



## Accidents Involving Language Factors

The ICAO language proficiency programme was initiated in response to a series of tragic accidents, each of which was partly caused by language factors. ICAO cited seven accidents in official documents and workshops held during the implementation of the language proficiency programme. The accidents are summarised in Table 1 below.

The opening chapter of ICAO Document 9835 refers to four of the accidents, but curiously the accidents are not identified. The document simply mentions the numbers of fatalities and type of accident, as well as, in one case, the year of occurrence. From this information it may be inferred that the accidents mentioned in Document 9835 were: the 1977 runway collision at Tenerife; the 1990 fuel exhaustion crash at Cove Neck, New York; the 1995 controlled flight into terrain (CFIT) near Cali, Colombia; and the 1996 mid-air collision near New Delhi, India. These are accidents 2-5 in Table 1.

More explicit information about the accidents was provided at regional workshops held by ICAO to facilitate the launch of the language proficiency programme. In a 2008 workshop at the ICAO Asia and Pacific Office, the Acting Deputy Director of the ICAO Air Navigation Bureau listed all the accidents shown in Table 1 and made the point that they had resulted in the deaths of 1,460 people (Lamy, 2008).

The accidents took place over a period of 25 years at different locations in Europe, North America, South America and Asia. They involved a variety of accident types, although it is striking that five out of seven were collisions (two mid-air and three on runways). The pilots and air traffic controllers had various first languages (L1); no single airline was involved in more than one accident; and the number of fatalities ranged from 1 to 583. In short, the accidents were diverse and the only obvious common feature is that language factors contributed to all of them.

ICAO did not provide any analysis of the language factors involved in the accidents. Document 9835 simply noted that “insufficient English language proficiency on the part of the flight crew or a controller” was a contributory factor (ICAO, 2010, p. 1-1). Subsequent analysis of the communication problems in the first three accidents highlighted the following commonalities in each of the events (Cookson, 2009, 2011):

- the accidents were complex and resulted from multiple causal factors;
- a combination of linguistic factors and non-linguistic factors was involved;
- the linguistic factors were exacerbated by high workload, stress and fatigue;
- the pilots and air traffic controllers were a mixture of native English speakers (NES) and non-native speakers (NNS).

There has not yet been a systematic analysis of the language factors that contributed to the seven accidents. This is surprising, given the prominence attributed to the accidents during the implementation of the ICAO language proficiency programme. A systematic analysis would improve understanding of the processes of **communication breakdown** that led to the accidents. It would also contribute to aviation safety by reducing the risks of similar accidents happening again in the future.

**Table 1: Accidents cited by ICAO (Lamy, 2008; ICAO, 2010).**

|   | DATE & LOCATION   | ACCIDENT TYPE                  | FATALITIES | AIRCRAFT FLIGHT NUMBER   | L1 OF PILOTS                      | L1 OF ATC                   |
|---|---|--------------------------------|------------|--|-----------------------------------|-----------------------------|
| 1 | 10 <sup>th</sup> Sep 1976<br>Zagreb, former Yugoslavia                  | Mid-air collision              | 176        | (1) Inex Adria Airways Flight 550<br>(2) British Airways Flight 476          | (1) Serbo-Croatian<br>(2) English | Serbo-Croatian <sup>1</sup> |
| 2 | 27 <sup>th</sup> Mar 1977<br>Tenerife, Canary Islands, Spain            | Runway collision               | 583        | (1) KLM Flight 4805<br>(2) Pan Am Flight 1736                                | (1) Dutch<br>(2) English          | Spanish                     |
| 3 | 25 <sup>th</sup> Jan 1990<br>Cove Neck, New York, USA                   | Fuel exhaustion                | 73         | Avianca Flight 052   | Spanish                           | English                     |
| 4 | 20 <sup>th</sup> Dec 1995<br>Buga, Valle del Cauca, near Cali, Colombia | Controlled flight into terrain | 160        | American Airlines Flight 965   | English                           | Spanish                     |
| 5 | 12 <sup>th</sup> Nov 1996<br>Charkhi Dadri, near New Delhi, India       | Mid-air collision              | 349        | (1) Saudi Arabian Airlines Flight 763<br>(2) Kazakhstan Airlines Flight 1907 | (1) Arabic<br>(2) Kazakh          | Hindi                       |
| 6 | 25 <sup>th</sup> May 2000<br>Charles de Gaulle Airport, Paris, France   | Runway collision               | 1          | (1) Streamline Aviation Flight 200<br>(2) Air Liberté Flight 8807            | (1) English<br>(2) French         | French                      |
| 7 | 8 <sup>th</sup> Oct 2001<br>Milano Linate Airport, Milan, Italy         | Runway collision               | 118        | (1) Scandinavian Airlines Flight 686<br>(2) private Cessna 525 Citation      | (1) Swedish<br>(2) German         | Italian                     |

## References

Cookson, S. (2009). Zagreb and Tenerife: Airline accidents involving linguistic factors. *Australian Review of Applied Linguistics*, 32(3), 22.1–22.14.

<sup>1</sup> In their analysis of the 1976 Zagreb accident, Weston and Hurst (1982, p. ix) stated that “there is no such language as Serbo Croat or... Serbo-Croatian”. They nevertheless used these terms because they occurred widely in source documents.



- Cookson, S. (2011). *Zagreb, Tenerife and Cove Neck: Revisiting the assumptions underlying ICAO's language proficiency programme*. Proceedings of the 16<sup>th</sup> International Symposium on Aviation Psychology, Dayton, OH, May 2-5.
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- Weston, R., & Hurst, R. (1982). *Zagreb one four: Cleared to collide?* New York: Jason Aronson, Inc.