



Human Factors in Aviation Safety at Gol Airlines integrated with AQD

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Human Factors in Aviation has been a permanent subject when Safety is considered. As flight systems' and equipments' development has become more reliable, measurable and controlled, a large part of air transportations professionals' studies are focused on who operates the machines, and how they are socially, psychological and prepared to do it.

"...It is involved with the study of the human's capabilities, limitations, behaviors and the integration of that knowledge into the systems designed for them with the goals of enhancing safety, performance, and the general well-being of the systems' operators (Koonce, 1979)".

GOL Linhas Aéreas Inteligentes, the largest low-cost and low-fare airline in Latin America, with 800 daily flights to 49 destinations in Brazil, South America and Caribbean, which operates a fleet of Boeing 737 Next Generation aircraft, since its foundation, in 2001, developed a clear and respected Safety Philosophy, expressing the commitment of the Board to all employees.

Following the best practices in aviation worldwide, GOL decided to give even more attention to this tendency with the creation of an exclusive Human Factors Department, joining the other three areas of the SMS (Safety Management System) Directory: Quality Assurance, Security and Operational Safety departments.

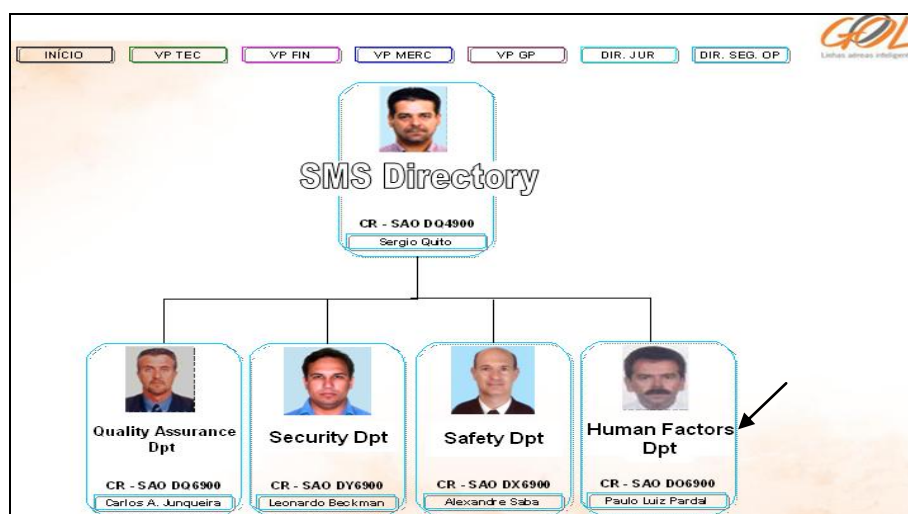


Figure 1 – Gol's Job Chart. Source: Internal website: <https://portal.golnaweb.com.br>

Also attending to international rigorous standards concerned with Operational Safety and Quality, Gol reached the IOSA (IATA Operational Safety Audit) certification in May 2009. A few months before this achievement, in Nov 2008, a dedicated Human Factors area was created to study and act on questions concerned mainly with CRM (Corporate Resource Management), LOSA (Line Operations Safety Audit), TEM (Treat Error Management), Ergonomics, Behavior, Attitude, Corporate Relationship, Flight Schedule, Food, Hotel, Transport, Judgment Chain and Stress.

In order to allow a participative management between the flight group and Human Factors Dept, Gol has included in its AQD (Aviation Quality Database) reports, a specific form to receive voluntary occurrences (identified or not), which are stored, solved and answered by the office staff.

Below, find the Human Factors´ AQD electronic form (Figure 2) and 2009 Human Factors´ Event Descriptors Statistics (Figure 3):

The screenshot shows a web form titled "HUMAN FACTORS REPORT" and "AQD - AVIATION QUALITY DATABASE". The form is divided into three main sections:

- IDENTIFICAÇÃO (OPCIONAL):** This section contains input fields for "NOME:", "EMAIL:", "MATRÍCULA", "SETOR:", "FUNÇÃO:", and "TELEFONE PARA CONTATO:".
- DADOS DA OCORRÊNCIA:** This section contains input fields for "Data:", "Hora Local:", "Aeroporto:", "Matrícula da aeronave:", "Número do voo / Pessoas envolvidas (Se Houver):", and a dropdown menu for "Modelo da Aeronave:".
- DESCRIÇÃO DA OCORRÊNCIA:** This section is a large text area for describing the occurrence.

At the bottom of the form, there are two buttons: "ENVIAR PARA O AQD" and "LIMPAR".

Figure 2 – Human Factors Electronic Form. Source: Internal website: <https://portal.golnaweb.com.br>

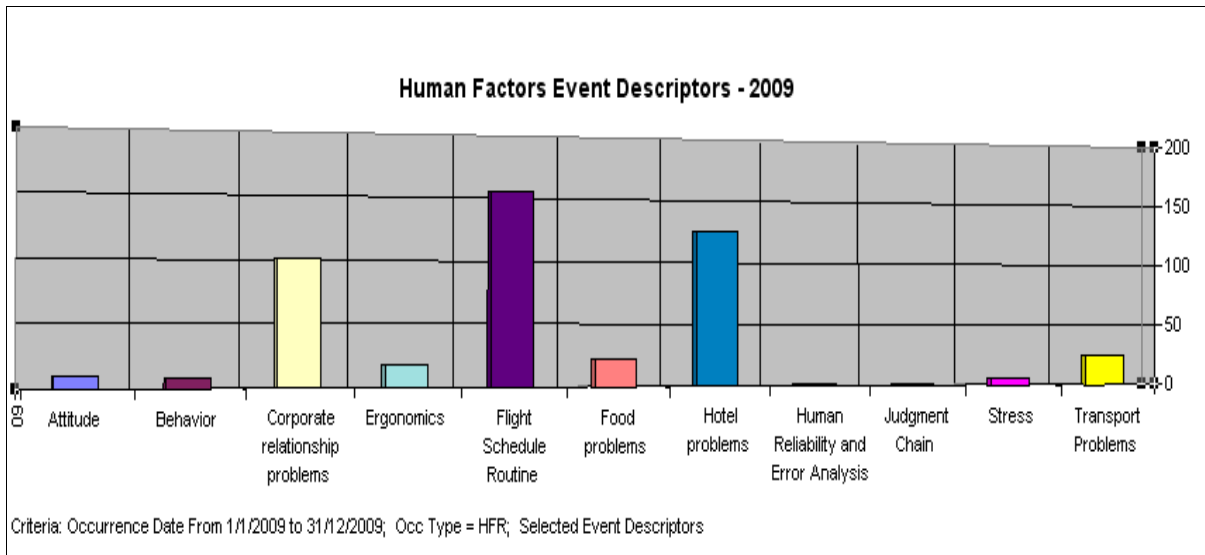


Figure 3 – Human Factors Event Descriptors Statistics 2009. Source: AQD, 2010.

To illustrate the effectiveness of this voluntary reporting approach, Gol presents an interesting result to the end of the year (2009), with Human Factors the second highest reporting mentioned, when compared to others (Figure 4):

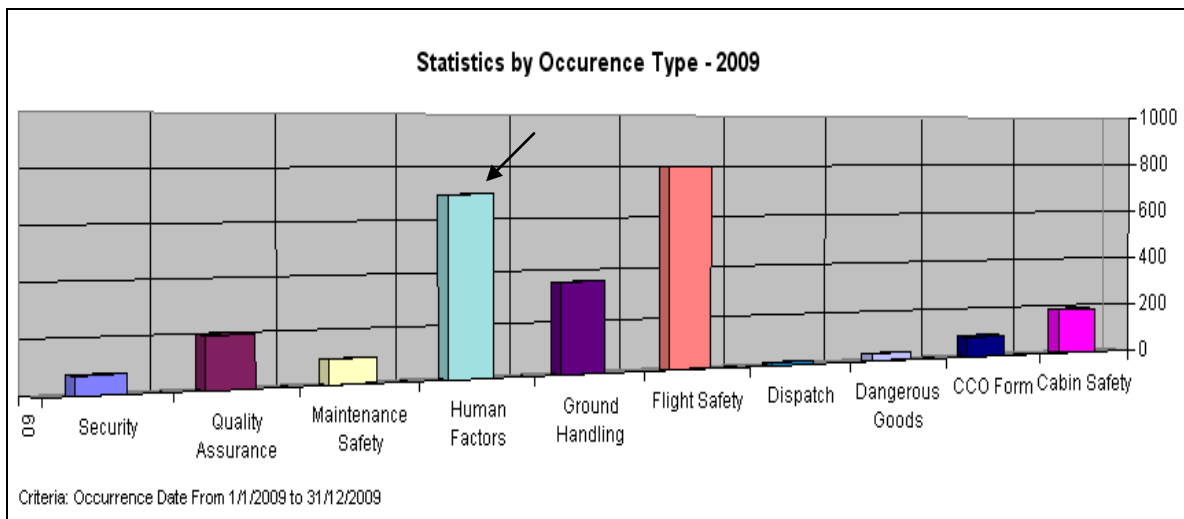


Figure 4 – Report Statistics by Occurrence Type 2009. Source: AQD, 2010.

In spite of a short current period in 2010, it is already possible to identify the growing forecast of this type of report. The Human Factors area has been the most pointed theme in GOL's Quality Database. It represents the emphasis of treatment and resolutions that were applied in 2009 in this area:

- some problematical hotels were changed, regarding to lack of darkness, silence and well-being of technical and commercial crew;
- an important Ergonomic problem – inside the cockpit - was solved due to employees' belief and completion of forms;

- in several flight schedules hazards were identified which resulted in crew rosters modifications, since some of them were stressing and tiring, mitigating fatigue;
- corporate relationship problems have been managed with more effectiveness.

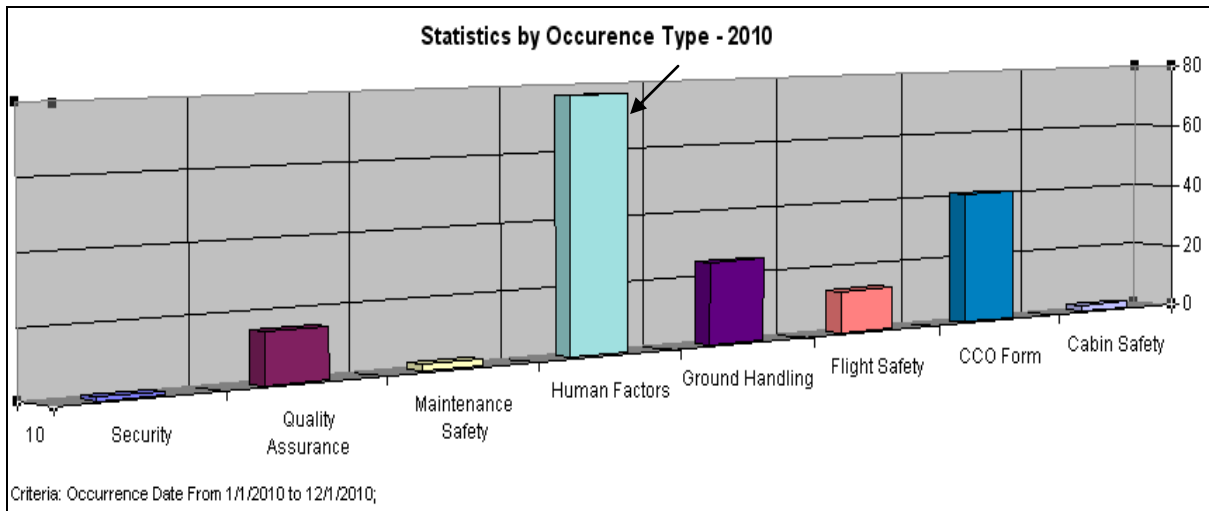


Figure 5 – Report Statistics by Occurrence Type 2010. Source: AQD, 2010

References

Gol's AQD (Aviation Quality Database). Superstructure, 2010.

Gol's Internal Website. <<https://portal.golnaweb.com.br>>. 2010.

Koonce J. M. (1979, September). Aviation psychology in the U.S.A.: Present and future. In F. Fehler (Ed.), Aviation psychology research. Brussels, Belgium: Western European Association for Aviation Psychology.

SMS Directory is hold by Capt. Sergio Quito (squito@golnaweb.com.br) and Human Factors Department is managed by Capt. Paulo Pardal (plpardal@golnaweb.com.br).

Capt. Fernando Rockert de Magalhaes is the Technical VP of GOL Airlines and supports all the Operational Areas involved with SMS (frmagalhaes@golnaweb.com.br).
