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ESSAY ON
MORSE CODE OPERATORS
IN THE AIR FORCE

When the Air Force was created as a separate service in 1947, it inherited many things from the Army. Among them were the Morse intercept operators and ground radio operators, the predecessors of today's Intelligence Systems Operator, Air Force Specialty Code (AFSC) 1N2X1. This paper will provide a historical background of Morse code; from its beginning as a simple, communications source in the nineteenth century and journey through its current use by the Air Force. I will give a brief history of how Morse created his code, tracing its use as a connector between continents, through the use by the military, touching upon the intelligence role it has played throughout the years. My focus will then shift to primarily how the Air Force redesignated Morse code operators from their old Army specialty codes to the different AFSCs they have been known as since 1947. Lastly, I will discuss some of the different major commands, assignment locations, and hardships endured by the enlisted members who have held the AFSC throughout the last 48 years. However, we must go back to the beginning and look at how, where, and when Morse code was invented.

Back in the 1830s, communications between points was accomplished by courier or by letters sent through the post office. It was very slow and time-consuming. Samuel F. B. Morse, inventor, painter, and politician, played around with the idea of sending a signal through wires, using magnets and electricity. While returning to the United States from abroad in 1831, Morse discovered he could send signals by electromagnetizing a metal bar and closing the circuit. He developed a rudimentary code that equated to numbers which he then translated into letters and words. However, he did not put much stock in this project at the time because he was more interested in his painting and being commissioned by the government to paint official buildings in Washington, DC. It wasn't until 1835, with the help of his partners,

Leonard Gale and Arthur Vail, that he decided to actually pursue telegraphy as a viable source of communications. (1:182-3)

With the backing of Gale and Vail, Morse devoted more time on the project and became determined to make the telegraph the fastest way to communicate between two points. By 1837, Morse and partners had experimented by sending messages through ten miles of wire, all contained on reels inside a university lecture room. (1:192) Morse also made his first attempt to bring his invention to the attention of the government in 1837; stressing the advantages of equipment size, recording transmitted intelligence, secrecy, independence of time or weather, and low cost compared to semaphores. Morse firmly believed his invention should be owned by the government, preferably the Post Office Department. (1:196) On January 6, 1838, Morse performed an experiment for Judge Vail, Alfred's father, that proved to be the catalyst for testing in front of government officials. By developing a code to send letters instead of numbers, Morse's code became a reality. Several revisions of the dots and dashes in the code led to what is now known as Morse code. On February 21, 1838, Morse got to exhibit his invention before President Van Buren and other government officials, which proved to be a resounding success. Congressman F. O. J. (Fog) Smith of Maine was so impressed, he decided to join the venture. It was his influence that led to the government giving Morse's invention an appropriation for use as means of communications between cities.

The first telegraph lines were strung between Washington and Baltimore, a distance of 40 miles, and on May 24, 1844, Samuel Morse sent the famous message, "What hath God wrought!" to his partner Arthur Vail in Baltimore. The telegraph was a reality, however, the government was still skeptical. It never procured the complete ownership that Morse thought it would and instead private enterprise took over. Soon telegraph lines stretched all over the country and even Europe as Morse took his invention across the Atlantic. The next obstacle was to link the Old World with the New

and undaunted by distractions and setbacks, Morse was successful in supervising the laying of the first transatlantic cable in 1858. Connectivity was realized when Queen Victoria of Britain sent a message directly to President James Buchanan on August 16, 1858. (1:336) Morse's code was now truly international.

With the advent of the Civil War in 1861, the telegraph became an important intelligence gathering source for the military. Commanders could be advised of troop strengths, advancing formations, dangers ahead, etc. The telegraph became a necessity and its value increased as nations throughout the world adopted its use. The US military continued to use it for primary communications purposes until the radio replaced it. However, because of its susceptibility to eavesdroppers, telegraph communications needed to be encrypted for intelligence use.

As the world became entangled in wars throughout the 20th century, Morse code operators proved their mettle by transmitting and receiving messages, intercepting enemy ciphers, and providing military authorities the intelligence means to win battles. The US Armed Forces used Morse code exclusively to transmit information over long distances as it was a reliable means of communication. The Army, during World War II, used Morse code-qualified soldiers as Intercept Operators G and J (German and Japanese) to "listen-in" on their communications and to operate direction-finding equipment to geolocate the source of the signals. (2:184-5) Additionally, Army Air Force (AAF) personnel were trained to operate Morse equipment on airborne platforms. (2:188) As you can see today's Air Force Morse operators evolved from its archaic predecessors. The code is the same, but the targets and the equipment are different. Let's look at how the career field has changed over the years.

When the Air Force became a separate branch of the Department of Defense in 1947, it inherited quite a bit from the Army. Morse operators were no different, they moved over into their new roles and changed their uniforms, but retained their old Army career field identifiers. The Air Force changed them to Air Force Specialty Codes

(AFSC) and rewrote the classification guides. Air Force Manual (AFM) 35-1, 1 Jul 54, listed AFSC 29351 as Radio Intercept Operator. (3:29) AFM 35-15 dated, 2 Jan 63, changed the AFSC to 29251 and title to Morse Intercept Operator. It also limited entry into the career field to males only. (4:29) When I came on active duty in 1974, the AFSC was 20751 and the title was now Morse Systems Operator. Additionally, women were allowed to train in the specialty. Presently, the AFSC was merged in 1993 with the 20752, Printer Systems Operator career field, into what is now known as 1N251, Signals Intelligence Production or Intelligence Systems Operator. (5:201) Training an operator to be proficient requires up to six months of intensive training. Let's look at some of the training required.

In order to be selected for the career field in today's Air Force, an airman must be able to type 25 words per minute, able to receive and transcribe manually or automatically sent International Morse Code at a rate of 20 groups per minute, have a high school diploma or equivalent, be eligible for a Top Secret security clearance, and cleared for sensitive compartmented information access. The airman must also successfully complete the basic signals intelligence production course. The Air Force used Keesler AFB, Mississippi as its primary training school until 1981, using the reflex method to train the operators by constant repetition of the characters. I graduated from this course in 1975, able to type over 30 words per minute and copy code at 25+ groups per minute and became a "ditty-bopper." However, things change and the military intelligence services decided to collocate all Morse training, opening a consolidated training center at Ft. Devens, Massachusetts. This school opened in 1983 and remained the primary training center for all armed forces Morse code training until 1993 when it moved to Ft. Huachuca, Arizona due to government cutbacks. This new location remains the primary source of basic Morse training today. Upon graduation, the students are then required to attend basic signals training at Corry Station, Pensacola Naval Air Station, Florida. There, they learn the additional skills

required of the AFSC since the merger in 1993. This training, coupled with the time it takes to learn Morse code, means a field unit can expect an apprentice Intelligence Systems Operator to arrive approximately 14 months after graduating from Basic Military Training. (6:-) So as you can see, the process is long and arduous, but necessary. The assignments for the graduates are usually rewarding and require some sacrifices of the individual. Let's look at what kind of assignments Air Force members were relegated to since 1947.

With the Air Force becoming a separate branch of the armed services in 1947, it received the initial source of Morse operators from the Army. The USAF Security Service (USAFSS) was activated on October 20, 1948 at Arlington Hall Station, Virginia. In addition to its cryptologic mission, USAFSS was tasked with providing communications security (COMSEC) for the relatively new Department of the Air Force. The Army Security Agency transferred four of its major subordinate units to USAFSS in 1949. The basis of the command was born. USAFSS formulated its units after the Army's successful Radio Squadron Mobile (RSM) operations. The RSM concept was the primary electronic intelligence agency within the Air Force. However, the RSM was primarily a mobile unit attached to meet the tactical requirements of various theater commanders. (7:8) The Air Force decided to build fixed sites at various locations throughout the world. Some of the locations included; Alaska, Japan, the Philippines, Taiwan, Korea, and Thailand in the Pacific. Pakistan, and Turkey in the Middle East. Greece, Italy, Germany, and England in Europe. All of these locations were self-sustaining and capable of existing on their own. However, some of the assignments to those sites above were not necessarily the "garden spots" of the world. Some of them, like Peshawar, Pakistan and Sinop, Turkey, were extremely isolated. Others like Iraklion, Crete, and Shu Lin Ku, Taiwan were on islands. In most cases, dependents were not allowed to accompany their sponsors to these often isolated, remote locations. Therefore, you had to resourceful and remain energetic and stay focused on

your job and your mission. However, there were some really good locations to be stationed at as well: RAF Chicksands, UK, Berlin, Germany, Misawa, Japan to name a few. But no matter where you were assigned, one thing remained constant, the mission.

Personnel assigned to USAFSS, and its successors, are among the best people in the Air Force. Rotating shift-work is the norm in the command with the operators, linguists, analysts, and officers required to remain watchful 24 hours-a-day, 7 days-a-week, 365 days-a-year. There are no holidays and no 3-day weekends. We definitely lived up to our motto, "Freedom through Vigilance" by keeping our eyes and ears on potential adversaries of the United States, as we do today.

The headquarters for all this was and still is located at Kelly AFB, Texas. USAFSS was the only Air Force major command (MAJCOM), that was a tenant on another command's base. (8:v) In 1979, the basic mission of Communications Intelligence (COMINT) and COMSEC was expanded to include Electronic Warfare (EW). On August 1, 1979, USAFSS was redesignated as the Electronic Security Command (ESC). During the reorganizations of the '90s, the command has undergone two more drastic changes; being redesignated as the Air Force Intelligence Command (AFIC) on October 1, 1991 and then losing its MAJCOM status on October 1, 1993 when it became a field operating agency (FOA) and was redesignated the Air Intelligence Agency (AIA). Many of the missions were inherited from its predecessors, but with the advent of technology, the shrinking defense budget, and a smaller Air Force, AIA's mission has increased and taken on new roles. As of today, there are very few sites left open overseas. Satellite technology and the end of the Cold War has forced the closure of some of the best assignments the Air Force had to offer.

In the preceding paragraphs, I've given you a snapshot history of Morse's gift to the world, looked at how the code became adopted for use by civilian and military communities, and how nations developed its use as an intelligence source. I then

discussed the changes made in the career field, looking at training, hardships, assignments, and a brief historical picture of the commands Air Force Morse operators have been attached to over the years.

As you can see, Morse code was responsible for expedient communications with local and faraway places. Its development for use by the military intelligence community brought about the need for people like me. Because of its long-range capability, reliability, and inexpensive nature, Morse code will continue to be used by nations throughout the world. And, as long as those nations have an intelligence value to the United States, those Intelligence Systems Operators will remain ever-vigilant and necessary to national security.

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