- Safety in Military Area: A point of View -

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As says the title of this flash, we will present here our view about the safety in the military area, be here in Brazil, be in other countries aware of the objectives of the mission of an Air Force.

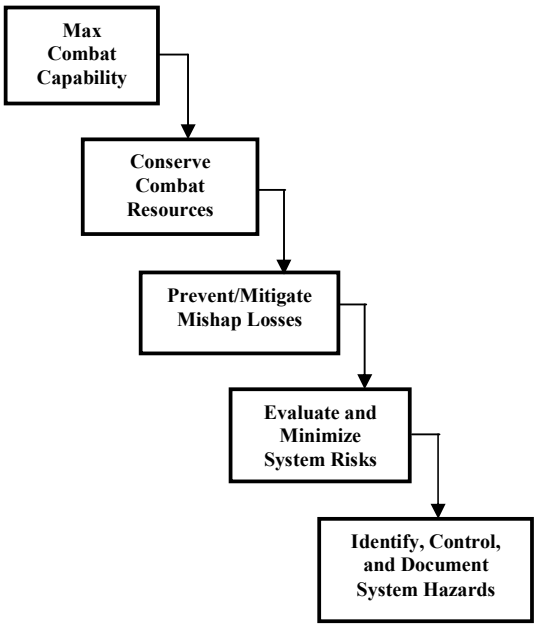
Our point of view is based on long experience we have accumulated throughout our life, being the most important that of 23 years in the extraordinary program of the military aircraft AM-X, together with the *Aeronautica Militare Italiana (AMI)*, named in Brazilian Air Force as A-1, and also in EMBRAER and in the *Instituto de Fomento e Coordenação Industrial* of the *Departamento de Ciência e Tecnologia Aeroespacial (DCTA/IFI)* situated in the city of Sao José dos Campos, SP, Brazil.

We do not know any other program in Latin America, which has had the same magnitude of the AM-X Program, especially considering that in this program there was a real transfer of technology to Brazil, in particular to EMBRAER. It was a program that has brought also a great improvement in the capacity of managing aeronautical programs in the Defense Ministry. Who took part in that program knows that this in fact occurred.

We start noting that the major concern in civil aviation is the safety of crew and passengers, both in small and in the large aircraft. Already in military aircraft the major concern is with the resources that are used to maximize the combat capability. Is there a concern also with the crew? Of course, but the main focus is to consider the crew as a valuable resource for maximizing the combat capability.

Indeed, an Air Force is made for battle, either in defense or in attack. For this purpose, it must have a capacity as high as possible to the combat, but with costs contained.

The following diagram gives an idea of what we mean.



As we see, the main objective is to maximize the combat capability. For this it is necessary to develop and preserve the resources to fight, avoiding losses, by assessing and minimizing risks, through the identification and documentation of hazards to the system. It's really another way of think safety, that is, differently from the way thinking in civil aviation.

When we talk about fighting capabilities, we are talking about the system as a whole, i.e. the operational subsystem (airplane and pilots) and logistics subsystem (mechanical and maintenance resources).

Therefore, the concept of safety (safety) extends itself to "Safety System - SS". That's exactly what advocates MIL-STD-882 (now in version E), a DoD safety system standard referenced by FAA, in its documentation.

An aircraft, its crew and mechanics are invaluable resources to maximize the combat capability. Reset a combat aircraft, a fighter pilot or a mechanic is not a simple thing and

besides it is costly for the public purse. It's money out of the pockets of citizens who pay taxes. It is not exactly the same in civil aviation.

The flight profile of a civil aircraft carrying passengers or cargo consists of the following: "Taxi and take off; Departure and Climb, Enroute Cruise; Descent and Approach, Arrival and taxi. Furthermore, almost always the civilian aircraft follows well defined rotes.

As for military aircraft, those who actually perform the activity end of its Air Force have one or more missions, but in general have more than one. The only similarity with civilian aircraft is that the military aircraft must also take off and land. But what happens between takeoff and landing is quite different from the behavior of a civilian aircraft. Moreover, the route for military aviation depends on the theater of operations.

Who lived with the fighter pilots of our Brazilian Air Force, as I lived, exercising my functions as electronic engineer in *Parque de Material Aeronáutico de São Paulo* (something like Aeronautical Material Park of Sao Paulo), knows very well what that's like.

I once heard from a friend that, being in peacetime, there would be no need, in the military area, of worrying about a scheme like this, i.e. we could deal with safety in that area like in civil aviation.

My friend told me: "In time of peace, we can consider safety in military aviation as in civil aviation because there is no fighting, no war."

However, if the Air Force in peacetime flew as in civil aviation, it would be useless.

But in peacetime systems (aircraft and logistics) Air Force are constantly training focused on their missions, i.e. follow the mission profiles as if in time of war. Anytime if it has to go to the combat, it is ready to perform their missions.

The maneuvers that are performed in that training can carry to risks totally different of those in configuration of civil aviation.

Well, I close here. I just wanted to express an opinion already formed some time ago.

Thanks for your patience.

See you.

References;

(1) DoD: MIL-STD-882E, System Safety. USA: DoD, May 2012.

(2) AIR FORCE SAFETY AGENCY, Air Force Safety Handbook. USA: HQ AFSC/SEPP, Kirtland AFB, NM 8117-5670, July 2000.

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