

TAC ATTACK

AUGUST 1977



IT MAY BE A
LONG WALK...Page 4

TAC ATTACK

FOR EFFICIENT TACTICAL AIR POWER



TACTICAL AIR COMMAND

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FEATURES

IT MAY BE A LONG WALK	4
FLY OUT, EJECT OR DIE	12
SPAD	16
THE GREATEST STORM ON EARTH	18
NEEDLE, BALL AND GODSPEED	26
PLACE THE FACE	30

DEPARTMENTS

Angle of Attack	3
TAC Tips	9
TAC Aircrew of Distinction	10
Safety Awards	15
Phyz Biz	22
Emergency Situation Training	28
TAC Tally	31

TACRP 127-1

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Angle of ATTACK

"Discipline is based on pride in the profession of arms, on meticulous attention to details, and on mutual respect and confidence. Discipline must be a habit so engrained that it is stronger than the excitement of battle or the fear of death."

General George S. Patton, Jr.

DISCIPLINE

Discipline is the foundation of the military profession and for two centuries it has made the American fighting man reliable and successful in battle. As Air Force leaders, managers, supervisors, aircrew members, maintenance and support personnel, we must know and adhere to high standards of conduct, job performance and personal appearance.

Those who fly combat aircraft must exercise total self-discipline. Fortunately, present Air Force leaders recognize the need for realistic training. Strict adherence to prescribed training programs, minimum altitudes/airspeeds, directives/regulations and other operational standards is absolutely essential to preserve allowed training environs. Occasional deviations in judgment and relaxed discipline have cost many aircrew members their lives and the taxpayer combat air-

craft. A well disciplined, professional, adult attitude is the only one which can be accommodated in today's Air Force.

Strong self-discipline requires courage -- the courage to do the right thing at the right time. Today's Air Force aircrew members, especially TAC fighter pilots and WSO's must have this courage. We must train hard; and if the time comes, win the fight. To get there, we must be able to count on every man to do his assigned task every time. Exercise and exhibit total self-discipline. It's the price you pay to be one of the best.

George M. Sauls
GEORGE M. SAULS, Colonel, USAF
Chief of Safety

George M. Sauls, Colonel, USAF Chief of Safety



By Maj Larry E. Carrigan, USAF
Armed Forces Staff College
Norfolk, VA

It may be a long walk By Maj Larry E. Carrigan, USAF Armed Forces Staff College Norfolk, VA

A few years ago, I stepped off a C-141 that had just arrived at Clark Air Force Base in the Philippines. It was approximately 4 PM, and it appeared that everyone on the humid ramp was happy all over. It was a good, yet unnerving, feeling facing the real world for the first time in a group of years. POW life had been a real bummer, all 5 years and 7 months of it.

Time passed -- and many of my friends put down on paper their thoughts that ended up in books; books on their POW experience. What emerges is an image of a group of men that were stubbornly equal to the worst that could happen to them. It was a grim TDY gang, please don't miss the point, but a nagging concern continues to haunt me. In many cases, *the POW tour could have been avoided.*

I don't know if you have ever been exposed to

that fact before. You have never read about the gross evasion mistakes made in the jungle of Vietnam by the POWs. They are all good guys, right? They all parachuted into the middle of angry villagers and were taken directly to HAO LO (The Hilton) where they were put in leg irons and tortured, right? Wrong -- *many of us made dumb evasion mistakes!* We don't like to admit our mistakes, but perhaps if told, those same mistakes can be avoided in the future. Read on gang -- there's not going to be a test.

After being hit at 12,000 feet MSL and 550 True, my aircraft (F-4C) caught on fire, and what seemed like immediately, the aircraft was out of control. The alternative to ejection was unthinkable, so I pulled the lower handle. Unhurt, I descended into the pungent jungle of North Vietnam. Unfortunately, I only spent three and

A LONG WALK!

one-half days evading the Vietnamese (V) regulars, militia, and villagers 45 miles northwest of Hanoi prior to my capture. But I learned a lot about evasion during that short time.

Having been through the survival school at Stead, water survival at Langley, and the jungle school in the Philippines prior to my first combat sortie, I felt that I was as prepared as anyone for the worst survival situation. I wasn't! I wasn't mentally prepared at all to walk out of the Red River Delta back into the safety of Thailand.

Our survival schools spend an enormous amount of time teaching two general axioms which apply to all evasion situations -- at all times. One of these axioms is that, *"The will to survive is paramount to the downed airman."* This is not a frivolous statement. It's true, and at the same time, it is a statement that can lead directly to your capture and it should be fully understood.

I spent a lot of time talking to the men in Hanoi about their evasion experiences, and some of the unbelievable hardships they endured were astonishing. Although they never lost their will to survive, many lost their will to evade. Your will to survive is an intangible personal strength which cannot be taught, but what about your will to evade? Read the next paragraph carefully, keeping in mind that many of the POWs were not seriously injured at the time of their capture.

Day by day the men followed their compass headings, walking, crawling, and hiding their way to the safety of a pick-up point. Averaging 1 mile a day wasn't much; yet, eventually it was too much for their mind. They felt that they weren't traveling fast enough, so they began to take shortcuts. With the hurried pace, mistakes were made that ultimately led to their capture.

Why did these men make subconscious and sometimes "conscious mistakes"? The truth is, they lost hope in the SAR effort and in their own abilities for a successful evasion out of enemy

territory. A POW camp appeared to be a better option than dying in a SEA jungle.

Why did they lose hope in the SAR effort? First, many of the men lost their survival radios, mirrors, flares, compasses, and other equipment in the dense jungle. Without a method of contacting the SAR aircraft, they were forced to walk out on their own, and that sobering thought became a mental catastrophe.





Maj Larry E. Carrigan is this month's Fleagle T-shirt winner.

it may be a long walk !

How could they lose all that equipment? It was easy. For instance, once desperate for water, I stopped to cut out the cellulose core from the innards of a bamboo tree which was full of potable water. Having trouble holding a slippery hand ax in my attempt to cut the tree down, I took off my right flight glove and tossed it on the green foliage of the jungle floor. After quenching my thirst, I looked for my glove which couldn't have been more than 10 feet away. Thirty minutes later, mentally cursing myself and what seemed like a million bloodsucking mosquitoes, I took out a piece of parachute shroud line that I had saved and tied every item of remaining equipment to my survival vest, G-suit, or knapsack. I never lost another piece of gear. This is really an important point for you to remember; TIE every piece of equipment to something you are wearing.

Second, there were few SAFE AREAS in North Vietnam. I'll never forget how the intel officers almost apologized (and the aircrews smiled) as they daily briefed Thud Ridge as a safe area. Located NW of the city of Hanoi, the mountain range rose to 5,218 feet and was topped by a Vietnamese lookout tower. Later, during my evasion, my doubts about this safe area were confirmed. Hiding on the ridge, I found myself surrounded by what must have been 25,000 V living in huts -- men, women, and children were everywhere. Two days later ... It's no wonder then that not a single individual was ever rescued from that infamous safe area. We have got to be realistic with our aircrews and not pass on a false hope. 'Nuf said.

I have been following the Red Flag SAR reports in the Service mags and have been disappointed that the accompanying photos often show an individual without his G-suit on. Keep yours, and wear it at all times during your evasion. It will save you the wretched misery of minor cuts and is an outstanding piece of flotation gear. Other photos depict survivors without their survival gear tied down and as I mentioned above that is a gross mistake. You should also be aware of the absolute necessity of obtaining a survival knife. In addition to the orange switchblade which everyone carried in their chutes, I had the PE guys sew a naval survival knife onto my G-suit. It looked good, but proved to be use-

less in the jungle environment. The downed aircrews that had bought their survival knives from the indigenous folks that lived in the jungles of the Philippines, Nam, and Thailand were completely satisfied. Their knives were not only durable, they were efficient. The point is, buy yourself a survival knife from the local folks in your area of combat soon after your arrival.

The rubber knapsack in your seat kit is the same type we used in SEA, and it tore along the zipper on numerous evasion efforts because of abuse. I promise, due to the nature of your problem, you will abuse yours too. A knapsack will be your most important piece of equipment, third only to your radio and knife on any lengthy evasion trek. So buy yourself a durable one, and wear it on all of your sorties.

Even though Red Flag is being conducted in a desert environment, the survival instructors haven't found an item yet that doesn't apply to almost any geographical area. In SEA, crews spent a good deal of time directly concerned over equipment they carried because they knew their turn on the ground could be next. We aren't dropping iron in anger today, but you should be prepared to E and E as if we were -- TODAY.

This brings us to the second all-important evasion axiom: *"Training, foreknowledge of what to expect and what to do, and preparation before a combat mission are the most critical elements towards a successful evasion."* What you know and what you do before you ever climb into the cockpit of your iron horse can determine your rescue, or loss, in an evasion situation as much as what you do after your bailout. Remember that SAR forces are there to help you, not to rescue you in spite of yourself.

I wonder how many of you fighter jocks have ever seriously thought about how difficult an evasion effort is? I suspect that most do not think about evasion at all after a survival school experience, unless you get "bagged" at Nellis. It's important that you think about it now. Studies have shown that most aircrews that were shot down, were downed within their first 10 combat sorties. Assuming that you will fly four to five sorties per week, that gives you a cool 2 weeks to prepare for the worst situation, and that is simply not sufficient time.

Survival schools emphasize the possibility that the downed aircrew may not be picked up immediately by a SAR force. From that departure point, things get progressively better. Eventually,

the Jolly Green arrives, and the last scene is one neat party at the O'Club. Super, huh?

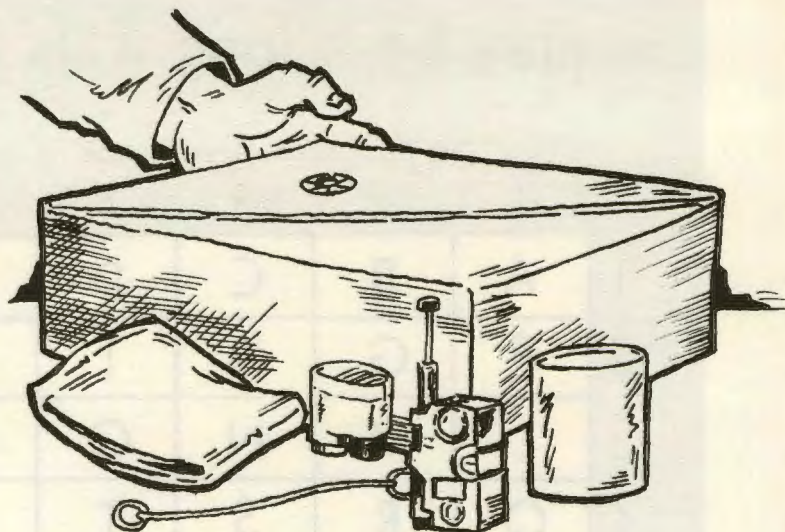
Well north of the Red River there was a big league war going on with no SAR effort to speak of. Since SAR recovery was unlikely to occur, evasion was the only recourse. The attitude of the typical aircrew was that, "If I'm downed north of the Red, I'll see you after the war." In fact, many had put their hands in the air in despair before they ever launched from home plate. Why should they think otherwise? Just look at their predicament if downed north of the Red River:

- a. No SAR.
- b. No real safe area.
- c. Two and one-half million Vietnamese living on the banks of the Red River that had to be crossed.
- d. Radio contact to be maintained with strike flights if a SAR effort was to be initiated after crossing the river.

It really wasn't a very pleasant thought; so the fighter wings made light of the subject in their jokes, songs, and party suit patches. There was no recourse north of the Red, or so it seemed. However, I will suggest that avoiding the enemy, crossing the Red, and a successful evasion could have been effectively accomplished by utilizing successfully the following four factors:

- a. *Knowledge* of your survival equipment (know exactly what is in your kit and how to use it) and evasion techniques. You need to know how to obtain water and food. You also need to know details about the country in which you are evading. Know the daily habits of its people, e.g., the V took a 2-hour nap every afternoon, and this was an excellent time to travel.
- b. *Common Sense* to control your responses to the evasion situation.
- c. *Imagination* to outwit the enemy by being unpredictable.
- d. *Resourcefulness* to recognize and use moments of opportunity.

Add to these factors a realization that perhaps the only way to your home base could be through your own attitude, physical ability, patience, and courage. Armed with these capabilities prior to your initial launch in a combat environment, you will have placed yourself on



the best possible course for the successful accomplishment of your evasion effort.

I understand that E and E is not a pleasant subject and never will be except in the comfort of our O'Club bars. Unfortunately, the results of Red Flag exercises continue to reflect that attitude by too many of our aircrews, both young and old. Anyone of the following errors that could cost you years in a "Hilton" are continually observed by the survival instructors at Nellis.

- a. Survivors continue to leave an obvious trail departing the the landing site.
- b. Survivors continue to reflect a lack of detailed knowledge concerning helicopter pick-up devices.
- c. Survivors lack familiarity with appropriate signaling devices.
- d. Survivors generally indicate that they would bury their parachute and excess gear at the landing site, or carry the equipment with them for disposal along the E and E route.

The list goes on and on. The same mistakes that were made in Nam, Korea, World War II, etc., are being made today. What is really sad is, you have the information in your squadrons that will help you avoid being captured. Get in the books and never forget -- your best and perhaps your only chance for evasion will be immediately after you're shot down. Good luck, think evasion, and I'll see you at the O'Club.

For those of you that are still reading and insist that because of your cool, your intelligence, your gunnery scores, or your good looks that you will never get shot down in combat, I have one last piece of wisdom.

Discard all of the above and memorize the following chart:

it may be a long walk !

The POW tap code was based on this chart.

	1	2	3	4	5	6
1	A	B	C	D	E	
2	F	G	H	I	J	(K)
3	L	M	N	O	P	
4	Q	R	S	T	U	
5	V	W	X	Y	Z	

Thus

D is 1-4

U is 4-5

M is 3-2

B is 1-2

Good luck and I'll see you at -- well --
maybe Clark. ➔



TAC TIPS

America and defeat cannot be made to rhyme.

Eric A. Johnston

gear-up landing

The aircraft from another command was en route to its home base after an "out and back" mission. Destination weather was estimated 500 feet overcast and one-half mile visibility.

The mission had proceeded normally until on GCA final when the IP turned off the Guard receiver due to excessive transmissions on Guard channel. At approximately 1.5 NM, the aircraft began drifting to the right of centerline due to a wind shear. There had been no GCA traffic prior to this aircraft to alert the controller to the possibility of a shear, and although numerous heading corrections to the left were issued, the aircraft continued to drift right. At the one-mile point, the controller directed a missed-approach stating, "too far right for safe approach." The crew confirmed the deviation by cross-checking the localizer indications and visually noting strobe lights to their left. The IP, who was flying the aircraft, initiated the missed-approach by advancing the throttles to military, retracting the speed brake, and retracting the gear. At this point, he observed the runway and decided to land. Power was retarded, speed brake extended, and the aircraft landed -- sans wheels.

The lessons learned from this mishap are obvious -- once you decide to execute a missed-approach, carry the procedure through to completion. It's a lot easier to go around and make another approach than to try and taxi with the wheels in the well.

interest items,
mishaps
with morals,
for the
TAC aircrewman

how cum ?

DID you ever see a bird have an accident?

Some birds make pretty weird landings. That's DESIGN ERROR.

Birds get smashed by hail, thunderstorms, etc., but that's WEATHER FACTOR.

A bird with a broken wing can't fly, but that has to be MAINTENANCE FAILURE.

And of course the mother bird may push the youngster out of the nest too soon. Call that SUPERVISORY ERROR.

What I mean is the plain, old garden variety BIRD ERROR accident. Like a bird fails to pay attention to what he's doing and flies right into a tree trunk. Or he gets so engrossed looking at something that he quits flapping his wings and goes crashing to the ground.

Why is it then that this lowly creature, who can't read, can't reason, and can't benefit from other bird's experience, and who knows only what instinct and his mama taught him, goes through life without having an accident?

And why is it that we thinking, reasoning, superior, intelligent human critters do?

Courtesy U.S. Army Aviation Digest



Why me..?

tac aircrew



Maj Bruce W. Schmidt
27 TASS/507 TAIRCW
Davis Monthan AFB, AZ



Capt Larry R. Stephens
549 TASTS/507 TAIRCW
Patrick AFB, FL

Major Schmidt and Captain Stephens were executing practice approaches on a local training mission when their O-2A experienced a landing gear malfunction. The nose gear was observed to be fully extended, but the main gear was in a trailing position and a large amount of hydraulic fluid was visible on the underside of the aircraft.

Several attempts to lower the gear using Dash One procedures were unsuccessful and engine temperatures began to climb out of limits due to increased power requirements. External stores were jettisoned in a safe area and power was then reduced to the minimum required for level flight while an Emergency Action Team (EAT) gathered to suggest corrective action.

Captains Benger and Dwyer, maintenance

members of the EAT, first considered the danger of further compounding the problem because the specific malfunction and exact extent of damage were unknown. Should a hydraulic line be damaged or the universal joint be fractured, use of the hand pump could make it impossible to retract the gear, thus necessitating a hazardous nose gear down, split main gear landing. The maintenance officers directed the crew of the aircraft to remove a floor panel and confirm that the universal joints and key hydraulic line were operational. Subsequent attempts to lower the gear using the hand pump, however, were unsuccessful.

Captains Benger and Dwyer then combined their ideas and knowledge of O-2 systems and concluded that the gear might be pulled into a

of distinction



Capt Jeffery F. Benger
549 TASTS/507 TAIRCW
Patrick AFB, FL



Capt John J. Dwyer
549 CAMS/507 TAIRCW
Patrick AFB, FL

locked position by looping a strap or similar device over the trailing edge of the main gear strut. They experimented with their idea by placing an O-2A aircraft on jacks. When convinced it would work, they relayed details of the suggestion to the airborne crew.

Major Schmidt and Captain Stephens quickly located and removed an intercom cord installed for a third seat occupant. Major Schmidt performed a controllability check to determine the minimum safe airspeed while Captain Stephens carefully adjusted the cord length to prevent accidental rear propeller/cord entanglement. Captain Stephens then secured one end inside the copilot's window and released the other end into the airstream. With Major Schmidt maintaining minimum airspeed, Captain Stephens opened the

rear baggage compartment door and leaned out to secure the cord as far back as possible on the right main gear strut. This was necessary to obtain maximum mechanical advantage from the copilot's seat. Captain Stephens then returned to the front seat and was able to pull the main gear into the full forward position. Since positive down lock indications were not available, the front engine was shut down on short final, and the aircraft recovered uneventfully on a foamed runway.

The superior airmanship, ingenuity, and professional competence demonstrated by Major Schmidt and Captains Stephens, Benger, and Dwyer averted an aircraft accident and possible injury to personnel. Their actions qualify them as Tactical Air Command Aircrew of Distinction.

FLY OUT,



Fly out, eject, or die

EJECT, OR DIE

By Maj Robert W. Coburn
Chief, Flight Safety Div
HQ PACAF

As long as we want to be the best fighter force in the world, we will walk a fine line between effectiveness and disaster. When you fly into a marginal situation at high speed, low to the ground, or in proximity to other aircraft, you're faced with three options: fly out; eject; or die.

Trying to get the most out of each mission is the lure that hooks us into these situations. Don't get me wrong: with reduced flight time and rationed sorties, it is important to maximize training because our ultimate job hasn't changed. However, last year 21 USAF Tactical Air Forces' (TAF) aircraft were lost by pilots who flew into marginal situations. An additional 22 aircraft were lost due to materiel failure and unknown causes. Of the aircrewmembers involved in these marginal situations, 31 died -- while only 22 ejected in time to survive. The TAF figures thus far in 1977 look better; but ADC, ATC, and SAC have had fatal accidents in two-place aircraft which indicate that the loss of equipment and people to marginal situations is continuing.

A point to consider here is the possibility that the number of encounters with marginal situations -- and subsequently the loss rate -- may increase.

The definition of a marginal situation is changing. Command restrictions have enlarged the area where we do not fly frequently. Without practice, familiarity with lower minimums, delivery parameters, and recovery procedures is

quickly lost. If you don't fly near the full capability of your aircraft, you are that much less able to use it when the need arises. Also, budgetary restraint has limited sortie availability and this cannot help but cause a partial loss of flying proficiency for each crewmember, especially new ones.

The same factors reduce our ability to recognize these situations as they develop. Therefore, the question arises: How well will you handle a situation which you can't practice; aren't trained for; and may not recognize until you are well into it? If you haven't done your homework, statistics indicate that you will handle it poorly.

Through accident and incident reports, the Air Force provides you with daily results of how other aircrewmembers handled these situations, so you can go to school on their errors. But knowing the results and statistics isn't enough. You must put some of your time and effort to understanding and using the information provided by analyzing those situations you are likely to encounter. Remember, situation analysis is the only approved way to approach prohibited maneuvers or go beyond Air Force or command limits. I'm not recommending armchair analysis to prove you're smarter than the other guy. I am recommending actual, real-world understanding which will: (1) help you recognize a marginal situation earlier (possibly avoiding it entirely); and (2) shorten the time you need to decide what recovery to use, initiate that maneuver with minimum delay, or eject before the situation has deteriorated completely.

You don't need to spend your time analyzing every situation you hear about. With the extensive amount of material you are responsible for, this would rapidly lead to an overload of your available time. But there are situations which

fly out, eject, or DIE

pilots seem to encounter frequently, as indicated by accidents, incidents, articles, and other war stories. Choose the ones that apply based on your mission, aircraft, home base climate, and additional specifics. An obvious situation for air-to-ground aircrews to analyze would be pop-ups combined with target fixation. Abort criteria were specifically stated by the TAF to preclude the recurrence of the accidents last summer.

Once you have decided on the situation, get the whole story: flight parameters, aircraft malfunctions, pilot actions, and results. In analyzing a war story situation, talk to other members of the flight if possible; your analysis is only as good as the inputs you start with. Keep in mind this analysis of marginal situations is for one purpose: to provide you with the options of flying out or ejecting -- not dying.

Start your analysis with your aircraft performance data. Get the G available to the aircraft accident/incident crew. Look at the energy-maneuverability charts and see if the G available could be maintained. See if the recovery charts would indicate possible recovery. How much farther could the crew have gone before recovery would have been impossible? When you find this point, you have a reference for deciding: fly out or eject.

Next, look at the capability of your egress system. You're drawing a line between ejecting and dying now, so you ought to be quite interested in an accurate figure. This process will also make you a believer in the 10,000 feet and 2,000 feet AGL ejection figures. Very few of us would like to bet on the possibility of getting a fully deployed parachute at one foot AGL. This reference line is also the only decision point of importance when your aircraft has failed and a flying recovery is not possible. Too obvious a decision? This year, two crewmembers rode a T-38A in from 10,000 feet with the left aileron uncontrollable due to material failure.

When you have the two decision points firmly fixed in your mind, talk to other pilots; and compare your data with their decision points. Do some have themselves programmed too low for

a flying recovery or a fully deployed parachute above ground level? If you run into figures you can't resolve or have trouble believing, fly the situation profile next time you're in the simulator and get some personal experience. This way you can duplicate aircraft malfunctions, too.

The guidelines used here apply more closely to air-to-mud problems, but similar ones can easily be drawn for air-to-air, takeoff, landing, instrument approach, inflight refueling, low level, or any other marginal situation you're likely to encounter. The goal is for you to be more aware of the hazardous areas and avoid them if possible. But if you do encounter a marginal situation, you will be well armed to make a quick, logical assessment and a correct decision.



Major Robert W. Coburn (MPS Western Kentucky University) is Chief, Flight Safety Division, HQ PACAF, Hickam AFB, Hawaii. His service experience includes fighter assignments in PACAF, TAC, and USAF, with two combat tours in SEA.



TAC

SAFETY AWARDS

INDIVIDUAL SAFETY AWARD

Staff Sergeant Carl Y. Shiinoki, 355th Avionics Maintenance Squadron, 355th Tactical Fighter Wing, Davis Monthan Air Force Base, Arizona, has been selected to receive the Tactical Air Command Individual Safety Award for this month. Sergeant Shiinoki will receive a desk set and a letter of appreciation from the Vice Commander, Tactical Air Command.

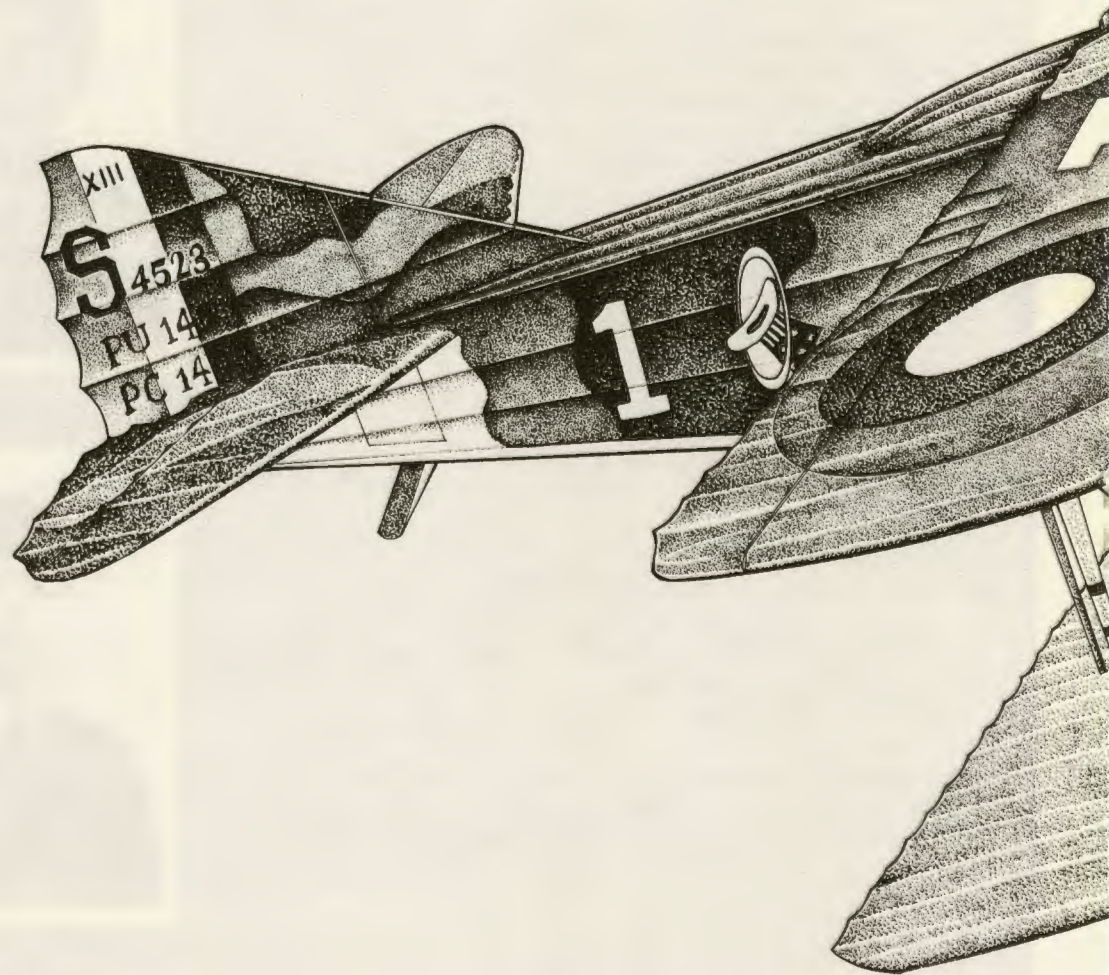


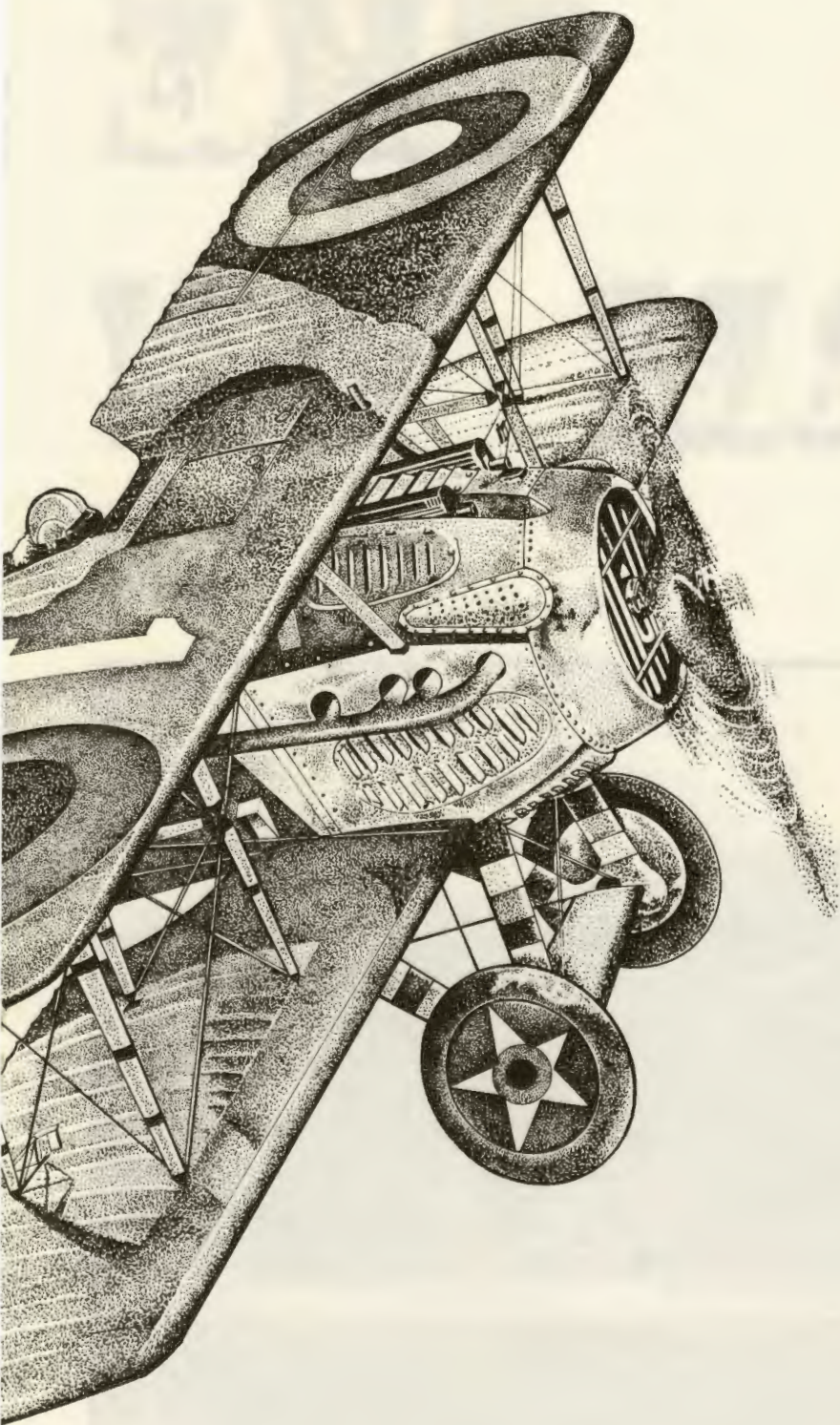
CREW CHIEF SAFETY AWARD

Sergeant Phillip D. Gilmore, 33d Organizational Maintenance Squadron, 33d Tactical Fighter Wing, Eglin Air Force Base, Florida, has been selected to receive the Tactical Air Command Crew Chief Safety Award for this month. Sergeant Gilmore will receive a desk set and letter of appreciation from the Vice Commander, Tactical Air Command.



SPAD XIII





James H. Brown

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THE STORM ON



GREATEST EARTH

By SMSgt David E. Masters
5th Weather Wing Climatologist
Langley AFB, VA

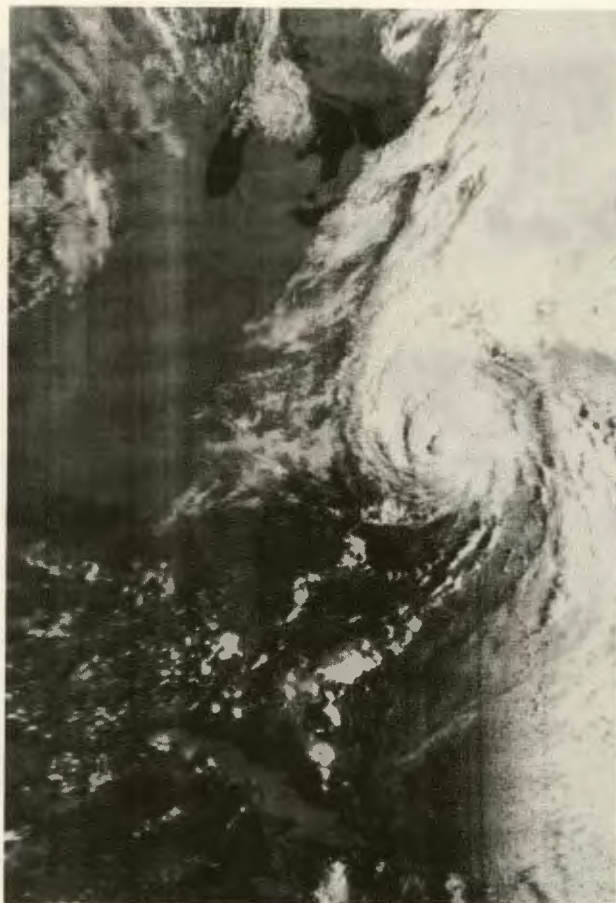
From a vantage point in space, they look like small, flat spirals drifting on the sea -- gentle eddies in the endless flowing of the planet's atmosphere. But where their drift takes them across shipping lanes and islands or the coasts of continents, their passage is noted by destroyed property and death. They are tropical children spawned by the ocean and atmosphere. Their power comes from the ocean's heat, and they are driven by the easterly trades and temperate westerlies, the high planetary winds, and their own fierce energy. In their cloudy arms and around their tranquil core, winds blow with lethal velocity, and the ocean develops an inundating surge. As they move toward land, tornadoes come down from the advancing wall of thunderstorms.

Throughout the world they bear names given locally: Baquio in the Philippines; Cyclone in the Indian Ocean; Typhoon in the western Pacific. In the Atlantic and the eastern Pacific, their name is HURRICANE -- the greatest storm on earth.

Scientists do not have a full understanding of the triggering mechanism involved in hurricane generation. It is believed that most storms begin with a starter mechanism in which either internal or external force intensifies the initial disturbance, setting up a vertical circulation which becomes an organized hurricane. In the lower few thousand feet of a mature hurricane, air flows in through the cyclone and is whipped upward through ascending columns of air near the center. Somewhere above 40,000 feet, the counterclockwise flow is replaced by clockwise circulation. This forms an enormous, high altitude pump which is the life sustaining exhaust system of the hurricane heat engine.

The strong winds associated with hurricanes are produced by marked differences in atmospheric pressure and density. With the exception of the pressure change across the narrow funnel of the tornado, the pressure-gradient -- rate of pressure change across a distance -- produced in hurricanes is the most severe in the atmosphere.

the greatest storm on earth



Hurricane winds are capable of causing severe damage. However, other factors associated with the storm are frequently far more deadly. The typical hurricane brings 6 to 12 inches of rainfall to the area it crosses, and the resulting floods can cause great damage and loss of life. Hurricane Diane, which occurred in 1955, caused little wind damage as it moved onto the continent; but after its winds subsided, it brought floods to Pennsylvania, New York and New England -- floods that killed 20 people and resulted in an estimated \$700 million in property damage.

As a hurricane moves inland, "storm surges" can cause water levels to increase to 15 feet or higher. These abnormally high wind-driven tides were responsible for the death of 200,000 people in East Pakistan during 1970. The huge waves and erratic currents produced by a hurricane can severely erode beaches and highways; and, in estuarine and bayou areas, intrusions of salt water endangers public health and creates bizarre effects such as the salt-crazed snakes which fled Louisiana's flooded bayous following

hurricane Camille in 1969.

Because hurricanes are influenced by many unpredictable and unknown forces, hurricane forecasts have inherent errors. To compensate for erratic storm behavior, the Hurricane Warning Service must "overwarn" to some extent. This means that when a high probability exists that a hurricane will strike a general area within a given interval of time, the threatened area is warned. Sometimes the entire area covered by a hurricane warning is not touched by the storm. Judicious overwarning is a way of ensuring that sudden accelerations or deviations of the hurricane will not catch people unaware. As with automobile insurance, it is easier to absorb the economic loss of precautionary measures than the destruction of an accident. What the public should remember -- and what it frequently forgets -- is that in the business of hurricane warning, there are no false alarms. The threat is real when a warning is issued.

WORDS OF WARNING

During the hurricane season, June through November, you may hear some of the various warnings and advisories put out by the Weather Bureau or the Hurricane Warning Service. These are:

- Small Craft Advisory: These are issued when a hurricane moves within a few hundred miles of the coast and warn small craft operators to take precautions and not to venture into the open ocean.
- Gale Warning: When winds of 38-55 miles per hour (33-48 knots) are expected, a gale warning is added to the advisory message.
- Storm Warning: If winds of 55-74 miles per hour (48-64 knots) are expected, a storm warning is added to the advisory message.

Warnings and advisories are issued whenever the given winds are expected and not solely in association with hurricane conditions. Warnings indicate the coastal area to be affected, the time during which the warning will apply, and the intensity of the disturbance.

If a hurricane is advancing and threatens coastal and inland regions, a "Hurricane Watch" is issued which covers a specified area and duration. A Hurricane Watch means that hurricane conditions are a real possibility -- it does not

mean that a hurricane is imminent. When it is issued, everyone in the area covered by the watch should listen for further advisories and be prepared to act quickly if hurricane warnings are issued.

When hurricane conditions are expected within 24 hours, a "Hurricane Warning" is issued. Hurricane Warnings identify coastal areas where winds of at least 74 miles per hour are expected to occur. A warning may also describe coastal areas where dangerously high water or exceptionally high waves are forecast, even though winds may be less than hurricane force. When a Hurricane Warning is issued, all precautions should be taken immediately.

Tornadoes spawned by hurricanes are among the storms' worst killers. When a hurricane approaches, listen for tornado watches and warnings. A "Tornado Watch" means that tornadoes are expected to develop; a "Tornado Warning" means that a tornado has been sighted. When your area receives a tornado warning, seek shelter immediately -- preferably below ground level. If a tornado catches you outside, move away from its path at a right angle to its forward motion. If there is not time to escape, lie flat in the nearest depression such as a ditch or ravine.

WHAT TO DO IN THE EVENT OF A HURRICANE

Although the hurricane season is from June through November, the peak periods of hurricane activity occur during the months of August and September for the Eastern seaboard and the Gulf Coast of the United States. During actual hurricane conditions, utility services (water, electricity, telephone) may be interrupted for days. Roads may be impassable, water may be unsafe to drink, power lines may be down and, heaven forbid, the Officer and NCO Clubs may close.

If you are not in the local area (TDY, etc.), your dependents should contact your unit's First Sergeant, Disaster Preparedness Officer or Commander for assistance in coping with hurricane conditions. For those personnel residing in on-base dormitories, essential services will be provided by the base Civil Engineers. Unless your duties dictate otherwise, everyone should remain indoors during a hurricane and monitor the local TV and radio stations for the latest information on the storm's progress and possible evacuation measures. In the early stages of a



hurricane, you should service your automobile and stock your pantry. Then restrict your driving. You should also make arrangements with friends if your home can't withstand hurricane force winds. This is equally important if you live in an area which is susceptible to severe flooding. Don't risk being marooned -- evacuate early.

It is good practice to maintain a "Hurricane Defense Kit" for your family. The size of the kit and the quantity of the items you place in it will depend on your family's size and your personal needs. The following is a list of a few basic items which are necessary for your comfort and welfare during hurricane conditions:

- a. A battery operated radio and a good supply of fresh batteries.
- b. Emergency lights: lanterns, candles, flashlights, and matches.
- c. Camp stove or equivalent.
- d. Fuel and water containers.
- e. Food (nonperishable).
- f. Blankets.
- g. First aid kit.
- h. Rope and tape.
- i. Household tools.
- j. Rags, mops, pans, and buckets.
- k. Games, books, and toys for children.

In the event of a hurricane, you will probably have several hours of advance notice of its arrival. Because of this, the loss of your life, or the lives of your loved ones is unwarranted. But it's up to you -- stay calm, stay informed, and use your head. Above all, don't take chances. If you follow these commonsense rules, you'll be around when the hurricane is over to talk about the "greatest storm on earth."



DUV7-R17 PHYZ-BIZ



flying
with
"mary jane"

"The effects of marijuana upon human performance is an area of major concern. No place is the concern more critical than in complex man-machine systems, such as those found in aviation, where even the slightest degradation in either flying or maintenance performance can result in catastrophic losses."



By Lt Col David H. Kerney, M.D.
Medical Division
US Army Agency for Aviation Safety

Courtesy US Army AVIATION DIGEST, Mar 77

Hundreds of thousands of people -- young and old alike -- are physically dependent upon drugs -- diabetics on insulin, angina victims on nitroglycerin, epileptics on anticonvulsants and high blood pressure victims on diuretics. But their dependency on such drugs is necessary for them to lead a normal, healthy life.

In contrast to these people, there are thousands of others who are dependent on a broad spectrum of drugs which affect them physically and psychologically. These are legal social drugs such as alcohol, tobacco, and caffeine; over-the-counter drugs; legally prescribed drugs such as amphetamines, barbiturates and tranquilizers; and illegal "hard" drugs. Somewhere near the middle of this drug spectrum is marijuana (affectionately known by users as pot, tea, grass, weed, or Mary Jane), a growing concern in our society and a potential threat to aviation safety.

When smoked, marijuana quickly enters the bloodstream and within a few seconds (minutes at the most) begins to affect the user's mood and thinking, which lasts for two to four hours.

The psychological effects on the emotions and senses vary widely, depending on what the user expects from the drug, the circumstances under which it is used, and the strength and quantity of the drug. Time is distorted and five minutes may seem like an hour. Space may seem enlarged or otherwise distorted, and sound and colors sometimes seem intensified. Thought frequently becomes dreamlike, and some individuals believe they are thinking better than usual. Recent evidence shows that there is a loss of immediate recall and that it is difficult to think or speak due to disorganization of recent memory.

Judgment Affected

Like alcohol, marijuana affects judgment and an individual may find it much harder to make decisions which require logical thinking. At the same time, he may erroneously believe that his judgment is unimpaired, or even that his mental functioning has been enhanced by the drug. The performance of any complex task which requires good reflexes and clear thinking is impaired, making such tasks as driving or flying particularly dangerous.

Marijuana, like all intoxicating drugs including alcohol, has no place in our aviation environment. While few aviation accidents have been



reported in which marijuana usage by maintenance personnel or aircrewmembers was a factor, it is a well-known fact that use of the drug is widespread among servicemen and it would be naive to think the aviation population has not been affected. The absence of documented marijuana-caused accidents is grossly misleading since proof of intoxication is, for all practical purposes, impossible at the present time.

However, there is information available concerning the effects of marijuana on an aviator's flight ability. An informal inquiry conducted by the University of California revealed that social marijuana smoking is not an uncommon practice among civilian-type aviators, some of whom reported that they had even flown while "high" on marijuana. For this reason, the University conducted an experiment to determine the effects of the drug on the aviator's ability to operate aircraft.

The test was conducted in instrument flight simulators using seven professional and three private pilots who had smoked marijuana socially for several years. Before actual testing, the aviators were familiarized with four consecutive 4-minute holding patterns, which included maneuvers encountered in instrument flight; straight and level flight; turns; pitch roll, and yaw maneuvers; radio navigation, etc. These tasks required coordination as well as short term memory, concentration, and orientation in time and space. Two flights consisted of a standard holding pattern and two of a modified holding pattern requiring altitude changes. Also, mild turbulence was added so that aviators would be

flying with "mary jane"

required to continually manipulate the controls to maintain the desired attitude. These flight profiles were carefully chosen to demand a high level of flying skill to correctly complete the sequence.

Flying Skill Degraded

Once the pilots were proficient in operating the simulator and in performing the holding patterns, two tests were conducted one week apart. Unknown to the pilots they were separated into two groups with each group serving as its own control in two separate tests to validate the results. Before the first test, one group smoked marijuana and the second smoked a placebo (containing no active drug). For the second test, the pattern was reversed. Flying performance of the pilots was then evaluated. In contrast to the placebo, marijuana caused a gross decrement in flying performance with increased prevalence of major and minor errors, altitude and heading deviations, and radio navigation errors. (See Table 1.) The effects of the drug persisted for at least 2 hours, generally disappearing within 4 to 6 hours after it was administered.

Several major problems were noted in flying the simulator while under the influence of



marijuana -- the most significant being its effect on short-term memory and time sense. Aviators often forgot where they were in a given flight sequence or had difficulty recounting how long they had been performing a given maneuver in spite of the presence of written instructions and a stopwatch. Marijuana also appeared to cause alterations in concentration and attention, so that pilots would become preoccupied with one task. As an example, several pilots noted that, following concentration on one particular flying task, they could not tell how long they had been flying or where they were located in the flight sequence. Once they realized this, they would then overcontrol the aircraft in correcting for errors in tasks which they previously had ignored. At times they exhibited a complete loss of orientation with respect to the navigational fix. This loss of orientation occurred when the pilots were either daydreaming, lapsing, or focusing on one certain part of their specified routine.

Although the results noted were quite dramatic in the flight simulator, it is believed that pilot performance in actual flight situations would be even more adversely affected by marijuana. The pilots tested performed a memorized flight sequence and had the instructions for the pattern in front of them at all times.

TABLE 1. -- Average Performance of 10 Pilots 30 Minutes After Smoking Marijuana or Placebo (Values Indicate Total Deviation From Assigned Flight Path During Entire 16-Minute Flight Sequence for Pilot Group).

	ACTIVE	PLACEBO
PULSE	107	73
HIGH RATING	10.5	0.5
ALTITUDE (METERS)	797	207
HEADING (DEGREES)	627	332
RADIO NAVIGATION	100	42
(CDI UNITS)		
MAJOR ERRORS	2.9	0.4
MINOR ERRORS	4.5	0.7

In actual flight situations, instructions come sequentially from an air traffic control specialist and must be accurately noted and repeated (i.e., read back) by the pilot.

Unfortunately, there has been little research into the effects of marijuana intoxication on personnel performing specific jobs such as aircraft maintenance, air traffic control, or other support duties. However, the effects of marijuana upon human performance, particularly those tasks requiring a high level of skill, memory, interpretation, awareness, and judgment, have been well documented. Based on this research and on the detrimental effects of marijuana intoxication on the performance of aviators, it is logical to assume that job performance of all aviation-related personnel would be affected.

Marijuana vs Alcohol

There is much controversy about the use of marijuana versus the use of alcohol. Note the following opposing statements comparing marijuana and alcohol intoxication.

"Marijuana perhaps more than any other drug is the NOW generation. Not just the hippies or the dropouts or the alienated but the doctors, lawyers, and all kinds of chiefs of tomorrow say marijuana is it. It is better than booze--no hang-over. It is a mind drug, not a body drug, while alcohol and nicotine are known to be responsible directly or indirectly for much illness and many deaths. It is a euphoriant in a world that needs joy, not the obliteration of sensation that accompanies alcohol. It is not addicting, whereas hard liquor is. No one dies when they stop using it; some have died when they stopped drinking. It represents and is part of a new attitude toward life while alcohol is regressive."

On the other hand ...

"Nonsense. Marijuana smoking is frequently the first step toward dropping out of life. It sometimes leads to the use of even more dangerous drugs. It has not been studied enough to say it is harmless. It is a symbol of attitude that will destroy our country and lower everyone's standard of living. Alcohol does present problems but it is the drug of choice in all of the more technologically advanced countries, so it cannot be too bad. Marijuana, on the other hand, is used only in the backwater countries of the world."

Regardless of the pros and cons, we know that alcohol is a dangerous drug physically, psychologically or socially for millions of people whose drinking is out of control, that it is a factor in one-half of all highway accidents, and that it has also been a factor in numerous aircraft accidents. And, based on the limited research presently available, there is no firm evidence that "pot" would be less harmful if used as consistently as alcohol.

Although marijuana is not a narcotic and does not appear to cause physical dependence such as heroin or other hard narcotics, users of marijuana are more frequent abusers of other stronger drugs. This may be sociological, but the relationship does exist.

Penalties Severe

The use of marijuana is illegal and the penalties for possession are severe. According to the federal legal controls based on the Controlled Substance Act of 1970, unlawful possession is punishable by up to one year imprisonment and/or fines of up to \$5,000. A second offense can be punishable by up to twice the imprisonment and fines of the first offense.

Unlawful distribution of marijuana, or possession with intent to distribute, is punishable by up to 5-year imprisonment and/or fines of up to \$15,000 plus 2 years of required special parole. A second offense can be punishable by imprisonment or fines up to twice that of the first offense. State laws vary as to the punishment.

Another aspect of off-base apprehension for marijuana use is that a civil court conviction on a possession charge results in mandatory consideration for discharge under the provisions of AFR 36-2 for officer personnel or under AFR 39-12 for enlisted personnel.

Punishment for possession of marijuana under the Uniform Code of Military Justice is severe. Maximum punishment can result in dishonorable discharge and up to 5 years' imprisonment.

Today, the effects of marijuana upon human performance is an area of major concern. No place is this concern more critical than in complex man-machine systems, such as those found in aviation, where even the slightest degradation in either flying or maintenance performance can result in catastrophic losses.

NEEDLE, BALL AND GODSPEED



by Capt George E. Nolly
549 TASTS
PATRICK AFB, FL

It took me several years to discover that my IP in Pilot Training was wrong. Not that I blame him; it's easy to overgeneralize and dispense Categorical Imperatives to an impressionable young "Brown Bar" -- especially to a dumb one! "Always rely on your attitude indicator! Disregard everything else, especially your internal sensations and maintain control by reference to the attitude indicator."

What got lost in the process was proper emphasis on the performance instruments (heading indicator, airspeed, VVI, turn & slip). And that's pretty darned important. Admittedly, it's easy to get "attitude indicator" tunnel vision. What's the

first thing that comes to mind when reading the thunderstorm section of AFM 51-12, WEATHER FOR AIRCREWS, "Prepare for attitude flying..." Most jocks probably immediately think of a big, grapefruit-sized ADI!

Granted, attitude indicators and ADI's have come a long way since the old J-8, but they're not perfect. Most, if not all, flight manuals contain a WARNING to the effect that the OFF flag only indicates insufficient electrical power to the instrument, and may not appear if an internal failure occurs. Interestingly enough, in 1976, tactical fighter and FAC aircraft experienced 51 cases of attitude indicator failure, many of which had no accompanying indications. In fact, a few years ago, an F-4 above an overcast (when else would it happen?) lost all three primary attitude references!

Add a few additional factors, like a fuel low light and a bladder full indication, and you've got the fixin's for a situation a bit more complicated than the "normal RTB." You can take a lot of tension out of the scene by having a firm background in partial panel instrument work -- practiced under no-sweat VFR conditions.

After experiencing several, practicing many, and administering dozens of partial panel approaches as an IP, I can propose several techniques and procedures that might be useful. Naturally, there are no "approved solutions," but these can be used as starting points for tailoring procedures to individual aircraft.

First, get to know your turn needle. AFM 51-37 shows three kinds of turn and slip indicators: two minute; four minute; and, the integrated ADI/turn and slip. Regardless of what you call it, if it has "dog houses" on each side of the center index, putting the needle under the dog-house results in a standard rate turn. If there are no doghouses, one-needle width gives a standard rate turn. In any aircraft and at any speed, a standard rate turn is 3 degrees per second, or a 180 degree turn in one minute. Only the angle of bank required changes. The next time you fly, get a good idea of how much bank gives you a standard rate turn at approach airspeeds.

Likewise, devote a few seconds to your "Whiskey" compass. There's nothing mysterious about making turns on it -- if you just remember that it's probably lying. Actually, you have to remember to add your latitude to the roll-out lead point when turning north, and subtract the latitude when turning to the south. Put more simply, if you use a 5 degree lead point and you are CONUS-based (approximately 30 degrees north latitude), roll out about 35 degrees prior to your desired heading when turning north and roll out about 25 degrees past your desired heading when turning south. There are no appreciable errors when turning east or west.

Okay, now it's time to put this information to practice. Some VFR day, on a practice GCA, cover up the attitude indicator. A line-up card with a piece of masking tape works well, and it can be rapidly removed. After you've gotten the hang of it, cover the heading indicator also. Now go through the procedures you've established for your aircraft.

Generally, the first thing you want to do when you have attitude indicator problems is select your alternate attitude source/gyro power. Verify which instruments have failed, using your altimeter, VVI, turn and slip indicator and magnetic compass. Advise Approach Control you require a no-gyro approach (be sure to tell them when it's a practice approach). Now, make all turns prior to GCA final at a standard rate, and all turns on final at a half-standard rate. An easy

way to visualize the aircraft's turning performance is to picture the turn needle as a representative of your control stick -- needle left, your stick is left, etc., while keeping the ball centered with rudder. (We O-2 drivers visualize the turn needle as a representation of our stick if we had a stick.) When level, keep crosschecking the magnetic compass. You'll find that, after a few times, the partial-panel approach is almost as easy as a full-panel approach -- and probably as smooth.

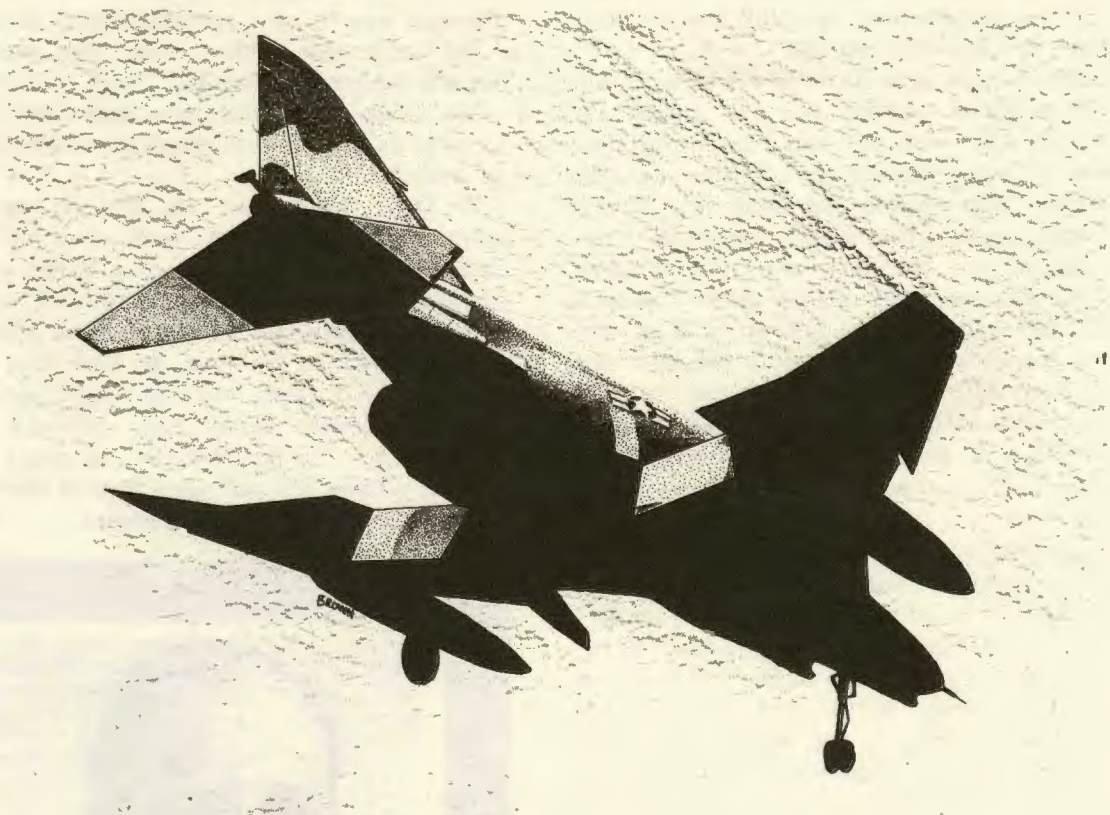
In TAC, fortunately, we have a mission in which the approach and landing merely constitute the termination of a sortie on which combat training was conducted. Of necessity, instrument approaches and training take a back seat to mission training, as well they should. But, sooner or later, you just might find yourself in the weather when your primary attitude systems go "Tango-Uniform." It could be that the ole needle-ball-airspeed trick is the deciding factor in your uneventful recovery. ➤



Captain George E. Nolly (M.S., University of Southern California) is Assistant Chief of Training for the 549th Tactical Air Support Training Squadron, Patrick Air Force Base, Florida. His flying experience has included F-4, B-52 and T-39 aircraft, in addition to his current assignment as an O-2A Instructor Pilot. During two combat tours he logged 200 missions in both the O-2A and the F-4.

F-4

Emergency Situation Training



By Capt Marty Steere

SITUATION :

You're leading a three-ship of F-4Es on a ground attack mission. Everything is going well, and you expect to win a few quarters from the bets on the bomb scores. On the pull-off from a 30-degree dive bomb pass, as the nose of the aircraft is coming through the horizon, you hear a loud "whooshing" noise (similar to the sound of rushing air) emanating from outboard and forward of the throttle quadrant. As you roll wings-level on downwind at 6,000 feet AGL, light gray smoke begins to fill the cockpit. You and your WSO calmly select 100 percent oxygen and check the circuit breakers -- they're all in. The smoke becomes more intense and very dark in color, and the MASTER CAUTION and RADAR-CNI COOL OFF lights illuminate. Whatcha gonna do now, Bunky?

OPTIONS :

- A. Treat the problem as an Equipment Cooling Turbine Failure.
- B. Reduce airspeed, wait 15 seconds and push the reset button. If the light remains on, remain at reduced airspeed and RTB.
- C. Tell your WSO to put out his cigar.
- D. Reduce airspeed, wait 15 seconds and push the reset button. If the light remains on, remain at reduced airspeed and reduced power setting and treat it as a possible bleed air duct failure.
- E. Treat the problem as an electrical fire.

DISCUSSION :

It is always possible that Option C will eliminate the smoke and fumes in the cockpit.

Unfortunately, today you are flying with a WSO who doesn't smoke.

Option A won't hack it either. True, the usual cause of a RADAR-CNI COOL OFF light, when it cannot be reset, is a refrigeration turbine failure or seizure. In such a case, however, the failure or seizure is usually accompanied by loud, unmistakable screeching sounds. These sounds were not evident in this situation.

Option E is a distinct possibility and most jocks instinctively think of an electrical fire when they get smoke in the cockpit. But let's do a little analysis of this situation. An electrical fire is usually accompanied by neat little things, such as circuit breakers popping out -- as well as the smoke and the fumes. Additionally, because the RADAR-CNI COOL OFF light has illuminated, we can assume that if there is an electrical fire or short, it is in the area of the equipment refrigeration package. This area does not contain large wire bundles -- only low amperage wiring protected by 5 ampere circuit breakers (Circuit Breaker Panel 3, A-6 and B-6). It is unlikely that the arcing required to cause such dense smoke would not be interrupted by tripping the circuit breakers.

Option B is close, but "no cigar." OK, that leaves Option D. Why? Thought you'd never ask. The RADAR-CNI COOL OFF light is an indication that an overtemperature condition exists in the equipment cooling package. A temperature limiter senses air temperature at the exit from the equipment package to the radar compartment. If the temperature exceeds 150°F, the limiter shuts the system down and actuates the warning lights. As was previously stated, the usual reason for this occurring is a failure of the equipment cooling turbine which results in an overtemperature condition within the equipment cooling duct. Another source for an overtemperature condition is the bleed air duct which runs beside the equipment cooling duct. Bleed air temperature within this duct is variable and depends upon airspeed, power setting, pressure altitude and outside air temperature. At military power, 6,000 feet pressure altitude, 235 knots CAS, and on a standard day (59°F at sea level), the temperature of the bleed air is approximately 730°F -- hot enough to melt the silicone seals around the cooling duct and allow hot air to enter it and trip the temperature limiter; or, to short the switch which is located just forward of the bleed air duct. The cockpit



floor of the F-4 has a Polyvinyl Chloride (PVC) coated, insulated blanket which is adhesively bonded to the cockpit floor pressurization bulkhead and is separated from the bleed air duct only by a .032" aluminum alloy which rapidly transmits heat. PVC begins to give off light gray smoke at approximately 580°F. As it continues to deteriorate due to heat, it begins to give off dark smoke -- exactly like the situation described.

Naturally, you are not expected to know what the floor of your aircraft is made up of and at what temperature it begins to melt and/or give off smoke. The important thing to know, and it's the key, is that if you get a RADAR-CNI COOL OFF light which will not reset and it is accompanied by smoke and fumes, your problem is most likely a bleed air duct failure -- not an electrical fire.

The obvious question at this point is, "If what you say is true, why isn't the information in the Dash One?" Well friends and neighbors, the information will be in the next revision of the F-4 Flight Manual. The Radar-CNI COOL OFF light, when accompanied by smoke and fumes in the cockpit, will be listed along with all those other indications of possible bleed air duct failure. Oh -- this can happen to you. In fact, TAC lost one F-4E earlier in the year to this same problem.

PLACE THE FACE



This F-86 "Sabre" jet pilot served with the 4th Tactical Fighter-Interceptor Wing in Korea during 1953

In our June contest, we really tried to stump everyone. Everyone at Fleagle's Roost thought no one would be able to recognize the mystery RAF Spitfire pilot. Then came the deluge -- over 150 entries and only three incorrect responses! Good Show!

The winner of the contest was Sergeant John K. Faircloth, Administrative Specialist, 33d Tactical Fighter Wing, Eglin Air Force Base, Florida. He correctly identified our fighter pilot as General Robert J. Dixon, Commander, Tactical Air Command. Sergeant Faircloth will receive the

coveted "Fleagle Fanny Feather of Fate Award," decorated with one of Fleag's own tail feathers.

This month, we bring you the photo of another fighter pilot from the past -- can you "Place the Face"? Send your responses to:

TAC/SEPP
Langley AFB VA 23665

P.S. We're running low on vintage photos and need your help. If you have any vintage photos of well-known folks around TAC and would like to see them in print, send them to us.

TAC TALLY

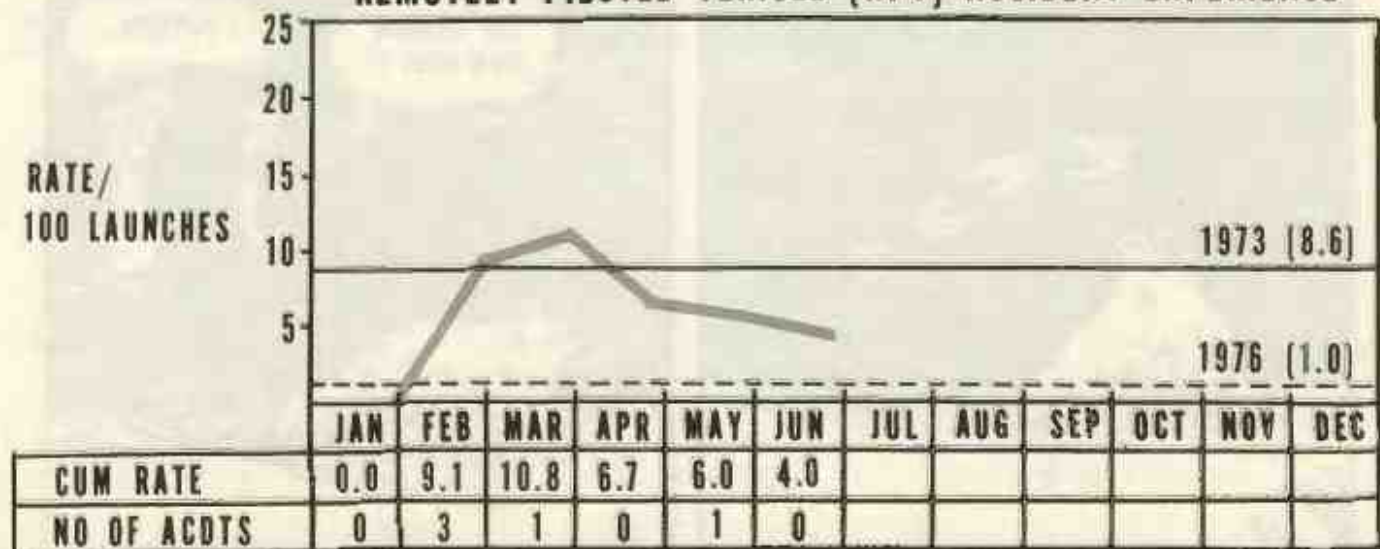


	TAC			ANG			AFR		
	JUNE	thru JUNE		JUNE	thru JUNE		JUNE	thru JUNE	
		1977	1976		1977	1976		1977	1976
CLASS A MISHAPS	2	13	18	2	6	5	0	1	1
AIRCREW FATALITIES	1	5	9	2	2	2	0	0	1
TOTAL EJECTIONS	0	10	15	3	6	2	0	1	1
SUCCESSFUL EJECTIONS	0	10	11	1	4	2	0	1	0
RATE COMPARISON		4.9	8.1		5.6	3.9		4.7	5.0

TAC'S TOP "5" thru JUNE

TAC FTR/RECCE		TAC GAINED FTR/RECCE		TAC/GAINED Other Units	
class A mishap free months		class A mishap free months		class A mishap free months	
20	4 TFW	63	127 TFW ANG	119	182 TASG ANG
14	474 TFW	29	156 TFG ANG	99	135 TASG ANG
12	56 TFW	24	117 TRW ANG	91	507 TAIRCW TAC
10	33 TFW	18	434 TFW AFRES	88	193 TEWG ANG
9	67 TRW	18	162 TFTG ANG	75	USAFTAWC TAC

REMOTELY PILOTED VEHICLE (RPV) ACCIDENT EXPERIENCE



FLEAGLE

