



International Civil Aviation Organization

Regional Aviation Safety Group - Middle East

Sixth Meeting (RASG-MID/6)
(Bahrain, 26-28 September 2017)

Agenda Item 5: Update from and Coordination with MIDANPIRG

CALL SIGN CONFUSION INITIATIVE

(Presented by IATA)

SUMMARY

The aim of this paper is provide an update on the Call Sign Confusion/Similarity project/initiative as it relates to commercial flights. The paper presents also a revised RASG-MID Safety Advisory (RSA-04), for review and endorsement.

Action by the meeting is at paragraph 3.

REFERENCES

- ATM SG/3 Report
- ICAO State Letter Ref.: AN 6/34-16/173
- MAEP Board/2 Report
- MIDANPIRG/16 Report
- RASG-MID/5 Report
- RASG-MID SAFETY ADVISORY – 04

1. INTRODUCTION

1.1 The use of similar call signs by aircraft operating in the same area and on the same radio frequency has potential to flight safety incidents, also known as “call-sign conflicts” or “call-sign confusion”. The danger of an aircraft taking and acting on a clearance intended for another aircraft due to call sign confusion is a common occurrence.

1.2 The project, led by Etihad Airways, aimed at providing regional solutions and testing to address the safety concern. Progress reports on the Initiative have been presented to the relevant MIDANPIRG and RAS-MID subsidiary bodies. The progress chart is at **Appendix A**.

2. DISCUSSION

2.1 To address the call sign confusion initiative, the project has been implemented in 2 phases.

2.2 Phase 1 of the project addressed regional Air Traffic Management systems to include Air Traffic Control, State Overflight Approval and Aerodrome landing/departure permissions and their acceptance to use the alpha-numeric within a commercial flight plan i.e.(UAE20AA) utilizing flight plan testing.

2.3 Phase 2 of the project running in parallel to phase 1 to identify means and processes for identifying and de-conflicting current and future airline call signs within the region.

2.4 The meeting may wish to note that a coordination meeting was held at Etihad Headquarters in Abu Dhabi, UAE on 24 August 2016, between IATA, ICAO and several air operators. The meeting reviewed the progress of the CSC Initiative and agreed on the launching of second phase of trials. Additional airlines joined Etihad Airways in the testing of the flight plans starting from this year winter schedule. Accordingly, States have been invited to cooperate and report feedback in order to ensure successful implementation.

2.5 ICAO issued State Letter Ref.: AN 6/34-16/173 dated 26 June 2016, requesting States to implement MIDANPIRG Conclusion 15/2 and report call sign similarity/confusion cases to ICAO and IATA.

2.6 The meeting may wish to note that, in order to harmonize the call sign similarity rules with Eurocontrol and other Regions, the ATM SG/3 meeting held in Cairo 22-25 May 2017 agreed that IATA provides a revised version of the RSA-04 to the ICAO MID Office by August 2017 for presentation and endorsement by the RASG-MID/6 meeting (Bahrain, 26-28 September 2017). The draft revised RAS-04 is at **Appendix B**.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) support the CSC initiative and urge all stakeholders to ensuring effective cooperation during the implementation phase;
- b) review and endorse the revised RAS-04 at **Appendix B**; and
- c) urge States to report call sign similarity/confusion cases to the following email addresses: MIDCSC@icao.int and MENACSSU@iata.org.

APPENDIX A

CSC PROGRESS CHART

RECOMEDATION	Organization/Action	Progress
Establish a regional call-sign similarity unit (CSS)	IATA MENA and ICAO MID and airlines	ICAO and IATA email accounts established
Establish MID Region CSS rules for call-sign conflicts as done by Eurocontrol	Mid states to utilize work and recommendation by Eurocontrol (appendix B)	
Operators having an internal process to de-conflict the airline's flight schedule, will provide the internally de-conflicted schedule to the regional call sign similarity unit (CSS).	Airlines can utilize own internal process or utilize Eurocontrol CSS tool	Some airlines current utilize Eurocontrol tool for internal de-confliction
Operators that do not have an internal de-conflicting process that they can utilize to de-conflict their internal flight schedule, will provide data to the regional call sign similarity unit (CSS) for de-confliction.	IATA MENA through agreement with of Eurocontrol will provide operators same services	Completed
Call- sign conflicts identified through regional call sign similarity unit (CSS) will be provided to operators with options for adjustments (example: XXX123 to XXX12A/XXX12M).	IATA	
Call signs that have been identified with no conflict will be assigned until such time they are no longer utilized by operator. Flight delays beyond 0000z shall replace the last letter of the alpha numeric call sign with the letter "z" and add the original alpha numeric call sign in the remarks field 18.	IATA/Airlines	

<p>All new call signs will be applied through the regional call sign similarity unit (CSS) prior to utilizations to assure de-confliction and report and assignment provided to submitter by the (CSS)</p>	<p>IATA/Airlines</p>	
<p>States will report to the regional call sign similarity unit (CSS) attaching the ATC/Airport call-sign confusion reports for review tracking and action if deemed appropriate.</p>	<p>IATA/ICAO/States</p>	<p>Regional email accounts established for reporting and trend analysis MIDCSC@icao.int and MENACSSU@iata.org.</p>
<p>States to publish the acceptance of alpha numerical call signs</p>	<p>States</p>	<p>See India AIC example appendix C</p>
<p>States to publish notification on airports that are unable to accept alpha numerical call signs for ATC use</p>	<p>States</p>	

APPENDIX B



RASG-MID SAFETY ADVISORY – 04

(RSA-04)

Revision 1- September 2017

GUIDANCE MATERIAL RELATED TO CALL SIGN SIMILARITY

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Disclaimer

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GUIDANCE MATERIAL RELATED TO CALL SIGN SIMILARITY

INTRODUCTION

Call sign similarity and confusion has been identified as a safety issue by the Second Meeting of the Middle East Regional Aviation Safety Group (RASG-MID/2) (Abu Dhabi, UAE, 12 – 14 November 2012).

The MIDANPIRG Steering Committee (MSG/4) recognized the urgency of implementing mitigation measures for the call sign similarity and confusion and agreed to establish a Call Sign Confusion ad-hoc Working Group (CSC WG) to develop solutions to mitigate the risk associated with call sign confusion. The CSC WG developed Draft Safety Enhancement Initiative (SEI) and Detailed Implementation Plans (DIPs) related to call sign similarity/confusion of which DIP 4 item 2 calls for the development of call sign similarity rules and guidance material.

The purpose of this Safety Advisory is to develop a clear set of guidelines and call sign similarity rules for Aircraft Operators (AOs) and Air Traffic Controllers (ATC) that could reduce the probability of call sign similarity/confusion occurrence.

DESCRIPTION

An aircraft call sign is a group of alphanumeric characters used to identify an aircraft in air-ground communications. The rules governing the use of aircraft call signs are laid down in ICAO Annex 10: Aeronautical Communications, Volume II - Communication Procedures, Chapter 5. Relevant paragraphs are summarized below.

Three different types of aircraft call sign may be encountered (see table below), as follows:

- Type (a) The characters corresponding to the registration marking of the aircraft (e.g. ABCDE). The name of the aircraft manufacturer or model may be used as a prefix (e.g. Airbus ABCDE);
- Type (b) The telephony designator of the aircraft operating agency, followed by the last four characters of the registration marking of the aircraft (e.g. Rushair BCDE);
- Type (c) The telephony designator of the aircraft operating agency, followed by the flight identification (e.g. Rushair 1234).

Examples of Full Call Signs and Abbreviated Call Signs				
	Type (a)		Type (b)	Type (c)
Full Call Sign	ABCDE	Airbus ABCDE	Rushair BCDE	Rushair 1234
Abbreviated Call Sign	ADE or ACDE	Airbus DE or Airbus ABDE	Rushair DE or Rushair BDE	No abbreviated form

The full call sign must be used when establishing communications. After satisfactory communication has been established, abbreviated call signs may be used provided that no confusion is

likely to arise; however, **an aircraft must use its full call sign until the abbreviated call sign has been used by the ground station.**

Most airline call signs belong to type (c) for which there is no abbreviation. An aircraft is not permitted to change its call sign during flight, **except** temporarily on the instruction of an air traffic control unit in the interests of safety.

In order to avoid any possible confusion, when issuing ATC clearances and reading back such clearances, controllers and pilots must always add the call sign of the aircraft to which the clearance applies.

The use of similar call signs by aircraft operating in the same area and especially on the same RTF frequency often gives rise to potential and actual flight safety incidents. This hazard is usually referred to as “call sign confusion”.

ICAO DOC4444 CHANGE OF RADIOTELEPHONY CALL SIGN FOR AIRCRAFT:

An ATC unit may instruct an aircraft to change its type of RTF call sign, in the interests of safety, when similarity between two or more aircraft RTF call signs are such that confusion is likely to occur.

Any such change to the type of call sign shall be temporary and shall be applicable only within the airspace(s) where the confusion is likely to occur.

To avoid confusion, the ATC unit should, if appropriate, identify the aircraft which will be instructed to change its call sign by referring to its position and/or level.

When an ATC unit changes the type of call sign of an aircraft, that unit shall ensure that the aircraft reverts to the call sign indicated by the flight plan when the aircraft is transferred to another ATC unit, except when the call sign change has been coordinated between the two ATC units concerned.

The appropriate ATC unit shall advise the aircraft concerned when it is to revert to the call sign indicated by the flight plan.

The following are some examples of the more common causes for call sign confusion:

- Airlines allocate commercial flight numbers as call-signs; these are normally consecutive and therefore similar (e.g. RUSHAIR 1431, RUSHAIR 1432, etc.)
- Airlines schedule flights with similar call signs to be in the same airspace at the same time.
- Call signs coincidentally contain the same alphanumeric characters in a different order (e.g. AB1234 and BA 2314).
- Call signs contain repeated digits (e.g. RUSHAIR 555).

RECOMMENDED SOLUTIONS

- Many larger airlines operate call sign de-confliction programmes. These involve reviewing company call signs to ensure that aircraft with similar call signs are not likely to be routinely in the same airspace at the same time, and a process to systematically resolve ongoing issues arising from reports of similar call signs from their flight crew, ANSPs or other operators
- Airline Operators with high flight densities in particular airspace should consider routinely using a combination of numeric and alphanumeric call sign formats.
- Airline Operators should observe the following guidance in selecting call signs:

- Avoid the use of similar call signs within the company;
- Where practicable, proactively co-ordinate with other operators to minimize similar numeric and alphanumeric elements of call signs;
- Avoid call signs with a four-number sequence; all-numeric call signs should be limited to a maximum of three digits;
- Do not use the same digit repeated more than once (e.g. RUSHAIR 555);
- If letter suffixes are to be used with a preceding number sequence, limit the full string to a maximum of four alphanumeric components and, to the extent possible, coordinate letter combinations with other airspace and airport users;
- Do not use alphanumeric call signs which have their last two letters as the destination's ICAO location indicator (e.g. RUSHAIR 25LL for a flight inbound to London Heathrow);
- If similarly-numbered call signs are unavoidable within a company, allow a significant time (at least 3 hours at any shared-use vicinity) and/or geographical split between aircraft using them;
- Do not use similar/reversed digits/letters in alphanumeric call-signs (e.g. RUSHAIR 87MB and RUSHAIR 78BM).
- For short haul flights, avoid using number sequences for particular routes which begin the day with.01 and then continue sequentially through the day.

CALL SIGN SIMILARITY 'RULES'

Agreement on and publication of 'Similarity' is a relative term and means different things to different people. The CSC WG/1 recommended the use of the call sign similarity rules of EUROCONTROL; this was later endorsed by the RASG-MID/4 meeting. The following table provides details on the similarity rules adopted by the MID Region.

MID Region Call Sign Similarity Rules

Based on the EUROCONTROL - OPS NM18.5 (currently 21 rules implemented in the EUROCONTROL Call Sign Similarity Tool (CSST) OPS as Global recommended rules).

The following similarity rules are recommended by the CSS User Group. The order within the following table is significant with the most critical rules at the top

APPENDIX B



General Similarity Rules

(Applicable to flights within a single AO schedule, i.e. AO ICAO designator remains the same)

Legend
Acceptable Format
Single AO Similarity Rule
Single Call Sign Similarity Rule

Name	Individual Rule Description	Special considerations for this rule	Examples		Rule ID
			Not acceptable	Acceptable	
C/S Format	Call Signs need to comply with the allowed formats (see ICAO Doc.4444 Field 7 (a), Aircraft Identification). Normal format: 3 letter ICAO AO designator followed by 1 to 4 alphanumeric characters (Flight Id).	The CSSUG have agreed that the following formats for the Flight Id should be adhered to: Pure numeric: n, nn, nnn, nnnn 1-final letter: nA, nnA, nnnA 2-final letters: nAA, nnAA	ABC 4B63, ABC F27	ABC 1, ABC 1234, ABC 23T, ABC 34TD	ZG00
Identical Final Digits	Checks for 2 identical final digits in the Flight Ids		ABC 234 vs ABC 534		AG62
Identical Bigrams	Checks for blocks of contiguous characters which form a bigram.		ABC 224 KF vs ABC 36 KF ABC 36 KF vs ABC 528 KF		AG67
Letters To Avoid	Some single letters may be easily confused with digits and are therefore best avoided.	Single letters, eg. "O" vs "0", "I" vs "1"	ABC 841I, ABC 4600		ZG08

Anagrams	Checks for anagrams occurring within the Flight Ids		ABC 1368 vs ABC 1386 vs ABC 1638 vs ABC 1683 vs ABC 1836 vs ABD 1863 etc.		AG63
Identical Block Digits	Checks for Calls Signs which form blocks of contiguous identical characters which are: <ul style="list-style-type: none"> the same length, or 2 versus. 3 characters, or 3 versus. 4 characters 		ABC 52 vs ABC 352 vs ABC 524 vs ABC 52L		AG64
Parallel Characters	Checks if characters composing the Call Signs form parallel alignment of identical characters.		ABC 41 vs ABC 401 vs ABC 4351		AG65
Identical Digit Roots	Checks for prefix blocks (roots) of identical digits.		ABC 57 vs ABC 573 vs ABC 5746		AG66
Identical Final Letter	Checks for Call Signs with identical final letter.		ABC 23L vs ABC 257L ABC 54L vs ABC 637L		AG68

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Triple Repetition	A specific form of similarity where 3 digits are repeated within a Flight Id	With 3 repeated digits there is a risk of dropping one of the digits, which could cause confusion with a different Flight Id.	ABC 111, ABC 444		ZG09
Flight Level Values	A specific form of similarity where the Flight Id is equal to the digits used in a flight level communication.	ICAO Doc 8585 recommends that, wherever, practicable 0 and 5 should not be used as the final figure in ATC Call signs. Values 040, 050,390, 400, 410 may cause confusion with Flight levels, but this only applies to the format nnn	ABC 330, ABC 095	ABC 1320, ABC 50	ZG01

<p>Any Runway Values</p>	<p>A specific form of similarity where a Flight Id is equal to the runway identifiers.</p>	<p>Combinations of numbers ranging from 01-36 (two digits only) followed by the letters L and R should be avoided. Only applicable to the format nn or nnA. Avoidance of the actual runway designators at departure and destination aerodromes is recommended.</p>	<p>ABC 36L, ABC 15, ABC 16R</p>		<p>ZG03</p>
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