

UNITED STATES AIR FORCE

FLYING

June 2003

M A G A Z I N E

Safety

A
I R
C R
S P E C T A C L E S

SAFETY FEATURES
CONSIDERATIONS
AND DESIGN

THE NEW, IMPROVED

USAF AIRCREW SPECTACLE FRAME

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Cover: Photo Illustration by Dan Harman

UNITED STATES AIR FORCE
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SAFETY

WARNING AGAINST CADMIUM PLATED HARDWARE ON BLEED AIR STRAPS

A recent USAF safety investigation revealed that a cadmium plated nut, mistakenly installed on an engine bleed air duct V-Band clamp, caused the clamp to fail due to liquid metal embrittlement. The failure resulted in bleed air being released into the engine pylon and igniting wire bundles and an engine fire indication in the cockpit.

Cadmium plated nuts are used on a variety of locations to prevent corrosion, however, when used on or near locations where temperatures exceed 400 deg F, such as where aircraft and engine systems connect, the cadmium plating becomes highly corrosive. The possibility of a similar failure presents potential for damage to aircraft and injury to crew and passengers.

Program managers on all airframes are encouraged to review whether cadmium plated hardware is used in, or may be inadvertently introduced to, the vicinity of engine systems (particularly bleed air clamps). If necessary, consider the following actions to reduce the potential for failure due to liquid metal embrittlement: inspect all bleed air clamps for correct hardware; inspect bleed air clamps for correct nuts upon engine pre-install inspections; inspect bleed air clamps at each ISO.

Correct use for this location is generally silver plated A286 hardware; however, consult your specific MDS T.O. or technical support for details. For further information regarding V-Band Clamps, reference T.O. 1-1A-8, chapter 18. □



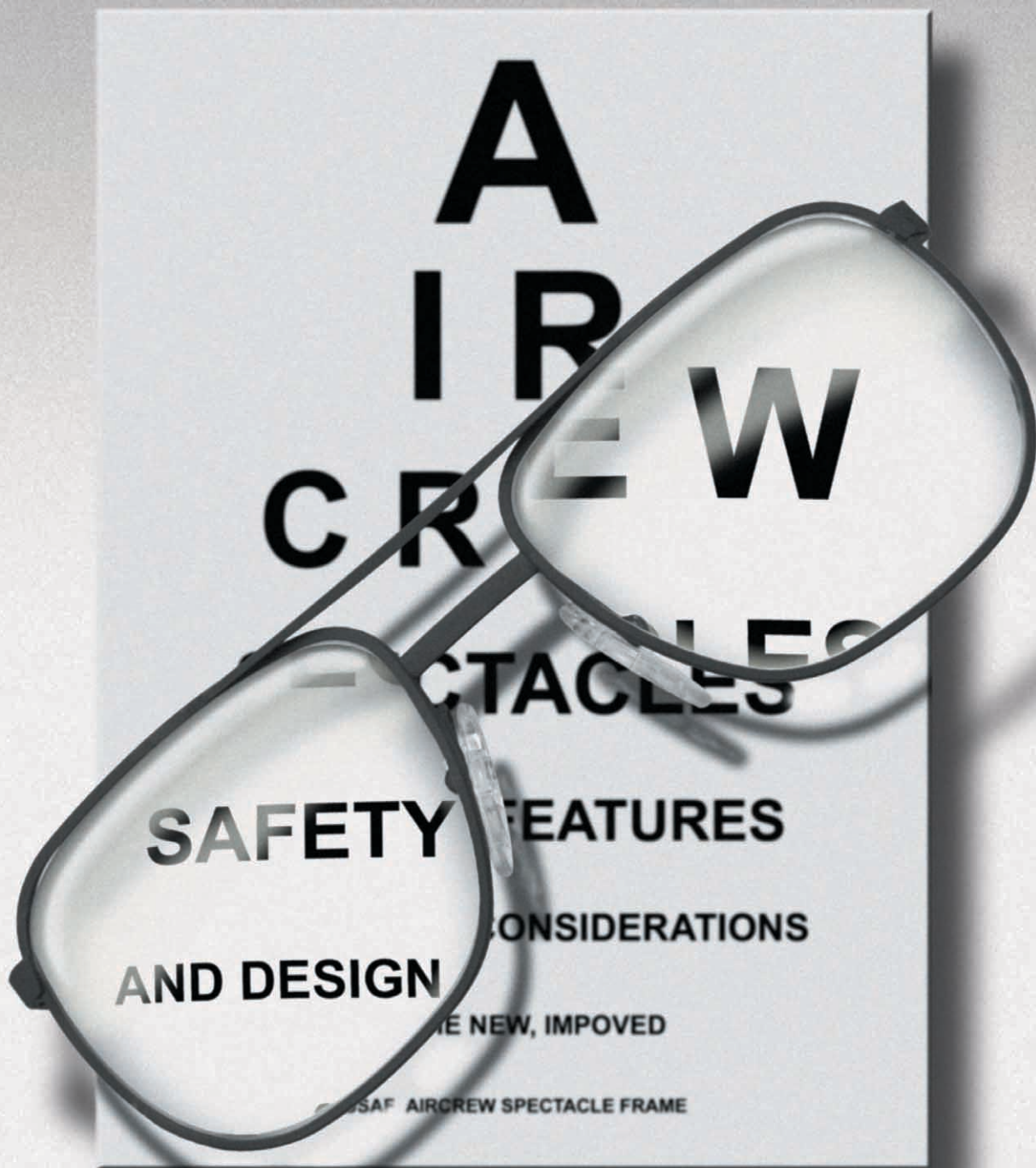


Photo Illustration by Dan Harman

MAJ RONALD C. TUTT
COL DOUGLAS J. IVAN
USAFSAM/FECO

Following analysis of WW I aircraft mishaps, Col W. H. Wilmer and Maj Conrad Berens wrote in 1920, "Of all the physical qualifications necessary for the military aviator there is not one that is more important than good sight."

At least 80% of the information required for flight performance is vision related. Historically, USAF aviator selection was based, in part, on having good vision. However, by modern standards, not all begin and/or end their career with so-called "perfect" vision without requiring corrective eyewear. Recent studies have identified that over 40% of all USAF aircrew require

some form of vision correction, such as spectacles, contact lenses and/or laser refractive surgery. Spectacles may still be necessary for aircrew having contact lens or refractive surgery correction to obtain best visual performance, and all aircrew who need correcting must carry spectacle backup. Spectacles that provide enhanced ballistic and safety protection are having increasing roles for all aircrew.

Providing aircrew vision with optimal correction and proper eye protection presents unique challenges. Aircrew work in stressful and often visually impoverished environments—low humidity, low oxygen, reduced illumination, low contrast, and/or high glare conditions—for extended periods of time. Headgear integration and use of specialized vision enhancement or protection devices, such as night vision goggles (NVGs), sunglasses and laser eye protection (LEP), create more complex challenges. Spectacles must be safe, comfortable and robust enough to withstand rough handling and conditions. They must, ideally, remain safe, stable and properly positioned under various G forces or vibration, or if exposed to wind blast (i.e., open aircraft door, aircraft ejection) or ballistic particles, such as canopy fragments.

In 1988, aircrew began to identify problems with the existing Air Force aviator frame at the time, the HGU-4/P, and several aircraft and mishap board investigations revealed safety concerns related to them. Those emergency problems caused the US Army and USAF to pursue a replacement frame with enhanced safety features and improved functional characteristics. A Technical Working Group (TWG) formed under Triservice Aerospace Research Panel (TARP) brought triservice vision experts and fabricators together to examine alternatives. Those responsible for developing a new aviator frame under the TWG were told to expect that the final product would become the standard aircrew frame DOD-wide. An interim USAF/SG policy (1990) approved use of some civilian spectacles meeting specific guidelines until an official replacement military aircrew frame was developed. Following extensive formal hands-on operational, flight and fabrication testing, the “Improved

Aircrew Spectacle” (IAS) was selected for proposed triservice implementation in 1996. Unfortunately, broad military funding issues at that time stalled triservice DoD implementation. To address unresolved safety issues, the USAF/SG made a decision to independently fund and implement the IAS for the USAF in FY 2000. The DoD Optical Fabrication Enterprise incorporated the IAS as the “Air Force Frame (AFF),” making this advanced and flight-tested frame available through standard routine medical acquisition. The interim civilian spectacles policy has been rescinded. Only the AFF (and HGU-4/P, in some cases) are currently authorized for in-flight use by USAF aircrew.



HGU-4/P Frame

The design and selection of the AFF was based on many factors, including aircrew anthropometric data and aircrew feedback. The new frame was to be optimized for combat, hence its matte black finish. The USAF Chief of Staff mandated that the new frame must fit all aircrew optimally. To accomplish the optimal fit in most aircrew, three eyesizes (52, 55, and 58 mm) were fielded with some optional choices of temple styles (skull and comfort cable). One-handed doffing and donning of the spectacle was required for helmeted aircrew and is accomplished with the skull temple style. The medium size AFF (55 mm) is dimensionally similar to the standard size HGU-4/P, which has had a long history of fitting on most aircrew. The other eyesizes were designed for smaller or larger headsizes. As with the HGU-4/P, aircrew at the upper end of the anthropometric norms, requiring the larger AFF, may experience some integration problems with certain specialized flight gear despite the smaller overall dimension of the largest AFF size (58 mm) as compared to the HGU-4/P. Current and future development of and integration with headgear and other flying devices will embrace all three AFF sizes.

Spectacles must be safe, comfortable and robust enough to withstand rough handling and conditions.



The Air Force Frame (AFF)

Key AFF features and issues are detailed below:

1. Frame Selection:

About 87% of all USAF aircrew reported a desire to replace the HGU-4/P due to increasing performance deficiencies and overall degradation in quality. While spectacle materials range widely in cost and quality, the TWG developing the frame was mandated not to exceed a targeted \$20.00/frame unit cost. Thus, the AFF was selected after extensive evaluation that balanced cost, durability, safety, usability and ability to meet aircrew vision requirements under operational conditions.

2. Lens Shape and Size:

Feedback from USAF aircrew clearly supported a larger lens size. Other aircrew wanted larger reading zones. NVG users commonly reported difficulty viewing cockpit instruments while using NVGs with the standard HGU-4/P. Oversized HGU-4/P increased the field of view and provided an initial solution; however, the frame itself was too large for average wearers and increased problems with compatibility of protective chemical/biological ensembles and other headgear. It was also not available to all aircrew. The medium AFF design provides about the same lens size and field of view as the oversized HGU-4/P, but without sacrificing headgear compatibility because of its overall narrower size. In fact, all three sizes of the AFF are significantly narrower than the older HGU-4/P.

3. Eyewire/Temple Hinge:

Spring temple hinges were considered, but were not adopted due to cost, stability, durability and expected performance under G and in windblast, i.e., open doors or aircraft ejection. Clip-on side protection (sunglass, LEP, safety shield) presented undesirable design problems and would render spring hinges inoperable.



Over 50% of USAF aircrew reported spontaneous loss of a lens from HGU-4/P frames, with nearly 25% experiencing in-flight loss between one to 10 times! The monoblock design of the AFF hinge creates an incredibly strong closure, providing enhanced safety protection and a firm base for temple earpiece support. Combined with the monoblock hinge, the eyewire incorporates deep safety bevels that securely lock each lens in place, preventing spontaneous lens loss and devastating backward lens ejection, if impacted.

The frame was mandated not to exceed a targeted \$20.00/frame.

The deep eyewire bevels are capable of securely holding increased lens thickness associated with higher refractive errors. The hinge design and the deep safety bevel represent significant improvements and are true key safety features found on all eye protection/safety frames.

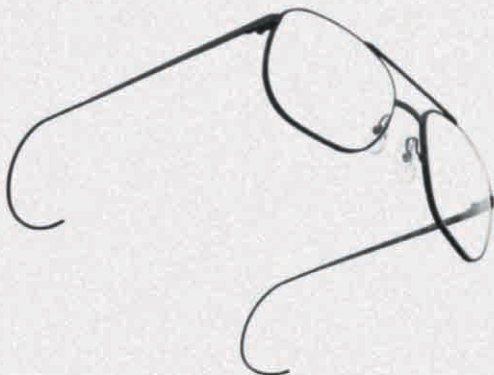


4. Temple Style:

USAF aircrew reported bayonet temple pressure points under some headgear, and if not wearing headgear, the frames often simply fell off when looking down. The "hockey stick" shaped (skull) temple replaces the traditional bayonet type temple of the HGU-4/P. The thinner ear pieces of the new skull temple minimizes hot spots, while better stabilizing the frame in place, without compromising single-handed doffing and donning.



Comfort cable temples offer more secure fit and maintain a more optimal position for aircrew not requiring quick doffing and donning. The new comfort cable on the AFF is superior in quality and durability to the existing HGU-4/P. To further optimize fit, both temple styles come in three lengths, available on all three eyesizes.



5. Frame Screws:


One source of spontaneous spectacle lens loss was attributed to the unintentional loosening or loss of the eyewire screw. The AFF have interchangeable screws at all screw points that "lock" in place, eliminating unintentional screw loosening or loss. The same screw is used for eyewire closure and temple attachment. This simplifies logistics for eye clinics and allows emergency repair with limited support. A setscrew also secures the nose pads. Unsecured nose pads loosen over time and can be lost spontaneously.



6. Frame Color:

By survey, most aircrew preferred black as the color for an operational "combat" frame. The AFF is actually double-coated in black. The inner finish consists of a black chrome undercoat. The outer surface coating is matte flat black, which reduces solar and laser reflections in the cockpit. Besides reducing scratch-ability, the black chrome undercoat ensures escape and evasion efforts are not compromised by reflective metal surfaces in the event that the outer coating becomes scratched or abraded.

Spectacles have been, are, and will continue to be a critical part of aircrew flying equipment. The new USAF aircrew spectacle (AFF) is an excellent product, designed and developed to meet aircrew requirements and optimized for combat flight operations.

A dress gold version may become available in the near future. It is a proven product based on extensive operational testing for many years, and provides greatly enhanced performance and safety at the target unit cost of \$20.00. More importantly, it allowed the outstanding safety deficiencies of the HGU-4/P on record to be effectively corrected and laid to rest. Finally, the AFF will enhance overall visual performance/safety in the career office it was intended for, the cockpit! 

The same screw is used for eyewire closure and temple attachment.

The Power Of Your Influence



JERRY E. TOBIAS

Have you ever considered how much impact your conduct and comments have upon your fellow aviators? I can assure you that your influence is far more powerful and longer lasting than you may have imagined.

Incredibly, it has been a third of a century since I graduated from UPT Class 69-07 at Laughlin AFB, Texas. I left the Air Force in 1980 after twelve very rewarding years that also permanently shaped my professional standards, ideals and attitudes.

HQ AFSC Photo by TSgt Michael Featherston
Photo Illustration by Dan Harman

How? Most of my perspectives and concepts of issues like aviation safety, professionalism, crew leadership, etc., and many of my techniques and patterns of conduct were formed both by *observing* other crewmembers and *listening* to their comments during those years of active duty. And, although I didn't realize at the time how defining each person's input was, I understand now that everyone I flew with during those twelve years influenced me in one way or another.

Some of what I learned came from observing bad examples of communication, decision-making, leadership, techniques, etc. Most, however, came from the hundreds of hours of opportunity that I had to observe the good examples of many very professional, thorough and dedicated individuals. Their examples later became the standards that I adopted as my own.

Those observations, plus the instruction, advice, encouragement and comments that I received from others, all had professional impact. As a result, each one helped determine who I would become as a pilot and how I would conduct myself in the cockpit throughout my aviation career. Let me give you a few examples.

From my T-37 IP I learned that a good pilot is an organized pilot. Even complicated tasks, profiles and procedures can be a "piece of cake" if proper preparation and planning techniques are used. That same IP, by the way, also taught me that you *can* be a great instructor and a gentleman at the same time. He never raised his voice, for example (which made him very unique—at least in those days), but he was highly respected and considered to be one of the best instructors in that squadron.

From my KC-135A CCTS IP I learned that deliberate and thorough responses are always best. There are no prizes for speed, and haste only leads to errors, miscalculations and, sometimes, holes in the ground.

From my first KC-135A Aircraft Commander I learned that if you are not presently completing a task or monitoring a situation, you're probably missing something. Considering this prospect during each flight helps curb complacency and prevents errors of omission.

From a fellow C-123K pilot in Vietnam I learned that you must prioritize your attention, actions and responses as your current scenario dictates. Prioritizing combats fixation, minimizes the impact of distractions, and guides you to the appropriate technique for the appropriate situation.

And from an E-4B IP I learned that you must constantly be aware of all that is involved in completing a successful mission, not just a successful flight. Keeping track of the "big picture" during any phase of flight or situation is an important part of every aircraft commander's role.

Lessons other crewmembers taught or illustrated (by either good or bad example) include:

- "Fly each and every flight as though it were a check ride."
- "Don't assume that anyone on your crew knows what you're thinking or planning."
- "Don't allow yourself to fly with any less precision during VMC conditions than you must during marginal IMC conditions."
- "Never assume that critical information hasn't changed since you last checked."
- "Encourage a healthy dose of suspicion, and resolve every bit of doubt."
- "Never delay your response to deteriorating conditions because you believe they will eventually improve."

I could list dozens of other similar thoughts. My point, though, is that *the influence of crewmembers I flew with decades ago still guides my responses today.*

Your influence will have the same impact. You must, therefore, take opportunities to demonstrate, critique, instruct or encourage seriously. You must also remember that you can teach what you know, but you reproduce who you are!

Your own performance and your advice to others will be remembered. Ultimately, both will significantly influence the concepts, the conduct, and—quite possibly—the safety records of many other crewmembers for years to come! □

(Editor's Note: After leaving the USAF, the author flew MD-80s for a major U. S. airline and worked as an aviation safety consultant. He now flies Challenger 604s for an insurance company in Omaha, Nebraska.)

***Everyone
I flew with
influenced
me in one
way or another.***

The Acquisition Of A Sobriquet

(OR "GETTING A NICKNAME")

Photos Courtesy of Author

HENRY E. HELM

At this point we were 8000 feet down a 9000-foot runway at not enough knots.

About 10 miles to the east of Phnom Penh (PP), I was engaged in putting a set of A-7s on a "soft TIC." That is to say, the Khmer ground commander was screaming bloody murder that he was being attacked heavily, but there was no visible confirmation that anything was really going on (except, perhaps, that we were "preventing" an attack that "might" take place). No tracers, no muzzle flashes, no smoke, no nothing. It was the Cambodian version of bombing a tree park.

After a couple of passes, the lead A-7 broke suddenly for the west, apparently *NORDO*, and headed for PP. I called him on FM and finally got him to reply. He was reading zero oil pressure and, moderately concerned that he might have to spend the night on the ground, he preferred to do so at PP.

I called Ponchentong tower and advised them that Rotor Lead was on the way and then asked Rotor Lead if he required assistance. He said no, and that we should continue the air strike with the next set of fighters overhead.

Yeah, right! I just might let you crash all alone, but I don't think so!

I boogied after him and told Rotor 2 to hold high and dry and follow me. I had the other two sets of air stay high and dry, called Crick (ABCCC) to advise them of Rotor Lead's problems,

and called Bokkor Control to advise the Air Attaché that he was about to have a visitor. All went well. He landed and taxied to the military side of the ramp, and the A-7 was pushed back into a revetment. We all went back to work. That should have been the end of the story, but it wasn't.

After completing my air strikes and "bingoing out," I dropped into PP for lunch. After parking, I went over to the A-7, noted no oily streaks or other damage, and proceeded into Scorpion Ops. I exchanged notes with the other guys



and received instructions to ferry the A-7 jock back to Korat instead of flying the second half of my double.

Eventually Lt Col Mark Berent (Air Attaché, known locally as Papa Wolf) and Capt Mike Lang, A-7 driver, came through the door and after the requisite introductions Mike and I went out to the OV-10. I paid special attention to his harness, as it almost didn't fit. We really had to struggle to get the Koch fittings

to close and we were both unhappy because we really didn't know if they would function properly. After getting him strapped in and showing him the radios, etc., I gave him the standard lecture about closing the canopy.

"Make sure when you lock the canopy that you can see the yellow ends of the pins in the holes at either end. If not, the canopy *will* unlock and *might* depart the aircraft with undesirable results."

Mike laughed, and I got in and tried to fire up the OV. The battery was as dead as a mackerel. I rustled up the pilot of another OV, and used a jumper cable to provide some power and did a "Buddy Start." I taxied the OV into position, looked over my shoulder, gave Mike a thumbs up, and rolled. Takeoff roll was uneventful, rotation *was* uneventful, but climbout *was* eventful!

At about 700-800 AGL I felt an air pressure change and heard a huge bang, and the OV rolled viciously to the left. I pulled both throttles to idle, determined that Number 1 was toast (blades were damaged and feathered, and oil was streaming from the spinner), fed power to Number 2 while applying all the rudder I could get and regained a semblance of controlled flight.

However, Number 2 was winding down. A rapid restart was accomplished (some IP at Hurlburt gets an attaboy for good single-engine training!). I immediately pushed the stores jettison button. Nothing. I pulled the manual jettison handle. Nothing. Well, s--t!

At this point we were around 800 AGL, 8000 feet down a 9000-foot runway at not enough knots. I turned into the dead engine (to avoid the civilian side of the airport) and headed for downwind, or a good place to jettison the aircraft.

We could maintain around 100 fpm rate of descent, the runway was 9000 feet long and we were at the wrong end. There was a 727 rolling and a C-47 on final. Reversing direction was not the answer.

I now looked over my shoulder and saw that what I had feared had happened—Mike's right canopy frame was gone. As the maintainers told me later, Number 2 ingested some plexi, and Number 1 ate the frame and what was left.

My bad brain said, "Well, let's just give this sucker back to the taxpayers!" but my good brain said, "Mike may not survive

the ejection." So on we went. I yelled at him to remain in the aircraft and that if we had to go it was my decision and he would really know when I arrived at it. I got a muffled reply from the back. (P.S.: Both generators tripped off and refused to reset, and to add insult to injury, positioning the battery to emergency failed to accomplish anything either...not enough time to recharge after the buddy start?) At least there weren't any of those annoying red lights to distract me! This OV was *not* a happy aircraft. One engine trashed, NORDO, now at 450 AGL, no electrics, a full 230, and three pods of rockets. I tried the Emergency Jettison Handle again, and this time the three rocket pods dropped away and our rate of descent eased somewhat.

Down we went. Finally, when I couldn't stand it any longer (Lord knows what Mike was thinking!) we were abeam the end of the runway, and we turned base to final. I dumped the nose and picked up all the smash I could and...

There was an AU-24 Helio Stallion on short final flying around 50 knots!

We were going to arrive at the same place at the same time and there was no alternate plan—other than the dreaded yellow handle. I remember thinking, "I hope this guy has a sense of humor." We whistled around a "modified" base among (between?) the trees as fast as we could go, and made the runway (huge sigh of relief). But the AU-24 had landed but had not turned off (he had landed long) and was filling the wind-screen big time! With a "Hail Mary" easing back of the stick, we floated (as much as a max-grossed single-engine OV can "float") over the AU-24 and "arrived" in front of him. The rollout was uneventful ('bout time something was uneventful!) and the return to normal breathing and heart rate were accomplished.

And—oh, by the way—the minute we touched down, the electricity returned to the aircraft. Go figure.

Upon inspection, there was serious frag damage from the canopy frame to the left side of the AC and the sponson. Had it not been for the cockpit armor, Mike might have been injured.

I was ferried home to Ubon in the rear cockpit of an OV. The maintenance debrief was lengthy.

I remember thinking, "I hope this guy has a sense of humor."



Author Helm, right

Seven days later, I ferried a safety officer down to PP to meet an Accident Investigation Board that was flying in to see where fellow Rustic FAC Rick Scaling had punched out following a left main tire failure on takeoff. Then I climbed up to become the "High FAC" overhead PP at 10,000.

About an hour and a half into the sortie, with absolutely no warning, Number 2 feathered and stopped. Well, s--t! Been here, done this! (Recently!) At least this time I had some altitude to play with.



I called Rustic Ops on secure HF and made the fateful decision to keep my

centerline tank, as they were in short supply. Besides, it (the 230) was empty. I jettisoned the rocket pods, and boy, was that the right thing to do with 20/20 hindsight!

I had plenty of smash and tons of time. I rang up PP tower, told them I was enroute, and settled into a flameout pattern, "just in case." The pattern went exactly like one at Hurlburt, everything was "on the numbers," and I remem-

ber actually sightseeing on the way down—looking for traffic and feeling just a bit complacent.

Frank Arnold (Nail 95) picked me up on the way down to fly chase and provide moral support, and we read checklists back and forth. The traffic pattern was clear except for a Goon, which amiably did a couple of orbits to let us in front of him.

Rustic 15: And 95, it looks like I'll be ready to go in as soon as 12 clears...

Nail 95: OK

Rustic 15: There shouldn't be any hurry here...I'll be dropping my gear on short final.

Nail 95: That's good, what's your airspeed?

Rustic 15: At the moment, I'm holding 140...that's what I'll be holding on final.

Nail 95: Outstanding!

Rustic 15: You betcha, Red Rider!

Rustic 15: At least this time I can hear myself talk. The canopy's still here!

Nail 95: You got plenty of power?

Rustic 15: Tons of it, and I'm real happy. Hey, 95! Nice to have you around!

Final was a non-event and just as I pulled Number 1 to idle over the overrun, I remember looking right, seeing some guys standing next to a sedan on the taxiway next to the end of the runway and wondering what they were doing there. The mains touched down, I lowered the nose to the runway...and my world went ape-s--t!

Nail 95: 15, you just blew your nose tire.

I was alternately hanging from my harness or being driven into the seat as the OV porpoised and the G Meter was pegged both positive and negative.

**"15, you just
blew your
nose tire."**



I went for the "Aircraft Jettison Handle" and could not get to it. At that point in time all I wanted was...out!

After what seemed like an eternity, the "smashing and crashing" came to an end as the nose gear departed the airframe, and I was left sliding down the runway right on centerline.

Rustic 15: 95...Am I on fire? I think I lost my nose (gear)...am I on fire?

Now, let's face it; what scares jocks the most? Getting shot? Naw. Punching out? Hell, no; what a ride! But then there is fire.

I thought about the "Yellow Handle" again, but as I was decelerating through 50 knots in a seriously nose-low attitude I was just a bit concerned as to the vector of the admittedly awesome OV ejection seat. So I made the almost fateful decision to remain with the aircraft.

Nail 95: You're OK. I don't see any smoke now!



Nail 95: OK, I see a little bit of spark out there...get out quick, bud...get out quick...get out fast...15...get out!

Those were Frank's words as he arched across my nose during his go-around. I was sliding slowly down the runway without a nose gear, and my centerline tank was on fire!

As I slid to a halt (riding on the 230 tank and the main gear), I calmly released my Koch fittings and seat belt,

punched off my seat kit, opened the canopy, and started to get up to exit the cockpit. It was the last calm thing that I was to do!

Both feet slid out from under me on the wet cockpit floor (condensation from my rapid descent from 10,000 AGL) and I was pitched out over the cockpit rail and left hanging face down, held in by the seat belt which was snagged on my 38 cal. I was no longer calm.

From this point on, everything was in super-slow-motion. I remember thinking how beautiful the scalloped flames were that slowly spread around the aircraft on the concrete. I got untangled, and the next thing I remember, I had launched myself over the flames and was 15 yards in front of the airplane, running like hell. I think I heard someone screaming... it might have been me.

Nail 95: OK Cricket, Nail 95, Rustic 15 is out of the airplane running away from it.

It's OK. The aircraft is on fire right now and 15 is clear of the aircraft.

I do not remember what happened next, but Rick Scaling (Rustic 09) and Mark Barent (Papa Wolf) had chased me down the runway in a staff car (the one I had noticed while I was in the flare). Rick was the first one to reach me and said I was lying beside the runway in the grass, repeating over and over "I almost got killed...I almost died."

I was pitched out over the cockpit rail and left hanging face down.

The fire was licking around the tank and threatening to immolate the whole damn thing. The main landing gear tires were alight, and it was not going to take much more to blow the wing tanks!



"Your one-year extension has been approved!"

Nail 95: *And King: We got two fire trucks next to the aircraft at this time, and they still haven't started any fire extinguishing yet.*

King: *OK, thank you. Good job, 95!*

Try to imagine my consternation when I saw the Khmer crash crew—including a fireman with a fire hood, a foam nozzle, and flip flops! They started foaming towards the aircraft but the foam fell well short. We convinced them to move in a little, and they finally hit the target and put the fire out.



Back at Scorpion Ops, I had a land line discussion with the general himself. He was concerned about the length of time the runway would be closed. He said, "Get a bulldozer and push it off to the side if you have to!" but about that time

the radio in ops crackled and we were informed that the OV was clear, and that the Phnom Penh airlift could proceed. And all the FACs trapped by my adventure could now get back to the war. A medicinal whiskey was consumed. But it's not over yet...

While on the way home in Norm Beyer's rear cockpit I got a call on HF from Rustic Ops: "Hey 15, got some great news for ya! Your one-year extension in the combat zone has been approved!"

Oh, Lord, what have I done!

Postscript

After getting questioned by the safety types and prodded by the docs (sprained ankle and some lower back pain), I was whisked away to NKP to see the wing commander. Somehow I was sure that he was not going to pin a medal on me for this one!

Fast forward a couple of days, I was now in a brace being advised (can one be advised while being screamed at?) that I was to meet an accident investigation board and then hopefully (his hope, not mine!) an FEB and, if he had his way, I would be drawn and quartered (or words to that effect).

It seems that some dimwitted individual (a Nail IP, I was told later) had stated that he had seen me touch down on my nose gear, not on my mains. I think he saw the third or fourth bounce!

At any rate, my bacon was removed from the griddle by none other than Papa Wolf—you remember, the Attaché from PP.

It seems that while he and Rick were waiting on the taxiway for Rick's Accident Investigation Board to land (they were in the Goon that had obligingly let Frank and me into the pattern), he happened to see the whole landing. Not only that, but he had photos of my touchdown attitude! The arrival of said photos seemed to reduce the interviewing officer's desire to render me wingless or, at least, they rendered him speechless, which was a pleasant change.

After some time in Bangkok to unwind, I returned to Ubon, much refreshed. I walked into Rustic Ops and was standing at the duty desk looking at the next day's frag when one of the "Old Heads" noticed me and said:

"Welcome home, 'Crash'."

The sobriquet stuck. It had been earned the hard way. □



HQ AFSC Photo by TSgt Michael Featherston
Photo Illustration by Dan Harman

"My Name Is Joe"

Editors note: This is the final column by "J.S.T. Ragman," who has written for Flying Safety for about seven years. Thanks, "Rags," and keep 'em flying!

J.S.T. RAGMAN

My name is Joe. I spit, I wipe, I spit, I wipe again. I am "Joe-Spit-The-Ragman." I stay hydrated, carry a good supply of rags, I keep things clean. I am everywhere. I walk the airfield ramps of the world. I can be found on every shop floor, the world over. I polish the chrome and the glass, dust the surfaces, and clean the lights.

Last week, I was the gentleman who noted the tape covering the pitot tubes as your aircraft taxied for takeoff following an aircraft wash. I was still there when you taxied back an hour later, after dumping a hundred thousand pounds of fuel. I am the gentleman who noted the "Remove Before Flight" flag in the wheel well as you headed out for a night mission in strong and gusty wind conditions—too dark and gusty for others to notice the flag. I was still there when you taxied back again after dumping another hundred thousand pounds of fuel. I was the gentleman who noted the near-zero tire pressure on the pressure gauge as I wiped it clear, and I was an eyewitness to the tire blowout on takeoff roll, the strut puncturing the fuel wing fuel tank, and the ensuing fire. You egressed safely; however, the aircraft did not fare so well; call it a total loss.

I am the gentleman who tugged at your sleeve, waved my arms, shouted above the storm, and pointed with both hands. However, as your voice-recorder noted upon its magnetic tape, I was "just the ragman."

As I have made my rounds on the ramp, these past many years, I have noted your habit of stating: "He/she is just an airman, a lieutenant, a copilot, a crew chief, a loadmaster, a navigator, a passenger." No doubt each of those individuals has likewise noted your habit of stating: "He/she is just a ..." as you have dismissed one input after another. I am just the "ragman": I spit, I wipe, I spit, I wipe again.

I am the gentleman who noted the steady drip of reddish fluid from the wing, and the puddle on the ramp below, as I wiped your landing lights clean, prior to the rainstorm washing the evidence clear. Together, you and I prevented quite a mess, as I communicated to you in my broken English, soaked to the skin from the driving rain. You offered me a hot cup of coffee, listened to the "ragman," and saved an aircraft—and a few lives to boot.

While sitting upwind, shielding my eyes from the sun's glare, I am the gentleman who noted the split elevator on your pre-taxi controllability check; the split elevator the downwind crew chief missed due to the blowing sand. I waved every rag I could pull out of my pockets as I ran to your aircraft. You stopped your taxi, listened, and bought me a beer.

Between each spit, and between each wipe, over these many years, I am the gentleman who has noted your willingness to stop, listen, and thank others; the younger as well as the older, the junior as well as the senior, the back-seaters as well as the front-seaters, the ground-pounders as well as the aircrew. I have noted your habit of saying: "Thank you for your input; I will check on that." I have likewise noted your habit of following through; you do "check on that." The flap motor was indeed leaking; the elevator actuating rod was indeed improperly installed. You bought me another beer.

I am but one "ragman" out of countless similar "ragmen." We are found the world over. Wherever there is work to be done, there is likewise cleaning to be done. We have eyes, ears, the five senses, and the capacity to put two and two together for four. We can help you, as can any- and everyone else, if you choose to give us an ear, and a moment to listen to the message, rather than the source.

The author has never forgotten that he was once young, new, junior and inexperienced; he has never forgotten that every young, new, junior, inexperienced person has eyes, ears, five senses, and the capacity to put two and two together for four. In 23 years of airline and military flying, he has never had a mishap. He has always listened to the "ragmen" among us. □

("J.S.T. Ragman" is the pen name of a C-130 pilot and unit commander in the Air Force Reserve. He is also a Boeing 777 pilot for a major airline.)



ORM:

Taking The Risk Out Of Risky Business

USAF Photo

We simulate inflight emergencies and abnormal situations.

CAPT CHRIS CALLAGHAN
Thunderbird #3—Right Wing & Flight Safety Officer

"Isn't your job dangerous?"

I'm asked that question very frequently as an Air Force pilot and as a Thunderbird. My answer always points to the fact that we take a seemingly dangerous job and break it down into safe and manageable phases. We in the flying business know flying can be dangerous and that it is inherently unforgiving if approached with any disregard or carelessness. Today, more than ever, we are deployed all over the world with an extremely busy operations and training tempo, which has introduced very dynamic and challenging environments. Unfortunately, these environments have

ushered in a period of increased mishap rates in Air Combat Command, and the irreplaceable loss of people and planes.

At the end of the last fiscal year, Gen Hal M. Hornburg challenged us in ACC to take charge of the basics and not overlook the risks involved with the less complex portions of our missions. Combat losses are not the source of our accidents and incidents; lately they are rooted in midairs, controlled flight into terrain, and landing mishaps. It's easy to sit back after a mishap has occurred and see the error chain. To be successful, however, we have to get good at the more difficult task of being proactive about mission hazards. We must identify them early and implement a plan to mitigate risks before they affect our missions and our people.

We have institutionalized Operational Risk Management (ORM) into Thunderbird flying because our mission demands it. We operate in close proximity to each other, low to the ground, at high speeds, and from different airfields and show sites each week. Our need for ORM is an obvious one, but all Air Force missions demand ORM. We use a very common sense approach to ORM, since ultimately its goal is a simple and logical plan to identify and reduce risk in our daily operations.

Thunderbird ORM is very specific to our environment and requirements, as it should be for all of us. We fly according to a regulation that drives very conservative operations. We are spring-loaded to the conservative approach because a safe demonstration is our number one priority. Our training philosophy is no different than those of other Air Force squadrons; it is based on the building block approach with the goal of not over-saturating pilots, allowing them to develop proficiency in basic skills and then introducing more demanding tasks. We accomplish this through a specific syllabus for each trainee, with a graduated altitude stepdown plan that starts with slightly wider formations. Gradually and at a comfortable pace, we work lower to the ground in tighter formation.

Even when we've arrived at our lowest altitudes and tightest formations, we continue to practice ORM on each sortie. We have specific steps to abort maneuvers and we practice aborts daily. We have a safety observer on the ground to back us up and identify the need to abort if minimum parameters for each maneuver are not met. We abide by very strict deconfliction contracts and execute abort procedures if there is any doubt. We simulate inflight emergencies and abnormal situations during demonstration sequences, and we take them to logical conclusions.


As each location presents a new set of challenges, we find ourselves using a mixture of conservative steps. This process begins with meticulous planning weeks in advance of any show. We use satellite imagery of each demonstration site to become familiar with ground references and potential hazards. From there, we develop a plan to deal with any identified hazards. In extreme

cases, we decide that a given location is simply not suited for high speed, low altitude formation aerobatics. Our analysis continues upon arrival with an airborne survey. We verify the accuracy of our imagery, look for additional hazards that the imagery didn't reveal, and crosscheck the location of show line markers.

Upon completing the analysis, we have the information to implement a plan to minimize the risks involved with the demonstration. Elements that challenge us in the demonstration are similar to ones we all deal with: terrain, weather, turbulence, fatigue, etc. We brief a plan to deal with these each time we fly and this consistent routine is critical to our success. We specifically implement the plan a number of ways. These include the flexibility to fly "wider" formations in high winds or turbulence, raising our minimum altitudes for inconsistent or rolling terrain, modifying our ground track for obstructions (such as towers), using increased landing spacing for short and/or wet runways, and increased taxi spacing in areas of higher FOD potential. Each pilot has the obligation to recommend a conservative call if he sees the need.

Just as these ORM steps are unique to us, yours will be unique to your operation. These steps allowed us to have a very safe and successful year in 2002 and, as we embark upon our 50th Anniversary in 2003, we will continue to fly with safety at the top of our priority list.

One of the many challenges we are all faced with when we fly is to mitigate the risk associated with each phase of flight. Some of these hazards are predictable but others happen real-time. Dealing with both types requires the discipline, leadership, and airmanship to adjust our sorties as required, including terminating for the day.

We know that our people are our greatest Air Force asset. We also know that we can't accomplish the mission (killing MiGs, putting bombs on target, delivering supplies, refueling aircraft, etc.) if we don't take care of the basics. ORM is a tool to help us in all phases of flight with the goal of safe and successful operations. Let's use it proactively to get the job done right and bring everyone home safely. Happy hunting! 

In extreme cases, we decide that a given location is simply not suited for formation aerobatics.



6 Principles Of Safety

LT COL WILLIAM J. SMITH
PSAB Saudi Arabia

**What works
in one
country
may not
work in an-
other.**

This is more of a “Here I Am” versus a “There I Was” type of story, because as I write this I am stationed at Prince Sultan Air Base (PSAB), Kingdom of Saudi Arabia, and this is about our operations with our host nation colleagues. My intent is to pass on several principles we have learned in our dealings with the host nation. These might help other forwardly-located safety offices deal with their host nation personnel, who might have a different view of safety and American procedures.

I am currently the Chief of Flight Safety at PSAB and work with the host nation personnel on a daily basis. This safety diplomacy comes down to a few common sense principles that can help any safety office establish an effective mishap prevention program in any of the many countries we are currently deployed that have different standards from our own. It is important to remember that what works in one country may not work in another, but at least you will have a baseline to start from.

The first principle I call the “Win Them Over” principle. Just like the old saying that “You catch more flies with

honey than you do with vinegar,” so it is true with host nation relations. To build a good rapport, you have to get to know your host nation colleagues, and they have to get to know you. The first thing to do within the first couple of weeks of arriving at your deployment site is to schedule a social meeting with your counterparts and their supervisors. Drink plenty of “tea” and get to know something about them and their operations, but don’t try to lay out your agenda at the first meeting.

After the first meeting it is time to get to work. By using the “*Graduated Intensity*” principle you will start presenting your agenda to the host nation, starting out with the small issues and working your way up. Seeing how they respond to the little things first helps you devise your plan of action to attack the larger issues. Whether it be working with the personnel on the bottom of the food chain or going directly to the top, you have to gain an understanding of the host nation’s line of protocol and direct your efforts appropriately or your time will be wasted.

With your cards now laid out on the table for the host nation to ponder, you have to continue with the “*Follow-up*” principle to ensure things are progress-



USAF Photos

Diplomacy

ing on the issues presented to them. On occasion the host nation might put an issue on the back burner that they are not interested in, hoping that you might forget about it and redeploy before anything more is said. That's why it is imperative to maintain a good accounting of the issues out there and have an aggressive follow-up program to make sure no issues are missed.

Just when you think things are going smoothly and issues are being dealt with, you hit a roadblock. That's why it's important to remember the principle of *"Realistic Expectations."* What you have to realize is there are some things that the host nation isn't interested in dealing with and won't come to any conclusion on. In cases like this you can continue to push the issue, but you will probably have to elevate it to the highest echelons of authority. Even after it is elevated, you might not get any closure, but at least you made the host nation aware of the importance of the issue to you and your superiors.

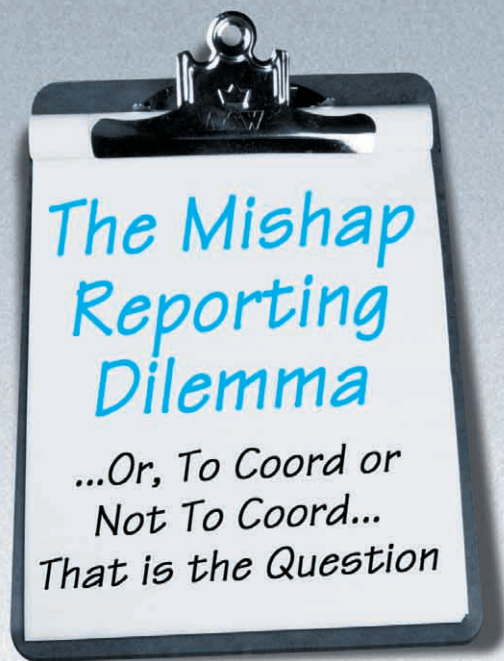
If there is an issue that doesn't get resolved and you have pushed it as high as it will go, then you have to employ the principle of *"Risk Mitigation"* to reduce the hazard associated with your issue. This could encompass far-reach-

ing items like procedural changes or smaller items like temporary restrictions until the hazard can be eliminated. Either way, the issue has to be dealt with and the risk mitigated until a permanent fix is agreed upon.

The last and one of the most important principles to remember when dealing with a host nation is the principle of *"Mutual Understanding."* It is not only important to have the host nation personnel understand your procedures and expectations, but you need to understand *their* procedures and especially their sensitivities. You have to continually remind yourself that you are the guest in their country, and no matter how much you believe you are there to "help" them, they don't always share the same sentiment. Cultures will continue to be different, but through mutual understanding the gap that separates our understanding can be bridged and joint operations made to run more smoothly.

Although not all-inclusive, I hope these six principles give you a cornerstone in which to start building lasting and productive host nation relations. Experience is a good teacher, but why not start out ahead of the class and employ some of these principles in your next dealings with a host nation? □

**You have
to continually
remind
yourself that
you are the
guest in their
country.**



LT COL PHILLIP P. TABER
49th Fighter Wing
Holloman AFB, NM

Time: noun, Middle English, from Old English 12th century

1. *The measured or measurable period during which an action, process, or condition exists or continues*
2. *A non-spatial continuum that is measured in terms of events which succeed one another from past through present to future*

You have just completed a world-class mishap investigation, which you have skillfully “translated” into a mishap report that is sure to bring the crowd in the MAJCOM Safety Office to its feet. Now, the only hurdle that remains is running the mishap report through the wing staff gauntlet before you can release it to the world. With that realization, your strong sense of pride and accomplishment begins to wither and slowly gives way to doom and despair... You know in your heart it could take weeks, even months, to get the mishap report through the staff wickets.

If you have experienced this type of cruel realization, I have several techniques which may allow you to live a normal life, streamline your wing’s mishap reporting system, uphold the integrity of the USAF mishap reporting system and dramatically increase the effectiveness of your wing’s safety program.

Autonomy = Effectiveness

The USAF safety system is structured to provide the autonomy required for appropriate oversight with regard to checks and balances (See Figure 1). The safety system is specifically designed to provide independent safety assessments to organizational commanders, rather than have the safety function buried under layers of bureaucracy, creating the potential of becoming diluted and ultimately ineffective. If a safety system is not independent from command influence, it cannot conduct honest internal critiques of program operations or mishap investigations, thus compromising the integrity of the mishap reporting system. Ultimately, this structure ensures the unit commander and safety personnel are solely responsible for the integrity and effectiveness of the organization’s safety system.

Staff-O-Logy 101—The Staff Summary Sheet

For those not intimately familiar with the protocols associated with the infamous AF Staff Summary Sheet (SSS), this section will provide a “Reader’s Digest” of several SSS techniques, which should prove useful in shortening the “staffing” process.

- SSS Routing/Coordination (coord) definitions/techniques:

- “In Turn” Coordination: This is the most basic form of SSS routing. This will require the SSS and associated package to physically travel to each listed person/agency, be reviewed/commented on, before it can travel to the next person/agency in the routing chain. COMMENT: Although sometimes required for policy-making documentation, “In Turn” routing is rarely useful for mishap reports. Additionally, this technique will consume a tremendous amount of time to make its way through the staff.

- “Shotgun” Coordination: This type of routing allows identical/multiple copies of a mishap report to be forwarded *simultaneously*. Shotgun Coord is absolutely the fastest and most efficient

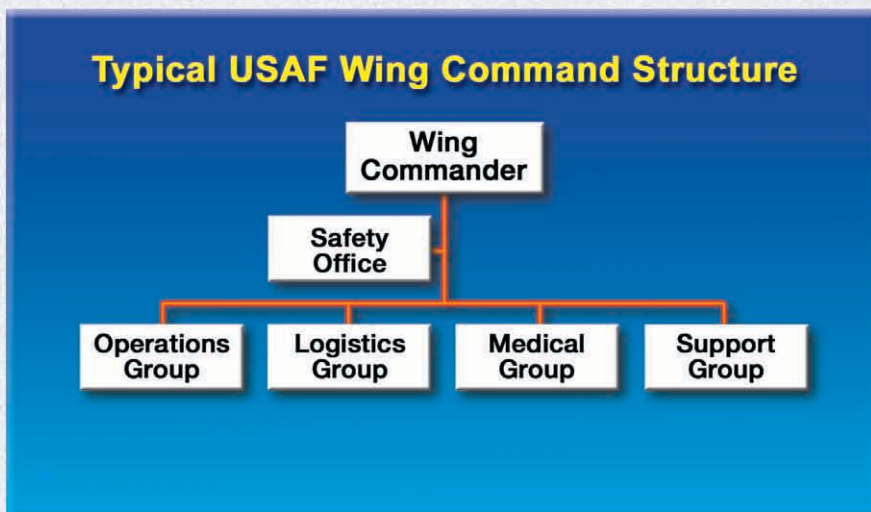


Figure 1

method of moving a mishap report through a staff; however, it can produce multiple responses, which can require review and summarizing before the package is forwarded to the commander. Shotgun Coord can be easily accomplished via e-mail. It is imperative you include all SSS responses in the package you forward to the commander. Additionally, this technique allows you to add a suspense date to the SSS, thus insuring a closeout date and an accurate estimate of the date the report will go to the "front office" for the commander's review and approval. COMMENT: Remember, only O-6s (or higher) suspense other O-6s; however, you have a responsibility to the commander to get mishap reports out IAW AFI 91-204, *Safety Investigations and Reports*.

- SSS Coordination Levels:

"INFO": Short for "For Your Information." Bottom line: "I want you to be aware of this information; however, your response is not required prior to the release of this report. The information you provide may or may not be used in the final report." Essentially, INFO provides a "heads-up" on information, which potentially could affect an organization's respective operation. COMMENT: This level of coord is not offered "control" or guaranteed input on the final mishap report.

"COORD": Coordination Required. Bottom line: "I desire/require your review/input prior to the release of this report. The information you provide will be used in the final report." COMMENT: This level has control of the final mishap report.

"APPROVE": Approval or Releasing Authority. Normally reserved for the convening authority (i.e., WG/CC, NAF/CC, MAJCOM/CC, etc.); however, the commander may delegate the responsibility to the vice commander.

- Safety System Integrity: To maintain the integrity of the safety system, I recommend the following mishap report staffing protocol for a typical wing structure (see Figure 2).

- APPROVAL Authority: Commander or designated Releasing Authority.

- COORD/APPROVE

Authority: Wing Commander, Vice Commander and Chief of Safety.

- INFO: Group Commander(s), Squadron Commander(s) or Detachment Commander(s). COMMENT: INFO addresses can provide vital information and should be carefully reviewed/considered before forwarding the final report to the releasing authority. Additionally, include all returned "INFO" SSS in the final staff package.

Staff-O-Logy 201—The Final SSS Package

Time is a valuable commodity for commanders. It is your job to summarize the mishap report, causes and recommendations. I recommend the following outline for the final SSS package:

Tab 1—Staff Summary Sheet

Tab 2—Final Mishap Report Message

Tab 3—Returned SSS (with attached comments/e-mails)

Tab 4—Reference Material (AFI, AFPAM, etc.)

Tab 5—Technical Reports/Data (if required)

NOTE: Tabs 4 and 5 would be provided for technically-oriented mishap analysis.

What Does All Of This Mean?

The suggested staff coordination process offered in this article is absolutely "technique only." However, I believe it is an effective way to solidify the integrity of your organization's safety program and streamline your staffing process. In aviation, speed is life...this is not true in mishap investigations. The quality of a report and root cause determination is far more important than making an internally generated staffing timeline. Use your time in the investigation phase, rather than in the staffing phase.

Remember: Mishap investigations and subsequent reports can provide vital mishap prevention information, which can ultimately preserve combat assets (people, equipment and resources) for future contingency operations.

Safety is not paramount. The mission is paramount. Safety is a by-product of smart tactics and training, following established guidelines and technical orders, correct use of personal protective equipment and judicial use of risk management. It is incumbent upon all of us to preserve our combat assets to meet our nation's taskings. ✈

Lt Col Phillip P. Taber is an Instructor Pilot in the F-117A Nighthawk at the 49th Fighter Wing, Holloman AFB, NM. He has been Chief of Safety and Chief of Flight Safety at several bases, and has been involved in numerous mishap investigations.

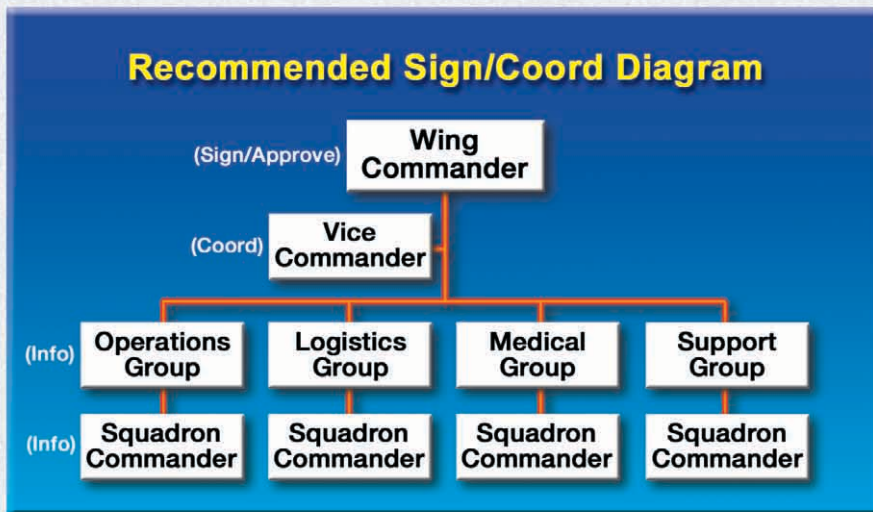


Figure 2

The Needle Concept



MSGT BRYAN KASMENN
27 OSS/OSTL
Cannon AFB NM

Many people think the hardest place to find a needle is in a haystack. In actuality, the hardest place to find a specific needle is in a stack with a bunch of other needles. This concept of hiding with all the other "needles" may be adapted for use by present day evaders and escapers, depending on the conflict's situation and the local population's tendencies.

Many evaders and prisoners of war (POWs) have tried to capitalize on this "needle" concept in past conflicts with some outstanding successes and, unfortunately, some life-costing failures as well. Throughout military history evaders and escapers have used disguises to make good their return to friendly forces or make "homeruns." Since this concept has been successfully employed, it may benefit us to look at some reasons why others have used disguises, present day laws governing disguises by the military, and actual usage of disguises by evaders and escapers in past conflicts.

An evader's or escaper's reasons for using a disguise are varied. Most figured there were so many homeless indigenous individuals wandering in remote areas that it would be very difficult to avoid detection, that "one more" homeless indigenous

would not attract attention, while a downed flyer or soldier would cause the alarms to be sounded. Some thought that by looking like anyone besides an evading flyer, they could utilize the available transportation resources, such as trains, planes and boats, through highly populated areas that blocked their evasion route. Others had to use disguises as the only way to blend in with an assisted evasion net.

The use of a disguise should be backed up by the flyer doing a great deal of prior preparation. The problem is that people catch people, so an evader's best bet is to avoid people and the areas he/she would be seen in. This kind of runs contrary to the aspect of disguise, which is a "deception" or "false front." They are not seeing "downed-Joe/Joan-jet-jock," they are seeing the local guy/gal from the next town over walking through the woods or down the street. Depending on your disguise, this may force you into areas of higher risk: A businessman would not be evading, he would be in plain sight walking towards his "business" destination. To acquire local clothing the evaders will have to go where there are people (stealing the clothing), which increases (not decreases) the chances of getting caught. All of this runs contrary to avoiding people. Potential evaders and escapers should obtain knowledge of the political, social, and economic situation of the local people before using a disguise.

Many evaders during World War II (WWII) tried

to stay in remote areas (with and without disguises), but unfortunately so did the local indigenous population. Locals were in pursuit of wild foods and resources that were hard to find in the war torn economy; unfortunately the evaders/escapees were in the same area, pursuing the same resources.

Individuals who have knowledge of local customs, languages, and cultural information are at a greater advantage than those who don't, but this is true whether using a disguise or not. People have been caught even when they looked exactly like the locals due to unfamiliarity with simple mannerisms. Ask yourself this before using a disguise, "Is a disguise logical, appropriate, and required to evade or escape?" and "Do I have the means to carry it off?"

US Joint Doctrine and international law states, "It is permissible for military personnel isolated in hostile territory to feign civilian status while evading, though they should avoid combatant or espionage activities while dressed as civilians," and "Potential and actual evaders may at some time consider the possibility of trying to disguise themselves as local (enemy) people by putting on civilian attire in the expectation of passing as natives." It does, however, state that this is extremely dangerous. US Joint Doctrine and international law gives only two examples when a civilian disguise might be necessary. The first example is when population density does not allow you to evade in a uniform. The second example is when an indigenous assisted evasion net insisted that the evaders disguise themselves to aid in movement.

Remember, other situations might dictate a disguise, such as an escape attempt. US Joint Doctrine and international law states that evaders should retain at least some of their uniform, such items as insignia, identification (dog) tags, US Armed Forces/Geneva Convention Identification Card, and blood chit, to use as proof of status and identity in the event of capture. While international law dictates that it's a violation to "make improper use of" enemy uniforms (fighting and killing the enemy in their uniform as an example), it's still permissible for military personnel isolated in hostile territory to use enemy uniforms to evade capture, as long as no other military operations are conducted while dressed in the enemy's uniform. This means no attacking the enemy, gathering military information, or engaging in combatant operations. However, dressing like an enemy soldier could very likely get you treated like a spy, before you could convince the enemy that you were an evader or escapee.

The only real disguise "no-no" is using protected emblems. The Red Cross, Red Crescent, medical, religious, and other protected emblems may not be used for the purpose of escape or evasion in armed conflict. Think of it this way, if you use it to evade/

escape, how will the enemy soldiers treat the real folks wearing the protected emblems? Those protected emblems have served the fighting forces of the US and our allies well. Let's not misuse them.

Historically, disguises have been used to varying degrees in every conflict. During WWII, the likelihood of an evader getting into civilian clothing (and usually helped by an indigenous assisted evasion net) was so great that the allied flyers carried personal photographs of themselves in civilian attire in their E&E kits for papers, as in "Hand over your papers, please!" Evaders who made contact with an assisted evasion net were easily provided clothing, apparel and the appropriate props to look less conspicuous, but the photograph part of their "papers" was too hard to obtain on such short notice. This became such a standardized item that the German interrogators/intelligence could identify what flying unit a prisoner was assigned to, by the civilian clothing and backgrounds found in his picture.

Clothing for escape from the POW Camps or Stalags was created from many sources. Clothing was obtained from POW's next of kin parcels, Red Cross clothing, successful trading with "tamed" guards, and through clandestine shipments from American and British intelligence services. The items sent by the home government were cleverly concealed. Blankets were sent with concealed detailed suit patterns that were only visible when rubbed with a damp cloth. One Royal Air Force officer's uniform was, on closer inspection, a disguised Luftwaffe uniform. Dyes were created using everything from tea/coffee to chloride of lime from the outhouses.

Records from Stalag III show that a variety of escape clothing was made in preparation for the planned escape of two hundred POWs (called the Great Escape) and other attempts. Some of the clothing disguises that were developed are as follows:

- 46 overalls from sheets dyed dark blue.
- 46 German and foreign workers coveralls from plain white pajamas.
- 42 German uniforms, to include buckles and badges created by pouring molten silver paper from cigarette packages or tin cans.
- Belts were made from the barracks walls' black paper.
- 260 civilian jackets from uniforms dyed, pockets removed, and corners rounded.
- 230 civilian pants made from uniforms and blankets.
- 140 overcoats made from Officer's greatcoats, their shoulder straps removed and buttons substituted.
- 100+ civilian suits made from military uniforms.
- 300+ civilian caps emerged from every conceivable type of material.
- 90+ neckties made from military ties.

**Potential
evaders
and escap-
ers should
obtain
knowledge
of the local
people be-
fore using a
disguise.**

- 60 haversacks were created from military kit bags and the mackintosh covers that game boards were sometimes sent in.

- Unmeasured numbers of shirts and waistcoats were modified with pockets to carry a 10-day supply of food concentrates.

For a WWII escaper, forged papers were just as important as civilian apparel. Materials needed for forging included copies of the original document, tracing paper, paper, pens, ink and brushes. Using toilet paper and flyleaves from books and Bibles got them tracing paper. Inks were created and "borrowed" from supplies sent by the Red Cross for art and entertainment. Stamps were cut from shoe heels and linoleum. Original documents were obtained from "tamed" guards and stolen from "untamed" guards. Some documents were sent by secret means from the government, but these were usually out of date by the time they reached the POWs. Everything from a soldier's transfer paperwork to a foreign worker's police permit to area passes were created. Sometimes the work on one pass would take a single individual a month working five hours a day.

Additionally, WWII escapers had made compasses (the back stamped with Made in Stalag Luft III), maps, food concentrate bars, and props to make their disguise complete. Such props might include fake rifles, briefcases, paperwork for "business," workmen's tools, and anything else they thought they might need to prove they were who they said they were. As can be seen from some of the facts above, a great deal of work went into preparing the two hundred escapers to go out the three tunnels in the "Great Escape." Of the two hundred escapers selected and prepared, eighty prisoners managed to get out of tunnel Harry before the Germans discovered the hole. Four of the eighty were captured at the mouth of the tunnel, while seventy-six made it clear of the camp area. The cost in man-hours, the danger of coordinated sabotage, and embarrassment led Hitler to give the infamous Sagan Order, which led to the death by shooting of fifty of the seventy-six escapers. Three of the seventy-six POWs made homeruns to England.

In WWII, escapers disguised themselves as guards, ferrets, electricians, local/foreign businessmen, and workers to get out of the camps. Depending on their command of a foreign language, the availability of forged papers, and the type of escape, they would either hard-line it (walk cross country) or try the trains to travel where evading would be shorter, a ship might be available, or a resistance net could be met.

In the Korean Conflict, the racial dissimilarities would betray the evader or escaper. So avoidance again became the common rule with evaders and escapers trying to stay in remote terrain. Unfortunately, due to population density near the coastal areas (needed to travel to return to friendly forces), it became increasingly difficult for evaders and escapers to avoid any contact with the enemy soldiers or the local population. This problem was recognized by several downed flyers, so they tried to pose, at least at a distance, as local citizens or Koreans/Chinese soldiers. This was done by use of discarded or stolen clothing items that they found while evading, or as preparation for their escape attempt. Captain Ward Millar, an F-80 pilot, shot down in June 1951, utilized discarded clothing to aid in his escape after being captured. Millar eventually was recaptured, due to injuries slowing his ability to travel, but eventually escaped again and made a successful "homerun" to friendly forces. Captains Clinton Summersill, a USAF T-6 pilot, and Wayne Sawyer, a USA T-6 observer, were shot down in January 1951. They utilized the clothing they had been wearing when they crashed to seem more like two elderly peasants from a distance while evading. They successfully used the clothing to try to look like "fellow" citizens and made a homerun to friendly forces.

In the Vietnam Conflict, like Korea, the racial dissimilarities would also betray the evader. With this in mind, Navy pilot Lt Dieter Dengler, shot down over Laos in 1966, tried to disguise himself as a German citizen providing support for the Laotians. Dengler carried his old German identification papers and had German hiking clothing, boots, and paraphernalia under his flight clothing. Captured by Laotian forces, Dengler did not seem to press the issue of German

citizenship vs. being a US Navy flyer much, but it also seems that his captors did not seem to care. He was not Laotian, definitely occidental, so he was the enemy in their eyes. Eventually, helped by the monsoon season and jungle survival tactics learned from the Viet Cong, Dengler and six other prisoners escaped from the camp. Dengler was the only one to make it back to the U.S. alive.

Capt John Dramesi, a USAF F-105 pilot shot down in April 1967, and Capt Edwin Atterberry, a USAF RF-4C pilot shot down in August 1967, used disguise as the main focus of their escape attempt from the Hanoi "Hilton." They used a combination of ground iodine pills and redbrick dust to match the average skin color of the North Vietnamese. They modeled sandals after the shoes of the North Vietnamese peasants. They gathered bits of cloth and string and made white "surgical" masks to disguise facial features. Using thread pulled from towels and needles made of copper wire, they fixed their black prison clothes to look like peasant dress. Out of strips of rice-straw pulled from sleeping mats, they wove two conical hats. Originally they had camouflage nets made from three blankets with clumps of rice-straw from brooms sewn on them, but were forced to turn them over to the rest of their cell mates, so they used mosquito netting with clumps woven into them. They also stole a burlap bag, two baskets, and a carrying pole as props to look like traveling peasants. While their disguise allowed them to get out of Hanoi, unfortunately they did not travel far enough before going to a hold-up site and were subsequently captured. Dramesi calculated that, by dawn, they had traveled four or five miles from the compound. A North Vietnamese patrol found the pair hiding in a bramble thicket near an abandoned churchyard. The two were captured, blindfolded and handcuffed, and returned to prison. John Dramesi repeated almost all of his disguise preparations and escape aids for a second escape attempt. Dramesi modified his clothes, gathered iodine to color his skin, made more sandals, made another conical hat, collected his fellow POWs' hair during their haircuts, procured other resources (forty feet of copper rope-wire, food, map, and a plan), and made a white "surgical" mask to disguise facial features; all to pose as a

pregnant Vietnamese woman. Though eventually the Senior Ranking Officer of his cell turned down his second escape attempt, who can tell how successful he might have been?

I have detailed some of the reasons disguises have been attempted in the past and the laws governing the use of disguises by today's military. There are certain inherent dangers involved with looking like a civilian or guard; being mistaken for a spy is just one. Always remember an individual with knowledge of local customs, languages, and cultural information has a greater advantage in evading or escaping than those that don't, whether using a disguise or not.

Knowledge is power to an evader or escaper. By depicting some historical examples of how disguise or the "needle" concept has been used in past conflicts, it will hopefully help you recall this knowledge in the future, no matter what circumstance you find yourself in. In every situation that a disguise was used, it took a great deal of time, energy, and preparation on the part of the evader and escaper. Unfortunately, hard work and disguise has not always been enough to even temporarily hide the "needle."

So ask yourself these questions prior to using a disguise, "Is a disguise logical, appropriate, and required to evade or escape this situation?" and most importantly, "Can I be a needle in a stack with a bunch of other needles?" Hopefully, no matter what your answer is, they will lead you to a homerun back to friendly forces.

References:

- JP 3-50.3, Joint Doctrine for Evasion and Recovery, 6 September 1996
- Dengler, Dieter. *Escape from Laos*. Novato, Calif.: Presidio Press, 1996.
- Dramesi, John A. *Code of Honor*. New York: Norton, 1975.
- Kilbourne, Jimmy W. *Escape and Evasion, 17 True Stories of Downed Pilots*. Macmillan, 1973.
- Blair, Jr., Clay. *Beyond Courage*. New York: David McKay, 1955.
- Durand, Arthur A. *Stalag Luft III, The Secret Story of 'The Great Escape'*. Simon & Schuster 'A Touchstone Book', 1988.
- Burgess, Alan. *The Longest Tunnel. Stalag Luft III. FE*. Bloomsbury, 1990.
- McDaniel, Eugene B., and James L. Johnson. *Before Honor*. Philadelphia: A.J. Holman, 1975.

***Dressing
like an en-
emy soldier
could very
likely get
you treated
like a spy.***



Editor's Note: The following accounts are from actual mishaps. They have been screened to prevent the release of privileged information.

Awareness: Watchful, wary; having or showing realization, perception, or knowledge. That is how Webster's defines awareness. How do you as an aircrew member define awareness? Read a few cases where awareness is what kept some aircrew members from being a statistic.

Am I Supposed To See The Other Aircraft In The Pattern?

A C-9 and a C-21 got a little closer than they liked during a recent approach. The C-9 was on two-mile final PAR approach when they had to take evasive action to avoid a midair with a C-21 that was turning base to final in the VFR pattern. When the C-9 first sighted the C-21 they had 300-400-foot separation verified by TCAS. When the C-9 turned to avoid the conflict, the C-21 passed across and above the C-9 by approximately 300 feet. A very close call, if you ask me.

So what happened in this case? Many factors.

- The C-9 was conducting a PAR approach so they were not on the tower frequency. The C-21 was completing an overhead pattern and was on the tower frequency.

- There was a controller trainee controlling the aircraft with a trainer looking over his shoulder the whole time. Nothing wrong with having a trainee perform the task, as long as the trainer steps in when things don't go right.

- The C-21 crew was advised that the C-9 was in the pattern.

- The C-21 crew acknowledged the call on the C-9, but "thought" the C-9 was behind them—not in front of them. Should the aircrew have a visual or know *exactly* where the other aircraft is in relation to them?

- The C-21 crew made their midfield break when advised by the tower and were told "traffic to follow C-9 seven-mile final." They were following instructions, but in this case the instructions were putting them in harm's way.

- The tower advised the C-21 crew that they were also inside a Heavy DC-8 on one-mile final.

- When the C-21 made their midfield break, they were actually headed for trouble with the C-9. They had turned inside the C-9 and were headed directly for the aircraft.

- The C-9 broke off the PAR and turned away from the C-21.

- The C-21 crew, seeing the problem on their TCAS, told tower they were going around due to traffic that was too close.

- The controller trainer, saw the mistakes and started to take corrective action, but was also explaining to the trainee what was going on the whole time. When does an instructor step in when the student makes mistakes? If you wait too long, it can be someone's last sortie.

The air traffic controller force is young, like the rest of the Air Force, but we must always ensure that aircraft safety comes first. The aircrew was lucky they had their eyes open and TCAS to avoid this mishap. Once again, awareness of surroundings helped these aircrew members *prevent* a mishap.

Who Goes Where?

A formation of three C-130s was performing a station keeping equipment training drop and they had a close call with a fellow C-130 that was using the normal takeoff routing. In this case, the drop zone and the main runway are about seven miles apart. The escape routing for the drop zone requires the formation to perform a timed delay and then climb to 2000 feet MSL and make a left turn (north). The other aircraft in this party was just taking off on a night proficiency training mission. They were performing their climbout, which requires them to maintain below 1300 feet MSL until the departure end of the runway, then climb to 2000 feet MSL and make a northbound turn. Do you see the problem starting to form? The second C-130 did as they were instructed and the formation lead aircraft determined, due to their TCAS, that a conflict was forming. The tower saw the aircraft in the same area and advised all the aircraft of the other traffic. The formation saw the single C-130, and the single C-130 saw two of the three aircraft in the formation. The formation lead aircraft used the TCAS resolution advisory and leveled the aircraft at 1700 feet MSL

Which Runway Do I Land On?

A T-37 driver received some conflicting information on what runway he was to land on. The T-37 was recovering from the auxiliary field, and a T-38 was being vectored by RAPCON for a PAR to the center runway. The T-37 stated his intention to land on the center runway to RAPCON about 10 minutes before he entered the pattern. RAPCON relayed to the tower and RSU that the T-37 was to use the right runway, not the center runway. Tower was again informed of the runway difference when the T-37 cancelled at the radar drop off point. The T-37 called the RSU, and again stated his intention to land on the center runway. The RSU directed the T-37 to call five miles and then called the tower to hand off the T-37. Tower told the RSU that the T-37 was number two behind the T-38 for the center runway, but the RSU did not relay this information to the T-37. The RSU did hand off the aircraft to the tower with instructions to let the aircraft know what runway he was to use. The T-37 was told by the tower that he was number two behind the T-38 for the center runway. The T-37 did not have the T-38 in sight, but "assumed" he was cleared to line up with the center runway. As he lined up for the center runway, the tower asked him to start squawking. As soon as he started squawking, RAPCON sent the T-38 around to avoid the T-37, and the T-38 passed about 200 feet above the T-37.

Now, that is close. Like all mishaps and close calls, there are several links in the chain that led up to this unplanned incident.

- Communication problems between the RSU and the tower. Did they effectively communicate

and delayed their northbound turn. The single-ship aircraft maintained their altitude of 2100 feet MSL and passed over the lead aircraft in the formation with 300 feet of clearance. Once clear, the formation climbed to their required altitude of 2000 feet and made their northbound turn. All aircraft recovered safely after their missions were completed.

What happened? The formation had cancelled their IFR clearance and went VFR as they began their run-in to the drop zone. This common practice allows aircraft taking off IFR from the home airstrip to do so without waiting for the drop zone traffic to clear in order to maintain IFR separation requirements. Both aircrews were procedurally correct, but this near-miss highlights a need to maintain situational awareness at potential areas of conflict. Here we have an established base in the States with a drop zone close to the home airstrip. The potential for conflicting flight paths is increased, so use ORM and CRM to ensure your common procedures aren't setting you up for disaster. The units involved in this mishap all got together to minimize the risk, and made some changes to their procedures to ensure they more effectively deconflict their airspace.

what the T-37 was supposed to be doing?

- The time to fly from the radar drop point to the five-mile point is less than two minutes. Not much time for people to react, but way too much time to set up an accident.

- There was no attempt to arrange a clearance for the T-37 to sidestep to the center runway. Miscommunication between aircraft, tower, RAPCON and RSU on where the T-37 was supposed to land.

- The T-37 pilot stated his intention and "assumed" that the handover to tower "implied" a clearance to sidestep to the center runway. Never assume anything; make sure the clearance you understand is the clearance you received.

- The T-37 pilot understood he was to follow the T-38, but thought the aircraft was in front of him, not behind. Again don't "assume." If the aircraft was in front, why didn't he see the aircraft?

- While turning, the T-37 did not apply "see and avoid" as he lined up on the runway.

- The final turn distance for each runway, center and right, is about one-mile different, which allowed the T-37 to turn in front of the T-38 instead of behind the aircraft. Different runways, different procedures. This can set you up for disaster if you aren't aware of what is going on around you.

This is another classic example of a bunch of little things adding up to an almost catastrophic ending. Luckily the tower folks caught it in time and were able to keep the aircraft apart. Keep your eyes open, and like it has been said many times, ensure you effectively communicate at all times. *Never* assume. 🐢



Maintenance *Matters*

Editor's Note: The following accounts are from actual mishaps. They have been screened to prevent the release of privileged information.

Hodgepodge! This edition of *Maintenance Matters* covers some very different subjects with no central theme other than, "We screwed up and people got hurt or aircraft damaged." A reminder that little things can become large mishaps very fast.

Oops!

A Non-destructive Inspection Technician was getting ready to perform an aircraft X-ray when he needed an X-ray. He was setting up a standard six-foot fiberglass and aluminum ladder that we always use but he didn't notice, or chose not to, that the ladder was unserviceable. He set things up, and as he climbed up the ladder and reached over to set down his equipment, the unserviceable ladder's legs decided to do the splits. The ladder

fell with the worker attached, and the worker's head hit a steel beam of a stationary platform that was next to the aircraft as he fell.

Do you know how to inspect your ladders? Do you actually inspect them prior to use? If not, you had better get back into the AFOSH standards and adjust your work practices. This gentleman only suffered a mild concussion, and I bet some embarrassment from his co-workers, because he chose to not follow the rules designed to keep him safe.

One, Two, Three Strikes You're Out!

A T-38 maintenance crew got three chances to solve an oil system problem, before the engine needed to be changed. The aircraft involved had the engine removed to repair a broken diverter valve and was reinstalled. Since the reinstallation of the engine, the aircraft had two oil system discrepancies, ending with the third on the mishap sortie when the crew aborted their mission.

- First Strike—Aircraft aborted for zero oil pressure on start. Corrected by replacing the front cockpit oil pressure indicator.

- Second Strike—Oil pressure went to zero on completion of a full-stop landing. Corrected by

changing the oil pressure transmitter.

- Third strike—The mishap sortie crew aborted the takeoff. Engine had oil pressure fluctuations. Corrective action? The team did some further troubleshooting and found a shorted wire on the engine junction box that would cause both cockpits to receive erroneous indications.

We all know how hard it is to find the "true" cause of a repeat malfunction, especially when the book may tell us to look somewhere else. Make sure you find the true cause, and it may not be easy. Don't hesitate to say, "Stop and dig deeper." There is no training sortie worth losing an aircraft or aircrew. Live up to our reputation of being the best!

Did You Clean Up Your Mess?

A C-130 crew had their sortie cut real short—they didn't even make the runway when they had to abort, return to parking and call for medical assistance. The aircraft was returned to maintenance and they started inspecting. Maintenance found that the aux pump had been changed after the previous mission, but the filters had not been cleaned and inspected as required. The aux pump filters

How'd That Happen?

An F-15E NATO Strike Eval sortie was cut short when a chase aircraft revealed the aircraft had a massive oil leak. Once back home, it didn't take maintenance long to trace the oil trail back to the JOAP sampling port. The port had become unscrewed and fell off in flight, allowing *all* the engine oil to dump out into the engine bay. Now, isn't the port normally secured with safety wire? Why, yes, it is. Unfortunately in this case there was

Another Loose Nut!

A two-ship of F-15s was taking off on a normal training sortie when the number two aircraft lost all primary and secondary altimeters and airspeed indications. Now, I bet that pilot got back to flying basics real quick. The wingman joined on the stricken aircraft, and they safely recovered to home station. Once again, maintenance was back at it trying to figure out what went wrong. Plus, this was the aircraft's first flight following a phase inspection. It didn't take long before maintenance found the golden bullet—a loose

It's Not Supposed To Do That!

An HH-60 aircrew had completed their training sortie and was going to complete the rescue hoist weight check. This check is required anytime the hoist cable is changed. The aircraft taxied over to the weight and loaded the weight on the hoist. The ground crew cleared the area, lucky for them, and the aircraft went into a 210-foot hover. The check went great through the normal part of the checkout; however, when the hoist failed the backup power check the weight and cable impacted the ground.

Test Cell Check, Check Bad

A T-64 engine was on the test cell following repair for an oil leak. Two technicians were assigned to the work package, and away they went. They worked together until the installation of the first stage nozzle. After installing the first stage nozzle, you verify the air seal installation and then proceed with the gas generator installation. The first stage nozzle and air seal are held together with 24 bolts and safety wire. The engine was finished and sent to the test cell for checkout. The engine ran fine

had clogged and caused the aux pump to overheat. The overheating pump gave off some nasty smoke and fumes that affected the aircrew. So maintenance had to redo the pump change and this time change the filters.

Lesson to be learned? Finish the job IAW tech data every time and clean up after yourself. Even if it's in between sorties. Take the time to do it right the first time.

no evidence that the JOAP port was ever safety-wired.

There were no documented events in the aircraft records that would have required the JOAP port to be removed since the engine was installed on the aircraft. So, this is another case where we know what happened, just not by whom and when the initial break in the chain of events happened. Make sure you look at everything and try to prevent a mishap instead of react to one.

pitot-static line for the standby altimeter. On this aircraft the loose line feeds pressure to both the standby system and the air data computer. This loss of pressure would provide false or no readings to the aircrew. Maintenance tightened the pitot static line and the aircraft passed the required ops checks.

Another example of one little thing, one loose line, that could have been disastrous. Imagine if the pilot didn't have a wingman to help him get back home. Take the time to double-check your work and make sure it's done right!

The reason the aircrew has to perform the backup power check is to ensure that the cable will stay on the drum by both the friction method and mechanical attachment. Documentation showed the cable was replaced IAW tech data, so it should have passed the checkout. It's a good thing they perform the hoist checkout, or a real life rescue could have gone from bad to worse real quick. Make sure all the checks are completed and the work is done right every time. The little things will come back to haunt you.

through the initial break in run; however, when the engine hit 82 percent RPM the engine stalled and a puff of smoke and debris exited the exhaust section. The engine was shut down and the mishap investigation started. Because of privilege I can't tell you exactly why this engine was destroyed, but I think if you are the smart maintenance people that I think you are, you will figure it out. Make sure every part of the task at hand is completed and you back each other up. We can't afford trashed engines due to bad maintenance. □



USAF

Class A Flight Mishaps

FY03 Flight Mishaps (Oct 02-Jun 03)

21 Class A Mishaps
10 Fatalities
15 Aircraft Destroyed

18 Oct ➔ A TG-10D glider crashed during a student sortie.
24 Oct ➔ An F-15 experienced an engine failure during takeoff.
25 Oct ➔➔ An RQ-1 Predator crashed during a training mission.
25 Oct ➔➔ Two F-16s collided in midair during a training mission. One pilot did not survive.
13 Nov ➔ An F-16 crashed during a training mission. The pilot did not survive.
04 Dec ➔➔ Two A-10s collided in midair during a training mission. One pilot did not survive.
18 Dec ➔ Two F-16s collided in midair during a training mission.
20 Dec ➔ Two T-37s collided in midair during a training sortie.
02 Jan ➔➔ An RQ-1 Predator crashed during a training mission.
26 Jan ➔ A U-2 crashed during a training mission.
06 Feb ➔ A manned QF-4E departed the runway during takeoff roll.
11 Feb ➔➔ A QF-4 drone crashed during a landing approach.
13 Feb ➔ An MH-53 crashed during a mission.
08 Mar ➔ A T-38A crashed during a training mission.
17 Mar ➔ Two F-15s collided in midair during a training mission.
19 Mar ➔ A T-38 crashed during a runway abort. One pilot did not survive.
23 Mar ➔ An HH-60 crashed during a mission. All crewmembers were killed.
31 Mar ➔ A B-1 received damage during weapons release.
16 Apr ➔ An F-15 experienced a single engine failure in-flight.
21 Apr ➔ A C-17 suffered heavy damage to the MLG during a landing.
02 May ➔ A KC-135 experienced a birdstrike during landing roll.
22 May ➔ An MH-53 suffered severe damage to the main rotor system.
29 May ➔ An F-16 crashed during takeoff.
04 Jun ➔ An F-15E departed controlled flight and crashed.

FY02 Flight Mishaps (Oct 01-Jun 02)

23 Class A Mishaps
7 Fatalities
12 Aircraft Destroyed

- A Class A mishap is defined as one where there is loss of life, injury resulting in permanent total disability, destruction of an AF aircraft, and/or property damage/loss exceeding \$1 million.
- These Class A mishap descriptions have been sanitized to protect privilege.
- Unless otherwise stated, all crewmembers successfully ejected/egressed from their aircraft.
- Reflects only USAF military fatalities.
- "➔" Denotes a destroyed aircraft.
- "➔" Denotes a Class A mishap that is of the "non-rate producer" variety. Per AFI 91-204 criteria, only those mishaps categorized as "Flight Mishaps" are used in determining overall Flight Mishap Rates. Non-rate producers include the Class A "Flight-Related," "Flight-Unmanned Vehicle," and "Ground" mishaps that are shown here for information purposes.
- Flight and ground safety statistics are updated frequently and may be viewed at the following web address: <http://safety.kirtland.af.mil/AFSC/RDBMS/Flight/stats/statspage.html>
- **Current as of 05 Jun 03.** ➔



**The Aviation
Well Done Award
is presented for
outstanding airmanship
and professional
performance during a
hazardous situation
and for a significant
contribution to the
United States Air Force
Mishap Prevention
Program.**

**Maj James G. Sturgeon
14th Fighter Squadron
Misawa Air Base Japan**

On 8 November 2001, Maj James Sturgeon was leading a four-ship of F-16s on an Instructor Pilot upgrade training mission. The mission was planned for two sorties with hot pit refueling between the sorties.

Just after takeoff for the second mission, Maj Sturgeon's aircraft experienced a massive engine malfunction that resulted in a significant loss of thrust and a loss of all lubricating oil. Maj Sturgeon immediately zoomed the aircraft to trade airspeed for altitude and time, and initiated a turn back to the field for an immediate landing.

Maj Sturgeon quickly determined that the engine wasn't producing sufficient thrust to remain airborne. He quickly checked to make sure he was over an unpopulated area and jettisoned his two external fuel tanks and remaining Maverick missile.

About 4500 pounds lighter, the crippled aircraft was then barely able to produce enough power to sustain level flight. Maj Sturgeon carefully steered the aircraft back around to enter the engine out landing pattern while avoiding overflying any populated areas, evaluating airworthiness and weighing the choice of whether to continue flying or eject. Once he knew he could safely land the aircraft even if the engine quit, he concentrated on the landing, engaged the departure end cable, shut down the engine and egressed normally.

The entire sequence from engine malfunction to landing took only two minutes. This is significant due to the fact that the F-16 flight manual warns that engine seizure will occur after only five minutes without oil.

Maj Sturgeon's quick analysis and continuous assessment of the status of his aircraft saved a valuable USAF combat asset. His outstanding situational awareness and concern for the local population also prevented any loss of life. ✈️

**A1C Derek Huffman
58th Fighter Squadron
Eglin AFB FL**

A1C Derek A. Huffman was replacing expended argon bottles on an F-15C when he noticed smoke coming from the Number 1 engine bay of an F-15 as it returned to the chocks after a routine sortie. A1C Huffman ran across the parking ramp and notified the crew chief of the situation. While the crew chief directed the pilot to shut down the aircraft and assisted him out, A1C Huffman and another member manned Halon fire extinguishers and proceeded to extinguish the fire, which by that time had engulfed the entire engine bay. If not for his quick and decisive actions, this would have undoubtedly led to the loss of a \$37 million aircraft and possibly the loss of an aircrew. ✈️

REXRILEY

SAFETY OFFICER

CMSGT
Holt

THE SPACE AGE AIR FORCE DEMANDS RESPONSIBLE SUPERVISORS WHO ARE CONSTANTLY ALERT TO PROBLEMS AND CAPABLE OF GIVING ATTENTION TO MANY DETAILS.... NO UNIT CAN REST ON ITS LAURELS; PAST PERFORMANCE IS HISTORY AND ONLY THE PRESENT COUNTS !

