



54th Conference
Directors General of Civil Aviation
Asia and Pacific Regions
Ulaanbaatar, Mongolia
07-11 August 2017

Agenda Item 3, DGCA-54/DP/38
Similar and Confusing Call Signs

Summary

- Use of similar call signs by aircraft operating in same area, at same time, and on same frequency often:
 - Resulted in potential and actual confusion leading to misunderstanding between pilots of different aircraft or pilots and controllers
 - Consequences: one aircraft may act on clearance meant for another aircraft
 - Lead to serious incidents involving loss of communication, level bust, loss of separation, Airprox, etc.
- AIC 02 of 2017 for avoidance of call sign confusion has been issued

Potential Outcomes of Call Sign Confusion

- Aircraft related
 - Aircraft takes up heading or routing intended for another aircraft
 - Aircraft commences climb or descent to a level for which not cleared
 - Aircraft sets speed intended for another aircraft
 - Aircraft leaves frequency when it is not instructed to do so
- ATC related
 - Blockage of transmission from intended recipient
 - Controller misunderstands intentions of aircraft under his/her control
 - Controller issues a clearance to wrong aircraft
 - Workload of controllers and pilots increased due want of resolution for the confusion
- In India, 3% of Airprox Incidents due call sign confusion

Factors Leading to Call Sign Confusion

- Call sign contains same alpha-numeric characters in different order of sequence operating in same airspace and same frequency e.g.:
 - ABC109 and DEF409
 - ABC523 and DEF523
 - ABC348 and DEF384
- Call signs contain repetitive digits e.g. ABC555, DEF777
- Use of non-standard RT phraseology
- Density of traffic in airspace
- Human factors viz. pilot/controller accent and fatigue level
- Visual or phonetic confusion associated with sequencing of letter and number groups in a call sign

Regulatory Framework on Call Sign

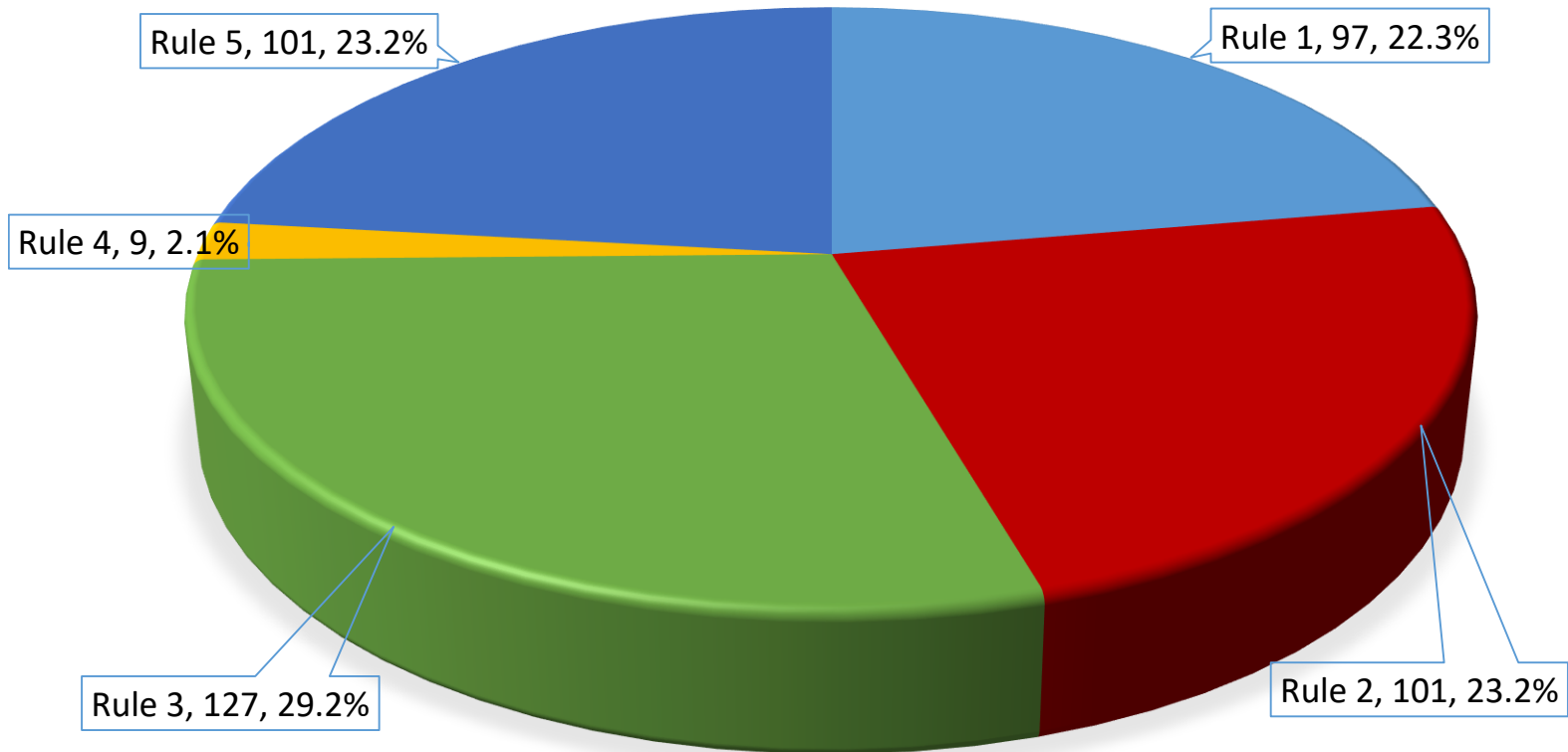
- Rules governing use of aircraft call signs laid down in ICAO Annex 10, Volume II, Chapter 5 on Radiotelephony
 - Use of full or abbreviated call signs
- Examples of full/abbreviated call signs:
 - **Type (a)**: characters corresponding to registration marking of aircraft (e.g. FABCD/FCD or FBCD) or name of aircraft manufacturer/model be used as a prefix (e.g. Cessna FABCD/Cessna CD or Cessna BCD);
 - **Type (b)**: telephony designator of aircraft operating agency, followed by last four characters of registration marking of aircraft (e.g. Varig PVMA/Varig MA or Varig VMA);
 - **Type (c)**: telephony designator of aircraft operating agency, followed by flight identification (e.g. Scandinavian 937/no abbreviated form)

Discussion

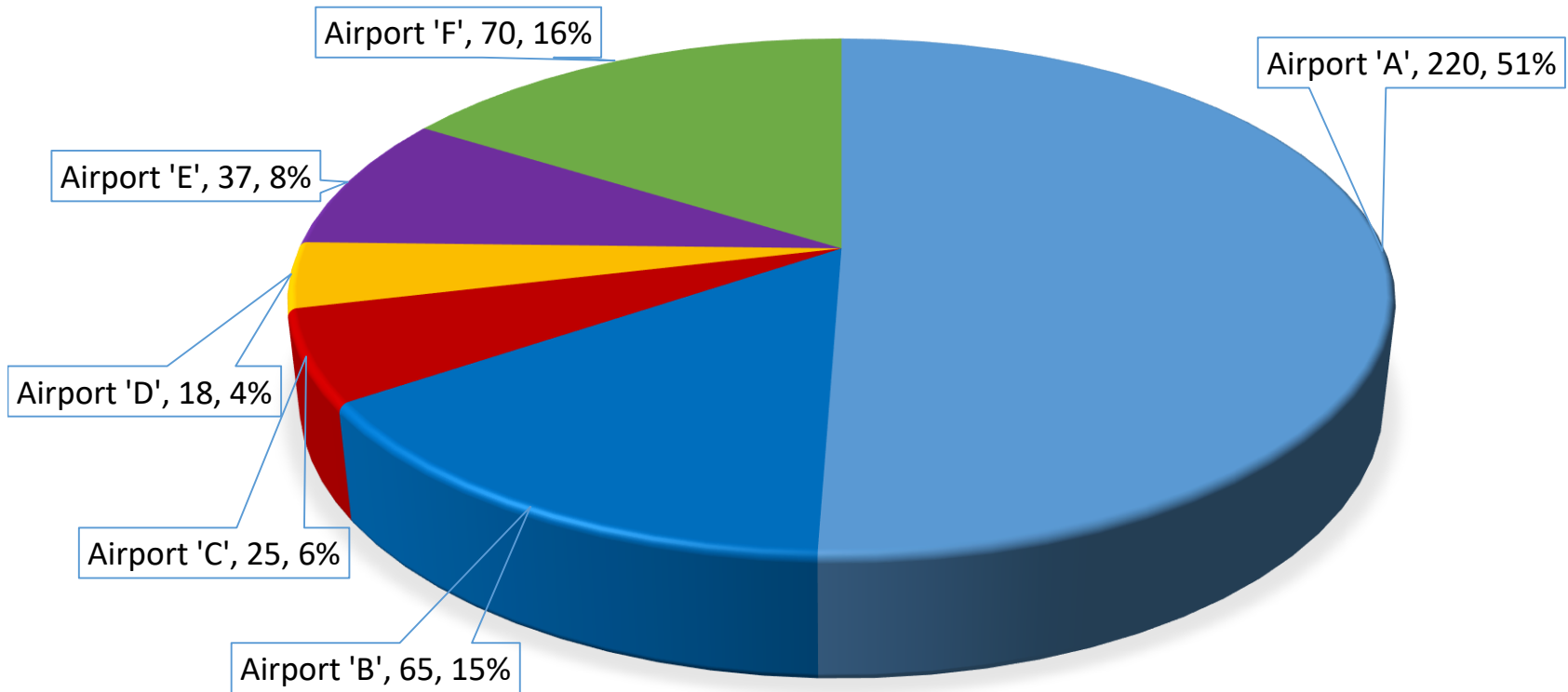
Analysis of Flight Data for Seasonal Flight Schedule

- 435 call sign conflicts (out of around 15,000 departure/week of last Scheduling Period) considered critical from safety of aircraft viewpoint
- Following similarity rules established:
 - **Rule 1:** Flights of same airlines with identical last two digits operating within 60 minutes period viz. ABC103 & ABC203
 - **Rule 2:** Flights of same airlines with identical first two digits operating within 60 minutes period viz. ABC103 & ABC104
 - **Rule 3:** Flights with identical first and last digit operating within 60 minutes period viz. ABC446 & ABC466
 - **Rule 4:** Flights of same airlines with identical flight numbers but in different order within 60 minutes period viz. ABC778 & ABC787 & ABC877
 - **Rule 5:** Identical flight numbers with different carrier operating within 120 minutes period viz. ABC103 & DEF103

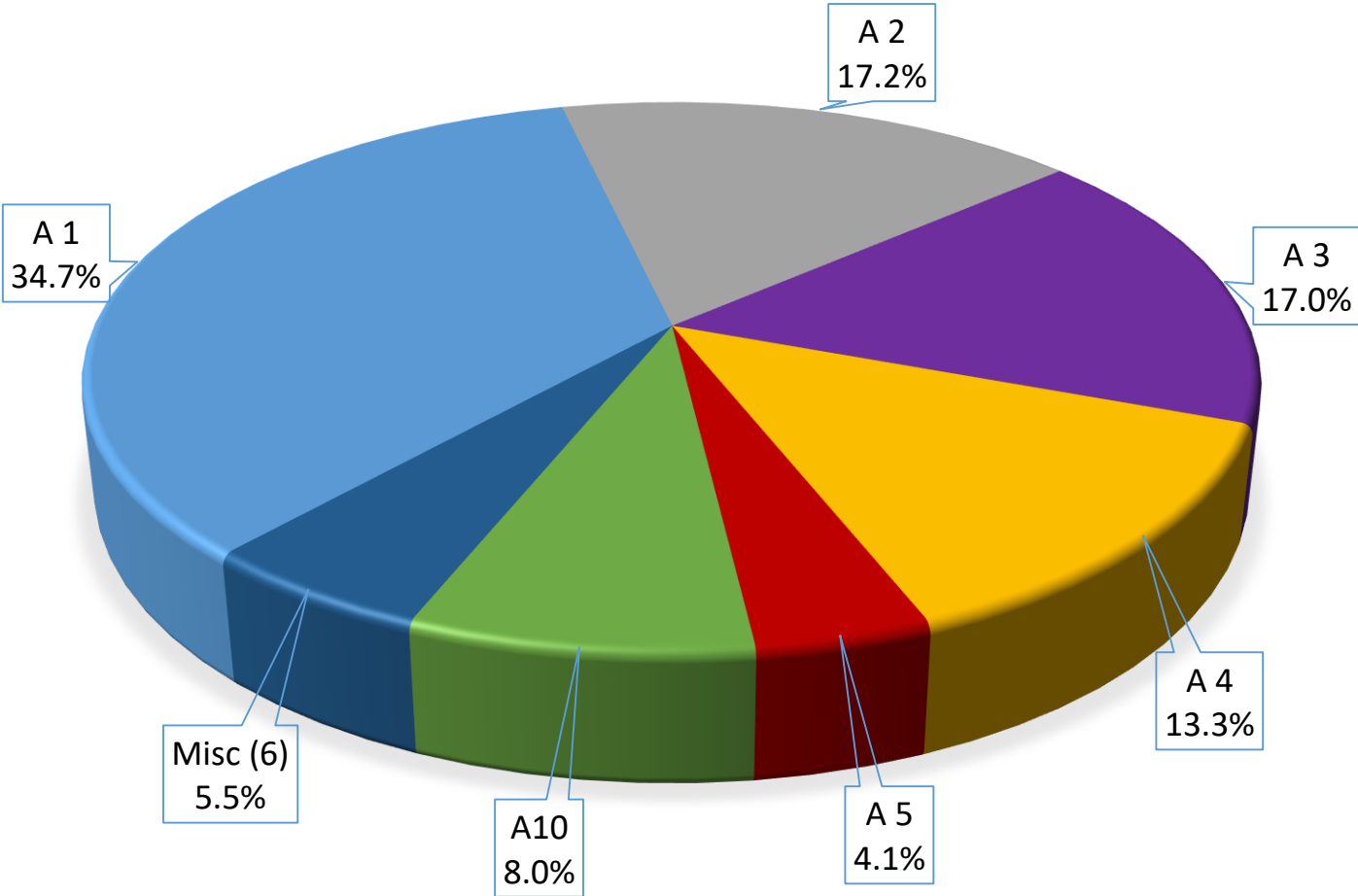
Rule-wise Break-up of Conflicts



Analysis of Call-sign Conflicts (Airport-wise)



Details Call-sign Conflict (Airline-wise)



Regulatory Provisions of AIC 02 of 2017

- Provisions made on following to address call-sign confusion:
 - Visual and aural similarity
 - Call sign format
 - Call sign similarity based on five rules identified during study

Action by Conference

- Meeting is invited to:
 - Take note of the content of paper
 - States to note that requirements of AIC 02 of 2017 will be applicable to their aircraft also, operating to/from India

Thank You