

# For Pilots Only

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In the past two years, we have seen a substantial change in our overall Class A mishap profile. Historically, operational-type mishaps ran about 47 percent of our totals, logistics mishaps about 42 percent, and the remainder were undetermined or environmental in nature. Now, and this has been true since the end of 1977, about two-thirds of our mishaps are operational, while less than one-third are logistics. The overall rates in terms of mishaps per 100,000 hours really haven't changed substantially, even though they are up from the mid-70s by 10- to 15 percent.

Also of concern is the fact that the destroyed aircraft rate is high, as is the fatal mishap rate. Now these aren't up just a little bit - they are higher than they have been since the late 60s. The destroyed aircraft and fatal mishap rates are up because the operational mishaps are up, and they are far more serious in nature than they used to be. We have agonized over the rate increases for the last 18 months or so, told everything we know and then some in an effort to reverse the trends in the operational mishaps.

A brief summary of the facts is in order. When operational mishaps are looked at in detail, it is apparent that it is the fighter/attack aircraft mishaps that are really up. This does not mean that there has been any great decrease in operational mishaps in other types of aircraft at all. As a matter of fact, the rest of the aircraft types have kept clicking along at their usual frequency, as far as operational mishaps are concerned, and should give none of us any warm feelings.

In the fighter/attack mishaps, we find two types of losses that are driving all rising trends:

- Collision with the ground or water with, as far as we know, a perfectly good aircraft.
- Pilot-induced control losses.

Both of these mishap categories are deadly. We destroy aircraft almost every time, and almost always, there is at least one fatality. On the other hand, those mishaps which occur on the range, during landing and takeoff, or point-to-point normal navigation, and those involving midair collisions have changed very little in frequency.

The problems generating the increases in both collisions with the ground and control losses are basically mission related. Low-level nav, low-level formation, low-level maneuvering, ACM, DACT are the mission elements where they occur, and, with the exception of the last two months, for two years, the frequency of mishaps during these mission elements has been increasing. While it is certainly too early to tell, the last two months of the year may be signaling a decrease or at least a leveling of the operational mishap frequency. We're hopeful.

Unfortunately, and naturally, operational mishaps get everyone tight-jawed. Rarely is there any type of malfunction involved; however, this is not always true. Our tendency is to get

mad at the individual involved, even though he may be dead. Mostly they look like dumb accidents by dumb pilots, and that isn't true either. As a matter of fact, it is our opinion that we could court marshal or otherwise unburden ourselves of every pilot who has had a bash, and we wouldn't change the rate at all. The facts of the matter are that most of them die anyhow, and yet the rate has continued on.

To limit our action to the individual event which precipitates the mishap or to the individual himself who had the mishap is really an ostrich-like maneuver. We know who did it, and we know what he did, but why? Once again, we believe that since the system selects these folks, trains them, and commits them, the system itself then must be a part of the problem, if not most of it.

When underlying causes that result in a pilot error or a supervisory error type mishap are examined, we see the leading contender is that the pilot was pressing too hard or *being* pressed too hard. Combined with that, oftentimes is an over-commitment. Either the pilot overcommits himself, or he is overcommitted by the mission which he is trying to accomplish based on his training, knowledge, and proficiency.

Low event proficiency is a large player in the operational mishap. By event proficiency, we mean the proficiency the pilot had for the specific event he was trying to accomplish at the time of the mishap. We have few pilots who don't get enough 30-60-90-day time, and I am sure there are few whose training squares aren't filled. But in 48 percent of the mishaps we have looked at, the pilot or the crew involved had either never done the specific event before, had not done it for at least two months prior to the mishap, or had done it once before, recently, but only for the first time.

In almost half of the collisions-with-the-ground mishaps involving fighter or attack aircraft, event proficiency was a factor. The first time that low, first time in that formation position, first time on that range, first time on that exercise with those specific parameters - all of those have been factors in our collision-with-the-ground mishaps

**Briefings.** Here we aren't talking about the fact that the pilot wasn't briefed to put in left rudder when the aircraft drifted right on the runway. We assume he learned that someplace in his career and doesn't need to be briefed on it. But if the mission elements are not covered in the briefing, or if while the aircraft are still in the chocks because of early abort, the mission is changed, and there is no briefing, then there is a good possibility of committing some folks for a mission for which they have not been briefed. Secondary missions - instruments, navigation, whatever- oftentimes are briefed just about in that detail, and that bites us with one of those dumb accidents.

Skill and technique deficits primarily concern control loss and landing and takeoff mishaps. They also are factors in mishaps where there is an over-commitment. In winter, for instance, we become extremely optimistic about the weather, particularly runway visibility and ceilings, when we attempt to bring our machines home rather than scatter them at other bases. Destination fixation on the part of the crews, as well as supervisory personnel, lead us into situations where marginal weather becomes sub-marginal and cannot be coped with

regardless of skill levels or techniques used by the pilot. Then we have another one of those dumb accidents.

Experience levels. We find in some of our mishaps that experience, both UE and total time, is a definite factor. We see where a pilot may have had a considerable amount of total time but no mission experience that parallels his current assignment. If his UE time is low, then we have the probabilities of a mishap soaring. From what we see in our accident pilot experience, both total and UE time, experience is a significant factor in the control loss and range mishaps, while in the other types of mishaps, excluding the solo UPT pilot in the training command, it is not.

Distraction/inattention. Distraction and inattention, task saturation, loss of situational awareness, or whatever you want to call it, is the single problem that precipitates collision-with-the-ground mishaps. Out of the 40-plus we have had in the last two years where a perfectly good airplane, as far as we know, was flown into the ground, none of the aircrews involved knew they were going to do that until just before they did if at all. The mistake? Attention, for whatever reason, was subtracted from flying the aircraft to the point that the pilot was unaware that he was about to hit the ground.

The reasons for the distractions are not really as dumb as the accident seems to be on the surface. The conditions which distract from flying the aircraft in the low-level environment are very predictable. Low-level nav over flat or undulating terrain in a spread formation requires considerable attention outside the cockpit. First time for a crew in a formation position that low, combined with first time on the range or in an exercise, can make a collision with- the-ground mishap distinctly possible. At best, that combination may result in the fact that you had to luck out in that there just wasn't anything to run into right at the time you were giving your entire attention to something other than flying the machine. In addition, a warning light at just the wrong time, losing sight of the leader at just the wrong time, encountering an unexpected threat, either ground or air, at just the wrong time may singularly or altogether subtract from the attention that is required to fly the aircraft in the low-level environment long enough to result in a collision with the ground.

Losing situational awareness - a term that has been coined recently - usually results from distraction on the part of the mishap pilot. Burying the nose while looking out the top of the canopy and not realizing the position of the aircraft until it's hopeless has happened too many times in the last two years, and it looks like a dumb accident. Looking over the shoulder when under attack has also resulted in many pilots placing their aircraft in an impossible recovery situation.

Desire, motivation, ego - whatever- also is a big player in our DACT/ACT mishaps. An experienced pilot with a less capable aircraft, or the obvious novice, has the pride, ego, and the desire to get the more capable aircraft, or pilot, on film if he can. But desire, no matter how well motivated and understandable, will not increase the capabilities of the equipment or the pilot one bit, and we have another dumb accident when those capabilities are exceeded.

All pilots must have a knowledge of basic aerodynamics. Now you don't need a college degree in aero engineering to get this, but if you are to fly an airplane at its limits, you have to know what the limits are. You have to know what the signals are when you are approaching them and what the first signals are when you exceed them. Pilots who are flying air-to-air combat must also know, in addition to the basic aerodynamics, the specific aero characteristics of their aircraft associated with high angle of attack maneuvering. In the middle of an exciting engagement, below the recovery altitude for your aircraft, is a very poor time to learn some startling facts about the aerodynamics of your airplane.

Discipline breakdowns. We are talking more about the subtle discipline breakdowns where the rules are stretched, limits are pushed, and procedures modified than we are about the gross and willful. This problem of discipline breakdowns is a tough nut for any of us to crack. The reason is that you get more victories – although they are paper ones - when you stretch the rules and press on than you do when you follow the rules exactly. The fact that among the losses are destroyed aircraft and fatalities doesn't seem to be balanced against that potential paper victory. Also, the problem with subtle discipline breakdowns is that they may be tacitly approved by the supervisory personnel at the unit or perhaps even demonstrated by airborne supervisory people and then, if not encouraged, certainly condoned by all.

It looks to us that, in over half of our mishaps, there is a discipline breakdown of some type, whether inadvertent or subtle and encouraged. We say that because the rules which applied at the time of the mishap, covering the specific event attempted, simply were not followed. Then once again - you guessed it - a dumb accident.

So the causes of our operational mishaps which underlie that call are as follows: pressing and overcommitment, training, and knowledge deficiencies, low event proficiency, poor briefings and failure to follow briefings, skill and technique deficiencies, experience deficits, distraction/inattention, and discipline breakdowns.

The types of mishaps in which they result - and it makes little difference what kind of an airplane we are talking about here- are pilot-induced control losses, collisions with the ground or water, midair collisions, and takeoff and landing accidents. They account for approximately 95 percent of all operational mishaps and always have. The underlying causes we have listed cover 95 percent of the problems that generate the operations-type mishaps. But there is something else.

It is not enough to know what kind of mishaps operators have and the underlying causes. The discussion still is purely academic. The guts of the issue is: How do you use the information we know about our mishaps to prevent future mishaps?

And all of us agree, I hope, that the human factors of our mishaps are by far the most difficult to get our arms around. When we have the human factor mishap, the resulting recommendations may change procedures, change mission elements, cause retraining, change proficiency requirements, expand briefings, restrict or limit low experience level pilots from the more difficult missions and discuss the best methods of improving discipline. Of course, when all else fails, we rebrief all pilots. But all of these actions can be likened to what our traffic folks go through. A curve is placarded for 45 miles an hour; the

driver tries it at 85 miles an hour and doesn't make it. The action is to reduce the sign limit to 25 miles an hour. So it goes with some of the actions that we feel obligated to take resulting from our operational mishaps.

For the most part, we have good procedures. They evolved from our combat experience, as well as what we have learned while training over the past 30 years. The mission is stated-we can't change that. It's a requirement and is the reason we even have an Air Force. Our pilots are well educated, trained; they're sophisticated folks much, much better equipped to fly the mission than was my generation. On the negative side, the mission is harder than it has been in the past. We have less dead time per sortie, and our margins for error are less than they were. But to balance that, the training is much more realistic than it was in the past, and I am sure that our readiness is also higher in a peacetime environment than it has ever been before. And that, after all, is why we train. But on top of it all, the stakes are much, much greater than they have ever been in the past for any military organization.

We think the situation boils down to this, and is why the article is entitled "For Pilots Only." When you strap yourself to a machine, and your wheels go into the air, no book, no tech order, no regulation, no checklist, no supervisor flies that machine. It's you, babes-you 're the one who does it, and the only one. When those wheels go into the air, no pilot can delegate responsibility for flying the machine to another soul on the face of the earth. He can't delegate his altimeter, airspeed, attitude indicator, aircraft attitude, aircraft control, or aircraft position to another soul in the universe. Not a nav engineer, copilot, flight commander, or command post. They can only help. The whole thing is his. Given his existing experience, skill, knowledge, training, and proficiency, he must then play the game as best he can with what he has.

Now there are lots of people who would like to take some of that responsibility, as long as they don't get any on them when things go wrong. Don't let them have it. Controllers, both military and ATC, will go so far, but when you are in real dire, deep trouble- unless things have changed since I've quit flying - their final transmission is, "what are your intentions?" The classic reply, I think, to that transmission (and I don't remember the situation exactly, except it was bad) was when the pilot answered back, "I intend to cry a lot."

But there is a control that you have as a pilot. In fact, you have the only control which will neutralize the threat to your clothes and bod, and that is to exercise what successful pilots of all countries' air forces have exercised, and that very simply is self-discipline. Now before you gag, read on just a little bit. You must discipline yourself to maintain situational awareness, to maintain attitude awareness, to know what your altimeter and airspeed say and what they should say, to know what you are up to and what you are capable of doing, when to do it, and make decisions and follow through. Nobody, but nobody, can do it for you.

In a good many of the mishaps of an operational nature we have had this year, we believe the problem was a breakdown or an absence of self-discipline. They go like this: In the past couple of months, there was a fighter pilot who died because he lost track of where he was and ended up with his nose buried at an impossible altitude for either recovery or ejection. What was he doing?

He was looking out the top of the canopy in the kill kill kill mode while attacking a flight of two at low altitude who had not seen him. He probably had a smile on his face right up to the time the entire earth showed up in his windscreen.

There was an IP tanker pilot who ended up dead, along with four others in the airplane, because he just wasn't ready for the emergency that developed and was generated by a student pilot. He had probably been mesmerized by how well the student pilot was doing, to the point that he dropped his guard - something that no IP can ever do, regardless of aircraft type.

There was a bomber pilot recently who lost control of his aircraft somehow- we're not sure how- in a benign environment at the end of a mission on his way home. Whether his adrenalin level was still up to the point where he simply overcontrolled his aircraft while accomplishing some simple navigation maneuver or he became distracted momentarily, we don't know. But both he and his nav are dead, and the aircraft hit the ground because it had gone out of control.

There was a cargo IP on a touch-and-go who raised the gear instead of the flaps, probably, and right to this day, we are sure he hasn't the foggiest notion of why he did that. He certainly didn't mean to. But he was on his seventh or eighth approach, and somehow the head bone became disconnected from the arm bone. Pushing the wrong switch, pulling the wrong lever continues to cause mishaps each year. The automatic actions only partially thought through are a problem of being human.

All of the mishaps we have mentioned, which are typical of many more that you can probably think of, have lacked that element of self-discipline as we have defined it. Pressing too hard too far, subtle discipline breakdowns, distraction, loss of situational awareness, over-commitment, and even deficient airborne supervision - all of those factors are still prevalent in our mishaps, and all of them can be neutralized only by forcibly keeping aware of those potentials. The pilot then relies on his airmanship, common sense, knowledge, experience, and *self-discipline*, so that the traps are clearly and cleanly avoided.

Somehow, over the years, it seems to me that it has become unacceptable to enjoy flying. To enjoy it has somehow been equated to complacency, whatever that is. Perhaps you feel guilty when you are enjoying flying a military aircraft on a tough mission. Certainly, you don't want anyone to know that you are really having one hell of a good time. But that's the way it should be. Our four stars, right down to our buck pilots who wear wings, flew or fly for only one reason when you get right down to it, and that is because they like to. They had or have pride in their ability to do it and are specifically proud that they have shown it in every war.

Few of our heroes in the flying business died in a dumb accident. Excluding combat losses, those who took pride and had fun doing the mission - those who had confidence that they were able to do the mission, and those who found better ways to do that same mission, are alive or died of old age. They are the ones, for the most part, we look up to today. You know their names as well as I do. They didn't fly military aircraft because they didn't like to, and neither should you.

So the bottom line of this particular piece is this (I hasten to add, in my opinion): Enjoy flying our aircraft and doing the mission. Be good at it. Look for better ways to do it. Learn your fundamentals and boldly apply your knowledge, common sense, and above all, your basic airmanship in flying our aircraft today. Be proud that you can. As a pilot, you have the whole thing. You can't give it to anybody, and if you want to, get out of the business. And finally, develop and maintain that self-discipline which keeps you out of the traps that some mighty fine pilots have fallen into and died.