

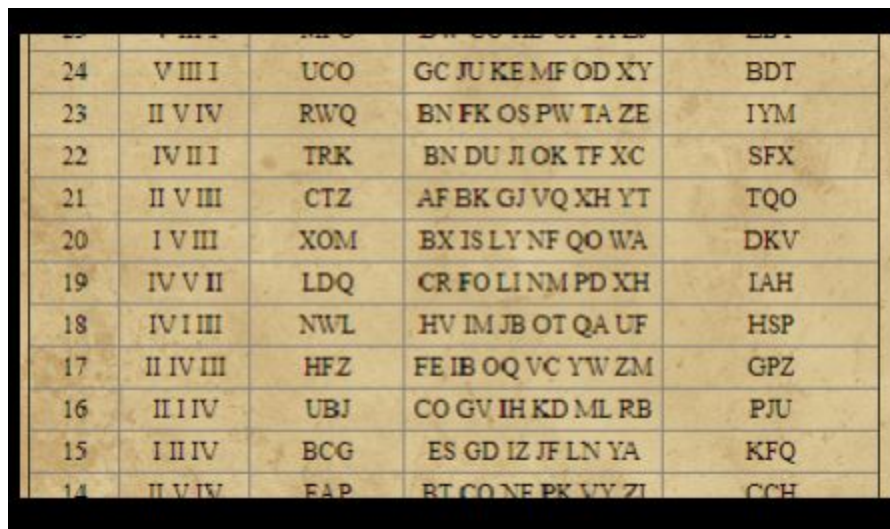
Category: Cryptography

Challenge: Is it breakable?

Write-up:

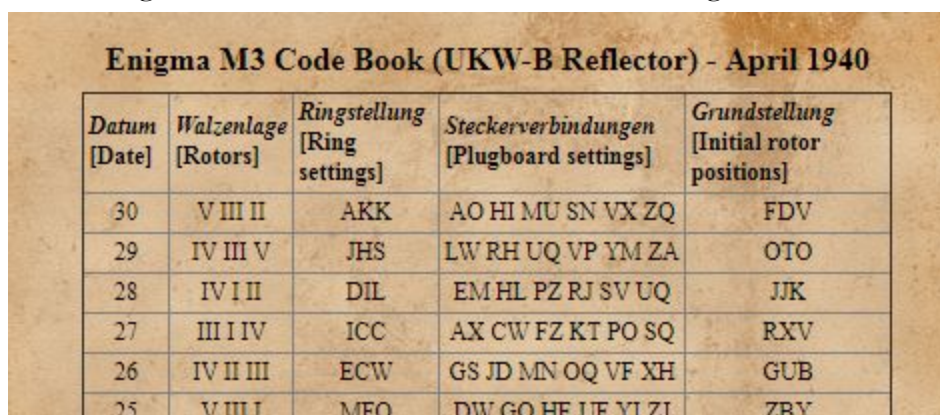
Encrypted: FOWPY UMSXI BFCLF UXDTA EAFE

First of all, when we look at the image, one can see that it is looking like the Enigma system, an encryption system used in World War II. It is a bit tricky question since we do not know anything about these letters etc. So, we need to do a little research about it.



24	V III I	UCO	GC JU KE MF OD XY	BDT
23	II V IV	RWQ	BN FK OS PW TA ZE	IYM
22	IV II I	TRK	BN DU JI OK TF XC	SFX
21	II V III	CTZ	AF BK GJ VQ XH YT	TQO
20	I V III	XOM	BX IS LY NF QO WA	DKV
19	IV V II	LDQ	CR FO LI NM PD XH	IAH
18	IV I III	NWL	HV IM JB OT QA UF	HSP
17	II IV III	HFZ	FE IB OQ VC YW ZM	GPZ
16	II I IV	UBJ	CO GV IH KD ML RB	PJU
15	I II IV	BCG	ES GD IZ JF LN YA	KFQ
14	II V IV	EAP	BT CO NE PK VY ZI	CCH

The first thing that one will search on the internet is the word Enigma daily settings or something like that. Now we can see the full image:



Datum [Date]	Walzenlage [Rotors]	Ringstellung [Ring settings]	Steckerverbindungen [Plugboard settings]	Grundstellung [Initial rotor positions]
30	V III II	AKK	AO HI MU SN VX ZQ	FDV
29	IV III V	JHS	LW RH UQ VP YM ZA	OTO
28	IV I II	DIL	EM HL PZ RJ SV UQ	JJK
27	III I IV	ICC	AX CW FZ KT PO SQ	RXV
26	IV II III	ECW	GS JD MN OQ VF XH	GUB
25	V III I	MFO	DW GO HE UF YI ZJ	ZBY

When we look at the image, we can identify the columns. We need to try all variations in CyberChef to get the correct, most meaningful result. Trying the day 21th will work.

The screenshot shows the CyberChef 'Recipe' tab with an 'Enigma' recipe. The input is 'FOWPY UMSXI BFCLE UXDTA EAFE'. The output is 'ENIGM AENIG MAENI GMAEN IGMA'. The recipe settings are as follows:

- Model: 3-rotor
- Left-hand rotor: EKMF LGDQVZNTOWYHXUSPAIBRCJ<R
- Left-hand rotor ring setting: C
- Left-hand rotor initial value: T
- Middle rotor: AJDKSIRUXBLHWTMCQGZNPYFVOE<F
- Middle rotor ring setting: T
- Middle rotor initial value: Q
- Right-hand rotor: BDFHJLCPRTXVZNYEIWGAKMUSQO<W
- Right-hand rotor ring setting: Z
- Right-hand rotor initial value: O
- Reflector: AY BR CU DH EQ FS GL IP JX KN MO TZ VW
- Plugboard: AF BK GJ VQ XH YT
- Strict output: ☒

The output statistics show: start: 28, end: 28, length: 0, time: 0ms, length: 28, lines: 1.

Flag is: “SUCTF{ENIGM AENIG MAENI GMAEN IGMA}”