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WORKING PAPER

ASSEMBLY — 41ST SESSION

TECHNICAL COMMISSION

Agenda Item 31: Aviation safety and Air Navigation Standardization

PROVIDING PHONETIC SYMBOLS IN 5LNC PUBLICATION TO ENHANCE SAFETY

(Presented by Indonesia)

EXECUTIVE SUMMARY

States who use English as a second language may encounter issues in understanding 5LNC radiotelephony phonetics. This paper addresses linguistic features, which could enhance safety and minimize potential risk to aviation safety.

Action: The Assembly is invited to:

a) instruct the Council to explore the need to review existing guidance material related to 5LNC pronunciation; and

b) encourage Member States to be aware of linguistic differences in various parts of the world to further improve aviation safety.

Strategic Objectives:	This working paper relates to Strategic Objectives on Safety and Air Navigation capacity and efficiency
Financial implications:	Nil
References:	Doc 9835, *Manual on the Implementation of ICAO Language Proficiency Requirements*; Annex 10 – *Aeronautical Telecommunications* – Volume II – *Communication Procedures including those with PANS status*; Annex 11 – *Air Traffic Services* Cir 323 – *Guidelines for Aviation English Training Programmes* Doc 9432, *Manual of Radiotelephony* ()

1. INTRODUCTION

1.1 The ICARD (International Codes and Route Designators) database contains 280,000 five-letter name-codes (5LNCs) and 16,000 route designators (RDs) required for global air navigation. It allows Member States and Regional Managers to reserve and allocate 5LNCs to identify significant points not normally marked by navigation aid sites and air traffic services (ATS) routes designators, in compliance with ICAO Annex 11 — *Air Traffic Services*, Annex 15 — *Aeronautical Information* Services and the *Procedures for Air Navigation Services — Aircraft Operations* (PANS-OPS).

1.2 Increased traffic, number of airports as well as new SID/STAR establishment and routes increased the demand for 5LNC. This increase made it more difficult to comply with the ICAO guidance as stated in Annex 11.

1.3 Annex 11, Appendix 2 states that the name-code designator shall be selected to avoid any difficulties in pronunciation by in ATS communications. For the users of English as a second language, this is currently not the case.

1.4 Effective communication is a very important aspect of aviation safety. Radiotelephony (RTF) provides the means by which pilots and ground personnel communicate with each other. The information and instructions transmitted are of vital importance in the safe and expeditious operation of aircraft operations. Many incidents and accidents recorded the use of non-standard procedures and phraseology as contributing factor. The importance of using correct and standardized phraseology cannot be overemphasized.

1.5 It should be recalled that the major means of communication between pilots and air traffic controllers (ATC) is radio communication. The significance of effective communication in aviation can be seen from the existence of standard phraseology, as it aims to provide clear, concise, unambiguous language to communicate messages of a routine nature.

1.6 It has been long identified among linguists that every language can possess a different set of sounds and how every sound is represented by different symbols. The worldwide use of alphabetical letters seems to be inconsistent in representing sounds in different languages. Therefore, miscommunication between ATC-Pilot is more likely to occur in case of waypoint names where both the ATC and the pilot do not share the same linguistic skills.

1.7 ICAO phraseologies are contained in in Annex 10 — Aeronautical Telecommunications, Volume II — Communication Procedures including those with PANS status and in the *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444).The ICAO *Manual of Radiotelephony* (Doc 9432) (ICAO language proficiency requirements are found in ICAO Annex 10, Volume II and Annex 1 — *Personnel Licensing*.)

2. DISCUSSION

2.1 After experiencing a series of miscommunications involving the pronunciation of waypoint names, Indonesian research revealed that on average, 29 percent of the total communication was the result of a waypoint name. Miscommunication occurred when someone heard a sound, which was different from his/her expectation or the corresponding sound of another word.

2.2 The result indicated that most common problematic identified waypoint names were those containing the letter C, V, and a series of NY. It showed there were distinctive linguistic differences between Bahasa Indonesia and English Language, and especially in how alphabet letters represent voice in written language. For example, in Bahasa Indonesia, the letter C will consistently represents /tʃ/ sound like C sound in "chapter". While in English, the letter C may represent three different sounds depend on what letter will come after the C. When the letter C is followed by the letter i.e., or y than it will represents the sound /s/; when the letter C is followed by the letter h than it will represents the sound /tʃ/; and when the letter C is followed by other than i, e, y, and h normally it will represents the sound /k/.

2.3 An interview with international pilots confirmed that this case is not exclusive to Bahasa Indonesia. For example, these pilots confirmed that confusion exists in case of the waypoint pronunciation of NANTES. One of ATC unit pronounced it as /nɔŋt/ while the neighbouring ATC unit pronounced it as /nʌntes/. Furthermore, the establishment of new routes, SIDs/STARs and new runways recently has proofed that waypoint names are erratically pronounced. For example: BLGRS, QTRBK, etc.

2.4 It is essential to ensure a successful communication by ATC and Pilots. Providing pronunciation on waypoint name should solve these problems so that both ATC and pilot will easily pronounce the waypoint name and pronounce it as it has been expected.

2.5 The use of the International Phonetic Alphabet (IPA) to be included in the Aeronautical Information Publication should be sufficient to address this problem. This IPA has already been used by linguists to transcribe foreign language for so many years and has been proven reliable

3. CONCLUSION

3.1 To enhance safety and minimize potential risk of miscommunication in terms of phonetics of 5LNC, we propose that the Assembly instruct the Council to explore the need for a review of radiotelephony provisions. The use of the International Phonetic Alphabet (IPA) for inclusion in the Aeronautical Information Publication should be further explored to address this problem.

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