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Research Article

A LINGUISTIC REVIEW OF CERTAIN ASPECTS OF AVIATION LANGUAGE ON THE LEXICAL LEVEL

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ABSTRACT

English which has become the lingua franca all over the world is used in aviation. Aviation English is one of the most outstanding fields of ESP (English for Specific Purposes.) This article sheds light on some linguistic aspects on the lexical level in the field of aviation language. Though this article exhibits some important aspects of aviation language, it does not cover the entire field. Specifically, it covers in this regard the civil aviation, so for the purpose of this study, what is relevant to space aviation or military aviation has been segregated in this article. Areas' lexical forms, exhibited for investigation in this review article from a linguistic perspective, include mainly telecommunications and flight operations; however other forms are shown for illustrations. This sort of aviation linguistic analyses can be investigated by aviation professionals as well as language specialists. Aviation English is full of terms and complicated coinages; some aspects of codes, acronyms, abbreviations, etc., are shown and analyzed on the lexical level in this article.

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INTRODUCTION

Nowadays, when someone says to a number of friends: "Listen! I'm going to the airport", most probably, they will say anything except "Wow! The airport!" In the 21st century, going to the airport, the mall, or anywhere else, is not something extraordinary to people, in general. As a passenger at the airport, you routinely take your luggage to the Check-in counter where travel procedures commence there.

The birth of practical heavier-than-air aviation was on December 17, 1903 in North Carolina (ICAO, 1990). On August 25, 1919, international airline service started when a flight was recorded between London and Paris (Encyclopedia Americana, 1989.)

IATA, the International Air Traffic Association is a non-governmental organization founded in 1919. This organization helps authorities to have a view of future requirements such as navigational aids, planning airports and any other needed facilities. According to Brancker (1977), IATA was intended to be a free union of interested companies; no attempts were made to establish things like monopolizing or dividing continents into spheres of influence. One of the most important tasks of IATA is traffic. It is facilitating interline arrangements, standardizing forms and procedures, and handling agreements. Lots of conferences are held for this purpose; sometimes, such

conferences fail to reach agreements because member airlines are under pressure by their own authorities (ibid, 1977).

ICAO, the International Civil Aviation Organization (commonly known as Chicago Convention) is the governments' agency that sets world standards for the technical regulation of civil aviation. It was founded in Chicago, Illinois on December 7, 1944 by 52 countries gathered to sign the Convention (Royal Jordanian (1978).

Every country's complete sovereignty over its own airspace and territory is recognized by ICAO. It prohibits any scheduled international air service from operating into or over the country without its previous consent. This convention, held in 1944, was a major event in the field of aviation; it provided the framework for the rules and regulations that govern aspects of international air transport. This convention emphasizes that international air transport services should be established on the basis of equality of opportunity (ICAO, 1977). This organization also specifies the aeronautical charts for navigation. Symbols and terms have been standardized for this purpose. ICAO works as well on a better utilization of airspace areas especially in areas of traffic density. It has its contribution to reducing aircraft noise by issuing certain limitations on aircraft engines (ibid, 1977).

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As an ex-ground staff of Royal Jordanian Airlines, I still remember that the noisy sound of one of the Boeing 707 cargo aircraft working between Amman and Romania had become tolerable and reasonable after installing some kit or instrument, and therefore, it was called a hush-kitted aircraft.

F.A.A is Federal Aviation Agency. It is an independent unit of the U.S government; its concern is the safety and progress of aviation. It was established in August 1958. F.A.A's operations are conducted by six major bureaus: Bureau of Research and Development, Bureau of Facilities and Materiel, Bureau of Air Traffic Management, Bureau of Flight Standards, Bureau of Aviation Medicine, and Bureau of National Capital Airports (Gentle *et al*, 1961). This agency contributes a lot to the field of aviation, mainly with regard to regulations, although it is a national one.

Aviation English is more than the pilots' communication in the aircraft with the air traffic control (ATC) staff. There are different areas under the umbrella of aviation (1).

- a. Flight services, ATC, Out-stations, Catering, Cargo, and other subdivisions.
- b. Engineering and Maintenance, and its specialized workshops.
- c. Business circles such as sales and investments (e.g. duty free shops, ticketing, etc.)
- d. Administration offices.
- e. Flight Operations (flight and ground staff).
- f. Training Centers for pilots (captains, First officers, and Flight Engineers)(2), flight attendants, ground staff of Flight Operations(3) in particular, and other staff in general.

Linguists, in general, agree that language varieties are two notable types according to (a) users and (b) use. Varieties according to users are called "dialects" and those to use are associated with "registers" (Halliday, 1964), (Corder, 1973).

Different varieties are embodied by language and so, the needs of its speakers are served in various situations. Hudson (1980) defines language variety as "a set of linguistic items with similar social distribution."

Probably, it is misleading to claim that there is an English for Science because each register demonstrates a number of varieties of sub-registers and each uses its structure. Therefore, defining a specific register clearly is not an easy task (Robinson, 1980). Despite the considerable contributions in the field of ESP, it seems that the field remains open to improvements. "...very few textbooks are based on any kind of register analysis" (ibid, 1980).

The acronym ESP (English for specific Purposes) embodies lots of varieties, for example, Business English, Technical English, English for Science and the like. One might think that such labels are different from common-core English (McDonough, 1984) but the differences are not extensive.

Linguists focus on the purpose for which the variety is used and so, they divide ESP on this ground. Mackay and Mountford (1978) mention (1) occupational requirements such as international telephone communications, (2) vocational training programmes such as hotel management, and (3) academic or professional study such as medicine.

Due to scientific progress in aviation, a load of data should be investigated. People in general are not aware of the concept of "Fly-by-wire" aircraft, or "VOR" (Visual Omni-Range) network (Elmer-Dewitt 1993).

When researchers, in general, investigate Aviation English, they will soon discover that it is, in deed, a sort of challenge once they make up their mind to go ahead in this field. Undoubtedly, it is large and full of complicated terms. Perhaps in this regard, it is important to differentiate between aviation professionals and language specialists. Here, a number of questions may be posed whenever Aviation English is investigated; for instance: What is the difference and / or the relation between them? Should we be aviation professionals to be English specialists or vice versa?

Generally speaking, the aviation professional is, of course, different from the language specialist; however the "distance" of this difference, as it were, is somehow "flexible" and certain aspects may be investigated in this respect by both parties whenever studies in the field of Aviation English increasingly become stronger and deeper. Any study dedicated in this field for (or even by) the aviation professional can be fruitful for a number of reasons. First, it presents background for the need to address this sort of language. Second, such conducted study is supposed to describe the nature of aviation uses of language. Third, reviewing selected materials in this field may pave the way for scholars to come up with certain ideas for advancing knowledge, and refining the use of Aviation English (Ragan 1996).

Theoretically, reviewing Aviation English by aviation professionals or language specialists is expected to make an addition to our knowledge, since contributions in this important field have been relatively few. Perhaps we can claim that a sort of professional and academic cooperation (whenever possible) between the two parties will be beneficial in this field. Contributions in this respect might be useful to airline instructors, film translators, newspaper editors, English specialists and the reader in general.

Why Should we Study Aviation Language?

At airports, you can see lots of people leaving or coming just by looking at departure or arrival signs in terminals. A regular passenger will definitely understand what is meant by "Baggage Claim," "First Class," and "Departure" signs, etc." Can we say, in this respect, that what is commonly written on papers, walls, screens, etc., is the same all over the world? In fact, English terms in this regard are not completely standardized internationally. For instance, the terms "luggage, aerodrome, cabin attendant, film" are British, whereas the American equivalents are "baggage, airdrome, flight attendant, movie." Despite the fact that American English is more dominant (mainly in passenger handling), both British and American terms should be studied to determine the lingua franca of the cabin crew (Beech, 1990).

For the purpose of language proficiency in aviation, the four skills of language (speaking, listening, reading, and writing) should not be neglected. This will enable trainees to go ahead in the field of Training, Operations, and Maintenance. Pilots, ATC controllers, engineers, and ground staff know, for example, that the manuals of flight operations and flight deck checklists, maintenance big manuals, and so forth, are all

published in English. According to Mathews *et al.* (2014), ICAO's implementation of language proficiency requirements was slow; it came after almost forty years of push for more awareness of human factors in the field of aviation.

There are certain issues that cannot be ignored. Flight safety is an outstanding point that is continuously raised in conferences and heated discussions. Safety, in this regard, is not restricted to airport runways and taxiways or aircraft equipment and maintenance, and the like; it also takes into account English language proficiency exams within which standard aviation terms (with different forms) are used by pilots, air traffic controllers, and other airline staff members in this field.

Federal Aviation Agency (FAA), in this respect, worked to standardize English language fluency requirements for its certificates. Certainly, this is related to real concerns regarding flight safety hazards that might occur due to pilots' inability to communicate well by radio with air traffic control (ATC) staff (Pena to Airlines, 1995).

According to Zahra (2011), one of the reasons beyond air aviation catastrophes is communication errors. Moreover, the lack of sharing information and knowledge might also cause aviation disasters (ibid: 2).

Human factors might be one of the most important reasons for communication errors (Krivonos, 2007). Human factors' fundamental role cannot be denied in the field of aviation. A number of different books in this respect focused on communication as a key component of safe operations. However, there is a gap between what is theory and what is practice; this gap is bigger in radio communication procedures than any other aspect of aviation (Wiener *et al.*, 1988. Language use may be viewed as comprising three areas of meaning: content, exchange, and organization (Halliday, 1994). Pilot-ATC controller's communication is a good example on language content in this regard. Cushing (1988) and Cushing *et al.* (1989) investigated well different issues related to language and communication.

Training in the field of aviation is the key word here; apart from machine training, there is a need for language training. International efforts are required for acceptable standards of English as a lingua franca of aviation (Ragan, 1996).

People may (or may not) know that pilots use flight simulators for training purposes before (and after) flying as "trusted" pilots. Such apparatuses are set up with computerized flights imitating real flights. A pilot is getting his /her training here in real flight-like atmospheres. For instance, the air turbulence is represented in such simulators. Working for ten years as a ground staff in the Flight Operations Department for Royal Jordanian Airlines, gave me the chance to understand something in this field.

Some Linguistic Aspects

Codes, Acronyms, Abbreviations and Other Coinages

In aviation language, there are many codes associated with navigation. The three or four-letter codes may represent airports, as in the following examples:

Country	Airport	3-letter code	4-letter code
EGYPT	CAIRO/INTL	CAI	HECA
JORDAN	AMMAN (Q. A. I)	AMM	OJAI

As regular passengers commonly know, the 3-letter codes are seen in everyday use in the field of aviation. These coined codes indicate the destination of each departing and arriving flight. The 4-letter codes are abundantly available in navigation and meteorology such as "OKBK, OJAI, OSDI", and they represent "Kuwait, Jordan, and Syria" respectively. Moreover, the 4-letter codes are significantly related to the FIR in navigation (Flight Information Region) as illustrated in the following example:

FIR	COUNTRY
LCCC	CYPRUS
LFFF	FRANCE

One of such aspects can be seen, for example, in an official computerized flight plan from Amman to London as follows:

RJ No	Sector	FIRS
111	AMM/LHR	OJAI/OSTT/LCCC/LTBB/LBSR/ (ViaE/EUR)LHCC/LOVV/EDDU/EBUR/EHAA/EGTT

The above string of codes represents a form of the navigational language used daily by pilots. The aircraft in the air will take its route according to these FIRS. Pilots and experienced Flight Operations ground staff (mainly aircraft dispatchers) can easily read these codes as follows:

Royal Jordanian flight number 111 Amman (Q. A. INT)(1) London (Heathrow) will fly via East Europe through FIRs of: Jordan / Syria / Cyprus / Turkey(2) (Ankara) /Turkey (Istanbul) / Bulgaria (Sofia) / Ex Yugoslavia(3) (Belgrade) / Hungary / Austria / Germany / Belgium / Netherlands / U.K. (Royal Jordanian Flight plan, 1989), (Gorgis and Hijazeen, 2010)

Acronyms which have a long history became very popular in the 1930s. They represented the names of governmental agencies especially in the west that were too long to pronounce. During World War II, their use was promoted to serve military issues, then it became a worldwide phenomenon (Pyles and Algeo, 1970).

1. Q. A. INT: Queen Alia international (Airport).
2. The Turkey FIR is divided into "areas" e.g. Istanbul FIR, Ankara FIR, Izmir FIR, etc.
3. Ex Yugoslavia is divided as well into FIRs. This system applies to Bulgaria.

Linguists sometimes disagree on certain types of acronyms. According to Baum (1962), the term acronym has been used since 1950 for words like motel from motor and hotel, racon from radar (or radio) beacon which had formerly been known as blends.

In aviation, there are acronyms that are common and understandable such as ETA which means Estimated Time of Arrival, but others are not like that; the following acronyms are just a sample:

LORAN:	Long Range Navigation.
CODAN:	Carrier Operated Device, Antinoise.
FMS:	Flight Management System.

The acronym VORTAC is built from two already coined acronyms: VOR which means Very-High-Frequency Radio Omnidirectional Range and TACAN means Tactical Air Navigation. (Gentle et. al, 1961), (Gentle et. al, 1980)

The acronym NOTAM (notices to airmen) is significant in flight navigation. NOTAM issues consist of information concerning the establishment, conditions or change in any aeronautical facility, service or anything relevant to flight operations (ICAO, 1977). NOTAM bulletins are issued to brief pilots before any flight. Here is an example:

UUEE: main TWY 2 BTN TWY 27 and 28 closed UFN.

This NOTAM can be read as follows:

Sheremetyevo (Russia): The main taxiway 2 between taxiways 27 and 28 is closed until further notice (RJA Daily Notam bulletins, 1992).

In general, Notam bulletins can be understood easily after considering some recurrent abbreviations in this aspect. Here are some examples:

APCH: Approach
VFR: Visual Flight Rules
IFR: Instrument Flight Rules
RWY: Runway
AWY: Airway
(ICAO, 1983)

The field of aviation is rich in its abbreviations; the following ones may spot the light on some forms.

Types of Clouds

CI: CIRRUS
CC: CIRROCUMULUS
AC: ALOCUMULUS

Weather Abbreviations

DZ: DRIZZLE
HZ: DUST HAZE
FG: FOG
(Dubai Forecast Folder 1989), (Gorgis and Hijazeen, 2010)

There are other coinages in aviation language such as "anti-skid," "go-around," and so forth. Bryant (1948), mentions certain compounds relevant to aviation industry in America such as "Airliners," "Skycruisers," "Skyfreighters, etc." In fact, there are a lot of aviation compounds that have become commonly known such as airborne, autopilot, airbrake, aircraft, airdrome, airline, airpark, airport, take-off, and the like.

Blending is also available abundantly in aviation. Potter (1969) provided early in this field certain examples such as "bash" which is a blend of "bang" and "crash," "smog" for "smoke" and "fog." According to Jeffers and Lehiste (1979:131), it is the "contraction of two existing words to make a new word incorporating certain of the semantic characteristics of each of the source words." Examples of blending include "brunch," which comes from "breakfast" and "lunch" and "chortle," which is derived from "chuckle" and "snort."

In aviation, some blends may seem to a certain extent difficult to understand; for instance "avionics," comes from aviation and electronics, "elerudder," for elevator and rudder, "navaid" for navigational aid, "oximeter" for oxygen and meter, "avgas" for

aviation and gasoline, "alnot" for alert notice, and so forth. (Gentle et. al, 1961), (Gentle et. al, 1980), (Reithmaier, 1990)

ICAO Standard Words and Phrases

There are standard words and phrases coined specifically by ICAO for the language of communication in the field of aviation. These of course are between the pilot and the control tower; here are some examples:

<i>Word/phrase</i>	<i>Meaning</i>
CLEARED:	Authorized to proceed under the conditions specified.
REPORT:	Pass me the following information.
ROGER:	I have received all of your last transmission
WILCO:	I understand your message and will comply with it (abbreviation for will comply). (ICAO, 1984:2-4)

ICAO's "standard Language" is meant to ensure uniformity in radiotelephony communications. This is expected to secure the accuracy of action, taking into account the huge number of daily arriving and departing national and international flights. Definitely, this means of communication will facilitate the daily traffic conducted by pilots from various nationalities and language backgrounds. Controllers, in the course of their duties, sometimes see that it is important to extend or amend the phraseology. Controllers, in these circumstances, should take care not to confuse basic meanings. Undoubtedly, the experienced controller knows that he or she can drop certain phrases without causing troubles such as "THIS IS," "OVER," "ROGER" (Jordan CAA-ATS, 1990).

ICAO Spelling and Pronunciation

Controllers should use clear, concise sentences and avoid obvious faults such as hesitating sounds, lowering of voice, blurring of consonants, etc. This will ensure maximum efficiency and prevent irritating repetitions. The following examples represent some of ICAO's word spelling alphabet with the pronunciation in parenthesis for each letter, the syllables requiring stress being underlined. This system, of course, will be used at all times when it is required to indicate letters. Here are some examples:

A	ALFA	(<u>AL</u> FA)
B	BRAVO	(<u>BRA</u> VOH)
C	CHARLIE	(<u>CHAR</u> LEE)
D	DELTA	(<u>DEL</u> TAH)

(Jordan CAA-ATS, 1990, 3)

It should be noted that I have not used a phonetic spelling; the spelling and pronunciation used here are as they appear in the Jeppesen Manual (1992) which conforms in style to other specialized aviation books. They are used in aviation on daily basis in civil aviation. This can be clearly noticed in the following aircraft registration:

"JY- AEC"

This Registration can be Read as Follows

JULIETT- YANKEE – ALFA – ECHO – CHARLIE.
(Gorgis and Hijazeen, 2010)

CONCLUSION

English has become the lingua franca in the world. For all flight destinations, pilots from different nationalities use English during their international flights on daily basis. ICAO,

the International Civil Aviation Organization set world standards for aviation technical matters, as well as necessary language requirements. Clearly the language of aviation is full of complicated terms. These terms and coinages are represented in different forms of codes, acronyms, abbreviations, blends, and so forth. Some linguistic aspects of aviation language are investigated in this article on the lexical level; what is dealt with in this regard is relevant to aviation telecommunications and flight operations. All investigated issues relevant to communications between the pilot and ATC (Air Traffic Control) staff stress the need for a clear and understood language to avoid flight disasters. Flight safety is also taken into consideration in all important conferences around the world. For aviation purposes, there are specialized centers that train pilots on flight technical matters one the one hand, and on language proficiency (based on ICAO's standardized aviation language) on the other.

Lots of efforts were exerted in studies pertinent to the field of aviation language, but undoubtedly, they didn't cover all aviation aspects. Most studies in this respect focused on aviation communications. Therefore, a further study in this field is recommended.

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