TAC ATTACK

SEPTEMBER 1979



HARLISON

TAC ATTACK (USPS 423-530) SEPTEMBER 1979



READINESS IS OUR PROFESSION



TACTICAL AIR COMMAND

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Angle of Attack

CHANGING SEASONS

It's already close to Labor Day--the unofficial end to the summer season. I'm sure some of us feel as though the 4th of July was only last week. Although it will remain warm in parts of the country for another month or so, the return to school, football, and other aspects of the fall season will soon occupy our thoughts. Even though the transition is usually quite mild and predictable, it can catch the unprepared rather quickly.

For instance, the bird migration of fall creates many localized hazards for our aircrews throughout the country. A pilot from a west coast base could have some problems if he assumes that the bird patterns are the same during a flight out east. Seasonal weather patterns will also serve to compound our problems. Low ceilings, rain, and wet runways will soon be the norm in many areas, setting up a slippery ride for the unprepared aviator. On the ground, the rain and wind make driving more hazardous. Reduced visibility can work against both drivers and pedestrians, so keep your guard up. The high cost of gasoline may even influence motorcyclists to continue riding their vehicles long after they should have been stored until the spring.

The fall season should be a welcome change from the hectic days of summer vacation and recreation. It only takes a few minutes on our part to make certain that it will be.

Do you have a few minutes? I'll bet that you do.

RICHARD K. ELY, Colonel, USAF Chief of Safety

SKIDDING AROUND



he intrepid fighter crew was returning to home station from a gunnery mission. Although a thunderstorm had passed over the field about 20 minutes previously, the field was now clear. After touchdown 500 feet down the runway at 155 knots, the pilot pulled the chute handle. The familiar tug of the chute blossoming wasn't there. "No sweat," thought the pilot, "just have to start braking a bit sooner."

The brakes were applied--without effect--at least it seemed that way. Passing the four thousand foot remaining marker, the airspeed was still above the century mark and showed little sign of decreasing. Pushing down harder on the pedals had no noticeable effect; and the frantic pilot deselected antiskid, activated the emergency brakes, and attempting to brake gently, blew the left main tire as the aircraft passed over the departure end BAK-12. Luckily, the BAK-9/MA-1A caught the aircraft in the overrun before it could slide off the left side of the overrun.

After the crew shut down the aircraft and deplaned, they took a good look around them. The marks from the tires could still be seen clearly through the thin layer of water on the runway. The pilot turned to his backseater and said, "It all happened so fast, I didn't even think about hydroplaning! Guess I should have put the hook down sooner..."

The Air Force has already experienced a number of hydroplaning incidents this year. With the fall rainy season only weeks away that number is certain to increase. I won't go into all the formulas and detailed descriptions of the mechanics of each type of hydroplaning cause all the analysis, formulas, rules of thumb, and other paraphernalia concerning hydroplaning won't do you a bit of good if you don't understand a few things: 1. There hasn't been a wheel or tire invented that won't hydroplane. Ergo, every plane that flies will hydroplane.

2. There is another requirement besides wheels -- a liquid upon which to hydroplane; water, oil, mixtures thereof, or even melted rubber from your own tires.

3. The water can be a thin molecular film or a puddle several inches deep.

4. If the runway is wet (even damp) you can, and probably will, hydroplane. The hydroplaning may be so slight as to be unnoticeable or it may be more like the incident above.

Hydroplaning occurs in three forms: dynamic, viscous, and reverted rubber.

• Dynamic: The tires are actually riding on a substantial layer of water.

• Viscous: There is a thin molecular layer of water between the tire and runway surface.

• Reverted Rubber: The tires are actually sliding along on their own melted rubber. This type results from problems with dynamic and viscous hydroplaning.

All forms of hydroplaning are dependent upon speed, tire inflation and condition, runway condition, the amount of water on the runway, and probably the phase of the moon. Dynamic hydroplaning is evident at higher speeds while viscous hydroplaning is predominant at lower airspeeds. However, there is no clearly defined separation between dynamic and viscous hydroplaning nor can the pilot tell the difference in most cases. Landing speeds of all our fighter aircraft are well above the minimum onset speeds for hydroplaning; and once hydroplaning starts, it can (and probably will) continue well below minimum onset speed. Values for your particular aircraft ought to be available from your Stan/Eval section.





SKIDDING AROUND

So, what does all this mean to you? Good question. The real problem with hydroplaning is a lack of friction between the tires and the ground. Your control of the aircraft--stopping, turning, etc--is dependent upon that friction. No friction = no control.

Practically speaking, there will always be some friction present; but the stopping ability on a runway will vary greatly because of differences in the runway surface, rubber deposits, etc. When there is standing water on the runway or the runway is wet from recent rains, the coefficient of friction is drastically reduced and so is your ability to control the aircraft.

A lot of us have landed on wet runways, and the whole thing was no sweat. So why do we keep having problems? Well, as long as you're prepared for something you'll be able to handle a problem. If you know a runway is wet and consciously or unconsciously make some adjustments, everything should go OK. If you press on



fat, dumb, and happy until touchdown, you could find yourself in the same situation our hypothetical aviator found himself in. Here are some things to think about when it gets wet outside:

1. Know what the runway condition is before you land. Rather obvious, but overlooked enough to still be the number one consideration.

2. Prepare yourself. If it's wet, go over your wet runway landing procedures. Consider the aircraft's condition, tires, antiskid system, etc. Mentally prepare for losing the drag chute, going around if the approach is bad.

3. Winds. Crosswinds can be your worst enemy. If the wind is excessive, you might want to use a shorter runway if it's better aligned with the wind direction. If it's wet with strong crosswinds, your best option may be to divert or to take an approach end cable. Follow your aircraft's procedures for using the drag chute in a crosswind.

4. Use everything you have for directional control. Use brakes, nose gear steering, flight controls, differential thrust. You still may end up in the dirt, but not without a fight.

5. There is no shame in taking the cable. Tailhooks are not ballast, they're used for stopping airplanes when other things won't work. If you don't need it, you can always raise it back up--that's easier than explaining why you didn't lower it!

6. Use your brakes judiciously and make sure you know your aircraft's braking characteristics. Above 100 knots, deceleration on a wet runway is unnoticeable. If you don't have any indications of stopping, such as antiskid cycling, get off the brakes--then reapply them--repeat as often as required. If the wheels have locked, a layer of steam will build up under the tires, melting the rubber, and you'll have reverted rubber hydroplaning. It doesn't take long to blow a tire that way, and your problems are then a lot worse.

Hydroplaning will always be a problem--to F-4s, F-15s, A-10s, and even B-52s. Only your skill and knowledge and how you handle both will keep you from getting into trouble on a wet runway. It's time to stop skidding around.

THE CATCHERS

Here are some tips on arresting gear engagements--points to ponder should a barrier engagement become necessary...

Courtesy: TSgt Bernero 24 COMPW/DEM Howard AFB, CZ



The "Catchers" (Barrier Maintenance), a group of professionals dedicated to preserving life, limb, and aircraft, offer these DO's and DON'Ts to our fellow professional, the fighter jock.

DO make every effort to contact the cable as near center line as possible.

DON'T use the arresting cable as a "target" on routine landings.

DO allow the cable to stop your aircraft with brakes built within the arrestment system.

DON'T ride aircraft brakes during the arrestment.

DO make every effort to engage the cable at speeds and gross weights below maximum design limits. DON'T engage the cable with speed brakes down.

DO notify tower upon pending engagement.

DO tell Barrier Maintenance about problems. They're the ones who can and will help.

DO tell the control tower after the engagement your aircraft weight and estimated speed. This information is necessary for determining future serviceability of barrier components for the next engagement.

The "Catchers" are concerned with your safety and the preservation of your aircraft. Accomplishing our job enables you to accomplish yours, again and again and again.

ARRESTING GEAR LIMITATIONS

SYSTEM	MA-1A MOD MA-1A	BAK-9/MA-1A	BAK-9	STD BAK-12	1,200' BAK-12
RUNOUT	1,000′	950'	950′	950′	1,200′
MAX ENGAGE SPEED	150 KTS @ 12,500#	190 KTS @ 28,000#	190 KTS @ 28,000#	190 KTS @ 42,000#	190 KTS @ 60,000#
MAX ENGAGE WT	42,000#@ 81 KTS	90,000# @ 90 KTS	90,000# @ 90 KTS	90,000# @ 95 KTS	90,000# @ 145 KTS



be proud of the man you are ? Unknown

FLIP Relief is on the Way

Courtesy of Lt Col Cobb HQ AFCS/FFOS

How many times, when you were flying, have you pulled out the US IFR Supplement only to find it almost impossible to handle because of its bulk? The latest version is 11/4 inches thick and is difficult to control with one hand. Numerous complaints have been received resulting in action being taken to reduce the size of the IFR Supplement.

The Air Staff has directed HO AFCS/FFOS (the follow-on to the old Instrument Flight Center, Flight Standards Branch) to purge nonpertinent information from the US IFR Supplement "Aerodrome Remarks" section for each Air Force entry. The standard aerodrome remarks criteria published on page 8 of US IFR Supplement will be used to determine what information will remain in the publication. Some of the deleted information which should be used for flight planning will be placed in the FLIP Area Planning under an alphabetical base listing entitled "Supplementary Aerodrome Remarks." Consequently, starting in September 1979, a more thorough review of the "Area Planning" section of FLIP will be necessary when flight planning.

...interest items, mishaps with morals, for the TAC aircrewman

Holloman AFB has already realigned their remarks. See Holloman AFB in the US IFR Supplement and also in FLIP AP/1, page 3-13.

Other programs are underway to improve all FLIP products. If you have any suggestions to improve the product for all users, call HQ AFCS/FFOS, AUTOVON 638-5479.



HIGH AND HOT

The aircraft was number two in a flight of two for a day weapons mission. Everything proceeded normally until takeoff. Number two rolled with ten seconds spacing behind lead. Acceleration checks were correct. Just after rota-

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tion, the aircraft experienced a slight oscillation and the pilot raised the gear. Two ground ob-



servers noticed smoke coming from the main gear tires as the aircraft became airborne.

The SOF notified the airborne aircraft of the occurrence, and the flight rejoined and RTBd. On their return, the mishap pilot lowered the gear. The only thing noticed by the flight leader was a rubbed spot on the right main tire.

Discussions with the crew and ground observers revealed that the gear handle was placed in the up position before the aircraft was positively airborne. When this occurred, the automatic braking system for the main landing gear was started and the tire was scuffed on the runway.

The pilot failed to consider the high density altitude and also forgot to make certain he was airborne before raising the gear. There are still a number of hot days remaining at our southern and western bases. If you're stationed there, or perhaps going cross country to one of them, take a good look at your takeoff data and make sure you're all the way in the air before you reach for the gear handle.

SINGED TAIL

For those of you who may wonder why the F-4 emergency procedures for out-of-control/spin contain the step, "Throttles-Idle," we offer the following pictures:

The afterburner plume heats the stabilator to the point that the skin is delaminated from the honeycomb. Airloads will cause the damaged portions of the slab to fail once recovery is made. Bringing the throttles to idle will also help to insure that the engines keep running--obviously a couple of nice things to have.

This is the second identical incident within the last month. Make sure you aren't the next. . .







watch out for them

The fall migratory season is rapidly approaching, and the incidence of birdstrikes will be on the rise once more. There have already been quite a few damaging strikes this year, Luckily, no one has been seriously injured in spite of some significant aircraft damage. However, incidents such as these are usually the farthest things from your mind as you stroke the burners (for those of you who have em) on your takeoff roll. I'm not going to bore you with any war stories. Suffice it to say that a 3-lb bird hitting your windscreen at 420 KTS has about 23,000 lbs of kinetic energy to dissipate. If the impact angle is right, you're going to be wearing your windscreen when you get out of the cockpit. Here are some ideas on how to avoid or live through this type of incident:

1. If there are concentrations of birds on the runway or in the approach or departure corridors, don't take off or land until they move. I realize that operational requirements or fuel consideration may force you to take off or land anyway--but if there's no real need--why risk it? Some bases have set up programs where the base ops folks are equipped to disperse the birds. Let them do their job first.

2. When you're at low altitude, keep your airspeed down. Kinetic energy varies with the square of the velocity, so a strike at 250 Kts is far less damaging than one at 500 Kts. Operational, training, and aircraft requirements may prevent you from doing this--but don't go fast just cause it's neat. Feathers in your teeth ain't cool!



3. Plan low-level routes to avoid known concentrations of birds. Remember, roosting sites as well as migrating routes may shift seasonally, so consult the experts on these problems.

4. Reduce night flying during the migratory seasons. Most waterfowl fly at night during the migratory season, continuing until after daylight in search of suitable stopping areas. Realistic scheduling can reduce the strike hazard.

5. Report observed bird activity to the controlling agency, SOF, RSU, tower, or ARTCC. Your report could keep other aircraft out of the same area and prevent a bash.

6. If birds are reported around the airport, fly a straight-in approach if you are able. Experiments have proven that birds can see and hear well, and they rely on these senses to warn of danger. Evidence also exists, however, that birds cannot predict an airplane's flight path if it is not in a straight line. Turn early to avoid birds, if able. Last ditch maneuvers usually don't work.

7. Report all birdstrikes regardless of damage to the aircraft. This information is essential to continuing birdstrike studies and is a requirement of AFR 127-15.

8. Attempt to identify species involved. If local wildlife personnel cannot identify the remains, the Bird and Mammal Laboratories at the National Museum of Natural History may be able to help. Follow the procedures listed in AFR 127-15.



9. Become knowledgeable about the habits of birds in your area of operations. This type of information is essential to any control and avoid-ance efforts.



10. Always fly with your visor(s) down. The visor was designed to save your eyes. It's a proven fact that it works.

11. If you sustain a birdstrike, check instruments immediately. Bird/FOD damage to engines is a definite possibility. Land as soon as practicable--your view from the cockpit or even your wingman's may not allow you to accurately determine the level of damage.



12. Make the subject of birdstrikes a point for crew coordination. If you take one in the canopy, you may not be able to communicate. Clearly define who's going to do what, when, and how. This will save a lot of worry and confusion.



The bottom line is--common sense. With a little preparation and by following these considerations, you should have a pretty good chance of avoiding the birds. As long as we fly in the same airspace, we're going to run into birds.

Preflight preparation and airborne alertness can make fowl encounters less disagreeable.

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SEVERE WEATHER NOTIFICATION AND AVOIDANCE By Major Garry Mueller HQ TAC/SEF

Thirteen FAA air route traffic control centers now have meteorologists assigned. The meteorologists monitor aviation weather conditions within their center's control area and keep controllers continuously advised of weather changes; particularly those that may pose a hazard to aviation or impede traffic flow. Severe weather advisories will be relayed to aircrews. Additional info on hazardous weather can be requested through the controllers. The centers with the new service are: Atlanta, Houston, Chicago, Indianapolis, Cleveland, Washington, Boston, Fort Worth, Jacksonville, Memphis, Miami, New York, and Kansas City. The program is scheduled to be expanded later to include all 20 centers.

National Weather Service radar convective activity reports passed by flight service and air traffic control facilities are based on radar video integrator processor' (VIP) intensity levels one through six with the following meanings:

- (1) Level One Weak Weather Cell
- (2) Level Two Moderate Weather Cell
- (3) Level Three Strong Weather Cell
- (4) Level Four Very Strong Weather Cell
- (5) Level Five Intense Weather Cell
- (6) Level Six Extreme Weather Cell

The VIP intensity levels do not always indicate whether a convective cell is a rainshower or a

thunderstorm. A level one cell may be a thunderstorm, while a level four cell may be only a rainshower, and the associated turbulence could be the same intensity whether reported as level one or level four. On the other hand, intense or extreme weather cells normally carry the connotation that these cells are, in fact, thunderstorms. Therefore, any reported weather cell (including weak through very strong) should be considered as potentially hazardous and treated as a thunderstorm.

Effective 16 May 78, new signet procedures were introduced. A convective signet which implies severe or extreme turbulence, severe icing, and/or low-level windshear will be issued, when required, on both a scheduled basis each hour at 55 minutes past the hour and on an unscheduled basis as a special report. These sigmet alerts are valid for a one-hour period and will be distributed nation-wide by FAA/NWS. Part A of the convective signet, which is a brief description of the thunderstorm area in terms of NAVAID locations, will be relayed directly to inflight aircrews by the controllers rather than by telling the airborne crews to monitor a VOR broadcast. These new procedures were issued by FAA class two NOTAMs and will appear in a future change to FLIP - General Planning section.

TOUGH TO LAND By Lt Col Dwight F. Wilson HQ TAC/SEF

The final event of any mission, other than taxi back and shutdown, is the landing. While this should be a fairly routine operation, numerous incident reports in the past month indicate that this is not so--especially for the A-7D drivers.

Under normal conditions, landing the SLUF should be a piece of cake. Throw in a little rain, wet runways, emergencies, heavy airplanes, steep glide slopes, short runways, etc., -- then it's a different story. Still, it should not be a major problem if proper attention and skill are applied in the appropriate areas. The one big item is to be ON SPEED. The correct touchdown speed and associated angle of attack are probably the most important factors. (This should sound familiar to everyone, not just A-7 pilots!) Also, there have been several cases where the pilots have landed--then needed and ignored using the tail hook when a nice, compatible barrier was available. This characteristic again is not limited to A-7 folks.

Let's do a little more concentrating on basic airmanship. It just makes good sense to use all available aids, in and out of the cockpit, to recover your airplane.

F-15 WINDSHIELD ANTI-ICE

By Capt Gary R. Porter HQ TAC/SEF

We are still damaging F-15 windshields due to inadvertent actuation of the windshield anti-ice switch. Despite safety wiring, the switches are still being bumped on. Do yourself and the next pilot a favor--write up the switch safety wire if it is broken or wrapped around the base of the switch, allowing actuation. There shouldn't be too much of a requirement for the system as we approach summer; but if you do need to clear off some icing, remember to turn the system off immediately after the windshield is clear.

NEGATIVE G'S AND THE FIGHTER PILOT

By Capt Gary R. Porter HQ TAC/SEF

Nobody likes negative G's, they're not natural, they just don't feel good, they don't even sound good. Unexpected negative G's are worst of all. There have been several recent incidents which demonstrate crews are not preparing for the

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possibility of this unexpected loss of apparent body weight (a crash diet?) when the aircraft experiences uncommanded negative G's. The first problem we see is that pilots aren't securing themselves in the seat very well. In order to check six better, they're leaving their lap belts loose; and as a consequence, some are finding out what it's like to bounce their heads off the canopy. Others are finding out that their bodies aren't the only thing that can float around the cockpit. Trying to secure floating tape recorders and helmet bags have been mentioned in several recent incidents. The pilot who lays his tape recorder on top of the map case is asking for trouble. We suggest that after you have started your recorder for the first engagement, see that it's stowed properly and the velcro fastened tight. (When was the last time you wrote up the velcro tabs on the map case, or whatever your jet uses, for not fastening securely?) It would be wise that a part of your fence check be to look for loose articles and a tight lap belt. If you should then enter an unexpected negative G condition, you can concentrate on keeping your stomach in the right place and not worry about the terminal approach plates.

F-102 PILOTS.

A reunion is planned for November 9th and 10th, 1979, at Sheppard AFB, Texas, in conjunction with dedication of a pedestal-mounted F-102. Anyone interested contact: Col John M. Franklin, 4300 Shady Lane, Wichita Falls, Texas 76309; AUTOVON 736-2603/4495; home phone (817) 692-6081.

RADIAL TIRE BULGE

Don't be fooled by radial tires. That bulging tire may still need more air, the Tire Industry Safety Council cautions.

Radial tires, even when properly inflated, bulge in the sidewalls and look as if they need air. Because of this, many Americans have become accustomed to this appearance and are taking their radials for granted. They are neglecting to use a tire pressure gauge to check the air pressure on a regular basis.

For a radial to give optimal performance, it must be properly inflated. Underinflation causes a tire to run hot, thus reducing its tread life and strength, and increasing the risk of sudden disablement. All tires, regardless of construction or price, tend to lose air over a period of time and should be checked every two or three weeks and before long trips.

The Tire Industry Safety Council has drawn up

the following list of tips for radial tires:

•Rotate radials from front to rear on the same side of the car. Don't use a crisscross rotation pattern unless your tire dealer recommends it to correct a severe wear problem.

• For best performance, radials should be used on all wheel positions. If you must mix tires of different construction, always put the radials on the rear.

• If your car is an older model, make sure its suspension and shock absorbers are tuned to handle radials before switching to radials. Most late-model cars are already adapted for radials, which are original equipment on many autos.

Remember, don't let that bulge in a radial fool you. Soft or underinflated tires could lead to trouble.



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BROKEN VAPOR LAMPS

High intensity mercury vapor lamps can be dangerous if they continue to operate when the outer globe of the bulb is broken, punctured, or missing. A broken outer globe allows the lamp to emit intense ultraviolet radiation. Persons exposed to excessive amounts of ultraviolet radiation can suffer severe skin burns, painful and even permanent eye damage; and intense or repeated exposure may lead to skin cancer. Injuries occurring in stores, sports arenas, warehouses, and school gymnasiums have been reported. This alert is to help prevent injuries in your facility.

The Food and Drug Administration is in the process of developing a performance standard for such lamps. It is anticipated that the standard will call for the manufacture of two types of bulbs. One type will include an extinguishing device which will extinguish the lamp within a specified number of minutes after the outer globe of the bulb is broken. The other type, without shut-off device, will include a warning that the bulb is to be used only in areas where people would not be exposed if the outer globe is broken; e.g., use in a fixture that provides filtration against hazardous ultraviolet radiation. It is the intent of this approach to regulation that after the standard becomes effective, mercury vapor and metal halide lighting in areas occupied by people will either use a lamp with a shut-off mechanism, or use a fixture which will protect people from hazardous ultraviolet radiation.

In the interim, to prevent future injuries, the following precautions should be taken:

If you plan to install mercury vapor lamps for areas ordinarily occupied by employees or the public:

1. Use bulbs which have extinguishing mechanisms. (At least two manufacturers are presently marketing bulbs with this feature.)

2. Use totally enclosed lighting fixtures with protective shields which protect the lamp from damage and absorb ultraviolet radiation.



If the building already uses mercury vapor lighting, make the necessary changes to comply with the precautions listed above. If this is not feasible, use a protective shield designed to fit over the lamp fixture. Such a shield absorbs ultraviolet radiation and is available for most fixture sizes.

Advise personnel working in areas lighted by mercury vapor lamps to:

1. Be alert for signs of damaged bulbs like broken glass on the floor.

2. Alert the proper personnel to turn off a lamp with a broken outer bulb immediately.

3. See that people leave the area lighted by a lamp with a broken outer bulb.

4. Be aware of the symptoms of injury from ultraviolet radiation exposure so that anybody who is injured can tell a doctor that the injury came from exposure to ultraviolet radiation.

5. Report any injuries to the local health department and to the Food and Drug Administration.

Also, if you have questions or wish to comment concerning this matter, write to: Bureau of Radiological Health, HFX-460, Food and Drug Administration, Rockville, Maryland 20857. They welcome your comments and appreciate your cooperation in following the recommended precautions.

Reprinted from Consumer Memo, Bureau of Radiological Health, Food and Drug Administration





PRIME NUMBER OF STREET, STREET



"HERE WE GO AGAIN"

BY Capt Ken Pesola HQ TAC/SEW

Ever look toward that day when technology resolves each of our problems? We in the safety "biz" do.

Fact: Today's weapon systems are designed with more built-in fail-safe features than ever before.

Fact: Our onboard weapon systems are more technologically advanced than ever, and system reliability is hitting new highs.

Unfortunate Fact: We humans are still plagued by mishaps. When Murphy strikes, we are sometimes "lucky" - sometimes not.

How many remember the flight line accident of a few years back where failure to follow tech data resulted in the inadvertent firing on the ramp of an F-4D SUU-23 20MM gun pod. This caused extensive aircraft, AGE, and flight line expeditor vehicle damage, and the death of one flight line technician.

The explosive safety regulation (AFR 127-100) states that aircraft with forward firing ordnance must be parked facing a direction with the least exposure to personnel, equipment and facilities.

Following this common sense mandate could have saved a life. Recent compliance by TAC personnel did just that.



After experiencing hydraulic failure, an A-10 aborted its gunnery mission and diverted to a secondary recovery base. The aircraft was parked in the designated aircraft FFO parking area. The following morning, hydraulic and gun system technicians arrived form the A-10 home base to work the system. After erroneously assuming the GAU-8A gun was jammed, the personnel attempted to clear a 30MM round in the sear (firing) position. After the gun locking/ unlocking cam was removed, the crew pulled the gun safing pin. The GAU-8A firing pin released and the gun functioned as advertised, firing one round of 30MM TP ammo across the parking apron, taxiway, runway, perimeter fence, and public highway. The projectile wasn't found,



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but it was believed to have impacted in an uninhabited field approximately 1600 feet from the FFO parking location. Bottom Line: No injuries nor property damage. Just luck? Not really. Realizing equipment is subject to failure and humans to error, the sound logic behind designating combat aircraft parking spots and maintaining a "clear fire zone" for 2.75 rocket, missile, and gun equipped aircraft makes a bunch of sense. Without practicing this safety technique, this recent mishap might have cost more than an expended 30MM round.

We can't eliminate all our Murphys, but we can at least minimize their results.

The only panacea to the FFO problem is the adequate spacing of parked aircraft and the maintenance of clear zones. Limited budgets preclude acquisition of the acreage necessary to totally alleviate parking congestion. However, we can minimize unwitting targets in our clear fire zones by continuously reminding our personnel of the hazards associated with FFO and employing effective flight line supervision. Forward firing ordnance does and will fire inadvertently. Take heed.

MISSION OR SAFETY...OR BOTH

By Capt Jonny J. Hepler 51 COMPW (Tactical)

My eyes hurt! It's cold and the rain is running down the front window of the step van. The windshield wipers are slapping back and forth; they seem to keep time with the chatter on the radio. The darkness stretches on forever, only broken here and there by the distant glow of light-alls. The light-alls identify the location of aircraft undergoing maintenance work. You have entered the world of the Weapon's Expeditor.

The Weapon's Expeditor is waiting for the call that an aircraft is ready for the load crew. Today's surge has been hard on the aircraft, and most of them come back Code III. That always adds pressure to the mid-shift because they know they will get the aircraft late due to the heavy maintenance that must be done prior to munitions loading.

The call comes in: "Aircraft 293, location Mike 04, ready for load crew." The Weapon's Expeditor starts the step van and tells the waiting crew chief to get his load crew ready. Aircraft 293 requires a complete configuration change and full load of practice bombs. This bird had received a functional check flight (FCF) today and required a SUU-21 on the left inboard station, a MER on the centerline, and a TER on the right inboard station. The step van pulls up by the aircraft and the load crew gets out. The number four man, who had been dropped off on the way over, is arriving with a SUU-21 on the MJ-1 lift arms.

As the Weapon's Expeditor drives off he hollers to the crew chief: "I'll be back in an hour. Make it fast! We're behind schedule." Then adding with emphasis: "Use your checklist. We don't want anybody hurt."

The Weapon's Expeditor realizes the error he almost made. He almost put the mission before the safety of his people. If you make the same mistake that the Weapon's Expeditor almost made, you might have to carry a heavy burden on your conscience for the rest of your life.



The BDU-33 and the MK-106 practice bombs can burn, maim, or kill, if handled improperly. If the safety device is not properly in place and the practice bomb is dropped, there is a very good chance the spotting charge will function as designed. A small charge will blow white phosphorus out the tail end of the bomb. If you have your hand over the end of the bomb, the least you can expect is to be severely burned. You might even be killed. So, next time the mission starts coming before the safety of your people, remember that any commander would rather have a late or missed mission than an injured member of his organization!

Capt Jonny J. Hepler completed ROTC training at the University of Texas and was commissioned 20 May 72. He served four years as a Minuteman Missile Combat Crew Member and attained a Masters Degree in Business Administration from the University of Montana. He is currently the Chief, Weapons Safety Branch for the 51 COMPW (Tactical), Osan AB, Korea.

Prescription for the Post-Delivery Blahs

(With Apologies to All Flight Surgeons)

A panacea? No, but a prescription that allows an exchange of information and ideas which enhances the product and reduces maintenance problems common with the introduction of a new aircraft into the Air Force inventory.

While the concept isn't entirely new, its focus and intent is one of crew chief participation in the seven to ten days prior to Air Force acceptance of this complex weapons system. The goal of the dedicated crew chief program is to get the new aircraft into the strike force in the best condition at the earliest possible time. It is also interested in avoiding the downtimes attendant with understanding and sometimes correcting factory-originated problems. The key ingredient for accomplishing this goal is to involve the assigned crew chief in the final inspection/acceptance process at the contractor's manufacturing facility.

Effective preventive medicine practices dictate that the doctor and patient fully communicate. This is especially true if you understand the organizational disparities and other barriers that exist between the F-16 manufacturing facility and the Air Force tactical fighter wings that receive these aircraft into the Air Force inventory. This doctor/patient relationship must be a face-to-face dialogue if all symptoms or problems are to be identified and treated. This allows both the prime contractor (General Dynamics/ FWD, Ft Worth, Texas) and the Air Force Plant Representatives Office (AFPRO-General Dynamics/FWD) personnel to understand the overall health of aircraft being delivered and provides the user an understanding of the methods used in the manufacturing and acceptance of the aircraft.

Understanding the methods utilized at this facility to manufacture, test, and inspect aircraft and its systems effectively treats the postdelivery blahs and the suffering associated with weapons systems transition pains.

Co-Authors:

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AFPRO, General Dynamics, Fort Worth Fort Worth, Texas

Photos: General Dynamics-Fort Worth

Symptoms--Bloodshot and dilated eyes, clenched fists, constant indigestion, headaches; followed by severe depression of all assigned personnel. Symptoms occur when new weapons systems are delivered to the using command without close coordination with the weapons system prime contractor, the cognizant Government Contract Administrative Services Office (GCASO), and the gaining units during the systems transition into the inventory.

Rx: Take 388th Tactical Fighter Wing's dedicated crew chief, place on temporary duty at Air Force Plant Four (General Dynamics, Fort Worth, Texas), for approximately ten days, and integrate with both the contractor and Air Force plant representative manufacturing and quality assurance people prior to the delivery of an F-16 multi-role fighter. Duration of treatment for this illness is a seven to ten-day assignment at Air Force Systems Command's Air Force Plant Four (AFPRO-General Dynamics/FWD). This treatment is basically simple and contains effective ingredients which have been medically effective. They are:

The using command is notified of impending aircraft delivery approximately 14 days from delivery date and is asked to send the designated crew chief to this facility. Follow-up calls are made to notify the using commands of any changes in the anticipated delivery dates. Several variables can affect the delivery dates (i.e., weather, aircraft system, subsystem problems, etc). This is accomplished to make maximum use of the time the crew chief is on station.



SSgt D. J. Romero and General Dynamics Crew Chief, Mr. P. Vercher, look on while SSgt T. H. Duggin installs refuel receptacle cap.

The first dose of the prescribed medicine is an in-plant orientation at Fort Worth. This includes a tour of the plant from the initial raw stock machining operations to the final assembly area. The tour provides an overview of the structures and assemblies as they are fabricated and fitted into the major components of the aircraft. The crew chief gets a good feel for the structural components and overall structures that make up the aircraft configuration.

In the final aircraft assembly area, the crew chief gets a chance to observe the aircraft in its last stages of construction, with all panels removed, and the final installation configuration of aircraft systems. Systems operations are also performed in this area; and the basic support equipment used is reviewed with the crew chief,



as well as a briefing of system functional components and their operations.

Over the remainder of the crew chief's stay at the facility, the recommended doses of prescribed medicine vary from day to day as the aircraft progresses through various system testing and flight testing activities. This gives the crew chief the opportunity to witness all aircraft predelivery activities as they occur and to take an active role in the functional aspects of these activities. Maintenance actions initiated by the contractor's flight line crew, system specialists, and supporting engineering give the assigned crew chief an unprecedented dose of knowledge that is not generally available through classroom training.

The last dose given at this facility is when all flights are completed (Contractor/Air Force) and



Mr. Vercher discusses the inlet support strut on the F-16.

TAC ATTACK

Prescription for the Post-Delivery Blahs

the crew chief works with AFPRO Quality Assurance Division personnel in performing final aircraft inspections prior to acceptance of the aircraft. In this task, the techniques, systematic approach, and methods utilized for determining aircraft acceptability are explained to the crew chief. These actions enhance the using activity's receiving inspection of the aircraft since the crew chief has an understanding of the aircraft's condition on arrival.

The prognosis? That the crew chief program is providing a thorough orientation and working involvement between the AFPRO/contractor and using organizations' representatives. The crew



Functional check-out being performed on F-16 wing tip launcher.



Discussing the various functions of the side stick controller.

chief's knowledge of aircraft, systems, maintenance actions, and inspection techniques increases remarkably through this program. AFPRO and contractor personnel are more involved in the exchange of information.

We have diagnosed the post-delivery blahs correctly and feel that the prescription is effective. However, in order to assure the patient's full recovery from the symptoms, the prescription must be refilled with each aircraft delivery for the foreseeable future. This will assure that our mutual goal of getting these new aircraft into the strike force in the best condition at the earliest possible time (and to avoid downtime attendant with understanding and correcting factory-originated problems) is accomplished in a truly cost-effective manner.





AIRCREW OF DISTINCTION





Maj Jerome C. Hauck 23 TASS/602 TAIRCW Bergstrom AFB, TX

Un 25 May 1979, Major Jerome C. Hauck was flight leader of three O-2As acting as simulated fighters for a fourth O-2A performing a Forward Air Control mission. As he pulled off the third target, Major Hauck felt and heard a loud thump coming from the rear of the aircraft. There was an immediate loss of thrust. A quick check by Major Hauck revealed that the rear engine was inoperative and the left tail boom was extensively damaged. The aircraft immediately nosed over and went into a dive, and in an attempt to recover, Major Hauck found he had no elevator control. Only through use of the elevator trim system was he able to obtain pitch authority sufficient to regain control. Major Hauck then declared an emergency, performed engine shut down procedures and established single engine maneuvering speed. A chase aircraft advised him that the rear propeller was missing and that the left tail boom was heavily damaged. Major Hauck immediately turned toward the nearest available airfield--Llano County Airport. During the turn he discovered he had limited rudder authority to the left. Severely limited on power and able to maintain only 800 ft AGL, he delayed lowering the landing gear and flaps until he was on final approach. Using judicious power changes to augment the limited authority of the elevator trim system, Major Hauck established a long, flat, straight-in approach. Elevator trim was not sufficient to prevent a hard landing and a subsequent collapse of the nose gear occurred. Major Hauck escaped injury and damage to the aircraft was held to a minimum.

Later investigation determined that a catastrophic failure of the rear propeller had occurred, causing it to separate from the aircraft and tear through the left tail boom. Both elevator and rudder control cables were severed. Major Hauck's superior airmanship and prompt reaction to this in-flight emergency qualify him for the Tactical Air Command Aircrew of Distinction Award.

the nature of things



By Major Pete Abler

"This special meeting of the Terrestrial Planet Safety Board will come to order."

Mother Nature rapped the gavel as the members of the board, the Nature News Service, and spectators quickly took their seats. She spoke forcefully.

"As you are all aware, this meeting has been requested by the Deputy Commander for Fauna to discuss the havoc currently being wrought by the humans and their aircraft. These machines have dealt devastating blows to our birds, not to mention the pollution, noise, and general disturbance which they cause. Although Fauna is directly concerned about birdlife, the increasing flights and number of crashes of these aircraft have caused damage which affects all of us. As you know, many years ago we launched our flight discouragement campaign. It is time to reexamine our efforts to see if we can make any improvements in the campaign. I will ask each of our deputies to summarize their specific efforts at aeroplane control and then open the floor for discussion of any new ideas which might discourage the human efforts at flight. The Deputy for Fauna will speak first. Mr. Grizzly, you have the floor."

"Thank you, Madam Nature. As you know, our efforts are aimed at discouraging the use of aeroplanes through natural means--the creation of hazards which any sensible person would avoid. We do not wish to harm the humans, but some of them have ignored the hazards we created and have lost their lives in crashes. For instance, the widespread flight patterns of their aircraft forced us to restrict our bird migration movements to just the spring and fall. In spite of our strictly enforced airway structure for the birds, the humans choose to violate our air space. We have even combined our roosting sites into large colonies to give their planes a wider berth. It seems that those humans are just like crabgrass--give them an inch and they want the whole yard! The final straw came two years ago when they undertook a new, low-level program.



Those planes come in at treetop level scaring and scattering everything in site. Occasionally, we have found it necessary to launch kamikaze attacks. These have been ineffectual, and I feel our birds are too valuable to waste in this futile endeavor. I fear we have failed in our efforts."

"Your level of concern is shared by all, Mr. Grizzly. We realize that you exercise little control above the ground level. I shall ask the Director of Flora for her report. Ms. Iris, it's your turn."

"Our department personnel envisioned a double-pronged attack on the aircraft problem. Our efforts at concealment and camouflage have been partially successful. With the cooperation of the weather department, we have achieved a level of sparse vegetation in the desert areas. The lack of visual contrast has forced the aircraft to fly higher, but has not eliminated them. Apparently not all humans appreciate the lack of depth perception and visual acuity since some of them fly their aircraft directly into the ground. In the more temperate climates we accelerated the growth of trees to force the aircraft higher--without success. The humans even helped by constructing towers, power lines, and other such obstructions. These do not discourage aircraft flight, and occasionally an aircraft is destroyed by these other human creations. I'm afraid that we too have been ineffective."

"Thank you, Ms. Iris. The problem does appear grim," agreed Mother Nature. "Dr. Andreas Fault, our Chief of Earth Engineering, will speak next."

"Madam Nature, members of the board, distinguished media representatives, the Engineering Department has concentrated its efforts at exploiting human weaknesses. We have attempted to scare these people away with the massive mountain ranges we created. With the cooperation of Weather, we even shrouded the peaks in clouds and fog to drive the planes out. Unfortunately, they keep flying into the obstructions when they should avoid these areas entirely. I have personally supervised the construction of



OF THINGS



blind canyons to discourage flight in these regions. It almost seems that these areas attract planes! Not only that, these humans do not passon warnings of the other visual illusions we have constructed. Time and again, an aircraft will barely miss running into the ground while following a sloping ridgeline, only to have one eventually fail to clear the ground during a turn. My department has contingency plans for the construction of mountain ranges on all land areas. But you all know how long a good mountain range takes to build, not to mention the expense and relocation of much animal life caused by the upheaval. I've even directed that oil production be limited to provide them with less fuel--to no avail. I think that the Department of Weather has had the most success in slowing flying operations. Perhaps they can help us further."

"You're probably right," added Ms. Nature. "Mr. Nimbus, could you please discuss your efforts."

"Surely. As you know, our arsenal of weather

is pretty potent. At the same time we have serious constraints which limit our effectiveness. The Commander-in-Chief of the Universe insists that we must allow the planet's axis to tilt throughout the year. This constant compensation for the convective activity caused by sunlight prevents us from attaining full weather control. We could blanket the entire earth with low level clouds, but our letter of agreement with Flora specifies a minimum of 7 to 18 days of sunlight per month, depending on the location, for proper growth of plant life. Our experiments in removing the lift from air have been futile, although we have been successful in promulgating the rumor that the lift is gone at night. This belief is expressed by about 50% of the human pilots. I can gin up more thunderstorms and severe weather, but those things tend to get out of hand. If we don't cut down their growth by the time they reach 35,000 ft, they're out of control; and we have to let them die down. Surprisingly, in spite of the hail, rain, updrafts, downdrafts, turbulence, and icing,



some pilots still insist on using the storms' airspace. Despite the increased accuracy of our lightning, other aircrews seem to get a charge out of daring me to zap them. Unfortunately, we cannot control lightning voltage as yet; and we still destroy too many things while we're trying to scare the humans. My conclusion is that in spite of our best efforts, humans will continue to challenge us every chance they get."

The 2 audience began to murmur as the seriousness of the problem and lack of solutions became more evident. Finally, a hand was raised and Ms. Nature acknowledged the presence of Father Time. He spoke sagely.

"Now you all know me--I've been around as long as anyone. I could tell that the first time one of them humans made a wheel that we was all in trouble. We let them have too many brains and not enuf smarts! They just don't know when to leave things alone. I agree that it would be nice to be rid of those dad burned aeroplanes, but they ain't goin'away. You've seen those folks. They don't even have the sense to come in out of the rain. What makes you think they gonna up and stop flying? They don't appreciate nature; they keep challengin' us in everthin we do. There's even some educated idjut out there trying to make more time. Then they got them there engineers what build aeroplanes one way and then them smart aleck pilots goes out and tries to fly that plane different than it was built. And what happens? Another smokin' hole in the forest. They know weather is uncontrollable; but they ignore ice, lightnin', hail, and rain. I'm afeered that we're wastin' our time. There's too many humans out there for us to stay out of their way. We'll jest have to hope that they come to their senses and quit pressing their luck when the weather's bad, flying into the ground 'cause they ain't watchin' what they doin', and smashing them aeroplanes on our hills and trees. I ain't sayin' we should guit tryin'; but we gotta realize it's not up to us, it's up to them!"

Although Father Time's words offered little encouragement, his undisputed wisdom was acknowledged by all. Mother Nature thanked him for his contribution and advice. She enjoined the deputies to continue their efforts as best they could. As the meeting adjourned, she wondered silently if the Intergalactic Council on Interplanetary Travel regulations could help. She made mental note to bring the subject up at their quarterly meeting. Silently, she closed her notepad and left the empty hall.



... incidents and incidentals with a maintenance slant.

TANGLED TUG

An NCO was driving a Coleman Tug on the flightline. He was proceeding to a hangar to tow an aircraft to the control tower area, but mistakenly went to the wrong hangar. When he realized that he was in the wrong area, he maneuvered through a parking lot and turned into a fire lane.



As he completed the turn, he was confronted by a civilian vehicle parked in the fire lane. Although he attempted to maneuver around the vehicle, he was unable to do so and hit the left rear quarter panel.

As a result of the accident, the tug was inspected at the motor pool. A discrepancy was discovered in the rear wheel steering system. Excessive play in the bellcrank assembly allowed the rear wheels to turn approximately five degrees when the front wheels were turned. The rear wheel steering ball joints were also loose because the nuts had backed off for an unknown reason.

Neither of these discrepancies caused the collision, but certainly contributed to the lack of vehicle control. If you notice any discrepancies in the handling characteristics of your vehicles--get them to the motor pool and get them fixed. I'm sure you wouldn't want to run into a coworker or an aircraft because the brakes, steering, or whatever wasn't working.

WHEN IT RAINS

An AIM-7E missile had accumulated several flights on an F-4 when it failed to hot tune. The missile was moved to another station where it failed to hot tune again. The missile was then downloaded while aircraft checks were being run and was placed on a trailer in front of the aircraft shelter without umbilical covers installed. A downpour of rain soaked the missile umbilical.

The missile was uploaded on the aircraft once more; and during the hot tune procedures, several aircraft circuit breakers popped. Once the missile was downloaded, three pins were burned and evidence of electrical arcing were found.

When the missile failed to hot tune, it should have been tagged as unserviceable and returned to the shop. The rain which soaked the umbilical only added to the missile problems and damage when it was mistakenly uploaded. Maybe next time we'll get it right...

HOW TO CHUTE A GUN

An F-105 drag chute was placed in the gun drum compartment of the aircraft before an exercise mission. The chute was there so the crew would have a spare in case the aircraft was required to divert. The chute wasn't needed, and later all 781 entries concerning the stored chute were cleared.

Several days and sorties later, the same aircraft was on an air-to-ground mission. When the pilot attempted to fire the gun, it jammed on the drag chute. The F-105 gun drum cavity is not an authorized storage compartment, so extraneous objects don't belong there. Does your particular aircraft have some nice nooks and crannies for storing things? If it does, you'd better make sure that these compartments are authorized in addition to being handy.

HQ TAC/LGMS	AN. TO	THERE IS A MESSAGE IN THIS MAZE. OUTLINE PRIMARY WORL AND BONUS WORDS IN CONTRASTING COLORS. READ FROM LEI TO RIGHT, TOP TO BOTTOM.											
Bonus Word List	1	F	Н	Y	U	С	A	N	R	S	Primary Word List		
BOLTS NAIL	K	M	B	0	L	T	S	E	E	w	CAN (2) EVERY		
TOOL	S	S	T	U	N	A	A	K	D	E	FOD		
SCREWS NUTS	F	0	R	J	T	D	0	J	R	R	YOU (2) THIS		
JUNK	S	I	H	T	U	0	Y	N	A	C	READ		
WIRE PIN	L	S	N	A	L	N	0	F	H	S	FIND IF		
LOOK	N	1	J	D	0	F	K	L	Y	N	TRY HARDER		
FOR	P	E	A	K	P	E	۷	E	R	Y	DAY		
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TAC SAFETY AWARDS

Individual Safety Award

Airman First Class Joseph E. Kadaras, 474th Component Repair Squadron, 474th Tactical Fighter Wing, Nellis Air Force Base, Nevada, has been selected to receive the Tactical Air Command Individual Safety Award for September 1979. Airman Kadaras' safety consciousness is evident in his identification and resolution of ground safety hazards within his weapons control system mock-up section. His active interest in the safety program has created a safer environment for himself and his co-workers.



Staff Sergeant Leslie G. Cable, 49th Aircraft Generation Squadron, 49th Tactical Fighter Wing, Holloman Air Force Base, New Mexico, has been selected to receive the Tactical Air Command Crew Chief Safety Award for September 1979. Sergeant Cable's superior achievements and rigid adherence to safety practices in all aspects of his job are commendable. His thoroughness and technical ability were clearly demonstrated in his undertaking the difficult task of getting an F-15 aircraft that had been a "hangar queen" for over six months back to fully mission capable status. As a direct result of Sergeant Cable's efforts, this aircraft has been flying a highly successful, sustained sortie rate.

Ground Safety Award of the Quarter

Master Sergeant Forrest A. Blood, III, 49th Aircraft Generation Squadron, 49th Tactical Fighter Wing, Holloman Air Force Base, New Mexico, has been selected to receive the Ground Safety Award for the second quarter of 1979. Master Sergeant Blood's safety awareness and conscientious performance of duties have enhanced the safety program of the 49th Tactical Fighter Wing. His efforts as the unit ground safety NCO led to the 49th Aircraft Generation Squadron's completion of the Tactical Air Command Operational Readiness Inspection without a single documented safety discrepancy. This outstanding organizational achievement was a direct result of his involvement.



A1C Joseph E. Kadaras



SSgt Leslie G. Cable



MSgt Forrest A. Blood, III

TAC	Ser Ser	Part and				AN A	15	G	•
		TAC	:		ANC	3		AFR	
		thru	JUL		thru	JUL		thru	JUL
	JUL	1979	1978	JUL	1979	1978	JUL	1979	1978
									21
CLASS A MISHAPS 🔶	6	23	18	0	6	10	0	3	2
AIRCREW FATALITIES	5	20	13	0	5	7	0	2	0
TOTAL EJECTIONS	4	24	21	0	4	5	0	3	2
SUCCESSFUL EJECTIONS 🗭	4	14	17	0	2	4	0	1	2
							-		

TAC'S TOP 5 thru JULY '79

	TAC F	TR/RECCE	1/	IC GA	INED F	TR/RECCE	TAC/GAINED Other Units				
class	A mi	shap free months	class	s A n	nishap	free months	class	A mishap	free months		
31	347	TFW	54	156	TFG	(ANG)	113	193 TEWG	(ANG)		
26	363	TRW	35	184	TFTG	(ANG)	100	USAFTAWC	(TAC)		
18	479	TTW	34	123	TRW	(ANG)	96	919 SOG	(AFR)		
17	33	TFW	19	121	TFW	(ANG)	69	1 SOW	(TAC)		
13	56	TFW	19	108	TFW	(ANG)	64	302 SOS	(AFR)		

CLASS A MISHAP COMPARISON RATE 78/79 (BASED ON ACCIDENTS PER 100,000 HOURS FLYING TIME)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
AIN	79	0.0	0.0	19.9	23.1	17.0	13.4	11.5					
AFD	78	0.0	0.0	10.9	7.8	6.0	4.8	8.1					
ANU	79	0.0	11.4	9.0	9.7	7.6	6.2	5.2					
ANC	78	0.0	3.4	4.0	5.9	8.1	7.4	7.9					
IAU	79	6.9	7.0	5.9	6.6	7.4	6.2	7.2		1.25		1273	
TAC	78	16.0	12.4	8.3	7.5	5.8	6.3	6.1					

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