



Agenda Item 6: Any other matter

“HUMAN FACTORS IN THE PROVISION OF AIR TRAFFIC SERVICES IN CHILE”

(Presented by Chile)

SUMMARY

Implementation of the results of a study of Human Factors in the Provision of Air Traffic Services in Chile, considering the general aspects of air traffic controller performance regarding both the technical and non technical profiles.

1. Background

1.1 ICAO Human Factors Training Manual, Doc. 9683 AN /950, which recommends:

“Increasing safety by urging States to be more aware of and alert to the importance of the human factor in civil aviation operations, adopting texts and practical measures with regard to the human factor that have been prepared on the basis of the experience acquired by States, and developing and recommending appropriate amendments to the texts in the Annexes and in other documents insofar as the role of human factors in the existing and future operational environments is concerned. Special emphasis will be placed on aspects relating to human factors that could have an impact on the design, transition to, and use of (future) ICAO CNS/ATM systems.”

1.2 Safety Management Manual, Doc. 9859 AN/ 460. Chapter 17, Appendix 1. “Human factors affecting human performance in air traffic services,” as regards the approaches to physiological limitations, psychological variables, equipment factors, information transfer problems, workload considerations and organisational factors.

1.3 Report delivered in March 2007 by the consulting firm that made the diagnostic study and recommended strategies and improvements in the spheres of equipment, work organisation and training, and that developed ergonomic and physiological requirements for safety purposes, so as to ensure the efficient and humanly sustainable performance of air traffic controllers in Chile.

2. Introduction

2.1 A study project on the aforementioned topics was prepared given the need to conduct a study covering the non technical profile of ATCs, to state the ideal ergonomic conditions for ATC units, and to make a diagnosis of human factors in ATC, and that would deliver recommendations and a training

programme and train facilitators for the implementation of said plan.

2.2 The diagnosis was made of human factors in the provision of air traffic services in Chile between October 2006 and May 2007, covering a total period of 34 weeks. It was carried out by an external firm that was awarded the study in a public tender.

2.3 The study was evaluated by stages, as provided for in the bidding conditions.

2.4 Three final products were delivered as a result of the study: Non Technical Profile of Air Traffic Controllers, Ideal Ergonomic Conditions for ATS and Diagnosis of Human Factors in ATC.

2.5 The diagnosis of human factors contained recommendations for overcoming the deficiencies that were found, created a training programme to deal with the most relevant issues, and produced an interactive digital manual for training through self-learning about the main aspects of human factor management and error, in keeping with ICAO recommendations and the findings of the study conducted.

3. **Development of the Human Factors Programme**

3.1 Non Technical Profile

- Determination of the technical profile of ATC through a bibliographic study, identifying aeronautical licensing requirements according to DAR 01 (ICAO Annex 1).
- Analysis of the curriculum taught at the Technical Aeronautical School for the ATC career.
- Interviews of supervisors and ATCs.
- Bibliographic review of quality and safety (state-of-the-art).
- Formulation of the non technical profile for ATC.
- Construction of assessment tools for assessing the non technical profile.
- Proposal of the non technical profile.

3.2 Ideal ergonomic conditions

- Familiarity with ATC units through on-site visits.
- Overall definition of the appropriate environmental factors for job performance in ATC.
- Study and definition of desirable factors, physical condition and state of health for ATC personnel.
- Proposal of ideal conditions.
- Validation of proposals
- Development of assessment tools for the evaluation of the non technical profile and its validation.

3.3 Diagnosis of human factors

- Diagnosis of ergonomics, physiology and quality of life.
- Diagnosis of the organisational climate, internal communications and culture.
- Diagnosis of error case history, analysis of job risks.
- Evaluation of non technical skills and detection of training needs.
- Recommendations on human factors, based on a review of the background.

- Implementation of a programme on human factors for ATC.
- Sensitisation workshop in ATC human factors for facilitators.
- Design, definition and distribution of the ATC human factors self-training manual.

4. Conclusion

4.1 The total ATC system performance was considered in the implementation of this project, from head offices to line controllers.

4.2 Progress has been noted among the ATCs in taking up the knowledge transferred during the implementation of the project on human factors, as a self-care tool, which reduces the negative effects of conditions that are not favourable to ATC performance in a safe environment.

4.3 While it is true that the facilitators in human factors were not chosen on the basis of a pre-established psychological profile, which caused demotivation among them and their students, in practice, self-motivation, which was part of those same workshops, was able to get them to show the necessary energy and motivation to ensure the success of the project in terms of its goals.

4.4 To some extent, greater integration of the heads of each of the ATC units, as the fundamental basis for project definition, was lacking. This integration has been considered for the continuation of the project.

5. Suggested action

The Meeting is invited to:

5.1 Take note of this working paper.

5.2 Urge States to carry out programmes on human factors.