CIPHER MACHINES AND CRYPTOLOGY

Enigma Cipher Challenge

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The challenge

Working with the Enigma cipher machine is not that hard. At least, if you have the secret machine settings! What if you were a codebreaker at Bletchley Park? What if the lives of many people depended on your skills? Do you have it in you, to break the code? Well, this is your moment of glory...

The Enigma cipher challenge gives you the chance to show your code breaking skills. Anyone who is interested in the Enigma machine can join the challenge. You don't need to be a professional cryptologist or math geek! There are ten messages or stages, each one a bit more difficult to solve than the previous. You can use the Enigma simulator (see image) or any other correct working Enigma software to decipher the messages.

You'll need a bit of logical thinking, some patience and a bit of luck. Of course, you will have translate the German language message, or did you believe the Germans wrote their messages in English? Don't panic! You don't need to know German or be a polyglot. You can read these translation tips and find all you need to translate the messages, and/or use an on-line translator. For more info on how to use the Enigma machine, please read the procedures page.



*** LATEST NEWS ***

- Oleksii Sylichenko from Ukraine is the 80th participant to decrypted all messages on October 27, 2022 Congratulations Oleksii!
- You can still participate in the Challenge! Your codebreaking results will be listed below in the All-time Table Of Honor
- 334 codebreakers from 42 different countries have already joined the challenge. You can join them!

Your task

It's your task as codebreaker to decipher and translate the messages. I don't ask for a perfect English translation, but the content must be clear and usable to our SIGINT Officer (see also translation tips). Of course, I cannot accept errors on important parts such as grid numbers, names of places etc. The stages have to be solved one by one. I tried to capture the most important moments of the war in the ten messages. You might find help or clues in your WW2 history books or on the internet. Googling around on names of operations, people, units or boats that appear in the messages will bring you some amazing wartime stories!

Important note: to simplify the key identification, the challenge procedure does not use Kenngruppen in the message.

How to participate

If you correctly decrypted and translated a message, you submit the solution by e-mail. Any message is only accepted when you solved all previous messages correctly. You can send multiple messages together, which makes the registration easier. Your position in the table of honor depends on the number of deciphered messages.

Important Note: It is not allowed to publish or distribute the copyrighted encipered challenge messages or their deciphered version on the Internet or anywhere else, electronically, in print or in any other form, in order to preserve the value of current and future challenge table results.

Finally, what can you win? The respect of your fellow codebreakers, the gratitude of our boys in the frontline, and a place in the Table Of Honor!



Table of Honor

Message 1 A

May 10, 1941

Sir, we have received a message from our Y-station in Scarborough. They intercepted this U-boat message in the North Atlantic. Harry Hinsley tipped us off that those weather ships probably use the same code books as the U-boats. Well, last week, we had a stroke of luck. Our Navy boys captured some papers on a German weather ship, the München.

Here's the sheet we found on the München. Seems the Officer made it a bit easier for the radio operator on the night shift. Let's hope they keep making these security mistakes! This should be an easy one.



The message, intercepted by our Y-station on May 6:

```
U35 DE W7 0630 = 46 = WTG PLT =

MUUQ JZVQ LORV MCOL YKXE
PMCD CWGH NTQV MEHG ECOE
ULBU LBOC ZFGG TXTF WCYX
ZKZK LYAE VCJD GXJZ QKQG
VXSO RRQN ZMAT PZDO EXIT
XFIU VJFI ZUAV LIJB VVGF
YXGR DQKA GUUW BNUU OUXQ
QUCX KUXP TYUI IXPA YXRL
TZPZ QRNL OPAD DDUS VFWM
ILZE OBVO PIPM HXVY ADCO
RXPI IEUZ VTXB RJRE CTGL
CPKQ AJDA MI
```

I hope the captured papers can help you, Sir. Good luck!

Message 2 ▲

June 20, 1941

We have good news from the SOE team in Norway. They managed to infiltrate in the German Mountaineer Corps. Apparently, they are preparing for something big. The SOE team has located an Enigma machine over there. We have received a message through the Norwegian resistance. We now have the plugboard settings and the wheels used. Unfortunately, all wheels were extracted from the machine. We have one big clue: Three of them are not zeroized, so these might be the used wheels for today. If we can find out the wheel order, we may have a chance on the intercepted message.

The message from our SOE agent:

```
FM SPECIAL OPERATIONS EXECUTIVE NORWAY
TO SPEC LIASON OFFR BP
O 201145B JUN 41
MSG 005/32
RECOVERED ENIGMA SETTINGS JUN 20
THE NON ZEROISED WHEELS IN THE BOX ARE I(7) III(25) V(3)
WHEEL ORDER UNKNOWN
B REFLECTOR STILL IN MACHINE
CONNECTED PLUGS BL CK DG FP IR MO QW ST VY UZ
```

The message, in two parts, picked up in Kirkenes, Norway:

```
ABSENDESTELLE : LII ARMEE KORPS KDR AN 2GD KDR
FUER 2GB 1840 - 2TL 1TL 182 - XLT VPM -

RGOXT IVDHR FWGIK PUKXK CTISB
GRIKM MYAAA SMOEH ZGLBU ZGOFG
MGOJF BOPVU KMPPX VGIBT FYGKO
LTSPX CLRRE QXOUQ OWXIJ OKUNQ
NHOX SYCOJ QGYDU NTPMI LYDOO
BPLFV JQTIZ FHHUN GXACF TTHGI
SJHXS RWOPP CCMUA CJFNV VUBGV
QFDET VS

2TL 117 - HNB SFA -

NGWTV VGTHG ZPQGF EXSWN FKSXH
POJOM PGHLL CAJCP UVTQU UZLQW
AVOTS CPZFA BNUOR ZZTAPM CJPGP
TGTDR GWTZA XNQRY JCBMQ ZVCQU
CQCCO JGNYN UCAVO MA
```

With the correct wheel order we should be able to break this one, Sir.

Message 3 ▲

November 25, 1941

Sir, I think we're on to something. Our listening station has intercepted a radio message. According to the direction findings, it's broadcast from somewhere around Kiel in Germany. We believe it comes from the U-boat shipyard. It's a Wehrmacht message. We have already broken the Wehrmacht keys for today, but we still have some problems with the plugboard settings. I believe you're the right person to figure this out.

The Wehrmacht keys for today. Unfortunately, we have one plug connection missing:

```
Wehrmacht setting for November 25, 1941
Rotors : III - II - V
Rings : 8 - 19 - 3
Reflector: C
Plugs : AL FP HX JO KT NV QR SU WY
```

Here's the message from Kiel:

```
UBB DE GWK 1520 = 57 = AST SGT =

ZJTPL TJNET NLLGO PQVSW XSRHC
OSHUT FGUSH HTVPO UMBMV GKLAA
FDUBN UVCUV POCFJ XDMIQ CCAUC
BQOKP HUMCI ZAJVI QESVG CFHDT
ISREH FCMBP JCRTW TTMXC NOIEU
WRPPOM CEMSU NBBCT WZZRB LFLUF
IFBNY OVJGX UMBKP TCQHT GVYWS
QDFFM SWVEC IDWIL ZBYLI PRXYI
CFCLP DQZNO ZWSKV NJURT GKMMU
NFPNL EPOFQ LJMED EFNNL RRRRJ
YTBVR KBQQG SUWVA WAFUU WFLMP
KPHLD ML
```

Let's hope we can figure out the plug settings. We'll just have to see which letters in the message are wrong. Always good to have an insight on that U-boat yard.

Message 4 ▲

December 15, 1941

We have an incomplete message, on which we have worked out the first two wheels with our Bombes. Hut Six has done a great job on the plugboard. Your job is to find the position of the leftmost wheel. According to the SIGINT Officer, traffic analysis has shown that the message probably was sent from St-Nazaire to Lorient. Admiral Donitz is visiting the St-Nazaire U-boat harbor at this very moment, so this might be interesting.

Here's all we got from Hut Six, together with the partial St-Nazaire message:



KGBJN TWBQY FFJWQ KKCTN ZJVRK
BWPQO FZQTB LCYCM WCWTR XSGKA
WIZEZ KFIWC KPEYB OBUBW VUHBO
BKEGF WGSSQ WIMING BKHSF TXAGY
XPKAX AOJQJ ANZKZ REKYX TXWWR
HJHST EJAJS QFZMZ FLTSE QXBAZ
WDSJR WHYGF KIXLM PUVIN NQSAW
QHXAJ QJCGU CQUFI HWAFN AAFPR
ZSMTR KYLUG AOZKY NMXFC HQQEY
MTIIN CHTSW CYCRZ FBKMB VSHEK
XDYCY PWSZJ WWZAK IRMSQ DZKTF
DDEUX WKXMN PDMKD RKASA ORATL
JAEHW INMYR SWASF ...

Message 5 ▲

December 9, 1942

Sir, our SOE has received a message from the NKVD, the Russian secret service. NKVD has intercepted a message near Stalingrad, where the VI Army Corps of General Paulus is surrounded by Soviet forces. They are asking our help in breaking the intercepted message. This might be crucial information to turn the tide in Stalingrad.

The Wehrmacht settings for today. We didn't have the message key, so we ran the message through our Bombes. As you can see, we failed to resolve the rightmost wheel. Since it's a Wehrmacht Enigma, we can only choose between wheel I, III and V. We're also missing the ring settings to that wheel. An error on the rings can result in unreadable text after an initial good start, due to a wrong turnover point. If so, the ring should then be adjusted. I believe the message comes from the Oberkommando Der Wehrmacht (OKW), so I'm guessing, well, and educated guess, that the message could begin with "VON OKW" or "VON JOKWJ". If this is correct, we have a great crib to find the rest of the message.

```
Rotors : II - IV - ?
Rings : 9 - 2 - ?
Reflector : B
```

```
Start position: E - F - ?
Plugs : AS CK DE FV GJ LU MW OT PX RZ
```

The message, intercepted by NKVD:

```
ACINZ CRVFJ RPETN UGAVD ZIHXF
MTPKK TTVXZ JTAYN XRQMA JKKFI
MUXTN HFCRZ PUUYP PKILQ YBYRD
MHFBM HPGYL CEIJU NMWGQ OKGHM
DLGJW BQBZB VNDTS UWHGX ZRFUX
MQTHT RHYPT PJZRO FTCMM XCKSD
DMHTM YSUGG RZUTY IUOTD ZPQRT
CXVQX PMZGJ BWLHX ULWLU NLWPW
NTONB QUFMM IKNTV WNK ...
```

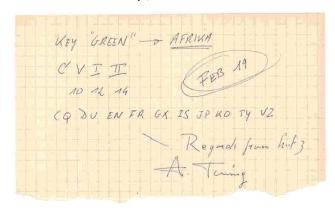
Could this help the Soviets beat the Nazi's?

Message 6 ▲

February 19, 1943

Sir, we received an urgent message from our Special Liaisons Unit in Tripoli. You know that Montgomery's 8th Army took Tripoli last month. Rommel's DAK, the Deutsche Afrikakorps, has now been cut off from its main supply. This could be a turning point. Therefore, the deciphering of all DAK messages has priority. Our colleagues have set all their efforts on breaking the German and Italian codes for Africa, and with success! We got into the DAK message traffic.

This is the note on the African keys, from Hut 3:



However, we also have some bad news. Our Y-station, attached to Monty's HQ, had a really bad radio reception. The result is quite disturbing. We lost some pieces of text, and worse, we lost some parts of the message keys. Maybe a Herivel Tip could be useful? But that's where you can earn your stripes, Sir! We've marked all missing pieces with an equal sign. Don't forget to skip then, while deciphering!

```
ABSENDE STELLE : 21PZD AN OKW

FUER WSTF 1840 - 3TL 1TL 250 - ACE =WE -

OLDTO GVQQV DCOZN NVUMD FJIOC
JV=AZ MZJRE GOBDI VMYRF TUAZS
RUDPO HWZRL LKHMC CJUKR YRJMR
TJMRGA UJMKG IEBVA ZKXSS OTGWO
DHUQP YILYG CSJHV, QMILS ITWQY
XBFNA GTSWM XJTSM OTVWG HVDZB
SQBDL SH=E ZUHMP GGMX HIJFY
IJHWBJ WJAKO TCOKO VCPNR QJPKN
IRPY FTFMPB MUPPO HPIBR KRQNA
OYHHS BYPBB XPKAF =JIFX GOUPZ

ZTL 250 - SED A== -

DOHFX QVZSX RJJYJ KKGMU Q==IU
LIXBO EMFQX AALQX CUYKO KPPVV
SGVBG RUAER DDOFA OWCGP PCUSW
IQQKK EHGXD CVYFQ TZICT JKOOF
QQJLH DXMDX TKCTC IMI=H YKJQQ
IDEGK RAXQT UELIS PWGJC OGHES
ZBILO UISLS OKVIO LHZSR HEXUJ
AVTIM DQMKG HVERX WMMJZ TBSBP
SMMCM TG=== UIZKN VDWDD VEHHN
EUPCN GJDLN DOZXS VZBYD UPCTI

3TL 112 - HIP PYX -

DQC== =THQP LAEIS ZHDJE OFQVA
AXXMN GUTIM MXSNA ORBRO WKDTH
MOCUI MZJNZ SWTLH GCHAS LLHIM
OMSZE ZBRLL JM
```

And Sir, it's urgent, could you get this finished by yesterday?

Message 7 ▲

May 15, 1944

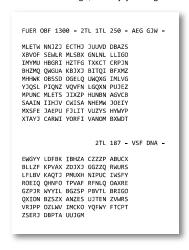
MI5 has requested to keep them informed on the results of Operation Fortitude, the deceptions for D-day, to check if the Double Cross system pays off. Operation Quicksilver, with its fictitious 1st U.S. Army group, is a key element of Fortitude South. SIGINT has reported a rise in some French message traffic. According to their direction findings, it's probably from the German Army Group West. Curious what they have to say...

Sir, this is what we're facing: The key for today is still unbroken, but last week, a Special Operations Executive team in France recovered a Wehrmacht code sheet, that should have been destroyed by the operator. Well, you would be surprised what you can find in a dirt barge. You should be able to deduce the plugs and rings for May 15, knowing the structure of a code sheet. Too bad we don't know which of the five Wehrmacht rotors or reflector were used.



Click to enlarge the code sheet

Here's the message, Sir. Enjoy the night shift!

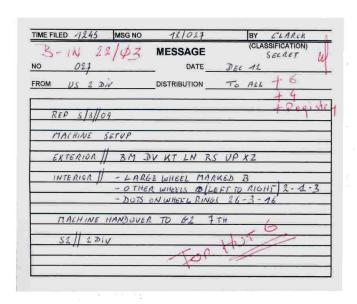


Message 8 🛦

December 12, 1944

The 1st Canadian Army has finally cleared the Westerschelde, opening the ports of Antwerp to our supply ships. Although the supply situation is a little better, all Allied forces are now spread all over France, Belgium and Luxemburg. This could weaken our troops, while German forces are drawing back behind their borders, concentrating their troops and supplies. They also switched more and more from radio to telephone network to communicate. This mean less intercepts and less ULTRA information for Special Liaison Units. Each intercepted message can make the difference.

At 0900 hrs, U.S. 2nd Division has found an Enigma machine in a German Signals Truck near Sankt-Vith in Belgium, destroyed by our airplanes. The machine was still on key, but its plugboard was badly damaged, and missing some plugs. This is all we got from them:



This is one of the few messages, intercepted today.

```
ABSENDE STELLE : AG/W AN AG/B

FUER BFB 1300 - 3TL 1TL 250 - BKL UPR -

SIAZK QGEML IVDBI YWAKC AMPYK
CFLOP QDCMP VMITTC WAYWK BRUJA
VGRYY CISIJ ZSGMT TZKEK GEQLWU
XIXYY MQLUH ODQFP NRKBZ DISMX
PHYDB NEQH JUZIAZ E-WAWWY TGIXF
SFCQI BWHHG ENWKN KYXMQ RYSMA
WCMBM FHYPN WJEBU YBZEZ RCUFZ
YLIFF JCQFK GOGBW GAWDJ LUJMM
KZDLN NNJIY EAOYU VDFRF CCUVP
WYPJH WFSGG RLXQD FFOKL SKGXZ

2TL 250 - SPL BKK -

YNDXI HNTJY ETDDJ VBPCA PORBP
PASUK HYHTH ETMFG JNPUF WAMEB
FIKQB ZGGFZ ZXJMU YNJDW XJXZD
MEEVP YRDGF YMAXW TWHUG DQZTM
JMKYQ RODKK VGTZY IJMB VDJPQ
VJLOI OSXQE NZZHC NTWCQ VQYWH
COXPN TOXMT ZWABT WRVYI GMJEI
CMHXH HEITF PKXEF WMICO VTIVI
BIEAC PFVXZ ILJXW TBRVB EFENE
WQZTC CDMW/ WGLDZ TXGUD JWSTR

3TL 137 - DVB LTK -

BKWVQ ICHPW RRYJD AXQEI QJKQQ
YMLTP VAKYC JZZTD ADODL STOKL
SSXJR TOKCK KGRRD RJXYZ WMJPT
ABZJE OWGRU KLASP PBMKZ BJRHI
OKPAK YFZPC OUAAX DMZQM TLDFN
NKEZD GRNUZ QA
```

Message 9 ▲

December 28, 1944

I think we're on a turning point, Sir. The U.S. 7th Army has reached the Vosges Mountains. If they can go on like this, the German troops will soon collapse. As they are drawing back, German troops leave all kinds of equipment behind. They seem to be in a hurry. They didn't even had time to destroy their secret documents. We have put our hands on a Wehrmacht code sheet, containing today's key settings.

The key settings, delivered on a silver plate, with many thanks to the fleeing German elite troops.



General Patton would appreciate all information, useful to his 7th and 3rd Army. If you break this partial message, this could be a nice Christmas present for the battered troops, stuck in the snow and cold.

```
INAVH YMVHI AGMJO PKVJH SGJYY
KNHLF KRZWH WLAKK EGGHZ FEAKV
VIDOS YYVEY OFQJP VYHLF UZESA
OLGNH TXTTB DZJVO AGEAW HBBWC
ADYYT HSLRX MPEDI CATSM ALBZY
LBPZW QDSXZ HPFSX VYCRK GEBTG
QGZII DQJDB YDACS WJGKU CUXLT
RTMZH HWXZP ESSYE EPFCQ AOWOS
PLUZU CVOKY JXCPY GNJHS PNCFS
WTLIM SGACQ BSUTP SAVGU YFVKS
UBSQE GXXV NRLXF IXZQW FKSXC
PPFRI MWQHT QSB...
```

Message 10 ▲

April 29, 1945

Well, Sir, I think we won't have to spend our summer vacation in Bletchley Park. U.S. troops are at the gates of Berlin. The Soviet army is already engaged in heavy fighting in the Berlin streets. I wonder what our friend Adolf is doing at this very moment. He's probably doing it in his pants, in the Reichskanzelei Bunker.

But work isn't finished. SIGINT still intercepted some messages from Berlin. I have a message for you, a long message, and they even didn't bother to divide it into parts. They must be desperate, those Germans. Well, so much easier for our statistics guys. I wonder why, and to whom, they still want to send these long messages. Very strange. I'm curious as to what they are doing over there. This is probably one of the last messages send on an Enigma machine in this War. One last effort, Sir. No key sheets or setting this time. If you break this one, you're an ace in codebreaking. Good Luck!

```
FUER ODES 2155 - EDF GXT -

KYYUG IWKSE YPQDF YPIJN TGNDI
AHNBR OXDIK EKPTM OUHBE JRRJP
VBAOC UZRDF SAZDC NUNNM RPCCM
CHJBW STIKZ IREBB VJQAX ZARIY
VANIJ VOLON BUMXX FNZVR QEGOY
XEVVN MPWEB SKEUT JJOKP BKLHI
YWGNF FPKKI EWSNT LMDKY JDMOF
PTDFJ AZOLV VQETN IPVZG TUMYJ
CMSEA KTYEL PZUNH EYFCL ADDYP
EEXMH QMVAV ZZDOI MGLER BBLAT
HQJIY CBSUP VVTRA DCRDD STYIX
YFEAF ZYLNZ ZDPNN XXZJN RCWEX
```

MTYRJ OIAOE KNRXG XPNMT DGKFZ
DSYHM UJAPP BGANC RCZTM EFYES
DZTTJ ZGMGC RNKNC ZAKAM DAXXT
JSRTA ZTZKR TOXHA HTNPE VNAAV
UZMHL PXLMS TIKES OBCTM BKGCJ
MMPD QOGCT WHICO GRPD JETTVV
DQGNP UKCGK FFIMM KWPSC LENWH
UEYCL YVHZN KNYZ ZXUXD ZBZMC
VODL QRLCG HARLF MMTPO CUMOQ
LGJJA VXHZZ VBFLX HNNEJ XS



TABLE OF HONOR

Jean-Francois Bouchaudy won the Challenge on May 2, 2006

You can still participate in the Challenge! Your codebreaking results will be listed below in the All Time Table Of Honor

	Codebreakers	1	2	3	4	5	6	7	8	9	10
1	Jean-Francois Bouchaudy	20.04.06	20.04.06	21.04.06	22.04.06	22.04.06	28.04.06	28.04.06	29.04.06	29.04.06	02.05.0
2	Keld Helbig Hansen	28.04.06	28.04.06	28.04.06	29.04.06	30.04.06	30.04.06	30.04.06	30.04.06	30.04.06	
3	Jakub Stepniewicz	21.04.06	22.04.06	22.04.06	22.04.06	22.04.06	28.04.06	29.04.06	29.04.06		
4	Torbjorn Andersson	23.04.06	23.04.06	23.04.06	23.04.06	23.04.06	01.05.06	01.05.06	01.05.06		
5	Michele Denber	21.04.06	22.04.06	22.04.06	23.04.06	24.04.06					
6	Jason	23.04.06	23.04.06	24.04.06	29.04.06						
7	Hindrik Deelstra	21.04.06	22.04.06	20.04.06							
8	Daniel Foerster	02.05.06									

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ALL-TIME TABLE OF HONOR

This table contains all code breaking results, registered during and after the Challenge.





3/1/23, 1:10 PW	Challenge	
37	Nikos Kyrloglou	Rafael Pasc
38	Onno Kuiji	William & Al Thomas
39	Chris Dermer	Jan Beck
40	Harry Brugmans	Urs B
41		Karsten Han
42	₩ Gina	Klaus Mohrmanr
43	Willie Viljoen	Christian Gauger- Cosgrove
44	Ed Höcker	George Las
45	J-O Ahlm	Markus Fisc
46	David Kuehlwein	Stefano Popovski
47		Rainer Boldh
48	Rolf Schneider	Luke Frec
49	Ricardo Sagarzazu	Gavin Melvi
50	Savas Ikiz	Ivan Kralił
51	Alexey Albov (UEMJ)	Alain Misli
52	Ralph Beckmann	Juerg Iseli
53	Ivana Belgers	Guy Beauchem
54	Marcel Lambrechts	Christoph Dominic Bel
55	Anders Delbom	Magne Groenhuis
56	Ralf Drückes	John Davie
57	Robert Butler	Luigi Tome
58	Eric Langeveld	Michiel Viss
59 60	Arno Adam	Iko Knyphau
61	Gerard Lührs	Detlef Richt
62	Martin Gwerder	Jörgen van d Velde
	Alister Watt	Peter Kohlı
63	Rudy Vanbelleghem	Madness
64	Patrick Ilyas Peeters	Christian Crevecoeu
65	Ronnie Tantriady	Valentin-Dar



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Popa

Matthias Sch

Marten Hammanr

Ivan Roler

· ·

Dave Raeth

Adam R. Cas

García Larra

Steve VA7k

Rene Gneh

Jean Loui: Fritsch

Mikael Irem

Helmuth La

Marc Niedm
Simon Vince

Ciprian Ione:
Oleksii

Sylichenko