

THE ROLE OF THE FIRST INSTRUCTOR IN CULTIVATING THE AVIATION SAFETY CONCEPT

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Abstract: *When we are talking about flight safety is mandatory to understand the objectives and the principles of this concept. From the beginning, when the instructor is teaching the first rules of flight or the basis of aviation rules, it is also necessary to act exactly like he delivers all the information. The first teacher will always be an example for all carrier of one airman. If he shows that sometimes it is possible to defy the rules and nothing happened, later, somehow, the chain will break.*

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1 INTRODUCTION

History of aviation is hard to understand as a distinct discipline because specialized literature has presented the idea of flying under a variety of aspects, ever since the ancient times and up to now. The entire history of aviation reveals the sacrifices of human lives and the efforts put into the materialization of the man's dream of flying.

The military branch of aviation implies the existence of, in most of the cases, one pilot aboard the aircraft (one crew member), who has to execute all maneuvers, interpret the board data and information, do all the calculations for navigation and maintain radio connection with air traffic controllers. All these actions require the maximum of a pilot's capacity of analyzing and synthesizing so as to make the right decision and to solve non-routine situations en route.

The simple or unilateral use of information, abilities and competencies formed throughout training may lead to the failure of the received mission or, in some cases, to serious flight events.

2. SAFETY STEPS IN AVIATION

Safety refers to something potential, that might occur and that has as its own indicators the statistics of flight events and the inventory of potential risk factors.

The risk for an accident to emerge depends on the complexity of the system and on the unpredictable character of the rapports between its constituent elements.

And since the level of complexity may hardly be diminished, an increase in safety may only appear with the intelligent effort of reducing the amount of uncertainty that governs the functioning of a system.

In a few words, in the branch of aviation, a branch extremely receptive to the most sensitive changes caused by the technological-scientific revolution, aviation, in general, and the military aviation, in particular, imposes not only the knowledge in depth of technology, its mastery, but also the specific issues related to the training of the flying personnel.

Accidents represent one of the fundamental challenges of aviation of all times.

The complexity of aircraft and of flight itself, the multitude of factors that intervene in the process of organizing, preparing and carrying out of a flight are permanent sources for flight undesired events, some of which may be serious and others may be less serious.

A flight event stands for something real and it represents a situation in which one or more uncertainty factors manifested their effect without being able to be annihilated by regular prevention measures.

The researches in the aeronautical field have led to the identification of three stages of development for the aviation safety: [4]

2.1 Technological period – the beginning of the 1900's and up to 1960's.

During this period there appears the air transportation that reduces the durations of travels and increases the number of passengers. It is still now that deficiencies related to safety had been initially identified with the technical factor and with the failure of technological development.

As a result, a concentration of efforts was channeled toward the investigation and repairing of technical faults discovered in the making process or during exploitation. Starting with the years of 1950's, technological innovations have led to a gradual decrease in the frequency of air accidents, whereas efforts for increasing safety have been re-dimensioned so as to impose and maintain certain standards in production and exploitation.

The technical factor – as we are going to refer to it from now on, is still the source for a series of causes generating insecurity and which emerge from its every component.

Based on statistics with regard to air accidents and catastrophes, the technical factor holds an important percentage in flight events production. Most technical malfunctions are detected on the ground, before any serious event occurrence.

Yet, when these malfunctions take place in flight, the situation becomes critical.

2.2 The period of human factor – the beginning of the 1970's up to the mid 1990's.

The incidence of air accidents is considerably reduced due to the introduction of new, advanced technologies and to the intensification of safety measures throughout the running of air activities. Air transport has thus become the safest and the most efficient way of travelling fast and comfortably and the scientists' concern has begun to be channeled towards including the topic of Human Factor within their specialized studies, including the man-machine interface. This concern has led to a different analysis of investigation methods from the existent one.

In spite of the increasing consumption of resources existent in the process of reducing errors in the field of aviation, human performances continued to be analyzed as one of the recurrent factors among those that result in producing accidents.

Thus, the science of human factor approaches the individual in itself, without considering the operating and organizational contexts in which the individual carries out his activity.

This is a totally erroneous approach, as it has been proven by current studies, because it has not been taken into account the fact that the individual operates within a complex environment, sometimes a hostile one, such as is the case of the military background, but not only this one, which allows for a multitude of factors to potentially modify the human behavior, reactions and actions. The human factor is the element that characterizes the representation in an external environment of the human body behavior.

This implies physiological and psychological aspects of the individual, but also his interaction with the other human beings, with the machine/ aircraft and the equipment in use, with the operating background, respectively, with the environment in which the individual performs his flight activity.[2]

At the origin of most of the flight accident imputable to the human factor is a mistaken action, an error. These appear on a background of tiredness, recklessness, insufficient preparation, stress, over-evaluation of own capacities, insufficient hours of training etc. Rarely does a catastrophe hold a single reason.

Most of the times, there is a major reason, to which one or more other secondary reasons are added. For example, a critical situation initially emerging as a result of a technical failure may be worsened by a wrong action that is able to make the situation more severe.[5]

2.3 The organizational period – from the mid 1990's until present.

Throughout the organizational period, safety has begun to be regarded through the system in order to also take into account the organizational factor as well, and not only the human and the technological factors.

As a result, the notion of “Organizational accident” has been introduced, taking into consideration the impact of the organization culture and its policies, for the purpose of increasing control over risks.

Thus, traditional methods of increasing the level of safety have been improved with a new, proactive perspective, in accordance with the current realities.

This new approach is based on a continuous collection and analysis of data and information regarding the organization as a whole, using both proactive methods and reactive ones to monitor risks and eliminate syncope in safety assurance.

The new vision leads to the permanent implementation and improvement of safety management and its purpose is to make the activity within organization more efficient.

In other words, there was a proposal for the exclusion of the tendency of blaming it all on the “human error”, emphasis being laid upon latent causes, upon accidents antecessors, which, identified in due time and corrected, would have significantly increased the chances to prevent the occurrence of an aviation event.

3. NOWADAYS SAFETY

Proving the existence of the three stages of aviation safety draws an alarm signal in case of military organizations that possess aircraft, and which are still tributary to the technology and training used by the former Soviet bloc.

The current tendencies and the necessity of aligning to the North Atlantic alliance have imposed the implementation of a new safety system in this field.

This system may be easily implemented throughout the period of initial training of future pilots.

But in order to do this, there is need for models within the structures of instruction from aviation schools for young pilots; positive examples on the instructors’ side, on the technical staff, air traffic controllers and on all people involved in the whole training process, planning, coordination and assessment of the flight activity, both theoretically and practically.

If for the old system of training the identification and punishment of guilty people after an air event was essential, whereas assuming responsibility and accepting some unjustified risks in air activities were praised and even prized – even if, in accordance with those times regulations, lack of discipline was severely punished – the current system rejects firmly such manifestations and encourages the factors involved in the flight activity to place the safety of resources first (human and material) and, implicitly, the entire organization, through the implementation of a set of lessons learned. These lessons learned emerge from the necessity of a permanent improvement of the training process management within the organization and they are based on past, undesired events, which underline some dysfunctionalities of the system.

Educating conscious discipline represents one of the basic problems in training pilots and it has powerful effects on avoiding flight events. It is the people who train future pilots’ duty to implement correct decisions, through their own good example. Often, incorrect decisions or the frequent and premeditated breaking of rules represent the lack of good pedagogy of training, lack of positive examples or even tolerance, from the organization, of risky actions that may affect flight safety.

The easiness of implementing the own example consists of strictly abiding, by an instructor, part of an aviation organization, by the Aviators Model Code of Conduct:[1]

GENERAL RESPONSIBILITIES OF AVIATORS

Pilots should:

- a. make safety the highest priority,
- b. seek excellence in airmanship,
- c. develop and exercise good judgment and sound principles of aeronautical decision-making,
- d. recognize and manage risks effectively, and use sound principles of risk management,
- e. maintain situational awareness, and adhere to prudent operating practices and personal operating parameters (e.g., minimums),
- f. aspire to professionalism,
- g. act with responsibility and courtesy, and
- h. adhere to applicable laws and regulations.

The instructor (flight instructor, the mechanic or the air traffic controller) needs to provide the clearest and the most complete instructions both during the theoretical training and during the practical training (in flight, within the maintenance workshop or in front of the command panel of the air traffic control). He has to encourage his trainee to learn as much as possible, including making him learn individually, so as to achieve mastery in his profession.

Instructors are also the first and the most important actors in what concerns the improvement of the results of the aircraft constructing industry, due to their careful training of pilots who use the technology made for them by the technical staff and air engineers.

The flight safety (aviation safety) is the supreme element of the training. Therefore, norms and regulations in this field hold the role of promoting and maintaining safety while diminishing to the maximum the conditions and circumstances in which both human and material damage occur. But even the strict alignment to these rules may be insufficient to guarantee the safety of air activities. Therefore, it is very important for instructors to have a proactive attitude regarding the adding and modification of rules, in agreement with the newly identified threats or with the new requirements issued in the light of optimizing the level of safety for the entire activity.

4. CONCLUSION

The manner in which the instructor applies the safety rules and makes correct decisions concerning the maintenance or assumption of the accepted level of risk has a long-term effect on the trainee under his supervision/training. In general, trainees consider their instructor to be a model, whose behavior trainees tend to imitate consciously or unconsciously.

Thus, one of the best methods to develop and maintain the safety concept within an organization, belonging to any area of expertise, is that of providing a self example.

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