

The Conet Project

Recordings of Shortwave Numbers Stations



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Numbers Stations

A Beginner's Guide

What Numbers Stations are.

Numbers Stations are radio broadcasts that appear in the Shortwave bands twenty-four hours a day, on many different frequencies. They are used to transmit short text messages. There are three different types of broadcast; voices reading groups of numbers or phonetic letters, Morse transmissions sending groups of numbers or letters and noise stations, transmitting several different types of noise.

What Numbers Stations are not.

Numbers Stations are not licensed in the conventional sense, and there is no easy to find information on any aspect of Numbers Stations from the government agencies that are concerned with radio use/misuse. They are not weather forecasts, or shipping broadcasts.

Anatomy of Numbers Stations transmissions.

In the case of a voice numbers station, there will be one of several types of introduction, usually starting at the top or at some whole fraction of the hour. These introductions can be a single letter of the alphabet

keyed in Morse, or a piece of music played for several minutes, before a voice, in one of several languages, begins calling out numbers. The first numbers called are usually a three digit number. There is then a call to attention, signaled by the use of the word Attention or by some other device, such as bells, gongs or tones. A group count giving the number of message elements that are to be sent is then transmitted, followed by the groups which are sets of numbers or phonetically spoken letters, usually numbering five in each group, although there are stations that transmit four figure groups. At the end of the groups, there is sometimes a repeat of the groups, if not, there is an ending indicator, either by a spoken end or a repeat of the introduction music. Morse stations generally do not have music at the beginnings and endings. The message structure of Morse transmissions is identical to the structure of voice transmissions, save that everything is sent in Morse code. Each of the noise stations is unique. The one thing that binds them together is the extreme length of time that the broadcasts are on the air.

When did Numbers Stations begin?

The origins of Numbers Stations are shrouded in mystery. In all probability, the evolution of modern Numbers Stations is closely linked to the advances in cryptography over the last forty years. We also have an account, via the ENIGMA newsletter from the German Kurzwellenpanorama magazine of an Austrian Numbers Stations monitor, Anton Habsurg, dating from WW1. During WW2 the BBC was involved in sending messages to friends overseas which were coded messages to Special Operations Executive agents. From at least the beginning of the Cold War to today, encrypted clandestine messages have been routinely sent over Shortwave. The truth is, because there has never been any kind of public admission from an agency that uses Numbers Stations, we do not know anything about their true origins and the many pioneer cryptographers and engineers that made it all possible; indeed the whole subject, until this CD was produced, was an area known of only by dedicated Shortwave monitors and the agencies responsible for the transmissions.

Why do Numbers Stations exist?

Numbers Stations offer powerful features to the people that use them. They allow complete anonymity for the message recipient, who can be anywhere in the world receiving detailed text messages in complete security at any time of the day, for years at a time, without fear of detection.

How do Numbers Stations work?

Numbers Stations send enciphered messages in the form of groups of figures or letters using a cryptosystem known as a one time pad. In this system, two identical sets of random numbers, printed on numbered sheets are generated (the pad); one pad is kept by the sender and the other is kept by the recipient. When a message is to be sent, the original message or plaintext, is mathematically added to one of the random numbers on the pad. The random number used is predetermined by the sender and recipient so that both are in sync. When the message is sent over the air, the recipient transcribes it by hand, and then subtracts the random number on her pad from the message she has just received. The random number is then discarded. In her hands, she now has the original plaintext message, sent to her over an open channel with zero possibility of enemy decryption. The only way that messages sent with one time pads can be deciphered is if your enemy retrieves your set of random numbers, or pad, or if the sender re-uses a pad.

Who uses Numbers Stations?

The only agency that has admitted to running a Numbers Station is the one responsible for Station OLX in the Czech Republic. They will respond to QSL requests. This is an admission that they are transmitting the two forms of OLX, but that is all; there is no information on what the transmissions are for and who

the recipients are. Almost every other piece of information on who is responsible for Numbers Stations comes from the part-time investigations of dedicated listeners. No government or person will admit to transmitting them, and only recently, due to the release of this CD set has GCHQ in the UK made its first ever public statement on Numbers Stations, saying that, "GCHQ are aware of the existence of Numbers Stations but cannot comment on operational matters". Do operational matters include The Lincolnshire Poacher which is believed to be of British origin? With direction finding equipment it is possible to track down the location of transmitting antennas, and in the case of Numbers Stations which use extremely powerful transmitters Dfing the more powerful stations has proved an easy task for investigators but what exactly does it mean when you find an antenna farm on US government property blasting numbers in Spanish? Where and who are the recipients?

Where and how to hear Numbers Stations. You can hear Numbers Stations twenty-four hours a day, on the shortwave bands. The frequencies that they appear on are numerous; to begin with, try at the top of each hour, and the chances are you will find a Numbers Station, transmitting in either Morse or voice. The equipment you need is simple; any domestic quality Shortwave radio with a whip antenna will enable you to pick up Numbers Stations; note however that it is illegal

to listen to these transmissions in the United Kingdom. A radio with the ability to receive USB and LSB transmissions would be useful, since some stations transmit in these modes.

The future of Numbers Stations. Numbers Station activity shows no signs of abating. The noise stations continue to baffle listeners in Europe, and stations, like Magnetic Fields and The Eastern Music Station are newcomers that have been identified. As the Conet Project goes to press, Enigma has announced the discovery of a new English language station, designated E22, and a Czech station, inactive since the end of the cold war, has suddenly resurfaced after six years of dormancy. Since Numbers Stations are clearly an efficient and secure form of transacting texts over long distances, it is unlikely that any government agency will ever admit to utilizing them. Numbers Stations fall outside of any Freedom of Information Act access (in countries where such Acts exist) because these stations are still relied upon for their required missions, and if the past behavior of the international and local radio authorities is anything to go by, no information will ever be forthcoming about these transmissions, save that which is painstakingly collected by the private activities of dedicated monitors. This is one of the most sensitive areas of government activity, and it is sure to baffle radio listeners for many years to come.



Ames



Philby



Pitts



Nicholson

Paranoia Contamination

My Introduction To Numbers Stations

Whilst tuning around the utility bands for some weather fax transmissions in December 1992, I ran across a station transmitting the voice of a woman reading out numbers in groups of five, in an American accent. I had heard the sound of Volmet before, but this was not at all like Volmet. It was not helpful in the way that the Volmet weather report transmissions are. Volmet tells you who is transmitting, the geographical origin of the transmission, and the purpose of the transmission. All of these features were missing from this station's output, which stopped with the word end after fifteen minutes. I logged the station, and continued my search for fax transmissions.

As the weeks went on, I discovered many more of these transmissions. One of the most shocking stations featured the sound of a child's voice. This station started its broadcast precisely on the hour by playing a series of short tones followed by several repetitions of a music box rendition of The Swedish Rhapsody. Then the sound of a female child began barking out numbers in German. This transmission invoked a sense of dismay as I asked myself, who could possibly utilize such an

unusual voice for no apparent reason?

When I bought Bill Laver's Shortwave International Frequency Handbook, a book of over 20,000 station loggings, I found out not only that no one really knew what these Numbers Stations were for, but that the locations of the transmitters was also unknown. This struck me as rather odd, because radio piracy is a crime that is taken very seriously in the northern hemisphere, and so if there were hundreds of rogue transmissions on an equal number of different frequencies, there was a great amount of airwave piracy that was going uninvestigated or ignored. If the Numbers Stations were pirates, then what audience were they transmitting for? If they were not pirates, then who was authorizing these clearly unlicensed stations? Sometimes, Numbers Stations can be heard interfering with air traffic control frequencies and utilities stations; this must wreak havoc with those organizations that use the limited resource of the radio spectrum for essential services like Radioteletype.

After listening to dozens of Numbers Stations of many types for over a year, I saw an advertisement for a book

called Intercepting Numbers Stations by Langley Pierce. I bought it. It had logs of many of the well known stations, analysis of the transmission formats and even the names of people who have admitted to being involved in receiving messages from them.

It appears that the Numbers Stations are run by our old friends the CIA, SIS, BND, MOSSAD, StB, DIE, MfS, UDBA, and the now renamed KGB. That list leaves out the non-European agencies that operate Numbers Stations, such as Chinese Intelligence. At first this struck me as being a ridiculous explanation; why should these intelligence agencies use an antiquated system like short wave to communicate instructions? After all, international direct-dial telephony is universally available, military grade Public Key Cryptography is in daily use by millions... why would these agencies, which are always assumed (to keep us in fear?) to have access to technology that is at least 30 years ahead of what is available to the general population, opt for the methods of their grandfathers?

The answer lies in anonymity and Traffic Analysis. Imagine a CIA spy who is posing as a Turkish taxi driver. A taxi driver can listen to the radio without arousing suspicion. If however, he was caught sending PGP encrypted files down an acoustic coupler equipped 28.8k PCMCIA modem slotted into a palmtop 586 from a public phone box, someone would, at the very least, ask a question! Short waves can propagate all over the

world. The receiver of instructions from a Numbers Station can rest assured that no one is logging her reception of coded messages which would, if she received her instructions via telephone from a foreign country, expose her to Traffic Analysis, and the inevitable questions of, what is it that you are saying in these monthly calls of 45 seconds duration that we have logged as coming from Langley Virginia? Computers in telephone exchanges can analyze phone use, and expose these telltale patterns; this is known as Traffic Analysis, and with the proper interpretation, could deliver up many potential operatives if telephones were used by spies. Everyone knows that all calls entering and leaving the UK are listened to and logged, and this must also be true to at least the same extent in The Czech Republic, Russia, Cuba, Turkey the USA and Germany. No. Telephones, as wonderful as they are, would be far too dangerous for spies to use for communications on a regular basis.

Numbers Stations send messages that are absolutely secure. They use a cryptosystem known as a one time pad; a very simple and very strong symmetric cipher, which means that the same key is used for encryption and decryption, the key being a string of random numbers. Computer generated random number keys are not suitable for this purpose; one-time pads that use pseudo-random numbers are open to attacks which attempt to compute part or all of the key. It is more secure to generate the key using the natural randomness of



Japanese Embassy Piccadilly

quantum mechanical events (such as those detected by a Geiger counter), since quantum events are the only source of truly random information in the universe.

With a one-time pad, there are as many bits in the key as in the plaintext. This is the primary drawback of a one-time pad, but it is also the source of its perfect security. It is essential that no portion of the key ever be reused for another encryption session (hence the name one-time pad), otherwise cryptanalysis can break the cipher. If the key is truly random, a one-time pad is perfectly secure against ciphertext-only cryptanalysis. This means that an attacker cannot compute the plaintext (original message) from the ciphertext (encrypted message) without knowledge of the key, even via a brute force search of the keyspace. Trying all possible keys doesn't help you, because all possible plaintexts are equally likely decryptions of the ciphertext. This result is true regardless of how few bits the key has or how much you know about the structure of the original plaintext.

To demonstrate this, suppose you intercept a very small, 8-bit, ciphertext. You know it is either the character F or the character A encrypted with a one-time pad. You also know that if the message is A, the operative will assassinate his target, and if it is F, the operative will flee the country. All you are missing is the key, a very small one-time pad. You assign your crack staff of cryptanalysts to try all possible one-time pads (exactly 256 different possibilities); this is a brute

force search of the keyspace. The results of this brute force search is that your staff finds one key that decrypts the ciphertext to A and one that decrypts it to F. And you still don't know which one is the actual plaintext.

Remember that most Numbers Station messages are designed to be decrypted by hand. Clearly, the Numbers Station is one of the most powerful communication systems ever devised. It offers absolute security, complete recipient anonymity and it is very easy to use, needing only a pencil, a piece of paper and an ordinary portable radio.

This of course does nothing to explain why these systems are used in the first place; the end of the Cold War, logically, should have resulted in short wave listeners observing a reduction in the use of Numbers Stations, when in fact, the reverse has been the case. Russian stations are still being heard, as are the eastern European stations like the Czechoslovakian OLX, which can be heard every day transmitting, ...OSSUM FEEDOOM OSSUM DEVIET DEVIET SHEST... Where are they getting the money to finance the hundreds of operatives they are controlling all over the world? How has it come to pass that such blatant, easily audible communications can go unquestioned by the general population? Most short wave listeners seem to be uninterested in Numbers Stations, perhaps due to the regularity of the transmissions. They take them as just another type

of noise that is to be filtered out and ignored. The unchallenged existence of Numbers Stations is a symptom of the somnambulistic state that the world's educated populations live in. Anything can be done to this population, and no one will notice or react in any way. If German phonetic numbers were transmitted by the BBC World Service immediately after the news, not an eyebrow would be raised, nor a question asked. Attitudes to the Numbers Station situation are similar to the There is no such thing as the Mafia mind set that was paraded around in the 1950s. Ostrich Posturing.

I wander thro' each charter'd street,
Near where the charter'd Thames does flow,
And mark in every face I meet,
Marks of weakness, marks of woe.

In every cry of every Man,
In every Infants cry of fear,
In every voice, in every ban,
The mind-forg'd manacles I hear.

From 'London' William Blake 1794

During the creation of The CONET Project we had the chance to speak to many SWLs and ordinary people about Numbers Stations. In these conversations a strange and disturbing thread always appeared at some point of the discussion. The thread is fear. Phrases like; I don't think that you should be doing this - releasing the recordings, I'm sure that you will be subject to some sort of Official Secrets Act action or something, what you are doing is illegal isn't it?, came around again and again.

A journalist working on a story for a famous magazine telephoned the DTI (the British Department of Trade and Industry, the FCC of the UK) to ask them for information on Numbers Stations. Two things came out of this inquiry. The DTI representative said the following, (verbatim) These people shouldn't have any interest in Numbers Stations because they shouldn't be listening to them because they are illegal to listen to. The second shocker that came out of this was that after having been exposed for the first time to Numbers Stations in sound and theory, the only question that this journalist could ask was: The DTI say it's illegal to listen to Numbers Stations under the provisions of the Wireless and Telegraphy Act; what do you have to say in response? Incredible: the only thing this person thought was important was that the DTI said it is illegal to listen to shortwave radio! In the face of a 30 year mystery, which has lasted to this very day, that is a world wide phenomenon, that remains unreported, that involves the

secret agencies of the most powerful governments ever seen on the face of the earth, and with all the implications of that involvement, in the face of what these stations sound like, the only concern is what do you think of the Wireless and Telegraphy Act. He didn't think that the DTI statement was hilarious or absurd. He took it seriously. Is this a bad dream? Reality check; is not the following the correct action: the journalist would simply ignore the impudent bleating of a civil servant, and concentrate on the true significance of Numbers Stations. Right? What are these people on?

The depth of the fear that we have encountered in otherwise psychologically normal people is incredible. What kind of nation is it that has people second-guessing their every action to check its legal status? An automatic fear response in relation to an act of publishing; what does this attitude say about the character of a nation? These bizarre sentiments are echoed in the letters pages of the Enigma Newsletter. In this section, the editors report the following: Several readers again voiced concern about the legal position of listening to Numbers Stations and also keeping logs and documents. On reading this and hearing the other rabbit reflex chatter on Numbers Stations we can only ask: is this Stalin's USSR? Is this modern mainland China? Is this pre-revolutionary Albania?

We are living in a time of widespread fear; fear of an all powerful state watching our every move and motivation. This level of paranoia used to be exhibited (with



Hungarian Embassy Belgravia

good reason) in the Eastern Block states, now this virulent plague has crept into the Western mind set. It has oozed in very slowly, which is how it seems to have been able to take such a firm and widespread grip on the population without anyone really noticing that anything has changed. It is a sickening yellow brain cancer, eating away at the very spirit of the west.

We implore all shortwave listeners with an interest in Numbers Stations, to continue listening to them, to continue making accurate logs of Numbers Station activity and to keep recording. In 100 years time, when we are all dead and shortwave radio is a memory, our recordings and log books will be an invaluable resource to future researchers who will laugh out loud at The Wireless and Telegraphy Act when they study the insane asylum known as the Twentieth Century.

Unlike the encrypted RTTY transmissions, which you expect not to be able to read or know about, the Numbers Stations contain extra mystery. They send messages that are as thoroughly hidden as 5 tone RTTY, yet they are in the clear as well, almost slapping the listener in the face with their audacity. With 5 tone RTTY, you know you are intercepting a secure communication between two parties, probably seated in very large guarded buildings. With Numbers Station transmissions, the ends of the signal are ambiguous and sinister. Witness the Numbers Station that employs the voice of a woman intoning numbers as if she were engaging in

intercourse. This is a red rag to a bull, inviting the casual listener who stumbles on the signal to pause and think that someone must be playing a very funny joke, sending up the Numbers Stations for the amusement of short wave listeners. In fact this is a genuine signal, containing real traffic. Who would dare use such a voice? Have the operators in the technical departments that run these stations lost their minds? And of course, they must have had permission to use such voices, so does this insanity go straight up to the top levels? Probably.

Witness the most beautiful and compelling Numbers Station variant of all, given the prefix X by ENIGMA. These stations do not transmit straightforward information like voice Numbers Stations, instead, they send out inexplicable noises. For example the station known as The Buzzer sends out high precision buzzing on 4625khz, 24hours a day, every day of the year. There is no official information on the source of this transmission, which has been on the air for over 10 years. Another X station, XP, transmits groups of 5 numbers by using tones punctuated by a low note to designate a space between the groups. This has the effect of making these transmissions completely musical, sounding like twisted Scottish reels. The call ups for the XP stations are repeated loops of tones that play much slower than the message part of each transmission; again, the output of these stations is very different from normal

shortwave data mode traffic, making them stand out from the shortwave background like a rogue iceberg. What is the rationale behind the use of this data mode to send Numbers? IS there a rationale?

The most worrying feature of the Numbers Stations is the implication that we are not truly at peace with the Eastern Bloc. The Cold War continues unabated, whilst a strange peace for public consumption is accepted as reality. When are the sabotage instructions to be sent, and what will the targets be? Will sleepers be awakened by a special codeword received whilst on a teabreak from waiting on tables at the Dorchester? How many corporations are being compromised by mailmen who pretend to be listening to football results as they rifle through mail? And is the bus conductor on the No.22 listening to the radio and writing down the results of the horses, or is he being told who his next murder victim is to be? Are all commuters really commuters? What is that buzzing? Is she wearing a Walkman, or is it a Sony SW-100E in her pocket? The baby sitter? The housekeeper? The shop-assistant? The flower stall man at Belgrave square? The school teacher? The TV Repairman. Painter. Plumber. Secretary. Accountant. Salesman. Traffic Warden. Window Cleaner. Publican. Garbage Man. Printer. Lecturer. Antique Dealer. Electrician. Journalist. Carpenter. Gardener. Pensioner. Dentist. Glazier. Politician. Beekeeper. Driver. Mechanic. Bricklayer. Vet. Conet! 'Irdial-Discs 1997

The Skunk Works

Recording Notes

There are many facets to the Numbers Station mystery, and many questions both political and practical that remain unanswered. Why do some of these stations have musical interval signals? Who is choosing the parameters? On the cryptographic side, why do some stations have four figure decode keys and others five? Why do some stations give a group count, and others no group count? Why is 'The Lincolnshire Poacher' being consistently jammed? Has someone tipped off the target nation? Why have some stations converted from voice to Morse, and why didn't all Numbers Stations start off their lives as Morse stations? What is the true purpose of The Buzzer, and the other noise transmitting stations? Who chose a Jeanne Michelle Jarre instrumental for E9?!

Who spoke the words of the many voice Numbers Stations? The women are probably grandmothers and the men grandfathers. They must live somewhere, and they probably have an interesting story to tell. Numbers Stations are operated by highly competent radio engineers; many of them must be retired and living; where are they, and what are their stories? What were/are their wages?

If you ever worked at a Numbers Station as an engineer, an announcer or crypto-officer, we would like to hear from you. Your information will not be divulged to any third party. You can send us information via PGP encrypted email, or by anonymous post. We would be very excited to hear from you.

In 1995, Irdial-Discs put out a world wide request for recordings of Numbers Stations via shortwave magazines and several USENET posts. Recordings were mailed in from around the globe, and were carefully cleaned up, compiled and edited at Irdial-Discs's Kley studio.

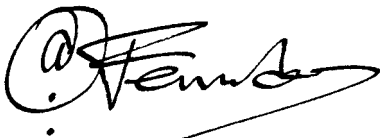
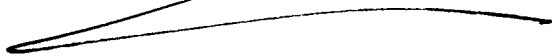
The CDs have been designed to work as both a reference for Numbers Stations monitors and as something fascinating to listen to. For those of you who have not heard Numbers Stations 'live' this is as close as you will get to live monitoring without having a shortwave radio. For SWLs wishing to identify a station that they are monitoring, identify the language being used, and then check the station against the Enigma checklist. Use the transmission format list to accurately ID the station. Standard message formats, null message formats, dual message formats and

exceptionals for each station are listed, along with a selection of calls. Some of the examples in the signal list appear on the CD, beginning on disc 3.

Long recordings have been shortened to give a representation of the transmission format and sound. Null message formats have been omitted in some cases and included in others. In every case, an example of the voice employed has been included. The recordings are ordered as they arrived at the project HQ; some recordings were replaced later in the project, in instances when clearer examples were found. The traffic in the Enigma signal list gives examples of typical output, and matches the recordings in the samples provided by them. This CD and booklet should make it easy for monitors to accurately identify Numbers Stations, so that logs will be consistent world wide. It is our hope that all SWLs adopt the Enigma classification system; consistent logging and reporting will help create accurate schedules and make it easier for everyone to know exactly what is going on. If you have made any logs of Numbers transmissions, please photocopy them and post the copies to ENIGMA. Logs, especially old logs are invaluable sources of information on the behavior of Numbers Stations. Loggings from as many sources as possible are needed to fill in the information gaps that exist about the many stations.

We will be posting errata (if any) on our WWW site. A complete set of recordings of all known Morse stations will also be posted in the fourth quarter of 1997.

A. O. Fernandez

Signal Checklist

This is a fully updated version of the signal list which appeared in issue 8 of ENIGMA and takes into account all known information. You will note that S22, S24 & V3 are now deleted, these have been identified as other stations which are already carried on this list. This way, existing stations do not change position within the context of the list.

Voice stations are classified strictly according to language; e.g. Station NNN in German, French, English and Hungarian would have four distinct reference numbers. To eliminate confusion over unknown or obscure/ambiguous languages and dialects the total number of languages has been grouped into four:-

E - English, G - German, S - Slavic (as a group, Slavic languages are easy to identify, but for the untrained ear not always easy to identify specifically. Slavic words for numbers are very closely related linguistically), V - all other languages.

Suffixes refer to variant forms of the SAME STATION, occasionally or regularly operating within the same period as the usual format. Earlier formats, later superseded, of the same station, but operative over different periods are classed as separate stations. The term 'variant' for our purposes applies only to format, not to schedule, nor to a different voice, nor to musical ID's. Variants have many forms, some being very minor and others radically different in preamble or message type.

* denotes stations / format which are no longer active

? denotes stations / format possibly inactive

D denotes stations / removed from list

ENGLISH

- E1 "Ready Ready !"
- * E2 Arabic Man or The Babblers
- E3 'Lincolnshire Poacher'
- E4 'Cherry Ripe'
- E5 Counting
- E6 English Man - ends 00000
A - 2 group commencing 11111
- E7 English Man - ends 000 000

- E9 'Magnetic Fields'
- E10 Phonetic alphabet - NATO (EZI etc.)
- E11 "Oblique"
- E12 NNN
- * E13 Five Dashes
- * E14 4F 'control'
- E15 Phonetic alphabet - pre-NATO (NAS etc.)
- E16 Two letter
- E17 English lady - ends 00000 (274 etc.)
- * E18 "Fife Free" (see 'Secret Signals')
- * E19 Irish Man
- E20 2 message, dual voice version of either E17, E6 or both.
all these could be variants of the same station.
- * E21 4F Counting, English accent
- * A - American accent
- E22 Details to be confirmed: new station

GERMAN

- * G1 Tyrolean Music (both sections)
 - * A - irregular tunes
 - * B - phrase messages in first section and irregular tunes.
- G2 'Swedish Rhapsody'
 - A - counting variant
- * G3 Gongs or Chimes
 - G4 Three note oddity (same voice as above)
- ? G5 Counting
 - * A - "Zwei" variant
- G6 German Lady 00000
- G7 German Lady 000 000
 - A - 774 type variant
- * G8 Four note rising scale (same voice as above)
 - * A - single repeated 5F group & Morse A's
 - * B - rapid dots introduction
- * G9 'Saxophone Piece' (G20 includes Jazz Players!)
- * G10 Bert Kaempfert
 - G11 "Strich"
 - G12 NNN
- * G13 Five Dashes
 - * A - 3/2 group variant
- * G14 DFC37/DFD21 (rising & falling 20 note scale)
 - * A - non-phonetic variant
- * G15 "Papa November"
 - * A - PN read over notes
- G16 Two Letter
- * G17 German Lady on 5420khz
- * G18 Eight note rising & falling scale
 - G19 German Man 000000 (same voice as G1)
- * G20 "Spruch"
 - * A - one 5F group
- * G21 Music and Morse
- * G22 "Edna Sednitzer" - German version
- * G23 2M8, Hitler's birthday (Langley Pierce)

SLAVIC

- * S1 'Aïda'
- S2 Drums and Trumpets
 - * A - with bugle
 - D B DELETED (see X1)
 - * C - 3F Nomer, then reversed
 - * D - 5F Nomer
- * S3 Czech words
- * S4 "Edna Sednitzer"
- * S5 OLX (earlier format - with null messages etc.)
 - S6 Russian Man 00000
 - A - 55555 00000 format ?
 - B - two groups commencing 11111
 - C - single 5F group repeated
 - D - ID + 111
 - E - two message
 - F - 00000 00000 (a possible error)
 - S7 Russian Man 000 000
 - A - multiple two group
 - B - multiple single group messages for same ID
 - S8 YT
- * S9 Polish Counting
- * S10 Czech Lady (piano peice, later five notes)
 - * A - 555 'idler' format
 - * B - five note intros. (3 versions)
 - C - re-activation
- * S11 "Presta"
- S12 "Cherta"
- S13 Russian counting and announcements (2 minute duration) UPT76 etc.
- S14 As S13 and of very long duration (shield 58/South 96 etc.)
- * S15 Rapid dots (an earlier OLX)
- S16 OLX (present form)
- S17 Czech Lady 'control' - single 5F message
 - * A - no circuit number, positioning index or group count

- * B - 01 GC
- * C - 313-5F
- ? S18 Czech Man - 3F 5F
- ? S19 Czech Man 'control'
- * S20 "Aifada"
 - S21 Russian Lady (342 etc.)
- D S22 DELETED
- * S23 "Barbara"
 - D S24 DELETED
 - S25 Russian Man 'control'
 - A - 11111 22222 format
- * S26 "Zyt ! Zyt !" ("Hush ! Hush!") - Polish Language

OTHER LANGUAGES

- * V1 'Ciocîrlia' 'The Skylark' - Romanian
- * A - with additional tune
- V2 Spanish Lady - two finals or three finals
- D V3 DELETED
- V5 Counting - Spanish 3/2F
- A - 4F
- V6 Spanish Lady 00000
- V7 Spanish Man 000 000
- V8 Eastern Music (6647khz) Arabic
- V9 Oriental language - 5738khz, 6280khz, 8036khz
- * V10 "Schlosst" (see 'Intercepting Numbers Stations')
- * V12 NNN (French)
- V13 New Star Broadcasting - Taiwan
- * V14 Counting 'control' - Spanish
- V15 North Korean - via Radio Pyongyang
- V16 Chinese 11028khz
- V17 Romanian 3F + 000
- * V18 NNN (Hungarian)
- * V19 WTR21 ("Don't Cry for Me Argentina")

MORSE STATIONS

- M1 'Two-tone' Ends 000 A - end-of-month variants
Hand-keyed B - as above but with message
 C - other variants incl. 3 long dash ending
- M2 Ends AR, long zero
- M3 / Ends = = 000 A - with triplet element
- M4 LOLLO , long zero
- * M5 6fig 000000, long zero
- M6 OLX *A - rapid dots tuning signal
- M7 (formerly rapid dashes) MCW Tone sequence, Ends 000 & TS
- M8 Cut Numbers, Ends AR AR AR SK SK SK
 A - 3msg, no GC
- M10 (formerly rapid dashes) CW, 2fig DK, Ends 000
 A - Triplet 000 B - additional groups
 C - 5fig headers Ends triplet 000
- M12 Ends 000 000 (3 or 4fig DK)
- M13 Ends 3 long dashes (slow) A - ID-000
- M14 Ends 00000 or 5 ling dashes
- * M15 DEA47
- M16 8BY
- M17 MCW Ends VA
- M18 4fig pseudo time signal
- * M19 MPL
- M20 V ends = = 000 (probably related to M3)
- M21 ?????? 14 fig pseudo time signal type
- M22 4XZ
- M23 Odd/Even MANY VARIANTS All long zero
- M24 Ends 5 long dashes, see M14 A - 2nd addressee, hand keyed
- M25 KKN, KRH, KWS series
- M26 98
- M27 BTV
- M28 HEP
- M29 VDE Ends AR A - simple format
- M31 FDC, FDG etc series

- M32 (Russian military nets)
- M33 P8K (Long zero)
- M34 11 12345 (2fig IDs, no ending)
- M39 3fig ID & four elements of 5fig (Long zero)
- M40 CQ 3fig
- * M41 WZD
- M42 KUL etc network
- M43 6XM8/C37A group
- M44 Continuous letters
- M45 S21 morse, ends 000
- M46 3fig cumulative
- M47 1/2/3 fig cumulative (JST)
- * M48 Ciocîrlia morse
- * M49 G8A morse
- M50 Hand keyed 5431khz + 4947khz MANY VARIANTS (related to M1?)
- M51 100x 5letter msgs
- M52 2fig:6fig

- MX SLHFBs
- MXC clusters
- * MXF FSK mode
- MXL solitary long-term
- MXS solitary short-term
- MXP 'P' with message
- MXV irregular 'V'

key: *presumed extinct. (M5 was a short-lived special operation)

NOISE STATIONS

- *X1 Bugle
- X6 Six notes
- XC Crackle
- XB Buzzer
- XF Faders
- XE Echo
- *XW Workshop
- XP Polytone
- XPL Polytone - low pitch
- XM Backward music/feedback
- XX Pip
- *Xs Saw/Whine

ENIGMA Format List

Key:

Voice Stations

Everything in CAPITALS is actually sent.

Everything in Brackets is not, i.e. commentary, translations etc.

Nothing in lower case is sent as such, but may be sent in another form.

R5 : Repeated for 5 minutes.

R½: Repeated for 30 seconds.

R x 3 : Repeated - sent 3 times

R x 3v : Repeated - sent 3 times in this sample, but in practice number of times would vary.

Rv : Repeat period variable.

Rmsg : Repeat of whole message.

* : short pause *** : very long pause, up to 90 seconds.

I.S. : interval signal/signature.

= : Voice stations - marks beginning of message. Nothing actually sent.

R : Repeat time indeterminate, unknown or variable.

5f : single 5 figure groups.

5F : paired 5 figure groups.

5L : 5 letter groups.

(all R x2) : all of this section, before brackets, repeated once, i.e. sent twice.

..... : transmission continues. May or may not be included on example.

..... (error) : Morse stations only - error signal sent, i.e. string of dots.

GC : group count.

ID: identifier.

Morse Stations

Speeds not given - can be estimated from samples. All use short zeroes unless otherwise stated.

Short zero : - Long zero : -----

Procedural signals used by Morse Numbers Stations:

= (BT): -...- (break)

?: ..--.. used only by M21 & M23.

AR: -.-.- (end of message).

SK: ...-- (end of transmission) Also sent as S K or V A.

VVV: calling.

CQ: calling -general call.

DE: from.

/: -.-.- (stroke or oblique)

QTC: message to follow QRU: no message to follow NW: now.

Underlined parts of transmissions indicate either a) errors, or b) significant elements etc.

MCW: modulated carrier wave - modulation or carrier may be keyed depending on station.

ICW: interrupted carrier wave - keyed unmodulated carrier.

E1: 13093 (R5) READY READY 28 28 = (28 pairs) 85426 5356954321 00982 END

E3: 'LINCOLNSHIRE POACHER' I.S. 39715 (R10) 6 notes on glockenspiel = (always 200 pairs) 66475 19274 92028 78494 24146 68542 17507 39398 32348 59378 70636..... repeat of 6 notes & I.S.

E4: 'CHERRY RIPE' 38277 I.S. 38277..... format same as E3 - only I.S. differs

E5: 257 257 257 1234567890 (R10) COUNT 74 COUNT 74 10 rough tones = (74 single 3/2 figure groups) 124 70 219 51..... REPEAT COUNT 74 COUNT 74 END

E6: voice 2: 821 (R5) * 704 704 42 42 = (42 pairs) 60083 53821 5393323301 62657 31341 30833 14423 94069 88315 7630530346 63164 22476 13677 41846 36111 10496 * 704 704 42 42 00000

E6: voice 1: 341 (R5) * 269 269 37 37 = (37 pairs) 19881..... ending as E6 voice 2

E6: voice 3: pairs95978 03685 20719 16727.... format as E6 voice 1

E6: null message format (voice 2): 897 897 897 00000 (R5)

E7: 3 figure 'decode key': 167 167 167 1 (R5) * 944 944 138 138 = (138 single groups) 2309 26807 74241 28010 23884 02266 * 000 000

E7: null message format: 471 471 471 000 (R5)

E7: 4 figure 'decode key': 485 485 485 1 (R5) * 6249 126 6249 126 = (126 single groups) 18259 61016 73933..... 000 000

(the figure 1 in E7 calling cycle refers to the number of messages - usually only one, but sometimes two and once five short messages were sent)

E9: "Magnetic Fields": musical introduction FORTY-FOUR D FORTY-FOUR D = 44372 24365 06352 05352 83521 99506 36886 66686 80531 39906 57455 AGAIN AGAIN 44372 24365 music repeated ("Magnetic Fields" is by Jeanne Michelle Jarre)

E9: 2nd voice (sample)

E10: Alpha Bravo Charlie typical message transmission (YHF): YANKEE HOTEL FOXTROT (R3) MESSAGE MESSAGE GROUP 1 0 GROUP 1 0 TEXT TEXT = (read phonetically) NLSVNUHNFY ZLNZF NTUME HOBZV IFDAM JHIGV VZSZO JHZGK ZLPJC END OF MESSAGE REPEAT REPEAT MESSAGE MESSAGE GROUP 1 0 GROUP 1 0 TEXT TEXT = NLSVN END OF MESSAGE END OF TRANSMISSION (complete transmission)

E10A: selection of calls:

ZWL 1, VLB 2, VLB 60, OEM C, OEM 8, TMS 22, VLB 15 D33 D34 D35 D36 D37 Z18, NDP 5, NDP R, (OE)M 9, FTJ 4, SYN 14 B131 B132 B164 B188, MIW 2, KPA 3, VLB 96 B29 B2330428, MIW 14 D37 D38 D39 D40 D41 D42 D43 D44 D45 D46 D47

E11: 'Oblique': 690/52 (R5) ATTENTION! = (52 pairs) 65487 93045 36839 01064 35400 31941 ATTENTION! = (52 single groups) 65487 93045 36539 01064 9?522 OUT

E11: null message format: 231/00 (R5) OUT

E12: voice 1 NNN: string of 'N's send in MCW for 5 minutes * GROUP 25 GROUP 25 = (25 pairs) 44919 22261ENDED

E12: voice 2 and 3 same format as voice 1

E13: 328 328 42364 089 089 (R10) five rough dashes = (89 single groups) 374 11 639 60 402 67 326 28 346 74 498 70 362 43 478 79 860 89 93 181 508 19 574 99 038 13 976 65 216 96 996 77 807 85 188 03 841 98 928 13 I SAY AGAIN 374 11 639 60 841 98 928 13 END

E14: (distinctive 'hash' on carrier) ten rough tones 1364 3828 4873 0006 (R10)

E15: Adam Baker Charlie (read phonetically): NANCY ADAM SUSAN (R5) QTC QTC QTC NR3 NR3 NR3 GR11 GR11 GR11 = (11 pairs) ZGYTO NYQCD RA RA (also appears with male voice)

E15: null message format: QRU QRU QRU read out after call. (group counts are reversed e.g. GR21 means 12 groups)

E15: 2nd voice.

E16: KILO GOLF KILO GOLF KILO GOLF electronic notes (R5) (MESSAGE FOR) 408 408 76 GROUP, 390 390 49 GROUP
* ATTENTION! 408 408 78 GROUP = (49 pairs) 11746 73192 (END) 2nd message follows

E17: 561 (R5) 733 733 140 140 = (140 pairs) 9309 91265 04879 733 733 140 140 0 0 0 0 0

E17: null message format: 274 274 274 00000 (R5)

E17A: two voices, two Ids each with own message (format as E17, but with call for 2nd ID immediately following:
....(30 pairs) 77112 258 258 30 30 * 169 (R10) 750 750 25 25 =(25 pairs) (750 750 25 25 0 0 0 0 0)

E21: 186 186 1234567890 (R10) ten rough tones COUNT 125 COUNT 125 = (125 single 4F groups) 1419 8626 2696
5728 * REPEAT! * COUNT 125 COUNT 125 1419 8626 * END

G1: First Section only. Usual four Tyrolean songs, following on one from another in sequence, on 6425khz.
Second section I.S. (R5) One bar from Communist 'Internationale' - this is actually speeded up during final minute before messages.

G1A: First Section. Non-usual songs,
Broken for first set of messages to Helmut, Kruse & Franz

2nd track

1st repeat of messages

3rd track

Final repeat of messages - with farewells

4th track

Abrupt cutoff. Carrier remains on for 2nd section 20mins later.

All of the above was recorded from a home-built 3 valve TRF (1-v-1) which is still in use. Mike Gauffman recorded G1A above on Saturday 25/9/71. The text is as follows: "Helmut, Kruse, Franz. Guttentag. Die große six-und-swanzig ist zwei-und-dreißig. Wasser mir gut. Der sonne schein verlösch. Unser henne ist abei eis ei so legen. (Final only: Als wieder?? Aufwiedesehn)" Translation: "Helmut, Kruse Franz.Goodday! The great twenty-six is thirty-two. Water good to me. (?) The sunshine is over. Our hen is about to lay one egg." This is an approximate translation.

G2: 'The Swedish Rhapsody' Repeated tone for ten minutes * I.S. (first few bars of "Swedish Rhapsody" played on a musical box -R5) 66252 66252 11850 11850 93888 93888 (R x3) ACHTUNG! 66252 66252 ACHTUNG! (100 x 5F pairs) = 76766 13000 78361 (2nd message block follows in same way - always 100 paired groups, after which 3rd msg block follows, but this time always 50 pairs. Ends: 'ENDE')

G2A: (As G2 but with count 12345 67890 12345 67890 included within the 5 minute I.S. period. G2A always sends a single 100 group message, whereas G2 sends either a single 100 group msg of 3 message blocks of 100, 100 & 50 groups - depending on schedule) I.S. and count (R5) ACHTUNG! 17277 17277 ACHTUNG! (100 x 5F pairs) = 17768 1999 22227 81871 54198 * 28956 81154 78698 19719 19787 * 98006 04646 81441 56941 25982 * 68665 20802 18412 41785 * ENDE (slight pause after every 5th group)

G3: Gong I.S. (R5) (2 samples) ** ACHTUNG! 03246/16 38146/14 75153/26 (R x5) * ACHTUNG! 03246/16 03246/16 (16 x 5F pairs) = 67972

G4: 3-note I.S. (R5) * ACHTUNG! ACHTUNG! 9msg of paired 5F non-random groups - no GC) = 87990 13145 69782 ENDE ENDE * ACHTUNG! ACHTUNG! = 87990 13145 69782 69780 43562 59783 60109 43556 57534 49682 10108 49782 49876 60984 41516 98723 08742 09562 49780 21357 97856 40015 39487 23249 41516 60109 ENDE ENDE (in this example the whole groups 60109 & 41516 occur twice)

G4: 3-note I.S. (not same as above) ACHTUNG! = 75421 63250 (slower delivery)

G5: 971 971 971 1234567890 (R10) 10 rough tones GRUPPE 99 GRUPPE 99 (99 x 3/2F) = 649 47 697 38 166 19 980 04 906 38 810 17 701 70 936 28 * WEIDERHOLE GRUPPE 99 GURPPE 99 (R msg) ENDE

G5: 145 145 145 1234567890 (R10) (different voice - same as G13 voice) note different pronunciations : ZWEI & ZWO for '2'

G6: 217 (R5) * 745 745 93 93 (93 x 5F pairs) = 50774 11234 31855 69278 51403 39869 45200 74581 66952 * 745 745 93 93 0 0 0 0 (note slight pause after all zeroes)

G6: 484 (R5) * 235 235 24 24 (24 x 5F pairs) = 21464 30967 73983 30579 29164 24724 02517 58336 * 235 235 24 24 0 0 0 0 (different voice)

G6: 374 374 00000 (R5) Null message format - call ends after 5 minutes

G7: 456 456 456 000 (R5)(ENDE) Null message format (all G7s begin ACHTUNG and end ENDE)

G7: 278 278 278 1 (R5 - 1 indicating one msg) * ACHTUNG 6403 217 6403 217 * (217 x 5f) = 01533 06919 95385 90060 93448 * 000 000 ENDE

G8: 4-note scale (R5) * 62537/05 25642/06 1127/09 60164/11 80291/17 69454/20 (R5) * ACHTUNG! 62537/14 ACHTUNG! 62537/14 (14 x 5F pairs) = 95836 47292 (2nd msg) * ACHTUNG! 25642/22 ACHTUNG! 25642/22 (22 x 5F) = 89017 ... 11297/08... ACHTUNG! 60164/48 ... ACHTUNG! 80291/25 ... ACHTUNG! 69454/34 ... ENDE
Traffic list indicates minutes past the hour for commencement of messages. This example has six messages of GCs, 14,22,8,48,25 & 34 respectively.

G8A: Repeated letter 'A' in slow Morse, then: = 90008 (R1) * long tone, then repeat of whole sequence - cycle of 2 minutes approx.

G8B: Rapid dots for 5 minutes in place of 4-note scale, format otherwise identical to G8 * 84356/05 58122/08

G10: "Wunderland bei Nacht" by bert Kaempfert (actually played twice) followed by the other side of the same record: "Dreaming the Blues" also by Bert Kaempfert. (1961 recordings) - also repeated. Message sometimes followed, but rarely. These took the form of GC/Triplet e.g. 62/111 or 67/222 and read as "zweiundsechzig strich hundertelf" or "tvoundsechzig strich tvouhundert-tvounundzwanzig". = (5F pairs ICH WIEDERHILE ENDE. No off air recordings available.

G11: 752/00 (R5) ENDE (STRICH used for '/') 2141 G11 284/00 (Morse on carrier)

G11: 751/100 (R5) ACHTUNG! (100 x 5F pairs) = 01190 61819 21936 ACHTUNG! 01190 61819 67539 59959 21966 ENDE Messages are rare with G11

G13: 301 301 301 91668 040 (R5) Five rough dashes (40 x 3/2F) = 615 15 452 72 169 29 413 72 023 68 390 00 845 19 893 64 582 74 847 76 947 64 216 14 808 26 065 81 107 96 835 38 783 63 764 90 599 77 ENDE ES WIEDERHOLE (R msg)

G13: (different voice) 469 469 469 89037 177 (R5) five rough dashes (177 x 3/2F)= 978 73 462 24 913 53 111 93 384 64...

G14: HIER IST DFC SEBEN UND DREIZIG (R5) ES FOLGEN TALON FÜR 295 295 21 GRUPPEN 226 226 5 GRUPPEN 792 792 70 GRUPPEN * ACHTUNG! 295 295 21 GRUPPEN (21 x 5F pairs) = 59692 18554 20628 36365 70104 24719 86743 ENDE ACHTUNG! 226 226 5 GRUPPEN (2nd msg) =

G14: DELTA FOXTROT DELTA ZWOU EINS random note I.S. (all R5) ES FOLGEN TALON FÜR 278 278 24 GRUPPEN 520 520 40 GRUPPEN 890 890 56 GRUPPEN * ACHTUNG! 278 278 24 GRUPPEN (24 x 5F pairs) = 62478 03818 84554 20145 ...

G14: DELTA FOXTROT CHARLIE DREI SEBEN (DFC37) random note I.S. (all R5) ES FOLGEN TALON FÜR 083 083 24 GRUPPEN 501 501 48 GRUPPEN 295 295 49 GRUPPEN * ACHTUNG! 083 083 24 GRUPPEN (24 x 5F pairs) = 24701 ...

G14: 20 note rising and falling scale I.S. HIER IST DFD EINS UND ZWANZIG (all R5) * ES FOLGEN TALON FÜR 229 229 23 GRUPPEN 817 817 GRUPPEN 436 436 8. GRUPPEN * ACHTUNG 229 229 23 GRUPPEN ...

G15: PAPA NOVEMBER (x4) random tones I.S. (all R5) ES FOLGEN TALON FÜR 849 849 8 GRUPPEN 231 231 17 GRUPPEN 92. 92. 9. GRUPPEN 78. 78. 7. GRUPPEN 524 524 14 GRUPPEN 602 602 15 GRUPPEN 307 307 13 GRUPPEN 669 669 9 GRUPPEN ACHTUNG! ... (note large no. Of messages and low GCs with this station)

G15: PAPA NOVEMBER read over continuous random tones (earlier version)

G16: LIMA GOLF (x4) random tone I.S. (all R5) ES FOLGEN TALON FUER 417 417 62 GRUPPEN 761 761 56 GRUPPEN ACHTUNG! ...

G16: VICTOR OSCAR (as above) Messages for 283 - 45 group & 52 group. VO always transmitted in AM at a time when all other G16s used SSB

G16: HOTEL KILO (328/11, 921/66)

G16: YANKEE SIERRA (516/90) Non electronic tones and live announcer

G16: DELTA TANGO (991/95)

G16: WHISKY LIMA (522/88)

G16: PAPA ZULU (107/75)

G16: ROMEO DELTA (116/91)

G16: ECHO LIMA (928/101)

G16: NOVEMBER UNIFORM (368/19, 203/20, 526/41)

G16: PAPA DELTA

G16: NOVEMBER UNIFORM (526/100)

G16: PAPA DELTA (551/75)

G18: 8-note rising & falling scale 67882 91 24 (R5) No record of following message - in this case 24 group - but probably as S10

G19: (no record of beginning) (msg 5F pairs) ...728 88542 47419 21203 02842 42690 34056 29460 48299 85708 49726 39360 91459 86122 0 0 0 0 0 0

G20: "Schubert Serenade" I.S. (R5) ACHTUNG! ACHTUNG! SPRUCHNUMMER 1 (x2) GRUPPENZAHL 38 (x2)ZEIT 80800 (x2) ACHTUNG SPRUCH GEHT! (x2) = (msg of 38 x 5F pairs followed) (ENDE ENDE) (Message Number 1, Group Count 38, TIME 80800 - actually date/time group, Attention - message comes!) (Spruchnummers are always associated with particular music)

G20: "Atlantis" by The Shadows I.S. (R5) Spruchnummer 5

G20: I.S. not identified: Spruchnummer 19

G20: Bach's famous Toccata in D minor I.S. Spruchnummer 10

G20: "Red Balloon" by the Dave Clark Five I.S. Spruchnummer 17

G20: "Mexican Hat Dance" I.S. Spruchnummer 4

G20: "Brahms Waltz" I.S. Spruchnummer 3

G20: "We Get Ideas" by Louis Armstrong I.S. Spruchnummer 7

G20: (female voice) ACHTUNG! (x2) SPRUCHNUMMER 4 (x2) GRUPPENZAHL 16 (x2) ZEIT 71100 (x2) ACHTUNG SPRUCH GEHT! (x2) = (sample count 12345 67890) ENDE ENDE

G20A: "We Get Ideas" I.S. (R5) ACHTUNG! ACHTUNG = 71452 71452 ENDE ENDE ACHTUNG! ACHTUNG = 71452 71452 ENDE ENDE

G20A: "Mexican Hat Dance" I.S. (R5) ACHTUNG! ACHTUNG! = 77180 77180

G21: Randomly chosen piece of music - usually German songs, but also international pop - with superimposed slow Morse sent every ten seconds, in this case, one letter 'M'. After five minutes, either signs off or sends message. 12345 67890 12345 67890 12345 67890 * 4659/33 4659/33 (no recording of message, but presumably a 33 group message would have followed. If the 4659 is a decode key, then this is the only known station apart from the M12 family which uses a 4F decode key.)

G22: 748 (R5) NUMMER 101 GRUPPE 33 * (33 x 5f) = 95337 78339 25312 27903 92368 72015 53687 89416 56287 * NUMMER 101 GRUPPE 33 (R msg) = 95337 78339 68513 73945 27903 52368 53687 89416 56287 0 0 0 (very poor recording, but the only one in existence)

S1: Grand March from Aida (no recording available)

S2: Drums & Trumpets I.S. (R5/10) * NOMER 42 GRUPPI 27 NOMER 42 GRUPPI 27 (27 x 5F pairs) = 83168 48765 10973 65890 77439 NOMER 42 GRUPPI 27 = 83168 94635 56359 87628 74459 77439 KRAI (Note - repeat sends single groups)

S2A: Drums & Trumpets I.S. (R5/10) GRUPPI 59 NOMER 245 GRUPPI 59 NOMER 245 (59 x 5F pairs) = 92317 88744 NOMER 245 GRUPPI 59 NOMER 245 GRUPPI 59 (59 x 5f) = 92317 88744 KRAI (Note 3F Nomer and reversal of Nomer/Gruppi order on repeat)

S3: OKNO ONKO OKNO DAYASAN DAYASAN (R5) KONEC (correct spelling not known, nor meaning of 'dayasan'. 'Okno/okna' are slavic for 'window')

S4: 408 (R5) NOMER 198 GRUPPI 30 (30 x 5f) = 99744 88605 70823 73364 64022 71231 37510 02173 88584 97407 29420 * 408 (R x 12) * NOMER 198 GRUPPI 30 (R msg) = ... 000

S5: 723 (R5) * 30 30 (30 x 5f) = 25211 29341 05238 78528 PAPAQUI (this word, which presumably means 'repeat' is written as it sounds in English - there is no such word in the Czech language, nor can we find anything similar) 30 30 (R msg) KONEC

S6: 298 (R5) 137 137 24 24 (24 x 5F pairs) = 82419 41740 * 137 137 24 24 0 0 0 0 0 (this voice, although uncommon is still in use)

S6: 815 (R5) * 397 397 46 46 (46 x 5F pairs) = 76432 13436 * 397 397 46 46 00000

S6: 956 956 956 00000 (R5) Null message to 956

S6B: 203 (R5) 864 864 2 2 11111 11111 00031 00031 864 864 2 2 0 0 0 0 0

S6C: 11715 (R5) then off

S6D: 802 802 802 111 (R5) 323 323 109 109 (109 x single 5f) = 31413 19909 60378 .809. 63666 15933 00000 00000 (very odd format)

S6E: 167 (R5) * 325 325 46 46 (46 x 5F pairs) = 15045 72501 325 325 46 46 167 (R1) 849 849 83 83 (83 x 5F pairs) = 28475 * 849 849 83 83 00000 (rare 2 msp format: 46 & 83 groups both for 167. Note different decode keys)

S7: 813 813 813 2 (R5) * 625 100 625 100 * (100 x 5f) = 77363 06550 54170 33350 813 813 813 2 (R5) 1479 69 1479 69 * (2nd message begins: 69 x 5f) = 29099 89261 26747 84243 35868 49575 40555 71697 * 000 000 (Two messages to 813: 100 & 69 groups - note decode keys of 3F & 4F)

S7: 571 571 571 000 (R5) Null message format - to 571

S7C: 55555 (R5++) Went on for hours at time of Moscow coup attempt.

S8: YT in MCW Morse (R5) 923 GRUPPA 15 923 GRUPPA 15 (15 x 5F pairs) = 00002 14045 53570 86642 51414 15437 70569 34520 56040 737.1 65722 4041. 75393 35745 33896 * YT (R until next 5 minute interval) Further messages follow.

S10: Piano Piece I.S. Thought to be "The Lark" by Tchaikovsky, but not confirmed. No off air recording exists.

S10A: 555 555 555 000 (R5) KONEC KONEC (Circuit Number without addressees)

S10B: 5 notes I.S. (R5) 333 333 333 - 97178 97178 13 13, 15121 15121 21 21, 61328 61328 24 24, 65012 65012 14 14 (all R5) POZOR! POZOR! 97178 97178 88 88 13 13 (13 x 5F pairs) = 60419 49918 89645 4784356184 20475 31473 58573 85703 34930 13902 73770 16361 * 88 88 13 13 POZOR! POZOR! 15121 15121 84 84 21 21 (2nd msg: 21 x 5f) = 90852 40234 33491 (end of 4th msg) 25 25 14 14 KONEC KONEC

S11: 313/00 (R5) Note pronunciation and use of 'preska' for '/'

S12: 971/00 (R5) KANYET - English phonetic spelling. Uses 'cherta' for '/'

S12: (M21 on adjacent channel) 971/35 (R5) VNIMANJE! (35 x 5F pairs) = 34372 04995 73805 67464 72988 79247 63630 90791 64387 96672 82743 17369 81685 69640 53287 87610 66631 43596 70421 06376 49541 VNIMANJE! (35 x 5f) = 34372 04995 73805 53596 70421 06376 4955. (note extreme similarity in sound of numbers 4&5 a very highly trained ear is necessary, and the above groups are not 100% accurate!) KANYETS

S13: Count in Russian 1-10 10-1 and announcement (R2) Announcement given twice at end

S13: Count in Russian 1-10 10-1 (x3) Announcement. (different voice)

S14: 1-10 Announcement (R -over period of hours) (male voice)

S14: 1-10 Announcement (female voice - 'Buzzer' in background on 4625khz) (R -over period of hours)

S: Counting in Polish 1-10 (two voices)

S15: Rapid dots (R5) 825 (R5) 68 = 44584 10689 87713 64410 08272 74320 44822 PAPAQUI (see S5 for 'PAPAQUI') 68 (R msg) = 44584 10689 87713 KONEC (68 x 5f)

S16: VVV DE OLX OLX (R5 - sent in MCW Morse) * 597 (R3) * 113 (113 x 5f) = 21566 22075 03829 77787 75995 11538 49487 28517 49011 96528 PAPAQUI (see S5 for 'PAPAQUI') 113 (R msg) = 21566 22075 03829 49487 28517 49011 96528 KONEC

S17: 555 555 555 - 313 313 313 05 (all R5) 313 313 313 42 42 05 05 POZOR! POZOR! 65023 (R x 10) POZOR! POZOR! 42 42 05 05 KONEC KONEC

S17: 555 555 555 - 313 313 313 05 (all R5) 313 313 313 42 42 05 05 POZOR! POZOR! 68024 (R x 10) POZOR! POZOR!
42 42 05 05 KONEC KONEC

Note: S17 always sends same Circuit no. 555, same 'ID' 313, same Decode Key 42, and same GC, 05 (possibly means one set of five figures, 5 alone would mean five groups) The only variable is the single 5f 'text' group, and these are not random, and are always related, as in the above examples: 65023 & 98024.

S17A: 313 313 313 99032 99032 99032 (R5) KONEC KONEC (note same 'ID' as above.)

S17B: 555 555 555 - 589 589 589 01 (R5) 589 589 589 18 18 01 01 POZOR! POZOR! 44447 44447 POZOR! POZOR! 18
18 01 01 KONEC KONEC

S18:4 859 859 859 47329 47329 47329 (R) 856 856 856 47324 47324 47324 47329 47329

S19:01010 01010 POZOR! POZOR! 986 (very poor recording)

S21: 342 (R5) * 036 036 20 20 1 (?) (20 x 5F pairs) = 00000 57991 97975 34041 05147 1 (?) Not certain about this word - it may be ODIN = one, but is always present, however it is never present on its Morse transmissions, which are otherwise identical) 036 036 20 20 000

Note change of voice and background noise at end of call. 342 schedule always has 00000 as first message group. Others do not.

S25: 615 615 615 69866 69866 (R10) * 615 615 615 6506 6506 (R10) Frequency change - 14890khz to 11270khz *
615 615 615 67536 67536 (R10) * 615 615 615 66436 66436 (R10) * 615 615 615 00000

'ID' is always 615. 5f group is non-random, its first and last figures remain the same throughout the four sections of the transmission. In the next entry, S25A, they are 8 & 0.

S25A: 615 615 615 22222 85130 85130 (Rv) * 615 615 615 11111 85850 85850 (Rv) * 615 615 615 11111 86750
86750 (Rv) * 615 615 615 22222 87420 87420 (Rv) * 615 615 615 11111 85620 85620 (Rv) * 615 615 615 000

Number of sections varies - whole transmission may last several hours, usually remaining on 14890khz throughout, but sometimes ending on 11270khz. v - varies between 2 & 20min. The 11111 groups need not be present in every section, and may also be 22222, 33333 or 44444 without any pattern. 8 & 0 are the two consistent 'text' figures above.

S26: "ZYT! ZYT! ("Hush! Hush!") no recordings exist. Messages in Polish followed.

V1: "Ciocirtia" (The Skylark) TERMINAT TERMINAT TERMINAT (null message) no recording exists

V1: "Ciocirtia" (R x2) = 09205 (first figure of first group always zero, next two figures are CG: 92 x 5f) 06985 05858 68027 65369 57455 63068 91367 ... TERMINAT TERMINAT TERMINAT

V1: (2nd voice) 21811 20297 67523 93847 82695 12491 87155 44163 95007 54448 86486 12463 64189 47424 83993 79077 15776 58267 30543 26465 68004 85465 18244 47509 32134 94842 77643 26903 16617 42545 03214
TERMINAT TERMINAT TERMINAT

V2: ATTENCION! 28979 (R4) ATTENCION! 28979 101 (R1) (101 x 5f) = ... 00730 27080 FINAL FINAL (or FINAL FINAL * FINAL)

V2A: ATTENCION 989 02 (R4) * 02 185 (R1) (185 x 5f) = ... FINAL (x2 or 3)

V5: Count 1-0 474 (R10) ten rough tones (message follows as E5)

V5A: As above but 4F msg. Message sample: 0548 9522 2473 9521 ...

V6: 514 514 514 00000 (R5) null message format

V6: 567 (R5) 294 294 75 75 * (75 x 5F pairs) = 70072 89956 99726 294 294 75 75 0 0 0 0 0

V6: (different voice) 659 (R5) 184 184 27 27 (27 x 5F pairs) = 96832 98737 98507 70778 87008 184 184 27 27 0 0 0 0 0

V7: 273 273 273 000 (R5) null message format

V7: 033 033 033 1 (R5) * 227 66 227 66 * (66 x 5f) = 23622 82614 13276 37937 60816 09552 * 000*000

V8: Musical piece. Header x 2 in Arabic (no GC) = message of 4F groups follows, read in a peculiar way, in both digits and 'flowing numbers'. Note word for repeat at end of first message reading. Ends with repeat of same music, cutting off abruptly.

V8: (different voice) (message -word for 'repeat' read twice - musical sign-off)

V9: Chinese/Korean - uncertain, reluctant to classify.

V12: Morse N in MCW (R5) GROUPE 89 GROUP 89 (89 x 5F pairs) = 14891 35951 99883 49859 51033 88580 49948 91355 ...

V12: Morse N in MCW (R5) GROUPE 60 GROUPE 60 (60 x 5F pairs) = 56950 N (x5) (R GC & msg) = 56950 FINIS (different voice)

V12: Morse N in MCW (R5) GROUPE 20 GROUPE 20 (20 x 5F pairs) = 10688 18775 01815 29006 82870 98680 50551 46040 67028 FINIS (Repeat to end)

V13: 'New Star Broadcasting'

V18: Morse N in MCW (R5) GRUPA (GC) GRUPA (GC) = (msg in 5F pairs) Repeat as V12, in Hungarian.

V19: Instrumental Music: "Don't Cry for Me Argentina" ** WHISKY TANGO ROMEO VEINTE Y UNO (WTR 21) ** (message of single 5f groups follows - note the unusual method of delivery using 'mixed numbers') ** WHISKEY TANGO ROMEO VEINTE Y UNO ** (R msg - but this time read normally in digits) = 61115 74939 04343 54388 40121 43372 43973 08610 ... (ending not known - possibly WTR 21 FINAL)

V20: Hungarian popular music from 1960s: Bilincsbe Zárva" ("Prisoner of Love") followed by B side of same record, "Álmatlan Éjszakán" both by Ervin Litkei. No off air recording available. Messages of 5f followed.

M1: 025 (R5) 639 639 42 42 = = (42 x 5F pairs) error & very bad spacing

M1: 197 (R5) 648 648 40 40 = = (40 x 5F pairs) 07413

M1A: 025 025 11759 11759 (R x 5v) *** 333 11282 (error) 333 11292 11292 (R x 4v) ** 020 16 19 ** 331 21
** 111 000 (elements separated by long pauses)

M1B: 463 463 463 51835 51835 (R x 5v) *** 111 * 111 213 29 = (29 x 5f) 88373 = 213 29 000 (that 000 was an error) ** 111 37590 37590 (x2) ** 111 000

M2: 712 (R5) * GR30 * (30 x 5f) 32445 AR * GR30 (R msg) AR Note long zero & strong key clicks. MCW or ICW depending on ID. Speed constant.

M3: all M3 calls are R5, rarely R10. MCW occasionally used. Keying speeds vary. 508/00

M3: 042/00 (ending follows) = = 000

M3: 035/00

M3: 621/00 = = 000

M3: 018/00

M3: 552/00

M3: 044/00

M3: 976/00

M3: 045/52 (R5, 52 group msg would follow)

M3: 011/00

M3: 584/00

M3: 287/00 = =000 (S6 on adjacent channel)

M3A: 287/333/00

M3: 284/00 (this one is always MCW)

M3: (010/00)

M3: (1)21/00 = = 000

M3: (044/00)

M3: 010/00

M3: 041/54 (R5, 54 group msg would follow)

M3A: 287/111/00

M3: 121/70 (R5, 70 group msg would follow)

M3: 016/53 (53 grp msg)

M3: 041/55 (R5) = = (55 x 5F pairs) 09756

M3: 558/00

M3: 017/53 (R5) = = (53 x 5F pairs) 93034 86515

M3: 508/00

M3: 552/00 (M10 rapid dashes adjacent)

M3: 496/00 (always MCW, this ID also used by G11)

M3: 049/57 (R5) = = (57 x 5F pairs) 51152 79773

M3: 040/00

M3: 282/00

M3B: 854/000 (R) = = 9 note three zeroes in null msg call)

M4: (always MCW) U (R10) * LO LO LO LO LO LO/01723 (all R5) * Lo LO/01723 = = (100 x 5f always) 89261 12616 98675 42381 82067 82182 31657 * LO LO/01723 = = (R msg) AR SK AR SK (note long zero)

M6: VVV DE OLV OLV (R5) * 414 414 414 414 414 414 = 011 011 (all R3, 011 never changes) = 146 = (146 x 5f) 15364 52874 71731 64072 10055 AR = 146 = (R msg) AR = 414 414 414

M7: (always MCW constant carrier) rapid dashes (R10) * (1min) 771 771 771 53 53 38 38 = = (38 x 5F pairs, keyed faster) 57527 = = (slower) 53 53 38 38 000 * (different tone sequence for 1 minute)

M7: 53 53 38 38 000 * (same msg as above but different transmission - note, ending tone sequence is not the same)

M7: ** (tone sequence 1min) * 833 833 833 24 24 14 14 = = (14 x 5F pairs)

M7: (1min tone sequence) * 771 771 771 63 63 27 27 = = (27 x 5F pairs, sent faster) 80970 = = (slower) 63 63 27 27 000 (tone sequence for 1min, no rapid dash intro.)

M8: cut numbers msg:MTT WIWGW UGDGU TRUNT GITDU WNUWW UUIRT UNNDI MAMWD WIUDD WIUIW N.GMM MDIAU GMAGG GGTGW MMMGN WWMUA MWNTT DTTII UUTNT AR AR AR SK SK SK

M10: (always ICW) rapid dashes (R10) ** (1min) 555 555 555 451 451 451 26 (all R5) 451 451 451 89 89 26 26 = = (26 x 5F pairs sent faster) 66945 18180 39958 64386 (slower) = = 89 89 26 26 000

M10: rapid dashes (R10) ** (1min) 555 555 555 355 355 355 20 966 966 40 (all R5) = = 88 88 20 20 (ending of 1st msg) 966 966 966 77 77 40 40 = = (2nd msg of 40 x 5F pairs commences) 13653 12806 (M10s may send from one to four messages)

M12: 658 658 658 1 (R5) * 2543 145 2543 145 * (145 x 5f) 96904 * 000 000

M3: 624/00

M12: 999 999 999 1 (R5) * 9001 74 9001 74 * (74 x 5f) 83434
Triplet Ids are very rare. Both above M12a have 4F decode keys.

M12: 305 305 305 000 null message format

M12: 305 305 305 1 (R5) one message call to same ID as above

M12: 209 209 209 000 (R5) null msg to 209

M12: 872 872 872 2 (R5) * 717 60 717 60 * (60 x 5f) 32872 * 872 872 872 2 (R1) * 6035 80 6035 80 * (2nd msg of 80 x 5f commences) 77206 000 000
Two messages to same ID: 1st with 3F decode key, 2nd with 4F decode key.

M13: (repeat to end) = 679 (R1) = 152 23 = (23 x 5f) 18310 73436 = * __ __ __ Note hollow sound and slow keying. The 3F number preceding GC is a monthly serial No.

M13A: 491 491 491 000 (R5) = 135 22 = (22 x 5f) 46980 This format is not a zero message type, and is identical to a slow M12 null msg format. The 000 sequence is again repeated before the message repeat.

M14: 872 872 872 00000 (R5) null msg format

M14: 147 147 147 00000 as above - but sent very fast

M14: 474 474 125 125 = = preamble & start of 125 x 5F pair msg - very fast

M14:ending of msg (111 group) = = 479 479 111 111 * five relatively long dashes; a variant of the usual five zeroes.

M: VVV DE DEA47 (R) string of dots NW ZMO 60 II ZMO 60 AR DEA47 VVV DE DEA47

M7: msg = = 92 92 26 26 000 * one minute tone sequence & off

M16: VVV VVV VVV 8BY 8BY 8BY 012/629/532/401/776 (all R20)

M16: VVV VVV VVV 8BY 8BY 8BY 780/645 469 146 536 (R20) Number of 3F groups varies widely (both of these happen to be five) but order of groups is fixed. Long zero.

M17: (MCW constant carrier) carrier 60881 (R3) rapid dots (10sec) 26 26 = (26 x 5f) 92376 54399 11190 08687 79578 65352 VA carrier off
Ids are not random, 1st two figures indicate schedule.

M18: 2307 (R1) 2308 (R1) ect. Increasing by one each minute. Time given is 2 hours ahead of UTC and may be up to 3min out

M3: 584/00

M20: string of Vs for 5min = = 000 (uses short zero, messages never heard)

M21: =990907??8?????? (sent once each minute, the 0907 element indicates present time several hours ahead of UTC - varies. Occasionally 14F groups interspersed.)

M23: 268 (R10-13) = 34 34 = (34 x 5f, 1st group & last 2 groups significant) 03901 31475 32000 03901 = ? ? = 34 34 = (R msg) AR AR

M23: 359 (R10-13v) odd no. ID - null message. Cuts off abruptly at end of call.

M23: 197 as above (two parallel channels sampled above)

M23: 00000 (R5) null msg again, different format. Two parallel channels sampled

M23: I (R10) = = 16715 66... (straight into msg - no GC)

M23: I (faster than above, R5-10v with break every 30sec)

M23: I (R5 rapidly, with break every 30sec) repeat sequence: I (R1/2) ? ? I (R1/2) = 23 II 23 = 35910 62547
72150 20000 35910 = = AR AR

Other M23 formats exist. All use long zero & identical 1st and last groups.

M26: 98 (R) very poor example - cant find recordings of 'traffic': one or two 5f groups nearly always prefixed by 98 - rare by 95, 97 or 99. Now also 66, 98 less often

M27: VVV VVV VVV CQ CQ CQ DE BTV BTV QTC (all R5) NW QTC 366/506 (all x2) 366/20 (20 x 5f) 20185 75584 06550
93023 26437 94269 61007 06308 81639 AR 506/15 (15 x 5f) 45993 86306 17564 76552 01281 68263 13807
50667 AR S K (long zero)

M28: VVV VVV VVV DE HEP9 HEP9 HEP9 AR (all sent sequentially with HEP3, HEP5 & HEP7, continuously 24 hours a day. So messages never heard.)

M29: VVV VVV DE VDE VDE VDE (R5) = = 73 73 32 32 5 5 0800 0800 = (32 x 5F pairs)

M33: P8K VVV VVV D DE PP8K P8K VVV VVV VVVV DE P8K PP8K P8K GR47 (47 X 5f) = 18532 559388 557766
772809 = GR40 (40 X 5f) = 10298 550600 889317 995999 = B GR46 (46 x 5f) = 60227 551225 12777 448530
= B GR42 (42 X 5f) = 87243 661104 665695 58722 335876 = B GR45 (45 x 5f) = 72287 11907 43457 91729 = B
GGR43 (43 x 5f) = 04101

This station, although auto-keyed is prone to errors - underlined in the above transmission. Uses long zero. Speed increases towards end of transmission. 6 messages.

M: short sample of wideband FM station - tuning from 14400khz to 14900khz. Later with BFO on. Extremely strong - obliterated stations beneath it. Only heard once.

M39:20042 dashes for 15sec 746 746 746 22749 22749 22749 (R2) dashes for 15sec 746 746 746 91313 91313 91313 (R2) dashes for 15sec - abrupt end. The same 3F 'ID' in any one transmission. Three to five 'messages' of this nature are sent, each with an unrelated 5f group. No call or ending.

M45: 150 (R5) * 067 067 22 22 = = (22 x 5F pairs) 00000 44837 = = 067 067 22 22 0 0 0 As in S21's 342 schedule 1st group is always 00000.

XP: call (R5) and off. Null message format. ID ID ID 000

XP: call (R5) message of about 26 groups, ends. Same calling cycle as M12 family. Lowest tone indicates spaces.



Disc 1

1 (G2A) The Swedish Rhapsody

This station operates on a rigid and complicated schedule, in both voice (AM and SSB) and Morse modes (M5). It does not operate on Fridays. The operating agency is unknown. R 06/09/93

2 (G5) Counting

Used by the CIA. May or may not be inactive. Note the use of the word 'Treholler', separating the 99 groups. R 1994

3 (E14) Counting 'Control'

Used by the CIA. No longer active, but traffic was heavy when in operation. Note the 'rushing air noise' as the numbers cease. This sound is heard on every E14 transmission. R 1994

4 (E10) Phonetic Alphabet - NATO

The E10 setup has been on the air from the mid 1970's, and can be heard 24 hours a day on a large number of frequencies. The Israeli MOSSAD have been named as the organization responsible for this huge network, by magazine writers and authors. R 1994

5 (G13) 5 Dashes

This station transmitted in both German and English. Note the remarkable voice employed. Operated by the CIA/BND. It is no longer active. 'Es Weiderholen' separates the groups, but appears at the end here because it is taken from a different recording. Note SITOR data mode. R 1994

6 (E3) The Lincolnshire Poacher

Operated by the British MI6, this station is operated on seventeen frequencies: 16475, 16084, 15682, 14487, 13375, 12603, 11545, 10426, 9251, 8464, 7755, 7337, 6959, 6900, 6485, 5746 and 5422. Each transmission always lasts exactly 45 minutes, and 200 five figure groups are always sent. It is the only station that uses inflection in the voice; the last number in each five figure group has a higher intonation than the previous four numbers. The LP is jammed consistently on 15682, possibly by Iran or Iraq. 13375 is never jammed. This station takes its name from the interval signal, 'The Lincolnshire Poacher' which is played using a Calliope sound. R 26/10/95

- 7 (G3) Gong Station/Chimes**
East German MFS origin. No longer active.
- 8 (G14) DFD 21**
This station had its origin in the 1970's, when it was spoken by a live announcer. In 1988, it switched to synthesized voice. Operated by the BND. See 'Secret Signals'.
- 9 (E1) Ready Ready (15728)**
Very stable schedule; Transmissions repeat on two frequencies at 20 minute intervals. Possibly operated by Bulgaria or Italy.
- 10 (S2B) Bugle**
Tune believed to be 'Il Silencio'.
- 11 (S10) 5 note version 'Czech Lady'**
This station used to be known as 'Bulgarian Betty' before the Enigma codes came into use. Commenced operations in 1990, inactive for 6 years and now back on the air. Operated by the StB.
- 12 (G4) Three Note Oddity**
The Three note oddity has a Morse sister station, M29. Possibly operated by Hungarian Intelligence.
- 13 (V13) New Star Broadcasting**
One of the few Chinese language stations, operated by Taiwanese Intelligence. Poor reception in Europe, on 8300. R 02/21/93
- 14 (V5A) Counting Station (Spanish)** R 07/03/94
- 15 (E17) English Lady / 00000 ending**
Russian Intelligence? R 07/05/94
- 16 (V2) Attention / 3 Finals**
Very active at present. Can end with either 2 or 3 'Finals'. Morse equivalent M8. R 02/03/95

- 17 (G8) 4 Note Rising Scale**
East German MfS origin. R 22/03/89
- 18 (V1) Ciocîrlia**
Also known as 'The Skylark'. Operated by Romanian Intelligence. Inactive. R 20/10/91
- 19 (S10) Czech Lady**
Operated by the StB. R 11/03/88
- 20 (G16) 2 Letter 'YS'**
Operated by the BND. R 10/02/87
- 21 (G16) 2 Letter 'EL'**
Operated by the BND. R 10/02/87
- 22 (G13) 5 Dashes**
Operated by the CIA/BND. R 04/89
- 23 (E16) 2 Letter 'RK'**
Operated by the BND. R 01/90

An aerial, black and white photograph of a large, multi-story building complex. The building has a prominent central courtyard area with a grid-like structure of walkways or ramps. The building is surrounded by extensive parking lots and several roads, including what appears to be a multi-lane highway or expressway on the right side. The overall scene is a dense urban or institutional development.

Disc 2

- 1 (V12) NNN**
The French language version of the NNN family. R 06/12/89
- 2 (G11) 'Strich'**
Rumored to be operated by Polish Intelligence (according to a reliable intelligence source). Possibly operated by a group of countries. R 09/89
- 3 (G14) DFD21 / DFC37**
Operated by the BND. This station has its origins in the 1970's; when it used a different interval signal (10 note rising scale) and a live announcer. See disc 3, G14, and 'Secret Signals'. R 19/06/91
- 4 (S2) Drums & Trumpets**
Possibly operated by Bulgaria (or even Italy!). R 03/01/91
- 5 (E12) NNN**
The English language version of the NNN family. Still active, with a new voice. R 21/12/91
- 6 (E17) English Lady - 00000 ending**
Operated by Russian Intelligence. R 10/02/91
- 7 (G12) NNN**
The German Language version of the NNN family. R 11/02/90
- 8 (S6) The Russian Man ('D-va' Northern Russian Voice)**
Russian Intelligence: KGB (FSB, FSK) / GRU operate separate networks. R 12/03/91
- 9 (E10A) Phonetic Alphabet - NATO**
This is an example of an unusual E10 message string. E10 stations, often at times of political crisis, transmit these strings. See Enigma issue 12 and 13. R 08/94
- 10 (V6) Spanish Lady**
Null message. Russian Intelligence. R 11/08/92

- 11 (E11) **'Strich'**
Strich, this time in English. Uses 'Oblique' for '/'. R 23/12/91
- 12 (G16) **2 Letter 'NU'** R 10/10/91
- 13 (G11) **'Strich'**
This version of The Strich is still on the air. R 10/01/95
- 14 (S8) **YT**
Probably transmitted by the UDBA Yugoslavia (i.e. Serbia). R 20/03/91
- 15 (E13) **5 Dashes**
English language version of the 'Sexy Lady'. BND/CIA destabilizing operations in DDR during ending of the Cold War. R 19/04/91
- 16 (G19) **German Man**
Russian Intelligence. R 24/10/91
- 17 (E6) **English Man**
Russian Intelligence. R 12/03/92
- 18 (S7/G7) **English Man + German Lady**
These two stations are transmitting on frequencies 3khz apart. Russian Intelligence. R 03/92
- 19 (G6) **German Lady**
Russian Intelligence. R 07/07/92
- 20 (V) **Chinese Numbers**
Appears to be 4 figure groups. R 06/08/92
- 21 (V6) **Spanish Lady**
Complete transmission sequence. R 03/94

- 22 (E16) **2 Letter 'MD'** R 06/93
- 23 (E6) **English Man**
Russian Intelligence. Different voice. R 12/08/93
- 24 (G6) **German Lady**
Russian Intelligence. R 02/01/95
- 25 (E10A) **Phonetic Alphabet - NATO**
Unusual message string. R 05/93
- 26 (E10) **Phonetic Alphabet - NATO**
This is part of the E10 network, but it uses a non-standard E10 voice. R 12/08/94
- 27 (E15) **Nancy Adam Susan**
The complete alphabet used by this station: Adam, Baker, Charlie, David, Edward, Frank, George Henry, Italy, John, King, Lewis, Mary, Nancy, Otto, Peter, Queen, Robert, Susan, Thomas, Union Victor, William, X-ray, Young, Zebra. Possibly Ukraine or Belarus Intelligence. R 11/08/95
- 28 (E14) **Counting 'Control'**
Good example of the distinctive 'hash' sound, before the 10 rough dashes.
- 29 (E15) **Nancy Adam Susan (Male Voice)**
Same station as 27, but with male voice.
- 30 (E4) **Cherry Ripe**
The far east version of 'The Lincolnshire Poacher'. Uses same format as 'LP', using a different signature. R 22/02/95
- 31 (S21) **Russian Lady**
Possibly operated by Ukraine or Belarus. Still very active. R 26/05/94

- 32 (S6) Russian Man**
Null Message. Russian Intelligence. R 05/05/96
- 33 (E12) NNN**
This is the current English language version of NNN, which is heard in Europe with a very strong signal. See Enigma Newsletter. R 09/06/94
- 34 (E15) Frank Young Peter**
Same as Nancy Adam Susan. Origin North Africa (Morocco to Middle East) Morocco, Libya, Algeria, Syria and Israel have all been suggested. R 11/08/94
- 35 (S12) Cherta**
Rumored to be Polish Intelligence. Possibly operated by a group of countries. R 02/01/95
- 36 (S14) Russian Counting Man**
The S14 stations play tape loops for many hours. The quality of the tape player is very poor; variations in speed, dropouts and other distortions are not uncommon. R 22/12/95
- 37 (S16) OLX**
The only Numbers Station that responds to QSL requests. The OLX address is: Ministervo Vnitra Cr, P. B. 21/SK, 170 34 Praha 7, The Czech Republic. OLX operates 23 hours a day, in both voice and Morse (M6), to a rigid schedule. R 10/11/95
- 38 (X6) 6 Tones**
Very active. No schedule has ever been established. R 13/96
- 39 (XPH) High Pitch Polytone**
5 Figure groups, represented by tones, the lowest being a space. No real information on these stations, save that they may be related to M12.
- 40 (XPH) High Pitch Polytone**
Different call up tune.

- 41 (XPH) **High Pitch Polytone**
Different call up tune.
- 42 (XPH) **High Pitch Polytone**
Null message format.
- 43 (V9) **Oriental Language**
Heard on 5738, 6280, and 8036khz.



Disc 3

- 1 (E1) **Ready Ready**
If we apply the 'endings rule', this is a station run by the CIA. The endings rule states that stations with the same ending are from the same agency/operation.
- 2 (E3) **Iran / Iraq Jamming Efficacy Testing**
The Lincolnshire Poacher in progress, with someone trying out different jammers to block it.
- 3 (E5) **English Lady**
Endings rule: this is a CIA station.
- 4 (E5) **English Lady**
E5 being Jammed.
- 5 (E6) **English Man Version 1**
See Enigma signal list.
- 6 (E6) **English Man Version 3**
Note the 'zeeero'.
- 7 (E6) **English Man**
Null Message.
- 8 (E9) **Magnetic Fields**
This is one of the new Numbers Stations. It is related to the 'Eastern Music Station' V8, sharing two frequencies, 11290 and 6645khz. Note the phrase 'again again' when the message repeats. The interval signature is 'Les Chants Magnétiques part 1' by Jeanne Michelle Jarre, from his 1981 album 'Les Chants Magnétiques'. Transmission quality is usually poor, and schedule erratic.
- 9 (E9) **Magnetic Fields**
Different voice.
- 10 (E11) **Oblique**
Note how this station ends with the word 'out'.

- 11 (E12) NNN**
A previous incarnation of the English language NNN.
- 12 (E13) 5 Dashes**
Note the phrase 'I say again' indicating the repeat. The sound of the 5 'rough dashes' is not a propagation artifact, or a recording fault.
- 13 (E16) 2 Letter 'KG'**
See 'Secret Signals'
- 14 (E21A) 4 Figure Counting (10 Rough Tones)**
This is the American accent variant; there is also an English accent variant. The pitch of the voice is not a recording error. See the forthcoming book from Enigma.
- 15 (E17A) 2 Voices in one transmission**
Two different, live, announcers, in one transmission. One message of 30 groups for '258', read by the female, and one message of 25 groups for '169' read by the male. Remarkable. See the forthcoming book from Enigma.
- 16 (G1) Tyrolean Music Station**
Vintage Numbers Station, recorded 1971. Ty•ro•le•an (ti rō'li ən, tī-) adj. 1. of or pertaining to the Tyrol or its inhabitants. Ty•rol or Ti•rol (ti rōl', tī-, tī'rōl'; Ger. t̩ Rōl') n. an alpine region in W Austria and N Italy; a former Austrian crown land. Two examples of some of the songs transmitted, the first bar of 'The Internationale', voice sample, message with farewell, and final song. Total weirdness in full effect. See enigma list, and the forthcoming Enigma book.
- 17 (G4) 3 Note I.S.**
- 18 (G5) 10 Rough Tones**
- 19 (G7) Achtung!**
Null message.

- 20 (G8) **'A'**
'A' in Morse, 90008, long dash then repeat.
- 21 (G8) **Voice Sample (1-10)**
- 22 (G8B) **Rapid Dots**
See the signal list.
- 23 (G11) **Strich**
A 100 group message for 751. Messages are rare for The Strich.
- 24 (G14) **Hier ist DFC Seben und Dreizig**
Earlier version of DFC37 (see 'Secret Signals'); multiple messages. Sample count included.
- 25 (G15) **2 Letter 'PN'**
'Papa November'. Multiple messages, multiple recipients.
- 26 (G16) **Sample Count**
G16 sample count; two different intonations.
- 27 (G16) **2 Letter 'VO'**
- 28 (G16) **2 Letter 'HK'**
- 29 (G16) **2 Letter 'DM'**
Rare example. See Enigma signal list.
- 30 (G18) **8 Note Rising Scale**
See the forthcoming book from Enigma.
- 31 (G20) **Spruchnummer 1**
Male voice. See the forthcoming book from Enigma.

- 32 (G20) **Spruchnummer 4**
Female voice, with sample count.
- 33 (G21) **Random Pop**
See signal list for detail.
- 34 (G22) **Nomer 101**
Rare recording.
- 35 (S3) **Okno Okno Okno**
'Okno' means 'window'. See signal list.
- 36 (S4) **Nomer 198**
- 37 (S5) **723 Papaqui**
See signal list. 'Papaqui' is also used by O LX.
- 38 (S6) **298**
This voice is still in use.
- 39 (S6) **815**
Different Voice.
- 40 (S6E) **167**
Rare 2 message format.
- 41 (S7C) **Moscow Coup Attempt**
Transmitted for many hours during the Whitehouse siege. See forthcoming book from Enigma.

Disc 4

- 1 (S7) **Russian Man Complete**
Russian Man transmission, from beginning to end.
- 2 (S8) **YT**
See the forthcoming Enigma book.
- 3 (S10A) **555 Konec**
See the forthcoming Enigma book.
- 4 (S11) **Preska**
Null Message.
- 5 (S12) **Cherta**
Null Message. Ends in 'Kanyet'.
- 6 (S13) **Count in Russian**
1 - 10, 10 - 1 and announcement, twice.
- 7 (S13) **Count in Russian**
Different voice; 1 - 10, 10 - 1 and announcement, thrice.
- 8 (S14) **1 - 10 Announcement**
- 9 (S14) **1 -10 Announcement**
Female version. Currently in operation on 4064khz. These stations are sometimes transmitted with an echo effect.
- 10 (S) **Counting in Polish**
Two voices.
- 11 (S17A) **Konec Konec**

- 12 (S19) **Pozor**
- 13 (S21) **Russian Lady test count and message**
Test count 1 - 10 before transmission, and then message.
- 14 (S25) **Russian Man**
- 15 (V2A) **Spanish Lady (2 finals)**
These Spanish Ladies are heard most strongly in the Americas.
- 16 (V5) **Spanish Counting**
M8 cut numbers can be heard under the V5 counting station.
- 17 (V5A) **Spanish Counting**
4 figure groups.
- 18 (V7) **Spanish Man**
The ending rule implies that this is of Russian origin.
- 19 (V6) **Spanish Lady**
- 20 (V6) **Spanish Lady**
Different voice, 00000 ending.
- 21 (V8) **Eastern Music Station**
This station is one of the new Numbers Stations, is currently active, and has used at least 3 different voices. In May 1997, we recorded a 35 minute transmission that had two different announcers. The groups are being read in single digits and multiple numbers. Single numbers in Arabic are: (1) Wahid, (2) Ethnain, (3) Thalatha, (4) Arba-a, (5) Khamsah, (6) Sittah, (7) Sab-ah, (8) Thamaniyah, (9) Tes-ah. V8 is related to E9 'Magnetic Fields'.
- 22 (V8) **Eastern Music Station**
Different voice.

- 23 (V) Unidentified Chinese Station**
- 24 (V12) NNN**
The French language version of the NNN family, earlier voice.
- 25 (V18) NNN**
The Hungarian language version of the NNN family.
- 26 (V19) Whiskey Tango Veinte Y Uno**
Note the pre-echo on the transmission.
- 27 (XC) The Crackle**
First, interfering with VOLMET, and then in the clear. This transmission has been heard obliterating the signal from Shannon Air Radio VOLMET on 5505khz.
- 28 (XM) The Backwards Music Station**
Two examples. Still on the air, on 6752/5, also noted on 9223 during daytime, and 6695, 6584, 5187 and 3740khz.
- 29 (XF) Faders**
Very active, on a number of frequencies. Only one country or organization seems to use this mode, which is made up of a Multiple Modulated AM signal.
- 30 (XW) Workshop**
'Jamming' E10 (FTJ2). It carries on banging and clanking away after the E10 stops.
- 31 (XX) The Pip**
Very active on 3757khz and 5450khz.
- 32 (XB) The Buzzer**
Can be heard in the UK on 4625khz after dark, buzzing relentlessly. Just before the top of every hour, the signal changes, as in this example. The Buzzer has been on the air since at least 1987. The station is not I.T.U. registered, and has no callsign. See Enigma Newsletter number 11.

- 33 (M1) M1 (197)**
Very active on 3757khz and 5450khz.
- 34 (M1B) M1B (463)**
Note the long pause in the transmission.
- 35 (M2) M2 (712)**
Part of the NNN family of stations.
- 36 (M3) M3**
Message reads: 042/ = = 000. Part of the 'Strich' Family of stations.
- 37 (M3) M3**
Message reads: 035/00
- 38 (M3) M3**
Message reads: 621/00
- 39 (M3) M3**
Message reads: 045/52
- 40 (M3) M3**
Message reads: 011/00
- 41 (M3) M3**
Message reads: 589/00
- 42 (M3A) M3A**
Message reads: 287/333/00
- 43 (M3B) M3B**
Message reads: 854/000 = = 000

Agency Index

E13, G13: BND/CIA destabilizing ops in DDR during the ending of the Cold War.
G19, E6, S7, G7, G6, V6, S6, E17?: Russian Intelligence - KGB (FSB,FSK)/GRU - Operate separate networks.
E15: Origin in North Africa; Morocco, Libya, Algeria, Syria and Israel have all been suggested.
S21: Possibly Ukraine or Belarus.
E11, G11, S12: Rumored to be Polish Intel. (via reliable intelligence source) possibly operated by a group of countries.
S16: More likely operated by the Czechs on behalf of Western agencies. StB have their own networks.
S8: South East Europe. Probably UDBA Yugoslavia (i.e. Siberia).
E1, S2: Possibly Bulgaria (or even Italy!).
G4, V12, G12: Probably Hungarian Intelligence.
E10, E12: Presumed to be MOSSAD, but not confirmed. May also be used by CIA etc.
G2: No information.

G16, E16, G14, E3, E4,	BND: Bundernachrichtendienst MI6: British Secret Intelligence Service MOSSAD: Israeli Intelligence service StB: Czech Statni Bezpecnost
S10, G5, E14, V5A	CIA: Central Intelligence Agency
V1	Romanian Intelligence: Departamentul de Informatii Externe
G3, G8	East German MFS: Ministry of State Security UDBA: Yugoslav State Security KGB: Komitet Gosudarstvennoie Bezopasnosti
V2	DGI: Cuban Intelligence

Known Families

Direct equivalents (Morse and voice) are separated by /.

Other transmissions operated by the same agency but not direct equivalents are separated by //.

All equivalents use identical formats and often similar schedules and frequencies.

KGB/GRU:	S25/?E17/E6/G6/S6/V6/M14/M24//E7/G7/S7/V7/M12//XP
CIA:	E5/G5/V5//E14/E21/V14
“Strich” Family:	?S26/G10//E11/G11/S11/S12/M3
NNN Family:	E12/G12/V12/V18//M2
Five Dashes Family:	E13/G13
BND:	G14//G15//G16/E16
? ‘Aida’ Family:	S1//S2//E1/M17 S2//X1
YT Family:	S8/M27
Czech Family:	S10/S18//M10//M7 S5/S15/M6A//S16/M6 S17/S19 S3
MI6:	E3/E4
‘Swedish Rhapsody’:	G2/M4
6647khz:	E9/V8
Russian Lady:	S21/M45//M1?//M50?
“Edna Sednitzer”:	E18/G22/S4//M13

All other stations would appear to be individuals, and show no obvious sign of ‘family’ relationship.

Letter From Simon Mason

My particular involvement with Numbers Stations goes back to the early seventies, when as a teenager, I became interested in tuning around on my father's Russian radiogram, which had several Short Wave bands included. I remember hearing these stations even then, but of course had no idea as to their purpose. I thought that as a beginner, more experienced listeners would know what they were. However, as the years passed, I realized that it seemed nobody knew what they were. At this point, around 1986, I decided to log and make recordings of as many of the Number Stations as possible to try and solve the mystery. I also sent many loggings to the U.S. magazine "Popular Communications", which was one of the few focal points for Numbers enthusiasts around the world. It was here that I found out that these were one method that governments contacted their espionage agents in foreign countries.

Around 1990 came the opportunity to write a book for the U.S. Publishers Tiare Publications. This book, called "Secret Signals-The Euronumbers Mystery" was a rare chance to document the European Numbers scene, without which much of this spy activity would have

gone unrecorded. I am grateful to Gerry Dexter for publishing the book, even though it is a fairly obscure subject.

When the ENIGMA group was set up, this enabled discrete individuals to pool their knowledge and get the benefit of other experience. This CD, which has been a superb idea, is a continuation of the gradual exposure to a wider audience of this most esoteric and little known activity. Many thanks must go to Akin for his excellent work in collating many recordings from around the world. Thanks for enabling a great number of people to hear these fascinating radio stations, past and present.

Simon Mason 11th July 1996

Bibliography

Secret Signals - The Euronumbers Mystery

by Simon Mason

Tiare Publications ISBN 0-936653-28-0

With almost 70 pages on European Numbers Stations, 'Secret Signals' reviews both past and present activity. A list of over 300 Frequencies, plus schedules and transmission times is also included; perhaps most interesting are details of clues found in transmission mistakes and traffic excerpts.

Available from: Tiare Publications PO Box 493 Lake Geneva, WI 53147 USA.

Cost: \$9.95 plus \$3.00 postage. Foreign payments must be made in US funds. Cheques drawn on a bank which has a US correspondent Bank. Postal money orders, VISA and Mastercard Accepted.

The Underground Frequency Guide

by Donald W. Schimmel

The third edition contains 209 pages and is split into 5 sections:

- 1) Numbers Stations. 2) Mystery Networks. 3) Four Puzzles (including Single Letter Beacons)
- 4) Miscellaneous Mystery Signals. 5) The Underground Frequency List.

Available from: Hightext Publications Inc PO Box 1489, Solano Beach, CA 92075 USA

Or: Gazelle Book Service Ltd., Falcon House Queens Square, Lancaster, LA1 1RN UK

Cost: £15.49 Including UK Postage. Add £1.85 for Airmail

Intercepting Numbers Stations

by Langley Pierce

Around 94 pages of detailed information. The book starts with the history of Numbers Stations and goes on to detail each operation by intelligence community - CIA (USA), MI6 (Great Britain), BND (Germany), etc. Each section is well laid out with details of each station's characteristics.

Available from: Interproducts, 8 Abbot Street, Perth PH2 0EB, Scotland

Cost: £9.95 including UK postage. Add £1 Seamail or £2 Airmail

The Forthcoming Book From ENIGMA

TBA





Acknowledgements

Mike Gauffman and Chris A. Midgley helped make this project the comprehensive collection that it is. They spent many hours compiling archive material. Mike Gauffman corrected the log entry errors, added the ENIGMA designation codes for all of the recordings in the first version of the booklet, and provided the station format table and agency list for the final version. The Station checklist also came from Enigma.

Special thanks go out to Chris and Mike for their intense efforts, and thanks to ENIGMA for their exceptional work in classifying all known Numbers Stations. We eagerly await their forthcoming book!

Simon Mason was a major contributor of recordings to the project. He painstakingly sifted through all of his logs for times and dates of recordings, some of which go back more than 20 years.

Phil J. Harrison (USA), Tom Severt (USA), Myke Weiskopf (USA) and Jacques Bras (The Netherlands) all donated fine recordings and logs. Many thanks to you for your work. Simon Davey mastered the project at The Exchange in London. Thanks are due to the SWM editorial staff for their support of the project.

Jackie Vidler was invaluable to Irdial-Discs. Her meticulous attention to detail, near photographic memory and tireless dedication to our work beyond the call of duty made her a valued member of the Irdial-Discs family. Her touch is on all of our projects. Many thanks to you...

Akin O. Fernandez edited and compiled the project, donated recordings, and supplied the photography. The booklet and discs were Designed by R-art.

Back cover photograph: Chinese Embassy from the 8th floor of BBC Broadcasting House, London. Front cover photograph: Large antenna behind the Dorchester hotel, London (detail). Cover of book: Hungarian Embassy glass insulator on dipole antenna, Back cover: large antenna behind the Dorchester Hotel, London.

Complete Lincolnshire Poacher transcript

Transcribed September 26 1996 21:00 13.375usb London

Lincolnshire Poacher x12
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69410 69410 03932 03932 42175 42175 72964 72964 79383 79383 32644 32644 41968 41968 81600 81600 27645 27645 01668 01668
75898 75898 77571 77571 22542 22542 72782 72782 17620 17620 92981 92981 39558 39558 75112 75112 51791 51791 91591 91591
04022 04022 65795 65795 63699 63699 75494 75494 27113 27113 80431 80431 64559 64559 88391 88391 55111 55111 04232 04232
94571 94571 16108 16108 54769 54769 22363 22363 57267 57267 00473 00473 04415 04415 84529 84529 48108 48108 78257 78257
35750 35750 00125 00125 00972 00972 93238 93238 64992 64992 26438 26438 21189 21189 07732 07732 86970 86970 41073 41073
66933 66933 66770 66770 66770 66770 50246 50246 46424 46424 38644 38644 65703 65703 78450 78450 83540 83540 11965 11965 05537 05537
52013 52013 47316 47316 70356 70356 08017 08017 05198 05198 52850 52850 32733 32733 48057 48057 92573 92573 28092 28092
82209 82209 15080 15080 60040 60040 50477 50477 63942 63942 63699 63699 37038 37038 21904 21904 54520 54520 42624 42624
04285 04285 98545 98545 45667 45667 93307 93307 89293 89293 71254 71254 11866 11866 75828 75828 88178 88178 09520 09520
50685 50685 06968 06968 96858 96858 64049 64049 92490 92490 83954 83954 94863 94863 94473 94473 91415 91415 78605 78605
99132 99132 02286 02286 35966 35966 70494 70494 26640 26640 04531 04531 91108 91108 93350 93350 22759 22759 25047 25047
43325 43325 70480 70480 17455 17455 02114 02114 38097 38097 87095 87095 70293 70293 16126 16126 21448 21448 61963 61963
51151 51151 63751 63751 93326 93326 32975 32975 59964 59964 97770 97770 49281 49281 75247 75247 35139 35139 18632 18632
20320 20320 53244 53244 05033 05033 97922 97922 48038 48038 54522 54522 19480 19480 70414 70414 87957 87957 38298 38298
67236 67236 13390 13390 87356 87356 47911 47911 23899 23899 22741 22741 78572 78572 60094 60094 26927 26927 29191 29191
19948 19948 80098 80098 07838 07838 99141 99141 92233 92233 99877 99877 52352 52352 75256 75256 41706 41706 40313 40313
77828 77828 21701 21701 67649 67649 56787 56787 22710 22710 50739 50739 55263 55263 80172 80172 00887 00887 80085 80085
44102 44102 99870 99870 20899 20899 05744 05744 32309 32309 05564 05564 59870 59870 09832 09832 95878 95878 64883 64883
58778 58778 43222 43222 40261 40261 90977 90977 74673 74673 52360 52360 50760 50760 54182 54182 35043 35043 69885 69885
10637 10637 24575 24575 35391 35391 65522 65522 03354 03354 55063 55063 05265 05265 78539 78539 17813 17813 46367 46367

gong gong, gong gong, gong gong
Lincolnshire Poacher x6

We plan to make further discs available to the public, containing up to date information and recordings. These discs will be playable on standard multimedia computers. If you wish to be informed upon the release of these discs, simply post this card with the appropriate amount of postage, and your name and address written under this line.

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