

March/April 2002

Air Mobility Command's Magazine

THE MOBILITY FORUM

- **BASH Program**
- **2001 Safety Awards**
- **Excellence In
Airmanship Award**
- **Interview With
General John Handy**



THE MOBILITY FORUM

March/April 2002

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About The Cover...



Falconer Reid Erickson prepares to release Olympia, a 10-year-old Peregrine Falcon for a bird clearance flight at McGuire Air Force Base, N.J. Olympia and Erickson, of the World Bird Sanctuary, clear the airspace of birds to reduce the risk of bird strikes. The Bird Aircraft Strike Hazard program at McGuire Air Force Base has utilized 12 falcons for the last three years. There has been a 100% reduction in C-141B Starlifter damaging bird strikes from 1998 and an 80% reduction in the number of KC-10A Extender damaging bird strikes from 1999.

DoD photo by Kenn Mann, U.S. Air Force.

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Correction Notice: In the last issue, the safety officer of the year was identified as Capt Timothy Burns. It should have read Maj Timothy Burns. The Mobility Forum regrets the error.

COMMANDER IN CHIEF USTRANSCOM

General John Handy



COMMANDER AIR MOBILITY COMMAND



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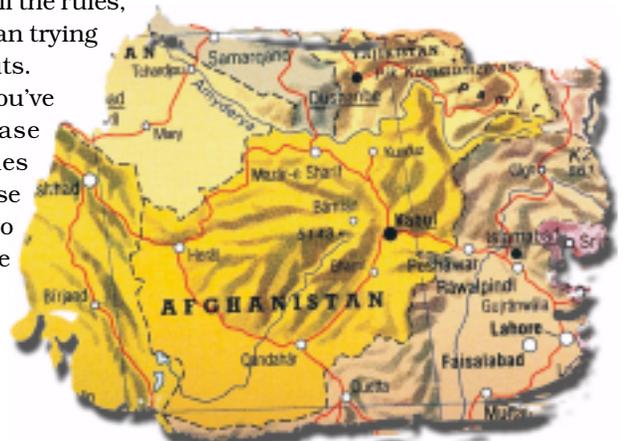


s I sit here writing this, the temperature is about 27 degrees and there's a slight chance of snow, but they tell me "spring is just around the corner." As we roll into spring of 2002, AMC is still heavily involved in the nation's war against terrorism. Our involvement has been the largest and best test of our mobility mission in this nation's history. Time and time again you have proven

what AMC is capable of doing—by completing some of the most demanding missions ever tasked. However, we've done this at a cost.

We've seen an increase in the number of ground and flight mishaps, and an increase in discrepancies within the munitions community. I've heard time and time again, "We're at war and things have to be done differently"...well, I'm here to say that's not true. As we continue to support our nation's "War on Terrorism" we must hold fast to the rules, instructions, and guidance that has sustained us to this point. The AFIs and TCTOs that govern our procedures are more important now than ever before. Use of the "rules" and ORM tools in your work environment and daily lives is critical to your safety and our success. Please examine the way you do business and how your performance helps carry out our nation's goals. Don't do things "different"; do things correctly, because the time you use to follow all the rules, will be better-used time than trying to fix the effects of shortcuts.

"Rules are Good!" You've heard me use that phrase before, so follow the rules you've been taught and use risk management to enhance your performance and ability.



Be safe,
Col Ziegler

In November 2001, General John W. Handy assumed the duties of commander in chief, U.S. Transportation Command, and commander, Air Mobility Command, Scott Air Force Base. General Handy has provided The Mobility Forum staff with insight into some of his present thoughts and future plans for the AMC through the following question and answer forum.



TMF Staff: What do you see as the greatest challenge we face within AMC?

General Handy: It's the same challenge this command has faced in the past. It's those calls in

General John Handy Assumes Command Of USTRANSCOM

the middle of the night when we need to move quickly because an airman, a service member from another branch, even a child, needs medical care urgently. It's when an earthquake happens somewhere and the call comes in for us to airlift humanitarian relief supplies and personnel. It's that call from the person on the other end of the phone who doesn't know what the solution is, but

is relying on us to move the world for them—and we do it. They always ask the same question, "What can AMC do to help?" and we always have the same answer—"you call—we haul...we deliver, we air refuel, we force extend, we do it all."

This capability demonstrates our readiness to the world. Air Mobility Command has been, and always will be, a very ready force. All the credit goes to our dedicated people. There is no finer group of professional military people anywhere. Nonetheless, we must continue to ensure we stay a ready mobility force for the nation. We must focus our energies on maintaining our excellence in fulfilling our Global Reach mission.



TMF Staff: What are AMC's greatest strengths today?

General Handy: By far our greatest strength is our people. I am humbled at the thought and honored to be the commander of Air Mobility Command. And it's primarily because of our people. This command resonates with the talent of our professionals. I can't overstate how proud I am of what they are doing everyday. Our execution of the global war on terrorism has been flawless—they are the reason!



TMF Staff: Does your vision of AMC include plans for any major changes?

General Handy: I have no desire to create instability through change. I have great respect for the processes that are





Photo Contests



2nd Place
Military Life
A1C Omayra Corte
"American Pride"



2nd Place
Recreational
SSgt Paul Dean
"Kids Balloon Toss"

Best Winners



2nd Place
Aircraft
TSgt Brian D. Wittlinger
"Our Bases Learn From The Best"



Excellence In Airmanship Award

1st Helicopter Squadron, Andrews AFB, MD



TEAM SIGNIFICANT ACCOMPLISHMENTS

At approximately 1455L on 9 Apr 01, the crew of Musel 01 was returning from a local training sortie on the west side of Washington D.C. in their UH-1N. They were heading for Andrews AFB via DC low-level helicopter routes 1 & 2. After rounding the Memorial Bridge at approximately 150' above ground level (AGL), they began to cross the Tidal Basin when the flight engineer (FE), SrA Dale Mathews, yelled a terse "Bird!" With virtually no time to react, a large bird burst through the pilot's windscreen and hit the pilot, Capt David Anderson, square on his helmet visor and visor cover, snapping his head back into the headrest. The resulting blast of oncoming air showered him with swirling glass and "snowed over" the windscreen with cracks. He could hear SrA Mathews talking over the intercom, so he knew that the FE was okay. Capt Anderson,

glanced out of the left hand corner of his visor and noticed the #2 generator segment light illuminated and thought he might lose an engine, further complicating the situation.

Capt Anderson maintained aircraft control and initiated a climb to gain altitude above the water, and determine where to land. Thousands of tourists lined the shore of the tidal basin for the annual cherry blossom festival, preventing an immediate landing. After a brief discussion with SrA Mathews, he decided to put the aircraft down on a set of baseball fields next to the Jefferson Memorial. Capt Anderson squeezed off a call to Ronald Reagan National tower to notify them of the situation, while SrA Mathews made a call to Musel Control, the squadron's command center. They set up the aircraft for a right descending spiral pattern for landing, while clearing the many tourists and spectators out of the way. After performing a quick before landing checklist on final, Capt Anderson was forced to rely upon a combination of FE verbal inputs, and glancing out the helicopter chin bubble

and side window to safely land. Once on the ground, the crew performed an emergency shutdown of the aircraft to prevent the encroaching crowd from encountering a hazardous situation. Follow-up calls were made to National tower and Musel Control to confirm they had landed safely, were not seriously injured, and that the aircraft suffered no further damage.

IMPACT ON THE MISSION

Musel 01 crew's rapid recognition of the problem, their calm coordinated reaction to the emergency, and superior flying skill averted a potentially disastrous aircraft mishap. Their superb handling of this emergency avoided injury to themselves and the throngs of people assembled nearby on the ground. Once safely on the ground, they coordinated with Musel Control and quickly confirmed another aircrew was



able to pick up their contingency mission alert posture. The aircraft was fully repaired in the field that evening and was flown back to Andrews AFB before dark.

POSITIVE REPRESENTATIVE OF THE AIR FORCE

The crew of Musel 01 demonstrates the best our Air Force has to offer—two highly trained aviators reacting calmly and correctly when faced with a sudden emergency, cooperating with one another and air traffic control (ATC) to save their stricken aircraft. They exemplified teamwork, technical expertise, self discipline, judgment and decisiveness—some of the attributes that best define Air Force professionalism.

MOTORCYCLE

SAFETY



by John Schatz
Safety Management Consultant

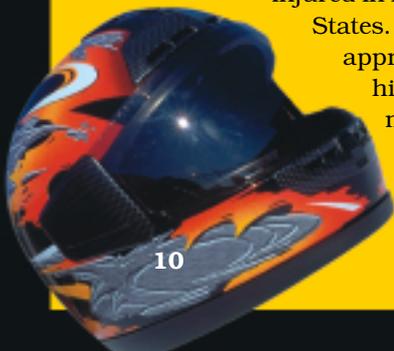
H

ead out on the highway, looking for adventure is a popular verse from a song that embodies the experience of driving a motorcycle. There is a certain freedom that comes with driving a motorcycle but with that freedom there is risk. According to the National Highway Traffic Safety Administration (NHTSA) in 1999 (latest statistics available) 2,472 motorcyclists died and approximately 50,000 were injured in highway crashes in the United States. Motorcycle fatalities represent approximately five percent of all highway fatalities each year, yet motorcycles only represent

approximately two percent of all registered vehicles in the United States.

Many fatalities and injuries are preventable by using good safety practices. Remember, you are extremely vulnerable on a motorcycle; a motorcycle provides virtually no protection in a crash. In fact, approximately 80 percent of reported motorcycle crashes result in injury or death; a comparable figure for automobiles is about 20 percent. Caution is key to motorcycle safety. On page 11 there are some safety tips to help make your adventure a safe one.

By following these safety tips and employing good defensive driving techniques, you greatly increase your chances of always having a good adventure rather than an unfortunate one.





 **Take a motorcycle safety course.** Many places offer courses that cover how to safely handle and operate a motorcycle.

 **Be very careful and aware of traffic** at intersections. Statistically, this is where most motorcycle/vehicle crashes occur.

 **Try to be visible** to other motorists at all times; stay out of the blind spot of other vehicles.

 **Check the weather forecast.** In inclement weather it's better to find another mode of transportation.

 **Don't drink and drive.** Approximately half of all fatal single-vehicle motorcycle crashes involve alcohol. A motorcycle requires more skill and coordination to operate than a car. Riding a motorcycle while under the influence of any amount of alcohol significantly decreases an operator's ability to operate the motorcycle safely.

 **Buy the right motorcycle** for your riding purpose. Decide what the primary use of your motorcycle will be and buy accordingly. Don't buy a highway bike if you are going to be using it to ride off road most of the time.

 **Wear appropriate clothing** and give yourself protection from abrasions in case of a spill. Wear a jacket and long pants made of a durable material and wear a reflective vest over your jacket to make yourself very visible. Wear footwear that is made of durable material (e.g., leather boots) with ankle support. Lastly, invest in a good pair of leather gloves.

 **Always wear a helmet!** The helmet is the single most important piece of equipment to have when riding a motorcycle. Currently, forty-seven states have laws requiring helmet use. The majority of these states only require it for a segmented population — usually under the age of 18. However, whether it's a requirement in your state or not, wearing a helmet makes sense. Head injury is the leading cause of death in motorcycle crashes. The NHTSA reports that an unhelmeted motorcyclist is 40 percent more likely to incur a fatal head injury and 15 percent more likely to incur a nonfatal injury than a helmeted motorcyclist when involved in a crash.

 **Wear eye protection:** Since many motorcycles don't have windshields, it's important to protect your eyes from airborne matter such as dirt, rocks and insects. Select a good quality pair of goggles or a helmet equipped with a face shield.



2001

Annual
Safety
Award
Winners

AMC

Safety Officer of the Year



Maj Timothy A. Burns

92 Air Refueling Wing ■ Fairchild AFB, Washington

Maj Timothy A. Burns enlisted in the Air Force in 1984. After attending basic training at Lackland AFB in Texas and Precision Measurement Equipment Laboratory (PMEL) school at Lowery AFB Colorado, AIC Burns' first duty station was Keesler AFB, Mississippi as a PMEL technician.

In August 1987, he was chosen to return to the University of Kansas to finish his degree in aerospace engineering. Upon graduation in 1988, he was selected to receive pilot training and was commissioned as a second lieutenant.

In March of 1988, 2Lt Burns entered Undergraduate Pilot Training (UPT) at Reese AFB in Texas. Upon completion of UPT, he went to the KC-135 Major Weapons School at Castle AFB in California. And, in August of 1990, 2Lt Burns' first aircraft assignment was at Fairchild AFB, Washington where he was one of the first two pilots trained for the then new, KC-135R.

In November of 1993, Capt Burns was transferred to the C-12F as a member of the initial cadre for the newly formed Companion Trainer Program (CPT). The CPT trained KC-135R copilots to become better aircraft commanders. The CPT program was cancelled in 1995 and Capt Burns was selected to fly T-34Cs for the Navy at Pensacola Naval Air Station (NAS), Florida.

In September of 1999, Maj Burns returned to Fairchild to fly the KC-135R. He was immediately entered into instructor training and then to safety training to become the Wing Chief of Flight Safety and Wing Operational Risk Management program manager.

Flight Safety NCO of the Year



MSgt Phillip R. Alerding

319 Air Refueling Wing ■ Grand Forks AFB, North Dakota

Philip Alerding entered service in 1982 after graduating from high school. He completed Avionics Navigation tech school in 1983, Keesler AFB, Mississippi (Communications/Navigation technician). His first duty station was Dyess AFB, Texas. With the 463 AMS he was a navigation technician and performed backshop /flightline maintenance on C-130 aircraft.

In 1984, PCS'd to Zweibrucken AB, Germany. In the 26th CRS as a Comm/Nav technician, he performed backshop/flightline maintenance on RF-4C aircraft. In 1988, he PCS'd to Andrews AFB, Md. With the 89th FMS, he performed backshop/flightline maintenance on SAM fleet, VC-135, VC-137, VC-9, VC-20 aircraft.

In 1990, Alerding was accepted as a member of the Air Force One maintenance team and maintained VC-25 and VC-20 aircraft.

In 1994, he PCS'd to RAF Mildenhall, UK, serving with the 352 Special Ops Group as MOCC Superintendent/Flight Chief, Production Superintendent, MC-130H aircraft.

In 1998, Alerding PCS'd to Grand Forks AFB, ND, 319 AGS, APG Section Chief, KC-135R/T aircraft. In 1999, he was selected as Wing Flight Safety Superintendent. (319 ARW). MSgt Alerding has participated in numerous mishap investigations, including being selected as a Safety Investigation Board member for two engine-confined mishaps in 2001. (KC-10 Class A mishap at McGuire AFB, NJ and E-4B Class B mishap at Offutt AFB, NE).

Ground Safety NCO of the Year



MSgt Nolan A. Rayne

22 Air Refueling Wing ■ McConnell AFB, Kansas

Master Sergeant Nolan A. Rayne joined the Air Force in October of 1982 as a Pneudraulic Systems Mechanic. In March of 1983 he was stationed at Torrejon AB, Spain, where he worked on F-4 and F-16 aircraft. In October of 1989 he cross trained into Cable Maintenance and was stationed at Grand Forks AFB, ND, where he worked on the Hardened Intersite Cables of the Minute Man III Intercontinental Ballistic Missiles.

In November of 1991 he was assigned to Iraklion AB, Crete, Greece, where he helped establish a Cable Maintenance Shop and close the base. In December of 1994 he transferred to Kelly AFB, TX, where he worked as an Engineering and Installation Team Chief.

In June of 1996 Sergeant Rayne cross trained into the Safety career field. He was subsequently assigned to McChord AFB, WA, as the NCOIC of Ground Safety. In October of 1999 he was transferred to McConnell AFB, KS, where he is the Assistant Ground Safety Manager of the 22d Air Refueling Wing.

Weapons Safety NCO of the Year



MSgt Dennis J. Tangney

60 Air Mobility Wing ■ Travis AFB, California

Master Sergeant Dennis Tangney entered the Air Force 18 July 84, and attended Tech school at Lowry AFB for Munitions Maintenance. His first assignment was in Kadena AB, Japan as a Munitions Storage Crewmember. Next he was stationed at Minot AFB, ND from July 86 until Dec 89, in the Munitions Handling Section. He then moved to Ramstein AB, Germany, and was assigned as a Conventional Maintenance Crew Chief and Munitions Inspector, from Jan 90 until Jan 94.

In Jan 94 he was assigned to Travis AFB, CA as NCOIC of Munitions Inspection. In November 1998, MSgt Tangney was selected for the 60th AMW Weapons Safety NCO position and served in that position until November 2001. He is currently serving as the Senior Quality Assurance Evaluator for Kunsan MAGNUM at Kunsan AB, ROK.

"The Weapons Safety position at Travis AFB was a huge stepping stone in my career. Working with 15th Air Force and HQ AMC expanded my knowledge of Munitions Systems and Airlift Operations. Being selected for this award is truly an honor and would not have been possible without the outstanding leadership and support of the Travis AFB Wing Safety Staff," said MSgt Tangney.

Safety Civilian of the Year



Mr. Mark J. Rupert

92 Air Refueling Wing ■ Fairchild AFB, Washington

Mr. Rupert is the Ground Safety Superintendent for the 92d Air Refueling Wing, Fairchild Air Force Base, Washington. He entered the safety career field in October 1992 as the Flight Safety NCO at Pope AFB, North Carolina. After serving twenty-four years of military service, he retired at Pope AFB in July 1994. He attended Embry-Riddle Aeronautical University completing his undergraduate degree in June 1995 and his masters degree in Dec 1997.

He was hired by the Air Force as a Palace Acquire safety intern in April 1997 and served his internship at the safety office at McGuire Air Force Base, New Jersey. He served at McGuire until April 1999 when he was reassigned to Fairchild Air Force Base, Washington. He is the 92d Director of Staff, 2001 Civilian of the Year (Cat. II). He is the Air Force nominee for the 2001 GEICO Public Service Award for Traffic Safety and Accident Prevention.

Mr. Rupert is married to the former Linda Woolsey of Watertown, New York and they reside in Medical Lake, Washington with their five children.



Let's Hear It For Safety

By **John Schatz,**
Safety Management Consultant



Hearing loss is one of the major occupational hazards we face today in both general industry and Air Force Operations.

It is estimated that 30 million workers are exposed to hazardous noise on the job and an additional 9 million are at risk for hearing loss.

But how does it occur and how can we prevent it from happening?

The Miracle of Hearing

First, let's look at how you hear. The outer ear concentrates sound waves and channels them through the eardrum to the middle ear. Tiny bones in the ear convert these sound waves to mechanical vibrations. There are thousands of hair cells in the inner ear that translate these vibrations into electrical impulses, which are then transmitted to the brain for interpretation and action. Another way of looking at this is by putting your hand to your ear to hear better. This is actually duplicating the function of the outer or external ear. The sound travels down the ear canal and strikes the eardrum, causing it to vibrate. The eardrum vibrates in response to the sound waves that strike it. The vibration or motion is transmitted across the air-filled middle ear cavity to a fluid in the delicate inner ear. This creates waves in the inner ear fluid that stimulate microscopic hair cells. This generates nerve impulses, which pass along the auditory nerve to the brain.

Loud sounds or noise can damage those tiny hair cells and when these hair cells are damaged, they bend over like grass that's been stepped upon. Eventually, they will straighten up, but frequent exposure causes the cells to be permanently

damaged. Some cells die off as a result of noise damage.

Prevention

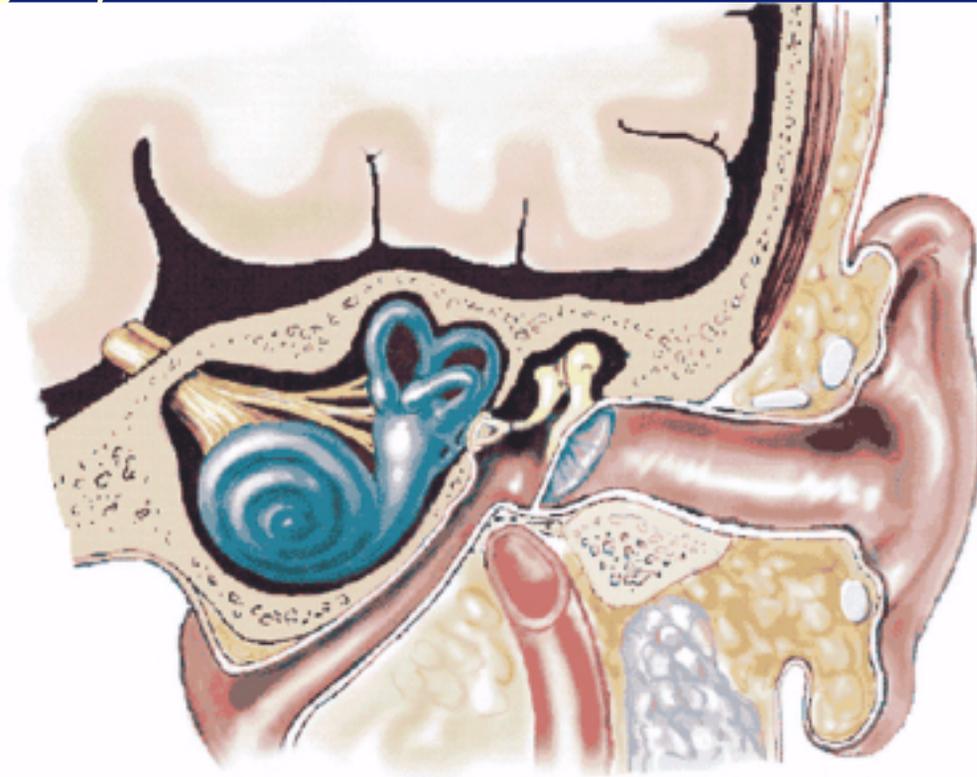
The Occupational Safety and Health Administration (see OSHA 1910.95 Occupational Noise Exposure) and the US Air Force (see AFOSHSTD 48-19 and AFSOSTD 161-20 Hearing Conservation Program) have standards that provide guidance on how much noise personnel may be exposed to and gives guidance on ways to protect the ears and monitor this hazard. According to the USAF's Hazardous Noise Program (Air Force Occupational Safety and Health (AFOSH) Standard 48-19) a person may be exposed to a certain amount of noise per day. If personnel exceed that, then hearing conservation measurements such as audiometric testing and monitoring must be put into place.

Sound Pressure Level	Allowable exposure in Minutes (per day)
85	480
86	381
87	302
88	240
89	190
90	151
91	120
92	95.2
93	75.6
97	30.0
98	23.8
99	18.9
100	15.0
101	11.9
102	9.4
103	7.5
104	6.0
105	4.7

To abate noise hazards, safety professionals first look at engineering and administrative controls to lessen the noise hazard. They use things such as:

Engineering

- Installing a muffler or building an acoustic barrier



- Substituting processes (e.g., welding instead of riveting)
- Good maintenance practices (e.g., replacement or adjustment of worn loose and unbalanced parts, good lubrication practices)

Administrative

- Rotating personnel schedules so that exposure time is reduced
- Complying with purchasing agreements that specify maximum noise levels at the operator's position.

If neither engineering nor administrative controls are effective then the use of Personal Protective Equipment may be used. Below are examples of hearing PPE used today:

Single-use earplugs. Made of waxed cotton, foam, or fiberglass wool, these ear plugs are self-forming and, when properly inserted, work as well as most molded earplugs.

Preformed or molded earplugs. These plugs must be individually fitted by a

professional. Non-disposable plugs should be cleaned after each use.

Band Type Hearing Protectors come on a flexible plastic band that is worn under the chin while the protectors are in the ears. The band can be left resting around the neck while the protectors are not in use. They are designed for convenience in work areas with varying noise levels.

Ear Canal Caps seal the opening to the ear without entering the ear canal. Similar to band-type hearing protectors, they usually come on a band that can be placed around the neck when the caps are not in use for convenience in work areas with varying noise levels.

Earmuffs. Earmuffs require a perfect seal around the ear. Glasses, long sideburns, long hair, and facial movements such as chewing may reduce the protective value of earmuffs. Some special earmuffs are designed for use with eyeglasses or beards.

Active Noise Canceling Headsets use an electronic system to cancel unwanted background noise while at the same time enhancing the quality of audio delivered through the headset. They are used primarily for in-flight noise reduction.

Communication Headsets block unwanted noise while at the same time allowing the wearer to communicate clearly with co-workers.

To gauge the adequacy of a hearing protector's attenuation capacity, check its Noise Reduction Rating (NRR). It is printed on all hearing protection packages. For example, a pair of molded earplugs may have a NRR of 29 dB printed on the box. Let's say the environment noise level as measured at the ear is 92 dBA (decibels in the ambient environment.) Thus, the level of noise entering the ear is approximately equal to: 63 dBA (92-29 = 63). Because of leaks in the seal, vibration or improper insertion you may want to consider a safety

factor. You can do this by dividing the NRR by 2. So in the example above $92 - (29/2) = 77.5$ dBA.

Noise hazards don't just exist at your jobsite. Listed below are some common sources of sound and their typical sound levels.

Sound Level dBA	Sound Source
60	Normal conversation
70	Freeway traffic
60 - 85	Vacuum cleaner
85	Heavy traffic, noisy restaurant
65 - 95	Power lawn mower
110	Baby crying
110	Power saw
117	Football game (stadium)
120	Thunder
120	Rock concert
120	Chain saw, hammer on nail
150	Firecracker
170	Shotgun

Whether on duty or off, take the proper safeguards and let's hear it for safety!





SAFETY MISHAP RATES AMC vs. AF

(As Published By AFPMRS 7 Jan 02)

Flight

■ AMC Class A Rate, 0.87 (3)	AF Rate, 1.16 (24)
■ AMC Class B Rate, 5.49 (19)	AF Rate, 3.87 (80)
■ AMC Class C Rate, 13.29 (46)	AF Rate, 13.45 (278)

Ground

■ AMC Class A Rate, 0.16 (9)	AF Rate, 0.12 (67)
■ AMC Class B Rate, 0.07 (4)	AF Rate, 0.02 (12)
■ AMC Class C Rate, 5.92 (342)	AF Rate, 5.26 (2825)



2002 TMF
Writing Contest

SUSPENSE: Postmarked NLT 30 April 2002

SUBMIT TO: Schatz Publishing Group
Attn: 2002 Writing Contest
11950 W. Highland Avenue
Blackwell, OK 74631

FORMAT: Identify entries by title only. Attach a cover sheet indicating author's name, rank (when applicable), unit, home address, DSN, Commercial telephone and fax numbers, and e-mail address (if applicable). You may submit a photograph of yourself as well as any photos/graphics relating to your entry, if available.

LENGTH: Original, previously unpublished fiction or nonfiction. Entries should not exceed four single-spaced pages, including photographs/graphics.

CONTENTS: Entries should contain one or more of the following messages: safety, risk management, CRM, tanker and airlift operations, and SAC/MAC/AMC heritage.

ELIGIBILITY: Military and civilian employees of the Department of the Air Force and Air Reserve Components. All other entries are judged under a Special Category.

Aging Aircraft Wiring

by MSgt Michael W. Westergren,
Ground Safety Representative,
61st Airlift Squadron



Background

Wiring is the backbone of all aircraft systems. Some compare it to the arteries and veins inside our bodies. However it is looked at, failures in the wire system can range from minor irritants to major catastrophes. Commercial aviation is particularly concerned with this issue. Wiring has emerged as a critical safety-of-flight system because of the increasing complexity, high density, and critical interface between electrical and electronic sub-systems. Wiring failure is implicated in the explosion of TWA flight 800 off Long Island and the downing of SwissAir flight 111 in the North Atlantic. To highlight the importance of wiring failure, the Presidents Office of Science and Technology, the FAA and Air Force Material Command have all



created Aging Aircraft Programs.

The Issue

Why would a wire fail? Depending on how you approach this question, answers can range from poor maintenance practices, exposure, time and even the properties of the wire itself. The effects of aging change this from a question of *whether* a wire will fail to *when* will the wire fail. Failures are rarely sudden and without warning. Maintainers must understand how to recognize impending wire failures and be proactive in mitigating the problem.

Uncommanded system inputs, transient or intermittent failures, CND write-ups and “ticking faults” should all be suspect for approaching wire failure. Herein lies the dilemma. If you can’t find the defect, how can you be expected to repair it? The remainder of this article will attempt to answer this question.

Wire Properties

A quick look at T.O. 1-1A-14 illustrates the several different possible wire types you may encounter. The conductor may be copper, copper alloy or aluminum. The wire may have silver or nickel plate coating applied. Finally, the insulation can be composed of one of several dielectric materials. It’s this variety of insulation that is playing a major role in current wiring failures. Your





job is to recognize the different wire types inside each bundle and understand how they interact with each other.

Since the early sixties, wire insulation has evolved through several stages. The poly vinyl chloride, MIL- W-5086, used since the early fifties was installed in many of our "E" model aircraft. It can be readily identified by its heavy, thick insulation. It easily chafes and is highly flammable. When burning, it produces copious amounts of dangerous, even deadly, smoke. Aromatic polyimide also known as Kapton, MIL-W-81381/11, began to appear in 1966. It was considered far superior to 5086 because its insulation was thin and lightweight with excellent dielectric qualities. Its weakness is the insulation which is extremely hard and abrades other wire insulation types. It also ages rapidly, leading to cracking. Once the inner wires are exposed, moisture can induce arcing. MIL-W-81044 is another lightweight type wire. It's alkane-imide or polyarylene formula gives it superior fluid resistance. It also is subject to premature insulation breakdown. The last common wire type is Tefzel, MIL-W-22759. This fluoropolymer, Teflon-type insulation is popular and is easy to use. Its hazards are that it becomes soft at high temperatures, burning easily and producing large amounts of smoke. Its soft insulation dictates that it not be bundled with other types. A new insulation type, MIL-W-22759/80-92, also known as TKT, is beginning to be utilized in both commercial and military aviation. It is a lightweight composite of Teflon and Kapton that exhibits superb abrasion and insulation protection. Its main advantage is its resistance to high heat, producing little smoke if it burns. TKT wire is the only product meeting current FAA standard FAR 25; "insulation material can not be used that is hazardous, unreliable, or contributes smoke/fire."

Aging and Degradation

Wire (both the wire and its insulation) deteriorate with age. "Aging" refers to the health of the wire's insulation and is related to the various conditions the wiring is exposed to rather than its age in years. The insulation dries out, becomes brittle forming cracks and exposing the conductor. All wire deteriorates in service due to environmental factors such as:

➔ ***Extremes of heat & cold experienced by aircraft on the ground and in the air.***

➔ ***Water damage, salt damage associated with marine environments.***

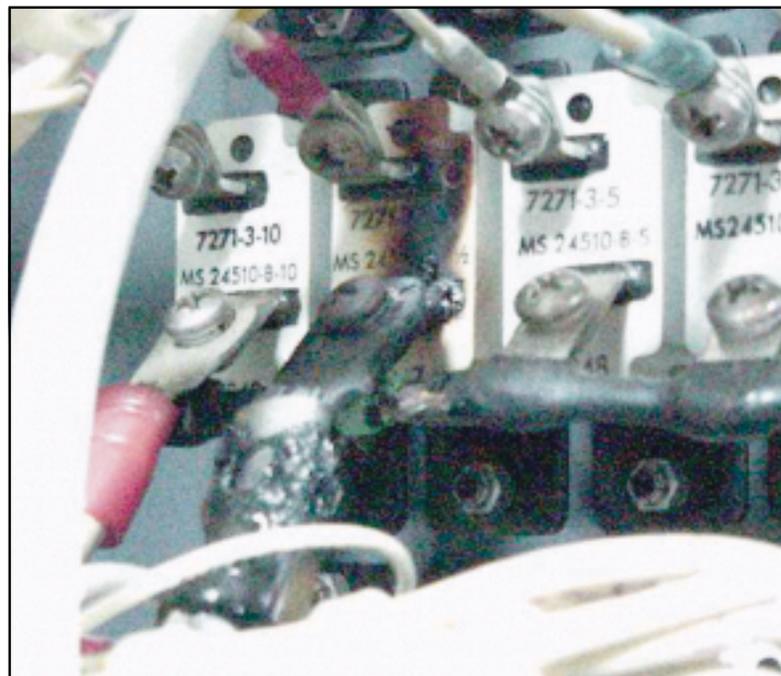
➔ ***Contamination by aircraft fluids such as fuel, oil, hydraulic fluid, deicing fluid, cleaning chemicals, toilet residue, galley spillage etc.***

➔ ***Inflight vibration causing chafing of wires rubbing against other wires or the structure of the aircraft. This is especially a problem with hard wire such as Kapton laying adjacent to a soft wire like Tefzel.***

All wire products display differing properties with regard to aging. Practically all wire insulation material dries out, goes hard and then develops hairline fractures. This allows the ingress of water and other aviation fluids leading to micro-discharges of current through the cracks to surrounding wires or the aircraft structure ('ticking' faults).

The wire and its connectors oxidize. The widespread electrolysis that occur in aircraft leads to poor contacts and the generation of local hot spots in the wire. This has the potential to melt the surrounding insulation material.

Having a wire insulation crumble in your hand or seeing a connector break at the crimp is a good indication of advanced aging. If you're



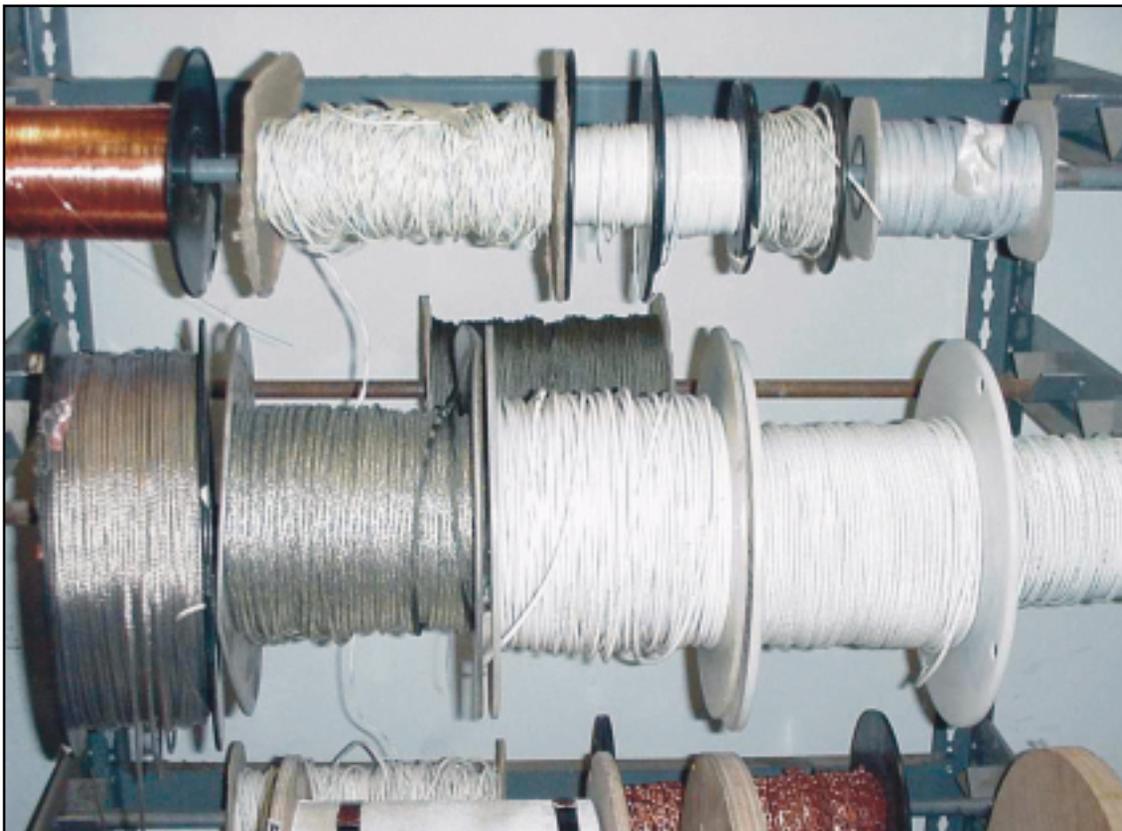


Hazardous Properties of Defective Wire Insulation

Recent detailed wiring inspections of transport aircraft with 20 or more years of service revealed one to five breaches on the insulation for every 1,000 feet of wire. A breach in the insulation can be a pathway for arcing. Any contaminant (water, oil, urine, metal shavings) entering the breach can complete the circuit and cause the arc.

troubleshooting and having difficulty locating a transient fault, look hard at the wiring and its insulation. Recent AF Safety Center mishap data indicates 43% of 271 mishaps attributed to electronics is associated with the wiring. (about 3% of total mishaps over a ten year period)

Momentary short-circuit arcs between a defective Kapton polyimide insulated wire and another conductor may thermally char (pyrolyze) the insulating material. The charred polyimide, being conductive, is capable of sustaining the short-circuit arc. The sustained arc may propagate along the wire through continuous pyrolyzation of the



polyimide insulation (arc-tracking). If the arcing wire is part of a multiple wire bundle, the polyimide insulation of other wires within the bundle may become thermally charred and start to arc-track (flash over). Therefore, arc tracking may lead to complete failure of an entire wire bundle or harness.

Look for evidence of arc-tracking. The first indication can be fine, dark tracks leading from cracks and pinholes to a nearby ground. At connectors and cannon plugs, a buildup of dust-like material should be suspect. Once flash over has occurred, all wires in the vicinity have an increased probability of pyrolization. Inspect the insulation for evidence of aging and abrasion.



EET Inspection Techniques

Wire bundles are difficult to inspect because they often run through inaccessible areas. Moving or dismantling the bundle can damage wire if its insulation is brittle or close to cracking, further complicating traditional inspection techniques. Remember, during original installation, these aircraft weren't expected to still be flying. The manufacturer used a "fit and forget" attitude concerning the wire bundles.

Use care when moving new wires through existing bundles. If you must move or open a bundle, remove as many clamps as necessary to prevent making sharp deflections in how the wires are arranged. Care should be taken to ensure all debris is cleaned up after work is complete. Clean the wiring during maintenance when hidden areas are exposed. Find and shield wiring that is exposed and easily damaged. Mechanical movement can break internal wires without any external signs. Look for evidence of chafing, especially between dissimilar insulation types. Use proper torque on terminals and appropriate crimping techniques. Remove all corrosion and treat to prevent reoccurrence.

Future Trends

Simple inspections for faults in wiring using multimeters and test lamps do little to confirm insulation breakdown. The low voltage these tools induce into the wire cannot jump across a pyrolized path. Knowing that insulation will continue to degrade, new techniques are needed to quickly

identify it as it occurs.

Short-term solutions will include new work unit code items in our -06 manual. Individual systems will have prescribed WUC's used to track failures related to wiring. This may seem unproductive, but it will make it much easier to track recurring discrepancies. Knowing that this system had previous repairs on its wiring can prevent re-troubleshooting. This information will also be helpful for data analysis to identify the total extent of wire breakdown.

New systems are being developed and tested that look down a suspect wire harness for insulation failures along with defects of other components in the wire. Standing Wave Reflectometry analyzers developed by NASA for the space shuttle program are being tested for effectiveness on Navy F-18 aircraft. Automatic Wiring Analyzers that track transient faults simultaneously in entire wiring harnesses will in the future be incorporated into fault isolation systems either installed on the aircraft or attached up during ground check-out. Expect new aircraft to have wiring harnesses with built-in chafe detectors. This may be as simple as an outer sheath with an imbedded wire that grounds-out before the harness begins to wear.

Don't expect these changes to appear overnight; don't expect the Avionics Modernization Program to replace all defective wiring. Use good troubleshooting and applied patience to find minor defects before they progress into major catastrophes. Your experience is our best defense to protect everyone involved in the dangerous profession of aviation.



Bird Aircraft Strike Hazard Program

by
Ebby Rexwinkle



Michael Cook began working with raptors, also known as birds of prey, in the early 70s on airfields in England. These trained raptors were used to rid airfields of nuisance birds which posed potential hazards for aircraft either landing or taking off. The effectiveness of the birds of prey on the English air bases was remarkable and now Cook has introduced the program to many bases across the United States. The success of the program has been truly amazing, especially when just a few of the following items are taken into consideration:

- *Technology wasn't responsible for the innovative program.*
- *Teams of scientists and engineers were not involved.*
- *Countless trials and tests were not performed.*
- *Millions of dollars were not spent to discover the program.*

Cook, assistant director of the World Bird Sanctuary, also director of their bird program, is extremely optimistic about his program and touts an 80% reduction in the amount of time U.S. air bases spend in moderate and severe bird conditions. This statistic is rather significant since according to Cook there are only three levels or conditions which air bases use to determine the risk of birds potentially contributing to runway incursions.

- **Low** - carry on normal activity
- **Moderate** - full stop landings and takeoffs only allowed when departure and arrival routes avoid identified bird activity.
- **Severe** - aircraft are not allowed to takeoff or land.

Difficult as it may be, just one blackbird or grackle flying into the path of an aircraft on a runway can result in severe damage to a multi-million dollar aircraft. Runways have become an attractive location for all species of birds including geese. The extremity of the bird strike problem was fully realized in 1995 in Elmendorf, Alaska. According to reports, an AWAC plane was attempting to depart from the Alaskan airfield when it collided with a flock of geese. Damage received during the collision resulted in the plane crashing, and the death of all 24 crew members on board.

The problem doesn't just involve U.S. air bases; commercial airports are also dealing with

the problem of birds and the potential hazard to safe flight. In a report published by the WBS, in August 2000, a Boeing 747 commercial flight departing from Los Angeles, California lost an engine and was forced to make an emergency landing following a collision with a seagull.

According to a report published by the World Bird Sanctuary (WBS), the FAA issued a bulletin in the spring of 2001, stating 4,798 collisions had been reported in 1999. These statistics were a dramatic increase over the 1,720 collisions which were reported in 1990.

According to the WBS, the U.S. Air Force averages about 2,500 strikes each year at an estimated cost of over \$20,000,000 annually.

For the Air Force though, the Elmendorf incident in 1995 catapulted the severity of the bird strike problem to the forefront. Cook stated the inception of the use of birds of prey in the Bird Aircraft Strike Hazard program (BASH) began in the fall of 1996 at Scott Air Force Base in Illinois and continued for two years. Cook related that the WBS was the first organization to incorporate birds of prey as part of an integrated BASH program for the Air Force. The logistics behind the program are simple: Allow innate instincts which cause wildlife to flee from predation to instill such an element of fear into the problem birds that they eventually flock to a more suitable and safe location.

Cook says several species of birds are considered to be nuisance birds, but the majority of problems arise from European Starlings, blackbirds, crows and seagulls. All of these birds instinctively fly when the birds of prey are released. Pat McDonald, veteran falconer of 14 years and wildlife specialist currently staffed at McGuire Air Force Base, says the flight pattern and silhouette of the falcon is responsible for the perceived predation threat to other birds. Cook said an adult peregrine falcon can dive at over 200 miles an hour leaving little, if any, time for birds to consider if there is a credible threat. Although falcons are indigenous to many areas of the United States, it is rare to actually catch a glimpse of the streamlined birds in flight.

BASH falconers are highly trained individuals, not only in the handling of birds of prey, but in



McDonald releasing a falcon

airfield safety as well. Incorporating the use of birds of prey to facilitate the BASH program requires a handler to develop a symbiotic relationship with his falcon. McDonald says the falcons rarely, if ever, are successful in their predation attempts.

Flocks situated on runways immediately flee when the falcons are released.

Falconers train their birds to stay within a maximum distance of 200 yards, at a height of 200-300 feet, usually just over the head of the trainer



as he walks. This way the trainer maintains control of the bird and the falcon has a diminished risk of injury. Handlers use a lure which is essentially a padded leather pouch to recall their birds. As the handler swings the lure the falcon stoops or dives to make his kill. According to the WBS, this mimics the action taken by the falcon when chasing a live bird, and reinforces the instinctual fear of other birds to flee from predation. Cook says falconers exercise their birds daily with as many as 20 to 30 stoops at a lure before allowing the falcon to actually catch the lure and receive a food reward. Because falcons are rewarded with food when they return to their handlers, it is rare that falcons are allowed to ever be successful in their predation attempts.

Currently two air bases, Travis and McGuire, use falconers from the WBS for the BASH program on a consistent basis throughout the year. McGuire is staffed on a year round basis and Travis utilizes the service for about seven months of the year. According to Cook, the WBS has a staff of three handlers who manage seven to eight falcons at each base. BASH handlers operate from dawn to dusk, seven days a week using falcon species such as peregrines, barbaries, sakers, prairie, lanners and even a peregrine/gyr hybrid.

Particular care is given to the health and safety of these stealth birds. Each day begins before

sunrise with handlers weighing and incorporating special preparations for the birds which have been selected to fly during the early part of the day. Handlers then load their birds into trucks and drive to the airfield to begin patrols. Airfield safety is a prime consideration for all BASH staff. Highly trained, all handlers must pass a Flight Line Driving Test and fully understand radio procedures before being allowed to drive on the airfield. They maintain continuous radio contact with personnel in the control tower, identifying their location on the airfield, obtaining permission to enter onto the runways when necessary, and even obtaining permission to release their falcons when nuisance birds need to be evacuated.

Cook says there are instances when the use of a falcon is simply not feasible and the WBS staff has been trained to use other methods such as pyrotechnics to scare off mammalian species such as deer and coyotes. Habitat management is also a consideration for BASH which includes grass height or water drainage, all factors to be considered when making an area less attractive to nuisance birds.

For more information contact The World Bird Sanctuary located in St. Louis, Missouri at commercial (636) 938-6193 or email: Worldbird1@aol.com.



C.R. TERROR



The Forgetful Flyboy Freezes Up

reprinted from the MAC Flyer, March 1985

"What a day, Boss," Max Torque proclaimed as he loaded his B-4 bag aboard the waiting crew bus.

"Yeah Boss, I'm just glad tomorrow is a free day."

"Absolutely true, m'lads. At least we finally made it to Paradise AFB. Just think, people eat baloney sandwiches for years saving money to visit this place," C. R. remarked trying unsuccessfully to breathe the life back into his crew.

"What's the local time here anyway?" asked Max.

"It's exactly 00:16 and 38 seconds, local time," piped in Capt Pinpoint Ficks, the squadron stan-eval navigator. Ficks was flying with C.R., against his better judgment, in order to log his one remaining night "cel" requirement.

"Ah, here's the command post. I'll be right back, boys.

Sammy, one copy of orders, if you please," C.R. requested, his pudgy hand outstretched.

As the Cherub of C3 approached the barred command post window, he was greeted by a major who looked as though he couldn't have been more than 13 years old.

"Good morning, Major Terror. I'm Maj. Sterling. How was your flight down?"

"Quite long, but well worth the effort, young man," answered the Rotund One as he shifted his position to avoid light reflections off the young major's silver-plated wings. "We're looking forward to a little sight-seeing tomorrow."

"Well sir, I'm afraid I've got some bad news for you. Colonel

Fang called and requested we give you minimum crew rest and send you back to Homeplate AFB. You're legal at 1300 local. Sorry."

"Egads! Did he give any reason?"

"No, sir. He only said that he needed the aircraft back sooner than expected. There's a phone on the wall behind you. If you'd like, you can give him a call yourself."

"No, no, that won't be necessary," sighed the Titan of Tourism.

"Oh, one other thing. Colonel Fang mentioned something about 'launch control officer' for a month if you don't get the aircraft back tomorrow."

"Gadzooks!"

C.R. looked like a deflated tire as he boarded the waiting crew bus. "Well boys, looks as though we'll have to do our sightseeing earlier than expected. We're legal at 1300 local for the flight back to Homeplate."

"What happened, Boss?" Sammy inquired, looking somewhat disappointed.

"The wing needs the aircraft back earlier than expected," C.R. started to explain, "and another aircraft was able to pick up our scheduled load. So we're free to RTB."

The now-depressed crew didn't utter a sound as the crew bus pulled into the billeting parking lot.

"Here we are m'lads. Let's hit the ground running," C.R. announced, still trying to keep up the crew's spirits.

In short order the crew was "log-sawing" in preparation for the day's activities.

"Sammy, wake up," C.R. spoke softly as he shook the Reposed Right-seater.

"Huh, wha', gear up, what is it?"

"Come on, we're going sightseeing," C.R. continued. In a flash the pair was dressed and out the door.

"What's the plan, Boss" Sammy asked, not having his copy of the sightseeing schedule.

"Just hold on Sammy. I've got a plan to see all the sights in short order," C.R. answered sporting a broad grin. "We're heading for the Paradise Regional Airport."

In no time, the pair found themselves at the portal of "Nick's Rent-a-Plane."

"Good morning, my good man. I'd like to rent a Sniper 140, por favor," the Able Aeronaut spoke in his best baritone voice.

"Have you flown with us before, sir?" asked the lethargic young lineman.

"Yes, of course I have. Besides, I am Major C.R. Terror, USAF heavy airplane pilot."

"Well sir, I need to see your log book and all of your civilian flying documents," the lineman responded, skeptical of C.R.'s qualifications.

"Now see here, young man. I was flying aircraft when you were still eating strained peas. Nick's going to hear about this and you'll regret the day you ever heard the name C.R. Terror."

"Yes sir, I can relate to that already. Go ahead and take 4851WD, but we need it back in an hour. And be careful," the young lineman pleaded, realizing the risk he was taking.

"No problem, young man, the Pudgy Pilot answered as he whisked himself out the door and scanned the tarmac for his chariot.

"There it is over there, Boss," Sammy called, pointing toward the red and white craft.

"Okay, Sammy, help me untie her and we'll be on our way."

"Boss, are you sure you know how to fly this thing?" Sammy spoke, as he felt a twinge in his stomach.

"Sammy," C.R. stated reassuringly, "I've spent many carefree hours and lost many lunches in one of these. Clear prop..." C.R. called turning the Sniper's key to the start position.

The Rhinestone Flyboy looked right at home as he rotated the single engine craft while adding additional right rudder to maintain the runway heading. By level-off, Sammy began to relax and enjoy the scenery.

"Look at that view, Boss! Beautiful!" Sammy exclaimed.

Bleeeeeeeep!

"What's that sound, Boss?" Sammy asked, starting to look nervous again.

"Oops...that's the stall warning, buck-o. Nothing to worry about. Just got to get used to the Sniper here," C.R. responded as he lowered the aircraft's nose slightly and added power.

"Boss, are we losing rpm's?"

"Negatory, Sammy," recited the Rusty Major while increasing the power slightly. "I'm just a little rough on throttle technique. Egads, it's getting late. We'd better head back to Nick's."

As the Perpetrator of Prop-wash approached the airport traffic area, he announced to the world via the VHF radio, "Paradise Tower, this is Sniper 4851WD six miles north requesting a straight-in runway 18."

"Sniper 4851WD you're cleared straight-in runway 18. Report three mile final."

"WD," C.R. answered trying to sound savvy.

"Gear down, Sammy," C.R. called looking like a Roman Emperor giving a "thumbs down" in the coliseum.

"It's welded down, Boss," Sammy responded, rolling his eyes upward.

"Oh, yes, just yankin' your chain, Sammy m'boy. Let's see...gear, gas, mixture, fuel pump and c...? Gear's down, gas is on both, mixture's rich, and c.c...c.... What's the bloody 'C' stand for? Oops getting a little steep. Power coming back.

"Paradise tower, WD, three mile final," C.R. called fumbling with the Sniper's hand-held microphone.

"4851WD you're cleared land runway 18. Winds are calm."

"WD"

Spudder...sput...sput...

"Boss, what's happening?" Sammy's voice was reminiscent of a bosun's whistle.

"No power, m'lad. We're dead in the water, but I think I can make the runway. Uh, let's see, best glide speed is...? Uh, gas is 'on.' Uh, battery switch is 'on.' Magnetos...uh, yeah." C.R. once again found himself in the cone of confusion.

"We're not going to make the runway, Boss!" Sammy called, the pitch of his voice now reminiscent of a dog whistle. "Flare, boss!"

CA-THUD! The sound of the Sniper hitting the ground was unforgettable. The aircraft came to rest on its belly about 100 yards short of the runway threshold with the landing gear collapsed and the propeller bent aft.

"We're down, Sammy. Let's get out of here," C.R. called, having enjoyed all the fun he could stand. The Field Grade Fumbler was a blur as he unstrapped and exited the

mortally-wounded Sniper.

"Hey Boss, here comes one of Nick's trucks," Sammy proclaimed having regained his voice.

"You guys alright?" Asked Nick's brother, J.D., looking down at the crippled Sniper.

"Absolutely, my good man. We're fine despite the fact this engine is apparently ill-maintained," the Gremlin of Grass landings barked, now becoming angry.

J.D. looked into the cockpit and quickly ascertained the problem.

"Looks like someone forgot to use carburetor heat during the approach. Can't tell yet, but you might have had some carburetor ice. Which one of you guys is the pilot-in-command?" he asked calmly.

"I am, er, was," C.R. answered, his face and pate taking on a red tint as he realized what the "C" stood for on the approach checklist.

"Well, the inspector from the local General Aviation District Office wants to talk to you. He also wants to see your pilot's license, your class III medical certificate, your logbook and your restricted radiotelephone operator's permit. Hop in and I'll give you a ride up the hill," replied J.D.

"Egads, Sammy, look at my watch. It's mission show time and we'll never take off on time."

"Boss, who ever would've figured that something so seemingly innocent as this could've had such an impact on the mission?" Sammy asked, looking toward his mentor.

"Sam, if Colonel Fang ever lets me fly again, I'll never even leave my Q-room while in crewrest and if the FAA let's me keep my license, the first thing I'll do is get some dual instruction.

"Sure, Boss. Sure."



Flying Hour Milestones

10,000 Hours

773 AS Vienna, OH
Lt Col Steve Kraysets

8,500 Hours

OKANG HQ, OK
Brig Gen Edward N. Stevens (Retired)

137 AW, Will Rogers ANGB, OK
Lt Col Roy W. Speakes II
SMSgt David A. Furr

185 AS, Will Rogers ANGB, OK
SMSgt Randy L. Cameron
SMSgt Gary N. Channel

7,500 Hours

OKANG HQ, OK
Brig Gen Thomas L. Bene', Jr.

136 AW Carswell Field Ft. Worth, TX
CMSgt Jerry A. Beasley

185 AS, Will Rogers ANGB, OK
SMSgt Johnny W. Waller

908 AW, Maxwell AFB AL
MSgt D. Greer

6,500 Hours

130 AW Charleston, WV
CMSgt Arnold B. Meadows Jr.

142 AS New Castle, DE
MSgt Paul M. Pickering

143 AW/SE North Kingstown, RI
Lt Col Kevin B. Minnegerode
SMSgt Eric J. Hanson

185 AS, Will Rogers ANGB, OK
Lt Col Scott J. Murphy
Lt Col Robert S. Shafer
CMSgt Charles R. Bentley

908 AW Maxwell AFB AL
Col Norman S. Bell
Lt Col Harold R. Dobbs
CMSgt John R. Melton
MSgt David S. Manning

5,000 Hours

1 AS Andrews AFB, MD
Maj Vinny Neville

136 AW Carswell Field Ft. Worth, TX
Maj John W. Buckler

137 AW, Will Rogers ANGB, OK
Col David M. Cope (Retired)
Col Michael L. Leeper
Col James M. McCormack

143 AW/SE North Kingstown, RI
MSgt David S. Prefontaine

179 AW, Mansfield, OH
Lt Col Jeffrey Mcquillen

185 AS, Will Rogers ANGB, OK
Maj Peter J. Browning
CMSgt Ronald D. Dorough
SMSgt Lindel K. Brinegar
MSgt David E. Mays

757 AS Vienna, OH
MSgt Brian Watson

773 AS Vienna, OH
Lt Col Rich Galante
Maj Ed Jennings
Maj Don Milliken
TSgt Bill Archambault

908 AW Maxwell AFB AL
Col Thomas R. Brown
Lt Col Robert F. Britton
Lt Col Richard W. Gilchrist
Lt Col Harold W. Griffith
Lt Col Gregory H. Kuh

Lt Col Jan Sztuka
Lt Col Harold R. Trammell
CMSgt M. Harper
MSgt Kenneth M. Eddy
MSgt J. Roland
TSgt P. Timms

3,500 Hours

1 AS Andrews AFB, MD

Lt Col Dan Monahan
TSgt Debbie Dudak

1 HS Andrews AFB, MD

Lt Col Curtis K. Kong

6 AMW, MacDill AFB, FL

Brig Gen William Hodges

91 ARS, MacDill AFB, FL

Maj Michael Babyak
SSgt Lance Quenga

136 AW Carswell Field Ft. Worth, TX

Lt Col John J. Conoley
Lt Col David S. Purtle
Maj Ira C. Berry
Maj David R. Boone
Maj Theodore L. Brown Jr.
Maj Matthew A. Clay
Maj Christopher D. Doan
Maj Brian L. Hoffman
Maj Bryan D. Langeberg
Maj Paul R. Marvin
Maj Randall D. Turner
Capt Robert C. Belwood
Capt Steven W. Nelson
MSgt Gregory M. Ellerman
TSgt Gene P. Garcia
TSgt Ronald M. Hughes

137 AW, Will Rogers ANGB, OK

Lt Col Dann D. Pettit
Lt Col Stephen M. Pulley
Lt Col Lloyd G. Tidwell
Maj Kenneth B. Carmichael
Maj Kelly W. Cobble
Maj Mark D. Hole
Maj Thomas W. Ryan

142 AS New Castle, DE

MSgt James D Scott

143 AW/SE North Kingstown, RI

Maj Daniel C. Geary
Capt Joseph E. Francoeur

179 AW, Mansfield, OH

Maj Mark Bean
Capt Darren Hamilton

185 AS, Will Rogers ANGB, OK

Lt Col William E. Standefer
Maj Glen M. Baker
Maj Robert L. Bonner
Maj William J. Kilmer
Maj John E. Leathers
Maj Eric D. Meyn
Maj Cheryl R. Olsowy
Maj Doris Schwartz
CMSgt John H. Carlile
SMSgt Larry W. Clymer
MSgt William L. McCaine II
MSgt John P. McCormack
MSgt Kenneth R. Working
TSgt Margaret Gonzales
TSgt James R. Lovett
TSgt Daniel K. Smith
TSgt Timothy T. Watts

310 A, MacDill AFB, FL

Lt Col Kevin Oatley
Lt Col Carey Thompson
Maj Michael Hamill
Maj Keith Kreeger
TSgt Mark Holcomb
TSgt William Steinbraker

757 AS, Vienna, OH

Lt Col Mark Glibbery
Maj Rich Elder
Maj Greg Finkbiner
Maj Mike Seres
Maj Les Snyder
Maj Pete Straight
SMSgt Jim Stevens
TSgt Tom Marhulik

773 AS, Vienna, OH

Maj Mike Fortunato
Maj Mike Hawkins
Capt Steve Enzweiler
Capt Jim O'Donnell
MSgt Randy Pritschau

908 AW, Maxwell AFB AL

Lt Col Michael G. Berg
Lt Col Jack B. Lynn
Lt Col Michael Underkofler
Maj Kenneth J. Bartczak

Milestones

Maj Blaine H. Bateman
Maj Bernard K. Bruhn
Maj Walter H. Chase
Maj Allan K. Click
Maj Michael G. Culjak
Maj Raymond S. Davis III
Maj Gary R. Gomez
Maj David E. Heinlen
Maj Paul C. Kelly
Maj Rici E. Lucas
Maj Michael W. Manion
Maj Michael D. Montgomery
Maj Donald W. Richey
Maj Jeffrey S. Spencer
Capt Paul A. Schultz
SMSgt Donald C. Campbell
MSgt Lee M. Mercer
MSgt J. Rickels
MSgt James B. Solomon
MSgt D. Tarrance

2,500 Hours

1 AS, Andrews AFB, MD
TSgt Veronica Witcherd

1 HS, Andrews AFB, MD
1Lt Thomas V. Higgins II

91 ARS, MacDill AFB, FL
Capt Steve Jones
Capt Marty Miller

130 AW Charleston, WV
Maj Christopher J. Walters
Capt Harry M. Freeman
MSgt Charles C. Butler

136 AW Carswell Field Ft. Worth, TX
Maj David W. Compton
Maj Harry E. Downing Jr.
Maj Joseph B. Jarboe
Maj Peter J. Lincoln
Maj David A. Maher
Maj Christopher G. Mcgraw
Maj Matthew C. Morgan
Maj Scott P. Reid
Maj Scott A. Morris
Maj Donald G. Scott
Maj John P. Smith
Maj Jerald K. Williams
Maj Ronald L. Worley Jr.
Capt Michael L. Earl
SMSgt David A. Armstrong
SMSgt John P. Schauer

MSgt Bruce R. Anderson
MSgt Timothy L. Hargrove
MSgt Eric J. Kondracki
MSgt Steven J. Perry
TSgt Steven B. Joiner
TSgt Jim B. Moser
SSgt Anthony M. Cohns

137 AES, Will Rogers ANGB, OK
MSgt Edwardo Almanza

137 AW, Will Rogers ANGB, OK
Maj Jon L. Scott
Maj Dennis D. Utsler

142 AS, New Castle, DE
Maj Michael W Eaton

143 AW/SE North Kingstown, RI
TSgt Jeffrey L. Burch

179 AW, Mansfield, OH
Maj Robert Dunlap
Maj Mark Koenig
Maj Peter Tesner
Capt Jeffrey Siwik

185 AS, Will Rogers ANGB, OK
Lt Col Gregory L. Ferguson
Maj Lloyd D. Coker
Maj Curtis R. Dekeyrel
Maj Jeffrey L. Jones
Maj Daniel L. Pogue
Maj Devin R. Wooden
Capt Thomas E. Haley III
Capt Robert E. Holmes
Capt James T. Jackson
Capt Michael S. McCormack
Capt Andrew P. Sroczynski
Capt Brett A. Vanmeter
SMSgt Edward R. Admire (Deceased)
MSgt Brent Crozier
TSgt Brian A. Brindle
SSgt Keith E. Werner

310 A, MacDill AFB, FL
Maj Jeffrey Metz
TSgt William Lopez

757 AS, Vienna, OH
Capt John Kochansky
TSgt Brad Franken

773 AS, Vienna, OH
MSgt Chris Feliciano

908 AW, Maxwell AFB, AL

Lt Col George A. Spencer
Maj William S. Adkins
Maj Stephen D. Catchings
Maj Stephen A. Coppi
Maj Ricky L. Crews
Maj Sam A. Dayhood
Maj William B. Grubbs
Maj Mark E. Harrison
Maj Kenneth C. Holston
Maj David E. Hughes
Maj David N. Hyre
Maj Stanley Jesionowski
Maj Mike F. Kazzie
Maj Bertram K. Medlock
Maj Danny J. Quitno
Maj Chester A. Treloar
Capt Joseph M. Accardo
Capt Jeffrey P. Harrold
Capt William S. Hughes
Capt Brian E. Rausch
MSgt C. Brown
MSgt Benjamin P. Kemp

1,500 hours

1 AS, Andrews AFB, MD

MSgt Vernon Sampson
TSgt James Pickel
SSgt Shawn Chada

91 ARS, MacDill AFB, FL

Maj Daniel Gillespie
SSgt Matt Dellalucca
SSgt Howard Gibson

99 AS, Andrews AFB, MD

SSgt Jeffery A. Depper

130 AW, Charleston, WV

Capt Jack J. Richmond

136 AW Carswell Field Ft. Worth, TX

Maj Edward A. Schindler
Maj Roland L. Stegall
Capt Kandi A. Chapman
Capt Noah J. Pressler
Capt James J. Yu
MSgt Crystal L. Campbell
TSgt Dustin E. Davis
TSgt Benjamin Galindo Jr.
TSgt Cadar B. Helms
TSgt John A. Shirey

137 AES, Will Rogers ANGB, OK

MSgt George C. Hoebing

137 AW, Will Rogers ANGB, OK

Lt Col Mark A. Brown
Maj Mark A. Muckey
Maj Tracy D. Spencer
MSgt John M. Wesley

142 AS, New Castle, DE

1Lt Cheryl L. Pauley

143 AW/SE, North Kingstown, RI

Capt Christopher T. Langlois
MSgt James M. Traficante

185 AS, Will Rogers ANGB, OK

Maj Thomas L. Cutter
Maj Calvin R. Palmer
Capt Todd M. Frost
Capt James C. Sanders
Capt Joseph T. Turner
Capt Bradley D. White
MSgt William D. Blanton
MSgt Donald H. Carter
MSgt Eric O. Salgado
TSgt Scott R. Irwin
TSgt Carolyn S. Thompson

310 A, MacDill AFB, FL

Capt Greg Coleman

757 AS, Vienna, OH

Maj John Schulte
Capt Craig Davis
MSgt Scott Young

773 AS, Vienna, OH

Capt James Torok
MSgt Marianne Badger
TSgt Donn Weilacher
SSgt Charles Walker

908 AW, Maxwell AFB, AL

Maj Jerome S. Hayes
Maj Denver H. Nolin
Maj Mark E. Sharp
Capt Ronald A. Baumgardner
Capt Daniel J. Hernandez
Capt Craig A. Maiorana
Capt Jeremy F. Mickelson
MSgt J. Hunter
MSgt R. Perry
MSgt Randall L. Porter
TSgt Kenneth Bailey

QuickStop

Aah! We Only Need One!

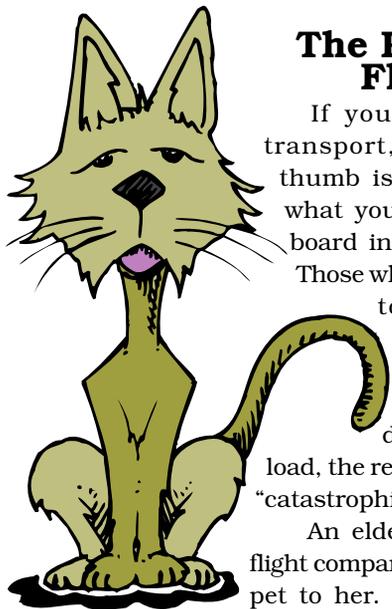
A pilot in Portland, OR had his name placed among the ranks of those who have committed stupid pilot tricks recently after he decided to launch his plane down the runway even though the right engine of his jet would not start. Despite the ranting objections of an unrated private co-pilot, the pilot elected to ignore obvious mechanical failure only to have the aircraft crash without ever leaving the ground. Luckily... all occupants on board escaped injury.



Did I Do That?

A Continental Airlines DC-9 landed wheels-up recently instead of the time honored technique: wheels-down. Reports allege the captain failed to turn on the hydraulics before he lowered the gear, so hydraulic pressure was not available to lower the landing gear or even deploy the flaps. An alert flightcrew eventually realized flaps were not extended and as the airliner continued approach the crew was consumed with the flap problem. However they forgot about the wheel problem. Where did we put that landing checklist?

oppers



The Purrfect Flight

If you're a pilot of a transport, a good rule of thumb is to always know what you are carrying on board in your cargo hold. Those who don't are bound to suffer the consequences. In South Africa, when one pilot didn't confirm his load, the results were literally "catastrophic."

An elderly lady asked a flight company to transport her pet to her. Animals weren't usually accepted for transportation, but the pilot agreed to transport the pet to satisfy his customer. The pet was placed in a transportation box to facilitate safe transport.

Upon arrival at its destination, the pet was unloaded at domestic arrivals, where the elderly lady was already waiting to retrieve her beloved companion.

An employee at domestic arrivals designated to handle pet arrivals called to inform the pilot the elderly lady's pet was rather dead. The pilot, horrified the cat was dead, began searching for solutions in a hurry. How could this have

happened? All of the precautions had been taken.

The pilot, in a very innovative move, told the lady there had been some problems with the aircraft causing the flight to be delayed. The news didn't seem to bother her much, indicating she was really in no rush and would just wait. The pilot, however, finally talked her into going home and told her they would personally deliver her cat.

In a panic, the pilot and his friend jump in a vehicle and rush to the city animal shelter to find another Siamese cat which would pass for the dead one now lying in the back of the car. They quickly picked a cat they felt matched the deceased kitty's attributes, holding them next to each other for comparison. Both were certain they had matched the color and size perfectly.

They then loaded the cat in the crate and headed for the elderly lady's home. She was delighted to see the men arrive and met them at the door, commenting on their efficient and personalized service. Suddenly the cat meowed and the elderly lady screamed in response. The pilot grabbed the cat out of the box only to have the elderly lady scream again, "My God, it's alive!"

Unbeknownst to the pilot the poor cat had died the night before and the lady hired the pilot to transport her beloved pet to another town for burial.



Information provided by AV Web.

POPE'S PUNS

YEAH, WE DIDN'T HAVE ENOUGH **CINDER**
BLOCKS TO FINISH THE JOB, SO WE
USED THE **CRACKERS** FROM THE **MRES**!

