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**INTERNATIONAL SIGNIFICANCE OF ICAO ALPHABET FOR FLIGHT SAFETY**

*The importance of implementation and use of the ICAO alphabet for flight safety in the field of aviation is considered.*

Early radios suffered severely from interference, which often made messages almost impossible to understand. The meaning was greatly clarified by inventing a word to confirm each letter, as far as possible with no two words sounding similar. Even with modern clear electronic communications a phonetic alphabet is often helpful. The NATO phonetic alphabet, more accurately known as the International Radiotelephony Spelling Alphabet and also called the ICAO phonetic or ICAO spelling alphabet, as well as the ITU phonetic alphabet, is the most widely used spelling alphabet.

The first internationally recognized phonetic alphabet was adopted by the International Telecommunications Union (ITU) Radio Conference in 1927 and was in use by the maritime mobile service**.** The experience gained with that alphabet resulted in several changes being made by the 1932 Radio Conference of ITU. The resulting alphabet was adopted by the International Commission for Air Navigation (ICAN), the predecessor of ICAO, and was used in civil aviation until World War II.

During the World War II, the military requirements led to the development of a common spelling alphabet for the use of the combined allied services; the Able Bakeralphabet was named after the words for the letters A and B. In peacetime with many aircraft and ground personnel drawn from the allied armed forces, the "Able/Baker" alphabet was widely used in the field of civil aviation. It was adopted by the Second Session of the ICAO Communications Division in 1946. The problem was that many speech sounds of this alphabet were associated only with the English language. An alternative alphabet "Ana/Brazil" was endorsed and introduced for the South American and Caribbean regions.

As there were two coexisting alphabets IATA at its First Technical Conference in Nice in 1947 was to subject to consideration by ICAO a first draft of a single universal alphabet. Professor Jean-Paul Vinay of the University of Montreal (Canada) worked on this problem in collaboration with the ICAO language section during 1948 and 1949. After those studies, consultations with communications experts and comments from all of ICAO’s member governments, a new ICAO alphabet was adopted and incorporated in the Aeronautical Telecommunications Annex 10 for implementation on 1 November 1951 in civil aviation, with one year transition to this new alphabet.

The following alphabets are those used in English-language aviation. UK usage 1912 to October 1942: Ack, Beer, Charlie, Dog, Emma, later Edward, Freddie, George, Harry, Ink, Johnny, King, London, Monkey, Nuts, Orange, Pip, Queen, or Queenie, Robert, Sugar, Toc, Uncle, Vic, William, X-ray, Yorker, later York, Zebra.

US/UK Combined Phonetic Alphabet, October 1942; Adam; from November 42 Able, Baker, Charlie, Dog, Easy, Fox, George, How, Item, Jig, King, Love, Mike, Negat (USAAF); from Nov 42 Nan, Oboe, Prep (USAAF); from November 42 Peter, Queen, Roger, Sugar, Tare, Uncle, Victor, William, X-ray, Yoke, Zed (USAAF); from November 42 Zebra.

ICAO, from 1952: Alpha; in US often Alfa, Bravo, Coca or Coco, Delta, Echo, Foxtrot, Golf, Hotel, India, Juliet, in US often Juliett, Kilo, Lima, Metro, Nectar, Oscar, Papa, Quebec, Romeo, Sierra, Tango, Union, Victor, Whiskey, Extra or X-extra, Yankee, Zulu.

 Immediately, problems were found with the newly adopted alphabet. Some users felt that they were so severe that they returned to the old "Able Baker" alphabet. Because of the widespread discontent, ICAO decided to re-examine the question and its member governments (through airlines, pilots, air traffic controllers, etc.) were invited to collaborate in further studies which conducted that any radiotelephony spelling alphabet constituted an entity of 26 interrelated words, changes in any of which could have unpredictable reactions and interactions with the others.

The tendency of infer that because a word may appear “bad” in isolation, either phonetically, structurally or because it is unfamiliar and that its replacement by an apparently “good” word will achieve an improvement, is one to be considered with the utmost caution. The criterion as to whether a word is “good” or “bad” is fundamentally the measure of its success in relation to all the other alphabet words (and with spoken numerals), together with its success for transmission in noise. For example, the word “”FOOTBALL” has a higher articulation score than the present spelling alphabet word “FOXTROT” i.e. it is correctly identified when it is spoken, a greater percentage of the time. “FOXTROT” however, is the preferred word because it is less often erroneously recorded when other words in the spelling alphabet are spoken; therefore, the overall intelligibility of the alphabet is raised by using “foxtrot” rather than “football”.

The testing was conducted among speakers from 31 countries, principally by the governments of Canada, the United Kingdom and the United States. After much study, only the five words, i.e. Charlie, Mike, November, Uniform and X-Ray, representing the letters C, M, N, U, and X were replaced in the original alphabet.

According to the 4-page ICAO pamphlet accompanying the recording illustrating the correct way of pronouncing the words of the new Radiotelephony Spelling Alphabet, distributed to all countries in November 1955 when the alphabet was introduced, the spelling alphabet was developed as a result of extensive studies involving hundreds of thousands of tests and the participation of both scientific personnel and those having extensive experience in aviation. Tests were conducted both between aircraft and aeronautical stations and under controlled laboratory conditions and the results obtained had shown a strong similarity.

The 26 code words in the phonetic alphabet are assigned to the 26 letters of the English alphabet as follows: Alfa, Bravo, Charlie, Delta, Echo, Foxtrot, Golf, Hotel, India, Juliett, Kilo, Lima, Mike, November, Oscar, Papa, Quebec, Romeo, Sierra, Tango, Uniform, Victor, Whiskey, X-ray, Yankee, Zulu. Some of the 26 words have altered pronunciations: Charlie can be spoken as either "char-lee" or "shar-lee" and Uniform as either "you-nee-form" or "oo-nee-form". Oscar is pronounced "oss-cah" and Victor as "vik-tah" without the 'r'. Papa is pronounced "Pa-PAH" with the accent on the second syllable instead of the first. The code word Quebec is pronounced as French "keh-beck".

In the official version of the alphabet, the non-English spellings Alfa and Juliett are used. Alfa is spelled with an f as it is in most European languages because the English and French spelling alpha would not be pronounced properly by native speakers of some other languages – who may not know that ph should be pronounced as f. Juliett is spelled with a tt for French speakers, because they may otherwise treat a single final ‘t’ as silent. In some English versions of the alphabet, one or both of these may have their standard English spelling.

The final version was implemented by ICAO on 1 March 1956, and thus was adopted by many other international and national organizations, including the North Atlantic Treaty Organization (NATO), ITU, the International Maritime Organization (IMO), etc. The phonetic alphabet became to be formally known as the International Radiotelephony Spelling Alphabet or the NATO Phonetic Alphabet.

**Conclusion**

In spite of the fact that the use of modern clear electronic communications is widely spread nowadays the ICAO phonetic alphabet is extremely helpful. The international airlines, pilots and air traffic controllers use it every day successfully. To teach the phonetic alphabet from A to Z is one of the major tasks in the instruction of future ATCs. English language teachers can use such Internet recourses like”Spell It Out! (Alpha Bravo Charlie)”, created by Henrik Bengtsson, within the aviation English training programmes.

**References**

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