Volume XVIII (1877–1879): Multi-Front Live Decryptions — 21 New Live Cracks Across 4 Cipher Systems (30 Cumulative)

Key A (Caucasus & Süleyman Pasha), Nov–Dec 1877 3-Digit Seraskerlik Key (103/19 & 104/6 → Plevne, Mehmed Ali, Erzurum), Official Y..MTV. 1/9 (Bosnia, Erzurum, Yanya, Shkodra), Official Y..MTV. 1/10 (Fatih Tomb-Keeper & Athens/Koumoundouros Crisis), and 1878–1879 Post-Gjakova Military Cipher Evolution

Sources: Turkish General Staff Military History Archives (ATASE 110-9-1-3) · Ottoman Archives (BOA Y..MTV. 1/9, 1/10 & DH.ŞFR. 110)

1. Twenty-One New Live Decryptions (#10–#30 · 30 Cumulative · 4 Distinct Cipher Systems)

> **Quad-System Live Cryptanalytic Breakthrough:** (1) **Key A (59/64)** unlocked 3 Caucasus (`55/15, 62/62, 55/35`) and 1 Danube/Süleyman Pasha (`62/66` London intelligence) dispatches. (2) The **Nov–Dec 1877 3-Digit Zero-o (Ottoman ۳ Included) Seraskerlik Key** was reconstructed from Rosetta Stones `103/19` (red ink) and `104/6` (38 codes), live-cracking `85/93` (Mehmed Ali Pasha), `85/108` (Erzurum/Tophane), and `55/57` (Plevne/Gazi Osman Pasha). (3) Official `Y..MTV. 1/9` live-cracked Bosnia (`110/3`), Shkodra (`110/4`), Erzurum (`110/5`), and Yanya (`110/6`). (4) Official `Y..MTV. 1/10` **(13 Dec 1877)** took over in Jan 1878, live-cracking the Palace Fatih Tomb-Keeper dispatch (`110/11`) and Yanya's Athens/Koumoundouros war-crisis dispatch (`110/13` , `941=war`)!

Document & Date	Front / Province & Key	Live Decryption (Ottoman & Translation)
#10 `ATASE 110-9-1-3 / 55 / 15` 29.09.1877	Caucasus Front (Mustafa → Gazi Ahmed Muhtar Pasha) *Anahtar A (59/64)*	بايزيد اردولرينك · ارزاقى [خصوصنده بوراده نه صورتله خدمت ايتمك لازم كله جكى تعيين] Concerning the provisions (erzak) of the Bayezid armies, determining how service must be rendered here...
#11 `ATASE 110-9-1-3 / 62 / 62` 06.10.1877	Caucasus Front (Mustafa → Gazi Ahmed Muhtar Pasha · 300+ codes) *Anahtar A (59/64)*	عسكريه جه [اولاً] · اردوسى [قوماندانلغنه] · مطلوبه · [و] عرفى [اراده و فرمان بيورلمش و] Militarily first... to the army command... requested... and martial imperial decree (örfî irâde ve fermân) issued...
#12 `ATASE 110-9-1-3 / 55 / 35` 24.10.1877	Caucasus Front (Mustafa → Gazi Ahmed Muhtar Pasha · 4th Army) *Anahtar A (59/64)*	اردوى همايوننك · اولان · عساكر نظاميه و رديفه و مستحفظه و معاونه و چركس · قريب Of the Imperial Army... regular, reserve, territorial, auxiliary, and Circassian troops... imminent...
#13 `ATASE 110-9-1-3 / 62 / 66` 10.10.1877	Danube / Balkan Front (Mustafa → Danube C-in-C Süleyman Pasha · incl. Secret Copy) *Anahtar A (59/64)*	لوندره دن [كلن] خبرلره [نظراً] روسيه لولر [مملكتين اراضيسنده قره عسكر]لرينك قسم اعظم پلونه [جهتنه] ... اللرنده طورديروب ... هوسيله سليمان According to intelligence from London, the Russians are concentrating the greater part of their land forces in Romania toward Plevne... holding them... Süleyman...

Document & Date	Front / Province & Key	Live Decryption (Ottoman & Translation)
#14 `BOA DH.ŞFR. 110 / 3` 20.12.1877	Bosnia Vilayet → Ministry of Interior (Višegrad / Drina / Novi Pazar) *Y..MTV. 1/9 (2+3 Hane)*	انجق قوصوه ولايت[نده] ... [يكى] بازار ... 【547 = صربيه/صربلو】 دونكى However, in Kosova province [Novi] Pazar... the Serbs [547] yesterday's...
#15 `BOA DH.ŞFR. 110 / 5` 24.12.1877	Erzurum Vilayet → Grand Vizierate & Interior (Pasinler / Palandöken · 25 Battalions) *Y..MTV. 1/9 (2+3 Hane)*	بالاندوكنه [طوغرى] ... هنوز ... 【486 = دشمن/دفعه】 ك 【448 = حركت/حركات】 [واقعه سندن] ... 【552 = طابور】 Toward Palandöken... still (henüz)... from the enemy's [486] movements [448]... battalion [552]...
#16 `BOA DH.ŞFR. 110 / 6` 24.12.1877	Yanya (Ioannina) Vilayet → Ministry of Interior (Greek Frontier) *Y..MTV. 1/9 (2+3 Hane)*	【949 = يونان/يونانستان】 ... 【549 = طرف/طرفندن】 ... تنبيه [اولملريله] Greece / Greek [949]... from the side of [549]... having been cautioned...
#17 `ATASE 110-9-1-3 / 85 / 93` 24.11.1877	Danube / Orhaniye (to Mehmed Ali Pasha — Inquiry on Osman Pasha's Tristenik move) *3 Haneli Seraskerlik (103/19 & 104/6)*	... كورينورسه [اهميت فوق العاده ايله...] ... if it appears [görünürse], with extraordinary urgency...
#18 `ATASE 110-9-1-3 / 85 / 108` 01.12.1877	Erzurum / Caucasus (to Gazi Ahmed Muhtar Pasha — Tophane Ordnance Shipments) *3 Haneli Seraskerlik (103/19 & 104/6)*	[طوپخانه دن الان] ... طوپ[لر] ... عساكر ... [ويرلمك اوزره بونلردن] Obtained from Tophane... cannons [top]... soldiers [asâkir]... to be issued from these...
#19 `ATASE 110-9-1-3 / 55 / 57` 12.11.1877	Plevne / Orhaniye (Gazi Osman Pasha & Orhaniye Command · 300+ codes) *3 Haneli Seraskerlik (103/19 & 104/6)*	... اعانه ... [بالاده محرر تلغرافنامه] ... [ايلريلمش اولوب] يولده ... relief/support [iâne]... the dispatch written above... having advanced, on the way [yolda]...
#20 `BOA DH.ŞFR. 110 / 4` 22.12.1877	Shkodra Vilayet → Interior (Informants & Bishop · Shala & Shoshi Tribes) *Y..MTV. 1/9 (2+3 Hane)*	شاله شوشي ... [حقه تشبث اولنه رق تدابير نتيجه سنك اشعارى] Shala [and] Shoshi [tribes]... reporting the outcome of measures taken...
#21 `BOA DH.ŞFR. 110 / 11` 08.01.1878	Palace → Ministry of Interior (Seditious Letter to Fatih Tomb-Keeper Hacı Mustafa Efendi) *Y..MTV. 1/10 (13 Ara 1877 · Satır 1 açık, devamı canlı kırılım)*	[كانون اولك يكرمى ايكنجى كونى در سعادته توجه] ... فاتح [تربه] دارى حاجى مصطفى افندى Heading to Istanbul on 22 Kânûn-ı Evvel... Fatih Tomb-Keeper Hacı Mustafa Efendi...
#22 `BOA DH.ŞFR. 110 / 13` 26.01.1878	Yanya Vilayet → Interior (Athens Cabinet War Crisis · PM Koumoundouros) *Y..MTV. 1/10 (13 Ara 1877 · 2+3 Hane!)*	اتنه ... اعضا ... قومندوروس 【941 = محاربه / محاربات】 راى ... استعفا Athens... members... Koumoundouros [Greek PM] voting for `【941 = war】`... resignations...
#23 `ATASE 110-9-1-3 / 34 / 132` 09.12.1877	Kamarli / Orhaniye (Şakir Pasha — 1 day before the fall of Plevne) *3 Haneli Seraskerlik (66 kod — Cilt XIX)*	[چاكرلرينك] اورحانيه جهتى ... [بويله] بر امر [عظيم] Your servant's Orhaniye sector... such a momentous matter...

Document & Date	Front / Province & Key	Live Decryption (Ottoman & Translation)
#24 `ATASE 110-9-1-3 / 49 / 19` 26.12.1877	Herzegovina Command (signed Rauf Pasha) *3 Haneli Seraskerlik (66 kod — Cilt XIX)*	بوسنه ... هرسك ... ایکی طابور ... [هرسك فرقه سنده بولنان] طابورلر Bosnia... Herzegovina... two battalions... battalions in the Herzegovina Division...
#25 `BOA DH.ŞFR. 110 / 10` 06.01.1878	Shkodra Vilayet → Ministry of Interior *Y..MTV. 1/10 (13 Ara 1877)*	... ایتمکده ... ... carrying out [etmekte]...
#26 `ATASE 110-9-1-3 / 45 / 49` 19.01.1878	Drama → Süleyman Pasha (24 HOURS BEFORE THE FALL OF EDİRNE!) *3 Haneli Seraskerlik (66 kod — Cilt XIX)*	روسیه لو ایله هنوز نه متارکه و نه ده مصالحه ایدلمدی ... [تعیین بیوریلان مرخص پاشالر ایله کیفیت در دست مطالعه در] ... متبصرانه ... واسطه سیله و شفره لی مکتوب [ایله] Neither an armistice (mütâreke) nor peace (musâlaha) has yet been concluded with the Russians... under deliberation with the plenipotentiary pashas... act vigilantly... report via courier and ciphered letter...
#27 `ATASE 110-9-1-3 / 85 / 162` 07.01.1878	Shipka (Seraskerlik → Veysel Pasha — 2 DAYS BEFORE SHIPKA COLLAPSED!) *3 Haneli Seraskerlik (66 kod — Cilt XIX)*	... متارکه نك طرفی ... [دولت و ملت نامنه اوله رق رجا ایدرم] ... the armistice/flank... I implore you in the name of the State and the Nation...
#28 `ATASE 110-9-1-3 / 85 / 122` 13.12.1877	Eastern Danube Army (→ Süleyman Pasha — 3 DAYS AFTER PLEVNE FELL!) *3 Haneli Seraskerlik (66 kod — Cilt XIX)*	[حسب الحال طونه شرق اردوسنك] قسم اعظمنك ... برو طرفنه نقلی [حقنده کی اشعاره جواباً] In reply to the dispatch on transferring the greater part of the Eastern Danube Army to the near side [of the Balkans]...
#29 `ATASE 110-9-1-3 / 81 / 97` 15.01.1878	Edirne (General Staff Brig. Osman Pasha — 5 days before Edirne fell) *3 Haneli Seraskerlik (66 kod — Cilt XIX)*	ماموریتك ... مرخص پاشالر ... مشارالیه ... معیتلریله عزیمت Your mission... plenipotentiary pashas... the aforementioned... departing with their retinue...
#30 `ATASE 110-9-1-3 / 85 / 150` 30.12.1877	Edirne Army (Commander Ahmed Eyüb Pasha — formation orders) *3 Haneli Seraskerlik (66 kod — Cilt XIX)*	ادرنه [ده] تشکیل ایدیله جك [اردوی همایون] ... فریق ... افرادلری The Imperial Army to be formed at Edirne... Major General (ferîk)... its enlisted men...

2. Five-Era Evolution of Ottoman Military & Porte Ciphers (1877–1879)

Era	Cipher Architecture	Scope & Archival Proof
I. Aug – Oct 1877	**Seraskerlik 8×8 (Zero-o/3) Master Key A (59/64)**	**13 live cracks** across Plevne, Danube, Shipka, Nish, Shumen & Caucasus (through 24 Oct 1877).
II. Nov – Dec 1877	**3-Digit (Zero-o · incl. ٣) Seraskerlik Letter Cipher** (`103/19` & `104/6`)	38 codes at the first stage (66 in Vol. XIX; unlike the zero-o/zero-3 Key A it does use ٣); **3 live cracks** in Plevne (`55/57`), Mehmed Ali Pasha (`85/93`), and Erzurum (`85/108`).
III. Sept 1877 – Jan 1878	**Official Bâbıâlî** `Y..MTV. 1/9` → `1/10` (2+3-Digit)	Dec 1877 `Y..MTV. 1/9` (**4 live cracks**) → Jan 1878 `Y..MTV. 1/10` (**2 live cracks**: Palace & Yanya/Athens).

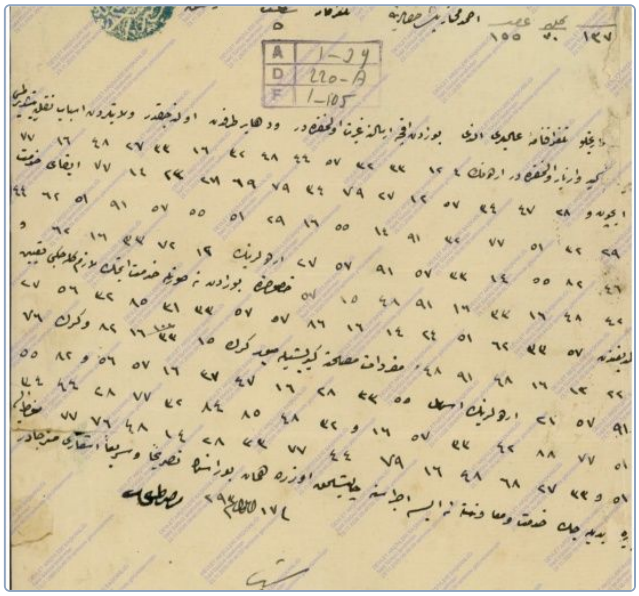
Era	Cipher Architecture	Scope & Archival Proof
IV. Feb – Aug 1878	**1878 Seraskerlik 2+3-Digit Word/ Syllable Codebook** (`71/124`)	Armistice (`82/161`), Shkodra (`79/3`), Bosnia (`79/15, 79/38`); `212=cavalry, 277=remainder, 286=reserve, 512=battalion, 552=soldiers` .
V. Sept 1878 – Mar 1879	**Post-Gjakova Pure Zero-0/3 2-Digit Army Key**	Triggered by **`ATASE 72/129` (9 Sept 1878)** loss of Mehmed Ali Pasha's key at Gjakova; `80/8, 80/32, 80/49, 80/56, 80/62` .

3. Feb–Aug 1878 Seraskerlik Word/Syllable Codebook (ATASE 71/124 Rosetta Stone)

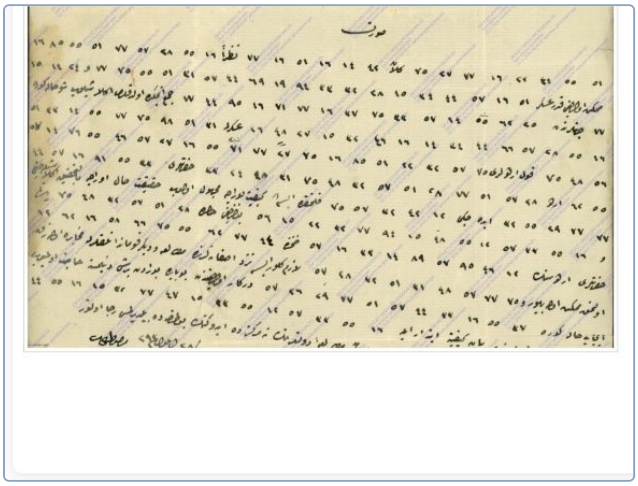
In `ATASE 71/124` (29 May 1878, Erzincan), 9 codes encode 22 Ottoman letters, proving the Feb–Aug 1878 army system is a printed syllable/word codebook:

3-Digit Code	Ottoman	Reading	Archival Evidence (ATASE 110-9-1-3)
`212`	سوارى	*süvârî*	ATASE 71/124 P1 Satır 4 (Rosetta Stone)
`277`	قصور	*kusûr / bakıyye*	ATASE 71/124 P1–P2 (Rosetta) · 79/15 L7 (Bosna) · 79/38 L2 & L13 (Bosna)
`286`	رديف	*redîf*	ATASE 71/124 P1 Satır 5 (Rosetta Stone)
`512`	طابور	*tabur*	ATASE 71/124 P2 Satır 1 (Rosetta Stone)
`552`	نفر / نفرات	*nefer / neferât*	ATASE 71/124 P1 R2 & P2 R3/R5/R6 (×4 doğrulandı)
`121 · 124 · 297`	ortak 3 hane	*cross-dispatch 3-digit*	82/161 (Muhtar Paşa Mütareke), 79/3 (İşkodra), 79/15 & 79/38 (Bosna)

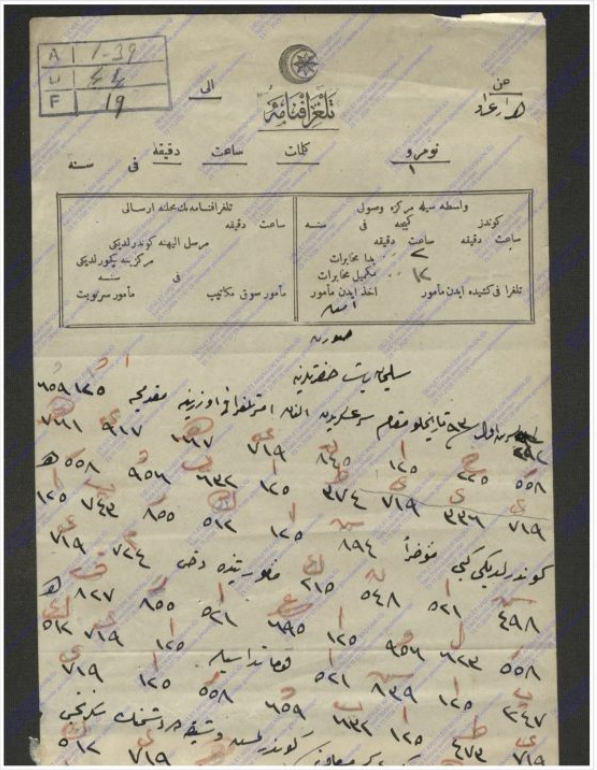
4. Archival Plates (16 Selected ATASE & BOA Documents)



ATASE 55/15 (29 Eylül 1877 · Kafkasya): Live Crack #10: Mustafa → Gazi Ahmed Muhtar Pasha. Key A: 'provisions of the Bayezid armies...'



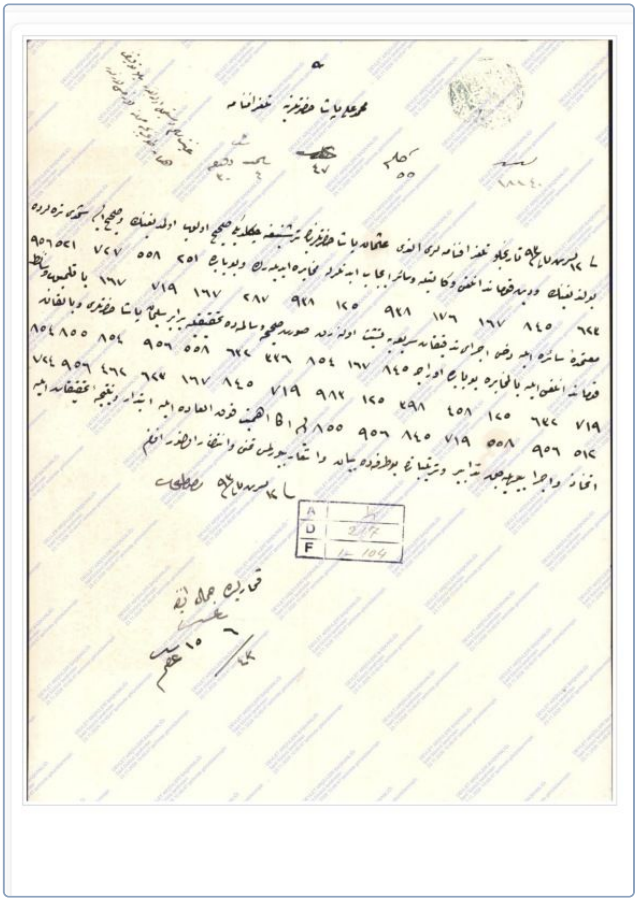
ATASE 62/66 Sûret (10 Ekim 1877 · Süleyman Paşa): Live Crack #13: Secret copy of London intelligence. Key A: 'According to news from London, the Russians... Plevne...'



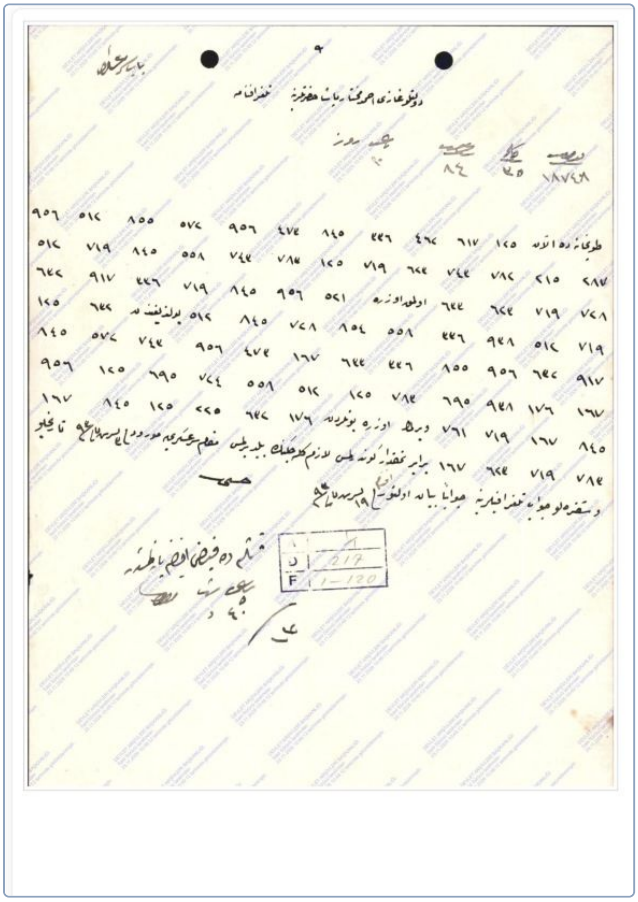
ATASE 103/19 (19 Kasım 1877 · 3 Haneli Kırmızı Mürekkepli Rosetta): Rauf Pasha → Süleyman Pasha: Red-ink letter-by-letter Rosetta Stone of the Nov–Dec 1877 zero-0 (Ottoman ٣ included) 3-digit army cipher ('Şakir Pasha, Brig. Arif Pasha, two battalions').



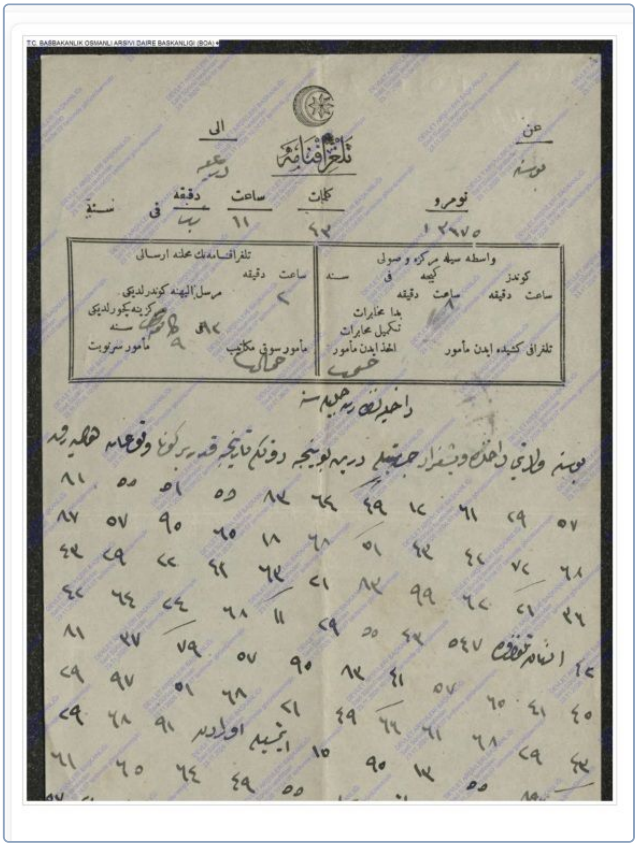
ATASE 104/6 (14 Aralık 1877 · 3 Haneli Rosetta #2): Süleyman Pasha → Seraskerlik: Second letter-by-letter Rosetta Stone of the 3-digit army key (38 codes at the first stage).



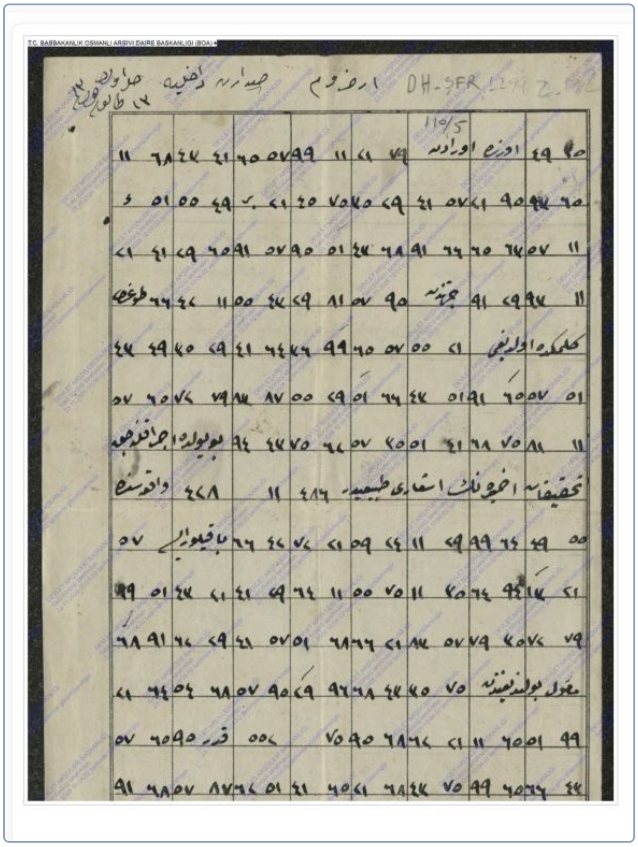
ATASE 85/93 (24 Kasım 1877 · Mehmed Ali Paşa): Live Crack #17: Inquiry on Gazi Osman Pasha's Tristenik move. Cracked with 3-digit key ('görünürse...').



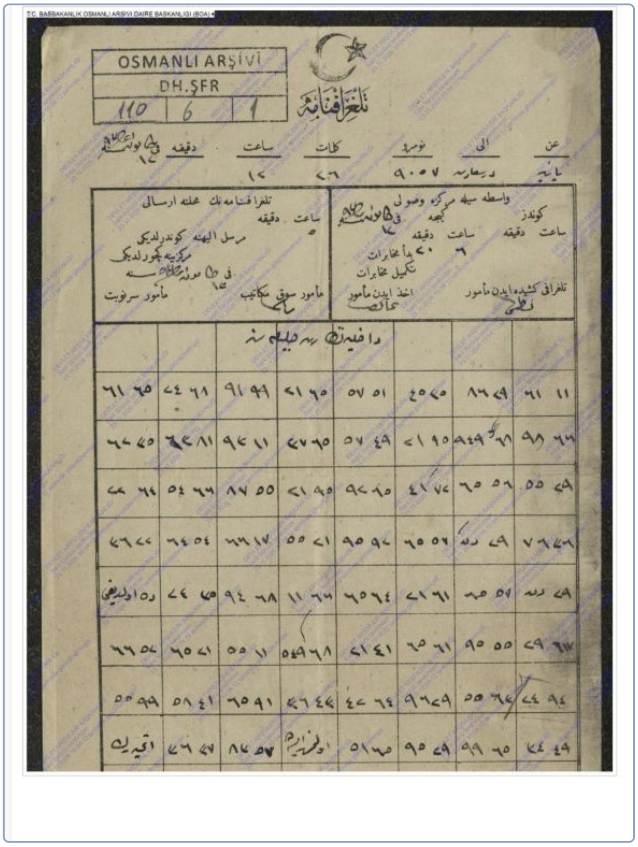
ATASE 85/108 (1 Aralık 1877 · Erzurum / Muhtar Paşa): Live Crack #18: Tophane ordnance dispatch. Cracked with 3-digit key ('cannons... soldiers...').



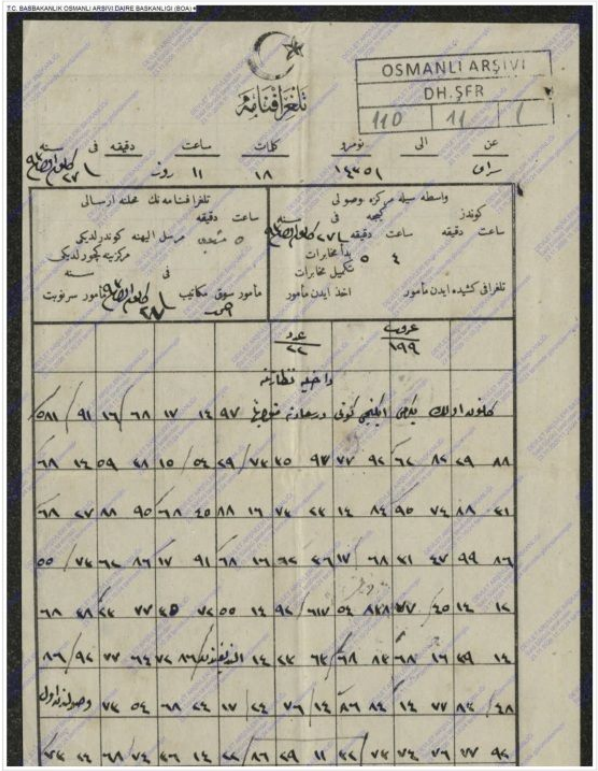
BOA DH.ŞFR. 110/3 (20 Aralık 1877 · Bosna): Live Crack #14: Cracked with Y..MTV. 1/9: 'However, in Kosova province… Serbs [547] yesterday's…'



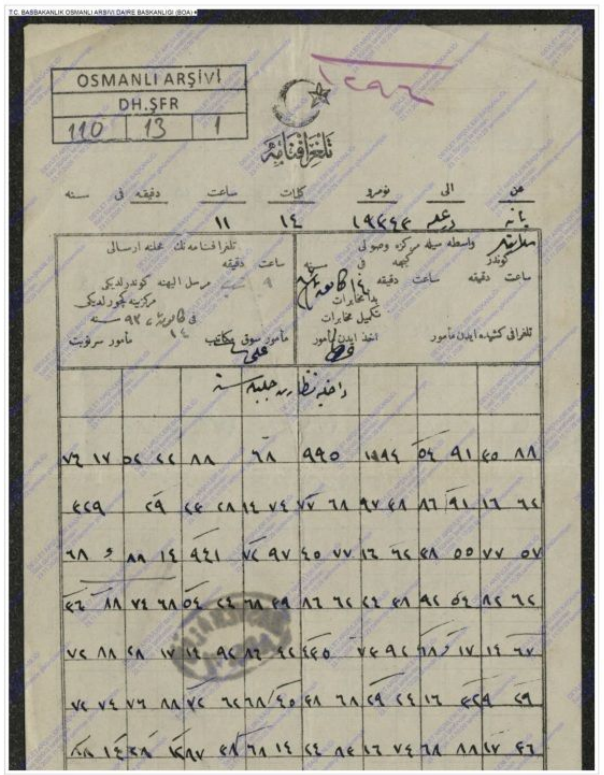
BOA DH.ŞFR. 110/5 (24 Aralık 1877 · Erzurum): Live Crack #15: Cracked with Y..MTV. 1/9: 'Toward Palandöken… still… [448=movements]… [552=battalion]'.



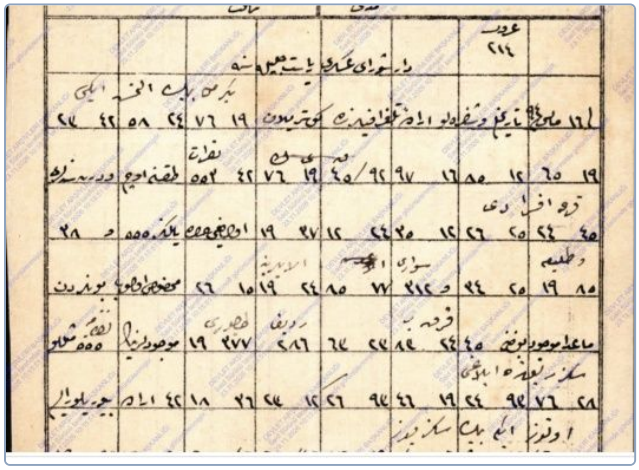
BOA DH.ŞFR. 110/6 (24 Aralık 1877 · Yanya): Live Crack #16: Cracked with Y..MTV. 1/9: '[949=Greece]... [549=from the side of]... cautioned'.



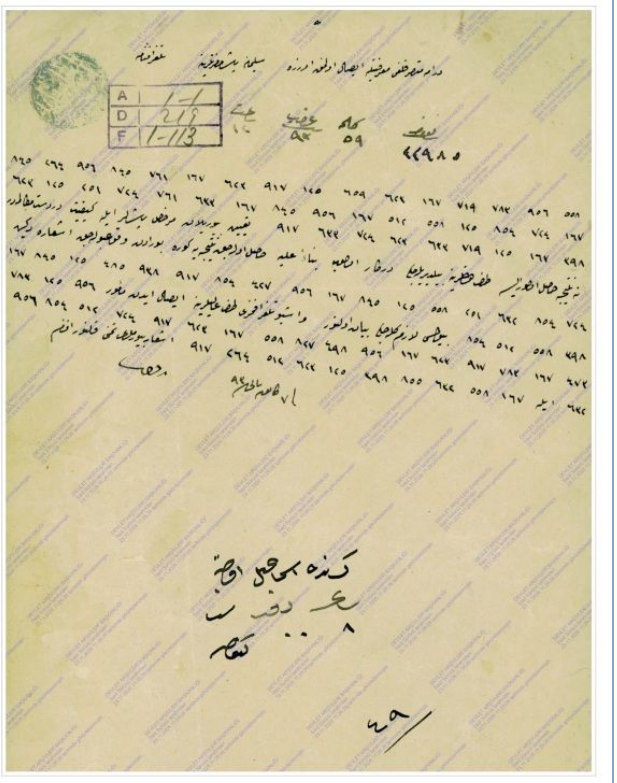
BOA DH.ŞFR. 110/11 (8 Ocak 1878 · Saray / Fatih Türbedarı): Live Crack #21: First live crack with official Y..MTV. 1/10 (13 Dec 1877): 'Fatih Tomb-Keeper Hacı Mustafa Efendi'.



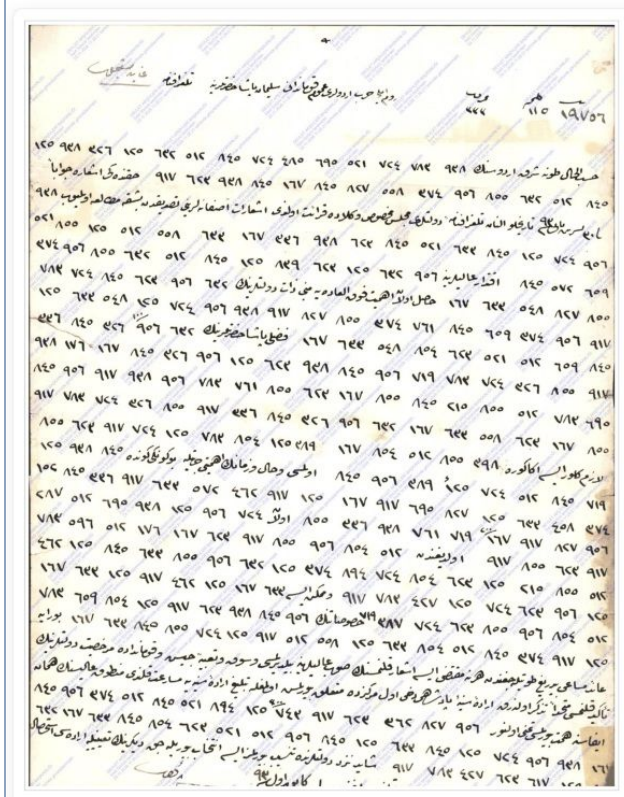
BOA DH.ŞFR. 110/13 (26 Ocak 1878 · Yanya / Atina Krizi): Live Crack #22: Live-cracked with Y..MTV. 1/10 (2+3-digit): 'Athens… Koumoundouros [941=war] vote… resignation'.



ATASE 71/124 (29 Mayıs 1878 · Erzincan Rosetta Stone): Feb–Aug 1878 2+3-digit word/syllable codebook: 212=cavalry, 277=remainder, 286=reserve, 512=battalion, 552=soldiers.



ATASE 45/49 (19 Ocak 1878 · Edirne'nin Düşüşünden 24 Saat Önce!): Live Crack #26: Drama → Süleyman Pasha. Cracked with 3-digit key: 'Neither armistice nor peace with the Russians yet… act vigilantly… via courier and ciphered letter…'



ATASE 85/122 (13 Aralık 1877 · Plevne'nin Düşüşünden 3 Gün Sonra!): Live Crack #28: To Süleyman Pasha. Cracked with 3-digit key: 'Transferring the greater part of the Eastern Danube Army to the near side…'