CCH 2022

The Center for Cryptologic History Calendar

FOREWORD

The Center for Cryptologic History (CCH) is remembering the people on the cryptologic front who contributed mightily to victory during World War II. After the discovery of photographs from Arlington Hall Station in northern Virginia and the U.S. Navy's communications annex in the District of Columbia, CCH wishes to share some of these images with you. (The collection and this calendar also include a few photos from shortly after the war and from other locations.)

Glossary

ADFGVX: A cipher comprising the six letters identified, which Germany began using in 1918

AEF: American Expeditionary Forces, World War I

AFSA: Armed Forces Security Agency (predecessor to NSA)

ARPANET: Developed by the DoD, the Advanced Research Projects Agency Network was the first operational switching network and a precursor of the Internet

ASA: Army Security Agency

Bombe: Electromechanical device used by the Allies during World War II to decrypt messages generated by the German ENIGMA machine

BRUSA: British-U.S. agreement to partner on SIGINT matters

CAST: U.S. intercept site on Corregidor, World War II

CCR: Center for Communications Research

COLOSSUS: Machine developed at Bletchley Park to break high-level German cipher; the world's first programmable, electronic, digital computer

COMINT: Communications Intelligence

COMSEC: Communication Security

DEFSMAC: Defense Special Missile and Aerospace Center

DIRNSA: Director, National Security Agency

DoD: Department of Defense

D/DIR: Deputy Director, National Security Agency

ECM: Electric Coding Machine

ENIGMA: German cryptographic device, World War II

FRUPAC: Fleet Radio Unit Pacific, World War II

G2A6: Organization that conducted battlefield communications intelligence support for AEF units in World War I

GC&CS: Government Code and Cypher School (predecessor to UK's GCHQ)

INSCOM: U.S. Army Intelligence and Security Command

NARA: National Archives and Records Administration

NRO: National Reconnaissance Office

NSC: National Security Council

NSOC: National Security Operations Center (formerly National SIGINT Operations Center)

RSA: Public key cryptographic algorithm, named after Rivest, Shamir, and Adleman, its co-inventors

SECAF: Secretary of the Air Force

SecDef: Secretary of Defense

SIGABA: Highly secure U.S. cryptographic machine used to encipher communications from World War II to the 1950s

SIGINT: Signals Intelligence

SIGSALY: Secure Digital Voice Communications machine used in World War II

SIS: Signals Intelligence Service (forerunner of Army Security Agency)

USAFSS: U.S. Air Force Security Service

WAAC: Women's Army Auxiliary Corps

WAVES: Women Accepted for Volunteer Emergency Service, U.S. Navy

VENONA: U.S. program from 1943 to 1980 that discovered Soviet diplomatic communications and dealt with espionage matters

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 *New Year's Day* — Lt. Gen. Gordon Blake, USAF, became DIRNSA, 1962 / U.S. Army Intelligence and Security Command (INSCOM) established, 1977
2 NSA Office of Policy first mandated use of term "Service Cryptologic Element," 1980	**3** NARA assigned Record Group 457 (now "Records of the National Security Agency") to declassified NSA records, 1977	**4** Major General Gordon Blake named Commander, Air Force Security Service, 1957	**5** Lieutenant (later Captain) Laurance Safford named OIC, U.S. Navy Cryptographic Branch, 1924	**6**	**7**	**8**
9 Louis Tordella, longest serving D/DIR (1958-1974), died, 1996 / Jerzy Rozycki, a Polish Cipher Bureau mathematician who helped break ENIGMA, died in a ship sunk off France, 1942	**10** U.S. intercepts cable from Napoleon III of France to Mexico revealing French position on status of Emperor Maximilian in Mexico; contributes to lessening of US-French tensions over Mexico, 1866	**11**	**12**	**13** First *History Today* article appeared on NSA Daily Page, 2003	**14** BRUSA Agreement–U.S.-UK COMINT relationships during World War II, 1944 / Brigadier General Bernard Ardisana, USAF, NSA's first Assistant Deputy Director of Operations, died on active duty, 1978	**15**
16 General Order No. 9 authorized publication of a new War Department Telegraphic Code, 1898 / Operation DESERT STORM began, 1991	**17** *Birthday of Martin Luther King, Jr., Observed*	**18** Alfred Vail, co-inventor of the telegraph, died, 1859	**19** Encoded Zimmermann Telegram sent by the Germans and intercepted by the British, 1917 / U.S. cryptologic pioneer Abraham Sinkov died, 1998	**20**	**21**	**22** National Security Decision Directive 298 made DIRNSA responsible for interagency OPSEC training, 1988
23 Intelligence chiefs of U.S. Army and Navy established list of eligible readers of "Magic" intercept, 1941 / North Koreans captured USS *Pueblo*, 1968	**24** WWI Naval Battle of Dogger Bank was a British cryptologic failure but the Germans sustained greater losses, 1915	**25**	**26**	**27** Paris Peace Accords signed–end of U.S. involvement in Vietnam War, 1973 / Church Committee began investigation of U.S. Intelligence Community, 1975	**28**	**29** New Zealand warship captured Japanese submarine I-1, seizing multiple copies of JN-25 codebooks, 1943
30	**31** The *Federal Register* published details for the Secure Hash Algorithm (SHA), 1992	Navy EA-3B recon aircraft crashed, Mediterranean Sea, 1987				

Arlington Hall Station (AHS), a former girls' school, was headquarters for the U.S. Army's cryptologic organization during and after World War II. The post also served as one of the two main locations for the Armed Forces Security Agency from 1949 to 1952 and for the National Security Agency for several years afterward. During the war, most AHS employees were women, like the keypunch operators gathered here on the campus. *CCH Photo Collection*
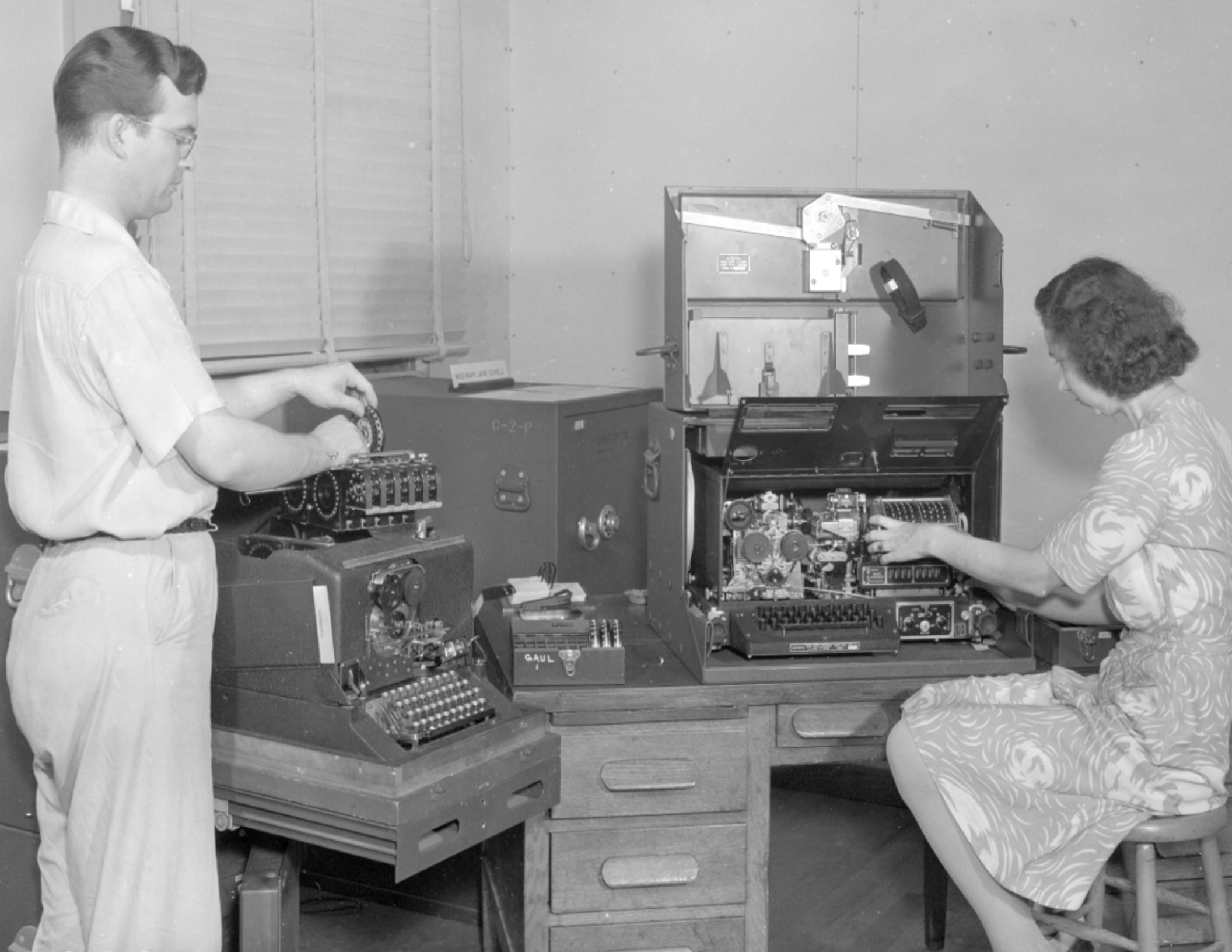
FEBRUARY 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 German spy Lothar Witzke arrested carrying a coded message, 1918 German Navy introduced 4-rotor ENIGMA for U-Boats, 1942 SIS began VENONA project, 1943 USAFSS received its first cryptologic units from the ASA, 1949	**2** USAFSS began operations in South Vietnam with the arrival of Team 1A, 6920th Security Wing, at Da Nang, 1962	**3** Intercept operations began at Phu Bai. Became the largest U.S. site in South Vietnam, 1963	**4**	**5** Colossus activated by Bletchley Park, 1944 USAF EC-47 (callsign Baron-52) shot down over Laos. Eight crew members, including four cryptologic technicians, perished, 1973
6 Genevieve Young Hitt, early U.S. female cryptologist, died, 1963	**7** The U.S. Navy's OP-20-G moved to Nebraska Avenue, 1943	**8** First Americans visit Bletchley Park, begins U.S.-UK cryptologic cooperation during World War II, 1941	**9** ENIGMA introduced into German Navy as Radio Key C, 1926	**10** Establishment of the 805th Signal Service Company for operation of the SIGSALY, 1943 Edward Hebern, developer of an electric coding and decoding machine, died, 1952	**11**	**12** Signing of King-Marshall Agreement—established role of Army/Navy COMINT liaison officers in Pacific theater, 1944
13	**14**	**15** The ENIAC computer began operating, 1946	**16**	**17** National Security Council Intelligence Directive 6 established Central Security Service (CSS), 1972	**18**	**19**
20 Government seizure of cryptologist Herbert O. Yardley's tell-all memoir, *Japanese Diplomatic Secrets*, 1933 Japan commenced operational use of the PURPLE machine-generated diplomatic cryptosystem, 1939	**21** *Washington's Birthday Observed* Sarah G. Bagley became first female telegrapher, Lowell, MA, 1846 Ribbon-cutting ceremony for National SIGINT Operations Center (NSOC), 1973	**22** Dedication of Memorial Wall in OPS2B, honoring those cryptologists who sacrificed their lives, 1996	**23** Radio Act of 1927 prohibited radio intercept in U.S. Lieutenant General Kenneth Minihan, USAF, became DIRNSA, 1996	**24** Captain Thomas Dyer, USN, became first NSA Historian, 1954 Claude Shannon, pioneer in cryptologic theory and father of the digital revolution, died, 2001	**25**	**26** NSA-sponsored exhibit opened at Smithsonian, 1981
27	**28** President Wilson informed of the contents of the Zimmermann telegram, 1917	*African American/Black History Month*				

In early 1944, the U.S. Army began hiring African Americans to do meaningful cryptologic work. Under the social mores of the time, their office was segregated. In this photo cryptanalysts are working to break nongovernmental codes from multiple countries. Supervisor William Coffee, standing, was inducted into the Cryptologic Hall of Honor in 2011. *NSA Archives, HIST-026-013*
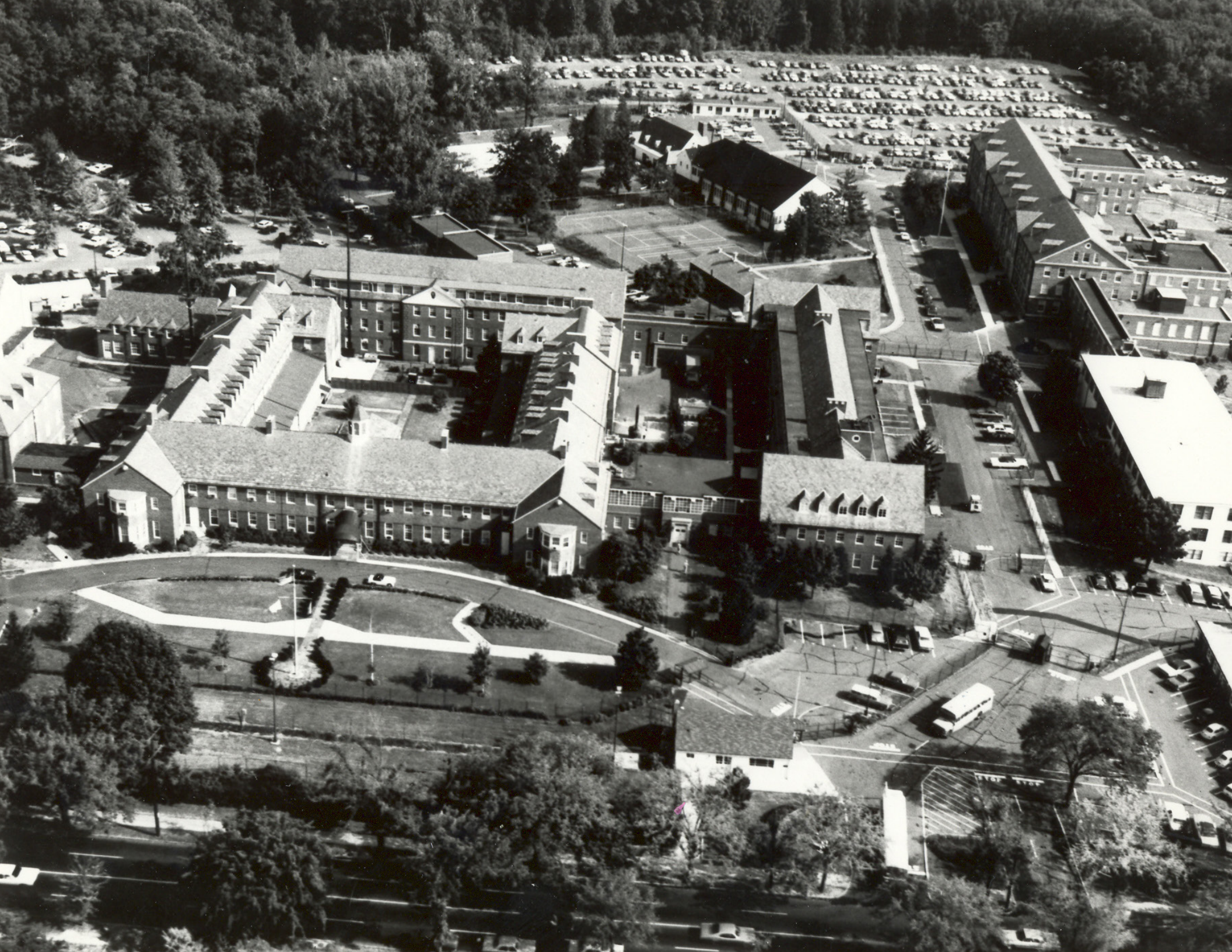
MARCH 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 German ADFGVX cipher first used, 1918 — First hire at SIS, Annie Louise Newkirk, cryptographic clerk, 1930 — U.S. Army aerial reconnaissance UH-1 loss, Vietnam, 1971	**2** Cryptologic pioneer Colonel Parker Hitt, USA, died, 1971	**3** U.S. Army aerial reconnaissance RU-8 shot down, Vietnam, 1971 — STONEHOUSE site in Ethiopia officially closed, 1975	**4**	**5** Station HYPO began reading Japanese system JN-25, 1942 — BRUSA Communications Intelligence Agreement continues U.S.-UK partnership after World War II, 1946
6 William Friedman testified before a Senate committee investigating the Teapot Dome scandal, 1924	**7** 509th Radio Research Group was resubordinated, ending ASA's 12-year presence in South Vietnam, 1973	**8** "Direct" SIGINT support to tactical air control center began on Cho Do (island) during the Korean War, 1953 — Lieutenant General Ralph J. Canine, USA, first DIRNSA, died, 1969	**9** USAF aerial reconnaissance EC-47 loss, Vietnam, 1967	**10** The first successful voice transmission over Alexander Graham Bell's telephone, 1876 — Establishment of Radio Intelligence Service, Mexican border, 1918	**11** U.S. Navy cryptologic organization redesignated OP-20-G, 1935 — Evacuation of Station CAST from Manila Bay, 1942	**12** AFSA Training Branch established, 1951
13 DIRNSA approved a barbershop and drug store for NSA Fort Meade, 1957	**14** Seoul, South Korea, recaptured by UN forces, 1951	**15** CREAM replaced ULTRA as the codeword for top secret cryptologic material, 1946 — USAF aerial reconnaissance RC-135 crashed at Shemya AFS, AK, 1981	**16**	**17** The details of the block encryption algorithm Lucifer were published in the *Federal Register*, 1975	**18** NSA implements the COVID Code Yellow plan, an alternate work schedule that conformed to CDC recommendations for social distancing, 2020	**19** Horst Feistel received a patent for "Block Cipher Cryptographic System," an encryption scheme that laid the foundation for the Data Encryption Standard, 1974 — Operation Iraqi Freedom began, 2003
20	**21**	**22** ASA flew first airborne radio direction finding mission in Vietnam, 1962	**23** The director of U.S. naval communications and the director of AFSA (both rear admirals at the time) signed an agreement regarding direction and support of COMINT operating activities of the U.S. Navy, 1951	**24**	**25**	**26** Lieutenant General Michael Hayden, USAF, became DIRNSA, 1999
27 Most NSA professionalization programs terminated, 2000	**28** Griffiss Air Force Base found packet-sniffing malware in its Rome, NY, labs network, 1994	**29**	**30** Chief Signal Officer Major General Joseph Mauborgne, Army Signal Corps, permitted to perform intercept and cryptologic services for peacetime training and national defense, 1938	**31** Geoffrey Stone, member of Presidential Review Group which was created in the wake of the Snowden leaks, spoke at NSA, 2014	*Women's History Month*	

Just before World War II, the U.S. Army and Navy developed a revolutionary cipher device. Called the "SIGABA" by the army and "ECM" by the navy, the device kept U.S. high-level communications secure from the country's enemies. In this photograph, technicians are performing maintenance on a SIGABA and another communications security device. Note the basket of rotors the man is working on. Both the German ENIGMA machine and the SIGABA used rotors; the ENIGMA had three or four, while the SIGABA had 15, which allowed for more complex rotor movement. *NSA Archives, HIST-010-009*

APRIL 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Days of Remembrance (Holocaust)				**1** Frank Rowlett reported to work for William Friedman, 1930 — Lieutenant General Lincoln D. Faurer, USAF, became DIRNSA, 1981 — Admiral Michael S. Rogers, USN, sworn in as Director, NSA and Commander, USCYBERCOM, 2014	**2** Samuel Morse, developer of telegraph code, died, 1872
3 Bell Labs completed the first cell phone call, 1973	**4** Secretary of War transferred cryptologic functions from the Military Intelligence Division to the Signal Corps; created the Signal Intelligence Service with William Friedman as its head, 1929	**5** Captain Georges Painvin of the French Cipher Bureau solved the first key for the ADFGVX cipher, 1918	**6** The United States entered World War I, 1917 — First break into the Japanese Water Transport Code, 1943	**7** The *Yamato*, a 72,000-ton Japanese battleship, sunk off Okinawa in large part because of SIGINT tipoffs, 1945 — IBM introduces the System/360 mainframe computer, which developed from NSA's HARVEST computer, 1964	**8** Navy PB44-2 shot down, Baltic Sea, 1950	**9**
10	**11** Abraham Sinkov reported to SIS to work for William Friedman, 1930	**12**	**13** FRUPAC intercepted encoded itinerary of Admiral Yamamoto Isoroku's upcoming tour of the Solomon Islands, enabling his shootdown five days later, 1943	**14** *Der Spiegel* reported on what might have been the first case of computer espionage, an operation run against IBM's West German affiliate from East Germany, 1969	**15** Central Bureau established in Australia to provide General Douglas MacArthur's Southwest Pacific Theater with COMINT, 1942 — Navy EC-121 shot down by North Korean MiGs, Sea of Japan, 1969	**16** Clinton administration proposed "Clipper Chip" key escrow method for telephone security, 1993
17 COMINT intercepts revealed Japanese plans to attack Port Moresby, allowing Allied defense, 1942 — Bay of Pigs landing in Cuba, 1961	**18** Shootdown of Admiral Yamamoto by U.S. forces, 1943 — NSA experts spoke in public for the first time on computer security at the Spring Joint Computer Conference in Atlantic City, 1967	**19** Confederate Signal Corps established, 1862	**20**	**21** Louis Tordella retired as D/DIR, 1974	**22** Solomon Kullback reported to SIS to work for William Friedman, 1930 — General Douglas MacArthur, USA, based on COMINT reports, attacked Hollandia, New Guinea, deep behind enemy lines, 1944	**23**
24	**25** U.S. Senate issued the Church Committee report, 1976	**26**	**27** DEFSMAC (originally the Defense Special Missile and Astronautics Center) established, 1964 — Estonia suffered mass cyber attack, 2007	**28**	**29** SECAF approved women for duty on EC-130 aircraft, 1985	**30** SecDef authorized the establishment of a National Cryptologic School at NSA, 1965

The U.S. Navy's cryptologic organization, the Naval Security Station (known as OP-20-G during World War II), similarly acquired a former girls' school for its main site. Located in the District of Columbia, Mount Vernon Seminary for Girls, like Arlington Hall Station for the U.S. Army, hosted OP-20-G and NSA after the war. This photo shows the grounds and some of the buildings erected for wartime work. Nebraska Avenue is at the bottom of the frame. *CCH Photo Collection*

MAY 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 GC&CS activated Heath Robinson Machine (predecessor to Colossus), 1943 U-2 recon plane shot down over Soviet Union, 1960 President George H.W. Bush visited NSA, 1991	**2**	**3** Colonel Ralph H. Van Deman became Chief, Military Intelligence Branch, 1917	**4** The first 29 Navajos of roughly 400 to be trained as codetalkers reported to Fort Defiance, AZ, 1942 GEN Paul M. Nakasone, USA, sworn in as Commander, USCYBERCOM, and Director, NSA/Chief, CSS, 2018	**5** Battle of the Coral Sea, set up by COMINT, began, 1942	**6**	**7** The 837th Signal Security Detachment, the first U.S. SIGINTers sent to Australia, arrived, 1942
8 VE Day, end of war in Europe, 1945 Lieutenant General William Odom, USA, became DIRNSA, 1985	**9**	**10** Elizebeth Friedman appointed as cryptanalyst in the Bureau of Prohibition, 1927 U.S. Senate established information security as U.S. government responsibility, 1933	**11** Colony 7 complex, site of the National Cryptologic Museum, acquired for NSA, 1990	**12**	**13** First Japanese linguist, John Hurt, hired by SIS,1930 Army Security Agency began its service in South Vietnam with the arrival of the Third Radio Research Unit at Tan Son Nhut Air Base in Saigon, 1961	**14** Center for Computer Assistive Technology opened, 1992
15 National Bureau of Standards (in cooperation with NSA) began solicitation for a government-wide data encryption standard, which was adopted 3½ years later, 1973	**16** WAAC (Women's Army Auxiliary Corps) established, 1942 Captain Laurance Safford, USN, father of U.S. naval cryptology, died, 1973	**17** System Development Corp. in Santa Monica, CA, convened private, academic, and DoD experts to discuss problems in computer security, 1965 Electronic Security Command took over USAF COMSEC mission, 1985	**18** The term "Signals Intelligence" (SIGINT) is formally defined by the National Signals Intelligence Committee (SIGCOM) as a combination of COMINT and ELINT, 1962	**19** U.S. State Department approved creation of Cipher Bureau ("Black Chamber"), 1919	**20** Armed Forces Security Agency (AFSA) created, 1949 Sergeant Trista L. Moretti Complex at NSA Texas dedicated, 2011	**21** William Friedman and Elizebeth Smith married, 1917 U.S. Cyber Command established at Ft. Meade, with DIRNSA dual-hatted as its commander, 2010
22 Death of Friedrich W. Kasiski; developed solution for polyalphabetic ciphers, 1881 Vice Admiral J. Michael McConnell, USN, became DIRNSA, 1992	**23** The NSC requested implementation plan for Washington Protected Communications Zone and Executive Secure Voice Network in response to the Soviet intercept threat, 1975	**24** "What hath God wrought," first telegraph message, sent from Baltimore to Washington, 1844	**25**	**26** Prime Minister Baldwin revealed in Parliament that the British government had intercepted and decrypted Soviet telegrams proving Soviet espionage conducted by the All-Russian Co-operative Society (ARCOS), 1927	**27**	**28**
29	**30** *Memorial Day* SecDef delegated authority to the DIRNSA to accept gifts of documents, records, and equipment for research, display, or museum purposes, 1980	**31** Rum-running trial against Consolidated Exporters Corp. began with Elizebeth Friedman's cryptanalysis of company's encoded messages, 1933	*Asian American/Pacific Islander Heritage Month*			

Arlington Hall provided training in many cryptologic disciplines for personnel destined for deployment. This included, as shown here, intercept operators who would staff the many signals collection units near combat zones around the world. There were no tape recorders then; thus, operators had to be proficient in typing at high speeds exactly what they heard. *NSA Archives, HIST-011-002*

JUNE 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Lesbian, Gay, Bisexual, & Transgender Pride Month			**1** Jargon code message announcing impending D-Day invasion intercepted and recognized by the German 15th Army but ignored at higher headquarters, 1944 — Lieutenant General Marshall Carter, USA, became DIRNSA, 1965	**2** Travis Trophy presented to the United States, 1948 — NSA's Marine Guards awarded the Meritorious Unit Citation, 1970 — Judith A. Burgin Building dedicated, 1984	**3**	**4** Battle of Midway began, 1942 — U-505, with trove of German cryptographic material and devices intact, became first enemy warship, since the War of 1812, to be captured by a U.S. Navy boarding party, 1944 — President George W. Bush's first visit (of four) to NSA, 2002
5 Brigadier General Marlborough Churchill, USA, became Chief, Military Intelligence Division, 1918 — USAF aerial reconnaissance RC-135 lost, Bering Sea, 1969	**6** D-Day, 1944 — Six-Day War began in the Middle East, 1967	**7** Death of Alan Turing, famed British mathematician and cryptologist, 1954 — Major General Joseph Mauborgne, USA, World War I Army Signal Corps Officer, WWII Chief Signal Officer, and an expert on codes and ciphers, died, 1991	**8** The USS *Liberty*, a Navy/NSA SIGINT collection ship, attacked by Israeli forces during the Six-Day War, 1967	**9** Canada established its cryptologic bureau "Examination Unit," 1941 — ELIGIBLE RECEIVER exercise shows DoD's vulnerability to cyber attacks, 1997	**10** Establishment of U.S. Army Code and Cipher Section, MI-8, 1917	**11** Herbert O. Yardley hired by Canada's National Research Council, 1941
12 Radio Intelligence Service of 1st Army, AEF, formed at Toul, France, 1918	**13** Publication of Brownell Committee Report; laid foundation for establishment of NSA, 1952	**14** Signal Intelligence Service took possession of Arlington Hall, 1942 — NRO established, 1962 — NSA Family Day, 1975	**15**	**16**	**17** Systems Development Corporation (SDC) hosted conference of private and government experts on computer security, 1965	**18**
19 *Juneteenth National Independence Day* — Communications Act of 1934 signed by President Franklin D. Roosevelt, 1934 — USSR and U.S. agreed on hotline between Moscow and Washington, 1963	**20**	**21** Publication of first of several installments of the influential cryptologic story "The Gold Bug" by Edgar Allan Poe, 1843	**22** GRAB, first SIGINT reconnaissance satellite, launched, 1960	**23** Diffie and Hellman present their idea for public-key exchange encryption at a conference in Sweden, 1976 — John J. Whitelaw Building dedicated at NSA Georgia, 2010	**24** The "Potomac Code," first of the AEF "River" series of field codes, issued, 1918	**25** Letters written by Hernán Cortés while in Mexico are first known use of cryptography in New World, 1532 — New NSA Headquarters building dedicated, 1966
26	**27** Albert J. Myer, developer of flag signaling system code, appointed signal officer with rank of major, 1860	**28** USS *Liberty* decommissioned, 1968 — Commissioning of Coast Guard Cryptologic Group at NSA Fort Meade, 2007	**29** Allies realized the U.S. diplomatic code had been broken by the Germans, 1942 — Frank Rowlett, American cryptologic pioneer, died, 1998	**30** Two Rock Ranch, one of the West Coast monitoring stations during World War II, closed, 1971		

Most army and navy personnel enjoyed sports. For individuals, golf, tennis, and bowling were quite popular. The posts also vigorously fielded teams in baseball, softball, and basketball, often playing other military teams from their district. *NSA Archives, HIST-210-001 and HIST-017-001*

JULY 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 At Elizabeth Friedman's urging, U.S. Coast Guard established a cryptanalytic section, 1931 USAF activated Air Force Cryptologic Office at Ft. Meade, 1994 CIA public ceremony for VENONA declassification, 1995	**2**
3 Cryptographic Security Board established, 1945	**4** *Independence Day*	**5** General Order 8 issued by AEF in France, establishing headquarters organization that included a cryptographic and cryptanalytic branch, 1917 Vice Admiral Bobby Ray Inman, USN, became DIRNSA, 1977	**6**	**7**	**8** Arthur Scherbius received a patent for a cipher machine, now known as the ENIGMA, 1918 Arlington Hall Station made an official military intelligence post, 1942	**9** First official public acknowledgment of NSA, 1957 The renovated, state-of-the-art Friedman Conference Center reopened, 2018
10 NSA Civilian Welfare Fund established at NSA Fort Meade, 1956	**11** First U.S. patent granted for a cipher device to Edward Hawley, for multiple alphabetic device, 1865 Signal Corps began first communications security monitoring in France, 1918	**12** Lieutenant William Friedman reported to AEF G2A6, Chaumont, France, 1918	**13** National Cryptologic Museum opened to NSA/CSS personnel, 1993 Washington Wong Building at NSA Hawaii dedicated, 2016	**14** NSA/CSS Cryptologic Archival program and position of NSA/CSS Archivist formally established by DIRNSA Inman, 1978	**15** AFSA formally activated; RADM Earl E. Stone, USN, first Director, 1949 MG Ralph J. Canine, USA, named director, AFSA, 1951 House of Representatives established Permanent Select Committee on Intelligence, 1977	**16** First WAAC personnel arrived at Arlington Hall Station, 1943
17 Mary, Queen of Scots, sent treasonous enciphered response to the Babington letter, 1586 American cryptologic pioneers Parker Hitt and Genevieve Young married, 1911	**18** First current TUNNY traffic read at Bletchley Park, 1942	**19** Army Signal Corps conference about establishing the Signal Intelligence Service, 1929	**20** Captain Joseph Rochefort, USN, a major figure in Navy cryptology in World War II, died, 1976	**21** CRITIC reporting program initiated, 1958	**22** Aaron Burr's "cipher letter" to General Wilkinson intercepted, leading to charges of treason against Burr, 1806 Patent issued to Gilbert Vernam for concept of machine encipherment, 1919	**23** The GUNMAN Project discovered implants hidden in typewriters used in the U.S. embassy in Moscow, 1984
24 / **31** The "Wabash" field code issued, 1918 Agnes Meyer Driscoll discharged from U.S. Navy, 1919; retired from NSA, 1959	**25** Meeting at Pyry, outside Warsaw, where Poland shared its successes against the ENIGMA with Britain and France, 1939	**26** National Security Act passed, 1947 U.S. Congress opens hearings on computer threats to privacy and the need for data encryption, 1966	**27** Office of Management and Budget Circular A-71, "Security of Federal Automated Information Systems," directed federal agencies to create computer security programs, 1978	**28** First use of transatlantic telegraph cable, generating upsurge in commercial cryptography, 1866 U.S. Navy Code & Signal Section established, 1916	**29** William Friedman received a patent for a device to transmit telegraphic messages quickly, the first of his eventual 30 patents, 1924 The Soviets shot down an RB-50G-2 near Vladivostok, Russia, 1953	**30** WAVES (Women Accepted for Voluntary Emergency Service) established, 1942

The AFSA, NSA's predecessor, was the original centralized cryptologic organization in the United States; it was based at Arlington Hall Station and the Naval Security Station. The central figure is Rear Admiral Earl Stone, AFSA's first director. Also shown, starting from the left, are an unidentified woman; Rear Admiral Joseph Wenger, AFSA vice director; Brigadier John Tiltman, the British liaison officer; Stone; an unidentified man; Captain John Harper, director of Production; an unidentified man; and Paul Neff, a senior civilian in communications security (far right). *NSA Archives, HIST-139-007*

AUGUST 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 Louis Tordella became D/DIR, 1958 New DIRNSAs: VADM Noel Gayler, USN, 1969 Lt. Gen. Sam Phillips, USAF, 1972 VADM William Studeman, USN, 1988 LTG Keith Alexander, USA, 2005	**2** Australian Coastwatchers sent coded message noting sinking of John F. Kennedy's PT-109, 1943 Iraq invaded Kuwait, 1990	**3** The "Mohawk" field code issued, 1918	**4** Prototype U-2 made its first test flight, 1955	**5** Representatives of U.S., UK, and USSR signed Limited Nuclear Test Ban Treaty, 1963 American cryptologic pioneer Solomon Kullback died, 1994	**6** The United States dropped atomic bomb on Hiroshima, 1945 World Wide Web was launched, 1991
7 American cryptologic pioneer Herbert O. Yardley died, 1958	**8** First public appearance of DIRNSA before Congress. Lieutenant General Lew Allen testified before the House's Pike Committee, 1975 The nation of Georgia suffered massive cyber attacks in conjunction with its border dispute with Russia, 2008	**9** The United States dropped atomic bomb on Nagasaki, 1945	**10** SecDef set the terms of reference for the Stone Board, which considered cryptologic reorganization after World War II, 1948	**11** Hedy Kiesler Markey (better known as actress Hedy Lamarr) and George Antheil received a patent for a secret frequency-hopping communication system, 1942	**12** The "Allegheny" field code issued, 1918 IBM introduced the IBM PC, 1981	**13**
14 Spy Velvalee Dickinson sentenced to ten years for providing intelligence to Japan via "Doll Code" steganography in messages, 1944 President Reagan declared this day Navajo Codetalkers Day, 1982	**15** Japan announced its surrender to the Allies, 1945	**16** First transatlantic exchange of telegraph communications occurred with congratulatory messages between Queen Victoria and President Buchanan, 1858	**17** NSA Far East (Tokyo) established, 1953	**18** USCYBERCOM is elevated to a unified combatant command for cyberspace operations, 2017	**19**	**20**
21 "House of 4 Hats" dining facility for NSA military opened (later, House of 5 Hats), 1974	**22** Chinese fighters shot down U.S. Navy reconnaissance plane over Shengsi Islands, killing all 16 crew members, 1956	**23** NSA responded to U.S. silver shortage in the 1960s by starting the NSA Silver Recovery Program to reclaim silver from scrap and waste, 1968	**24** President Eisenhower approves the development of the GRAB satellite system, 1959	**25** First meeting of the Stone Board; led to establishment of AFSA, 1948	**26** American cryptologic pioneer Elizebeth Smith (Friedman) born, 1892 Russian Navy seized an undestroyed codebook from grounded German ship *Magdeburg;* given to the British government, 1914	**27**
28 U.S. Navy establishes collection site at Otter Cliffs, ME, 1917	**29**	**30**	**31** Key intercepts of Russian radio traffic allowed German Generals von Hindenberg and Ludendorff to encircle and crush Russian forces at Tannenberg, 1914			

Both the U.S. Navy and Army did vital communications security and cryptanalysis functions at their main cryptologic posts. Just prior to American participation in World War II, the two services developed what turned out to be the most secure cipher machine of its time, called the "SIGABA" by the army and "ECM" by the navy. Here, personnel are learning about the device. *NSA Archives, INST-007-010*

SEPTEMBER 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 The War Department Telegraph Code of 1919 was first used, 1921 First bombe shipped to Nebraska Avenue, 1943	**2** Belligerents sign Japanese surrender aboard USS *Missouri*, 1945 RC-130 shot down while on recon mission, Armenia, 1958 Vigilance Park dedicated at NSA Ft. Meade, 1997	**3**
4 First broadcast of the *Star Trek* episode "The Enterprise Incident," loosely based on the capture of the USS *Pueblo*, 1968	**5** *Labor Day* Palestinian terrorists killed 11 Israeli Olympic athletes and a German policeman in Munich, 1972	**6** Winston Churchill visited Bletchley Park, 1941	**7** Boris Hagelin, inventor of Converter M-209 cryptodevice, died, 1983	**8** A "computer bug" was first identified and named by Lieutenant Grace Murray Hopper, USN, 1947	**9** The "Electronic Disruption Theater" mounted a denial-of-service attack on the Pentagon's DefenseLink website, 1998	**10** USAFSS-crewed RB-50 lost during a typhoon, 1956 Genevieve Grotjan discovered the secret to unraveling the Japanese PURPLE machine, 1940.
11 al-Qaida attack on the Pentagon and World Trade Center, 2001 President Obama visited NSA and USCYBERCOM, 2015	**12** U.S. offensive on the St. Mihiel salient, France, begins, 1918 Elizebeth Friedman departed the Coast Guard, 1946	**13**	**14**	**15** The Signal Security Agency reorganized as the Army Security Agency, 1945	**16** First U.S. Intelligence Board meeting at NSA Fort Meade, 1966 American cryptologic pioneer Agnes Meyer Driscoll died, 1971	**17** President Reagan's National Security Decision Directive-145 briefly gave NSA a role in securing data on federal computer systems, 1984
18 USAF Security Group established, 1947	**19** Joseph Ream hired as first civilian deputy director of NSA, 1956	**20** Rivest, Shamir, and Adleman received a patent for the encryption algorithm RSA, 1983	**21** First NSA open house at Ft. Meade, 1957	**22**	**23** British Major John Andre captured with treasonous ciphered letter from Benedict Arnold, 1780	**24** American cryptologic pioneer, William Friedman born, Kishinev, Russia (now Chisinau, Moldova), 1891 The "Colorado" field code issued, 1918
25	**26** Hubert H. Humphrey visited NSA; first vice-presidential visit, 1967 President Reagan dedicated Operations Buildings 2A and 2B; first presidential visit to NSA, 1986	**27** SIS issued first two translations based on the first solution of the Japanese PURPLE machine, 1940.	**28** Department of Defense and Intelligence Community closed the Information Operations Technology Center (IOTC), 2004	**29** USMC turned over responsibility for guarding NSA Fort Meade to Federal Protective Service, 1978	**30** Edward Hebern received a patent for an electric coding machine, the first U.S. cipher machine to use a rotor, 1924 Lieutenant Colonel Frank Moorman, USA, chief of G2A6 during World War I, died, 1953	

National Hispanic Heritage Month
September 15 – October 15

Cryptologic successes could not happen or be sustained without a large workforce of skilled tradespeople and first responders supporting critical functions, such as the post engineer (the above building), food service, garbage removal, construction, plumbing, and firefighting. *NSA Archives, SC-017-001*

OCTOBER 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	National Disability Employment Awareness Month					**1** The American "Black Chamber" began operations, 1919 AFSA assumed operational control of cryptologic activities, 1949
2 Signing of Holden Agreement regarding U.S.-UK naval COMINT responsibilities, 1942	**3** U.S. Army and Navy agreed to "odd/even" day division of effort on Japanese diplomatic cipher, 1940	**4**	**5** U.S. Army transferred Cryptographic Division School from Ft. Monmouth to Vint Hill Farms, VA, 1942	**6** Yom Kippur war in Middle East began, 1973	**7** USAF aerial reconnaissance RB-29 shot down by Soviet fighters over Sea of Japan, 1952 Operation ENDURING FREEDOM began, 2001	**8**
9 The FBI arrested Joseph Petersen, "NSA's first spy," at his home, 1954	**10** *Columbus Day*	**11** Researchers use 400 linked computers to factor a 100-digit number, 1988	**12** William Friedman awarded National Security Medal by Director of Central Intelligence Allen Dulles, 1955	**13**	**14** DIRNSA Hayden conducted first NSA "Seniors' Day" meeting, 2000	**15** World War I trench code "Huron" issued, 1918 School at Vint Hill Farms renamed ASA School, 1946 Pendergrass report on use of computers in cryptology, 1946
16 President George W. Bush's Executive Order 13231 creates the Committee on National Security Systems with NSA as a member, 2001	**17** First commercial transatlantic wireless service began, 1907	**18** Howard Engstrom appointed D/DIR, 1957	**19** Charles Wheatstone, inventor of the Playfair cipher, died, 1875 Robert Lamphere, FBI, began collaboration with Meredith Gardner on VENONA-related material, 1948	**20** USAFSS established, 1948 NSC Directive 168 designates DoD as executive agent for all government COMSEC matters (DoD further delegates this duty to NSA), 1953 President's Foreign Intelligence Advisory Board reestablished, 1981	**21** President Kennedy ordered naval quarantine of Cuba after intelligence discovered offensive missile sites on island, 1962	**22** USAFSS deployed Emergency Reaction Unit to Key West, FL, for Cuban Missile Crisis, 1962
23 Terrorists destroyed the Marine compound in Beirut, killing 254, 1983 **30** Center for Cryptologic History published *The Friedman Legacy,* containing transcripts of the famed "Friedman Lectures," 1992	**24** Influential Killian report on defense and intelligence submitted to President Eisenhower, 1957 **31** Elizebeth Friedman died, 1980	**25**	**26** First combat employment of Native American codetalkers, 1918 National Cryptologic Museum recognized Dr. David Kahn for contributing his collection to the museum library, 2010	**27** Senator Daniel Patrick Moynihan introduced bill that would create the Public Interest Declassification Board, 1999	**28** President Lincoln approved establishment of Military Telegraph Department, 1861 Lambros Callimahos, noted NSA cryptanalyst and teacher, died, 1977	**29** First U.S. intercept in France in World War I, 1917 First message sent on DoD-funded ARPANET, forerunner of modern Internet, 1969

Before World War II, the army and navy cryptologic services had been quite small. When war came, they rapidly expanded, reaching about 10,000 people each by the end of the war. Women comprised a clear majority of both workforces, some in uniform and some in civilian status. With this rapid expansion, offices at Arlington Hall and Nebraska Avenue were crowded. *NSA Archives, HIST-012-001*

From Gridlock to the Gridiron

NOVEMBER 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 Britain's GC&CS established, 1919 COMINT station established on Guadalcanal, 1942 First *NSA Newsletter*, 1953 National Cryptologic School becomes operational; first commandant is Frank Rowlett, 1965	**2** William Friedman died, 1969	**3**	**4** NSA established; Lieutenant General Ralph J. Canine, USA, became first DIRNSA, 1952	**5** The Android mobile operating system debuts, 2007
6 The "Seneca" field code released, 1918 Captain Joseph Wenger, USN, became head of OP-20-G, 1944	**7**	**8**	**9** Lieutenant General Ralph J. Canine, USA, first DIRNSA, born, 1895 Center for Cryptologic History established, 1989	**10** First NSA Field Chiefs Conference, 1975 NSA designated a Combat Support Agency, 1988 DIRGRAM 00 began the "100 Days of Change," 1999	**11** *Veterans Day* Armistice signed ending World War I, 1918 First fixed U.S. field station at Houlton, ME, began operation, 1918	**12** AEF Radio Intelligence Section opened intercept site at Souilly, France, 1917
13 First World Wide Web page written, 1990	**14**	**15** President Clinton's Executive Order 13026 eased exports of encryption products, 1996	**16** Herbert O. Yardley hired as State Department code clerk, 1912	**17**	**18**	**19**
20 Attempt to rescue POWs from Son Tay, North Vietnam; tactical SIGINT was superb, but the POWs were moved before the raid, 1970	**21** First permanent ARPANET link established, 1969	**22** Herbert O. Yardley fired by Canada's National Research Council, 1941	**23** The Data Encryption Standard approved as federal standard for all unclassified government communications, 1976 Lieutenant General John Samford, USAF, officially opened the OPS 1 building, 1957	**24** *Thanksgiving Day* Lieutenant General John Samford, USAF, became DIRNSA, 1956 Vice Admiral Laurence Frost, USN, became DIRNSA, 1960	**25** Ronald Pelton, former NSA analyst, arrested for spying for Soviets, 1986	**26** OPS 3 (now the Frank B. Rowlett Building) dedicated, 1968
27 SSDD (Signal Security Detachment D) was re-established as Army Security Agency, Europe (ASAE) at Rüsselsheim, West Germany, becoming the parent organization for other ASA units in Europe, 1945	**28**	**29**	**30** Charles Chibitty of the Comanche Nation received Knowlton Award for codetalking contributions during World War II, 1999	*National American Indian Heritage Month*		

The AFSA, as America's first centralized cryptologic organization, helped the Service Cryptologic Components work together. Each component previously had operated in near isolation, and each had developed different procedures and vocabulary for many of the same functions. Symbolic of the new joint operations were joint sports teams. Here, Rear Admiral Joseph Wenger, AFSA vice director, is hosting a football team on which the U.S. Army, Navy, and Air Force are represented. *NSA Archives, A-118-01*

DECEMBER 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 Polish Cipher Bureau first solved ENIGMA message, 1932 JN-25B code was introduced by the Japanese Navy, 1940 ATLAS operational, first U.S. cryptologic computer, 1950	**2** Washington Post columnist Jack Anderson compromises sensitive NSA program, 1980	**3** First "Muzak" in NSA spaces, 1964
4 Executive Order 12333 issued on intelligence community roles and activities, 1981	**5**	**6** Pre-employment polygraph became mandatory at NSA, 1952	**7** Japanese attacked Pearl Harbor in Hawaii, 1941	**8** SecDef announced that the Global Positioning System (commonly known as GPS) was complete; accurate to 100 meters, 1993	**9** The Sperry Rand Corp. unveiled the Univac 1107, the first electronic computer to use thin-film memory, 1960	**10** Official end of Spanish-American War, 1898
11 Germany and Italy declared war on the United States, 1941	**12** Panay Incident; U.S. Army decrypts of Japanese RED code shaped U.S. response to incident, 1937	**13** USAF launched the POPPY 1 satellite into orbit, 1962	**14** First NSA holiday party, 1958 Three MIT researchers filed for a patent for what came to be known as the RSA public-key encryption algorithm, 1977	**15** Death of Johannes Trithemius, author of first book on cryptography published in Europe, 1516 NSA Georgia fully operational, 1995	**16** NSOC inaugurated in 1972; the official ribbon cutting ceremony was held in February 1973	**17** Guglielmo Marconi proved radio messages could cross the Atlantic, 1902 National Cryptologic Museum opened to the public, 1993
18 DoD Directive 5200.28, "Security Requirements for ADP Systems," established the first computer security regime for DoD, 1972	**19** Robert Patterson's coded challenge message that was included in an 1801 letter to Thomas Jefferson was decrypted by Dr. Lawren Smithline, mathematician at CCR-Princeton; the key to the decrypt turned out to be the Declaration of Independence, 2007	**20** Meredith Gardner solved KGB message containing list of scientists working on Manhattan Project, an important development in the VENONA project, 1946	**21** Terrorists sponsored by Libya blew up Pan Am flight 103 over Lockerbie, Scotland, 1988	**22** Specialist James Davis, USA, became first American cryptologist killed in Vietnam, 1961 Astronauts aboard NASA's Apollo 8 spacecraft transmitted the first live telecast from outer space, 1968	**23** USS *Pueblo* crew released by North Korea, 1968	**24**
25 *Christmas Day* Arlington Hall Station Civilian Welfare Fund began serving AFSA members, 1949	**26**	**27** Stone Board report on centralizing U.S. cryptologic organizations issued, 1948	**28** Brownell Committee established, which led to the creation of NSA, 1951	**29**	**30**	**31** William Friedman became the first civilian cryptanalyst with the Office of the Chief Signal Officer, 1921

During World War II and after, the military services engaged in volunteer work and charitable giving to benefit the communities around them. A Christmastime gift collection for the less fortunate, organized at Arlington Hall in 1950, is shown here. *NSA Archives, HIST-142-01*

ABOVE: One shift of the officers and enlisted personnel who worked at the U.S. Navy station on Nebraska Avenue. In the center is Captain Joseph Rochefort, who had led the team in Hawaii that succeeded in solving a mainline Japanese Navy code prior to the Battle of Midway. *CCH Photo Collection*