aerospace Aerodynamics, Shi Wen, the CH-5 is capable of linking up with other combat drones to conduct joint missions.

"Another advantage is that the CH-5 is capable of making a joint strike together with its predecessors, the CH-3 and CH-4, because they can share the same data link and control system. Therefore, it is very easy for current users of the CH-3 and CH-4 to introduce and integrate the CH-5 into their drone network," Shi said.

CASC intends to export the CH-5, including licensing the technology to manufacture the UAV in other countries. "Several foreign nations have expressed intentions to purchase the CH-5, and we are in talks with them," Shi said. A number of other countries have purchased drones of the CH series in the past, including Egypt and Iraq (See: "Revealed: Chinese Killer Drones in Iraq").

As I reported previously (See: "China Unveils its Largest Killer Drone to Date"), the CH-5 conducted its maiden flight at an undisclosed airfield in Gansu province, China in August 2015. The CH-5's maiden flight latest for about 20 minutes. It is unclear whether the drone is already operational and in service with the People's Liberation Army or not.

The CH-5 is reportedly equipped with cutting edge technologies including a wall-penetrating radar system capable of identifying targets behind walls and within a building. 'Terrorists have their hideouts. They can hide in a bush or in a house. That requires us to go through walls and identify the objects inside,'" explained the drone's chief designer, Ou Zhongming, in August 2015.

While CASC claims that its drone is superior to the United States' MQ-9 Reaper UAV — the CH-5 "can perform whatever operations the MQ-9 Reaper can, and is even better than the U.S. vehicle, when it comes to flight duration and operational efficiency," according to Shi — it is generally assumed that Chinese combat drones lag behind their Western counterparts in terms of detection capabilities and endurance.

Beware of friendly strangers: Lithuania warns citizens about Russian spies

30th November 2016

http://uk.businessinsider.com/beware-of-friendly-strangers-lithuania-warns-citizens-about-russian-spies-2016-11

A single mother takes a kindly man into her confidence. A student is plied with beer by a smiling stranger. Beguiling scenes. But Lithuanians are being urged in TV adverts to be wary of the kindness of strangers and call a new 'spyline' to check if they aren't, perhaps, being lured into espionage by foreign agents.

By foreign agents, Lithuania means the Kremlin. Ties have always been tense with former imperial master Moscow. But since the annexation of Crimea, Russia is seen in Vilnius as a threat to Lithuania and the other Baltic states of Estonia and Latvia.

"People don't even think that information is being squeezed out of them until it's too late," Darius Jauniskis, the 48-year-old head of Lithuania's State Security Department, told Reuters.

"So to prevent this, we are going public and we are explaining all this."

The Russian Foreign Ministry and the FSB security service did not immediately respond to written requests for comment.

Each advert, Jauniskis said, is based on a true recruitment story.

As the relationship flourishes, the kindly man dupes the lonely mother into installing an information-sucking virus at her workplace. The student wonders if the stranger's largesse might just be motivated by the diplomatic career he plans.

NATO and EU member Lithuania is perhaps the most vocal of the Baltics in criticizing Russia and increased Russian military activity in the Nordic region. The government has even published a manual on resisting a Russian invasion.

Russia characterizes such fears as fantasy concocted by a NATO alliance that seeks to intimidate Moscow. NATO also has carried out extensive maneuvers near Russian borders.

But Lithuania was under Soviet rule only 25 years ago. It was the first country to declare independence from Moscow in 1990, and saw off a Soviet army attempt to topple its government in 1991. Twelve civilians were killed.

Jauniskis, then 22, stood guard inside the Lithuanian parliament. Later, he led a Lithuanian commando squad fighting the Taliban in Afghanistan alongside the Americans.

He said a third of Russian embassy staff were intelligence officers working under diplomatic cover. Equipment installed on the embassy roof allowed them to listen in to phone calls.

"You will not recognize a spy," he said. "Because a professional spy will not stand out in any way. He will not have a good car or great clothes. He will just be same as any of us."

Moscow is recruiting Lithuanians on shopping trips to Russia, accusing them of smuggling, then offering to drop charges - and facilitate future shopping - if they agree to provide intelligence, Jauniskis's agency said in its annual report.

Russia was also targeting Lithuanian businessmen and diplomats working in Moscow, often using blackmail.

All these things may appear standard fare for many intelligence agencies, but Lithuania sees a particular threat, living as it does in the shadow of so powerful a neighbor.

"Russia is abusing every weakness of democracy that it is able to," said Jauniskis. "As a former soldier, I can say that defense alone will not win a war. You need to counterattack."

But critics say the spy hotline will only breed paranoia - while perhaps overestimating Russian intelligence capabilities.

Few Russian spies have actually gone to prison. Two Lithuanians were sentenced in 2015 and 2016 and a Russian who Lithuanian prosecutors say is a Russian intelligence officer was detained in 2015. His trial is in progress.

Jauniskis said Russia was trying to undermine citizens' trust in their own country by repeating falsehoods about it in the media and elsewhere. He proposes legislation to criminalize the "spreading of lies" to destabilize the country.[nL8N1DH3LT]

"I will not get popular by saying this, but times have changed, and we must understand that civil liberties are being curtailed in times of war," he said.

Jauniskis is not impressed by critics' accusation that all this constituted a step back to Soviet-style "thought police".

"I don't think Russia is even concealing that their main target is not Baltics, but destroying the European Union and NATO," Jauniskis said.

China's Spies Gain Valuable U.S. Defense Technology: Report

9th December 2016

http://fortunascorner.com/2016/12/09/chinas-spies-gain-valuable-u-s-defense-technology-report/

According to the annual report of the US-China Economic and Security Review Commission, Chinese cyber espionage is a "major problem" for America

US intelligence agencies have determined that China stole secrets relating to the F-35 jet fighter from a US contractor. Photo: Reuters
China has gained military benefits in recent years from stealing defense secrets through industrial and cyber espionage carried out by its intelligence services, according to a US congressional report.

"In recent years, Chinese agents have extracted data on some of the most advanced weapons and weapons systems in the US arsenal, such as jet fighters and unmanned submersible vehicles," states the annual report of the US-China Economic and Security Review Commission, released on November 16.

“The loss of these and other sensitive defense technologies undermines US military superiority by accelerating China’s military modernization and giving China insight into the capabilities and operation of US weapons and weapons systems,” the report adds.

The espionage operations are not limited to direct spying activities against the United States and include intelligence collection against US allies and friends in Asia, including Taiwan, Japan, the Philippines and Thailand.

“The United States shares weapons, weapons systems, and operational plans with its allies and partners, many of whom China has targeted with espionage operations,” the report says. “These infiltrations also threaten US alliance stability.”

US intelligence agencies determined that China stole secrets relating to the F-35 jet fighter from a US contractor. The design secrets were detected in China’s new J-20 stealth fighter.

The stolen secrets included details of the F-35’s electro-optical targeting system, radar-absorbing coatings and engine nozzles.

Taiwan remains a major spying target of China and, since 2002, 56 Chinese agents have been arrested there after being caught obtaining sensitive information, including about US technology shared with Taipei.

In recent years, Chinese agents have extracted data on some of the most advanced weapons and weapons systems in the US arsenal

The United States is committed to defending Taiwan from a Chinese military takeover and as a result shares sensitive defense information.

“Taiwan’s strategic position in the Western Pacific makes its defensibility an important aspect of the US alliance system and strategy for the region,” the report says.

Recent Chinese cyber intelligence operations include the July 2016 infiltration by China of networks at the Philippines Department of Justice which were involved in organizing the Asia Pacific Economic Cooperation summit. Chinese hackers also broke into a law firm involved with the Permanent Court of Arbitration at The Hague, the court that ruled against China’s expansive maritime claims in the South China Sea.

In Australia, Chinese cyber spies were behind a massive intrusion into networks of the Australian Bureau of Meteorology, which provides data to the Australian Defense Department, an American treaty ally.

“China-based actors have conducted extensive cyber operations targeting Japan,” the report says.

Japan’s National Institute of Information and Communications Technology reported that China was behind 40 percent of approximately 26 billion attempts to compromise Japanese information systems in 2014.

Chinese intelligence services have also recruited agents in Thailand and the Philippines, prompting the commission to warn that “China’s apparent shift toward more overseas recruitment and handling operations could create a greater espionage threat environment in these and other US partner countries.”

The spying activities could undermine US support for allies. For example, if Washington believes sharing information and equipment with its Asian partners comes with significant risk, the nation could hesitate to provide support in a future crisis or conflict.

Growing threat

The commission report for the first time devoted an entire chapter to Chinese intelligence services, which were outlined as including the Ministry of State Security — the country’s civilian spy agency — and several military intelligence services.

The report concludes that the Chinese intelligence threat is increasing as China reforms and centralizes its intelligence apparatus and gains experience conducting spying operations.

In particular, Chinese human spying, or HUMINT, activities, “already appear to be growing more aggressive and extensive,” the commission says.

“China’s intelligence processing and communication to decision makers is likely to become more effective and efficient as the moves toward joint, integrated intelligence operations,” the report says.

The military spy agencies were the subject of a major reform effort in late 2015 that moved them from the General Staff Department of the People’s Liberation Army to a new military service-level group called the Strategic Support Force.

The units believed to be placed under the new force are 2PLA, the military’s espionage branch; the 3PLA — the group responsible for electronic spying and cyber attacks; and 4PLA, which is responsible for electronic warfare.

Chinese military technical intelligence capabilities also are growing. They include beefed up intelligence, surveillance and reconnaissance equipment and platforms that will bolster China’s ability to fight regional conflicts and to monitor and target US military forces.

“Chinese intelligence services have demonstrated broad capabilities to infiltrate a range of US national security (as well as commercial) actors with cyber operations”

Regarding cyber attacks, Chinese intelligence have repeatedly gained access to email accounts of senior US government officials — infiltrations that provide Beijing with insights into highly sensitive US national security decision making, the report says.

The commission recommends that Congress direct the US State Department to develop educational material to alert people living and traveling abroad to Chinese intelligence activities.

The Pentagon is also directed to set up special counter-intelligence education to help US students studying in China under a Defense Department National Security Education Program to avoid Chinese intelligence recruitment efforts.

In addition, the commission calls for the Federal Bureau of Investigation to provide a secret report to Congress outlining the risks and threats posed by foreign information systems purchased by the US government.

“This report should identify information systems or components that were produced, manufactured, or assembled by Chinese-owned or -controlled entities,” the report says.

Chinese telecommunications companies, including Huawei Technologies and ZTE, have been identified by the US government as working with Chinese intelligence to provide equipment that can be accessed remotely and clandestinely.

China's cyber espionage appears to be the most serious espionage threat, described by the commission as a major problem.

"China has a large, professionalized cyber espionage community," the report says. "Chinese intelligence services have demonstrated broad capabilities to infiltrate a range of US national security (as well as commercial) actors with cyber operations."

Chinese warship seizes US underwater drone in international waters

16th December 2016

https://www.theguardian.com/world/2016/dec/16/china-seizes-us-underwater-drone-south-china-sea

Official says drone deployed by American oceanographic vessel in South China Sea was taken by Chinese navy on Thursday

The Chinese navy has seized an underwater drone in plain sight of the American sailors who had deployed it in international waters, in a seemingly brazen message to the incoming Trump administration.

According to a US defence official, the unmanned glider had come to the surface of the water in the South China Sea and was about to be retrieved by the USNS Bowditch, an oceanographic and surveillance ship, when a Chinese naval vessel that had been shadowing the Bowditch put a small boat in the water.

Chinese sailors in the small boat came alongside the drone and grabbed it despite the radioed protests from the Bowditch that it was US property in international waters. The incident happened about 100 miles north-west of the Philippines' port of Subic Bay.

The US has issued a formal protest and demanded the return of the glider.

Peter Cook, the Pentagon press secretary, said the Bowditch made radio contact with the Chinese ship and asked for the glider to be returned. "The radio contact was acknowledged by the [Chinese] navy ship, but the request was ignored," Cook said.

"The UUV [unmanned underwater vehicle] is a sovereign immune vessel of the United States. We call upon China to return our UUV immediately, and to comply with all of its obligations under international law."

The aggressive Chinese gesture comes at a time of rising tensions between China and the US in the South China Sea, where Beijing has claimed ownership of a number of reefs and small islands – which it is in the process of militarising – while the US navy has been conducting patrols nearby to assert freedom of navigation in the sea lanes.

The tension has spiked since Donald Trump was elected in November. The US president-elect quickly broke a 37-year protocol by taking a call from the president of Taiwan, and openly questioned Washington's longstanding "one China" policy that does not recognise Taiwan as a separate state. Beijing has signalled it would respond dramatically if Trump implements a break in policy once he takes office on 20 January. In recent days, China has conducted bomber patrols close to Taiwan in a flexing of its military muscle.

The seizure of the drone is also a reflection of the struggle occurring under the surface of the South China Sea. As China develops a strategic submarine fleet, with the potential to carry nuclear missiles out into the Pacific Ocean, the US has built up a monitoring network designed to spot Chinese submarines as they leave their bases. Drones are key to the network, and there is a race under way between major naval powers to develop drones that can work together in swarms and "see" long distances through the water. Underwater gliders are drones that can stay underwater on the lookout for submarines for long periods of time.

"This looks like signalling from the Chinese in response to Trump's Taiwan call," said Bonnie Glaser, the director of the China Power Project at the Centre for Strategic and International Studies. "It is hard to believe this is the action of an independent commander. The Chinese now have much better control over the military, particularly the navy. It is in China's interest to send signals before Trump is inaugurated, so that he gets the message and be more restrained once he is office."

Sebastian Brixey-Williams of the British American Security Information Council said: "Nuclear states are increasing anxious about unmanned underwater vehicles (UUVs, or underwater drones) autonomously tracking their nuclear ballistic missile submarines (SSBNs), making them vulnerable to antisubmarine warfare. This is an issue for China in particular, whose SSBN fleet is small and noisy. Though the USNS Bowditch is an oceanographic ship and may sound harmless, the kinds of data it is collecting will make Chinese submarines easier to find over time.

"China therefore accomplishes a number of things by seizing a US underwater drone," Brixey-Williams said. "It allows Chinese scientists to better understand the US's offensive technical capabilities in this area, and potentially allows them to reverse-engineer them, bringing gains in both the commercial and military spheres."

Glaser pointed out that the Chinese have frequently tested the US when there is a new administration. In the early months of the George W Bush administration, in 2001, the Bowditch was involved in a close encounter with a Chinese frigate which turned on its gun control radar and forced it to retreat. A week later there was a collision between a US spy plane and Chinese warplane off China's Hainan island.

At about the same point in the early Obama administration, in March 2009, a number of Chinese navy ships harassed another US oceanographic vessel, the USNS Impeccable, coming as close as 50ft away, trying to snag its acoustic equipment with hooks, waving flags and demanding the Impeccable leave the area.

Cambridge spy seminars hit by whispers of Russian links as three intelligence experts resign

17th December 2016

http://www.telegraph.co.uk/news/2016/12/16/intelligence-experts-cut-ties-cambridge-spy-seminars-amid-claims/

It has been more than 70 years since a ring of Cambridge spies infiltrated British intelligence so they could pass on crucial information to the Soviets.

But it seems academics at the university are once again involved in whispers of espionage and double bluffs.

The concerns emerged after a number of experts unexpectedly resigned from their positions at the Cambridge Intelligence Seminar (CIS), an academic forum on the Western spy world.

The men - former MI6 chief Sir Richard Dearlove, Stefan Halper, a former policy adviser at the White House, and historian Peter Martland - are said to have left amid concerns that the Kremlin is behind a newly-established intelligence journal, which provides funding to the group.

Mr Halper told earlier reports that his decision to step down was due to "unacceptable Russian influence" on the group.
Last night, a former KGB spy chief said it is entirely possible the experts' alleged fears are true.

The CIS was set up by official MI5 historian Professor Christopher Andrew. Seminars, which take place on Fridays at the university's Corpus Christi college, are advertised on the university website, with previous attendees including Mike Flynn, Donald Trump's choice as new national security adviser for the US, and Dr Paul Martin, the ex-director of parliamentary security.

Suspicions were allegedly raised after claims a new digital publishing house called Veruscript, which helps cover some of the CIS's costs, may be acting as a front for the Russian intelligence services.

The publishing house, which, according to its website, is based in London, is also publishing a new journal, the Journal of Intelligence and Terrorism Studies.

Some of those involved are thought to be concerned that Russia may attempt to use the link to the seminars to influence sensitive debates on national defence and security, sources told the Financial Times.

Last night, experts warned it was feasible for the Russians to be involved, despite no concrete evidence yet found to suggest the claims are true.

Oleg Gordievsky, who ran the KGB's London bureau and was a double agent for the British intelligence service from 1974, said Russians were targeting creative industries but in larger cities, such as London.

"It is possible [they have targeted CIS] but it is not very important," he said. "Cambridge is just small pin point, the centre of the earth is London and there are at least 40 officers, including 25 KGB officers there.

"They are always not very organised as they are very poorly paid and therefore they are not dangerous. They would use publishing or creative industries to infiltrate, it is very possible they might be doing this."

The warnings came as Government sources acknowledged for the first time that Russia is waging a "campaign" of propaganda and unconventional warfare, including fake espionage, misinformation, cyber attacks and fake news, against Britain.

It is understood that intelligence officers and senior civil servants voiced their concerns during a meeting at the Cabinet Office two months ago, which discussed the growing scale of the Russian threat.

Conservative MP Dominic Grieve, who chairs the House of Commons Intelligence and Security select committee, said he did not wish to speculate as to the precise reasons for Sir Richard's departure.

But he admitted Russian involvement was "possible" amid a "cascade" of Russian intelligence-related activities.

He said: "After the heady days of post-Cold War and the belief that we were moving the Russians into a rules-based international system, we seem to be going very rapidly in the opposite direction.

"Whether it's cyber activities, their apparent general malevolence and disruption, what you're hearing is alleged to have taken place in the United States - and there is no reason to suggest the United States has made this up - it's a catalogue of activities.

"Television outlets like Russia Today are running around all over the place. There is a lot of Russian activity. It is perfectly plain that the Russians are in a hyperactive mode and this seems to be on the face of it orchestrated by Mr Putin, and frankly I find it very worrying."

Cambridge University declined to comment. Sir Richard and Mr Martland have been approached for comment but have not replied.

Gleb Cheglakov, who is believed to have set up Veruscript with his wife, said it would be editorially independent of the organisation. He did not comment on the alleged link with the Russian government.

[I do wonder how Mr Gordievsky can make any claim on what activities his ex-employers are now up to having been out of it for 35 years with a massive increase in technology and telecommunications].

18th December 2016

Donald Trump accuses China of 'unpresidented' act over US navy drone

President-elect makes spelling error in belligerent early morning tweet

China says 'hyping up' of issue is not helpful but agrees return of vehicle

President-elect Donald Trump has risked further inflaming US relations with China, after he used Twitter on Saturday to accuse China of an "unpresidented [sic] act" in its seizing of an unmanned American submarine this week.

"China steals United States Navy research drone in international waters – rips it out of water and takes it to China in unpresidented act," Trump said, misspelling "unprecedented".

The tweet was later reissued with the correct spelling of "unprecedented". The tweet containing the error was deleted.

His message – itself without precedent given his status as a president-elect commenting on an international incident before assuming power – was likely to worsen fears of increased US-China tensions under his presidency that have grown over his rhetoric on trade and policy towards Taiwan.

Hours later, Trump suggested the US tell China it no longer wants its property returned.

Trump's initial tweet was issued shortly after China's foreign ministry said it was negotiating with the US over the vehicle, a "glider" used to collect unclassified scientific data.

A Pentagon spokesman said it was being operated by civilian contractors when it was seized on Thursday in international waters, about 57 miles north-west of Subic Bay, near the Philippines, in the South China Sea.

The unmanned vehicle was deployed by the USNS Bowditch, an oceanographic and surveillance ship. A diplomatic complaint was issued by the US after its seizure, and its return demanded.

The area in which the submarine was taken is claimed by China virtually in its entirety. China has been building islands, and this week it was reported to have installed "significant" weaponry on them – including anti-aircraft and anti-missile systems.

On Saturday, the Chinese foreign ministry said that American "hyping up" was not conducive to a smooth resolution of an incident that began when a Chinese naval vessel discovered a piece of "unidentified equipment" and checked it to prevent any navigational safety issues, before discovering it was a US drone.

"China decided to return it to the US side in an appropriate manner, and China and the US have all along been in communication about it," a statement on the ministry website said.

"During this process, the US side's unilateral and open hyping up is inappropriate, and is not beneficial to the smooth resolution of this issue. We express regret at this."

Pentagon spokesman Peter Cook later said in a statement: "Through direct engagement with Chinese authorities, we have secured an understanding that the Chinese will return the UUV [unmanned underwater vehicle] to the United States."

On Friday, in a press conference at the White House, Barack Obama cautioned Trump against allowing relations with China to slip into "full conflict mode".

Trump took a congratulatory phone call from the Taiwanese president earlier this month, breaking with nearly 40 years of US foreign policy orthodoxy, and then used a Fox News interview to question US "one China" policy on Taiwan, a breakaway island state which is not recognised by Beijing.

"The idea of 'one China' is at the heart of their conception as a nation," Obama said, "and so if you are going to upend this understanding, you have to have thought through what are the consequences.

"Because the Chinese will not treat that the way they will treat some other issues. They won't even treat it the way they treat issues around the South China Sea, where we have had a lot of tensions. This goes to the core of how they see themselves and their reaction on this issue could end up being very significant."

On Thursday, Bonnie Glaser, director of the China Power Project at the Center for Strategic and International Studies, told the Guardian the seizure of the drone looked "like signalling from the Chinese in response to Trump's Taiwan call".

"It is in China's interest to send signals before Trump is inaugurated," she said, "so that he gets the message and [will] be more restrained once he is office."

Observers have suggested that both during the presidential campaign – in which Trump offered belligerent rhetoric against China over trade – and after his election victory, he has used outlandish statements on Twitter as a means of distraction when under pressure from the media and opponents.

He is currently facing the belief of the White House, the CIA, the FBI and other intelligence agencies that Russia sought to influence the election in his favour – claims he has rejected and ridiculed – and questions about his business holdings and conflicts of interest that will arise when he takes office.

Trump has also failed to stage a press conference since winning the election, instead embarking on a "thank you" tour of rallies in states which voted for him.

The electoral college, in which Trump beat Hillary Clinton 306-232 despite losing the popular vote by more than 2.8m ballots, meets on Monday to decide the election victor.

Some electors have indicated an intention not to vote for Trump, but not the 38 Republican electors it would take to send the decision to the House of Representatives.

Also on Saturday morning, Trump's transition team released a statement announcing the nomination of the South Carolina congressman Mick Mulvaney, a budget "hawk" who has advocated deep federal spending cuts, as director of the Office of Management and Budget.

Chart Section Index

January 2017

Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC	wk	Stn	Fam	Jan kHz, ID, ...	Feb kHz, ID, ...
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x	x	x	x	x			0400		S06	01A	15721 480	15721 480
x	x	x	x	x	x	x	0400		V13	0	15388	15388
x	x	x	x	x	x	x	0440 (var)		HM02	01C	7351	
x							0450		E11	03	5082 416/00	5082 416/00
	x			x			0455		S11A	03	4828 321/00	4828 321/00
x		x		x		x	0500		HM01	18	10860	10860
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x	x	x	x	x	x	x	0540 (var)		HM02	01C	7351	7351
x		x		x		x	0600		HM01	18	10345	10345
	x		x		x		0600		HM01	18	14375	14375
x	x	x	x	x	x	x	0600		V13	0	9522	9522
x				x			0600		E11	03	13046 181/00	13046 181/00
	x						0600/0610		S06S	01A	16145/14240 438	16145/14240 438
					x		0600/0620/0640		M12	01B	5839/ 7439 842, search	7637/ 9137/10237 612
		x			x		0600/0620/0640		XPAc	01B		
			x	x			0600/0700	1/3	E06	01B	13960/16350 139	17470/20085 702
						x	0600/0700		M14	01A	5947/ 6767 382	5947/ 6767 382
						x	0630/0640		S06S	01A	13470/16515 524	13470/16515 524
	x		x				0645		E11	03	7840 517/00	7840 517/00
x		x		x		x	0700		HM01	18	9330	9330
	x		x		x		0700		HM01	18	13435	13435
						x	0700		M01	01B	5465 197	5465 197
	x						0700/0710(15)		S06S	01A	5250/ 6320 374	5250/ 6320 374
x	x	x	x	x	x	x	0700		V13	0	15250	15250

Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC	wk	Stn	Fam	Jan kHz, ID, ...	Feb kHz, ID, ...
					x	x	0700/0720/0740		E07	01B	8123/ 9323/10423 134	10112/11112/12112 111
		x			x		0700/0720/0740		XPAc	01B	9109/10909/12209	11409/13509/14609
	x			x			0700/0720/0740		XPAt	01B	13472/14772/16272	14558/15958/17458
	x			x			0710		E11	03	10800 633/00	10800 633/00
			x		x		0710		E11	03	12924 491/00	12924 491/00
		x					0710/0730/0750		M12	01B	16324/18124/ 314, search	18014/19464/ 049, search
x		x					0715		S11A	03	19099 382/00	19099 382/00
				x		x	0730		E11	03	16112 352/00	16112 352/00
	x						0730/0740		S06S	01A	7410/11532 427	7410/11532 427
			x				0730/0750/0810		M12	01B	5284/ 5784/ 277, search	5884/ 6884/ 888, search
x							0745		E11	03	10213 264/00	10213 264/00
	x		x				0745		E11	03	16112 335/00	16112 335/00
x							0800	1/3	G06	01A	5320 329	5320 329
x		x		x		x	0800		HM01	18	9065	9065
	x		x		x		0800		HM01	18	11365	11365
x	x	x	x	x	x	x	0800		V13	0	15250	15250
			x				0800/0810		E17Z	01A	11170, 9820 674	11170, 9820 674
	x						0800/0810		S06S	01A	11945/13195 352	11945/13195 352
					x		0800/0810	1	S06S	01A	8680/ 8260 254	8680/ 8260 254
	x						0800/0820/0840		M12	01B	8053/ 9178/10287 816	8053/ 9178/10287 816
x		x					0800/0820/0840		XPA2p	01B	15978/14978/14378	15983/14783/13883
					x		0800/0900		M14	01A	5430/ 5561 171	5430/ 5561 171
		x				x	0805		E11	03	10429 311/00	10429 311/00
x			x				0820		E11	03	7371 439/00	7371 439/00
		x					0820/0830		S06S	01A	8417/ 9262 471	8417/ 9262 471
x							0830/0840		S06S	01A	8057/ 8530 371	8057/ 8530 371
		x					0830/0840		S06S	01A	11535/11830 745	11535/11830 745
			x	x			0830/0930		S06	01A	16243/13469 842	17440/15614 842
x		x					0900		E11	03	9446 534/00	9446 534/00
x		x		x		x	0900		HM01	18	9240	9240
	x		x		x		0900		HM01	18	11462	11462

Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC	wk	Stn	Fam	Jan kHz, ID, ...	Feb kHz, ID, ...
x							0900/0910		S06S	01A	14675/12830 872	14675/12830 872
			x				0900/0910		S06S	01A	12952/13565 167	12952/13565 167
			x				0900/0910		S06S	01A	5765/ 6315 624	5765/ 6315 624
					x		0900/0920/0940		E07A	01B	11123/12123/13423 114	11053/12153/13553 015
	x			x			0915		S11A	03	7504 480/00	7504 480/00
		x	x				0930		E11	03	9950 279/00	9950 279/00
			x				0930/0940		S06S	01A	8812/ 9540 314	8812/ 9540 314
				x			0930/0940		S06S	01A	11780/12570 516 9445/10195 search	11780/12570 516 9445/10195 search
x		x		x		x	1000		HM01	18	5855, 9155	5855, 9155
	x		x		x		1000		HM01	18	12180	12180
	x						1000/1010		S06S	01A	/ 5660 893, search x6440	/ 5660 893, search x6440
		x					1000/1010		S06S	01A	12365/14280 729	12365/14280 729
			x			x	1010/1030/1050		M12	01B	13369/14669/15969 369	13569/14869/16269 582
x			x				1015		S11A	03	12530 471/00	12530 471/00
	x			x			1020		S11A	03	9610 426/00	9610 426/00
	x						1045		E11	03	12153 577/00	12153 577/00
	x						1100/1110		S06S	01A	5035/5975 754	5035/5975 754
x							1100/1120/1140		M12	01B	12205/13559/14728 973, check	12205/13559/14728 973
		x					1200	?	G06	01A	4912 574 search in 2017	4912 574 search in 2017
x	x	x	x	x	x	x	1200		V13	0	7502	7502
			x				1200/1210		S06S	01A	12155/10920 425	12155/10920 425
				x			1200/1220/1240		M12	01B	10343/ 9264/ 8116 124	10343/ 9264/ 8116 124
	x	x					1205		E11	03	7984 469/00	7984 469/00
x				x			1225		E11	03	20167 521/00	20167 521/00
	x	x					1300		E11	03	18030 133/00	18030 133/00
			x		x		1300		E11	03	8680 581/00	8680 581/00
		x					1300	?	G06	01A	4039 574 search in 2017	4039 574 search in 2017

Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC	wk	Stn	Fam	Jan kHz, ID, ...	Feb kHz, ID, ...
			x				1300	1/3	G06	01A	4460 329	4460 329
x	x	x	x	x	x	x	1300		V13	0	7502	7502
x							1300/1310		S06S	01A	8420/10635 831	8420/10635 831
					x		1300/1310/1320		M42C	01A	10526/16142/14674	19441/17456/15817
	x					x	1300/1320/1340		XPA2m	01B	16138/14438/13438	
			x		x		1310/1330/1350		M12	01B	7692/ 6792/ 678, search	9162/ 8062/ 7462 104
	x				x		1345		E11	03	14666 911/00	14666 911/00
x	x	x	x	x	x	x	1400		M08A	18	8096	8096
				x	x		1400/1420/1440		XPA2r	01B	16167/14664/13924	18667/17419/16212
	x		x				1450		E11	03	8196 441/00	8196 441/00
					x		1500		M01	14	5810 197	5810 197
	x						1500/1510		S06S	01A	6845/ 9170 537	6845/ 9170 537
				x			1500/1520/1540		M12	01B	15987/14687/ 963, search	16314/14814 388, search
	x					x	1500/1520/1540		XPA2m	01B		16338/14538/13538
			x				1530		E11	03	5409 268/00	5409 268/00
		x			x		1540		S11A	03	10728 563/00	10728 563/00
x	x	x	x	x	x	x	1600		HM01	18	11435	11435
	x					x	1605		E11	03	4505 232/00	4505 232/00
				x			1610/1630/1650		E07A	01B	7632/ 6832/ 5832 688	9347/ 8147/ 6847 318
		x				x	1625		E11	03	10448 972/00	10448 972/00
				x		x	1630		E11	03	16335 921/00	16335 921/00
x							1700	1/2	G06	01A	3696 574 search in 2017	3696 574 search in 2017
x	x	x	x	x	x	x	1700		HM01	18	11530	11530
				x			1700/1800	1/3	M14	01A	5374/ 4975 382	5374/ 4975 382
		x			x		1705		E11	03	9443 394/00	9443 394/00
		x			x		1730		E11	03	8545 402/00, 406/00	8545 402/00, 406/00
			x				1730		E11	03	5082 413/00	5082 413/00
x						x	1745		E11	03	242/00, search	242/00, search
x							1800	1/2	G06	01A	4562 574 search in 2017	4562 574 search in 2017
x	x	x	x	x	x	x	1800		HM01	18	11635	11635
	x		x				1800		M01	14	5320 197	5320 197

Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC	wk	Stn	Fam	Jan kHz, ID, ...	Feb kHz, ID, ...
		x				x	1800/1820/1840		E07	01B	8194/ 6794/ 5294 172	10219/ 9119/ 7519 215
x		x					1800/1820/1840		M12	01B	9176/ 7931/ 6904 257	9176/ 7931/ 6904 257
			x				1800/1820/1840		M12	01B	11435/10598/ 9327 938	11435/10598/ 9327 938
x							1810/1830/1850		M12	01B	8047/ 6802/ 5788 463	8047/ 6802/ 5788 463
					x		1810/1820/1830		M42C	01A	7684/ 5387/ 4572	9153/ 7641/ 5251
	x						1820	2/4	M14	01A	4636 186	4636 186
			x				1830	2/4	G06	01A	4519 271	4519 271
			x				1900/1920/1940		M12	01B	9176/ 7931/ 6904 257	9176/ 7931/ 6904 257
		x					1900/1920/1940		M12	01B	8047/ 6802/ 5788 463	8047/ 6802/ 5788 463
	x		x				1900/1920/1940		XPAe	01B	7891/ 6791/ 5391	8123/ 7523/ 6823
				x			1900/2000	1/3	S06	01A		7812/ 5736 761 new freqs and SN in 2017
x							1910		M01B	14	2435, 3519 853	2435, 3519 853
		x					1920	2/4	M14	01A	4761 748	4761 748
				x			1930	2/4	G06	01A	4792 436	4792 436
	x			x			1940/1950/2000	1	M42C	01A	7629/ 6783/ 4030	8156/ 6844/ 4527
		x		x			1955		S11A	03	5815 372/00	5815 372/00
				x			2000		E11	03	6304 575/00	6304 575/00
	x		x				2000		M01	14	4490 197	4490 197
x	x	x	x	x	x	x	2000		M08A/ V02A	18	7554	7554
x		x					2000/2020/2040		E07	01B	ex 6982/ 5882/ 5182 search	ex 7724/ 6924/ 5824 search
	x						2000/2020/2040		M12	01B	9176/ 7931/ 6904 257	9176/ 7931/ 6904 257
			x				2000/2020/2040		M12	01B	8047/ 6802/ 5788 463	8047/ 6802/ 5788 463
				x			2000/2100	1/3	S06	01A	7812/ 5736 761 new freqs and SN in 2017	
					x		2000/2100	1/3	S06	01A	4031/ 3513 614 new freqs and SN in 2017	4031/ 3513 614 new freqs and SN in 2017
				x			2002		M01B	14	2653, 3197 866	2653, 3197 866
					x	x	2005		E11	03	11107 363/00	11107 363/00

Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC	wk	Stn	Fam	Jan kHz, ID, ...	Feb kHz, ID, ...
x							2015		M01B	14	2427, 3205 375	2427, 3205 375
			x				2030	1/3	E06	01A	4836 321	4836 321
			x				2042		M01B	14	2485, 3160 382	2485, 3160 382
x		x		x		x	2100		HM01	18	11635	11635
	x		x		x		2100		HM01	18	16180	16180
		x					2100/2120/2140		E07A	01A	5877/ 5277/ 4577 825	5877/ 5277/ 4577 825
				x			2110		M01B	14	2405, 3180 610	2405, 3180 610
			x				2110/2130/2150		E07	01B	6777/ 5449/ 4483 774	6777/ 5449/ 4483 774
				x			2130	1/3	E06	01A	4760 472	4760 472
x		x		x		x	2200		HM01	18	10715	10715
	x		x		x		2200		HM01	18	17480	17480
		x					2200/2220/2240		M12	01B	5361/ 4461/ 4061 340	5429/ 4629/ 4029 460
	x		x		x		2300		M08A	18	8135	8135
						x	2300		M14	01A	5240 376	5240 376

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

M12 Yearly Repeat Schedules 2015 - 2016 **Brian S.E. England**

ime UTC			Freq kHz			ID	M	T	W	T	F	S	S
Jan													
0020	0040	0100	15826	15476	13416	854*			X			X	
05**30**	05**50**	06**10**	4457	5157	- - -	417	X						
0600	0620	0640	5838	7438	- - -	842						X	
07**30**	07**50**	08**10**	5284	5784	- - -	277				X			
10**10**	10**30**	10**50**	13369	14669	15964	369				X			X
13**10**	13**30**	13**50**	7692	6792	5892	678				X		X	
1700	1720	1740	13386	12189	11491	725				X			
1800	1820	1840	8047	6802	5788	463	X						
1800	1820	1840	9176	7931	6904	257			X	X			
1900	1920	1940	9176	7931	6904	257	X						
19**30**	19**50**	20**10**	10343	9264	8116	124		X					
2200	2220	2240	5361	4461	4061	340			X				
Feb													
0020	0040	0100	18576	17436	15826	548*			X			X	
05**30**	05**50**	06**10**	4617	5317	- - -	638	X						
0600	0620	0640	7637	9137	10237	612						X	
07**30**	07**50**	08**10**	5884	6884	- - -	888				X			
10**10**	10**30**	10**50**	13569	14869	16269	582				X			X
13**10**	13**30**	13**50**	9162	8062	7462	104				X		X	
1800	1820	1840	8047	6802	5788	463	X						
1800	1820	1840	9176	7931	6904	257			X				
1800	1820	1840	10343	9264	8116	124				X			
1900	1920	1940	8047	6802	5788	463			X				
1900	1920	1940	9176	7931	6904	257	X						
19**30**	19**50**	20**10**	10343	9264	8116	124		X					
2200	2220	2240	5429	4629	4029	460			X				

Time UTC			Freq kHz			ID	M	T	W	T	F	S	S
Mar													
05**30**	05**50**	06**10**	5792	6992	- - -	796	X						
0600	0620	0640	8158	9258	10658	126						X	
07**30**	07**50**	08**10**	6784	7684	8184	761				X			
10**10**	10**30**	10**50**	14769	16269	18169	721				X			X
13**10**	13**30**	13**50**	12214	10814	9214	282				X		X	
1800	1820	1840	9176	7931	6904	257			X				
1900	1920	1940	8047	6802	5788	463			X				
1900	1920	1940	9176	7931	6904	257	X						
19**30**	19**50**	20**10**	10343	9264	8116	124		X					
2200	2220	2240	5763	5163	4463	714			X				
Apr													
04**30**	04**50**	05**10**	5792	6992	- - -	796	X						
0500	0520	0540	8176	9376	- - -	134						X	
06**30**	06**50**	07**10**	7484	8084	- - -	402				X			
1100	1120	1140	12205	13559	14728	973	X						
13**10**	13**30**	13**50**	14468	13568	12178	451				X		X	
1800	1820	1840	9176	7931	6904	257			X				
1900	1920	1940	8047	6802	5788	463			X				
1900	1920	1940	9176	7931	6904	257	X						
19**30**	19**50**	20**10**	10343	9264	8116	124		X					
2100	2120	2140	6793	5893	4593	785			X				
21**10**	21**30**	21**50**	11469	10469	9169	441			X			X	

* Asiatic Schedule - Not audible in Europe

M12 Yearly Repeat Schedules 2015 - 2016 **Brian S.E. England**

Time UTC			Freq kHz			ID	M	T	W	T	F	S	S
May													
04**30**	04**50**	05**10**	6857	7557	- - -	850	X						
0500	0520	0540	9167	10267	11567	125						X	
06**30**	06**50**	07**10**	7984	9184	- - -	911				X			
13**10**	13**30**	13**50**	13926	12126	10926	919				X		X	
1800	1820	1840	9176	7931	6904	257			X				
1900	1920	1940	8047	6802	5788	463			X				
1900	1920	1940	9176	7931	6904	257	X						
2100	2120	2140	9241	7541	6841	258			X				
21**10**	21**30**	21**50**	14869	13569	12179	851			X			X	
Jun													
04**30**	04**50**	05**10**	6857	7557	- - -	850	X						
0500	0520	0540	9282	10982	12182	291						X	
06**30**	06**50**	07**10**	7984	9184	- - -	911				X			
13**10**	13**30**	13**50**	13873	13373	11473	834				X		X	
1800	1820	1840	9176	7931	6904	257			X				
1900	1920	1940	8047	6802	5788	463			X				
2100	2120	2140	9986	9086	7386	903			X				
21**10**	21**30**	21**50**	16269	14669	13369	263			X			X	
July													
04**30**	04**50**	05**10**	6857	7557	- - -	850	X						
0500	0520	0540	9217	10617	12217	262						X	
06**30**	06**50**	07**10**	7984	9184	- - -	911				X			
07**10**	07**30**	07**50**	16332	18032	- - -	303			X				
1100	1120	1140	12205	13559	14728	973	X						
13**10**	13**30**	13**50**	13926	12126	10926	919				X		X	
1800	1820	1840	9176	7931	6904	257			X				
1900	1920	1940	8047	6802	5788	463			X				
2100	2120	2140	9379	7979	6879	398			X				
21**10**	21**30**	21**50**	14869	13569	12179	851			X			X	

Time UTC			Freq kHz			ID	M	T	W	T	F	S	S
Aug													
04**30**	04**50**	05**10**	5792	6992	- - -	796	X						
0500	0520	0540	9167	10267	- - -	125						X	
06**30**	06**50**	07**10**	7484	8184	- - -	402				X			
07**10**	07**30**	07**50**	16348	18148	- - -	316			X				
1100	1120	1140	12205	13559	14728	973	X						
13**10**	13**30**	13**50**	14468	13568	- - -	451				X		X	
1800	1820	1840	9176	7931	6904	257			X				
1900	1920	1940	8047	6802	5788	463			X				
2100	2120	2140	8123	6923	5823	198			X				
21**10**	21**30**	21**50**	13369	12179	10469	314			X			X	
Sep													
04**30**	04**50**	05**10**	5792	6992	- - -	796	X						
0500	0520	0540	8176	9376	- - -	134						X	
06**30**	06**50**	07**10**	6784	7684	8184	761				X			
07**10**	07**30**	07**50**	14575	16075	- - -	504			X				
1100	1120	1140	12205	13559	14728	973	X						
13**10**	13**30**	13**50**	13873	13373	11473	834				X		X	
1500	1520	1540	17417	16117	- - -	417				X			
1800	1820	1840	9176	7931	6904	257			X				
1900	1920	1940	8047	6802	5788	463			X				
2100	2120	2140	6793	5893	4593	785			X				
21**10**	21**30**	21**50**	11469	10469	9169	441			X			X	

M1 M12 Yearly Repeat Schedules 2015 - 2016 **Brian S.E. England**

Time UTC			Freq kHz			ID	M	T	W	T	F	S	S
Oct													
04**30**	04**50**	05**10**	4617	5317	- - -	638	X						
0500	0520	0540	6832	7932		892						X	
06**30**	06**50**	07**10**	6784	7684	8184	761				X			
07**10**	07**30**	07**50**	16354	18254	- - -	324			X				
1100	1120	1140	12205	13559	14728	973	X						
13**10**	13**30**	13**50**	12214	10814	9214	282				X		X	
1500	1520	1540	20036	18636	1540	064					X		
1800	1820	1840	9176	7931	6904	257			X				
1900	1920	1940	8047	6802	5788	463			X				
2000	2020	2040	8047	6802	5788	463				X			
2100	2120	2140	5814	5214	4614	826			X				
21**10**	21**30**	21**50**	10269	9269	7969	229			X			X	
Nov													
0600	0620	0640	7637	9137	10237	612						X	
13**10**	13**30**	13**50**	9162	8062	- - -	104				X		X	
1800	1820	1840	9176	7931	6904	257			X				
1900	1920	1940	8047	6802	5788	463			X				
2200	2220	2240	5429	4629	4029	460			X				

Time UTC			Freq kHz			ID	M	T	W	T	F	S	S
Dec													
0600	0620	0640	5784	7584	9184	751						X	
10**10**	10**30**	10**50**	13569	14869	16269	582				X			X
13**10**	13**30**	13**50**	7741	6841	5741	787				X		X	
1800	1820	1840	9176	7931	6904	257			X				
1900	1920	1940	8047	6802	5788	463			X				
2000	2020	2040	8047	6802	5788	463				X			
2200	2220	2240	5312	4512	4012	350			X				

Yearly repeats were severely reduced from November 2016 by changes to many of the regular schedules. Although this has happened in previous years, these had previously been replaced by new schedules or changes of times to those existing schedules.

So far, no new schedules have been found to replace those lost & the level of M12 activity is the lowest we have seen in many years.

Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC	wk	Stn	Fam	Jan kHz, ID, ...	Feb kHz, ID, ...	Nov kHz, ID, ...	Dec kHz, ID, ...	Remarks
		x	x				0315		E11	03	5779 253/00	5779 253/00	5779 253/00	5779 253/00	since 01/14, last log 12/16
x							0450		E11	03	5082 416/00	5082 416/00	5082 416/00	5082 416/00	since 02/10, last log 11/16 2nd transmission Thu 1730z
	x			x			0455		S11A	03	4828 321/00	4828 321/00	4828 321/00	4828 321/00	since 09/14, last log 11/16
x			**x**				**0530**		**E11**	**03**	**6849** **646/00**	**6849** **646/00**	**6849** **649/00**	**6849** **646/00**	since 05/16, last log 12/16
		x		x			0545		E11	03					since 06/11, last log 10/16
x				x			0600		E11	03	13046 181/00	13046 181/00	13046 181/00	13046 181/00	since 07/15, last log 08/16 **d e l e t e d ?**
	x		x				0645		E11	03	7840 517/00	7840 517/00	7840 517/00	7840 517/00	since 07/09, last log 11/16
	x			x			0710		E11	03	10800 633/00	10800 633/00	10800 633/00	10800 633/00	since 02/11, last log 10/16 **d e l e t e d ?**
			x		x		0710		E11	03	12924 491/00	12924 491/00	12924 491/00	12924 491/00	since 07/15, last log 11/16
x		x					0715		S11A	03	19099 382/00	19099 382/00	19099 382/00	19099 382/00	since 05/14, last log 10/16 **d e l e t e d ?**
				x		x	0730		E11	03	16112 352/00	16112 352/00	16112 352/00	16112 352/00	since 04/15, last log 10/16
x							0745		E11	03	10213 **264/00**	10213 **264/00**	10213 **264/00**	10213 **264/00**	since 03/14, last log 12/16 2nd transmission Thu 1530z
	x		x				0745		E11	03	16112 335/00	16112 335/00	16112 335/00	16112 335/00	since 10/11, last log 12/16
		x				x	0805		E11	03	10429 311/00	10429 311/00	10429 311/00	10429 311/00	since 07/14, last log 12/16
x			x				0820		E11	03	**7371** **439/00**	**7371** **439/00**	**7371** 438/00	**7371** **439/00**	since 10/09, last log 12/16
x		x					0900		E11	03	9446 534/00	9446 534/00	9446 534/00	9446 534/00	since 10/05, last log 12/16
	x			x			0915		S11A	03	7504 **480/00**	7504 **480/00**	7504 484/00	7504 **480/00**	since 01/10, last log 12/16
		x	x				0930		E11	03	9950 **279/00**	9950 **279/00**	9950 270/00	9950 **279/00**	since 02/14, last log 12/16
x			x				1015		S11A	03	12530 **471/00**	12530 **471/00**	12530 **477/00**	12530 **471/00**	since 04/10, last log 12/16
	x			x			1020		S11A	03	9610 426/00	9610 426/00	9610 426/00	9610 426/00	since 02/10, last log 12/16 2nd transmission Thu 1730z
	x						1045		E11	03	12153 **577/00**	12153 **577/00**	12153 576/00	12153 **577/00**	since 01/12, last log 12/16 2nd transmission Fri 2000z
	x	x					1205		E11	03	7984 469/00	7984 469/00	7984 469/00	7984 469/00	since 03/10, last log 12/16 2nd transmission Mon 0450z
x				x			1225		E11	03	20167 521/00	20167 521/00	20167 521/00	20167 521/00	since 05/15, last log 11/16
	x	x					1300		E11	03	18030 133/00	18030 133/00	18030 133/00	18030 133/00	since 08/13, last log 12/16
			x		x		1300		E11	03	8680 **581/00**	8680 **581/00**	8680 585/00	8680 **581/00, 585/00**	since 02/16, last log 12/16
	x				**x**		1345		E11	03	14666 911/00	14666 911/00	14666 911/00	14666 911/00	since 10/15, last log 12/16
	x		x				1450		E11	03	8196 441/00	8196 441/00	8196 441/00	8196 441/00	since 02/16, last log 11/16
			x				1530		E11	03	5409 **268/00**	5409 **268/00**	5409 262/00	5409 **268/00**	since 06/14, last log 12/16 2nd transmission Mon 0745z
		x			x		1540		S11A	03	**10728** 563/00	**10728** 563/00	**10728** 563/00	**10728** 563/00	since 03/16, last log 12/16
	x					x	1605		E11	03	4505 232/00	4505 232/00	4505 232/00	4505 **235/00, 236/00**	since 11/15, last log 12/16
		x				x	1625		E11	03	10448 972/00	10448 972/00	10448 972/00	10448 972/00	since 02/15, last log 12/16
				x		x	1630		E11	03	**16335** 921/00	**16335** 921/00	**16335** 921/00	**16335** 921/00	since 05/16, last log 12/16
		x			x		1705		E11	03	9443 **394/00**	9443 **394/00**	9443 392/00	9443 **394/00**	since 02/14, last log 12/16
		x			x		1730		E11	03	**8545** **402/00, 406/00**	**8545** **402/00, 406/00**	**8545** 405/00	**8545** **402/00, 406/00**	since 06/16, last log 12/16
			x				1730		E11	03	5082 **413/00**	5082 **413/00**	5082 416/00	5082 **413/00**	since 03/10, last log 12/16 2nd transmission Mon 0450z
x						x	1745		E11	03	242/00, search	242/00, search	242/00, search	242/00, search	since 05/16, last log 10/16 **deleted or no winter sked?**
	x		x				1925		E11	03					since 07/15, last log 10/16
		x		x			1955		S11A	03	5815 **372/00**	5815 **372/00**	5815 371/00	5815 **372/00**	since 02/14, last log 12/16
				x			2000		E11	03	6304 **575/00**	6304 **575/00**	6304 576/00	6304 **575/00**	since 03/12, last log 12/16 2nd transmission Tue 1045z
					x	x	2005		E11	03	11107 363/00	11107 363/00	11107 363/00	11107 363/00	since 03/14, last log 12/16 2nd transmission Thu 1530z

Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC	wk	Stn	Fam	Jan kHz, ID, ...	Feb kHz, ID, ...	Nov kHz, ID, ...	Dec kHz, ID, ...	Remarks
x							0800	1/3	G06	01A	5320 329	5320 329	5320 329	5320 329	since 07/10, last log 12/16 repeat at Thu 1300Z
		x					1200	?	G06	01A	4912 574 **search in 2017**	4912 574 **search in 2017**	4912 574	4912 574	since 10/14, last log 12/16 yearly changing frequencies + id repeat at 1300Z
		x					1300	?	G06	01A	4039 574 **search in 2017**	4039 574 **search in 2017**	4039 574	4039 574	since 10/14, last log 1q/16 yearly changing frequencies + id repeat from 1200Z
			x				1300	1/3	G06	01A	4460 329	4460 329	4460 329	4460 329	since 09/11, last log 12/16 repeat from Mon 0800Z
x							1700	1/2	G06	01A	3696 574 **search in 2017**	3696 574 **search in 2017**	3696 574	3696 574	since 04/10, last log 12/16 yearly changing frequencies + id repeat at 1800Z
x							1800	1/2	G06	01A	4562 574 **search in 2017**	4562 574 **search in 2017**	4562 574	4562 574	since 05/09, last log 12/16 yearly changing frequencies + id repeat from 1700Z
			x				1830	2/4	G06	01A	4519 271	4519 271	4519 271	4519 271	since 05/01, last log 12/16 repeat at Fri 1930Z
				x			1930	2/4	G06	01A	4792 436	4792 436	4792 436	4792 436	since 04/01, last log 12/16 repeat from Thu 1830Z

Current HM01 Schedules

Freq 1	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5855	0500	0500		0500		0500	
11462			0500		0500		0500
10345	0600	0600		0600		0600	
14375			0600		0600		0600
9330	0700	0700		0700		0700	
13435			0700		0700		0700
9065	0800	0800		0800		0800	
11635			0800		0800		0800
9240	0900	0900		0900		0900	
11462			0900		0900		0900
5855	1000	1000		1000		1000	
9155	1000	1000		1000		1000	
12180			1000		1000		1000
11435	1600	1600	1600	1600	1600	1600	1600
11530	1700	1700	1700	1700	1700	1700	1700
11635	1800	1800	1800	1800	1800	1800	1800
11635	2100	2100		2100		2100	
16180			2100		2100		2100
10715	2200	2200		2200		2200	
17480			2200		2200		2200

M42d Schedules (January 1, 2017) Most schedules repeat the next day using the same times and frequencies if a message was sent, unless noted. Yellow schedules indicate message-only repeats of other schedules, not always present.

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
Every	Mon - Fri	**02:00**	16321												41018
		03:00	14881												
New message every day, no repeats the following days. Parallels M42c at 0000/0100z, S06 at 0400z, and M14 at 0500z.															

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
1st, 3rd	Monday	**04:00**				?	11414	12064	11049	10748	9436	9354			45079
		04:10				8184	10169	10926	9126	9139	7923	7956			
		04:20				6773	8169	9049	8137	7424	6776	6774			
		05:00	6927	?	10249								7658	6788	
		05:10	5945	?	8137								6778	5384	
		05:20	4816	5126	5948								5361	4454	
Repeats messages the following Wednesday at 21:00 or 22:00 (look further down for frequencies) instead of the following day.															

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
Every	Tuesday	**16:50**	?	?	?	?	?	?	?	?	?	?	?	9313	20501
		17:00	?	?	?	?	?	?	?	?	?	?	?	7928	
		17:10	?	?	?	?	?	?	?	?	?	?	?	6783	

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
Every	Tuesday	**23:00**	8126	9234	10643	11124	13378	14981	14456	12184	11158	10521	8173	8048	40988
		23:10	7643	7819	8051	9248	11096	12203	12188	10189	9175	8044	6836	6789	
		23:20	5148	5361	6924	7946	9129	11148	11084	8116	7919	6941	5269	4038	
Repeats messages the following Friday at 06:00 (look further down for frequencies) instead of the following day.															

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
Every	Wednesday	**06:00**	?	?	18189	16325	17420	17512	17419	16346	15930	19268	20082	20157	32816 32817
		06:10	?	?	16046	14724	15673	15930	15707	14847	13503	17548	18207	18241	
		06:20	?	?	14459	12172	13361	13503	13446	12223	11109	15779	16141	16204	

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
Every	Wednesday	**08:00**	19928	19654	18431	17496	15993	15906	15844	15938	16324	18546	20314	20838	45075
		08:10	17489	17461	16278	15829	13581	13468	13396	13554	14616	16231	18183	18294	
		08:20	15914	15869	14423	13408	11494	11114	11089	11461	12188	14629	16154	16313	

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
2nd, 4th	Wednesday	**08:00**				19138	17488	16330	15795	16319	18178	20018			16404 16405
		08:10				17545	15823	14367	13428	14378	15613	18325			
		08:20				15626	13459	12141	11060	11636	13459	16248			
		09:00	20735	20916	20386								20476	20875	
		09:10	18037	18730	18215								18915	18747	
		09:20	16250	16165	16061								16328	16316	

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
2nd, 4th	Wednesday	**09:15**				17537	14638	15629	14948	17434	16146	19476			20492
		09:25				14576	12156	13376	12176	14369	13385	17458			
		09:35				11639	10164	11544	10177	11163	11434	15884			
		10:15	19433	20639	20138								20349	18046	
		10:25	16048	17539	17428								18573	16326	
		10:35	14976	15644	14983								16245	14944	

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
Every	Wednesday	**10:00**	19313	19984	20961							22863	20996	20983	49202
		10:10	16348	17489	18553							20674	19163	19139	
		10:20	14494	15621	16264							18594	17428	17463	
		22:00				13983	15838	17476	16031	15618	12184				
		22:10				12209	13984	15843	14369	13374	10168				
		22:20				10203	11167	13488	12193	11081	9286				

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
1st, 3rd	Wednesday	**12:30**	16329	18235	18563	18476	17430	16286	16244	17455	18517	19363	18191	17478	53277
		12:40	14826	16144	16314	16168	15814	14517	14649	15923	16309	17476	15963	15838	
		12:50	12166	14519	14723	14643	13487	12179	12206	13388	14464	15873	13436	13387	

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
Follows 1st, 3rd Monday	Wednesday	**21:00**				10636	?	12218	?	13548	?	9948			45079
		21:10				8163	?	11164	?	11516	10161	8115			
		21:20				6854	?	9418	?	8145	8184	6826			
		22:00	6828	?	10164								?	?	
		22:10	5129	?	8076								?	?	
		22:20	4534	4989	6769								?	?	
Message-only repeat slot of 1st & 3rd Monday 04:00 or 05:00.															

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
Every	Thursday	**13:30**	14661	16154	17468	15951	15814	13543	13387	13439	14396	15841	13384	12169	49237
		13:40	12186	14483	15859	13506	13411	11154	11023	11138	12194	13376	11428	10364	
		13:50	10243	12196	13471	11483	11146	9221	9166	9244	10529	11108	10376	8168	

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
		06:00	9068	12214	?	15991	16189	17483	16291	15946	15864	15813	13381	10236	
–	Friday	**06:10**	7853	10226	13419	13546	14408	15888	14519	13561	13483	13389	11018	8093	40988
		06:20	6964	9091	11133	11161	12191	13394	12186	11148	11126	11044	9139	6814	

Message-only repeat slot of Tuesday 23:00.

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
2nd, 4th	Saturday	**08:00**				?	?	?	13468	12223	13384	14986			45114 45115
		08:10				?	?	?	11634	10186	11463	12219			
		08:20				?	?	?	9486	8094	9328	10574			
		09:00	?	?	?								15623	13938	
		09:10	?	?	?								13469	12136	
		09:20	?	?	?								11569	10314	

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
2nd, 4th	Saturday	**09:00**				17481	17426	16314	16089	16186	16341	18919			45057
		09:10				15946	15818	14569	14384	14571	14706	16268			
		09:20				13543	13396	12191	12173	12195	12217	14486			
		10:00	20973	20894	18948								20868	20951	
		10:10	18736	18429	16223								18259	18643	
		10:20	16328	16153	14639								16113	16314	

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
Every	Saturday	**11:00**	?	?	?	?	?	?	?	?	?	?	16236	15623	36882
		11:10	?	?	?	?	?	?	?	?	?	?	14419	13854	
		11:20	?	?	?	?	?	?	?	?	?	?	12128	11586	

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
Every	Saturday	**15:00**	20564	22878	22913							22963	22871	20648	32821
		15:10	18471	20216	20374							20461	20629	18483	
		15:20	16308	18253	18406							18356	18553	16196	
		21:00				20386	18751	18323	17436	16289	15928				
		21:10				18509	16174	15886	15789	14461	13396				
		21:20				16231	14563	13581	13473	12176	11143				

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
2nd, 4th	Saturday	**15:30**	?	22986	22874							20806	22984	20741	32821
		15:40	18689	20363	20634							18441	20719	18368	
		15:50	16156	18669	18751							17463	18348	16343	
		21:30				20589	18663	18521	18246	17429	?				
		21:40				18371	16344	16256	16149	15861	13498				
		21:50				16108	14869	14641	14474	13486	11054				

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ID
Every	Sunday	**15:30**	10378	?	?	?	?	?	?	?	?	?	?	?	20501
		15:40	9169	?	?	?	?	?	?	?	?	?	?	?	
		15:50	7419	?	?	?	?	?	?	?	?	?	?	?	

M42c Schedules (December 27, 2016) Most schedules repeat the next day using the same times and frequencies if a message was sent, unless noted.

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Every	Mon - Fri	**00:00**	17471											
		01:00	14421											
New message every day. Parallels M42d at 0200/0300z, S06 at 0400z, and M14 at 0500z.														

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Every	Monday	**00:25** **01:25**	?	?	16023	?	?	16218	14878	16023	15672	14434	12101	10884
		00:35 **01:35**	?	?	13555	?	?	?	12185	14373	13892	11439	9215	8157
Doesn’t repeat the following days.														

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1st	Wednesday	**18:40**				12194	14363	14621	14829	15854	13467	11136		
		18:50				10581	12189	12206	12214	13543	11084	9074		
		19:00				8112	10346	10465	10932	11126	9052	7723		
		19:40	7629	8156	10467								8172	7684
		19:50	6783	6844	8094								6791	5326
		20:00	4034	4527	6779								4546	4029
Repeats messages the following Friday (same times and frequencies) instead of the following day.														

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Every	Friday	**22:30** **23:30**	?	?	20700	?	?	19224	18562	20823	20618	20966	20741	18169
		22:40 **23:40**	?	?	18726	19405	?	17491	16218	18397	18048	18954	18702	15765
Doesn’t repeat the following days.														

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Every	Saturday	**12:00**				18206	17431	17496	16329	17482	17441	19526		
		12:10				16159	15827	15932	14641	15967	15845	17463		
		12:20				14551	13376	13481	12187	13396	13506	15824		
		13:00	18526	19441	18437								20374	20562
		13:10	16142	17456	16305								18351	18194
		13:20	14674	15817	14719								16249	16107

Week	Day	UTC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Every	Saturday	**18:10**	7684	9153	12184	14517	15806	16322	16147	15931	13384	11462	9247	8131
		18:20	5387	7641	10292	12196	13512	14804	14389	13452	11441	9226	7762	6824
		18:30	4572	5251	8054	10413	11131	12207	12214	11093	9184	7829	5216	4471

XPA Sched c and XPA2 [Sched m, r & t] Russian Intelligence Multitone Systems [Radiogramma] Transmission Schedules

Zulu > / Month v	0600/0700 Sched c Wednesday/Saturday USB 10baud			XPA2 Sched m Various times Sun/Tue H 00 H+20 H+40 1300,1500,1800,2000,2100			XPA2 Sched r Various times Fri/Sat H 00 H+20 H+40 1400, 1900, 2100			XPA2 Sched t Tuesday/Friday H 00 H+20 H+40 0700z		
Jan	9108	10908	12208	16138	14438	13438	16167	14663	13923	13472	14772	16272
Feb	11409	13509	14609	16338	14538	13538	18667	17419	16212	14558	15958	17458
Mar	11409	13509	14609	16138	14438	13438	18667	17419	16212	13431	14631	15931
Apr	10359	11559	13559	14538	13538	12138	17462	16114	14828	16347	17447	18747
May	10868	12168	13368	14538	13538	12138	17462	16114	14828	19667	18767	17467
June	11409	13509	14609	14738	13438	12138	16167	14663	13923	19514	18214	16314
July	11409	13509	14609	14538	13538	12138	15967	13884	12217	20173	18763	17473
Aug	10868	12168	13368	14738	13438	12138	16167	14663	13923	20049	18549	17449
Sept	10359	11559	13559	14538	13538	12138	16167	14663	13923	17429	18629	20129
Oct	10868	12168	13368	16338	14538	13538	17462	16114	14828	16284	18184	19584
Nov	11409	13509	14609	18238	16238	14438	17462	16114	14828	14517	16017	17417
Dec	7756	9056	10656	14538	13538	12138	15967	13884	12217	13393	14493	16293

Notes:

XPA c 0600/0700z schedule appears to be robust with reasonably strong signals into UK

XPA2 m Repetitive frequency triplets, appears robust, generally strong into UK
XPA2 r Schedule appears robust; generally very strong signals to UK
XPA2 t Weak in UK
XPA2 p Six day variable schedule, separate document

Bespoke decoding program used to decode: 'Sepal'

Updated 19/12/2016

XPA2 p Russian Intelligence Multitone Systems [Radiogramma] Transmission Schedules

Zulu H+20	Sun			Mon			Tue			Wed			Thu			Fri			Sat		
Jan 0800				15978	14978	14378				15978	14978	14378									
Feb 0800				15983	14783	13883				15983	14783	13883									
Mar 0800				15956	14956	13956				15956	14956	13956									
Apr 1500	16147	14947	14447													16147	14947	14447			
May 1500	16314	15814	14514													16314	15814	14514			
June 1900							15884	14984	14384				15884	14984	14384						
July 1900							15884	14984	14384				15884	14984	14384						
Aug 1900							16314	15814	14514				16314	15814	14514						
Sept 1500	16147	14947	14447													16147	14947	14447			
Oct 1500	16147	14947	14447													16147	14947	14447			
Nov 0800				16073	14973	14373				16073	14973	14373									
Dec 0800				15861	14761	13561				15861	14761	13561									

XPA2 p

Appears to be a robust schedule
Usually sttrong into UK, latest poorconditions affect sendings

08/11/2015

SPECIAL MATTERS

Operation Jallaa: Nil Return; Jallaa under review.

MESSAGES:

E: Thanks for info and updates; especially long article HNY to you and yours.

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

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