



*The 8<sup>th</sup> International Scientific Conference*  
**“DEFENSE RESOURCES MANAGEMENT  
IN THE 21<sup>st</sup> CENTURY”**  
Braşov, November 14<sup>th</sup> 2013



## THE IMPACT OF CULTURE IN FLIGHT SAFETY

STANCU GHEORGHE, MSc

Regional Department of Defense Resources Management Studies / Brasov / Romania

**Abstract:**

In military aviation, *cultural differences* between countries play an important role in the complexity of human factor causes of aircraft accidents that result in the total loss of the aircraft. The connections with *individualism* and *power distance* have been established long time before. The additional link for the military sector with *uncertainty* avoidance is probably a consequence of the fact that this *cultural* feature as well as *power distance* is pre-eminently typifying aspects of the military organizational culture. The more profession-oriented the air force *culture* is, the lower the chance to jeopardize *flight safety*<sup>1</sup>. Vice versa, the more institutionalized the air force culture is, the greater the chance of accidents. The chance of accidents occurring is relatively smaller in those air forces in which the *culture* is more *individualist*, in other words, more oriented toward the work itself. In these air force cultures, *power distance* is, moreover, relatively small, and furthermore, personnel have relatively less trouble in working in an improvisational manner.

*Key words: culture, aviation, flight safety, power distance, uncertainty.*

### 1. Introduction

The Cultural differences obviously exist between the armed forces from different countries. It is important to understand that the causes of accidents do not occur only at the implementation level. Causes of accidents during implementation can sometimes be characterized as active failures. However, at the level of commanders, but particularly also at the level of policy development, the conditions for accidents may be created. This is not always as easily recognizable, and, moreover, the effects of policy decisions are often not felt until years later. Therefore, in these cases, we speak of "latent errors"<sup>2</sup> (Reason, 1990); Culture-related problems may certainly arise if there is interaction between pilots from different air forces. Mixed cockpit crews and operations conducted in mixed pairs or larger groups of combat aircraft are no longer an exception in modern-day military aviation.

---

<sup>1</sup> *Safety* - the state in which the possibility of harm to persons or of property damage is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and safety risk management.

<sup>2</sup> *Latent error* is a human error which is likely to be made due to systems or routines that are formed in such a way that humans are disposed to making these errors.

# ***THE IMPACT OF CULTURE IN FLIGHT SAFETY***

## **2. The impact of culture in flight safety**

If national air forces differ from each other in respect to culture, we may assume that national cultural characteristics could apparently impact *flight safety*. During all of flight activities, some people, depending on the national cultural characteristics within them, would represent either a lower or higher chance of causing accidents than others.

**2.1. Individualism-collectivism.** The latest research showed that a national organization can be regarded as relatively *individualist* if employees attach relatively high importance to a *pleasant living environment and leisure time* to devote to their private or family life. Furthermore, freedom to choose their own approach to their work as well as the presence of challenging work, from which they derive personal satisfaction, are characteristics of an *individualist culture*. All characteristics of individualism, according to Hofstede (1991), "stress the employee's independence of the organization" (p. 52). In an individualist culture, when continuing their own career, for instance, people will just as easily look for a job outside their own organization as they will look for one within the same organization. The *culture* of an organization may be more *collectivist* if the employees attach relatively high importance to *good working conditions, good working relationships, training facilities*, and the possibility to show one's own skills in their work. Private circumstances (free time, living environment) are regarded as relatively less important. The employing organization and one's own career within that organization take first place in a collectivist culture. In such a culture, the employee is "*rather dependent on the organization*" (Hofstede, 1991, p. 52), dependent in terms of mental orientation and experience, but also actually dependent in terms of job security and income; in other words, the employee is *both subjectively and objectively dependent*. In every country, positions in military aviation are, by and large, filled by people for whom the work itself is, first and foremost, a challenge. Compared to, for instance, military infantry personnel, air force personnel (pilots, air traffic controllers, and the like) will therefore be relatively individualist and thus *occupation and profession-oriented*. In comparison with colleagues from civil aviation, however, they will be more institutional-oriented toward that particular employer, the military air force.

Military pilots and other air force employees will vary from country to country with regard to the extent to which they act dependently from the organization in which they work. This has implications for the attitude at work. In *collectivist*, institutional air force cultures, employees will first and foremost be *committed to the organization*, as they are inspired by motives based on organization-related fear, loyalty, and shame (e.g., Flam, 1994). After all, the average employee will not want to risk receiving a reprimand or missing promotion opportunities, let alone suspension or dismissal. Besides, *collectivist* cultures may be considered to be "high-context" cultures in which little information is made explicit and much remains "unsaid" (Hofstede, 1991, p. 60). On the other hand, in individualist, profession-oriented air force cultures, the average employee will be more likely to look at what the position itself demands.

**2.2. Uncertainty avoidance.** Uncertainty avoidance is the extent to which the members of a society perceive a threat in *uncertain or unfamiliar situations*, and the extent to which they subsequently try to *avoid these situations by means of regulations and bureaucratic sanctions*, among others. Uncertainty avoidance concerns the limiting of unclearness as a result of which events become more predictable and which risks are more

## ***THE IMPACT OF CULTURE IN FLIGHT SAFETY***

clearly defined. Greater reduction of uncertainty sometimes means greater risk. In countries with a low score for uncertainty avoidance, people have grown accustomed to solving problems independently, using improvisation, and, if necessary, acting outside formal rules. Furthermore, in such countries there are simply fewer rules and regulations. In these countries people are generally less nervous, and the chance of stress in such an unfamiliar situation is, on average, less. People respond more naturally and are not under so much strain in the event of something unplanned happening (Hofstede, 1991, chap. 5). In military aviation, the precise following of rules is a matter of life and death. A large part of training (e.g., for pilots) focuses on learning to follow procedures and regulations. For a trained pilot, knowledge of regulations and quality of flight preparation provide a "safety envelope." Nevertheless, accidents often involve events outside this envelope, which happen unexpectedly and for which a solution has to be found quickly. It would seem plausible that under such conditions, despite all the training and standardization, national differences regarding the reduction of *uncertainty* play a role in the extent of success in dealing with *emergencies*. So, we can say that *uncertainty avoidance and the occurrence of military aviation losses will correlate positively*.

**2.3. Power distance** is defined as the extent to which the less powerful people in organizations and institutions within a country expect and accept that **power is distributed unequally**. In countries with a large power distance, subordinates are, both actually and in terms of experience, subordinate to their superiors (the patient to the doctor, the student to the teacher, the child to the parent, the private to the general, and the citizen to the politician, respectively). A relatively small distance between superior and subordinate, on the contrary, results in supple contacts and a great deal of informal discussion, and, if necessary, the subordinate will contradict his superior. In the more extreme cases of small power distance, the subordinate will not hesitate to correct his or her superior (Hofstede, 1991, chap. 2).

**2.4. Masculinity.** Masculinity refers to the extent to which the dominant values in a society are either more or less masculine. Expressions of this are an *orientation toward competition and performance* and the desire for recognition of one's performances (Hofstede, 1991, chap. 4). Connected with this are the very personality traits on the basis of which air force personnel, and in particular, military pilots, are selected all over the world. A significant link between the incidence of accidents and the score on the masculinity index of the various NATO countries therefore seems implausible. After all, the laws of statistics show that the smaller the range of a distribution on a variable, the smaller the chance of a correlation with anything else. Therefore, we hypothesize no correlation between masculinity and military aviation accidents.

### **3. Conclusion**

Certainly there are significant correlations between the accident figures and individualism, uncertainty avoidance, and power distance. The more profession-oriented the air force culture is, the lower the chance of total loss accidents. Vice versa, the *more institutionalized* the air force culture is, the *greater the chance of accidents*. In addition, it appears that the greater the level of uncertainty avoidance or regulation orientation within a national culture, the greater the chance of accidents. Furthermore, a significant, although somewhat weaker, link is visible between the chance of total losses and power distance. If the intercorrelations are studied, links become visible between individualism and a low

## ***THE IMPACT OF CULTURE IN FLIGHT SAFETY***

level of uncertainty avoidance and a small degree of power distance. Conversely, there is a strong relation between a collectivist culture and a relatively high level of avoidance of uncertainty and a high power distance. Finally, uncertainty avoidance and power distance, appear to have a strong interrelation. People tend to take a position that is relatively more independent from the organization. In these air force cultures, power distance is, moreover, relatively small and furthermore, personnel have relatively less trouble in working in an improvisational manner; in other words, they are less rigidly oriented toward rules and procedures, should the situation require. On the other hand, there is a cultural profile in which organization-oriented, institutional thinking is predominant. In these air force cultures the organization orientation is relatively high, and almost logically bureaucratic characteristics control the thoughts and actions of employees to a relatively high degree. Thinking, sometimes rigidly, in terms of rules, procedures, and competencies (power distance) dominates one's own judgment. According to our analysis, in these air force cultures the chance of total losses is demonstrably higher.

Apart from the possible dangerous qualities of one's own national culture, the cultural component will be strongly felt with regard to two particular situations: first, in the interaction between air forces, as can occur in situations such as combined operations (working with different air forces inevitably leads to interaction with different cultural characteristics, with all the possible consequences this may have); and second, within the national air force organizations, now that civilians from ethnic minorities are applying increasingly for jobs in and around aviation. Despite neutralizing selection and training activities, diverse cultural effects will undoubtedly occur in this situation. These are characteristics that obviously belong to the military culture but at the same time illustrate clear differences between national military organizations.

Naturally, rules and procedures are very important in aviation organizations from a safety point of view, but they must, above all, be useful and enable people to do their jobs well. Moreover, the number of rules must be comprehensible and manageable. Only when these conditions are met can it be expected that personnel will handle the rules sufficiently.

### **References:**

- [1] Flam, H. (1994). *Fear, loyalty and greedy organizations*. In St. Fineman (Ed.), *Emotion in organizations* (pp. 58-75). London: Sage.
- [2] Helmreich, R. L., & Merritt, A. C. (1998). *Culture at work in aviation and medicine*. Aldershot, England: Ashgate.
- [3] Hofstede, G. H. (1991). *Cultures and organizations: Software of the mind. Intercultural cooperation and its importance for survival*, London: McGraw-Hill.
- [4] ICAO, Document 9859 *Safety Management Manual (SMM)*, 2<sup>nd</sup> Edition, 2009.
- [5] ICAO, Circular 302 *Cross-cultural factors in aviation safety*, 2004.
- [6] Reason, J. (1990). *Human error*. Cambridge, England: Cambridge University Press.
- [7] Soeters, Joseph L., Boer, Peter C., *Culture and Flight Safety in Military Aviation*, *International Journal of Aviation Psychology*; 2000, Vol. 10 Issue 2,
- [8] Weener, E. F., & Russell, P. D. (1993, November). *Aviation safety overview flight safety foundation*. Proceedings of the FSF 46th International Air Safety Seminar/23rd International Conference of the International Federation of Airworthiness, 15-28.
- [9] Wilson, J. Q. (1989). *Bureaucracy, what government agencies do and why they do it*. New York: Basic Books.