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DECODING NEGATION IN AERONAUTICAL DISCOURSE

The article presents a discourse-based approach to negation. It investigates the real-life aeronautical communication examples in order to elicit negation decoding techniques. The author shows how negation in aeronautical discourse works. The nature of aeronautical discourse is presented in section 2, followed by basic knowledge about negation and its decoding strategies in high-risk aeronautical environment. Sections 3.1 and 3.2 analyse routine and non-routine negation in a given context.

KEYWORDS: negation, aeronautical discourse, Aeronautical English, decoding, standard phraseology

INTRODUCTION

Negation is a central feature of language and cognition, interacting with all areas of grammar as well as with the philosophy of language (Horn/ Kato 2000). Furthermore, it is negation that makes us human, imbuing us with the capacity to deny, to contradict, to misrepresent, to lie, and to convey irony (Horn 2010: 1). It is important to observe how negative sentences are realised cross-culturally in high-risk environment where each word can contribute to misunderstanding and where speakers are usually pressed for time. Such is the nature of aeronautical discourse.

Although aeronautical communication in English which is the language of international aviation communication, takes place unceasingly in real professional life, the linguists' attention has not been devoted to negation in aeronautical discourse yet. The subject is mentioned only by Estival (2016: 64–66) and Borowska (2017). Therefore, there is a need to identify the functions of negation and the types of negating forms found in a corpus of aeronautical communication, which should be followed by the description of key methods to decode the specific aeronautical register. Such analysis may facilitate not only understanding of aeronautical discourse. It is especially crucial for global aviation safety as these are aircraft crews and air traffic controllers who communicate during every phase of flight when performing their aeronautical tasks on a regular basis.

AERONAUTICAL DISCOURSE

The term *aeronautical discourse* refers to pilot-controller routine and non-routine exchanges: “Air traffic communication occurs entirely over radio frequencies and includes no face-to-face communication. The linguistic exchanges occur within a sociotechnical system supported by material anchors (Hutchins 1995, 1996, 2005)” (Moder 2013). Spoken communications are therefore the essential way of pilots and controllers exchanging information. The mechanism seems to be simple, i.e. controllers read and interpret the data on radar displays and pilots interpret the data on cockpit instrumentation. Then, both sides share necessary information concerning the air traffic as well as other flight parameters, including weather conditions. Although today there are two types of aeronautical discourse in use: written and oral, the written one imitates the spoken variety and includes written messages exchanged between pilots and controllers via Controller-pilot data link communications (CPDLC). However, it does not suffice because it only supports the spoken variety: “CPDLC is a data link application that supports the exchange of data messages directly between a controller and a flight crew” (ICAO, GOLD 2013, 2.2.5.1.1). As mentioned in the Introduction, global radiotelephony communication is required to be in English:

Pending the development and adoption of a more suitable form of speech for universal use in aeronautical radiotelephony communications, the English language should be used as such and should be available, on request from any aircraft station unable to comply with 5.2.1.1.1, at all stations on the ground serving designated airports and routes used by international air services.

(ICAO 2001: 5.2.1.1.1)

According to Alderson (2009), the English of international aviation is not English for general purposes or English for international purposes:

Aviation English¹ is a language for specific purposes (see Douglas, 2000), but it is even more restricted than that. Much of the English of aviation can be classified as a code that is used in a very restricted context (see Cabre, Freixa, Lorente, & Tebe, cited in Sarmiento, 2005, p. 2), known as standard phraseology. It can be seen, following Ragan (2007, p. 54), as a highly restricted register associated with “distinctive probabilities of discourse functions and choice of lexis and grammar.”

(Alderson 2009: 168)

In order to overcome the phonetic and linguistic difficulties experienced by non-native speakers, the structure and elements of this code have been greatly simplified so as to avoid pointless redundancy and excessive difficulties in comprehension and expression. Thus, specific phrases have been codified, each with its specific

¹ Traditionally, Aeronautical English is also called Aviation English in literature (A.B.).

function and well-defined meaning, and message/reply markers have been coined to identify the pragmatic value of each utterance (Gotti 2004).

The aeronautical communication aims can be thus achieved via Aeronautical English which has been prescribed by the aviation authorities. The rules have been clearly formulated in the following regulatory documents, such as ICAO² Doc. 9432 *Manual of Radiotelephony* (2007a), ICAO Doc. 9835 *Manual on the Implementation of ICAO Language Proficiency Requirements* (2010a), ICAO Annex 10 to the Convention on International Civil Aviation: *Aeronautical Telecommunications*, Volume II (2001, 2010b), ICAO *Procedures for Air Navigation Services: Air Traffic Management* Doc. 4444 (2007b), *Radio Communications Phraseology and Techniques – P-8740-47* (FAA 2006). However, in order to understand any aeronautical exchange we need to be familiar not only with Aeronautical English, but also with aspects such as: meteorology, aviation technology, air navigation. Nevertheless, for linguists, the most interesting issue here seems to be the language in question and the prescribed rules aeronautical discourse is supposed to follow to maintain safety. Aeronautical English is composed of two elements: standard phraseology and plain aeronautical English.³ These two phenomena as well as the rules of aeronautical communication should be investigated in order to observe and interpret the negation in aeronautical discourse. However, standard phraseology is regarded as a specific code where not only English-based vocabulary is modified, but also English grammar and pronunciation, whilst Plain Aeronautical English, though closer to natural English, seems to imitate standard phraseology simplification processes. A controller usually gives information in a particular order, and a pilot reads it back accordingly. This kind of coded dialogue is definitely unintelligible for non-specialists. Thus, its structure needs to be also decoded for those who do not deal with aviation communication, but may be interested how it works.

Aeronautical discourse goals are related to actions leading to concrete results, such as taking off, climbing, cruising, holding, landing, taxiing. It is also specified who communicates with whom, when and how. Eurocontrol (2006) points to few stages of aeronautical spoken communication, such as controller's clearance, pilot's readback (pilots are obliged to repeat after the controller the instruction(s) they are going to follow), controller's hearback (controllers are supposed to listen carefully to the pilot's readback in order to check the proper comprehension of the given instruction as well as numerical data provided), controller's correction (in case of mistakes in pilot's readback). Such a model is called a *pilot-controller communication loop* and it is supposed to be strictly obeyed by aeronautical communication participants. Thus, we address a type of conversational structure that includes a turn taking, how such turns are constructed, back channeling (signaling comprehension or lack thereof),

² The International Civil Aviation Organization.

³ For linguistic description of standard phraseology and *Plain Aeronautical English* (also called *Plain Aviation English*) see Borowska (2017).

adjacency pairs (e.g. questions and answers), as well as conversational boundaries such as opening and closing conversations (Schegloff/ Sacks 1973).

Last but not least is the fact that the controller issues instructions based on a timing requirement that will place an aircraft on a flight path that will result in the most efficient use of airspace. The 5-8-second delay caused by inattentive pilot will destroy this sequence and result either in a delay for every aircraft that follows or a scramble on the part of the controller to change the sequence (Stewart 1989: 19). Hence the need for the effective code that can be easily processed by human mind. According to Chomsky (1965), our subconscious mind is responsible for such word processing that leads to non-verbal reactions. Yet the mind can understand only simple, or basic, language under time pressure. Thus, it is our conscious mind that can only interpret negation. Therefore, in our context, the negation should be expressed with as simple structures as possible.

DECODING AERONAUTICAL NEGATION

English is an official language and automatically *lingua franca* of global aviation. Pilots and controllers must be able to use the memorised standard phraseology with sufficient skills to pronounce and comprehend the phraseology as spoken by both native and non-native speakers of English (Hinrich 2008: 4): “speakers must also be able to construct and comprehend novel utterances appropriate to a particular situation which may require words or phrases that are not exclusively included in the phraseology”. Therefore, Aeronautical English users can predict not only what sort of information will be provided in a routine exchange, but also how it will be provided. Because of its prescribed nature, Aeronautical English is unambiguous, so more efficient.

Negation in spoken discourse often relates to a previous utterance. Giora (2007: 143) presents ‘backward resonance’ in the context of negation, which makes sense in aeronautical context: “[i]f concepts within the scope of negation resonate with information mentioned previously in the discourse, this suggests that speakers assume their accessibility and hence their affinity with previously mentioned information”. Therefore, in order to understand, so decode, how negation is expressed in aeronautical discourse and how we should interpret it, it seems obvious that negation should be analysed within the context in which it occurs (cf. Cheshire 1999: 36). To this end, negation ensures the coherence of the emerging discourse: “it can link the current turn to the previous one, by negating a presupposition that has just been expressed, whilst simultaneously ensuring that the interlocutors have a shared orientation to the topic they are pursuing, so that the subsequent turn is felicitous” (ibid.: 38).

Crystal (2008) defines *negation* as “a process or construction in grammatical and semantic analysis which typically expresses the contradiction of some or all

of a sentence's meaning"; Pei and Gaynor (1954) claim it is "a morphosyntactic operation in which a lexical item denies or inverts the meaning of another lexical item or construction"; whilst *Dictionary of Language Teaching and Applied Linguistics* (2013) describes it as "contradicting the meaning or part of the meaning of a sentence". According to Klima (1964), a linguistic theory of negation needs to explain the syntax, semantics, and pragmatics of negation. The initial process composes the meaning of constituents out of the meanings of their words and the grammatical relations amongst them. Therefore, negation has an important effect on meaning (Klima 1964). Decoding aeronautical negation aims at explaining the parsing of negative sentences, the process of understanding them, the resulting mental representations, and the contextual factors that make them easier to understand (cf. *ibid.*: 2). For decoding aeronautical negation we need to be familiar with the following elements:

- context (e.g. aims of air navigation)
- rules of aeronautical communication
- standard phraseology
- Plain Aeronautical English
- prescribed negation structures for routine and non-routine situations.

Traditionally, we may talk about routine negation in standard phraseology and non-routine negation in Plain Aeronautical English with the emphasis that the latter follows more frequently general English structures. Nevertheless, both types of negation may be considered as aeronautical, and they would intertwine in a non-routine situations because these are speakers who decide which structures they use in similar occurrences where the only aim, apart from maintaining safety, is to be intelligible. Hence we may mention here the notion of particular specialists' idiolects: "each individual text is produced by an individual, so on the basis of their particular idiolect (more in S. Gruzca 2008, 2013). When a professional uses a language in a professional context it means it is his or her professional idiolect... Fortunately, we may assume that those idiolects definitely share common acceptable features used in aviation communication" (Borowska 2017). Therefore, there is no need to describe an aeronautical language model together with recommended usage, but this is Aeronautical English in actual use that should be analysed.

ROUTINE NEGATION

The syntactic behaviour of aeronautical discourse negative elements is better understood if one takes into consideration the character of this discourse. In particular, the negation properties are different from general English ones and they may be interpreted as ungrammatical on the assumption of structures or words in use. However, if one knows how to interpret the code⁴, standard phraseology clauses are transparent.

⁴ See more on standard phraseology structures in Borowska (2017).

Alderson (2009: 169) notes that although the acoustic quality of radiotelephony is often poor, routine air–ground communications are typically smooth and effortless. In general, misunderstandings are infrequent and easily resolved (Mell, n.d., 1):

This is largely because, over the years, standard phraseology has developed as an internationally recognized code. This has been refined in part as a result of the analysis of aviation incidents involving miscommunication, whereby ambiguities and confusions have been reduced to a minimum. This restricted code is used in highly predictable circumstances, and normal communications follow a prescribed sequence.

(Alderson 2009: 169)

Standard phraseology is a specific linguistic tool that serves routine aeronautical communication. The phrases and the grammatical constructions have been developed in order to be as simple as possible, with the particular emphasis put on positive and negative instructions or advice that are clearly differentiated.

In the following examples we can observe how speakers use negation to ensure that interlocutors have the same orientation to the topic as they have themselves in terms of shared background knowledge. The analysis cannot be based on isolated examples. In routine aeronautical discourse the negation refers to the previous utterance. The prescribed negators⁵ are the following:

- the multi-purpose word NEGATIVE defined by ICAO (2007: 2.7) as ‘No’ or ‘Permission not granted’ or ‘that is not correct’ or ‘not capable’. Its coded use depends on the context and previous statement, but it negates nouns, verbs and clauses. One of its functions is to substitute the utterance ‘I do not confirm’ (see Borowska 2017).

As Estival (2016: 64) notes:

[T]o avoid the English words ‘no’ and ‘not’, which are too short and phonologically weak and could easily be missed in the transmission, potentially leading to confusion with the positive form and to serious misunderstanding. Negation must be conveyed by the term ‘NEGATIVE’, followed by a corrective statement ..., not by a negative answer ..., even when the prior transmission was a question which did not strictly follow the phraseology.

Exchange (1):

Controller: [callsign] TURN RIGHT HEADING 130, CONTINUE CLIMB TO FLIGHT LEVEL 150

Pilot: RIGHT HEADING 130, CLIMBING LEVEL 190, [callsign]

Controller: [callsign] NEGATIVE, FLIGHT LEVEL 150

In the above exchange (1), the instruction was provided, but the readback was partially incorrect, so the controller had to negate the wrong data by using the negator NEGATIVE that refers to the corrected data that follows the negator. Thus,

⁵ A *negator* is a lexical item that expresses negation (Pei/ Gaynor 1954).

in general English we may provide the following equivalent: ‘You did not repeat my instruction in the correct way. The flight level you are supposed to climb is not 190, but 150’ or in a simpler way ‘The flight level is not 190 but 150’. So the word NEGATIVE substituted the short negator *not* and therefore negated the noun phrase. The aeronautical negation meets its aim here as it is very short and clear.

Exchange (2):

Pilot: [callsign] REQUEST CROSS RUNWAY 33R

Controller: [callsign] NEGATIVE, HOLD SHORT OF RUNWAY 33R

If a pilot cannot receive the clearance to cross the runway, his or her request is negated by the controller and such negation can be interpreted in various ways, e.g. ‘You are not allowed to cross the runway’, or ‘I cannot give you the clearance to do so’, or simply ‘Don’t do so’. Thanks to this type of negation, all the required activity is negated. Automatically, the negation is followed by a standard clear instruction.

Moreover, verbs are often negated in the following way:

Exchange (3):

Controller: DO YOU WANT VECTORS?

Pilot: NEGATIVE VECTORS, TRAFFIC IN SIGHT

In exchange (3) the negative marker is again a non-inflecting element and substitutes an auxiliary that usually negates the verb in general English. Thus, the presented negation can be decoded as ‘No, I don’t (want vectors)’. The negator NEGATIVE also substitutes the entire negative sentence occurring at the same slot as naturally expected in general English auxiliaries, so can be interpreted as ‘No, I do not’, ‘No, I am not’ or ‘No, I will not’ with the choice of person depending on the context. It is usually followed by a corrective statement and not by a negative answer (Estival 2016: 64). The system is not very demanding as usually auxiliaries are not used for the negation of verbs, neither commands.

Exchange (4):

Controller: [callsign] UNKNOWN TRAFFIC 10 O’CLOCK CROSSING 16 MILES LEFT TO RIGHT FAST MOVING

Pilot: NEGATIVE CONTACT, REQUEST VECTORS [callsign]

The pilot was provided with the information about the approximate position of unknown traffic that was in conflictual flight path, its distance from the aircraft in

nautical miles as well as the direction it was following (Fellner/ Kozuba 2009). The pilot did not observe any traffic, so he or she negated this fact by saying NEGATIVE CONTACT that we can paraphrase as ‘I can’t see any aircraft.’ Therefore, in this case the word NEGATIVE negates the entire clause.

In any other case, when a pilot is supposed to confirm a performance of a given instruction, he or she uses the bare infinitive AFFIRM, and a lack of confirmation is expressed with the negator NEGATIVE. Moreover, in standard phraseology there are no *Yes* and *No* words in use. Therefore, when a pilot wants to say *Yes*, he should use AFFIRM, and when he wants to say *No*, he should use NEGATIVE instead. This tendency seems to be the most common distinction between affirmation and negation.

Exchange (5):

Controller: [callsign] CAN YOU ACCEPT LEVEL 390?

Pilot: NEGATIVE [callsign]

Thus, we can observe a number of uses of the negator NEGATIVE and the question is whether the distinction between them is to be captured pragmatically, or is a semantic matter (cf. Carlston 1996). According to Horn (1989), this type of relationship does not amount to a semantic ambiguity, an ambiguity within the linguistic system itself, but rather a pragmatic ambiguity, a ‘built-in duality of use’ (see Horn 1989: 379–382).

With regard to negative commands in routine aeronautical discourse, they are not shared with general English ones. Initial *don’t* is not added to a command. This one syllable word is very probable not to be heard due to some background noise, pauses in transmission, or two speakers broadcasting simultaneously and the effect of blocking the transmission of one of them and creating a loud screech on the channel. If a transmission is blocked in this way, one of the pilots may only hear the final part of “Do not turn right!” that might be perceived as “(screech....) turn right.” This phenomenon has led to accidents in the past and is considered a dangerous shortcoming in the use of radiotelephony in aviation (McGrath 2011). Therefore, it is considered safer to use the word NEGATIVE as a strong denial of permission or a refusal as opposed to the general English negative imperative. Moreover, the word NEGATIVE has become a universally accepted aeronautical jargon word for the issuing of prohibitions (ibid.: 42). This negator may be always followed by the word CORRECTION that introduces a correct phrase in case of committed mistake.

We actually face the omnipresence of the imperative form in the controller’s messages due to his/her role as an administrator who provides pilots with manoeuvre instructions and authorisations (Lopez et al. 2013). The word NEGATIVE serves similar purposes. Quite rarely may we hear constructions as DO NOT ACKNOWLEDGE. While this form of the negative imperative is available to controllers and pilots,

it is only occasionally used in routine conversations (McGrath 2011: 41). Usually, in order to issue a negative command, controllers use the verb CANCEL instead.

- the verb CANCEL encoded by ICAO (20: 2.7) as ‘Annul the previously transmitted clearance’, as in: Controller: [callsign] CANCEL PUSHBACK, STANDBY, which can be interpreted as: ‘Don’t push back. Wait for further instructions’, or simply ‘I cancel pushback. Wait for further instructions’.

However, there are occasional phrases that do require the insertion of negative elements *NOT* and *NO* following the ellipted subject and operator, as in the following expressions: NOT IDENTIFIED, NOT YET WITHIN RADAR COVER, NO DELAY EXPECTED. Denial of the truth of a clause typically involves the use of a negative word, e.g. *not*, *no*, or a prefix with negative force, e.g. *un-*.

- the negative word NOT usually negates the adjectives and adverbial phrases it precedes.
(route) NOT AVAILABLE DUE (reasons);
- the negative word NO usually negates the noun phrases: NO REPORTED TRAFFIC, and is used in conditional clauses such as: IF NO CONTACT (instructions follow);

Exchange (6):

Controller: [callsign] CLEARED ILS APPROACH, RUNWAY 33R, NO DELAY EXPECTED

Pilot: CLEARED ILS 33R [callsign]

- the negative prefix *un-* as a negation marker is the only example of an affixal type of negation used in standard phraseology. It usually negates the adjectives LEVEL UNKNOWN, UNABLE, but is especially in use by pilots who are not able to follow the controller’s instruction. The controller, on the other hand, can use it in a conditional clause, e.g. IF UNABLE (alternative instructions), ADVISE or when he cannot issue a clearance, e.g. UNABLE ISSUE CLEARANCE INTO RVSM AIRSPACE.

Exchange (7):

Pilot: [callsign] UNABLE RVSM DUE TURBULENCE

Controller: [callsign] MAINTAIN FLIGHT LEVEL 150, REPORT WHEN ABLE TO RESUME RVSM

Although standard phraseology code is distant from general English usage, we can observe a natural tendency, also for the sake of clearness, to place the negative first or at any rate as soon as possible (cf. Jespersen 2010: 3). There is another tendency to attract the negative notion to any word that can easily be made

negative. Aeronautical routine negation cannot lead to unnecessary verbosity due to the need for fast exchange and reaction. Simplified negation is a convenient way to deny instructions and negate all required clauses as all the participants of aeronautical discourse may understand and express it easily. Interestingly, native speakers of English are also required to know and use the code.

NON-ROUTINE NEGATION

Non-routine aeronautical situations cover mainly emergencies and sudden unexpected situations caused, for example, by weather conditions or temporary problems at airports or airspace. If “standardized phraseology cannot serve an intended transmission” (ICAO 2001), another element of Aeronautical English, called Plain Aeronautical English, is used. ICAO (2010a) calls it ‘plain language’ and underlines that it is

spontaneous, creative and noncoded use of a given natural language, although constrained by the functions and topics (aviation and non-aviation) that are required by aeronautical radiotelephony communications, as well as by specific safety-critical requirements for intelligibility, directness, appropriacy, non-ambiguity and concision.

(ICAO 2010a)

When plain language is required, it should be delivered in the same clear, concise, and unambiguous manner as the standardised phraseology; for example, in emergencies or unusual situations in order to clarify or elaborate on instructions or to negotiate information (Wegler 2016: 54). Where the circumstances are unpredictable, where speed and clarity of communication are of the essence, and where accuracy of comprehension by conversational partners is crucial, the demands on the language proficiency of aircrew and air traffic controllers can be extreme (Alderson 2009: 171). Therefore, the utterances produced by the operational personnel should be as brief as possible and simply structured (Bieswanger 2016: 81). Hence the sophisticated grammatical structures employed for negation purposes, e.g. inversion, negation markers other than negators (e.g. *scarcely*, *barely*) may be regarded as confusing in this context. Although standard phraseology phrases are not obligatory to be used by pilots and controllers during non-routine situations (ICAO 2007a), they are very common and often facilitate the comprehension (Borowska 2017). Therefore, all the above-mentioned negation strategies are welcome in non-routine aeronautical negation, as in the following example:

Exchange (8):

Controller: Make a three-sixty for better traffic separation.

Pilot: You mean make another circle of the airport?

Controller: Negative. Make a three-sixty in place.

(source: Cushing 1994: 56)

Exchange (9):

Ground Crew Chief: Captain, this is the ground crew chief, how do you hear me?

Pilot: Not very well. You're coming in broken with a lot of static noise. How do you hear me?

Ground Crew Chief: I hear you but with lots of static noise also.

Pilot: Then let's use hand signals instead of the headsets.

Ground Crew Chief: Negative. This is OK. The area is clear. Release brakes for pushback.

(source: Wegler 2016: 57)

The following example confirms that during emergency, the pilot chose a short and well-known word in aeronautical discourse 'unable' that can be paraphrased as 'We would not be able to do it':

Exchange (10):

Controller: Cactus 1529, if we can get it for you, do you want to try to land on Runway 13?

Pilot: We're unable. We may end up in Hudson.

Standard negation calls for particular grammatical structures in English. For example, negation in a verb phrase should be preceded by an auxiliary verb that carries tense instead of the main verb (Klima 1964). Hence, the common non-routine negation of: *can* is *can't*, and *do* is *don't*, as in: *If you can't, We can't go on the haul, I don't know what you wanna do* (liveatc.net). Moreover, we are all too familiar with negative imperatives used in general English to announce prohibitions. They are rarely used in Plain Aeronautical English, e.g. *Don't get out, Don't exceed...* The more common negator for clauses and sentences in such cases is still NEGATIVE followed by the correct instruction, as indicated in point 3.1. Although there are strong tendencies in general English to attach the negative to the verb, they are not very popular in non-routine aeronautical negation. However, a combination of a negative with an adjective or adverb is, however, an acceptable usage, e.g. NOT READY, NOT IMMEDIATELY.

The negator *no* is used more often as in:

Pilot: We have no more smoke in the cockpit, only fumes.

Nevertheless, negative orientation is hardly ever found in questions which contain a negative form. It is more common to ask a positive straightforward question, e.g. *Can you see any traffic?*

The present analysis shows that aeronautical negation must be simple so as to reduce the longer reaction time to negative sentences. Otherwise, in high-risk environment negative structures may be regarded as inappropriate. Although negative constructions can be found in Plain Aeronautical English, it may be claimed that in non-routine situations the use of negation is somewhat dispreferred: “Negative constructions are very rare, because they signal ‘unusual’ situations, where either ATC or the pilot are unable to comply with a request or where further information needs to be provided...” (Estival 2016). The users rely more on formulaic and routinized negation forms and strategies in order to avoid misunderstanding. Hence the need to decode negation in aeronautical discourse as it differs from pragmatic conventions in general English.

CONCLUSIONS

As more attention is being paid to the intercultural communication, there is a constant need to gain more insight into elements that can affect the development of such communication, especially when it aims at safety. Negation as an element of grammar has an important effect on meaning (Klima 1964). In aeronautical discourse, context plays an important role for decoding negative structures as they reveal significant patterns of usage. Moreover, speakers find it easier to understand a negation if they have already constructed the models of the corresponding affirmative assertion, and if they know what possible structures they may hear. Therefore, negative statements have been presumed to be harder than their affirmative counterparts, so they must be simple and straightforward not to interfere with meaning. Although affixal negation is present in aeronautical discourse, it is non-affixal negation that seems to be more common. The conducted analysis allowed us to observe various negation strategies of aeronautical discourse different from everyday usage in English.

We have observed that the negation in aeronautical discourse is strictly coded. What is more, it is followed in its prescribed variety, so Aeronautical English users seem to feel comfortable with it. Decoding negation in aeronautical discourse requires at least basic aeronautical knowledge of air navigation that allows to understand routine and non-routine situations, pilot-controller communication procedures and the linguistic code they use for such communication. It is only then that the depth analysis and interpretation of negators in aeronautical discourse are guaranteed.

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