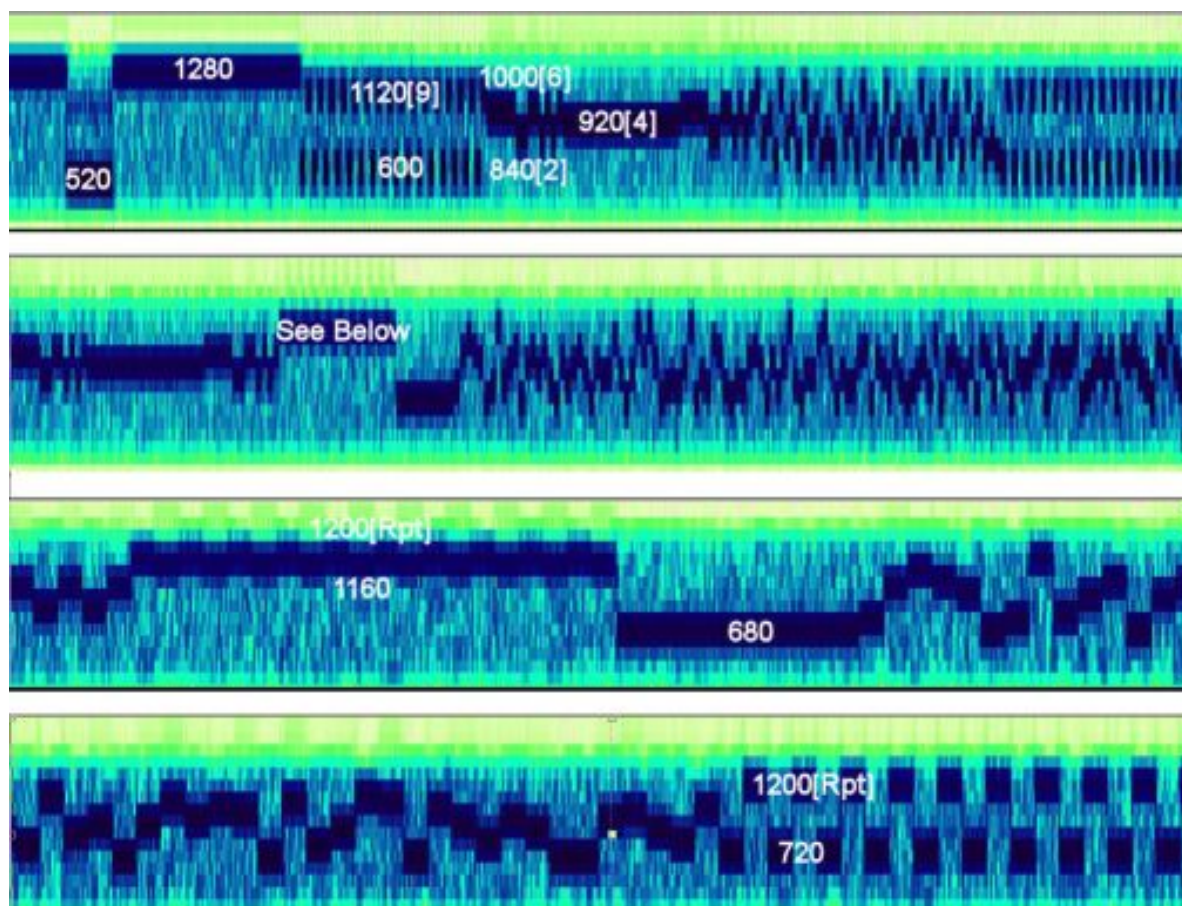


ENIGMA CONTROL LIST

NUMBER 25



XPA [MFSK-20 Russian Intelligence Multitone System] tone map

February
2011

www.enigma2000.org.uk

INTRODUCTION

The ENIGMA CONTROL LIST is Copyright and cannot be published in any form without prior permission from ENIGMA 2000, the custodians of this List.

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This list supersedes all previous Control Lists. It is continually updated taking into account all known, and confirmed, information at the dates of revision.

Stations if marked "DELETED" have been identified as other stations already included on the list.

Stations if marked "WITHDRAWN" have been identified as not being "numbers stations" or having any recognisable "numbers" content.

Existing stations never change position within the context of the list and deleted ENIGMA ID's are NOT reused.

Many of the stations listed are no longer operational, although some have been known to return after long periods of inactivity, however the Control List serves as an important historical record of "numbers" activity and is the first, and only, (non-governmental ?) organised classification of Number Stations, whether of voice, Morse (CW) or Data format, publicly available.

Minor revisions are announced in the ENIGMA 2000 bi-monthly Newsletters and the Control List is meant to be read in conjunction with these, and their included detailed charts, to obtain current frequencies and TX times.

NUMBERING RATIONALE

Voice stations are classified strictly according to the language used in their transmission. Eg :- Station NNN in German, French, English & Hungarian would have four distinct reference numbers.

In order to eliminate confusion over unknown or obscure/ambiguous languages and dialects the total number of languages has been grouped under four headings :-

E - English, G - German, S - Slavic, V - All other languages

(As a group the Slavic languages are easy to aurally identify, but to the untrained ear are not easy to identify specifically.)

Slavic words for numbers are closely linguistically related and a listing of those used by the currently operating Slavic stations can be found in the European Languages document on the ENIGMA 2000 Website, and elsewhere)

Non-voice stations have the classifications:-

M - Morse & RTTY X - Other modes

New Modes

From Jan 2007 an extra section has been added to the Control List to cater for the use of additional digital mode TX's by existing known stations. These designators will be "Transmission Type" related.

Currently only **SK01** has been assigned, which relates to the various formats being used by the Cubans in addition to/instead of the V02a & M08a TXs. At the time of writing only the RDFT format is in continued use although trials were conducted with BPSK31, BPSK63 & PSK220F amongst others.

Alphabetical suffixes (**always written in lower case**) refer to variant forms of the SAME STATION, occasionally or regularly operating within the same period as the more usual format.

Earlier formats, later superseded, of a station, retain their original designation.

Those operative over markedly different periods are assigned as separate stations.

The term variant for our assignment purposes **applies only to format**, not to schedule, or different voice, or musical ID's or tuning signals. The variants have many forms, some being minor and others radically different in preamble or message type.

Numerical/Alphabetical suffixes, currently only used for the M01/M45 CW stations and XPA, were introduced from 2004 to meet specific logging requirements.

M45 was given numerical suffixes in 2010.

XPA was given alphabetical suffixes in 2011

Activity Indicators

With the current rate of change in the activity status of stations these indicators should not be regarded as definitive, only a guide.

* Denotes station/format no longer active

^ Denotes station/format possibly inactive

Omitted reference numbers have been deleted from the ENIGMA Control List

CW Stations

Figures/Letters shown in the Morse Station profiles are for illustration only.

The actual currently used content may vary considerably, but those shown have all been used in past transmissions.

Times

All times are quoted in GMT/UTC/Zulu, all information posted to ENIGMA2000 should use this structure.

KNOWN FAMILIES

Direct equivalents (Morse & Voice) are separated by /.

Other TX's operated by the same agency, but not direct equivalents, are separated by //.

All equivalents use broadly similar formats, and often, similar schedules and frequencies

Family	"Owner?"	Members
I	KGB/GRU/FSB IA-	E06/E17?/E20?/G06/S06/V06/M14/M24//S25 (no digits repeated in first 8 numbers)
	IB-	E07/G07/G17?/G19?/S07/V07/M12//XP
	IC	M18, M21, M42, MX, S13, S14, S28, X6
II	CIA/NSA?	E05/G05/V05//E14/E21/V14
III	"STRICH" Family	E11/G11/S11/S12/M3//G10/S26//M20
IV	NNN Family	E12/G12?/V12/V18//M2
V	Five Dashes	E13/G13
VI	BND/FRG	G14//G15//G16/E16//M15
VII	AIDA Family	S01//S02//E01#/M17#//X1
VIII	BVT/YT Family	S08/M27//?M40/M53?
IX	CZECH Family IXA-	G18?/S10/M10//M07 #M11/S10d
	IXB-	S05/M06A//S15//S16/M6
	IXC-	S18//S17/S19//M39?
X	MI6	E03/E03a (Formerly E4)
XI	SWEDISH RHAPSODY	G02/M04//E23
XII	?	E09/V08
XIII	3 NOTE ODDITY	G04/M29
XIV	M1 Family	S21/M45//M01//M50//S27
XV	EDNA SEDNITZER	E18/G22/S04/M13
XVI	ROMANIAN	V01//M48//V17?//M63?
XVII	DDR	G03//G08/M49 G01? M41?
XVIII	CUBAN	V02/V02a/V02b/M08//V19?//V20?
XIX	FRENCH	M51?//M83?

AIDA Family:- E01 & M17 may not be part of the family, only indication is frequency usage.

IX(A) Family M11 & S10d possibly not of this family, although using the same formats.

O INDIVIDUALS Show no obvious signs of a "family" relationship.

STATION LISTING BY LANGUAGE / MODE

YL = female voice OM = male voice

ENGLISH

Family	Ref.No.	Comments/"nickname"	Non-Voice Counterpart (other links in brackets)
VII	E01 YL *	AM, "Ready Ready" ends "End"	M17
O	E02 OM*	AM, Arabic Man (The Babblers)	
X	E03 YL *	USB, "Lincolnshire Poacher" intro tune, with 'gong' chimes TX = 200 groups of 5F figs, approx 45 mins duration	
X	E03a YL *	USB, "Cherry Ripe" intro tune, with 'gong' chimes TX = 200 groups of 5F figs, approx 45 mins duration	
II	E04	DELETED, should be logged as E03a	
II	E05 YL *	USB, Counting Station (Cynthia). 3-2 gps, "end" Last heard 3 Oct 03	
IA	E06 OM	AM (English Man) Usually H+0, H+30 Stays on UTC Times/freqs vary seasonally, up to date charts given in Newsletters High pitched start tone. Null message format:- " nnn x3 00000 " for 4 mins. Message format:- 3f call for 4mins preamble – 3f DK x 2, 2/3f GC x 2. Mssg 5F gps, Ends – DK x 2, GC x 2, 00000 (fast/slow zeros) Note that the first 8 figs of TX has NO repeat figs. (returned to the original voice early 2001, with distinctive pronunciation of 3 & 8) (additional voice from Sept 03, with no perceived distinctive pronunciations)	M14 / M24
	E06a OM	AM, 2 group commencing with 11111 stutter group	
	E06b OM	AM, 3F ID with 5F group <i>in call</i> , 2 messages	
IB	E07 OM	AM, (English Man) H+0 or H+10, Changes time 1 st Apl/Nov. Null mssg format : - "nnn nnn nnn 000", R2 Repeats 20 mins later, no third sending. Mssg format : - Call, 3f x 3, Number of messages, R2 Preamble 3/4f ID, 2/3f GC all x 2 Mssg 5f gps, repeats 20 & 40 mins later Ends with 000 000. New voice early 2001. In Dec 2003 it was noted that the ID was no longer always directly TX frequency related, and that no separate repeats were logged. Ongoing study (2004 – 2005) now show that some of the ID's are again freq related and can be the 2 nd , 3 rd or 4 th fig of a 4fig freq or the 3 rd , 4 th or 5 th fig of a 5 fig freq, or again not related at all. Some TX's noted using the E06 voice in 2010	M12// XP
	E07a	First logged 01 Jan 2009 ID assigned 26 Feb 09. Effective 01 Mar 09 Null mssg format:- Nnn nnn nnn 000 R2 Repeats 20 mins later. Mssg Format :- 3f call x3, number of messages(1), single 5f group. all R2 Pause then preamble 3f ID, 2f GC, all x2 Mssg 5f gps, repeats 20 & 40 mins later Ends with 000 000	

XII	E09 YL ^	AM, intro music from Magnetic Fields (J-M Jarre) Uses 2 different ID tunes, (possibly a schedule identifier. Ed)	(V08)
		<u>E10 is probably still the most prolific voice station and always gives surprises.</u>	
O	E10 YL	Newsletters contain comprehensive charts of current activity. AM, (more correctly H3e, some J3e (USB) reported) NATO Phonetics call. (any 3 letters eg :-ART, PCD,VLB, TMS,) xxx2 =Null mssg , xxx1 = Test, xxx3 = not yet determined	
	E10a YL	All variants / strings to above eg :- SYN7, VLB524X118X0115Z7, HNC-F, HNC-Z etc	
III	E11 YL	AM/USB, Daily, all/any 05.00, 06.05, 06.45, 07.15, 07.55, 08.15, 08.45, 09.15, 10.30, 11.00, 12.30, 13.00, 13.30, 14.15, 16.30 Wed 21.00z (noted Feb 06 5082kHz) Freqs vary regularly, up to date info given in Newsletters. YL speaks quickly. Null format : - " nnn Oblique 00" (nnn / 00) no intro, 5 min TX, ending "OUT"	M03 G11 S11a
III	E11a	With mssg(s) nnn Oblique nn (nnn/nn)R5. 5Fmssg, 5f Rpt, ending "OUT" (originally END)	
III	E11b	Starts & ends with stutter gps, (7777 7777),as first and last 2 mssg gps. Mssgs with only "in 30's" gps, Initial mssg is 5F, repeat is 5f. distinct pause every 10 gps	M03c M03f S11b G11
III	E11c	Assigned 08 Sept 2010 First logged 22 July 2010, 00.45z, 6804kHz, last log 05 Aug. Null format:- nnn Oblique nnn Oblique 00 (754/555/00) Rc3, ends "OUT" Mssg format:- nnn Oblique nnn Oblique nn, Attention, 5f groups ending "OUT"	
IV	E12 YL *	NNN	M02 sG12 V12 V18
V	E13 YL *	Five Dashes	
II	E14 YL *	4F "control"	
O	E15 YL/OM ^	AM/USB, uses a pre-NATO Phonetic Alphabet (very similar to the 1948 ARRL "Adam Baker Charlie" phonetics) ie NAS = Nancy Adam Susan. Does not TX on Fridays. Ends AR AR (as Adam Robert) Difficult copy in Northern Europe, heavily accented. YL voice returned Mar 05 after very long absence. (Under ongoing intensive investigation with numerous variants already found, their significance, if any, is not as yet fully understood. Ceased in 2006, it may return.	
O	E15a	WITHDRAWN, may be part of an expanded E15 section at later date.	
VI	E16 YL *	USB, 2 Letter, (AK, AG, DM, MD)	
IA	E17 YL *	AM, English Lady, ends "00000" Sends mssg for first 2 weeks of month Null mssg thereafter. Ending Zeros can be fast or slow.	M14
	E17a YL *	AM, Dual message variant	M14a
IA	E17y YL *	AM, "398" (ex Cuba)	

IA	E17z YL	AM, call "674" variant, Thurs 08.00/08.10z +- (ex Ukraine?) Call-up for 4 Min, New mssg monthly. 674, nnn(ID)x2, n (GC)x2, 5f mssg ends ID, GC, 0 0 0 0 0 (spaced) Has used current freqs (7635) / 9820 / 10240 / 10320 / 11170 / 12850 / 12930 / 14260 / 16780 usually very short messages. Heard in Europe mainly during Nov – Feb inc	
XV	E18 YL *	LSB, Edna Sednitzer	M13
O	E19 OM *	Irish Man, notable accent.	
?IA	E20 YL/OM *	2 Message, dual voice version of E17 / E6, or both. All could be variants of same	M14?
II	E21 YL *	4F counting, Eng accent	
	E21a YL *	" American accent	
O	E22 OM/YL	WITHDRAWN JAN 06 Found to be engineering test TX's of All India Radio network. See Issue 32 ENIGMA 2000 Newsletter and investigation document on group site. (Original write-up from 1997) AM, Arabic Man, (Heavily accented English) 2L+ f , (ie FD7, FD9) . YL voice also logged. Relogged July 05, many calls heard XN2, PN8, PS5 etc. 15040 / 17387kHz / 11620kHz, 09.00z – 15.00z at H+25, H+55 variable Strong carrier in Europe, but mod sometimes difficult to understand.	
XI	E23 YL/OM ^	AM/USB, (Swedish Rhapsody), Changed in 1998 to "without music intro" and using the E05 "Cynthia" type voice. Typically operates on a 3 out of 4 weekly cycle, missing out week 2, and starting 1 st Mon of month. 2005, Skeds are now erratic and may be heard at other times. Updates / skeds published in E2k Newsletters. Format : - Intro of 0 – 9 as 5f stutter gps (00000 11111 etc) all x 3, then into Mssg of 5F gps. Ends with stutter group and "message end"	M04
O	E24 OM *	AM, "Allo! Allo!"	
O	E25 OM/YL	AM(suppressed LSB) /USB, music intro (sometimes), songs by the Egyptian singer Umm Kultum & others. 3f-2f call, 4f mssg repeat repeat repeat mssg rpt ends 'end of message' Daily, currently only on 9450kHz. **** see later. Operates to a "local" time, not UTC From late 2004 TX's have been heard between 11.00z – 15.00z (12.00-14.00z in winter) From Apl 05 times noted varying +- 20min 3f-2f call, R5 = null mssg. Poor reception in Northern Europe, BC QRM. From May 2006 being affected by VoR DRM service. Noted with musical endings to some TX's from April 04 There are 5 voices used for the English transmission 1 YL & 3 OM (July 2005) + [another heard during May 06] During Jan 2007 a further schedule at 07.45 / 08.00z +- was identified. See major article in E2k Newsletter 39, Mar 2007. **** On Sat 26 May 07 a new sked found **** 07.00z 6140kHz, (6170 also reported.) This is still current.	
O	E25a OM/YL	AM/USB, As E25, but 3f 3f 2f 2f 2f 2f call. (re-appeared Feb 05 after a couple of years unlogged) Believed to be "Control" messages of some sort, remains unheard for very long periods.	

	E25b OM	Arabic language message variant, but call-up is in English. From 01 July 07.	
	E26	Allocated in error and immediately WITHDRAWN	
O	E27 OM	First heard 23 Nov 06 16270 // 10915kHz USB, 15.30z/ 20.40z, 5f gps 6840kHz used from Jan 07 at 20.45z. 9061 & 9269 also reported but unconfirmed. Format :- Carrier up c5 mins prior Long 1k tuning tone followed by 5 long dashes. Only 20 gp mssgs heard. Message, group nn, message Into mssg, with c3 sec pause after 10 gps Message End	
		Suspected 'special event' station, now presumed closed down, but occasional listening watches are still carried out	
GERMAN			
?XVII	G01 OM *	Tyrolean music (both sections)	
	G01a OM *	Irregular tunes, 1st section	
	G01b OM *	Phrase messages, 1st section, and irregular tunes.	
XI	G02 YL *	Swedish Rhapsody Ceased 1997	M04
	G02a YL *	Counting Variant	
XVII	G03 YL *	Gongs or Chimes intro Ceased 23 May 1990	
XIII	G04 YL *	AM, (3 Note oddity), starts at any 5 min. Intro of 3 rising tones, "Achtung Achtung" 1 st Thurs of Month, Started using English in 98 with the TCS voice. Ceased early 2005.	M29
II	G05 YL *	German Counting "Zwo"	
	G05a YL *	"Zwei" variant	
IA	G06 YL	(see E06 for format details) AM, German Lady, ends "00000" Only five schedules known, seasonal frequency changes. Sends messages infrequently. See Newsletters for current activity.	M14
IA	G06a YL	AM, Dual message variant	
IB	G07 YL ^	AM, German Lady, (Nui Noichen) Intro "Achtung". Uses "noiken" for 9 ends "000 000 ende". 3/4f DK, single gps (Inactive for a long time, resurfaced 15Mar 2002 Inactive again 2005, may return)	M12 XP
	G07a YL *	AM, 774 type variant	
XVII	G08 YL *	4 note, rising scale. Same voice as G7 Last noted scales were "so-la-ti-do" & "do-me-so-do" Ceased Apl 1990	
	G08a YL *	Single repeated 5F group + morse	M49
	G08b YL *	Rapid dots intro	
O	G09 YL *	Saxaphone Piece	
III	G10 YL *	"Bert Kaempfert"	M03

III	G11 YL	AM/USB, Strich Format generally as E11a, ending "00000 00000 ENDE" 0 = Zerau 2 = Zvou (very unusual pronunciation) Last heard 2 April 98 Reheard Jan 07, for a short time, after almost 10 year absence. See E2k Newsletter 39, Mar 2007. Returned again Sept 2007 and is still active (2010)	E11a S11 M03
IV	G12 YL *	NNN	E12 V12 V18 M02
V	G13 YL * G13a YL *	5 Dashes 3/2 group variant	
VI	G14 YL * G14a YL *	DFC37/DFD21, rising and falling 20 note scale. Non-phonetic variant	
VI	G15 YL * G15a YL *	Papa November, USB sent on 3// freqs PN read over musical notes	
VI	G16 YL*	USB, 2 Letter (AU, DB, DC, DT, EG, EL, FS, GK, NU, WL, OA, PZ, RD, VO) Network gradually reduced in the mid/end 90's GK the last station in this network ceased mid 1999.	
?IB	G17 YL *	German Lady, only on 5420 kHz	
IX	G18 YL *	8 note, rising and falling scale	M10? M07?
IA	G19 OM ?? *	German Man, ends "000000", same voice as "live"G1 Possibly reactivated April 2003, under investigation, Unconfirmed / unreliable reports only, considered closed	M12? XP?
O	G20 YL * G20a YL *	Spruch One 5F group	
O	G21 YL *	Music & Morse intro	
XV	G22 YL *	LSB, Edna Sednitzer German speakers have remarked on the odd accent used. First Thur of month 22.00/23.00z 6748, 6682, 4832 seasonal. Ceased Feb/Mar 2006	M13 S04
O	G23 ? *	2M8, Hitlers birthday, (20 Apl)	
SLAVIC			
VII	S01 YL *	intro Aida (Grand March)	?M17
VII	S02 YL * S02a YL * S02b YL * S02c YL * S02d YL *	intro Drums and Trumpets march Ceased June 1996 with added Bugle "Taps / Il silencio" intro, see also X1 3F nomer, then reversed 5F Nomer	
O	S03 YL *	Unid Russ/Slavic ? words, such as "Adim Yadeliet Sim", "Shest Sim Adim" "Shest Adim Vosim" Messages rarely sent, has ended "Nula / Nul / Zero ? x3 Was very busy in Mar 95, May 97. Last confirmed log 20 Jan 98 (MoK) Random sked, heard 94 – 98 in 5/6 meg bands. Has used S&R 5680kHz slot at times. Has been confused with S18 / S19 (but voice very different)	

IB	S07 OM ^ S07a OM ^ S07b OM ^ S07c OM ^	AM, Russian Man, 3f call, 3/4f DK ends "000 000" AM, Multiple 2 group AM, Multiple single group message, using same ID AM, 4f, non random	M12, XP	
VIII	S08 YL *	YT (Serbo Croat?) Ceased end 1996	M27	
O	S09 *	Polish Counting		
IXA	S10 YL * S10a YL * S10b YL * S10c YL * S10d YL ^	AM, Czech Lady I (piano piece, later 5 notes) AM, 555 "idler" format AM, 5 note intro (3 versions) AM, 3F ID, with "idler" AM / USB, 3F ID (Bulgarian Betty, actually Czech) M10, S10, Normally Sun /Tue 20.50z – but other skeds heard Changes freqs monthly, 2 // freqs, can have one in AM other USB 5F groups Ends "Pozor Pozor, nn nn, nn nn, Konec Konec" Predictions / updates are published in E2k Newsletters Stays on UTC time [There was an earlier version of B.Betty, ceased Dec 89]	M10c M10c M39 distant relative ?	
	S10e OM ^	AM, Slovak, 5Ff, GC x 3 in call. 4 weekly sked. Ends "000"	M10e	
III III	S11 YL * S11a YL	AM, (Presta) AM/USB, (Cherta) Mon/Tue/Wed/Thu Null mssg "nnn/00" Call nnn(ID) nn (GC) V 5f Ends 'FINIT/KONEC' Freqs (mid 2010) 5815, 5855, 6280, 6877, 7840, 9371, 10210, 13908, 16388 Times 07.00, 07.30, 09.00, 09.50, 10.00, 12.30, 13.00z	M03	M03
III	S11b YL	Format as E11b Mssgs with 30's gps, starts with stutter gp, rptd (77777) this doublet as first & last 2 gps. Ends "Konyets" First noted Wed Mar 6 th 06, 09.00z, 7377kHz (freq will vary)	M03c E11b	
	S12	DELETED		
IC	S13 OM	Russian Counting, 0-9, & occasional announcements such as UPT76 etc (only 2mins duration)		
IC	S14	As above, of very long duration. Shield58/South 96 etc (in Russian)		
IXB	S15 *	Rapid Dots (an early OLX) see S5a	M06a	
IXB	S16 *	OLX, see S5b	M06	

IXC	S17 YL S17a YL * S17b YL * S17c YL ^	AM, Czech Lady "control" single 5F message AM, no circuit No, positioning index or GC AM, 01 GC USB, Daily 12.50z, Freqs change through year, has 2 // freqs Updated skeds are published in E2k Newsletters Call always 313 313 313 05 Preamble always 42 42 05 05 Podor Podor, single 5f gps x 10 (middle fig always 0) Podor Podor, rpt of preamble Ends Konec Konec Updates: Changed to the 555 triplet call during ? On 1 Nov 06 was heard with a single 999 call but then reverted to 555 probably on 2 Nov but definitely on 3 Nov and maintained this till Feb 07. 01 Feb 07 changed to a single freq TX with 555 call. 02 Feb 07 – the big change – brings its calls fully into line with the associated M10 & S10d stations using variable triplets. Presumed ceased June 2007.	M10, S10d
IXC	S18 OM/YL	Czech Man/Lady, 3F-5F Reactivated with YL voice 2004 after very long absence. Format : - 3Ff ID, 5Ff gp, all x 5 (xxx xxx xxx xxxxx xxxxx xxxxx) x 5 ends Konec Konec no known freqs or times, pot luck.	M39
IXC	S19 OM * S19a OM *	Czech Man "control" 000 888-018 (S17c type)	
O	S20 YL *	Aifada	
XIV	S21 YL/OM	AM, Russian Lady, 3f call, OM voice started Oct 2010, similar to S06 Format: 3f call (454/323/973 etc)R, nnn DK, nn GC, 5f mssg Ends DK GC 000 Time/freq 3323//3823, 4454//4854 , 4973//5373 17.42/18.42z Seasonal changes	M45, M01a?
IA	S25 OM S25a OM * S25b OM * S25c OM *	AM, Russian Man "control?" 40 min TX Returned to air Sept 04 with much shorter TX's , still under investigation as very unpredictable and seldom logged, reheard Dec 06, Aug 07. AM, 11111 22222 format, very long TX AM, with message/s, very long TX AM, "615" single group, 14720 kHz	
III	S26 YL *	"Zyt ! Zyt! (Hush! Hush!) Polish ?	M03
XIV	S27 YL * S27a YL *	Czech Lady II with message/s	M01c

IC	S28 OM	Buzzer /UVB-76, 4625kHz, (Formerly XB) AM/USB TX, Also reported on 3824/3842. Additionally from mid 2010 +- 4585, 4625, 4666, 4705, 4745 logged Believed Russ Mil. Emergency Mobilisation Ch marker, With additional voice & data. The traditional 'top of the hour' warble ceased mid 2010 after the 'maintenance' off air period.	
IXC	S29 YL	DELETED was the S18 YL	
	S30 OM	"The Pip" with messages; was XT 3757 night / 5448kHz day, changing over at c18.00z/06.00z +- ?hrs, seasonal dependant. Freqs sometimes run // for a short time. Russ Mil.Ch marker, voice & data.	
O	S31 YL ^	AM, Czech, 1122 & 2136 kHz 24hr, H+10 & +40 made by/over a BC station	
	S32 YL	Formerly XSW,(Squeaky Wheel) voice traffic noted during Mar 05 / Dec 05 Short Russian phrases, ie "For 544: 384 388 290" TX last about 1 min. Current freqs : -3829, 5474, 6991kHz, slight variations. Noted on 15010/15040kHz Nov 05 Russ Mil. Ch marker with voice & data.	
OTHER LANGUAGES			
XVI	V01 OM * V01a OM *	intro "Ciocirlia " (The Skylark, tune) Romanian with additional tune	M48
XVIII	V02 YL *	<u>V02 & M08 Family, see also notes for M08</u> AM, Spanish Lady, "Atencion" 1/2/3 finals Call 3f2f for 3 mins, single gps Format ceased late 1996	M08
	V02a YL	AM, 3 mssgs of 150 gps each, diff addr , single gps Usually rptd 1hr later, first and last 2 gps usually the same, but during late 2010 mssgs with a different last group were noted and is under investigation. Initial notes in Newsletter 62. Comprehensive sked charts & updates in Newsletters.	M08a
	V02b YL ^	AM, 5f 5f 4f header version of V2a	
	V02c YL ^	AM, 3f2f call for 3 mins, <u>gc x 6</u> , 3 sec pause every 10th gp. Format started Aug 04, ceased 30 Sept 05. May return. Note , V2 stations may use USB – rare.	
II	V05 YL ^	AM, Spanish Counting, 3/2F	M68
II	V05a *	AM, Spanish Counting, 4f	
IA	V06 YL ^	AM, Spanish Lady, ends "00000"	M14
IA	V06a YL *	AM,"362"	
IB	V07 OM/YL^	(see E07 for call details)	

		AM, Spanish Man, ends "000 000" (fem voice started early 2001)	M12, XP
XII	V08 YL ^	AM, Arabic Music (Umm Kultum) or J-M Jarre, Arabic language, 6647 & 11292 kHz, 18.00/19.00z First Sat of Month	E09
O	V09 YL ^	AM, (Chinese I), (5738, 6278/80, 7584, 8036 kHz)	
O	V10 OM * V10a OM *	Spanish ? "Stop Schlosst" 2 group idler	
IV	V12 YL *	NNN - French	E12 G12 V18 M02
O	V13 YL	AM, Star Star Radio, Taiwan, in live Mandarin Musical intro (flute) + voice preamble H-3 TX's 23.00z – 16.00z In Europe best 12.00/15.00z 8300kHz. In CONUS best on 10522kHz, 06.00/12.00/13.00z Freqs used : - 8300, 9725, 9275 ?, 10522, 11430, 13750, 15388	
II	V14 YL *	4F "control, Spanish	formerly M72
O	V15 OM/YL	AM, North Korean, given via Radio Pyongyang, martial music.	
O	V16 YL *	Chinese, 11028 kHz, 5min max TX, 15.00z (Europe) Reported in Australasia on 3/4/6/8 meg bands, no logs. Very fast speaking, each phrase ends "Oh Sie" x 2 Poss on 13680Khz (under BC) only reported from monitor in Cambodia (1998) Last European log 1999 (by ML)	
?XVI, ?IB	V17 OM *	3F + 000, Romanian	?M12
IV	V18 YL *	NNN, Hungarian	E12 G12 V12 M02
O	V19 OM *	WTR21. Intro (Don't Cry for me Argentina tune) Spanish speaking.	(related V20?)
O	V20 OM/YL? ^	Bored Man/Lazy Man, Spanish Slow uneven delivery	(related V19?)
O	V21 OM/YL?	The Babblers, Spanish. USB Quick delivery, erratic TX's around 13.50 – 14.40z 5673, 5688 See Newsletter 62, page 40 for an analysis	
O	V22 YL	Chinese II, 8375kHz AM, Mon-Fri, 13.00/13.30/14.00/14.30z 4f gps. Only the QRU (null mssg) format heard in Europe. Heard in Japan, misc times, on 8375/10200/10520/16520kHz with the announcement [All listening stations in the country x 3, This is Beijing x 2]. Repeated 5 mins. Ending "Thanks"	
IA	V23 YL *	French Lady, AM. Heard for 1 week in Aug 1999, 8124 & 11060kHz	(related S06 E17z ?)

Format was as S06

- O V24 YL AM. S.Korean, 3+2f or 2+2f (eg: 710.75) M94
Folk music intro, call (3+2f) then GC,
mssgs in **xxx.xx / xx.xx / xx.xxx** formats.
“I will repeat that”
then Call, GC, mssg
Ends “That’s all thanks” possibly related V08
as it uses similar numbering peculiarities
11.00-17.00z, usually H+00 or H+30
Now (10/2010) only using 5715, **6215**, 6715kHz (rare),
6330, **6730**.
6330 first noted Feb 2010.
See Newsletter 61, page 36 for an analysis of V24/M94
A current V24/M94 sked can be found at:-
http://token_radio.home.mchsi.com/Sched_V2_Oct2010.jpg
- V25 YL Chinese, 3f +3f ID, in 8 - 23mHz range around East
Format "316 x3 this is 728 x3" R5, No,GC, Asian Midnight
4F gps R2, ends "goodbye" [16.00z+-]
- V26 YL Strange Chinese / English mixture. Poss Mil M95
Callsigns XSA or XSE23 (Eks-Es-Ee Lian San)
Preamble unid., TX is **AM, LSB or USB** (2010),
unid sked, 3f gps
Heard at 06.30z & 15.33/15.53z
Update –**Aug 2010**.
07.30, 09.00 – 10.00 & 13.00 – 14.00z
Simultrans on multiple freqs.
Freqs heard **4283**, 5922, 6446, **7553**, 8619, 8621, 9101,
9054, 9153, 13030, 16665kHz
Format :- nr 030 15 35 0927 0600
Where 030=mssg nr/recipient, 15=gc, 35=unid (stays constant)
0927=date, 0600=appears to be time of origination,
but can be **later** ?? than the TX time !!
All figs in synth Chinese however inter mssg announcements
and callsign letters are in “broken” English,
ie “em-es-eeg ai-gee-en, while the numbers are in Chinese !!!
- V27 YL ^ Another strange Chinese/English station, similar to V26
Callsign 3SG (San-Es-Gee)
TX is **LSB**, unid sked, 3f gps.
Freqs heard 4650, 6460kHz

MORSE STATIONS (including known format examples, see header notes)

Common abbreviations used for reporting :- (full abbreviation list available on our group site)

R4=repeated for 4 mins 5f=5 figure single groups 5F=5 figure paired groups
 5Ff=5 figure triple groups Short =short zero (sent as "t") Long = long zero (- - - - -)
 nnn x 3= repeated 3 times // = parallel freq Hand = hand sent

Cut = numbers sent in abbreviated form (numerous systems used), example :-

A= 1, N= 2, D= 3, U= 4, W= 5, R= 6, I=7, G= 8, M= 9, T=0. As used by Cuban M08a.

Family	Ref No	Comments	Voice Counterpart (Other links in Brackets)
XIV	M01	"Two Tone" MCW, hand, ends "000",short. 194 R4, 381 381 40 40 = =, mssg 40 x 5F, ending 381 381 40 40 000 This station has an annual "per months" sked structure and the designators are amended to :- (from July 2004) M01/1 Skeds ID197 Jan, Feb, Nov, Dec M01/2 Skeds ID463 Mar, Apl, Sept, Oct M01/3 Skeds ID025 May, June, July, Aug Messages never repeated. (but see Newsletter 62, page 3 for an anomaly)	S21?, M45?
	M01a	Formerly end of month variants, day/time/freq varies. Now changed to random skeds, (2005). 197 197 197 58003 58003 58003 111 000 repeated several times, no message	
	M01b	as M01 but with the same message repeated over several weeks, even multiple repeats within same day. Uses // freqs, hand sent.	
	M01c	other variants, inc short 000 ending by hand. usually only 10 groups.	S27
	M01d	5730/1kHz, M01c variant, auto sent. 1st heard Sept 99	
IV	M02 *	Ends <u>AR</u> , long zero	E12, G12, V12, V18
III	M03	Usually ICW with a few in CW/MCW at about 17 wpm except call 503 which is at a slow 5 wpm. Each mssg is sent firstly with double 5 fig gps then "call x 5" and mssg repeated with single 5 fig gps. Short 0. Null format:- 044/00 R5, null message, ending = = 000 Mssg format 044/nn (R5), = = nn x 5F, ending = = 000	E11, G1, G10, S11, S12, S26
III	M03a *	with "triplet" element, 111 or 333 552/111(or 333)/00, R5, null message, ending = = 000 Last heard May 2000	
III	M03b	Mssgs in 50's gps, annual, or year on year, repeats and sent on sameTime/freq	
III	M03c	Mssgs in 30's with double quintuple sevens (stutter groups) as first and last 2 gps (77777 77777), ends '= = 000' Sometimes repeats the same mssg in the same week but not at any other time.	
III	M03d	Mssgs over 60 gps, some with short period repeats	
III	M03e	Mssgs of (so far) 71 gps with letter R between each gp and RR Every 10 gps. Rare TX	
III	M03f	First logged 22 Aug 07 , ID assigned from 01 Sept 07 Mssgs of (so Far) 71 gps. Structure as M03. Mssg Format, with single quintuplet element & prefixed GC 886/71 = = 33333 33333 00071 00071 = = 000	
XI	M04 *	"LO LO"x3 /75977 75977, always100x5f gps long	G02 (E23)

			Repeats mssg, ending "AR SK AR SK" Last heard Sept 2000	
O	M05*		MCW auto. "The Two Day Wonder" only heard on 5/6 Oct 1993. The dates of the Russian Coup. Believed to have originated in UK 6F, 000000, long zero, // freqs.	
IXB	M06	*	OLX	S16
	M06a	*	rapid dots tuning signal	S05, S15
IXA	M07	^	MCWCC, Tone sequence start & end of TX (formerly rapid dashes), 17wpm. 749 749 749 85 85 35 35 = =, 35x 5F, ending = = 85 85 35 35 000	S10, M10

M08 & V02 Family have during 2007 been undergoing a series of marked changes which still continue (Sept 07), reference is made to these in the Newsletters. It is currently not considered to be appropriate to assign a new ID for every change but to wait until the situation becomes more settled.

XVIII	M08*		ICW/CW, some MCW cut numbers, (ANDUWRIGMT) "UAAMD MDUUA UAIAU" R3. "UAAMD x 5 + = = = 150 x 5F" Ending AR AR AR SK SK SK Format ceased late 1996.	V02
	M08a		ICW/CW some MCW, 3 messages, each 150 groups Sends AR AR AR MDUUA after 1 st mssg Sends AR AR AR UAIAU after 2 nd mssg Ends AR AR AR SK Usually rpts 1hr later, first and last 2 gps the same	V02a
	M08b	^	"de xxx" callup	
	M08c		ICW, cut numbers, as M08a but ending OE K First noted early 2004, believed defective TX tape, has periods of absence before restartin	
	M08d		Format ceased mid 2005, back in Feb 06. Not currently being heard (2010) Format started Mon 17 July 2006, ended 22 July 2006 MCW with 1000hz tone, a 2 sec pause every 10 th gp, usual M08's cut numbers, ending SK SK SK. It sent the same 20gp mssg repeated 25 times !! every day at 16/17.00z. Logged again starting April 2009 Not currently being heard (2010)	
IXA	M10	*	Last logged 13.45z, 18 June 2007 ICW, MCW, some CW. 2F DK, 5F gps, ends "000" short. 17-25 wpm, freqs vary +- 1k. Sending speed quickens on repeat TXs Now one of the busiest CW stations where many additional skeds have been identified in past year, operating H24 (See Newsletters for current info.) Regular skeds use 2 // freqs. Other unpredictable skeds continually subject to change. Format 555 x 3, 571 x 3 46, (R5). 571 x 3, 75 75 46 46 = = 46 x 5F. Ending = = 75 75 46 46 0 0 0 . Czech? Updates: From 01 Nov 06 the call changed from 555 to a variable triplet format, as did the S10d partner station.	S10d, S17
	M10a	*	Triplet "000"	
	M10b	*	additional groups, ends triplet "000"	
	M10c		5F headers	S10

	M10d *	GC sent 3 times, hand keyed	
M11 *	ICW/MCW	<p>Presumed ceased with M10 Formerly M10e. Hand ?, Slovak ? Call always 111. Was Tue/Wed 07.00z 7891kHz ??, may return. 5f ID, only 4 used, multiple mssg's only 5 to 7 gps. Format 111 45897 nn 73689 nn 53204 nn 56412 nn From late 2004 changed to :- Mon – Fri, 09.00z, 5019kHz, rolling 4wk sked. Misses days out. TX's becoming erratic with long periods of inactivity.</p> <p>2007, a further change. A possible change of pattern was noted on 14/21 Mar 07. The 4 mssg format appears to have been reduced to 2 mssgs and time/freq changed to 08.00z 7891kHz, its original freq.</p>	S10e
IB	M12	<p>ICW/CW, short 0 Some MCW reported regularly in the early mornings, being heard on Mondays 05.00/06.00z (BST/GMT) Format:- 5f, 3 or 4F DK, ends "000 000" Erratic timing. Keeps to CET (Central European Time) Call-up about 8 wpm, message at about 25 wpm – variable. Daily, 2 repeats per sked, based on Hr, + 20, +40 mins, varies to cater for long messages. Changes through the year, varies for different days & skeds Currently using sked start times (Jan 2009) 03.00,04.00, 05.00, 06.00, 07.00, 13.00 17.00, 18.00, 18.30, 18.50, 19.00, up to +- 2 mins from nominal. Formats :- 749 749 749 000, R5 null mssg Mssg: 749 749 749 1, R2/3. 1573 143 1573 143, 143 x 5f pause, (ID, no of messages, DK, GC x2, content) ends 0 0 0 0 0 0 749 749 749 2, R2 2 mssgs 938 938 938 3 R2 3 mssgs, rare Reuses some freqs on an annual basis. Current comprehensive activity Charts and Predictions published in Newsletters.</p>	E07, G07, S07, V07, XP, XPA, XPA2
	M12a	Two/Three message variant, Call nnn, 2/3, DK nnn/n , GC nn, ends 000 000	
	M13's	<p>No M13 family TX's heard since 04.30z, 13 Mar 2006, presumed inactive Note that all the M13 family changed time with GMT/BST Freqs change monthly for all M13 family, but used year on year. So will be +- 1hr as the clock changes. Known freqs will be monitored for possible return, but considered unlikely.</p>	
XV	M13 *	<p>ICW,(rarely MCW) 3f ID,5f mssg, c 9wpm, short zero First TX between 00.01 – 05.00z Repeats following evening. 261, R5, =(BT) 189 22 =(BT) 22 x 5f. repeat - ID x 12 = 189 22 = 5f mssg. Ending “=(BT) 000” (short) Special schedule, “ID x 3, 000” R5 (R4 on the repeat) 2nd/4th Mon/Tue of month 21.00z [if an 03.00z TX is made the ID will be different] nnn nnn nnn 000, R5 (nnn changes monthly)</p>	E18, G22,S04
	M13a *		

(Format can be confused with M12, check endings and speed)

	M13b *	Long message variant, up to 70 gps. Changes ID monthly 2 nd /4 th Sat/Sun 21.00/22.00z (summer/winter) Will use a type "a" call when mssg is between 19 – 23 gps. Can send 2 mssgs in a month.	
	M13c *	Special 2 x month schedule, sent in MCW , slowly. 1 st /3 rd Wed/Thu 21.00/ 22.00z (variable)	
	M13d *	First noted March 2002. Single 5f gps. Usually stays on 5876kHz winter, 6715kHz summer. Only 02.30z. Preamble "nnn (R5), BT, Mssg No, GC, BT". Long mssg call "303 x 12 BT 264 86 BT". Ending BT ttt (cut). Short mssg call "767 x 12 BT 265 20 BT" Other calls & freqs used at times Possibly a 3 rd freq.	
	M13e *	Has different ID each month with 3 daily TX's at 06.00 / 16.00 / 18.00z	
IA	M14	MCW / ICW / MCW CC 5F<3F,ends "00000" long or short 560, R4. 245 245 161 161 == 161 x 5F == (call DK GC x2 content) ending 245 245 161 161 00000 Null format nnn nnn nnn 00000 (R4) Note that the 1 st /3 rd Fri of month 19.00/20.00z TXs will repeat same time on Saturday if message is sent.	E06, G06, V06, S06 E17?
	M14a	dual message variant, formerly Fri 19.00z Now random times, and lower GC's. Repeats ID for 2min after 1 st mssg	S06e
	M14b	Rare, added 2nd msg hand keyed	
	M14c	Rare,dual msg, <u>consecutive</u> ID's	
VI	M15 *	DEA47/EC3Y	
	M16	WITHDRAWN (8BY,French Mil)	
VII	M17 *	5f, sent in MCW, ends "VA"	E01, (S01?)
IC	M18	CW, 4f , continuous. Sends time strings UTC+4. Reportedly located in Kazakstan.	
O	M19 *	MPL	
III	M20 *	WITHDRAWN V's, ends "= = 000" (this is an M03, tuning sig)	
IC	M21	WITHDRAWN Continuous, occ 14f msg, 5918/7941 / 5369 / 3246kHz. Eg :- " = 99 1116nn8nnnnn" Russian Air Defence, plotting station. Uses full time stamp Many variants, time stamp in minutes only.	
O	M22 ^	WITHDRAWN 4XZ, Israeli Navy ?? Believed largely replaced by a "data modem" early 2005 on 7160//8780kHz	

O	M23		ICW, usually 5f call, some as stutter gps (can also be 2 or 3f or the letter I for 45secs or random letters) 00000 R3 to 20 = 30 = 33 x5f = IMI IMI =". No mssgs being sent, only nulls. can end AR or AR AR or no ending. Can have long periods of no activity, keeps to GMT. Additional freqs / times been noted in 2009 although the daily 14.30 / 16.30z on 14450 / 5670k & 13.00z 11170/9750 can be widely heard, although with a very variable signal, the most recent activity has been on 7542 at 17.00z Commencing 3/3/07 the callup <i>format</i> changed to :- 5 secs between numbers, 12 secs between call groups. Or 3f for 10 mins Mar 2010 saw a huge increase in the used freqs/times MANY VARIANTS, some very strange.	
IA	M24		ICW / MCW / MCWCC. Ends 0 0 0 0 0, spaced out (high speed ver of M14) Format as M14 but different ending.	
	M24a		2nd addressee, hand keyed (high speed, as M14a)	
O	M25	*	KKN, KRH, KWS series. (KKN heard very rarely)	
O	M26	*	"98" continuous version of M3	
VIII	M27	*	BTV, 5f > <u>BT</u>	
O	M28	*	HEP	
XIII	M29	*	VDE, 5f, ends <u>AR</u> , 12wpm "VVV x 2, de VDE x 3" R5 "VVV x 2, de VDE x 3 = = 73 73 37 37 8 8 1900 37x5f ending AR	
	M29a	*	no preamble or GC	G04
	M29b	*	extended preamble	G04
	M30		DELETED	
	M31		WITHDRAWN (FDC etc, French Mil)	
O	M32	*	WITHDRAWN FAPSI Russ. Mil. nets 4 char. c/s	
XIX	M33	*	P8K, long zero	replaced by M51
O	M34	^	11 12345 (2F ID, no ending) long zero. erratic, 15 wpm. 5f.	M26
	M35-38		DELETED	
IXC ?	M39	^	ICW, MCW, slow, hand, short zeros Inactive / unlogged for a long time, returned May 03 No known skeds, a real "pot luck" station Format :- 3Ff ID, 5Ff gps all x 5 (xxx xxx xxx yyyyy yyyyy) x 5 Pause, period of dashes then Same ID, different 5f gp. No ending, uses short zero There may be a further pause of 10 – 15 mins then another TX of same format with a different ID	S18

Possibly part of M10 group.
 During Jan 2007 it was noted sending alternate gps x3 and using a
 0 0 0 ending.

	M40	^	20WPM, short zeros, poss N.Korean "VVV CQ 747.135" R5. "CQ 135 CQ135 CQ135 HR HR 18 18 = = 18x5f AR AR RPT RPT repeats above line, ending AR AR VA VA. Last heard Oct 03	
XVII	M41		WITHDRAWN WDZ / ABV trigrams, Russ Mil tracking.	
IC	M42		WITHDRAWN FAPSI networks	
O	M43	*	WITHDRAWN 6XM8/C37A networks	
O	M44 M44a	^	Rare, Continuous "Roman" letters Rare, Continuous "Cyrillic" letters (reactivated June 2004)	
XIV	M45		MCW, 5F, hand keyed, paired groups H+02, ends "000", short zero Similar format to M1 but much slower (9/12 wpm) "074 (525, 555) x 4mins, XXX XXX XX XX = = 5Fgps. ending = = XXX XXX XX XX 000" where XXX=DK, XX=GC. Alternatively XXX – XXX/XX = 5F Changing skeds. M45/1 Nov – Feb clg 525, freqs 3525//4025 M45/2 Mar/Apl/Sept/Oct clg 555, freqs 4555//4955 M45/3 May - Aug clg 074, freqs 5074//5474 TX times are, Jan – Apl & Sept – Dec = 18.02z, May – Aug = 17.02z	S21
O	M46	^	3F cumulative	
O	M47	^	1/2/3 F cumulative (JST)	
XVI	M48	*	Ciocirlia morse?	V01
XVII	M49	*	AAAAA, G8a morse	G08a
XIV	M50		MCW, Hand keyed, sloppy, 5431/4641/5372kHz INCONSISTENT FORMAT always 50 groups (training net ??) appeared on 9567 / 7722kHz in Feb 06	(related M1, S21)
XIV	M50a	^	Hand keyed, sloppy, 5372kHz, 19.30z 20 group variant, started mid 2001.	
XIX	M51		Believed Fr Mil CW training net, many freqs. Operating since early 1900's in various forms. Possibly also the station known as FAV22 (using many 68xx/38xx freqs), and the amateur call F9TM, with different freqs. 100 x 5 let groups, ends B*T Call (if any) unknown, header is mssg serial No/first let. of month/date/time (1hr ahead of utc) " = NR J 9 10:42:37 = 100 x 5let complex schedule !!, has ended "579 x 60" ?? Reuses TX tapes, some over 20 years old, with both Crypt & Text. Sometimes uses // freqs.	
O	M52	*	2f 6f, long zero	

unpredictable, Special Forces ?
heard last 12 Feb 01

- O M53 DELETED, See M40
- O M54 ^ V98T, only null message format known
- O M55 Rare, 3F x 5, ends "000 000" long zero
only null message known Tue/Thu, 9254Khz,
22.00z, erratic hand, 10min TX
Example "529 x n 000, (r3), last gp 529 x n 000 000"
From 2004 being heard Tue & Fri, 13.00z, 12150kHz
Mid 2005 started using new operator with slower sending.
- O M56 f : 5Ff, long zero related M52 ?
unpredictable, Special Forces ?
No known freqs/times, A pot-luck ? station

Note: M57 to M61 & M66 NOW ALL WITHDRAWN

- O M62 Repeating 4 digit (LNLL)
Using mixed Lets/nums.
Rarely sends mssgs, then usually only c30 groups
Believed Slovak Mil. Mainly 3-5 meg.
Each mssg has a UTC+2 D/T stamp
- O M63 A2A net,
- O M64 * = 3f 3f = 11111 5F > AR
- O M65 * 5f, ends == QRU QRU SK SK
- O M67 ^ Cut numbers, 4f gps, ends "000", Turkish ?
no reports within Europe?
M67a ^ 3f 2f 7777 variant
- II M68 ^ Cut numbers E05
- O M69 ^ 5f, ends AR
- O M70 ^ */year, cumulative
- O M71 ^ K88
- II M72 ^ 4 fig, long zero E14, V14
- O M73 ^ Cut, 3 long tones > 5F
- O M74 ^ (3f 4f 4f 4f 4f 4f)
- O M75 ^ (3FF DK/GC DK/GC) x 10

- O M76 4 cha. c/s (bogus) x 3, same x 2, long zero.
Update Mar 09
complex msg structures, multiple messages, 25 wpm.
Uses accented letters.
C/s de C/s QTC 96 23 = 23 x5f ending AR 0 (x ?)
on 3280kHz, Mar – Oct, 3820+-kHz Nov – Feb.
17.50z, 05.00z winter. 16.50z, 04.00z summer
Mainly unheard in Europe from cMay - Oct
Changes c/s every day
The preamble which will contain “808” has fg as “32610”
and contain the groups RRRRR
20nXX WWW ending NNNNN
In early 2004 the null mssg format was changed to
“=229XX” after the preamble.
If mssg is sent then fg is 40545
End of mssg will always contain
“437” even if spread out in multiple gps eg “zzz43 7xxxx”
- O M77 P7X, around 11445kHz, 20.00/21.00/21.30z
(QRA P7X GR 06 BT) Only heard in USA
- O M78 ^ unpredictable, variable format, 8140kHz
- M79 ^ 5120 kHz, under investigation
- O M80 ^ "847 847 847 97333 97333"
Possibly M1a, with different call.
- O M81 ^ Sent at 40 characters pm (5-10wpm), 4f groups, long zero
currently only heard in Russia, Chinese TX?
- O M82 "BML" North Korean Army ?
Sample format “vvv jvg jvg jvg de bml bml qsa qtc 587” R2
Or “abv qtc nr xxx xx xx xxxx xxxx xxx xxx = “
Known to send “r” as separator each 10 gps
Not normally heard in Europe/USA
- O M83/a/b/c 4 dig. c/s, long zero, 20 f/1 msg.
Poss. Slovak Mil Net, under investigation.
M83 “xxxx xxxx xxxx vvvvvvvvvv vvvvvvvvvv vvvvvvvvvv”
M83a “xxxx de xxxx QTC 2 20 02 0907”
2= serial No, 20=gp cnt (20 or 50),02=date,0907=time (utc + 1)
c/s’s can be mix of letters/figures, often changed, 5f or 5l
M83b “ xxxx xxxx xxxx de xxxx xxxx xxxx ”
M83c “ NNNN or LLLL or mixed, sent continuously”
A write up by AB added to the Detailed Morse Profiles List
Oct 2003
- XVIII M86 DELETED now M8a
- O M87 MCW, cut, hand. Presumed Chinese Mil.
Mainly heard in Russia, has been heard in Northern Europe
Format:- 3f ID (rptd up to x25) 000 (short) or 333, 5f gps, ending
= = 000 or = 000 000
Null format:- nnn nnn nnn 000 000 (x7) ttt
Note that formats are inconsistent.
Oct 2003 additional format noted :-
nnn x 3 333 x 3 all R7
A detailed write up of M87 by IB added to t
he Detailed Morse Profiles List, Oct 2003

- M88 DELETED, identified as a M03 “null mssg” format
- O M89 Chinese Mil., 4f. Auto
 No fixed skeds/freqs. Mainly between 3 – 10 meg but 3327//4523, 4225//5500, 4860//6840, 5310, 3297 have recently been reported.
 Best known were the L9CC family including L9CC, CP17, LA5S, NH8T, MW3D, 2SLC, BFR7, 4XML, T3AP, B7TZ etc, but there are many more. Most recently QPZM, WOYN, JA3L, UN2T
 Sample formats :- V CP17 CP17 CP17 de L9CC L9CC
 VVV Q2M de NYZ QSA ? K
 A detailed write up by AB added to the Detailed Morse Profiles list, Oct 2003
- M90 Czech Mil, MCW & hand. Very busy
 Control stations CH8N, S8BD, U4NP. Operates 24/7
 Format:- 28 21 25 0720 = 178 TR2F = mssg = CH8N K
 Where 28 = mssg nr, 21 = gc (always 20's), 25 = day, 0720 = UTC +1 (W +2), 178 TR2F = addressee.
 A detailed write up by AB/FN added to the Detailed Morse Profiles List Oct 2003
- M91 Czech Mil, MCW & hand. Very busy
 C/s changes daily. Operates 24/7 no skeds. Used 2362//2852kHz for past 3 years. Mssgs 5Lgs/5Fgs or mixed. Sometimes only 2362kHz.
 Format:- 64 20 09 2123 696 c/s
 Where 64 = mssg nr, 20 = gc (always 20) 09 = day, 2123=UTC +1, 696 = ABCD = addressee
 A detailed write up by AB/FN added to the Detailed Morse Profiles List Oct 2003
- M92 Czech Mil,(Network 25), possibly associated with M90
 5F or 5L. Time CET varying. Works to a 10 day freq/QRA cycle.
 1 to 10 mssgs of 20 or 50 gps, preamble & calls by hand (poor/errors), msgs are Auto, encrypt.
 Sample format:-
 W6QZ de KVF2 QTC 1 50 12 0805 = 743 W6QZ = 5LG = KVF2 +
 Known freqs include 4900//5330, 4800, 6920//5340, 5200, 5270//5920kHz
 A detailed write up by AB added to the Detailed Morse Profiles list, Oct 2003
Ed note :-There are some further Chinese stations being studied.
- M93 ^ First logged Apl 2004, Auto at 15wpm, long zero.
 At 21.00z Tue/Thu/Fri (sometimes) on 14377kHz
 Format:-
 V's for 45 seconds (has been heard for 2 mins), call M6 sent 4 times,
 Then single 5fig gps, ending // +
 This station logged only over a period of 3 weeks on this freq but E2k informed that it regularly changes freqs, no logs received since May 04 so presumed inactive.
- O M94 Assigned 01 June 2009
 MCW station sistering voice station V24
 Location believed to be S.Korea
 Current freqs :- 5715, 6330 (Oct 2010)
 Heard 12.00 – 16.20z (mainly 13.00/14.00z)
 Variable reception, little success in Europe. Most reliable reports come from Western USA.

 Various formats used, but typical ‘head and tail’ is:-

 Vvv vvv vvv cq cq cq de nnnn nnnn qrv qrk qtc k
 Repeated further twice

 Hr Wnn (group count)

 Mssg
 Rpt

Ends “=ar k tu va”

- O M95 Assigned 08 Sept 2010
CW Sister station to V26 Chinese voice station.
Hand sent
Format not the same and TX structure varies. 3f gps
Sample header:-
V V V (x2 – x6) BNEC(x2 – x5) BNEC de XSV70 XSV70
(sent as zero or oh)
HR
Rpt above
Heard on +-9153, 7553, 08.00 – 15.00z
- IC MX SLHFB's (Single Letter HF Beacons) Solitary
MXI SLHFB clusters (group of beacons v.close in freq, c 0.1kHz apart)
MXII FSK mode TX
MXIII WITHDRAWN, MX covers
MXIV WITHDRAWN, MX covers
MXP With message, probably Russ. Naval
MXV Irregular "V"

The above MX designators apply only to Russ/E.European networks, others should use the generic “SLB” term.

NOISE STATIONS (or unidentified mode)

Family	Ref No	Comments	Counterpart
VII	X01 ^	Bugle, no other TX	S02
IC	X06	<p>6 tones, repeating sequence. (Mazielka) Russ selcall system for FAPSI* stations, many variants. Uses basic tone mapping, as follows, to produce the figures 1 – 6, giving a possible 720 unique combinations, but far fewer heard. Usual format:- A long single 'lead in' tone, then:- 1 = 840Hz, 2 = 870Hz, 3 = 900Hz, 4 = 930Hz, 5 = 970Hz, 6 = 1015Hz Observed that the X06 stations have a close, but not yet fully defined, association with CROWD36 stations. (* Note that FAPSI, per se, closed in 2002 – confirmed 2003 – but the system is still in use by other "owners") [Data & CW sigs sent after the tone sequence which ceased mid 2003, turned up again on 11 May, 2006] Starting in Newsletter 58, page 10 (May 2010) the concept of 'Alert Signals' was introduced for some 'repeated scale' transmissions. Extensive research work by the E2k 'X06' sub group has culminated in a significant 'Commentary' being published in Newsletter 62, page 7, (Jan 2011). Those with a specific interest in the 'tone' stations should consult.</p>	
	X06a	Alternating two tones in 'ababab' sequence.	
	X06b	Audibly less than 6 tones, where a tone is sequentially repeated 2 or 3 times giving an audible single longer tone.	
	X06c	6 tone rising scale, stepping sequentially through the available tones.	
	X21	21 note melody, 2 variants	
	XB	Buzzer/UZB76,(UVB-76) now classified S28, usually 4625kHz AM, others used. Russ Mil, Ch marker with voice & data. See S28 entry	
	XBS ^	Buzz-saw, being heard 5.1-5.8mHz and 7019 in 08/2001	
	XC	Crackle, closely spaced carriers, total b/w =< 380Hz	
	XD	Fast ICW dots, 24hr, 3595kHz	
	XE ^	Echo	
	XF	Faders	
	XFR	Croaking Frog, 7380kHz 08.00z+- and 7992, 11173, 13975, 18864kHz at various times, all USB	
	XJT	<p>The Jet, appears to use blocks of 10 freqs from 2 - 9 mHz.. Sig is about 3kHz wide and uncannily often TX's on freqs known to be used by other number stations but is not considered to be a deliberate jamming of, although a nuisance. Update:- During 2010 it was noted that many of the sigs were now up to 10kHz wide and appeared to have an affinity towards E07,E10 & Fam IB stations, is this a coincidence ?</p>	

XM Backward music / whales / feedback.
(original entry)
Generally considered to be a result of unintentional cross mixing where RF / Audio circuits are co-located as the effect is being noticed on many different circuits with different equipment, ruling out a single user or set-up as the culprit.
A close association with Link-11 TX's have been remarked upon by some monitors and this aspect is receiving further attention.2005/2006
(updated entry, July 2006)
(Amid an ongoing debate with much conflicting opinion)
Now considered to possibly be a form of "COMPEX" type signal as the ongoing investigation has isolated multiple voice traffic, so far unintelligible, within the signal, making it man-made rather than random, further enhancing the possibility of a LINK-11 connection. Also suspected is some form of commonality, structural rather than relational, with the XP series signals and in turn the X06 series.
The XP's & Link-11 "possible" connections are very interesting as they are "conflicting signals" as regards origins.
Further opinion has been given that there could be an element of "Chaos encryption" involved.

XP Family of stations: See later dedicated section

XQ ^ Plaintive "mew"

XS Saw/whine

XSL Slot machine, widely heard in US, (Europe in winter months),believed Japanese PSK. Wide range of freqs(+/- 2k) used including :-
2578, 2656.5, 4153, 4231.5, 4291, 5807, 6250, 6416.5, 6417, 6445, 8313, 8588, 8703.
Appears to be a form of pulse modulation.

XSW Now S32
Squeaky Wheel. 3829/5474/6991kHz, 15010kHz reported.
See S32 entry

XT Tick/pip, 24hr, Superseded by **S30**

XTB 1 tone, 2 buzzes. 11116kHz, early morning daily.

XT2 Pip, 22.00z + varying freqs, usually low end HF.
(early 02, Issue 9 for details)

XUP Assigned 11 Sept 2010
The Pulser
The unusual Pulsed Signal being heard primarily in the USA
Notified in NL60.

XW Workshop, heard again on 24 Jan 06 on 6250kHz, i/p 16.45z

XWP Wop Wop (wideband sig) [Ocean surface radar system]
Heard from 5600 – 9400kHz, lasts 20mins then changes freq..
See Newsletter Issues 9 & 26 for more details.

XX DELETED

XXX DELETED

Polytones (XP Family)

See discussions in Newsletter 10, May 2001 and articles in Newsletter 16, May 2003 & Newsletter 23, July 2004 for further info.

The Polytone transmissions are of Russian origin and are associated with the more conventional Voice & Morse stations. The particular family relationships are identified from the decoded polytone message structures and transmission schedule similarities.

XP	[Russian Intel Multitone System 1+12] Standard Tones (Hz +-3Hz) [XP used as the nominal value for measurement of other Polytone systems]	M78?, M12
	303, 319, 335, 351, 367, 383, 399, 415, 431, 447, 463, 479, 495, 511 Hz. Datum tone 303Hz Tone/value relationships:_ 303=space, 319=end, 495=start, 511=repeat, 335=0, 351=1, 367=2, 383=3, 399=4, 415=5, 431=6, 447=7, 463=8, 479=9.	
XPA	[Russian Intel Multitone System MFSK-20] Major Article published in E2K Newsletter 23, July 2004, giving detailed analysis and comment. Skeds Tue/Fri 07.00/20/40z & 21.00/20/40z (see update info) Changes freqs monthly, new freqs are posted via E2k group list. High probability of this signal being involved with an "auto receive" capable system, hence XPA. It consists of 25 tones (then amended to 20 tones Jan 06) Station first noted on 3 rd Dec 2003, by 8 th Dec 2003 analysis had started. Tones / value relationships used given below (nominal values as per update published Mar 2006 following prolonged analysis, after some anomalies were found in the original assessments)	M12

Owing to the number of new schedules and time variations continually being discovered the current well established and robust transmission pairs are being alphabetically identified [from Jan 2011].

This enables immediate identification between the monitoring team without resorting to a full schedule description – and automatically highlights any new, out of sked, transmissions. These alpha tags are expected to change with the appearance/closure of schedules

XPA/a	Wed/Fri	04.00/05.00z	(currently inactive)
XPA/b	Mon/Wed	04.40/05.40z	
XPA/c	Tue/Fri	06.00/07.00z	(changes being made)
XPA/d	Sun/Tue	08.00z Sun / 14.00z Tue	
XPA/e	Tue/Thur	17.30/19.00z	

Update info : 2010

Until recently XPA operated in two modes using either USB[10bd] or MCW[20bd]. The MCW [20bd] sendings are heard only during the 20.00/21.00z skeds on Tuesdays and Fridays.

The MCW sendings mode and baud rate changed on 1st Dec 2009 to USB [10bd], putting those skeds in line with all others, and oddly gave increased signal strengths. However those previous MCW skeds then ceased after Tue 25th May 2010.

Historically the USB mode became operational for the morning sendings on 22 Sept 2006, the evening sending remaining as AM. On 3 Oct 2006 the numerals and some administration tones of the USB mode changed to double length duration, leading to:- Two distinctly different schedule types with both sending a train of 60 pulses at 0.5 baud prior to entering the message mode, via the complicated 'administration' tone sequence.

The first schedule type, so far only heard in the morning (UK), uses Upper Sideband as its transmission mode and sends the message section at 10 baud.

The second schedule type, previously heard in the evening (UK), used MCW (modulated carrier wave/AM) as its transmission mode and sent the message section at 20 baud.

(Now ceased, as remarked in update above, Ed)

At least one XPA split-schedule has been discovered, transmitting the same message on two separate days at differing times and using six differing frequencies.

Transmission Structure for both XP and XPA. Spectral image shewn on front cover.

Lead-in pulse train, administration tones, ident, message count, administration tones, serial number, GC, DK, message/s, ending admin tones.

Message Structure

The message/s are sent in 64 group 'blocks' with a 7segment single tone separator between each 'block'.

The total number of groups sent is always 3 more than given in the GC as the SN/GC/DK are exclusive of the GC.

XPA and M12 have been noted to have interchanged some of their skeds, particularly the Tue/Fri 21.00z AM skeds as from 16 Feb 07.

The XPA Polytone system uses a total of twenty tones. Five of which have definite machine 'administration' functions.

Twelve are concerned as numerals [0 to 9], the space function, and character repeat.

Four of the numerals are known to have other additional functions.

Three tones remain "unallocated" as yet.

<u>Tone [Hz]</u>	<u>Function</u>	<u>Secondary Function</u>	<u>Remark</u>
520	Start Low		Transmission starts on low tone Used with 1280 Start High
600	Synch Low [starts]		Used with 1120 – fig 9
680	Space between groups		Separates Groups or other functions; lengths vary.
720	End Tones		Used with 1200 Repeat tone
760	Fig 0	*	*
800	Fig 1	*	*
840	Fig 2	Separator Low	Seven segment: 626262
880	Fig 3		
920	Fig 4	*	*
960	Fig 5		
1000	Fig 6	Separator High	Seven segment: 626262
1040	Fig 7		
1080	Fig 8		
1120	Fig 9	Synch High	[Follows 600]
1160	Message start pulse		Only seen at beginning of message BUT led in by 1200 repeat
1200	Repeat		Follows character to be repeated
1280	Start High		Used with 520

Null Message ending seen as 10140 at null message end

XPA2 First heard 3 May 2006, ceased 2 June 2006 then re-appeared Dec 06
 See NL 35 July 2006 for full initial report.[P36 to 39]
 Narrow bandwidth, 15Hz tonal separation.
 Operates at 3 differing speeds and can be mistaken for another system, it is essential to confirm tonal values.
 The construction of the tonal sequences clearly indicate this is another system designed for automated reception however the limited samples preclude, for the time being, the establishment of possible tonal secondary functions. However the nature of the transmissions together with the wide range of frequencies used lead us to believe that this is probably of a “diplomatic” nature

Tone/value relationships initially established :-
 1005 = space, 1035 = sync, 1050 = end, 1080 = repeat, 1235 = start
 1100 = 0 1115 = 1 1130 = 2 1145 = 3 1160 = 4
 1175 = 5 1190 = 6 1205 = 7 1220 = 8 1235 = 9
 [These tones still used and lately measured in AM transmissions,
 09.00z intercepted October 2007 – See NL issue 43 for log]

Tones suddenly changed on 30 May 2005, becoming:-
 965 = space 1025 = sync 1135 = end 1125 = repeat 1435 = start
 1115 = 0 1185 = 1 1215 = 2 1245 = 3 1275 = 4
 1305 = 5 1345 = 6 1375 = 7 1405 = 8 1435 = 9
 [Note in both tone maps the allotted tone for the figure 9 is dual function].

As a result of the many intercepts performed in October 2007 this station is known to send in both AM and USB without change in the baud rate. The above tones encountered on 30th May 2005 can be understood to be nominal tones only for the receiver on which they were heard. Our recent understanding of the tones utilised illustrates that the individual values depend on the characteristics of the receiver used in sideband mode. Therefore analysis of the tones is simplified by measuring the separator tones which, like XP and XPA, use the values for 2 and 6, and the first tone values of groups 1 and 2 producing that for 0, and the 2nd tone of group 2 which provides the repeat tone value [usually -15/20Hz from the 0 value]

XPH High Tones (Hz +-3Hz) M12 family
 Has sent at 3 differing speeds during its lifetime, (1980's – 2003) essential that tonal values are confirmed if comparing recordings.
 814, 844, 879, 914, 954, 992, 1038,
 1089, 1143, 1202, 1234, 1271, 1304 Hz.
 Datum tone 1304Hz
 Tone/value relationships :-
 1304=space, 1271=separator, 992=repeat,
 1234=0, 814=1, 844=2, 879=3, 914=4, 954=5, 1038=6, 1089=7, 1143=8, 1202=9.

XPL Low Tones (Hz +-3Hz) M12 family
 It would appear that the low tones are the product of mixing 2 non harmonically related tones, analysis is ongoing, tone pairs identified as (Hz +-3Hz), tone product in parenthesis:-
 150/235[80], 165/255[90], 180/245[65], 205/260[55],
 215/290[75] Hz
 Tone/value relationships :-
 Will undergo full analysis as & when we have sufficient samples.
 This station has only been positively identified three times in the past 10 years, lastly on 27 Mar 07 in Greece.

XPM [Russian Intel Multitone System 17+1]
 Mid Tones (Hz +-3Hz)
 450, 488, 531, 568, 611, 649*, 692, 730, 773*, 811*,
 854*, 891, 934, 972, 1015, 1058*, 1096*, 1177*
 *used on longer duration tones only
 Tone/value relationships :-
 Still under analysis.
 Often confused with the Piccolo system.

NEW MODE STATIONS

SK01

Assigned 20 Jan 07, as a generic identifier.

The PSK31 TX's allied to the Cuban M08a station

First noted on 27 Dec 06.

BPSK125 and BPSK220fec also noted during first half 2007

RDFT became the sole operating mode in late 2007

The station has a similar general structure to the M08a / V02a family but also many detail differences including the "non use" of the M08 cut numbers scheme.

Further developments are occurring on a sporadic basis (2007-10) and will be referred to in the Newsletters

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Associated documents, available on Website

Nomenclature and Abbreviations

Current active stations "Hitch-hikers Guide"

Short Form, Morse Stations Profile List

European Languages Listing

(includes Arabic used by E25 & V08)

Slavic tracker Charts