



DIRECTORS GENERAL OF CIVIL AVIATION CONFERENCE ON A GLOBAL STRATEGY FOR AVIATION SAFETY

Montréal, 20 to 22 March 2006

Theme 2: Improving aviation safety

Topic 2.2: Management of aviation safety

"CULTURE - THE UNSEEN FACTOR IN AVIATION SAFETY"

(Presented by Pakistan)

SUMMARY

This paper seeks to call attention to the fact that, the “cultural background” of both individuals and groups, markedly influences the organizational safety culture. Cultural background modifies the priorities and values assessments of individuals and thereby the group’s collective safety culture. For such compelling reasons, aviation organizations must remain perceptive of cultural influences on their operations, if safety efforts are to succeed. In the current data driven approach towards the identification and analysis of accidents, it is apprehended that the importance of cultural background as a contingent factor, may be underrated.

A truly comprehensive global strategy for enhancing aviation safety must be cognizant of the effects of culture on aviation processes, techniques and systems. A better understanding of these aspects would help devise more effective safety solutions and thus save lives.

1. INTRODUCTION

1.1 An inexorable corollary, to the continual growth in global aviation activity, is that accidents and fatalities would keep rising, unless the current accident rate is reduced. Acceptance of this fact has fuelled research in accident causative factors, with a view to develop proactive, safety enhancements to address the underlying human, operational, technical and organizational facets.

1.2 With ever improving aircraft systems reliability, ‘human factors’ have emerged as the most prevalent contributory factor in accidents. Once recognized, the complexity of manifestly human factor causes has been studied in the environments of the airplane flight deck, air traffic control (ATC) and line maintenance. A new paradigm of “safety culture” has progressively materialized, along with an awareness of its impact on formal safety issues within an organization. The earliest mention of “safety culture”, albeit in a negative term, can be traced to a report on the Chernobyl nuclear disaster. Since then, the perception of safety culture as an important element in operational safety, has gained widespread acknowledgement.

1.3 There is no universal definition of safety culture in aviation literature. Experts agree that it embodies the concept of “enduring value and priority placed on worker and public safety by everyone in every group at every level of an organization”. Importantly, safety culture is viewed as a sub-set of the overall culture of the organization and tangibly affects the behaviour at work, of each individual member. To achieve reductions in the accident rate, it is necessary to understand the convergent dynamics of human and organizational factors.

2. THE ROLE OF CULTURE IN A DATA DRIVEN SAFETY STRATEGY

2.1 This paper seeks to call attention to the fact that, the “cultural background” of both individuals and groups, markedly influences the organizational safety culture. Cultural background modifies the priorities and values assessments of individuals and thereby the group’s collective safety culture. For such compelling reasons, aviation organizations must remain perceptive of cultural influences on their operations, if safety efforts are to succeed. In the current data driven approach towards the identification and analysis of accidents, it is apprehended that the importance of cultural background as a contingent factor, may be underrated.

2.2 Culture serves as a cohesive force to hold members of a group together and may also be used as a predictor of behaviour in normal and non-normal situations. In a Western-built airliner cockpit, the pilots are trained to follow procedures and drills designed by European and United States manufacturers, typically for Western cockpit environments. Notwithstanding similarity of training, the crew of an Asian operator may handle certain auxiliary aspects on an in-flight abnormality differently. Cultural background has a bearing on behavioural norms, attitudes, and values; thus it may impinge on a pilot’s innate professional approach and attitudes in subtle ways. Studies have identified significant culturally-based parameters, with a particular reference to aviation safety; these include: risk perception, attitudes towards organization, hierarchy, procedure and working habits. Certain socio-cultural factors, such as religious persuasion, are also known to affect work, achievement and motivation.

3. SOME RAMIFICATIONS OF CULTURAL ORIENTATION

3.1 The ramifications of actions, influenced by cultural orientation, have been noted by investigators in numerous major accident enquiries and analyses of safety failure. An oft-quoted case is the crash of Avianca Flight 052, near New York, in 1990. As in most cases, this accident was a tragic finale precipitated by a combination of factors. These included the fuel starvation of engines, the specific actions of the pilots, terminology of air-ground communications and assessments of ATC, all of which have since been correlated with safety impacting, cultural influences.

3.2 Certain elements of human factors training, developed for crew resource management (CRM) instruction in a Western environment, may not always be relevant or correctly understood in some other cultures. The illustrative scenarios aimed at developing pilot CRM skills for threat and error avoidance may convey different messages due to the relative differences in East-West cultural perceptions. The predisposition of certain cultures towards collectivist behaviour is likely to be at variance with the individualist focus, more typical of Western cultures. Interpretation of “individualism”, “power distance” and regard for “rules and order”, may convey different messages, thereby diluting the efficacy of such transposed training. These facts need to be addressed in the design and delivery of CRM training programmes, to help create and foster a culture of safety.

3.3 There is overwhelming evidence to support the statement, that “cultural background influences the cockpit work environment”. The pervasive element of culture permeates the barriers of training, SOP and CRM principles. It could affect the relationship of a junior co-pilot with a senior captain and the sharing of information. Culture may influence their perceptions about capabilities and even their adherence to SOPs. The synergy of flight crew and machine interaction is also dependent on attitudes towards automation. At times, cultural background can also influence pilot decisions in use of available automation.

3.4 Looking beyond the work group dynamics within the cockpit, national culture and language differences have an important bearing on the international aviation system. Conducting and comprehending radiotelephony communications, in the ICAO mandated English language, demands proficiency from both ground and air stations. Even the standardization of terminology, cannot easily overcome the hurdles of accents and local language idiosyncrasies; these problems may be exacerbated by cultural interpretations and usage of terms, particularly in stress situations.

4. CONCLUSION

4.1 Human fallibility is an inescapable reality. This paper has touched on cultural background and its associated ramifications on aviation safety. A truly comprehensive global strategy for enhancing aviation safety must be cognizant of the effects of culture on aviation processes, techniques and systems. A better understanding of these aspects would help devise more effective safety solutions and thus save lives.

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