



# Naval Safety Center

## LESSONS LEARNED



LL 21-19

### AVIATION WIRE STRIKE MISHAP (FATALITIES)

**Knowing “WHY” rules and limits exist can protect us from disaster.**

*Note: This lessons learned product is derived solely from non-privileged, publicly available sources. It does not contain information from any safety investigation report.*

A common virtue among warriors is boldness: taking risks and conquering fear when other people may not. Success in combat can depend on bold acts at the right place and time. Issues arise, however, when boldness becomes recklessness. Many of our rules and restrictions (particularly in naval aviation) result from reckless acts that ended in catastrophe. Sometimes knowing not just the rules themselves, but **WHY** the rules exist, helps ensure those catastrophes aren't repeated.



As you read the following narrative and background, ask yourself why these highly trained and skilled warriors performed the way they did. What information, if they knew it before this flight, might have prevented this mishap? Why did the limiting rules exist that could have prevented the mishap?

#### NARRATIVE

A forward-deployed Marine aircrew flew a multi-seat aircraft on a day, low-level navigation training mission over land in the host country. The limiting rule for low-level flight in this area was to fly no lower than 2,000 feet above ground level (AGL) and no faster than 450 knots. The flight crew mistakenly briefed the low-level navigation training flight route limitation to be 1,000 feet AGL.

In flight, the aircrew pushed the limit even lower than this erroneously briefed altitude. They were at approximately 350 feet AGL and 540 knots ... when they impacted and cut the cables supporting a ski resort cable car with 20 people on board. The jet landed safely at a nearby airfield. This event killed 20 civilians, created an international incident, and damaged relations with the host country.

#### CONSIDERATIONS

1. Why was the 2,000 foot AGL restriction for this area established, to begin with? The answer is because of ski resorts and hazards above the terrain. More than 20 years before the mishap, on the same mountain, 42 people died when a ski-lift car plummeted over 700 feet when high winds caused the cable supporting the car to snap. This event was the deadliest cable car crash in history. Although this earlier disaster wasn't caused by an aircraft, the earlier mishap, plus two other aviation-related cable car mishaps and repeated recurrences of low-altitude flying in the area, resulted in flight altitude restrictions.<sup>1</sup> One of the most dangerous hazards in this region isn't the mountainous terrain, but the cables and wires that are difficult to spot by pilots and navigators of low-flying, fast-moving aircraft. — *If this flight crew had known WHY the rule was in place, would they have flown as low or as fast as they did?*

2. Why did the crew brief the route with a flight altitude of 1,000 feet AGL, when the minimum altitude for this particular area was 2,000 feet AGL?

A. The training and readiness standard for this Type/Model/Series (T/M/S) aircraft's low-level flight and navigation was to fly and navigate with precision at 1,000 feet AGL. Of note, a crash of the same T/M/S aircraft in the United States two years before this mishap resulted in the order to fly no lower than 1000 feet.

<sup>1</sup>Trivia: Military jet aircraft had cut other cable car lines in the same region of the mishap country twice before in preceding decades. Miraculously, there were no fatalities the first two times. Those instances were part of WHY limitations were in place.

B. It was common practice at the time for this T/M/S to fly low-level training flights at 1,000 feet above ground level, *while on established fixed-wing, low-level navigation routes* in the United States.

C. This training flight was flown in a foreign country, not on an established fixed-wing, low-level training route, and during a deployment. Personnel were not familiar with, and did not effectively research, the governing limiting rules for the area. The crew had documents in the aircraft listing the 2,000 feet limit, but they hadn't read them.

3. Why did this aircrew knowingly fly even lower and faster than the limitations they briefed? The reports offer only conjecture. Oversight? Thrill-seeking? What is known is that the mishap crew had *unopened* charts in the aircraft that depicted the cable car location. Additionally, the Aeronautical Publication 2 (AP2; used in preflight planning; naval aviators are familiar with it from their annual instrument ground school courses) stated that the minimum safe altitude in this area was 750 feet AGL. As with the unused charts, it appears the crew did not read it.

**CLOSING THOUGHTS**

Every warrior knows not to violate rules, yet just about everyone will admit to having violated a limiting rule at some point. Why? To test skill; to be bold; to push boundaries; to “be ready” for combat ... these are often the justifications (*sometimes, excuses*) made by those seeking the thrill of pushing the limit. Challenging ourselves is good – that’s how we make more effective and capable warriors – but there is a difference between challenging ourselves and being reckless.

This crew was in a non-standard environment on a training mission. They pushed boundaries with a careless disregard for the hazards and consequences. Training or operating in non-standard environments or non-established areas or routes increases uncertainty and heightens risk. In such situations, wise decision-making demands more upfront analysis to inoculate ourselves and our fellow warriors from succumbing to lapses in judgment or reckless, rule-violating actions. This crew violated altitude and airspeed limitations and diverged from their planned, briefed route without consulting the charts and pubs that would have warned them of the danger. Twenty people died as a direct result of their unprofessionalism. This catastrophe has become another example of *WHY* present-day aviation rules and limitations are in place. ***Please remember and learn.***

**Key Takeaways / Lessons Learned**

Marines and Sailors are members of a bold and risk-taking profession, but we **MUST** protect ourselves and each other from pushing beyond boldness and into recklessness and violating limiting rules (*not just in aviation*). Those limits are there for a reason. Boundaries are meant to be pushed, but rules should not be broken. They have likely been “written in blood,” (*as a common naval aviation saying goes*). To ignore that fact is to risk more unnecessary loss.

1. **Know the limits.** Especially when training or operating in a new area. Whether you are in an aviation command or infantry unit, be deliberate and identify the limiting rules for that location. Preflight plan like it matters (*because it does*). Ignorance won't protect you or those in your [flight] path.
2. **Know the “biggest reason why.”** Why does a limiting rule exist in the first place? Take the time to find out. Leaders, teach your subordinates. Arbitrary limits and numbers are easy to dismiss; knowing the blood that wrote those limits makes them far harder to disregard.
3. **“Brief the flight. Fly the brief.”** That’s an aviation saying, but it can be tailored to any community. Discuss and brief the hazards and the plan, including when and where recklessness could become a factor at various stages during mission execution.

***And remember ... Let's be careful out there.***