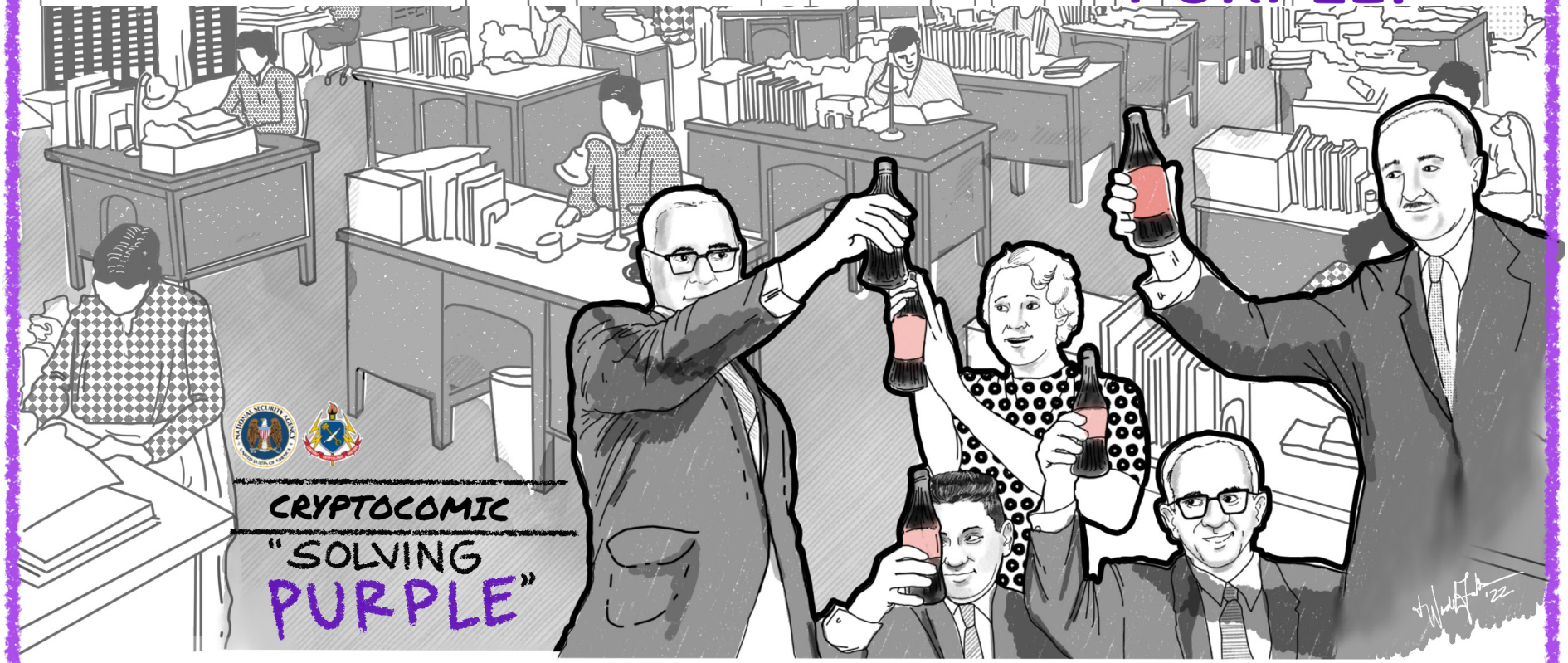
IN 1940, AFTER MONTHS OF EFFORT, A TEAM OF US ARMY CRYPTANALYSTS, LED BY FRANK ROWLETT, WITH SPECIAL INPUT FROM MATHEMATICIAN GENEVIEVE GROTJAN, SOLVED A COMPLEX CIPHER USED BY JAPAN'S FOREIGN MINISTRY. THE AMERICANS GAVE IT THE DESIGNATION "PURPLE."



THE CRYPTANALYSTS KNEW THE IMPORTANCE OF THEIR MISSION. THEY TOOK ONLY A FEW MINUTES' BREAK TO CELEBRATE: THEY TOASTED SUCCESS WITH A COLA, THEN WENT BACK TO WORK. SOLVING PURPLE WAS VITAL FOR AMERICAN AND BRITISH DECISION MAKERS BEFORE AND AFTER WORLD WAR II.

CCH

THE CENTER FOR CRYPTOLOGIC HISTORY CALENDAR

2024

Front Cover:

In this CryptoComic set during World War II, American cryptanalysts celebrate their successful efforts to solve the Japanese machine-generated cipher system known as Purple. (This system was used to protect Japanese diplomatic communications worldwide.) Their work was vital to US national security; therefore, they only spent a few moments celebrating and then got back to work.

From left to right: Frank Rowlett, Solomon Kullback, Genevieve Grotjan, Abraham Sinkov, and William Friedman

Back Cover:

Baltimore-based legend Edgar Allan Poe was a talented amateur cryptologist; as editor of a popular magazine, he published articles about cryptologic theory and famous instances of codebreaking. He challenged readers to send him cryptograms they thought he could not solve and he showed a remarkable success rate—somewhat fudged because, as editor, Poe only printed the submissions he did solve. Above all, his exciting short story, "The Gold-Bug," inspired countless people to take up cryptology as a hobby and many others who have made cryptology their profession.

Foreword

Since its standup in 1989, the Center for Cryptologic History (CCH) has not only focused on preserving American cryptologic history and the history of the National Security Agency (NSA), but also has pursued disseminating that history to agency employees and the general public in new and memorable formats.

In 2019, CCH developed the idea of CryptoComics—a uniquely effective way of telling cryptologic history stories that appeals to a wide range of readers. CryptoComics also allowed CCH historians to help create visual representations of people and events for which CCH had no photographs or other graphic materials.

The first publication of a CryptoComic proved to be exceedingly popular with the NSA workforce. CCH now presents them to the wider public.

CCH's 2024 cryptologic calendar is a celebration of this successful new resource for outreach. We hope the calendar will encourage you to read the entire CryptoComics collection, which is available on the NSA website at:

https://www.nsa.gov/History/Cryptologic-History/Historical-Publications/#cryptocomics

BENEATH THE SURFACE

EARLY IN WORLD WAR II, ONE OF THE MOST POWERFUL WEAPONS NAZI GERMANY HAD WAS A LARGE FLEET OF SUBMARINES, KNOWN AS U-BOATS (IN GERMAN: Unterseeboot.)

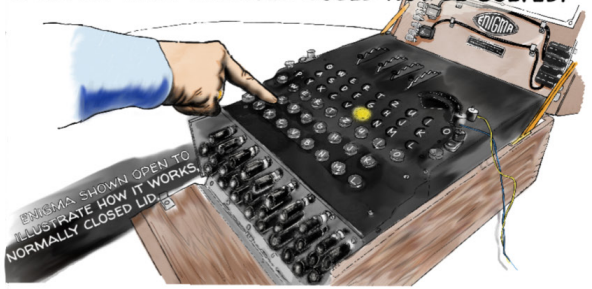
U-BOATS PREYED ON CONVOYS IN THE ATLANTIC CARRYING VITAL SUPPLIES FROM THE U.S. TO GREAT BRITAIN. SHIP LOSSES THREATENED BRITAIN'S EXISTENCE.

GERMAN U-BOATS WERE SO SUCCESSFUL THEIR CREWS CALLED THIS PERIOD EARLY IN THE WAR "THE HAPPY TIME."

U-BOATS WERE SO BOLD THEY SANK SHIPS JUST OUTSIDE U.S. HARBORS, IN SIGHT OF THE PEOPLE WHO HAD LOADED THEM.

SOMETHING HAD TO BE DONE.

U-BOATS GOT THEIR ORDERS BY ENCRYPTED RADIO MESSAGES FROM THEIR HEADQUARTERS. THE MESSAGES WERE PROTECTED BY THE ENIGMA, A HIGH-GRADE CIPHER MACHINE THAT TURNED PLAINTEXT INTO GOBBLEDEGOOK FOR TRANSMISSION, AND THEN BACK INTO PLAINTEXT ON THE SUB. THE ENIGMA WAS A VERY COMPLEX MACHINE TO BEGIN WITH, AND GERMAN SUBS USED A SPECIAL VARIANT THEY BELIEVED COULD NOT BE SOLVED.

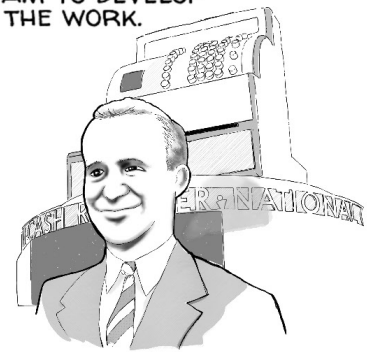


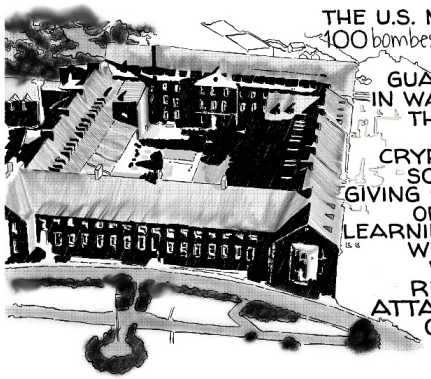
BRITISH CRYPTANALYSTS AT THEIR HEADQUARTERS, BLETCHLEY PARK, NORTH OF LONDON, WITH EFFORT FINALLY SOLVED THE GERMAN NAVY ENIGMA.

THE SOLUTIONS TOOK TIME, BUT THE BRITISH DEVELOPED A MACHINE CALLED A BOMBE THAT SPEEDED THE PROCESS UP.

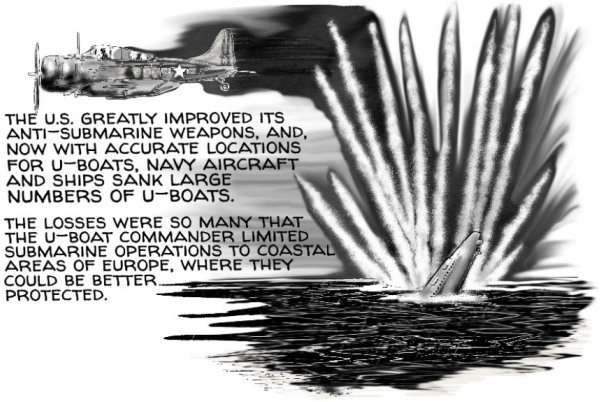
THEY ALSO SHARED THE METHOD OF SOLVING THE ENIGMA WITH CRYPTANALYSTS FROM THE UNITED STATES.

THE U.S. NAVY CONTRACTED WITH THE NATIONAL CASH REGISTER IN DAYTON, OH, TO DESIGN AND BUILD AN IMPROVED VERSION OF THE BOMBE. ENGINEER JOSEPH DESCH ASSEMBLED A TEAM TO DEVELOP BLUEPRINTS FOR THE WORK.





THE U.S. NAVY PUT OVER 100 bombes IN OPERATION IN A SPECIALLY GUARDED BUILDING IN WASHINGTON, D.C. THESE MACHINES ENABLED NAVY CRYPTANALYSTS TO SOLVE MESSAGES GIVING U-BOATS THEIR ORDERS--OFTEN LEARNING IN ADVANCE WHERE U-BOATS WERE TOLD TO RENDEZVOUS TO ATTACK A BRITISH OR AMERICAN CONVOY.



THE U.S. GREATLY IMPROVED ITS ANTI-SUBMARINE WEAPONS, AND, NOW WITH ACCURATE LOCATIONS FOR U-BOATS, NAVY AIRCRAFT AND SHIPS SANK LARGE NUMBERS OF U-BOATS.

THE LOSSES WERE SO MANY THAT THE U-BOAT COMMANDER LIMITED SUBMARINE OPERATIONS TO COASTAL AREAS OF EUROPE, WHERE THEY COULD BE BETTER PROTECTED.

THIS WAS THE TIME WHEN THE U.S. BEGAN SENDING HUNDREDS OF THOUSANDS OF SOLDIERS AND TONS OF SUPPLIES TO EUROPE TO HELP LIBERATE IT FROM NAZI TYRANNY.

VICTORY AGAINST THE ENIGMA AND THEN THE U-BOATS HELPED THE AMERICAN NAVY AND COAST GUARD DO IT MORE SAFELY, AND, THEREFORE, FASTER.

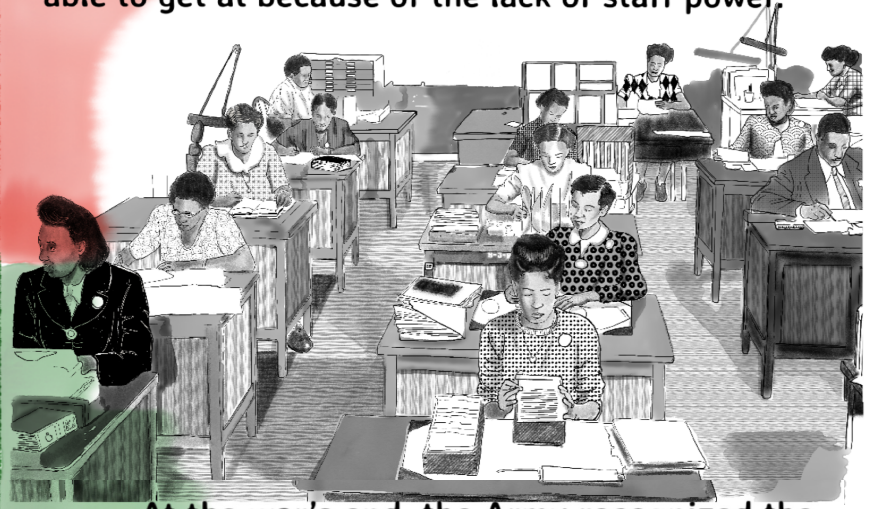
JANUARY

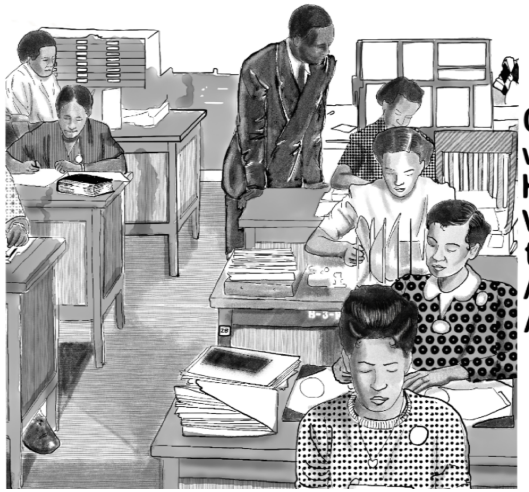
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 U.S. Army Intelligence and Security Command (INSCOM) established, 1977 ***New Year's Day***	**2** NSA Office of Policy first mandated use of term "Service Cryptologic Element," 1980	**3** NARA assigned Record Group 457 (now "Records of the National 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. intercepted cable from Napoleon III of France to Mexico revealing French position on status of Emperor Maximilian in Mexico; contributed to lessening of US-French tensions over Mexico, 1866	**11**	**12**	**13** First *History Today* article appeared on NSA Daily, 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** ***Martin Luther King, Jr., Day, Observed***	**16** General Order No. 9 authorized publication of a new War Department Telegraphic Code, 1898 Operation DESERT STORM began, 1991	**17**	**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** Navy EA-3B recon aircraft crashed, Mediterranean Sea, 1987	**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			

Early in World War II, one of Nazi Germany's most powerful military forces was its large submarine fleet. It threatened to starve Great Britain into surrender and was a strong barrier that could prevent the United States from sending troops, weapons, and supplies to help liberate Europe from Nazi domination. But British and American cryptanalysts developed a secret method to locate the enemy submarines and then destroy them.

First African American Cryptologists

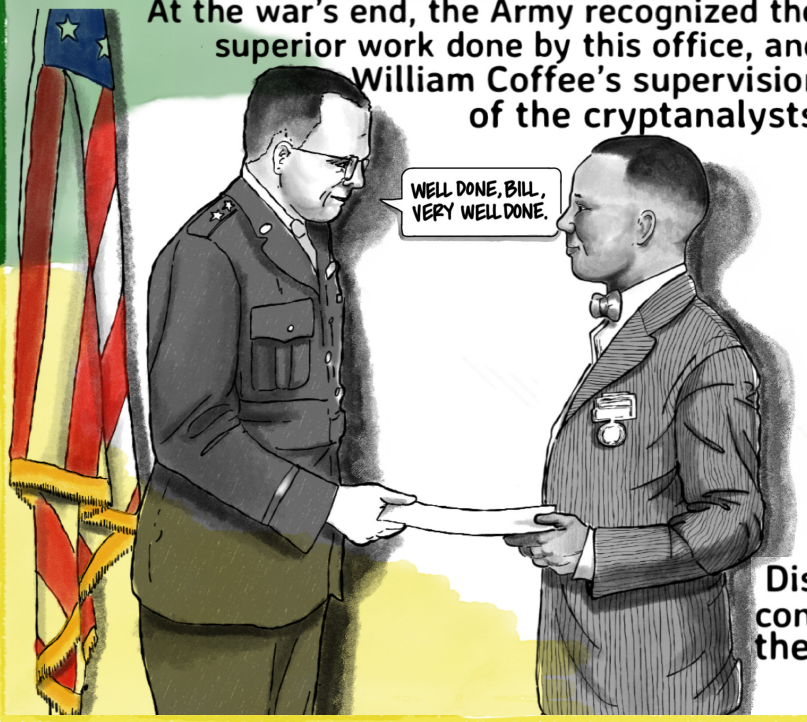
Many African Americans were hired and assigned to do cryptanalysis against systems the Army had not been able to get at because of the lack of staff power.





On paper, a white officer was chief of this office. However, in actual practice, William Coffee supervised the work of the all African American office at Arlington Hall Station.

At the war's end, the Army recognized the superior work done by this office, and William Coffee's supervision of the cryptanalysts.



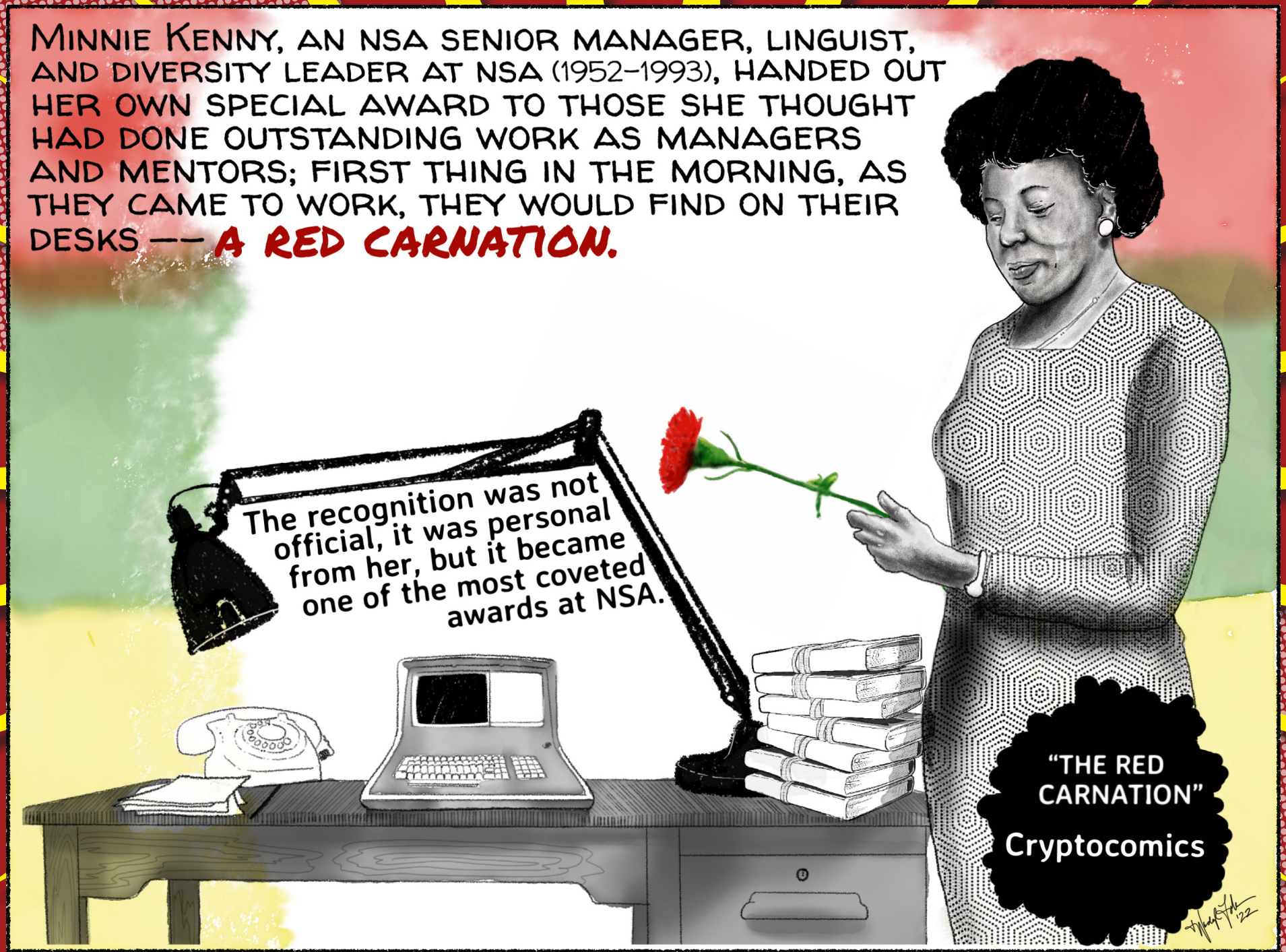
Discrimination against minorities in the cryptologic organizations continued long after the war. At NSA, William Coffee continued as the Agency's conscience, and, with many colleagues, struggled for equal opportunities for all Americans.

FEBRUARY

AFRICAN AMERICAN/BLACK HISTORY MONTH

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 Joseph Ream hired as first civilian deputy director of NSA, 1957	**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 visited Bletchley Park, beginning 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** ***Washington's Birthday, Observed***	**20** U.S. government seized 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** 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., 1927 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	**29**		

Even as the United States fought tyranny and injustice overseas in World War II, American society, including American military forces, was racially segregated. In the midst of the injustice, the U.S. Army's cryptologic organization was ordered to hire African Americans for "meaningful work." Read the full CryptoComic ("First African American Cryptologists") on nsa.gov.


MINNIE KENNY, AN NSA SENIOR MANAGER, LINGUIST, AND DIVERSITY LEADER AT NSA (1952–1993), HANDED OUT HER OWN SPECIAL AWARD TO THOSE SHE THOUGHT HAD DONE OUTSTANDING WORK AS MANAGERS AND MENTORS; FIRST THING IN THE MORNING, AS THEY CAME TO WORK, THEY WOULD FIND ON THEIR DESKS — A RED CARNATION.
The recognition was not official, it was personal from her, but it became one of the most coveted awards at NSA.
"THE RED CARNATION"
Cryptocomics

MARCH

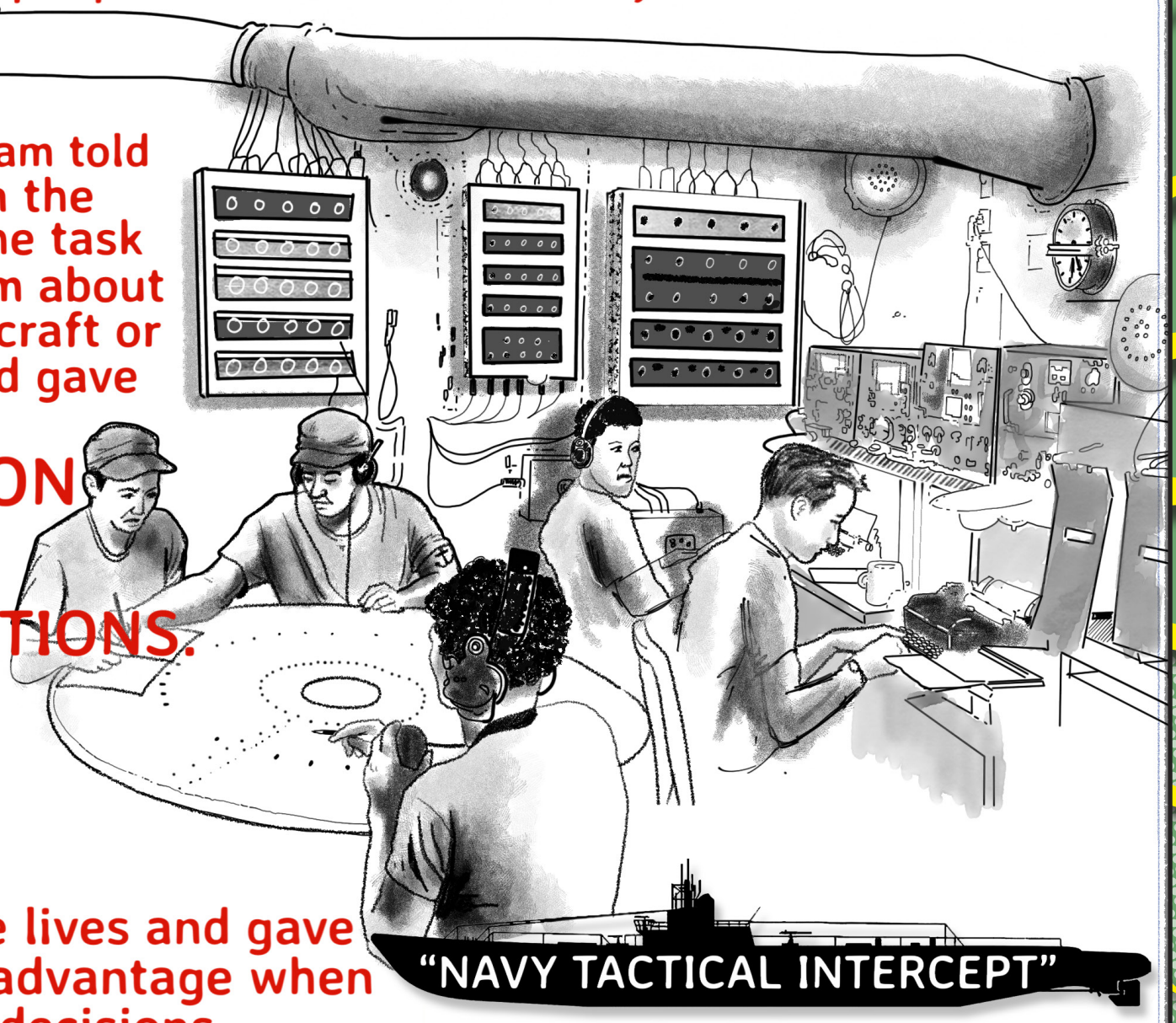
NATIONAL WOMEN'S HISTORY MONTH

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 German ADFGVX cipher first used, 1918 First hire at SIS, Annie Louise Newkirk, cryptographic clerk, began work, 1930 U.S. Army aerial reconnaissance UH-1 lost, Vietnam, 1971	**2** Cryptologic pioneer Colonel Parker Hitt, USA, died, 1971
3	**4** U.S. Army aerial reconnaissance RU-8 shot down, Vietnam, 1971 STONEHOUSE site in Ethiopia officially closed, 1975 William Friedman testified before a Senate committee investigating the Teapot Dome scandal, 1924	**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**	**7** Realignment of 509th Radio Research Group ended 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 lost, 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 algorithm for a data encryption standard 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 **31** Geoffrey Stone, member of Presidential Review Group that was created in the wake of the Snowden leaks, spoke at NSA, 2014	**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

Over the decades, NSA has employed many remarkable individuals, but very few had more effect than Minnie Kenny. As a language expert and mentor to other linguists, she helped protect American national security. As an activist on diversity issues, she changed NSA's work culture for the better. Read the full CryptoComic ("The Red Carnation") on nsa.gov.

During World War II, every US Navy task force on a combat mission took with it a team of intercept operators to listen to enemy radio communications.

The interceptor team told the admiral when the enemy spotted the task force, warned him about enemy attack aircraft or ships coming, and gave him any other **INFORMATION** on the enemy available in **COMMUNICATIONS.**



This helped save lives and gave the admiral an advantage when making combat decisions.

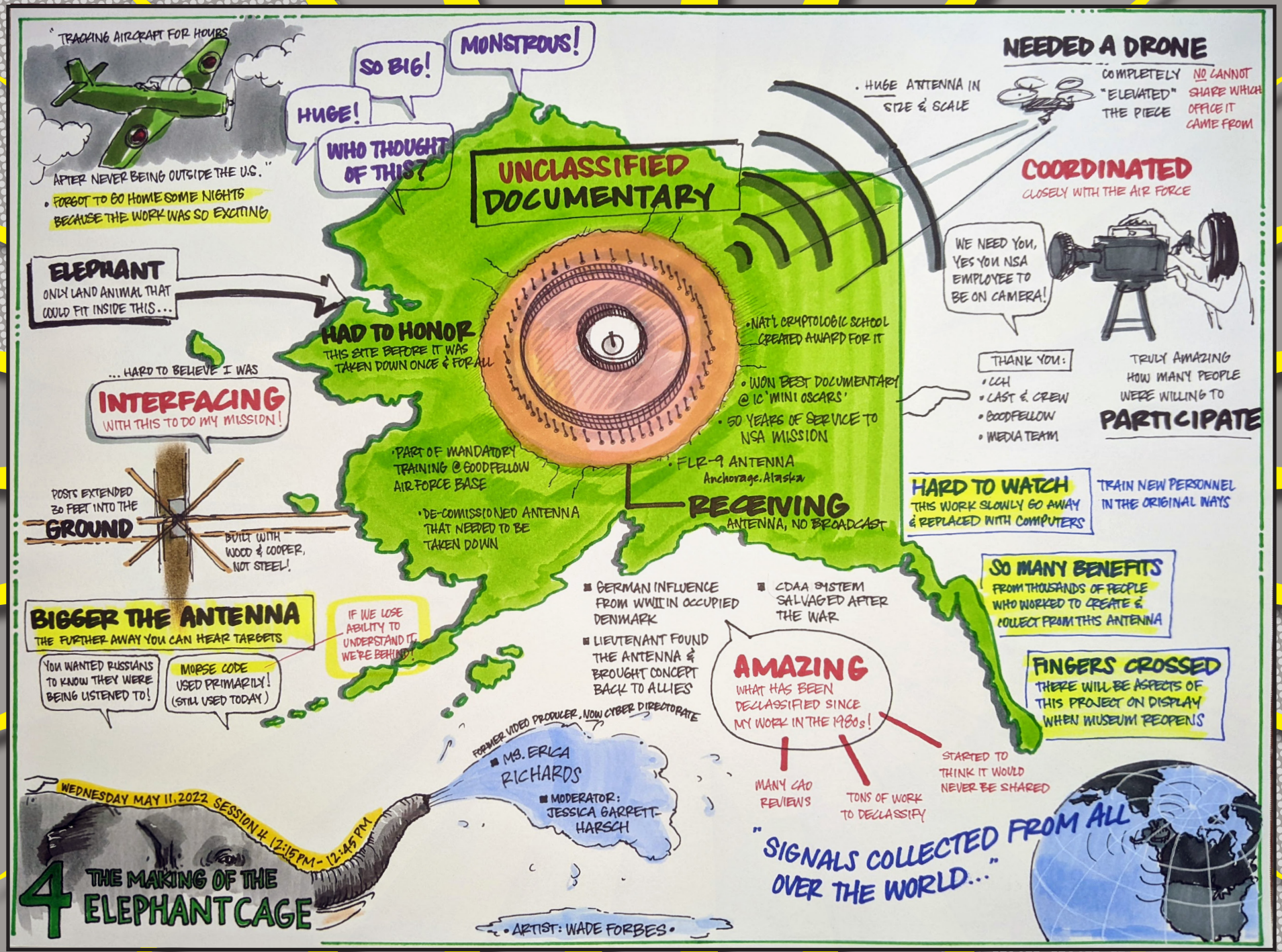
"NAVY TACTICAL INTERCEPT"

APRIL

DAYS OF REMEMBRANCE (HOLOCAUST)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 Frank Rowlett reported to SIS to work for William Friedman, 1930 Lieutenant General Lincoln D. Faurer, USAF, became DIRNSA, 1981	**2** Samuel Morse, developer of telegraph code, died, 1872	**3** Bell Labs completed the first cell phone call, 1973 Admiral Michael S. Rogers, USN, sworn in as Director, NSA and Commander, USCYBERCOM, 2014	**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 introduced the System/360 mainframe computer, which was 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**	**26** U.S. Senate issued the Church Committee report, 1976	**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				

During World War II, strategic signals intelligence (SIGINT) from high-level enemy messages provided intelligence of immense value to senior American and British decision makers. But tactical commanders needed SIGINT, too. Both the U.S. Army and Navy deployed tactical SIGINT units to monitor enemy communications.


"TRACKING AIRCRAFT FOR HOURS
AFTER NEVER BEING OUTSIDE THE U.S."
• FORGOT TO GO HOME SOME NIGHTS BECAUSE THE WORK WAS SO EXCITING
SO BIG!
MONSTROUS!
HUGE!
WHO THOUGHT OF THIS?
UNCLASSIFIED DOCUMENTARY
NEEDED A DRONE
• HUGE ANTENNA IN SIZE & SCALE
COMPLETELY "ELEVATED" THE PIECE
NO CANNOT SHARE WHICH OFFICE IT CAME FROM
COORDINATED
CLOSELY WITH THE AIR FORCE
WE NEED YOU, YES YOU NSA EMPLOYEE TO BE ON CAMERA!
ELEPHANT
ONLY LAND ANIMAL THAT COULD FIT INSIDE THIS...
HAD TO HONOR
THIS SITE BEFORE IT WAS TAKEN DOWN ONCE & FOR ALL
• NAT'L CRYPTOLOGIC SCHOOL CREATED AWARD FOR IT
• WON BEST DOCUMENTARY @ IC 'MINI OSCARS'
• 50 YEARS OF SERVICE TO NSA MISSION
THANK YOU:
• CCH
• CAST & CREW
• GOODFELLOW
• MEDIA TEAM
TRULY AMAZING HOW MANY PEOPLE WERE WILLING TO PARTICIPATE
... HARD TO BELIEVE I WAS
INTERFACING
WITH THIS TO DO MY MISSION!
• PART OF MANDATORY TRAINING @ GOODFELLOW AIR FORCE BASE
• FLR-9 ANTENNA Anchorage, Alaska
• DE-COMMISSIONED ANTENNA THAT NEEDED TO BE TAKEN DOWN
RECEIVING ANTENNA, NO BROADCAST
POSTS EXTENDED 30 FEET INTO THE GROUND
BUILT WITH WOOD & COOPER, NOT STEEL!
HARD TO WATCH
THIS WORK SLOWLY GO AWAY & REPLACED WITH COMPUTERS
TRAIN NEW PERSONNEL IN THE ORIGINAL WAYS
SO MANY BENEFITS
FROM THOUSANDS OF PEOPLE WHO WORKED TO CREATE & COLLECT FROM THIS ANTENNA
BIGGER THE ANTENNA
THE FURTHER AWAY YOU CAN HEAR TARGETS
YOU WANTED RUSSIANS TO KNOW THEY WERE BEING LISTENED TO!
MORSE CODE USED PRIMARILY! (STILL USED TODAY)
IF WE LOSE ABILITY TO UNDERSTAND IT, WE'RE BEHIND!
■ GERMAN INFLUENCE FROM WWII IN OCCUPIED DENMARK
■ LIEUTENANT FOUND THE ANTENNA & BROUGHT CONCEPT BACK TO ALLIES
■ CDAA SYSTEM SALVAGED AFTER THE WAR
AMAZING
WHAT HAS BEEN DECLASSIFIED SINCE MY WORK IN THE 1980s!
MANY CAO REVIEWS
TONS OF WORK TO DECLASSIFY
STARTED TO THINK IT WOULD NEVER BE SHARED
FINGERS CROSSED
THERE WILL BE ASPECTS OF THIS PROJECT ON DISPLAY WHEN MUSEUM REOPENS
FORMER VIDEO PRODUCER, NOW CYBER DIRECTORATE
■ MS. ERICA RICHARDS
■ MODERATOR: JESSICA GARRETT-HARSCH
WEDNESDAY MAY 11, 2022 SESSION 4 12:15 PM - 12:45 PM
4 THE MAKING OF THE ELEPHANT CAGE
"SIGNALS COLLECTED FROM ALL OVER THE WORLD..."
• ARTIST: WADE FORBES •

MAY

ASIAN AMERICAN/PACIFIC ISLANDER HERITAGE MONTH

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 of roughly 400 Navajos 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 ASA 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** WAAC (Women's Army Auxiliary Corps) established, 1942 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** 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 Fort 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** *Memorial Day*	**28**	**29**	**30** SecDef delegated authority to 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	

Sketchnoting, also known as visual notetaking, is the creative and graphic process to capture information through illustrations, symbols, and text. This sketchnote was drawn at the 2022 Cryptologic History Symposium for "The Making of The Last Elephant Cage" session, which covered the FLR-9 antenna and its 50 years of service. The antenna was about 120 feet tall and 1,443 feet in diameter. Watch this session on nsa.gov/history/. (The Museum reopened in October 2022!)

DREAM TEAM

JUNE

LESBIAN, GAY, BISEXUAL, & TRANSGENDER PRIDE MONTH

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						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, 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 showed 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 (SIS) took possession of Arlington Hall, 1942 NSA Family Day, 1975	**15**
16	**17** Systems Development Corporation (SDC) hosted conference of private and government experts on computer security, 1965	**18**	**19** Communications Act of 1934 signed by President Franklin D. Roosevelt, 1934 USSR and United States agreed on hotline between Moscow and Washington, 1963 ***Juneteenth Independence Day***	**20**	**21** Publication of first installment of the influential cryptologic story "The Gold-Bug" by Edgar Allan Poe, 1843 The Special Intelligence (SI) definition updated to establish additional protections for sources, methods, or activities of Signals Intelligence (SIGINT defined as COMINT, ELINT, FISINT), 2022	**22** GRAB, first SIGINT reconnaissance satellite, launched, 1960
23 Diffie and Hellman presented their idea for public-key exchange encryption, 1976 John J. Whitelaw Building dedicated at NSA Georgia, 2010 **30** Two Rock Ranch, one of the West Coast monitoring stations during World War II, closed, 1971	**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

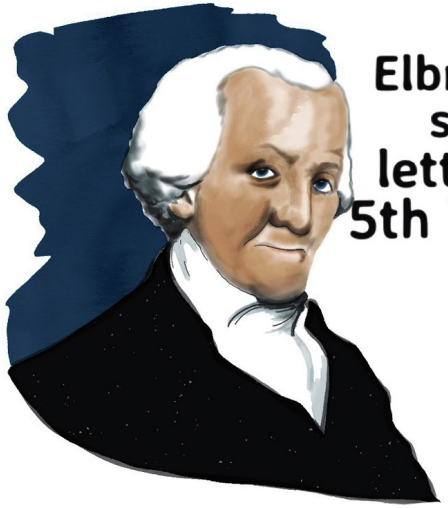
While this "Dream Team" of brilliant British and American cryptanalysts never worked side-by-side during WWII, the illustrated partnership includes Britain's Brigadier John Tiltman, William Millward, and Alan Turing, and American William Friedman plus a man and two women in uniform who symbolize the thousands of UK and U.S. women and men who served as cryptologists. This depiction is part of original artwork presented by the NSA Director to his British counterpart at GCHQ in 2021.

Washington had Doctor Church taken into custody, and he sought someone who knew how to solve secret ciphers.

Washington found a few patriots skilled at solving enciphered messages. One was Reverend Samuel West, chaplain to a Massachusetts army unit. The other was Elbridge Gerry, an officer in the Massachusetts militia.

AMERICA'S FIRST SPY STORY

General Washington continued to lead the patriot Army through many defeats until final victory, and the establishment of the United States of America.



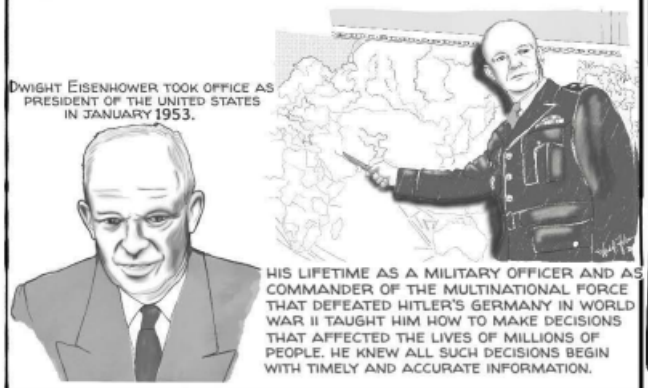
Elbridge Gerry, who solved the cipher letter, became the 5th Vice President of the United States.

JULY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 At Elizebeth Friedman's urging, U.S. Coast Guard established a cryptanalytic section, 1931 Lt Gen Gordon Blake, USAF, became DIRNSA, 1962 USAF activated Air Force Cryptologic Office at Fort 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** 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 National Cryptologic Museum opened to NSA/CSS personnel, 1993	**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 U.S. 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**	**25** Meeting at Pyry, outside Warsaw, where Poland shared its successes against the Enigma with Great Britain and France, 1939	**26** National Security Act passed, 1947 U.S. Congress opened 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, generated 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	**31** The "Wabash" field code issued, 1918 Agnes Meyer Driscoll discharged from U.S. Navy, 1919; retired from NSA, 1959			

George Washington, as commander of the revolutionary army, was given a captured letter that had been intended for the British Army occupying New York City; the letter was enciphered. The letter writer was soon discovered to be Dr. Benjamin Church, a trusted member of Washington's senior staff, who occupied a position similar to today's surgeon general—and who was betraying his country! Read the full CryptoComic ("America's First Spy Story") on nsa.gov.

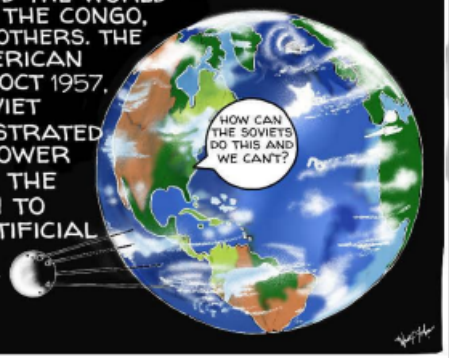
CRITICAL COMMUNICATIONS



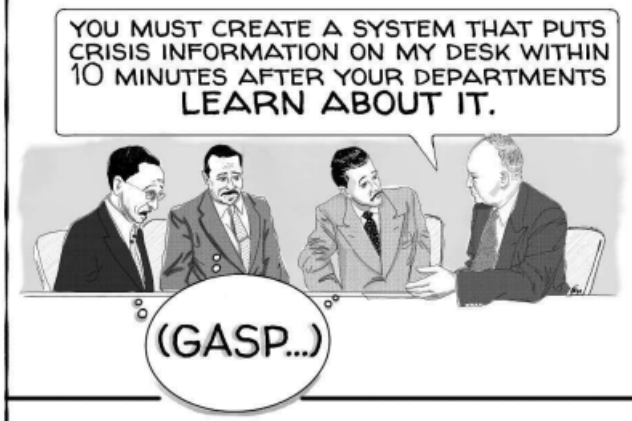
DWIGHT EISENHOWER TOOK OFFICE AS PRESIDENT OF THE UNITED STATES IN JANUARY 1953.

HIS LIFETIME AS A MILITARY OFFICER AND AS COMMANDER OF THE MULTINATIONAL FORCE THAT DEFEATED HITLER'S GERMANY IN WORLD WAR II TAUGHT HIM HOW TO MAKE DECISIONS THAT AFFECTED THE LIVES OF MILLIONS OF PEOPLE. HE KNEW ALL SUCH DECISIONS BEGIN WITH TIMELY AND ACCURATE INFORMATION.

EISENHOWER AS PRESIDENT FACED CRISES AROUND THE WORLD--- BERLIN, CUBA, THE CONGO, AMONG MANY OTHERS. THE AVERAGE AMERICAN FELT FEAR IN OCT 1957, WHEN THE SOVIET UNION DEMONSTRATED ITS MISSILE POWER BY BECOMING THE FIRST NATION TO ORBIT AN ARTIFICIAL EARTH SATELLITE--- SPUTNIK. (спутник)



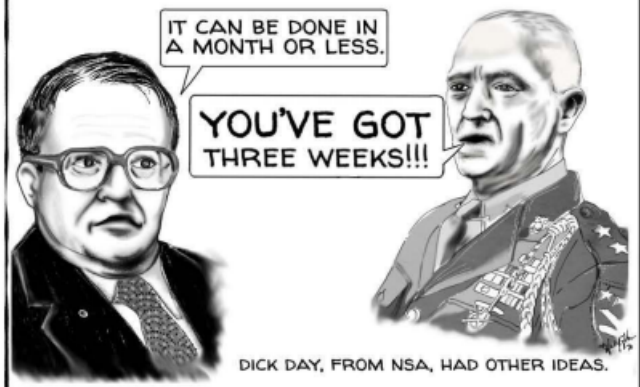
PRESIDENT EISENHOWER MET WITH THE NATIONAL SECURITY COUNCIL, COMPOSED OF THE MOST SENIOR OFFICIALS IN THE AMERICAN GOVERNMENT WHO HAD RESPONSIBILITY FOR THE COUNTRY'S DEFENSE AND FOREIGN POLICY.



GRAVES B. ERSKINE, RETIRED MARINE CORPS GENERAL, CHAIRED A MEETING OF PENTAGON EXPERTS TO PLAN HOW TO MEET THE PRESIDENT'S REQUEST.

NSA SENT NAVY CAPTAIN ARTHUR ENDERLIN & MR. RICHARD DAY, A CIVILIAN COMMUNICATIONS EXPERT. GENERAL ERSKINE HAD COMMANDED TROOPS IN THE INVASION OF IWO JIMA -- NOT A PERSON TO BE TRIFLED WITH.

NONE OF THE PENTAGON EXPERTS AT THE MEETING THOUGHT THAT THE RESULTS WOULD COME SOON.



DICK DAY, FROM NSA, HAD OTHER IDEAS.

DICK DAY WORKED WITH NSA PERSONNEL TO DRAW UP A PLAN USING EXISTING COMMNUNICATIONS EQIPMENT IN INNOVATIVE WAYS. A SENIOR OFFICIAL BRIEFED THE PLAN TO THE PRESIDENT. "IKE" WASTED NO TIME IN MAKING A DECISION.

THIS BECAME KNOWN AS "CRITICAL COMMUNICATIONS SYSTEM," OR "CRITICOMM." MOST OF THE SYSTEM WAS OPERATIONAL BEFORE DWIGHT EISENHOWER LEFT OFFICE IN 1961, BUT SOME FAR-FLUNG COMPONENTS WERE NOT READY UNTIL JOHN KENNEDY BECAME PRESIDENT. IN THE DECADES SINCE THEN, THIS SYSTEM HAS BEEN AN IMPORTANT FACTOR IN HOW U.S. PRESIDENTS AND OTHER SENIOR LEADERS MAKE MAJOR DECISIONS.

AUGUST

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 operation, 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 established 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

The production of good intelligence is a critical step in supporting decision-making by civilian and military officials. However, timely dissemination of that intelligence is equally important; if the information isn't received quickly, then its production process has been rendered meaningless. In this CryptoComic President Eisenhower challenges his advisors to forward intelligence information with greater speed to ensure timeliness.

WHEN NSA MOVED ITS HEADQUARTERS TO FT MEADE, MARYLAND, IN 1955, ITS MAIN OFFICE BUILDING WAS STILL UNDER CONSTRUCTION. THE FIRST NSA OFFICES WERE LOCATED IN TWO NEWLY-BUILT BARRACKS BUILDINGS.
TRAIN OF THOUGHT
THE ONLY HEAT FOR THESE TWO NEW BUILDINGS WAS FROM TWO LOCOMOTIVES THAT GENERATED STEAM ON A SIDING NEARBY.
AFTER ABOUT TWO YEARS, BOTH THE HEADQUARTERS AND THE BARRACKS HAD MODERN HEATING SYSTEMS AND MORE EMPLOYEES MOVED THEIR OFFICES FROM NORTHERN VIRGINIA.

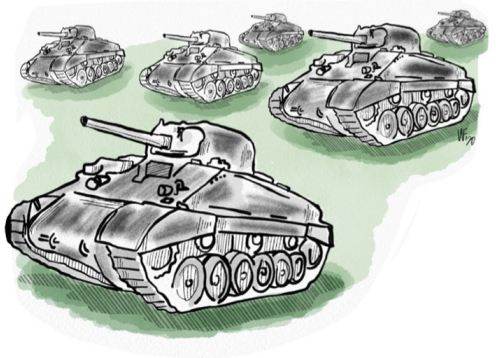
SEPTEMBER

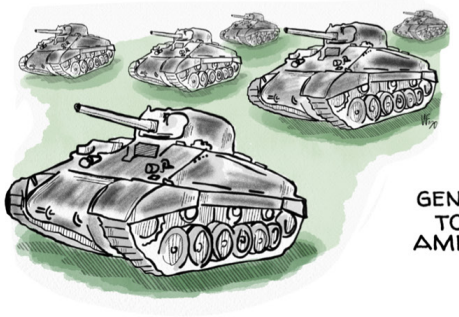
NATIONAL HISPANIC HERITAGE MONTH (SEPT. 15 - OCT. 15)

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 Fort Meade, 1997 ***Labor Day***	**3**	**4** First broadcast of the Star Trek episode "The Enterprise Incident," loosely based on the capture of the USS *Pueblo*, 1968	**5** Palestinian terrorists killed 11 Israeli Olympic athletes and a German policeman in Munich, 1972	**6** NRO established, 1961 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**	**20** Rivest, Shamir, and Adleman received a patent for the encryption algorithm RSA, 1983	**21** First NSA open house, 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					

NSA began moving to its now-familiar location on Fort Meade (Maryland) in the late 1950s. Some of the first employees arrived before the main buildings were fully constructed. They recalled that heat for the new buildings in those early days was provided by several steam-powered locomotives on a nearby railroad siding. Apparently, no photos of these locomotives exist today, so CCH did its best to recreate the situation in a CryptoComic.

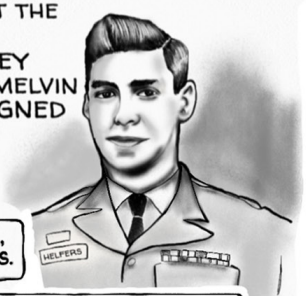
TEACHING AN OLD GENERAL NEW TRICKS





THE TOP SECRET ULTRA INFORMATION WAS SHARED WITH BOTH BRITISH AND AMERICAN GENERALS. ONLY THE MOST SENIOR COMMANDERS WERE ALLOWED TO READ THIS SECRET SOURCE. BUT, BEFORE THE WAR, MOST AMERICAN GENERALS KNEW LITTLE ABOUT THE INTELLIGENCE, AND, MANY LIKE GENERAL PATTON, DID NOT RESPECT IT.

ALL SENIOR COMMANDERS HAD AN "ULTRA OFFICER" TO SEE THAT THEY GOT THE INFORMATION FROM DECRYPTS WHEN THEY NEEDED IT. CAPTAIN MELVIN HELFERS WAS ASSIGNED TO PATTON'S HEADQUARTERS.

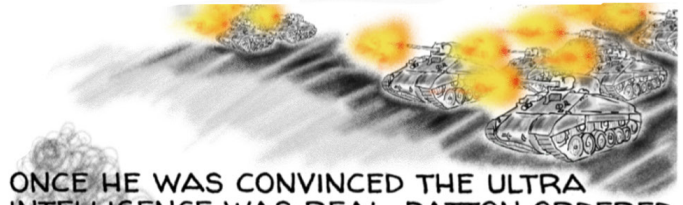


HELFERS: WE MUST WAKE THE GENERAL, HE MUST SEE THESE MESSAGES.

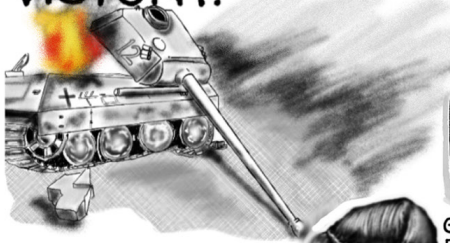
THIS COULD MEAN LIFE OR DEATH FOR THIS COMMAND.

OFFICER: YOU KNOW HE DOESN'T CARE FOR THAT MUMBO JUMBO!

OK, BUT HE ISN'T GOING TO LIKE IT.



ONCE HE WAS CONVINCED THE ULTRA INTELLIGENCE WAS REAL, PATTON ORDERED HIS SUBORDINATE COMMANDERS TO PREPARE TO DEFEND AGAINST THE AMBUSH. THE RESULT WAS A MONUMENTAL AMERICAN **VICTORY.**



HELFERS, THIS IS GOOD STUFF, AFTER ALL. YOU WILL BRIEF ME ON IT EVERY MORNING, PERSONALLY, AFTER THE OPERATIONAL BRIEFING IS OVER.

GENERAL PATTON BECAME A BELIEVER IN ULTRA AND USED IT TO VERY GOOD ADVANTAGE IN MOVING THE U.S THIRD ARMY AGAINST THE GERMANS. HELFERS BRIEFED THE 3-STAR DAILY FOR THE REST OF THE WAR.

OCTOBER

NATIONAL DISABILITY EMPLOYMENT AWARENESS MONTH

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		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 Fort 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**	**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 ***Columbus Day***	**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 designated DoD as executive agent for all government COMSEC matters (DoD further delegated 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	**24** Influential Killian report on defense and intelligence submitted to President Eisenhower, 1957	**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 the modern Internet, 1969	**30** Center for Cryptologic History published *The Friedman Legacy*, containing transcripts of the famed "Friedman Lectures," 1992	**31** Elizebeth Friedman died, 1980		

Before World War II, few senior American officers knew much about SIGINT, and some, even the famous General George Patton, wanted little to do with it. However, as they learned how useful the information that SIGINT provided could be, many became believers. Read the full CryptoComic ("Teaching an Old General New Tricks") on nsa.gov.

"Friedman's success with the Kryha test messages demonstrated his skills to his superior officers, and helped gain acceptance for his nontraditional ideas. He served as the Army's (and later NSA's) senior cryptologist for more than a quarter century."

NOVEMBER

NATIONAL AMERICAN INDIAN/ALASKA NATIVE HERITAGE MONTH

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** Armistice signed ending World War I, 1918 First fixed U.S. field station at Houlton, ME, began operation, 1918 ***Veterans Day***	**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 New DIRNSAs: Lieutenant General John Samford, USAF, 1956; Vice Admiral Laurence Frost, USN, 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** ***Thanksgiving Day***	**29**	**30** Charles Chibitty of the Comanche Nation received Knowlton Award for codetalking contributions during World War II, 1999

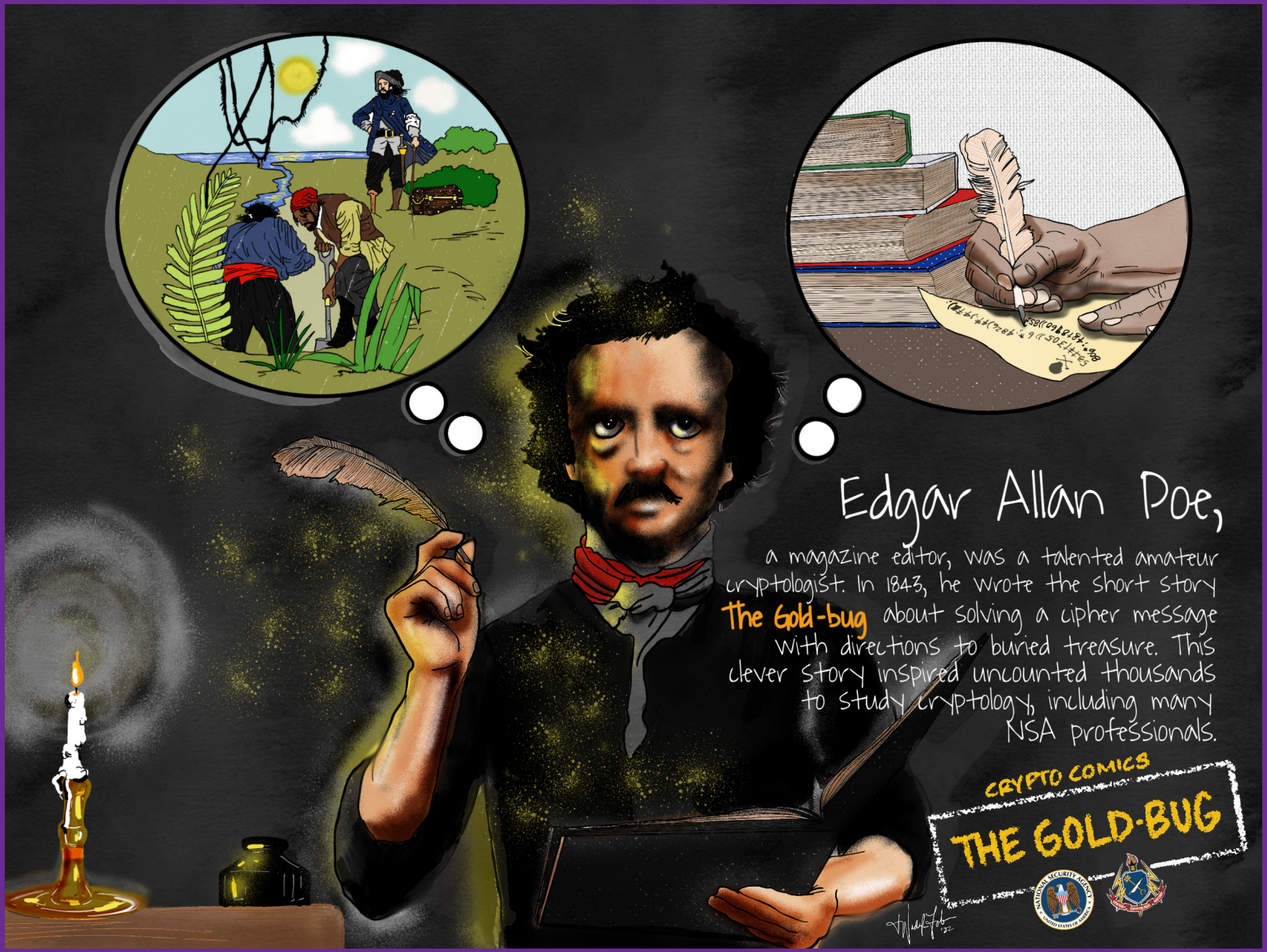
Nowadays, William Friedman is remembered and honored as an innovative pioneer who revolutionized the practice of cryptography and made countless contributions to U.S. national security through his forward thinking. But, as a new government employee, even Friedman had to prove himself and his theories about cryptologic work. Read the full CryptoComic ("The Unbreakable Kryha Machine") on nsa.gov.

The Battle of Long Tan demonstrated the importance of wartime SIGINT cooperation between Allies

DECEMBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Polish Cipher Bureau first solved Enigma message, 1932 JN-25B code introduced by the Japanese Navy, 1940 ATLAS, first U.S. cryptologic computer, became operational, 1950	**2** Washington Post columnist Jack Anderson compromised 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 attack on 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 National Cryptologic Museum opened to the public, 1993	**17** Guglielmo Marconi proved radio messages could cross the Atlantic, 1902	**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** Arlington Hall Station Civilian Welfare Fund began serving AFSA members, 1949 ***Christmas Day***	**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				

Australian troops deployed to Vietnam achieved a hard-won victory in the Battle of Long Tan in August 1966. The conflict began with SIGINT intercepted by U.S. and Australian collection sites. Australia recognizes this battle as a major victory during the Vietnam War, which demonstrated the importance of SIGINT cooperation between allies.


Edgar Allan Poe,
a magazine editor, was a talented amateur cryptologist. In 1843, he wrote the short story The Gold-bug about solving a cipher message with directions to buried treasure. This clever story inspired uncounted thousands to study cryptology, including many NSA professionals.
CRYPTO COMICS
THE GOLD-BUG