



Armed with an M1 carbine, a Navajo Code Talker communicates in the South Pacific during WW II. The first Navajos who were recruited as Code Talkers initially trained as radio operators and used the Able-Baker phonetic alphabet as a basis on which to develop a unique code using the Navajo language.

FROM “ABLE-BAKER” TO TODAY

The History of the Phonetic Alphabet

By Sam Lichtman

Clear and concise communication in the chaotic battlefield environment has always been of paramount importance. Radio was a revolutionary technology, but its invention in the early 1900s didn't instantly result in rapid and clear communications between Marines. Military strategists and civilian officials spent decades developing methods to ensure that messages were received and understood with no ambiguity in the heat

of combat or with communications between air crews and Marines on the ground. After two world wars and a great deal of effort, the answer was found when an international team developed the standard phonetic alphabet we use today.

Any Marine, and indeed anyone involved with worldwide military and civil transportation authorities, has used the phonetic alphabet in one form or another. This system for clearly spelling words has become practically ubiquitous with even the uninitiated aware of the code words

for at least a few letters. Relatively few, however, know how the phonetic alphabet was actually created.

The phonetic alphabet is used today to ensure the message is received accurately despite interference; its earliest known predecessors were created for the very same purpose. Although the modern system was designed primarily for civil aviation, it, like the earliest radio spelling alphabets, is used routinely on the battlefield.

“It's for the middle of the night, when



LCPL GADIEL ZARAGOZA, USMC

During a February 2020 exercise at Camp Pendleton, 1stLt Daniel Lyrla, a tank officer assigned to I Marine Information Group, I Marine Expeditionary Force, relays information to higher headquarters.

there’s no light and you’re being shot at,” said Major Joe Featherstone, who served as both an enlisted Marine and an officer throughout his 22 years on active duty. Featherstone worked as a voice radio operator and served in a number of communications-related billets.

According to Jayke Craig, a former communications officer and platoon commander, “When data capability fails, tactical radios are the backup ... [the] phonetic alphabet becomes much more important.” Craig would know—during his recent service with 9th Communi-

USMC

cation Battalion, he and the radiomen under his command used the phonetic alphabet routinely during numerous large-scale training exercises.

With the technological boom experienced after the First World War, several new technologies combined to create a problem for sailors and aviators. Radio technology had improved enough that new, lightweight radio transceivers became practical for use aboard aircraft and ships, and aircraft became reliable enough to travel long distances with cargo and passengers. Aviation and maritime radios were powerful enough to transmit voice messages rather than the simple pulses of Morse code, but just barely. In the early days of this new technology, “voice communications were always fragile,” said Featherstone. Lightning noise, inclement weather, ground obstacles, and sheer distance constantly conspired against radio operators to render messages unreadable.

This problem was compounded by the fact that there existed no internationally standardized method of spelling words. Different militaries had independently developed their own spelling systems, ranging from the British Army’s ever-evolving method of replacing just a few easily-confused letters with sounds or words (e.g. “Ack” for “A” and “Emma” for “M”) to the U.S. Navy’s elaborate system of two parallel phonetic alphabets. A British soldier, for example, might have difficulty understanding a U.S. Navy Sailor’s “Actor, Baker, Canteen” and “Ash, Back, Chain,” despite the two militaries working together during the war.

Even within a single military, several



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A Marine air traffic controller with Marine Wing Support Detachment 371, assigned to Special Purpose Marine Air-Ground Task Force–Crisis Response–Central Command 20.2, talks with an Air Force air traffic controller with the 407th Expeditionary Support Squadron in Kuwait on July 30. A standardized phonetic alphabet ensures there is no ambiguity when pilots and air traffic controllers, regardless of service, are communicating with each other.

different “standard” phonetic alphabets might be in use at the same time—a British soldier, perhaps thinking in terms of “Ack, Beer, Cork” might also fail to properly receive a fellow British soldier’s message transmitted using “Apples, Butter, Charlie” or misread “Freddy” (“F” in his own phonetic alphabet) as “Eddy” (“E in the same system). The Royal Air Force used their own separate phonetic alphabet, so a member of the U.S. military might have to learn three or more different sets of code words just to communicate properly with his Commonwealth allies in the heat of battle. Clearly, a solution was needed by all.

Recognizing these problems, the Universal Electrical Communications Union (a body commissioned by the Allied powers at the end of World War I) convened in Washington, D.C., on Oct. 8, 1920, to issue the world’s first set of official radio communication rules. Their “Draft of Convention and Regulations” included standards for everything from maritime signal flags to the permitted uses of specific long-wave frequency bands. Tucked away in Appendix 14, “International Radiotelephone Procedure,” lies the brief passage: “3. Spelling out of Distinguishing Signals and Words. Words will be spelled out using names of well-

known places. The following names are to be used,” followed by a chart showing the first known example of an internationally standardized phonetic alphabet in both English and French. This alphabet used a mix of country and city names for its letters, such as “Canada” for “C” and “Jerusalem” for “J.”

Another conference, the International Radiotelegraph Convention of Washington, was held in 1927 with delegates from almost every country in the world. This conference aimed to create a better set of international rules specifically for radio communication. A phonetic alphabet was defined, this time almost exclusively using city names. This alphabet was largely the same as the one set forth seven years prior with only a few exceptions (i.e. “Amsterdam” instead of “Argentina” for “A”). Despite the efforts of the Convention, many militaries and even civil organizations and private corporations continued to develop and use their own systems, perhaps most notably the Joint Army/Navy Phonetic Alphabet, more commonly known as “Able-Baker” after its first two code words.

Just as the First World War had shown the need for a truly universal phonetic alphabet, so did the second. The formation of North Atlantic Treaty Organization (NATO) on April 4, 1949, made this need even more clear as it required the member states’ militaries to function together in the event of a seemingly imminent all-out war against the Warsaw Pact. The problem was soon solved by another group working in parallel. The International Civil Aviation Organization (ICAO), a body created by the United Nations, commissioned a team of linguists to develop an “optimized” phonetic alphabet to replace the previous ones ICAO had adopted but deemed flawed. This new system was to be designed very carefully using more scientific means than had ever before been employed for this purpose; the goal was to create a spelling alphabet for the entire world to use.

When selecting a code word, every factor was considered, ranging from the obvious (such as ease of pronunciation and lack of ambiguity) to the seemingly pedantic. Because native speakers of different languages have different accents, the new system could only use sounds that anyone could pronounce and understand equally well despite language barriers.

In the interest of eliminating any possible cultural connotation attached to the code words, trademarked words and names of companies were generally rejected. “Whiskey” was almost thrown out with “Vodka” and “Cognac” due to its per-



SGT DAVE BUTLER, USMC

A Marine aviator must be able to communicate with Marines on the ground. In this 1968 photo, LCpl John Daly tests helicopter radio equipment in the avionics facility’s communication and navigation section.

ceived “negative moral value” as the name of an alcoholic beverage. “Quebec” was very nearly rejected, too, because it was thought that place-names might become politically sensitive in the event of a future armed conflict. The designers of what would eventually become the modern phonetic alphabet were so insistent that the code words be free from connotation that “Kodak,” despite its general suitability, was ultimately discarded in favor of “Kilo” due to the latter’s lack of connection to commerce.

The first draft of ICAO’s “Radio-telephony Spelling Alphabet” was unveiled to the world in 1951, but lingering problems with the words for C, M, N, U and X caused most people to reject it outright in favor of the already familiar “Able-Baker.” It wasn’t until 1955 that the alphabet was perfected, using statistical analysis to determine which code words were still ambiguous. The last code word to be selected was “November,” competing with “Nectar” for its place in the new phonetic alphabet. The deliberations took so long that NATO seriously considered unilaterally adopting the alphabet as it stood, with “November” as “N,” without waiting for ICAO to make a decision.



MSGT FRED BRAITSCHE, USMC

Working in contact with observers in spotter aircraft, a tactical air control party calls in air strikes on the Korean front in 1953.

NATO
phonetic alphabet,
codes & signals

The ability to communicate and make yourself understood can make a difference in life-threatening situations – imagine for example that you are trying to alert a search and rescue helicopter of the position of a downed pilot. To ensure clear communication, NATO uses a number of well-known formats which are in general use. NATO standardization agreements enable forces from many nations to communicate in a way that is understood by all.

Some standards can be found in everyday civilian and military life. “Bravo Zulu,” typically signalled with naval flags on ships at sea and meaning “well done”, is also commonly used in written communication by the military, for example by replying “BZ” to an email.

Phonetic alphabet
The NATO alphabet became effective in 1956 and, a few years later, turned into the established universal phonetic alphabet for all military, civilian and amateur radio communicators.

International Morse Code
Morse code transmits text through on-off tones, light-flashes or clicks. It was widely used in the 1890s for early radio communication, before it was possible to transmit voice.

Flaghoist communication
Ships use flags as signals to send out messages to each other. The use of flags, known as flaghoist communication, is a fast and accurate way to send information in daylight.

A Alfa
(al-fah)

K

Semaphore
Semaphore is a system in which a person sends information at a distance using hand-held flags – depending on the position of the flags, the message will vary. The signaller holds the flag in different positions that represent letters or numbers.

Panel signalling
Panels are visual signals for sending simple messages to an aircraft. Using a limited code, ground forces can send messages to pilots, for example to request medical supplies.

B Bravo <i>(brah-voh)</i>	C Charlie <i>(char-lee)</i>	D Delta <i>(dell-tah)</i>	E Echo <i>(eck-oh)</i>	F Foxtrot <i>(foks-trot)</i>
G Golf <i>(golf)</i>	H Hotel <i>(boh-tel)</i>	I India <i>(in-dee-ah)</i>	J Juliett <i>(jewe-lee-ett)</i>	K Kilo <i>(key-lah)</i>
L Lima <i>(lee-mah)</i>	M Mike <i>(mike)</i>	N November <i>(no-ven-ber)</i>	O Oscar <i>(oss-ah)</i>	P Papa <i>(pah-pah)</i>
Q Quebec <i>(keh-beck)</i>	R Romeo <i>(row-me-oh)</i>	S Sierra <i>(see-air-rah)</i>	T Tango <i>(tang-go)</i>	U Uniform <i>(you-nee-form)</i>
V Victor <i>(vic-tah)</i>	W Whiskey <i>(wis-key)</i>	X Xray <i>(ex-ray)</i>	Y Yankee <i>(yang-key)</i>	Z Zulu <i>(zoo-loo)</i>

Numbers

1	One <i>(wan)</i>
2	Two <i>(too)</i>
3	Three <i>(mee)</i>
4	Four <i>(fow-er)</i>
5	Five <i>(fife)</i>
6	Six <i>(six)</i>
7	Seven <i>(sev-en)</i>
8	Eight <i>(ait)</i>
9	Nine <i>(nain-er)</i>
0	Zero <i>(zer-oh)</i>



PFC John N. Bryant, a radio operator with 1st Bn, 2nd Marines establishes radio contact with the company command post during a search and clear operation south of the Demilitarized Zone, in Vietnam, 1969.

The final product was simultaneously made official by ICAO, NATO, the International Maritime Organization, the International Telecommunication Union, and a host of other regulatory bodies the world over on March 1, 1956. Despite the miserable failure of every previous attempt to create a universal phonetic alphabet, the ICAO system immediately caught on. Its scientific design proved extremely effective in both speeding up messaging and eliminating ambiguity, and the popular “Able-Baker” fell out of favor within just a few years. After decades of voice radio communication, the entire world had finally standardized on a universal auxiliary “language” for

spelling words. Because the Marine Corps’ voice radio operators were mostly young enlisted personnel who usually only served for a few years, the transition was nearly seamless.

As Featherstone remembers, some older Marines didn’t learn the NATO phonetic alphabet because they were not directly involved in radio communications and did not have a need to use it. Even some infantrymen weren’t fully acquainted with the system initially—“if you didn’t have a radio operator, it was an infantry guy carrying the radio and he may not have known [the phonetic alphabet].” For Featherstone and other Marines working in the communications specialties, however,

“the phonetic alphabet was our bread and butter.” After working on the signal bridge of the attack cargo ship USS *Thuban* (AKA-19) during a Mediterranean cruise the early 1960s, Featherstone was sent to Vietnam to coordinate naval and land-based artillery as a voice radio operator and later communications chief. At his post in front of a field radio and RC-292 portable antenna, he and other operators used the phonetic alphabet “all the time ... under duress, in calling situation reports, artillery fire, et cetera.” Skilled operators could communicate messages more quickly using the NATO phonetic alphabet and code phrases derived from it than a layperson could in plain English.



CPL G.N. ZIMMERMAN, USMC

With sufficient experience, they could instantly recognize which operator was which and what kind of stress they were under just by voice.

The near-simultaneous adoption of the new system worldwide by both civil and military authorities ensured that it would be used and understood by hundreds of millions of people on every corner of the globe; allowing, for example, an Alaskan bush pilot to immediately understand a message spelled by a French naval captain.

The modern phonetic alphabet has even given rise to some common expressions among Marines. During the war in Vietnam, Viet Cong insurgents were referred to by American personnel as “VC,” which



MAJ PAUL GREENBERG, USMC

Above: Since the invention of radio communications, the radio operator has been a crucial part of Marine Corps operations. Before a patrol in Rutbah, Iraq, in 2008, Sgt Daniel Giere, left, a squad leader with “Echo” Co, 2nd Bn, 25th Marine Regiment, Regimental Combat Team 5, calls his command operations center to relay a situation report with assistance from Cpl Talmadge Flowers, a radioman with 2nd Bn, 10th Marine Regiment.

became “Victor Charlie” over the radio, eventually shortened to “Charlie.” Featherstone said that Marines used a handful of other similarly derived colloquialisms that are rather less appropriate for publication in *Leatherneck*.

Although the use of modern computer systems has made conventional voice radio less common, use of the phonetic alphabet persists. As a recently separated communications officer, Jayke Craig explained that the phonetic alphabet is still alive and well in an age of satellites and encrypted telecommunications. During various field exercises, sometimes involving more than 10,000 Marines, he helped to coordinate ship-to-shore amphibious operations. Often, they were forced to conduct radio traffic the “old-fashioned way,” without the use of the more sophisticated datalink systems typically available now.

Even when using computers to transmit voice messages, Marine Corps communications personnel use call signs and identifiers based on the phonetic alphabet to obfuscate communications. This makes important messages easy for friendly forces to understand but impossible for enemy intelligence to decode in time.

The joint international standardization of the ICAO phonetic alphabet has ushered in a new era of interoperability in both civil and military communications. From Marines in the most remote areas on Earth to airline pilots ferrying travelers across the world at 35,000 feet, nearly everyone who uses voice radio for important communication can understand each other using the phonetic alphabet. It took a herculean effort over half a century for the world to settle on a universal “language” for voice radio. From the jungles of Vietnam to the arid highlands of northern Iraq, that same system has proven itself for more than half a century in all conditions. The story of the creation of the phonetic alphabet may not be widely known, but its end product has been an integral part of voice radio communication in every clime and place.

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