

TAC ATTACK

OCTOBER 1969



for efficient tactical air power

TAC ATTACK

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COMMANDER

GENERAL WILLIAM W. MOMYER

VICE COMMANDER

LT GEN GORDON M. GRAHAM

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COLONEL R. L. LILES

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LT COL C. E. PEARSON



editor

Maj Bill Richardson

assistant editor

Don Reynolds

art editor

Stan Hardison

layout & production

TSgt John K. Miller

editorial assistant

Mariella W. Andrews

printing

Hq TAC Field Printing Plant

JAMIE SEZ:

It has been said that people cause accidents, Sometimes we tend to forget how many they prevent.

current interest

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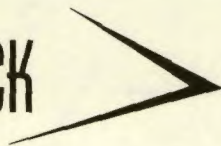
TACRP 127-1

Articles, accident briefs, and associated material in this magazine are non-directive in nature. All suggestions and recommendations are intended to remain within the scope of existing directives. Information used to brief accidents and incidents does not identify the persons, places, or units involved and may not be construed as incriminating under Article 31 of the Uniform Code of Military Justice. Names, dates, and places used in conjunction with accident stories are fictitious. Air Force units are encouraged to republish the material contained herein; however, contents are not for public release. Written permission must be obtained from HQ TAC before material may be republished by other than Department of Defense organizations.

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Angle of ATTACK



your personal minimums...

Your level of proficiency in any aircraft changes from time to time. For example, would you drive down to 200 feet and one-half on an ILS after a PCS and thirty days delay enroute? Not by yourself, I hope! However, Air Force and Command minimums are just that — and under TERPS criteria possibly lower. On the other hand, there is nothing published to prohibit YOU from jacking them up when your proficiency level is down. Some of you may feel insulted if I infer that perhaps you can't hack it right to the ragged edge at any moment in time. Suit yourself, but give the personal minimums subject some thought.

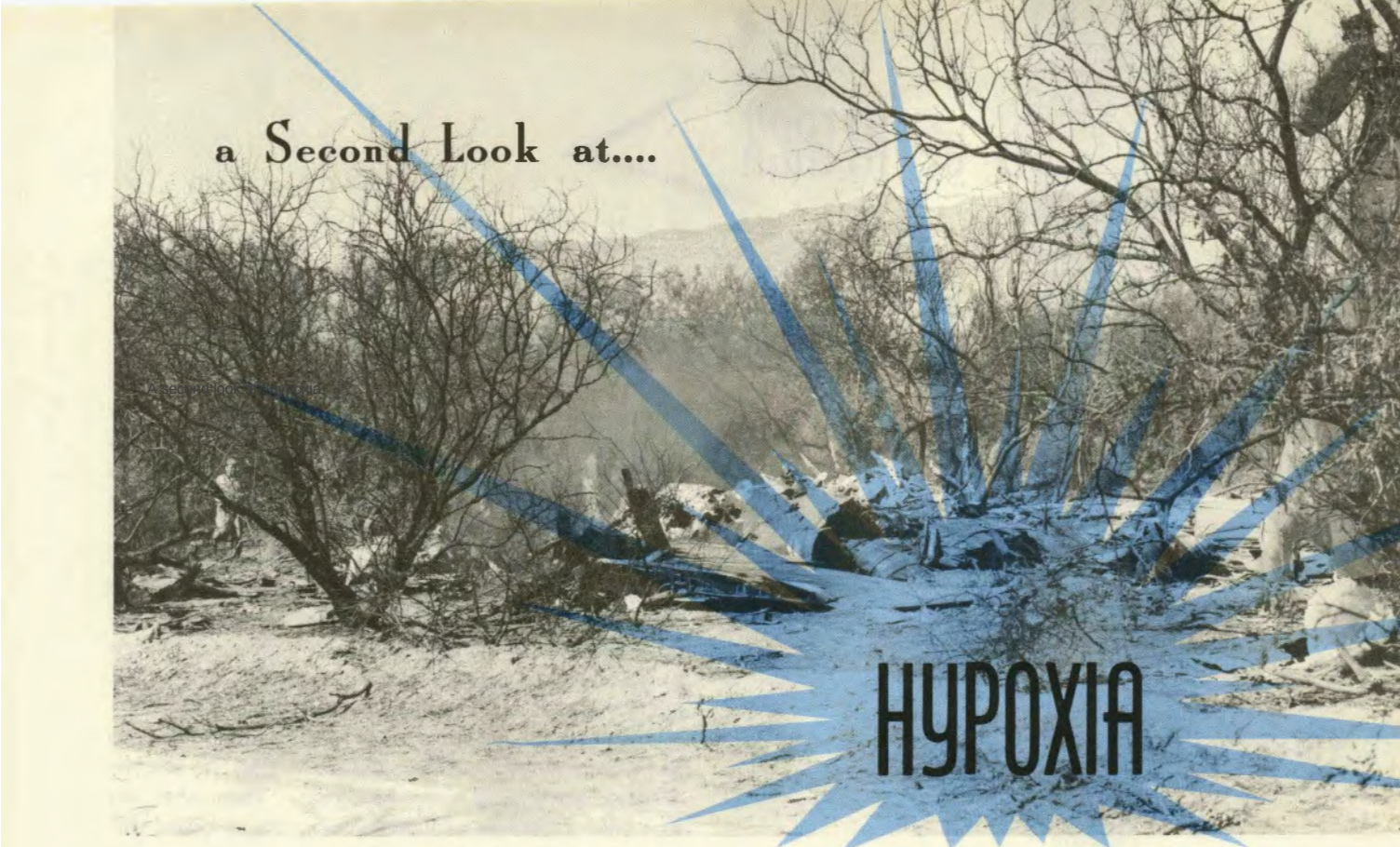
An objective self-appraisal of your actual proficiency and mental attitude will give you the answer. No one else is better qualified to make the decision. There is no way that your supervisor can read your mind, or know what you are thinking. And speaking of thinking, keep in mind the effect of "get-home-itis" and "get-there-itis." These two insidious drives may be responsible for more bashes than we know about. It's very hard to remain objective over a go-no-go decision into marginal weather when you have an important party planned, or when a member of your family is seriously ill.

Accident boards discover many surprising things during their investigations, about pride and other motivations driving pilots into the ground, literally. A case in point: an aircraft made three passes at a field, which was below minimums, before crashing just off the end of the runway. A member of the crew was scheduled to go on emergency leave just as soon as they landed — he didn't.

As we ease into winter it will be well to reflect a while on the instrument approach phase of your flying business. There are many who will argue that this is the most demanding part of your flight; others think not. No matter who is right, the fact remains that for the next several months you will be required to perform your approaches with far more precision, and much more seriously than you have all summer.

R. L. LILES, Colonel, USAF
Chief of Safety





a Second Look at....

HYPOXIA

Although hypoxia incidents are becoming more rare, we can never be complacent about this proven killer. There is no more insidious or dangerous hazard, always present, waiting to strike the unwary flying type. We are exposed from the day we begin flying school, and must live with it thereafter throughout a career in the air. Relatively few succumb — we think. We really don't know the total. Just how do you prove it's hypoxia without a corpus delicti? How many of our undetermined accidents have been caused by this killer? How many times did it contribute to an accident and wasn't discovered? It's anybody's guess!

Five hypoxia incidents have crossed this desk so far in 1969. On the surface it may seem like not enough to even be worried about. And it wouldn't, except for the fact that every single one was caused by carelessness! How many go unreported for every one we hear about? Besides the carelessness on someone's part, another disturbing facet of this oxygen business is that some jocks won't even take proper corrective action after identifying the symptoms! That in itself indicates that the problem wasn't considered very serious. If only incomplete reporting is making us look at you with a jaundiced eye, we'll apologize and buy you a beer — if it's not, we had all better take a good look inside ourselves. For some of us are dead-men-to-be and don't even know it!

Two of the five hypoxia incidents mentioned earlier have already been briefed as TAC Tips. To recap, the F-4

incident was an "undetermined." After level-off at FL220 the instructor pilot noted a cabin altitude of 20,000 feet. He waited for the student to make an ops check as required by TACM 55-4 . . . the student never did. He became hypoxic for some reason and could not follow his instructor's directions when told to select emergency oxygen and pull and reset the cabin emergency vent knob. The IP then descended and the student came around. They could find nothing wrong with the cabin pressurization system or the student's oxygen system.

The T-33 incident occurred at FL310 with a cabin pressure of 20,000 feet. After thirty minutes at altitude the pilot began to have trouble holding his heading and altitude. He selected 100 percent oxygen and noticed that he was feeling strangely similar to the hypoxia sensation observed in the altitude chamber during his last ride. He immediately reduced power, lowered the T-bird's nose, and selected 45M on his oxygen regulator. He was barely able to maintain consciousness. Passing 14,000 feet he considered actuating his bailout bottle, but didn't because he felt better.

His aircraft oxygen system did not begin to supply oxygen for over five minutes after he leveled off at 3,000 feet. The report did not mention if the oxygen warning blinker was working during this time. After landing, the oxygen system checkout was satisfactory. The oxygen regulator was removed, it was either defective or the system "iced" up.

Another T-33 incident showed up which was interesting and a little puzzling. Thirty minutes after takeoff while cruising at FL 270 with a cabin of 18,000, the front-seater began experiencing hypoxia symptoms. He checked his oxygen equipment but was unable to locate the trouble. He quickly descended to 10,000 feet and then recovered at home with no further problems.

They found that his personal oxygen hose had disconnected from the manifold fitting on the seat. This hose had been replaced recently and possibly (?) "may have been clamped improperly." What's puzzling is, "how did the pilot's oxygen regulator blinker work with this hose disconnected?" It was reported that he was unable to find the trouble with his equipment.

The next two incidents both concern the B-66. This first one was a comedy of sorts; a comedy of errors for sure. It involved a passenger on a familiarization ride who went down for the "count." This passenger, a pilot, got up from the gunner's seat after level off at 30,000 feet and went forward to see what was going on in the front office. The cabin pressure was about fifteen thousand and after getting out of his seat, the jock plugged into the walk-around hose. He observed for a while and smoked a few cigarettes. When he had enough of that, he returned aft and unplugged from the walk-around hose prior to sitting down. As he was maneuvering to get into his seat, the cabin pressure suddenly dumped. The navigator then noticed that their passenger was unconscious and had to leave his seat to get him back on oxygen.

As it turned out, the jock hadn't had any oxygen from the time he first got out of his seat. THE WALK-AROUND HOSE HE USED WAS NOT CONNECTED TO AN OXYGEN SOURCE AT THE OTHER END! The fifteen thousand cabin pressure and a few cigarettes probably had him half-way to hypoxia before the pressure dumped. As for the cabin pressure: while turning to get into his seat, he dumped it by rotating the manual dump valve located, guess where — on the gunner's panel forward of his seat. He went out rapidly and the rest is history.

The second B-66 incident falls in the category of "would-you believe." It points up our dependence on other people in areas that don't fall into P. D. McCriple or PRICE or any of our other gimmicks. It also illustrates a neat little trap that may have caught this pilot had he been higher than twenty thousand; a way you can vent your emergency oxygen onto the cabin floor.

During his preflight the pilot noticed that the LOX gauge read 6.5 liters. Maintenance personnel informed him that the gauge had dropped 1.5 liters in three hours, but they had positively identified the problem as only a defective gauge. Oxygen checks by the crew verified that the D-2 regulators were operating properly and that the

oxygen system was normal. As a precaution the pilot had two portable oxygen bottles placed aboard the aircraft.

The pilot used 100-percent oxygen for takeoff, then switched to normal at 1000 feet. Passing 15,000 the cabin pressure was 11,000 feet. It should have been 8000. The crew made oxygen checks at ten and fifteen, everything except the broken LOX gauge indicated that all was normal. Passing 15,000 feet the pilot began checking the air conditioning and pressurization system. At 20,000 he switched to 100-percent oxygen when he noticed that his vision began to blur as if in a white haze, he could still read the cockpit instruments. He rechecked his regulator, the pressure was up but his blinker no longer worked. He started an immediate descent and pulled the green apple on his bailout bottle — he did not feel a flow of oxygen to his mask. He felt that he had not pulled the green apple hard enough so he asked the navigator to come forward and hook up a portable oxygen bottle to his mask. The nav came forward, pulled the green apple again, and hooked up the oxygen bottle to the pilot's CRU-8/P connector. About 35 minutes after takeoff and now below 16,00 feet, the pilot's vision returned and the haze disappeared. An emergency was declared followed by a normal landing. Throughout the flight the D-2 regulators for the navigator and EWO worked properly and neither crewmember suffered symptoms of hypoxia.

Three separate things happened to cause (or complicate) this hypoxia incident:

- The cockpit pressurization duct blew out causing loss of pressurization.
- The oxygen supply hose separated at the quick disconnect on the cockpit floor. There is supposed to be enough slack between this disconnect and a clamp on the side of the seat to permit fore and aft movement of the seat without placing tension on the hose — there was not. The pilot moved his seat aft somewhere above fifteen thousand and disconnected himself from the aircraft oxygen supply.
- When the pilot pulled his green apple and activated the bailout bottle, the oxygen vented through his CRU-8/P and out the supply hose through the parted disconnect and onto the cockpit floor. A neat trap!

On the surface, this incident doesn't appear to be anything to really get excited about. Pilot takes off — cockpit pressurization duct blows — moves seat back during climb and disconnects oxygen supply hose — gets hypoxic at 20,000 feet, descends. Let's change it a little now. Pilot takes off — moves seat back during climb and disconnects oxygen supply hose — cockpit pressurization duct blows out at 30,000 feet. Will this bird come home if things happen as in the second example? We don't really know, do we? Had this B-66 pressurized as the Dash One indicates, at 30,000 feet

HYPOXIA

the cabin would only have been at 12,000. The pilot might not have made it to a safe altitude if he had begun fiddling with his now useless bailout bottle after losing cabin pressure.

This brings us to the unbelievable part. The fact that a break in your oxygen supply system can prevent you from breathing your emergency oxygen supply! If the pilot's oxygen supply hose had separated from his CRU-8/P at the connector, the resistance valve would have warned him of the break. He would then have the option of hooking the hose up again or pulling the green apple. This unit ran a test to verify the pilot's suspicion of what happened to him. An oxygen mask hose, a bailout bottle and an aircraft oxygen supply hose were connected to a CRU-8/P. When the green apple was pulled the oxygen followed the path of least resistance and flowed out of the open end of the aircraft supply hose, almost no oxygen reached the pilot's mask. Conclusion? **THE AIRCRAFT OXYGEN SUPPLY HOSE MUST BE DISCONNECTED AT THE CRU-8/P TO ALLOW OXYGEN TO FLOW INTO YOUR MASK!**

The cause factor which precipitated the disconnect of the oxygen supply hose was labeled a tech order deficiency for the following reasons:

- The length of the oxygen hose between the clamp on the left side of the pilot's seat and the quick disconnect on the floor, is not specified.
- The tech order does not specify whether the clamp on the pilot's seat should swivel. This one and four others were found swiveled to the rear. This would increase the length of hose required between the clamp and the disconnect if tension is not to be placed on this section of hose when the seat is moved back.
- The tech order does not specify that this clamp should have a rubber liner. This one did not, all other squadron aircraft did. The rubber liner is to prevent the hose from sliding through the clamp when the seat is moved forward, effectively shortening the clamp to disconnect hose length. When the seat is moved aft, the hose can catch on the clamp and exert enough pressure to part the disconnect on the floor.

At first glance we had a tendency to fault this oxygen system — perhaps, after reading the preceding paragraphs, you would too. But *why*? This oxygen system functioned exactly as it was designed and put into service! That's right — everything that happened to this pilot was built into the system by us.

So where does that leave you if you are a pilot? Well it follows that you should do some thinking on the subject of hypoxia and oxygen. For a start, where is the last point

that you can do something about hypoxia? For some of us it's the bailout bottle, but there are many different systems. It might be interesting to work backwards with your system to see where it could fail you . . . and what you can do about it. The B-66 certainly has no exclusive franchise in this area and we aren't picking on it — the unit involved just happened to send out an outstanding incident report.

We hope you're convinced that aside from complacency, which you can't afford, you must always be prepared to cope with an in-flight oxygen system malfunction. At the higher altitudes you will have a very short time to make a decision. If you use this time to fiddle with a system that isn't working — you've made a bad bet. By the time you realize that you are hypoxic, your ability to think has already been impaired to some degree, it will continue to degenerate until your brain is given oxygen.

The carelessness that causes hypoxia can be at any level, from the factory to you. When the gear comes up you're on your own with the equipment you accepted. The P — R — I — C — E check will insure, to it's limits, that you have a good system, our life support personnel have done their all — the rest is up to you. ➤







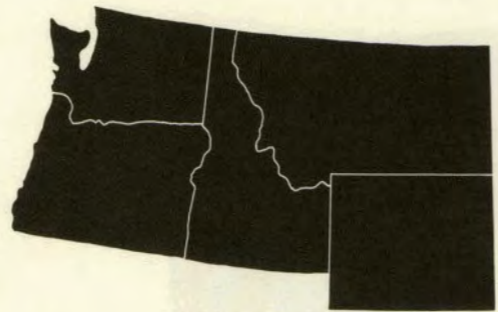
As winter draws near it's time to begin thinking about snow, freezing rain, low ceilings, strong enroute winds, et cetera. Those aren't the only changes that accompany winter of course, but they should be enough reason to make you begin "re-thinking" and "re-evaluating" your summer flying procedures and equipment. No matter where you fly or what you fly in, you will be affected by the change in climatology ushered in next month.

A few months ago your only problem was how long to make your nav legs and the best way to avoid thunderstorms. All that changes now! Planning a flight must be more precise . . . no fudging on alternates or fuel. Your approaches must be more precise . . . how long since you've been under the bag? You must sharpen your landing technique . . . sloppy landings on snow and ice won't sell for the next few months.

Generally, winter flying weather is poor. Snowstorms strike suddenly in the northern states and often extend far to the south. Aircraft icing and freezing precip are serious problems in the early and late phases of winter. Frequent cold outbreaks are the prime cause of gusty surface winds, winds aloft become stronger. The Jet Stream moves south for the winter . . . like tourists!

Through the courtesy of the Fifth Weather Wing here at Langley we have printed a study of WINTER FLYING WEATHER IN THE CONTIGUOUS UNITED STATES. To ease the presentation, the country has been divided into six geographical regions. It's light reading so scan it, paying particular attention to your region and those you intend to fly into. Following the study, we've added some reminders for your perusal — some things to think about and some preparations that will save you money and manpower if they are done BEFORE winter arrives.

northwest



GENERAL. The Coastal Range, Cascades, and Rocky Mountains play a leading role in shaping the climate of this region. Precipitation is heaviest near the ocean and on the windward or southwesterly slopes of the mountains, and lightest on the leeward slopes.

FRONTS. During winter, this region is under the influence of frontal weather from 30 to 50 percent of the time. Frontal passages average one every three or four days. Fronts often become stationary for periods of two or three days. Widespread precipitation and extensive cloudiness are experienced with stationary fronts. The mean number of low centers moving through this region in winter is two per month.

FREEZING LEVEL. The average seasonal height of the freezing level is near the surface over most of the region. Only along the coast, west of the Coastal Range, is the freezing level persistently above the surface, the average height being about 5,000 feet.

AIRCRAFT ICING. Conditions are favorable for icing up to 35 percent of the time from the surface to 25,000 feet.

PRECIPITATION. In half of this region, winter is the wet season. East of the Rocky Mountains, in Montana and Wyoming, winter is the dry season. Precipitation is distributed in north-south bands or zones, with amounts increasing from the west inland to the crest of the Coastal Ranges, then decreasing through the interior lowlands, and again increasing on the western slopes of the Sierra-Cascade Range. In the sheltered areas east of the Rockies, precipitation is generally light.

Along the coast, west of the Coastal Range, the average

number of days with precipitation ranges from 17 to 22 days per month; over the remainder of the region the average number varies from 9 to 15 days. The average winter precipitation ranges from about one inch in eastern Montana to more than 50 inches along the coast and in the Coastal Mountain Range.

Snowfall. In Washington and Oregon, the average monthly snowfall amounts range from 1 to 120 inches, depending upon elevation and exposure. In Montana, Idaho, Wyoming, and on the sheltered sides of mountains, the mean monthly snowfall amount ranges from 6 to 10 inches.

Freezing Rain. In western Washington and at higher elevations, freezing rain occurs on the average of 2 days per month. Elsewhere, the average occurrence of freezing rain is less than one day per month.

SURFACE WINDS. Topography strongly influences both the direction and force of surface winds throughout the region. During winter, westerly winds predominate throughout this region. Surface winds reach maximum speeds during this season. Those that are 25 mph or more occur 5 percent of the time west of the Rockies and 15 percent of the time east of these mountains.

FLYING WEATHER. Winter is the season when terminal operations are most frequently hampered by adverse weather. In the coastal areas, ceilings of 1,000 feet or more and visibilities 3 miles or greater occur about 70 percent of the time, elsewhere 85-90 percent of the time.

Along the coast of Oregon and Washington, ceilings below 5,000 feet occur 40 to 50 percent of the time, decreasing on the lee sides of the mountains to 10 to 30 percent of the time.

southwest



GENERAL. In this region, climatic types are well defined by major relief features such as the Coastal Range, Sierra Nevadas, and the Rocky Mountains. The Coastal Mountains and the Sierra Nevadas are effective barriers to eastward moving moist air from the Pacific. Most of the moisture in the eastward moving air, is lost on the westerly slopes as the air is forced to ascend the mountains. West of these ranges, winter wet climate prevails; on the east sides, climate is relatively dry.

Temperature, precipitation, and cloudiness are largely controlled by elevation, and direction of airflow. Along the immediate coast of central California, the climate is as equable as can be found anywhere within the United States. Moving eastward from the Coastal Range, a radical change of climate takes place; desert climate gives way to steppe and mountain climate. These inland areas are semi-arid with cold winters; however, in southern Utah, southern Nevada, Arizona, and southeastern California, winters are very mild, though occasional freezing temperatures are experienced on the plateau rim.

In general, temperatures decrease inland from the coast. These trends are by no means uniform because the temperature patterns are greatly disturbed in the vicinity of mountains where the depressing effect of elevation is very apparent. The latitudinal influence in the distribution of temperature is most noticeable in the dry areas to the east of the Sierra-Cascade Range. Here, the bitter cold winters of northern plateaus contrast sharply with mild winters of southern deserts.

FRONTS. In a study of a five year period (1949-53), it was found that the average number of frontal passages through this region was six per month during the winter season. During the same period, the lowest number

crossing the region in any one winter month was three, the highest nine. The majority of the passages were of the cold front variety. Many became stationary and remained in the area for periods of up to three days.

The number of low centers passing through this region, ranged from none in some winter months to three per month in others, with an average of one crossing per month.

PRECIPITATION. In this region, winter is the wet season. Most of the precipitation that falls along the coast is in the form of rain, with greatest amounts along the northern California coast. Generally, throughout southern California and southern Arizona, precipitation during the winter season is in the form of light rain; however, excessively heavy rains have been recorded within short intervals of time.

Average precipitation amounts for this region, during the entire winter season, range from two inches at lower elevations to near 40 inches at highest elevations. Along the California coast, the average number of days per month with precipitation ranges from 4-5 days along the southern extremity to 17 days per month at the northern edge. Over the remainder of the region, precipitation occurs on 6-9 days, except in southern Arizona where it takes place on only two or three days per month.

Snowfall. Along the coast of California, southern Arizona, and southeastern California, snowfall is an unimportant feature of climate. In the high Sierra Nevadas and the uppermost slopes of the high terrain snowfall is extremely heavy. Snowfall is relatively light at basin level. Except on higher slopes of mountains, snowfall seldom forms a continuous cover.

In northern California, monthly average snowfall ranges from less than one inch in some areas to maximums near 110 inches on high mountains. In Nevada, the monthly average ranges from less than 1 inch to 9 inches; in Utah, the range is from 13 to 60 inches; northern Arizona has a range from 6 to 28 inches.

Freezing Rain. In the higher elevations of this region, freezing rain occurs on the average of four days during the entire winter season. Along the coast, in southern California, and in southern Arizona, freezing rain is rare.

FREEZING LEVEL. The freezing level is generally near the surface in northern Utah, Nevada, and in the higher terrain of California, increasing to heights of about 10,000 feet along the southern borders of California and Arizona.

AIRCRAFT ICING. Conditions are favorable for icing 5-20 percent of the time from the surface to 25,000 feet.

SURFACE WINDS. Topography, in this region, plays an

important role in wind direction and speed. Gusty surface winds are experienced with most frontal passages and very strong gusts are usually associated with lows. Gusty winds are most frequently observed during the hours 1000 to 1900 LST.

FLYING WEATHER. Winter is the season when terminal operations, at most stations, are most frequently

hampered by adverse weather. In the coastal areas, ceilings of 1,000 feet or more and visibilities 3 miles or greater, occur about 75 percent of the time, elsewhere in this region over 90 percent of the time.

Along the coast, ceilings below 5,000 feet occur 10-30 percent of the time, decreasing on lee sides of the mountains to less than 5 percent of the time.

north central



GENERAL. The eastern and central portion are generally flat, with a gentle rise to the west which culminates in the High Plains and Rocky Mountains.

FRONTS. During winter, frontal systems are in this region, from about 30 to 50 percent of the time. This does not mean that fronts move through this region every other day; what does happen is that fronts often become stationary for extended periods of time when crossing this region.

FREEZING LEVEL. During winter, the average height of the freezing level is near the surface; however, on any given day in the southern part of the region the freezing level may be near 2,000 feet MSL.

AIRCRAFT ICING. Conditions are favorable for aircraft icing from the surface to 25,000 feet 5-30 percent of the time during winter.

PRECIPITATION. Most of the precipitation is in the form of snow; however, rain is not uncommon in the Great Lakes complex and in southern portions of the region.

The distribution of precipitation days shows a slight increase eastward, varying little from north to south. Over most of the region, the mean number of precipitation

days per winter month ranges from 6 to 10 days. On the lee side of the Great Lakes, the average number of precipitation days may be as high as 19 per month.

Snowfall. In the southern part of this region, the average monthly snowfall amounts are 3-5 inches, in northern portions 6-10 inches. In the Great Lakes complex the average amounts are 11 to 19 inches per winter month. In the higher terrain monthly snowfall amounts are greater than 19 inches.

Freezing Rain. Freezing rain occurs throughout this region during winter. The average occurrence of freezing rain ranges from about one day per month in the northern and western portions to about three days per month in the vicinity of the Great Lakes.

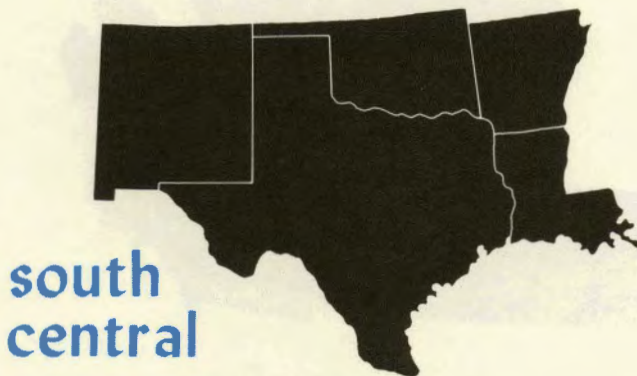
SURFACE WINDS. Prevailing winds are northwesterly during the winter. Local influences are strong in mountain areas, where funneling of winds by valley and mountain passes influence the direction and speed of the surface wind. Foehn winds on the eastern side of the mountains may attain considerable speeds as they move down through mountain passes; in addition, rapid downward movement causes warming and rapid evaporation.

The uniform topography of the Great Plains and Central Lowlands presents a large flat area where wind meets a minimum of resistance. As a result, the area has

relatively high winds, with wind speeds averaging 10 to 16 mph during winter.

FLYING WEATHER. Winter is the season with the most adverse flying weather in this region. Ceilings 1,000 feet or higher and visibilities 3 miles or more occur 80-95 percent of the time in the western part of the region, decreasing to 65-80 percent of the time in the Great Lakes complex.

Ceilings below 5,000 feet occur 10 to 20 percent of the time on the sheltered side of the Rocky Mountains, gradually increasing to 40-70 percent occurrence in the vicinity of the Great Lakes.



south central

GENERAL. This region covers a wide variety of terrain ranging from swamp lands in southern Louisiana to desert in central New Mexico. Elevations range from near sea level along the coasts of Texas and Louisiana to uplands 2-3,000 feet high in western Oklahoma and mountainous areas above 10,000 feet in New Mexico.

FRONTS. During winter, fronts are located in this region from 25-40 percent of the time. The mean number of cyclone centers crossing ranges from two to four each winter month.

FREEZING LEVEL. The mean height of the freezing level along the southern border is 10,000 feet, along the northern border near the surface.

AIRCRAFT ICING. Throughout the region, from the surface to 25,000 feet conditions are favorable for aircraft icing 5-15 percent of the time during winter.

PRECIPITATION. Winter is the dry season. The mean days per month with precipitation generally increases from west to east throughout the region. In New Mexico, western Texas, and Oklahoma, the mean number of precipitation days ranges from 1 to 5. In eastern Texas, Arkansas, and Louisiana, the mean number of days per month with precipitation ranges from 6 to 12 days.

Mean monthly precipitation amounts range from less than one inch in western Texas, western Oklahoma, and New Mexico to about 5 inches per month over the remainder of the region.

Snowfall. In southern Texas, southern New Mexico, and most of Louisiana, the average monthly snowfall is less than one inch. In northern New Mexico, northern Texas, Oklahoma, and Arkansas, average monthly snowfall ranges from 1 to 5 inches per month.

Freezing Rain. During winter the average number of times that freezing rain occurs ranges from about one day per season in the southern portion to near 10 days per season in the northern portion.

SURFACE WINDS. In general, winter is the period with strong surface winds. These strong winds are usually associated with cold frontal passages. Prior to frontal passage, wind directions are usually from the southwest shifting to northwest with frontal passage. Strong winds occur most frequently in the northern part of the region. The percent frequency of surface winds greater than 25 mph ranges from 5-10 percent.

FLYING WEATHER. In southwest Texas and southern New Mexico, ceilings 1,000 feet or greater and visibilities 3 miles or more occur more than 95 percent of the time, over the remainder of the region 70-90 percent of the time.

In the eastern part of the region ceilings below 5,000 feet occur 30-40 percent of the time, in the western part 5-20 percent of the time.



southeast

GENERAL. This region with the exception of eastern Tennessee and western North Carolina, is without extensive areas of uplands or high mountains, and has much the same climate throughout. In Florida and the coasts of Mississippi, Alabama, and Georgia, winter is generally mild and pleasant, with a high percentage of sunshine. Occasional cold waves make practically all parts of Florida susceptible to freezing temperatures. No

section of the mainland is absolutely frost free.

In the low-lying plains that slope away from the Appalachian Uplands of North Carolina, winters are mild with occasional cold spells. Freezing temperatures may accompany cold waves, but persistence of continuous freezing weather is usually limited to periods up to three days.

In Tennessee and the uplands of the Appalachian Mountain system, climate resembles the continental type of central United States with invigorating winters; snow is a common phenomenon.

FRONTS. In winter, frontal systems are in this region from 35-45 percent of the time. Many of the fronts passing through this region become stationary for periods up to three days, giving extensive cloudiness and precipitation to the region. The average number of low centers passing through this region is three to five per winter month.

FREEZING LEVEL. Throughout this region, the average height of the freezing level is near 10,000 feet, with the penetration of cold air masses the freezing level may drop to near the surface.

AIRCRAFT ICING. Conditions are favorable for icing in this region up to 10 percent of the time from the surface to 25,000 feet.

PRECIPITATION. Weather situations favorable for the production of precipitation occur frequently in the winter season; most of the precipitation is rain. Lows developing or moving through this region are chiefly responsible for winter precipitation. The average number of precipitation days per month range from 7 to 11. The average winter season precipitation amounts along the east coastal areas increases from about 6 inches in southern Florida to 12 inches on the coast of North Carolina. Along the Gulf coast amounts increase from near 6 inches over Florida to 16 inches over Louisiana. Throughout the interior average winter precipitation amounts range from 10 to 16 inches. Precipitation maximums of 20 inches or greater for the entire winter season are located in the high terrain of the southern Appalachians.

Snowfall. Average snowfall amounts per month range from a trace or less in the southern parts of this region to 1-2 inches in North Carolina and Tennessee. Higher amounts are received over the southern Appalachians at the higher elevations.

Freezing Rain. Over Florida and in coastal locations freezing rain is not common. Elsewhere in this region it occurs about one day per month during winter.

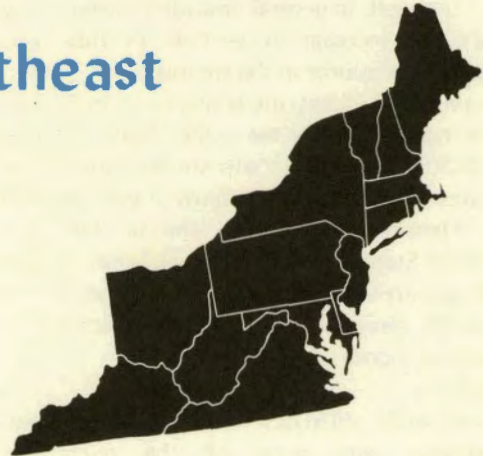
SURFACE WINDS. In central and southern Florida,

surface winds have easterly components. Elsewhere, westerly winds predominate during winter. Speeds are generally strong, averaging 10 to 12 mph in all winter months.

FLYING WEATHER. Flying conditions are generally favorable in this area. Ceilings 1,000 feet or more and visibilities 3 miles or more occur over 90 percent of the time in most of the area; the poorest area being Tennessee, with 80-85 percent occurrence of such conditions.

Throughout the region, ceilings below 5,000 feet occur 30 to 50 percent of the time, highest occurrence of this phenomenon being over the Appalachians and in Louisiana.

northeast



GENERAL. Topography ranges from the flat coastal plains to the Appalachian Mountains with peak elevations near 6,200 feet. The slightly irregular coastal lowlands are influenced by the proximity of the water body and have a milder climate than the mountainous inland areas.

An important role is played by the Great Lakes in the climate of the western part of this region. Cold air moving across the Lakes gains moisture and releases it over western Pennsylvania, western New York, and over the higher terrain of this area as snow or rainshowers. Thus, precipitation amounts are greatly increased near the Lakes.

FRONTS. In winter, frontal systems are in this region 25-45 percent of the time.

FREEZING LEVEL. The mean height of the freezing level is 10,000 feet over the southern part of this region, gradually decreasing to near surface in the central part of this region; remaining near the surface throughout the northern part of the region.

AIRCRAFT ICING. During winter, conditions are

favorable for icing 5-30 percent of the time from the surface to 25,000 feet. Icing conditions are encountered most frequently in the vicinity of the Great Lakes.

PRECIPITATION. Precipitation is fairly uniform throughout the year. Precipitation amounts are greater on the windward slopes of the high mountains and on the lee side of the Great Lakes. The average number of precipitation days per month ranges from 11 to 14 over most of the region; however, on the lee side of the Great Lakes the average number of precipitation days increases to 16 to 18.

Average precipitation amounts for the entire winter season range from 6 to 12 inches. Greatest amounts are generally observed on the higher Appalachian terrain.

Snowfall. In general, average snowfall amounts increase with an increase in latitude in this region. Average monthly amounts in the southern part of this region range from 2 to 7 inches, increasing to 12 to 27 inches along the northern border of the United States. Increased amounts (20-30 inches) per month are encountered near the Great Lakes and at higher elevations of the Appalachians.

Freezing Rain. Along the northern border of the United States and at higher elevations, the average number of occurrences of freezing rain is about three days per month; elsewhere, the average occurrence is about one day per month.

SURFACE WINDS. In winter, prevailing winds are westerly over most of the region; however, in mountainous areas local topography influences direction and speed. High mountains and associated valleys have a high incidence of strong winds. Throughout the region, surface winds exceed 25 mph from 5 to 15 percent of the time during winter. Periods of calm or light winds occur most often during the early morning hours.

FLYING WEATHER. The poorest winter flying conditions are usually experienced on the lee side of the Great Lakes and in the mountains; in these areas ceilings are 1,000 feet or greater with visibilities 3 miles or more from 60 to 75 percent of the time. In the remainder of the region these conditions exist from 75 to 85 percent of the time.

Watch Out....

....for the Unusual!

As you can see, we all get weather to some extent. Prior to winter we'll brief on it, be briefed on it, and generally get pretty tired of the whole business. You'll see it on posters, in the rest of the safety magazines, a flick on the subject may even show up. Just about the time you

think you're full of cold weather briefings and begin to tune them out — take another think. Don't forget the usual, but why not add your two-bits and delve into the unusual?

What's unusual? How about one of our winter accidents that occurred last January? It involved a fighter whose pilot made a somewhat less than average landing and blew a tire during roll-out. He held it down the runway, drifting right, and ran off with about 300 feet to go. The ground was frozen and the wheels did not sink in. The aircraft then hit a snow and ice bank, and spun to a stop. That's where the damage occurred! This was a civilian airport, the snow and ice bank encountered by the aircraft had been piled up by a privately owned snow plow while making a path to a civilian aircraft parking area. The investigation turned up a total of seven snowbanks adjacent to the runways. MEANWHILE, THE FIVE FOOT HIGH SNOWBANK THAT DID ALL THE DAMAGE WAS THE ONLY OBSTRUCTION WITHIN 3000 FEET OF THE END OF THE RUNWAY! And incidentally, HAD the pilot made it to the end, he would have found that the barrier was buried under snow and ice!

And how about your gunnery ranges — the strafe area for instance. Is it usual or unusual to plow the impact area BEFORE it freezes? Any old Minnesota farmer can tell you that you'll fare better by plowing early rather than waiting till the ground is solid and your aircraft start eating bullets. It makes plowing easier all winter, as a matter of fact. Our southwest ranges will also benefit from plowing BEFORE the rains come to pack the sand. Don't forget last January.

Try thinking of the screwiest winter accident that could happen — and then see if it can happen on your base. It really isn't the normal things that cause all the consternation, IT'S THE UNUSUAL. Things like unsecured chocks, ice on aircraft surfaces, and people running into the ground while trying to peek under clouds will be with us forever, it seems. Identifying a problem that everyone else has missed should be a challenge, a challenge that could pay off for you and for your unit.

We won't go into all the usual "lookouts," if you didn't read the study above, go back and try it again — for they are all there. Icing, the white-out, the snowstorms, the weather you must survive in if you go down, ad infinitum. The important thing, and the reason for this pitch, is to get you to think about winter and that, "it can happen to you."

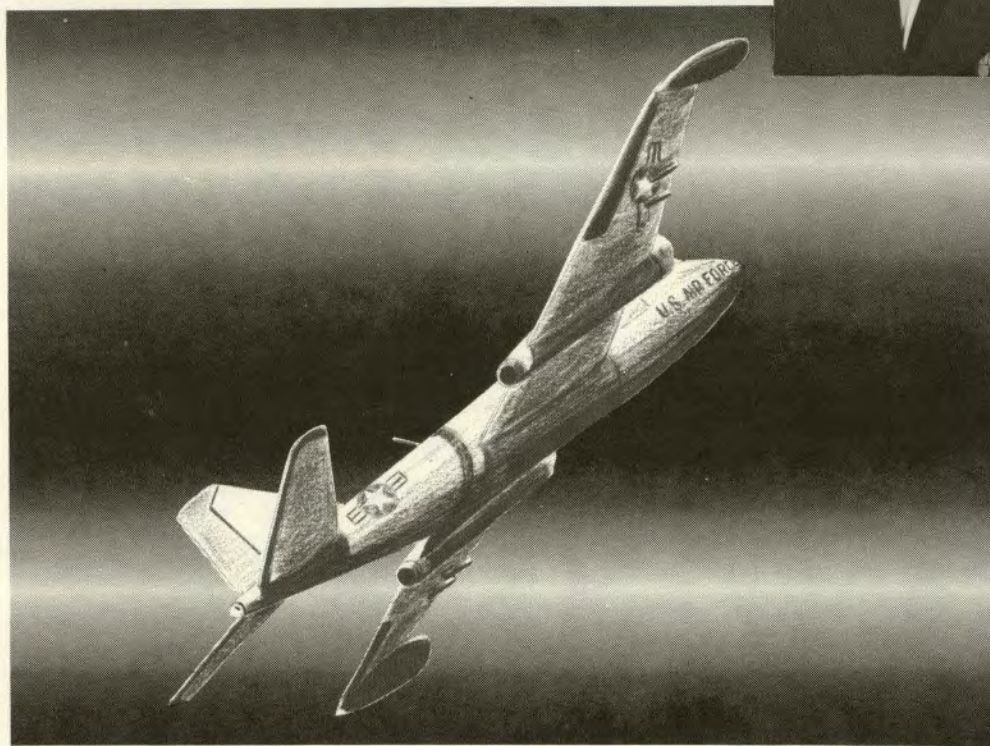
We'll have to leave you with those thoughts . . . the calendar says it's time to start working on our summer article. You know, increased takeoff rolls, thunderstorms, sunburn. . . well, have a good winter and F—C—S—W—I !!



TACTICAL AIR COMMAND

Pilot of Distinction

Major R.W. Clark



Major Robert W. Clark of the 4424th Combat Crew Training Squadron, MacDill Air Force Base, Florida, has been selected as a Tactical Air Command Pilot of Distinction.

Major Clark was flying a ground attack mission in a B-57 when he experienced flight control problems. During pitchout following range entry, he was unable to obtain proper elevator response. Unable to hold altitude while in a steep turn at 2000 feet, Major Clark used aileron, rudder, and asymmetrical power to regain control. Climbing to a safe ejection altitude, he checked for structural damage and maneuvered his aircraft under various configurations to determine control

characteristics. Major Clark determined that a no-flap approach with gear and speed brakes extended could be made if a higher-than-normal airspeed was held. He established a long, flat final approach and by using smooth control inputs and power control, landed successfully.

Investigation revealed a cannon plug had worked loose from its attaching point and dropped between the elevator bell crank and bulkhead, resulting in restricted elevator movement.

Major Clark's outstanding airmanship in a critical inflight emergency readily qualifies him as a Tactical Air Command Pilot of Distinction.

barrier hookwire CONFUSION

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS TACTICAL AIR COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA 23365

28 July 1969

Squadron Leader P. F. Hart
Directorate of Flight Safety
Ministry of Defence
Princes House, Kingsway
London W.C. 2
England

Dear Squadron Leader Hart,

Regrettably, your letter of 2 January did not reach us. I can find no record of, or anyone who can recollect, receiving your correspondence. It's unfortunate because we have lost over six months bringing this subject to the attention of our pilots.

Your point on the misuse of the term "barrier" is well taken. We, in the USAF interchange the terms at random to a point where a clear idea of what the pilot wants depends on the interpretation of each individual. I plan to cover this subject in the September issue of TAC ATTACK and to reproduce your poster.

To make the story more complete and to lend emphasis to the subject, I will need the details of the accident you mentioned in your letter. If it was a USAFE accident, please send me the date it occurred and the aircraft type and number so we can follow it up with their headquarters.

Sincerely,

Will. J. Richardson
WILLIAM J. RICHARDSON, Major, USAF
Editor, TAC ATTACK



DIRECTORATE OF FLIGHT SAFETY (RAF)
MINISTRY OF DEFENCE
Princes House, Kingsway, LONDON W.C.2

31st July 1969

From: Squadron Leader P. F. Hart, RAF

Dear Editor,

AIRCRAFT ARRESTING DEVICES

I have just read the June 1969 edition of TAC ATTACK and found it most interesting - especially the article, "Landing the F-4."

Touch-wood, we have not had to land a Phantom with less than three locked down, but one never knows and the article will no doubt provoke much discussion in the RAF. My point in writing (again) is the misuse of the term "barriers." As I mentioned in my letter dated 2nd January 1969, following an accident due to the misuse of this word, we only use the word "barrier" to describe the net arresting devices. The arrester gear is called "hookwire" and we have asked that a STANAG be considered on this subject.

A copy of DFS poster No. 1-69 is enclosed for your information and you may care to make use of it! It might be worthwhile publicising these terms within USAF, certainly in units that are likely to use RAF airfields.

Sincerely,

Peter Hart
PETER HART



DIRECTORATE OF FLIGHT SAFETY (RAF)
MINISTRY OF DEFENCE
Princes House, Kingsway, LONDON W.C.2

19th August 1969

From: Squadron Leader P. F. Hart, RAF
Dear Major Richardson:

1. Thank you for your letter dated 28th July 1969. I apologise for my delay in replying but I have been on leave.
2. A copy of my letter of 2nd January, is enclosed, also the edition of our AIR CLUES magazine to which I referred. The incident did not involve one of your aircraft, but this risk is always with us. We have asked for a STANAG to be agreed on this subject, but this will take time.

Sincerely,

Peter Hart
PETER HART

2 January 1969

Dear Editor,

AIRCRAFT ARRESTING DEVICES

1. I have just read the November 1968 edition of your excellent TAC ATTACK magazine. In the article on page 10 "Wet Runways ... Unpredictable" the pilot mentions that "I reached for the hook." Subsequently he states that "Because of the grooves we didn't need the barrier."
2. It is likely that the word "barrier" was misused in this article, and the pilot was, in fact, referring to the arrester gear. A copy of our AIR CLUES magazine is enclosed. If you read page 399 you will see what can happen if aircrew or air traffic controllers are permitted to misuse these terms. As a result of this accident we have had the terms barrier and hookwire accepted throughout the RAF and a STANAG will be issued in the future. The word "barrier" is only to be used when referring to a net type aircraft arresting device. The term "hookwire" means an aircraft arrester which is deliberately engaged by a pilot when the aircraft hook is lowered. We have great difficulty in curing the misuse of these terms - as you have, no doubt - so we keep on reminding personnel whenever we hear the wrong term used. I hope you don't mind me pointing this out to you.

Sincerely,

Peter Hart
PETER HART

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCES IN EUROPE
APO NEW YORK 09633

25 August 1969

Maj Bill Richardson
Editor, TAC Attack
HQ TAC (OSP)
Langley AFB, Va. 23365

Dear Bill:

1. Based on the limited information that the accident you are trying to identify occurred at an RAF base prior to the end of last year, and that it involved communication confusion, I believe it may have been a USAFE mishap. An F-4C was destroyed on landing. Two discussions of this mishap were presented in AIRSCOOP (copies attached).

2. I will attempt to contact Squadron Leader Hart. Knowing time is of the essence, I elected to dispatch the available information as soon as possible, and will follow up with another letter if I am able to turn up anything else.

Sincerely,

Dick

RICHARD L. WING, Major, USAF
Editor, AIRSCOOP

P. S.

Bill:

Just talked with Sqdn Ldr Hart. He says it was a Royal Navy bird. Air mail letter from him to you 21 or 22 Aug.

► MORE ►►►

CONFUSION

The correspondence on the preceding pages was generated following Squadron Leader Hart's second letter. Just a few minutes of thought revealed the potential for chaos that we face by using the terms "barrier" and "arresting gear" interchangeably and at random. To the best of our knowledge TAC has not experienced an accident from this cause, yet. It would be unfortunate to do so now that we have the experience of the RAF and USAFE to warn us. Let's take a look at the RAF experience first as it was reported in the Royal Air Force Magazine, AIR CLUES.

ROYAL NAVAL PURPLE

My photograph (unavailable — ed.) shows what befell an unfortunate Sea Vixen last autumn at a Royal Air Force staging-post. The pilot of the Vixen was an RAF officer, and having been trained on Gnats and Hunters he was quite accustomed to the Safeland Arrestor Barrier being referred to as "the Barrier." When he was diverted to the staging post, which he had never previously visited, he was told by Air Traffic Control that the westerly runway was in use "because it had a barrier." He was cleared to land and told that the upwind arrestor gear was ERECTED!

The pilot touched down at the correct speed but found that he had a partial brake failure, and as it appeared unlikely that he was going to stop on the runway he quite rightly called, "Barrier, Barrier." There was no reply from the tower, no barrier appeared and the aircraft ran off the end of the runway and into the Indian Ocean.

Subsequently, the crew of the Sea Vixen were surprised and angered to find that the staging-post did not possess a Safeland Barrier, but that a rotary hydraulic arrestor gear had recently been installed and that was what Air Traffic was referring to when they said "barrier." (The facility was not listed in the current En-Route document.) I am glad to report that the pilot was not held to blame for this unnecessary accident.

The point of the story is this: as a result of the accident the U.K. has defined the following voice terminology applicable to aircraft arresting devices:

BARRIER — *The term Barrier refers only to an arresting device of the net type.*

HOOKWIRE — *The term Hookwire refers to an arrestor center span which can be engaged only by an aircraft hook.*

In the accident I have described, as you can guess, there were a lot of red faces and purple Naval faces. Let us avoid any further interservice embarrassment and

unnecessary damage to aircraft by correct use of the new terminology.

While awaiting Squadron Leader Hart's answer we did some more checking and hit the jackpot again in Europe. Major Dick Wing of USAFE's AIRSCOOP dug up another accident involving misuse of the term "barrier." It sounds like this, right out of their magazine of May 1969. Only the applicable portion of the accident is presented.

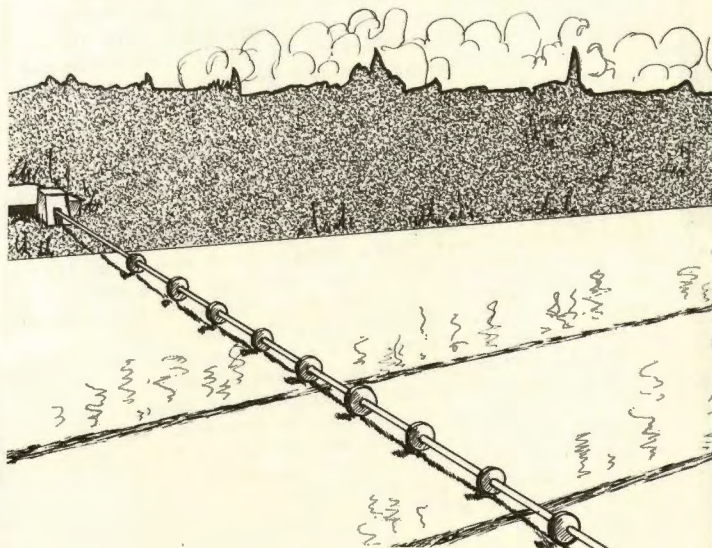
LANDING

The AC decided to get the bird on the ground as soon as possible. He made a teardrop turn and elected to land downwind, retaining the full external tanks because of possible property damage or personnel injury if the tanks were jettisoned.

When he rolled out on final, he discovered he was too close and had too much airspeed. The power was pulled to idle, but because of the bird's heavy weight, the pilot did not get a rapid deceleration. The airspeed finally decreased to 200 knots as they crossed the overrun approximately 100 feet in the air. At this point the AC deployed the drag chute; it blossomed, then separated immediately. The AC realized he was too high for a successful approach end engagement, but decided against a go-around, and elected to make a far end BAK-9 engagement. At this point the accident was practically inevitable, for the AC did not know the BAK-9 was disconnected at the far end of this runway (the approach end for the active runway).

CONFUSION

Here a little drama occurred wherein probably the last



chance to reduce the severity of the damage — or possibly prevent the accident — was lost.

The tower operator knew there was no BAK-9 barrier available, nor was the MA-1A (now in the webbing down position) connected to permit an engagement. Caught up in the urgency of the situation, the tower operator blurted out: "There is no barrier — there is no barrier — do you want it up?" He meant: "There is no BAK-9 available, nor is the MA-1A cable connected; do you want the almost useless webbing — with its disconnected cable — thrown up in front of you?"

The pilot did not get the intended message that he had no BAK-9 available, but said, "Roger, get it up," meaning get that MA-1A barrier up too, if only for assurance. He stated that he may have braked less than maximum during this part of the rollout because he was still anticipating a far end BAK-9 engagement. In fact, the tire marks faded after the initial braking and were not visible again until 150 feet in front of the MA-1A. Only when the pilot got close enough to the BAK-9 pits to see clearly that the cable was not in place did he realize he could not make the anticipated engagement.

He did not consider a go-around from that point feasible, and continued the rollout, probably hoping the MA-1A would snag his funny looking, speeding tricycle. The wire did provide some deceleration before the disconnected-from-one-side cable slipped through his tail hook. One hundred and fifty feet of chain were moved on that connected side. Then the aircraft crossed the overrun and the perimeter road, rolled over the perimeter fence before the gear failed, and stopped in a cultivated field. Both pilots survived but the aircraft was destroyed.

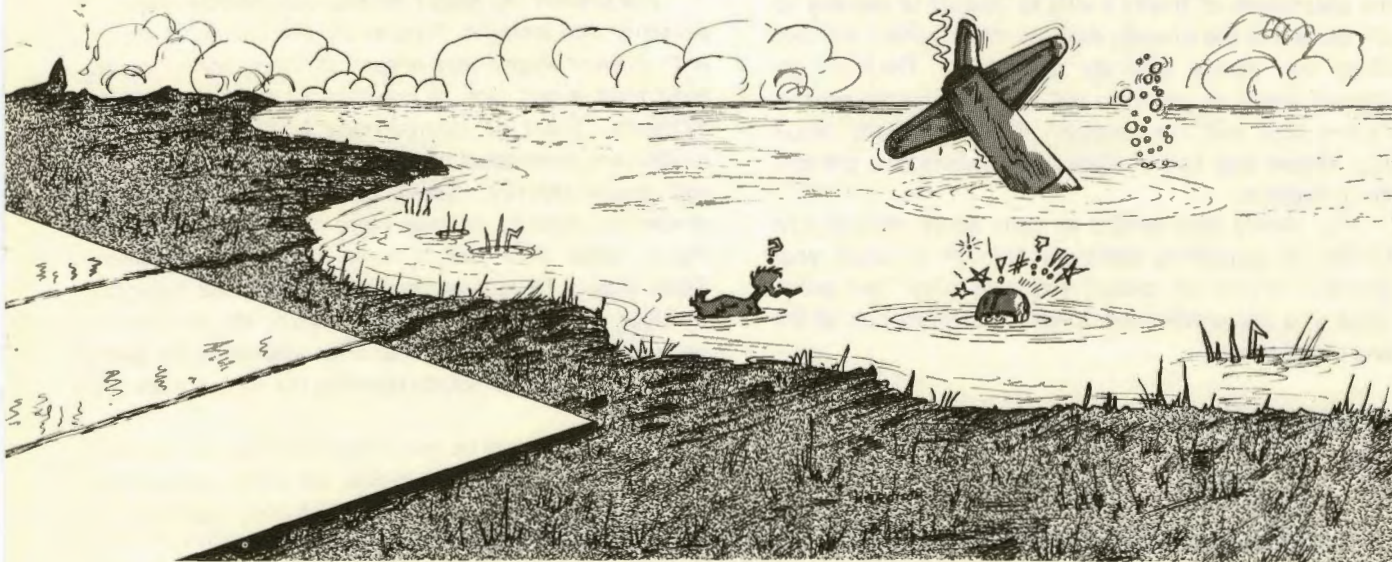
These two accidents vividly demonstrate what CAN happen to us in TAC if we continue to use the term "barrier" interchangeably to indicate either type of aircraft stopping system. If you get in a pinch what will

you ask — or ask for? And better yet, what do you think the man you are talking to, thinks you mean? If you are one who thinks, "BAK-12," but says "barrier," how do you expect the recipient of your message to understand that you want the BAK-12? It just won't work — unless you have time to discuss it. During a full-blown emergency it takes teamwork to get an aircraft on the ground safely. Each member of the team must understand what is needed, clearly and immediately.

If you are to depend on a Jet Barrier or Arresting Gear and plan your recovery accordingly, you must ask for what you want — and be specific! That man in the tower is not a mind reader, and he might have his own idea of what the term "barrier" means. Right now you can only hope it's the same as yours.

We searched for a source document to recommend as a pilot's reference and could find none as regards aircraft stopping systems. The only reference which would be available to everyone was the enroute supplement. It lists and defines most of the systems in use today. It also differentiates between the Jet Barrier and Arresting Gear. Since we have two different types and a combination of the two, it is imperative that you ask for what you want. If you want the jet barrier, ask for it. If you want them to throw up everything on the runway, ask for all arresting gear and the jet barrier.

A catchy descriptive term such as "hookwire" would easily solve our communication problem, however no authority exists to use it. If the RAF is successful in getting approval of their proposed STANAG and the term is adopted by NATO, we could consider world-wide adoption of it. Meanwhile, we must use JET BARRIER or ARRESTING GEAR to indicate what emergency stopping we mean. Proper and precise terminology is important in all our work, in the stopping business it is mandatory.



TAC TIPS

...interest items, mishaps

BARRIER, BARRIER, BARRIER...

In July a T-33 ran off the end of the runway at a TAC base following an abort at lift-off speed. The investigation centered on the pilot's abort procedure, five lines were devoted to the fact that no MA-1 was installed at this base. The fact that no jet barrier was available may not be important enough to discuss in the accident report but it is very important that you consider it in your preflight planning. As many of you who have flown the T-33 know, the stopping charts in the back of the Dash One are only valid as a guide line, if you bet your life on them you have a fool for a shooter — especially if it figures out closely. Out of curiosity we checked the enroute supplement to find out which TAC bases did not have an MA-1 installed, they are listed below:

Bergstrom	Mountain Home
Dyess	Pope
Forbes	Sewart
McConnell	

A problem on takeoff at these bases will require you to make a rapid decision to abort or "guts it" and press on with your takeoff. Either way, in order to have two choices your decision must be rapid or you're left with the alternatives of finally trying to takeoff or burning up off the end of the runway. And the missing MA-1 will also affect you people who fly with hooks. The MA-1 has stopped many of you who got that shoe on the runway "just a little late," or "thought they could stop." Hook skip should also be considered. It's infrequent, granted, but it happens.

You should lean toward an early abort without a jet barrier. If something significant enough to catch your attention occurs on takeoff roll, why play "test pilot" while you are accelerating toward that open hole at the end of the runway.

BOUNCING BIRD DOG

The O-1 pilot lifted off and climbed to 500 feet. Then the chip detector light flashed and glared at him. Deciding to abort early and avoid the rush, he executed a quick

90/270 procedure turn and lined up downwind. After a slight power pulloff he found he needed a little more thrust to reach the runway. He pushed the throttle forward, but lost power. He had some carburetor heat cranked in after his first power reduction, so he removed all of it. Still no thrust increase. Luckily, his short landing hit firm turf. He bounced onto the PSP. His "chipped" engine quit about the same time he rolled to a stop.

Maintenance troops found a slight metal sliver on the chip detector probe. But not too much else wrong with the engine. It was the same finding as the three previous chip lights had produced. They decided to change engines and quit taking chances. In tournament play you can't depend on short "chip shots" bouncing onto the green . . . you might land in the rough and lose the match.

A WORD TO THE WISE

"The front seat pilot went rapidly through the emergency ground egress procedures. He failed initially to release the left Koch clip which fixes the harness to the chute. This went unnoticed until his attempted exit. There is no evidence of malfunction of this item.

"The present clip design requires considerable fingertip dexterity and strength. Presumably this particular design is to prevent inadvertent release. Ill-fitting gloves, haste, hand injuries and lack of practice can all lead to release difficulty. Short of incorporating a new quick-release mechanism, prevention of a possibly fatal egress problem will require practice, close-fit gloves, and hope. Aircrews should be urged to practice rapid clip release after each flight, rather than just in static seat practice sessions. There should be no loose material in the glove fingertips to cause slipping or decreased dexterity. We all hope no one will be faced with burns or other injuries to the hands which might easily preclude releasing the clips as presently designed."

The narrative above was extracted from an accident report. It needs no amplification, the pilot was egressing from a burning aircraft. The rear seat pilot helped him to release his clip and assisted him over the cockpit rail.

with morals, for the TAC aircrewman

QUOTH THE PILOT, "NEVERMORE"

It's an old complaint. It's an old airplane. And the problem's older than the gooney bird involved. It faces any jock or ground crewman cleared to taxi aircraft . . . old or new. It may date back to the time Orv and Will built their second airplane.

Taxiing out at night, the student pilot found A-37s parked too close for his comfort to his gooney's wingtips. He stopped and the IP took over the taxi chore, complete with wing walkers. On the right side, the wing watcher signaled for a left turn. The IP responded with a left turn and promptly modified an A-37's rudder with his slicing wing tip. That's when he decided to park it and call for a tow tug. A too-late decision that his eagerness to get the job done had delayed until he suffered a "bird strike." Unfortunately in this case, the IP's eagerness to do his job wasn't shared by the support troops responsible for keeping taxi lanes clear and training wing walkers.

It's a trap many pilots fall into. Because it's relatively easy for conscientious airplane drivers to risk the wrath of AFR 60-11 and taxi within ten feet or less of an obstruction. They want to get on with their work and shutting down for a tow is time consuming and frustrating. Besides, pilots dislike to add to maintenance's work load.

No matter how many taxi lines are painted. No matter how many wing walkers wave reassuringly. If your wingtip clearance tightens to ten, shutdown and call for a tug. Then you can quote AFR 60-11 to anyone who questions your action. It's a lot easier than having an investigator quote AFR 60-11 to you after you've dinged. Just ask the pilot who's scratched one!

FOOD FOR THOUGHT

As throttles were advanced for takeoff, the RF-4 pilot noted that his brakes did not release normally. He did a little checking and found that with his anti-skid switch on, the brakes would lock without depressing the pedals. When anti-skid was turned off, the brakes were completely normal. This malfunction was verified several

times and each time the anti-skid switch was turned on, the brakes would lock.

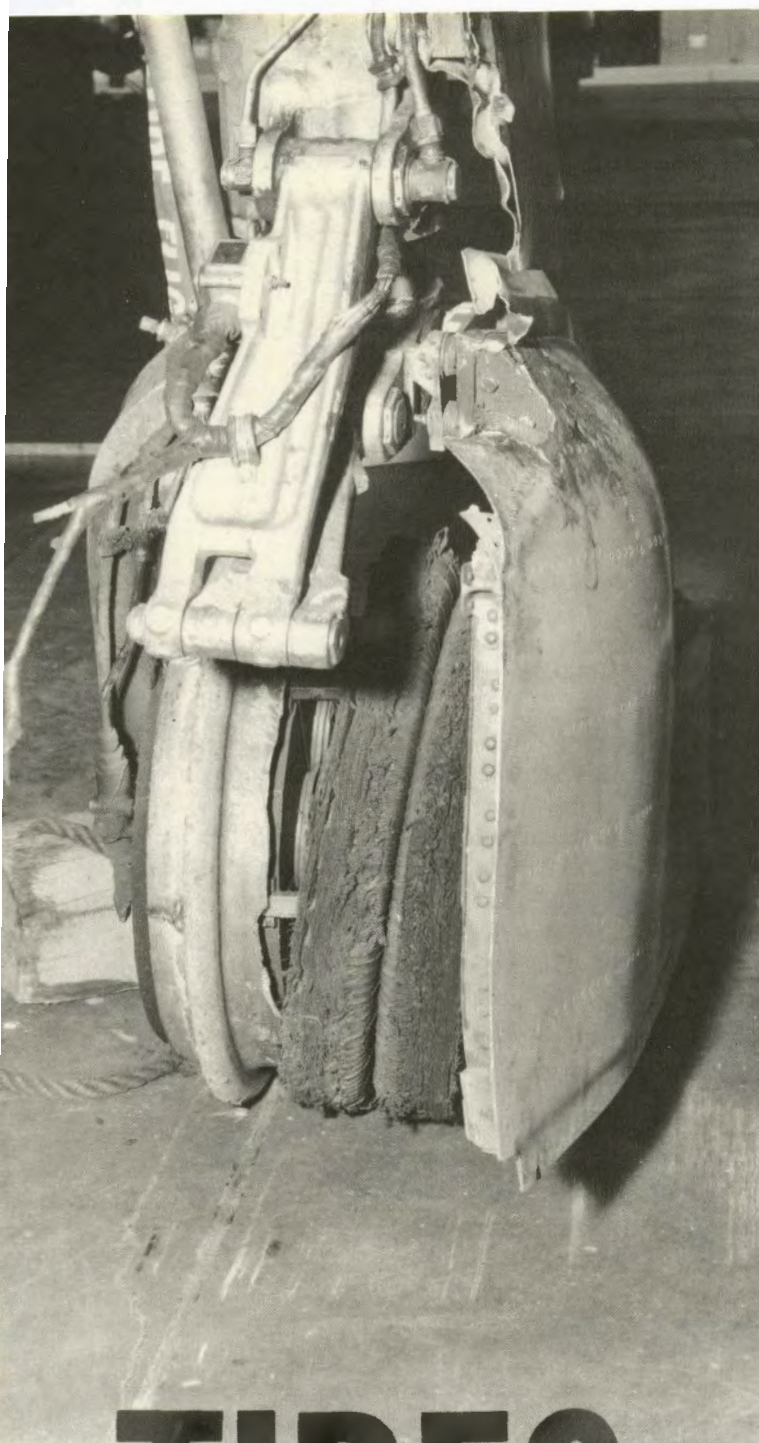
You won't believe what the investigators found. The LH sensor was chipped, the RH sensor worn badly. The left and right anti-skid harnesses were shorted internally and the right hand harness was also shorting to ground. And finally, there was a broken wire in the connector to the hydraulic control valve.

The most disturbing factor in this incident is: The unit involved could not find out what caused it! They corrected all the discrepancies listed above and the system worked okay. But in spite of an exhaustive electrical and hydraulic system investigation, the discrepancy (or combination of discrepancies) that caused the brakes to lock could not be specifically determined. A number of F-4s have touched down with locked brakes. When no system malfunction can be found, the stigma usually slips to the jock for premature, or accidental brake application prior to wheel spin-up. Had this airplane become airborne, it is probable that both tires would have blown on touchdown — and we'd be right back where we started. Pointing at pilots!

NUMBER ONE !

Ole Gooney cruised about 50 minutes before number one engine coughed and started shaking on its mounts. Throttle back, mixture full rich, and the pilot got rid of the "shake and bake" routine. When he eased power back on, it ran okay until he leaned the mixture. That restarted the bark and bounce. Discouraged, he feathered the complainer and went home.

Maintenance troops compression checked, felt for oil screen filings, and couldn't find a reason for engine misbehavior. They launched the bird again with an engine specialist on board. Sure enough, it acted up for him too. Convinced that the aircrew really had a problem, they borescoped the engine. That delayed exercise turned up a missing valve head in number one jug on number one engine.



By Captain George E. Grant
Hq Ogden Air Materiel Area
Hill AFB, Utah

Pilots have been kicking tires since Orville and Wilbur did away with the skids. And along with the kicks, a lot of verbal knocking has been heard during the ensuing years. Much of it justified. A beautiful landing can quickly turn to ruin when a tire gives-up on touchdown. But this perennial complaint soon may be history. Air Force is putting their tire problems on a new track, though it's a path most of us have always known.

If you are like most people, when shopping for automobile tires you consider at least three factors: tread wear characteristics, cost, and above all, safety. After all, who wants to become disabled for life as a result of a marginally safe tire. Cost is very important of course. However, the other factors previously mentioned must be considered if you are to get the "best buy" for the dollar spent, keeping in mind the old adage, "you get what you pay for." The potential buyer may, however, look for some other characteristics such as smoothness of ride and appearance; but the one question that must stand out in his mind is, "how reliable is this tire on the road under normal and adverse driving conditions?"

So it is with the many pilots who fly Air Force's vast inventory of aircraft. They are deeply concerned with how well their tires perform on taxi, takeoff, and landings. And so is the Ogden Air Materiel Area (OOAMA) at Hill AFB, Utah, who has for years been constantly working toward improving the quality and performance of aircraft tires.

It was not until just recently, however, that OOAMA has been able to effectively implement a program which would tie together all the performance and logistic characteristics associated with tires and make these available to Procurement for consideration in the purchase of tires. The program has been labeled "Life Cycle Costing Procurement" (LCC). It is designed to support logistic requirements under a real/ultimate cost concept.

Previously, the Air Force was required by law to

TIRES ..on the RIGHT

purchase aircraft tires from the lowest bidder without considering such items as maintenance, transportation, wear, installation, and removal costs. Because of this policy, no incentive was offered a tire manufacturer to develop a better product.

Meeting specification requirements at the lowest possible price was his primary objective. While the specifications were supposed to insure a safe tire, they required no demonstration of extended service life. Obviously, the Air Force was not availing itself of the latest innovations in tire technology, and consequently, was failing to get the "best buy" for its dollar.

In order to implement and carry on the new program, each manufacturers' tires are actually tested on aircraft to establish wear or landing indices (landings per tire) which will be used in the bidding. When a manufacturer has successfully qualified his newly designed tire to Air Force specifications, 125 of these are purchased from each participating manufacturer for testing under actual operational conditions at an Air Force base.

When each evaluation is completed, a statistical analysis is performed on the results to determine performance and landing index. It is significant to note that tires removed because of internal weaknesses and foreign object damage are considered in the analysis along with those removed for wear. Thus, it behooves each manufacturer to design and incorporate into his tire the very best technology available to him. Obviously the Air Force benefits not only in increased landings per tire, but overall tire reliability. In other words, tire structure must be redesigned to make longer tread wear practical. The LCC program has most definitely provided the Air Force with these improvements. The manufacturer that produces the best tire gets the contract.

For tactical aircraft, improved tires have been tested on the F-100, F-105, F-4, C-130 main and nose gear. Tests are scheduled for new tires on the F-101A, OV-10, A-37, F-111, T-39, and C-130 retreads. The overall quality of the tires has been significantly improved.

In most cases the number of landings per tire have at least doubled. The average landing for an F-100 main tire prior to implementation of the LCC was eight landings per

tire. The LCC program has provided Air Force with an F-100 tire which gives 28 landings. The average for the F-105 was 15 landings per tire. Although the test is not complete, present results indicate that a 30-landing tire will be available for the F-105.

Tests presently being conducted on aircraft in other commands (SAC, ATC, MAC, ADC) are showing the same impressive results as TAC tires. The increase in landings per tire on the B-52, KC-135, T-38, and C-141 has ranged from 50 to 200 percent.

The using command managers who now have these tires in the inventory are currently deriving direct benefits in terms of service life, and reduction in maintenance time. But even more important, the men who fly the newly shod aircraft have a more reliable tire with a built in safety margin, simply because they tested the tire before the purchase was made.

Previous to Life Cycle Costing procurement, OOAMA qualified a manufacturer with one dynamically qualified tire and permitted the manufacturer to commence production. OOAMA now has the benefit of also observing 125 tires tested under actual service evaluation. The confidence level for production is thereby increased, which significantly reduces the probability of stocking the inventories with potentially dangerous or defective tires.

Under the LCC program the Air Force has realized fantastic savings in the procurement of tires. For the F-100/F-102/F-106 and T-38 main tire buys alone it is estimated that through FY71 over eight million dollars will be saved in new tire procurements.

Using commands are getting more landings per dollar and, with pre-purchase testing under actual operating conditions, pilots have the opportunity to participate in proving which tire is the most reliable. And that's Progress!

Buying from low bidders seldom provided aircrews with best tires, but LCC program offers latest technology benefits.



TRACK

TAC ATTACK

CHOCK TALK

chock talk... incidents and incidentals

...incidents and incidentals

leaky line!

Ole Gooney flew faithfully for more than two hours, performing all the transition training tricks demanded of her. Then came the time for practice feathering one of her flailing fans. The student pilot stroked number two's feather button (It's called a feather button because IPs are tickled when they torture students with it!). Two feathered okay, but the eagle-eyed engineer (a real birdman!) spotted a massive oil leak on number two engine during unfeathering for restart. So, they left Two's prop point zero degrees to the wind and landed single-engine style.

Investigators found Two's wildcat oil gusher was caused by a chafed prop feather oil line. It rubbed against an adel clamp installed on the crankcase breather in an area not easily accessible. They figured it was formed improperly when new, or bent out of shape during installation. Whatever the cause, they checked feather oil line chafing on the rest of the Gooneys and installed chafe pads where oil-line-to-clamp clearance looked tight.

Chafing's been a problem on all airplanes almost as long as diapered babies have suffered from a similarly-name complaint. Unfortunately for airplanes, baby powder won't help. But good maintenance procedures will. Let's stamp out chafing!

round one

On the first strafe pass, the A-37 nose gun jammed after firing thirty rounds. The crew safed all armament switches and went home to be impounded. They landed from a hung ordnance pattern and the arm/dearm crew went to work on the gun. After the gun was electrically and mechanically-safed the dearm crew chief found, and extracted, one live round. While attempting to remove another they found the bolt locked in the cocked position. The dearm crew then called the gun plumbers and told the pilot to shut down. During shutdown the round fired.

The cause of the jam is unknown, so is the reason the

electrically and mechanically-safed gun fired. The unit is establishing procedures requiring a suitable barricade to be positioned in front of the gun prior to any attempts to safe a jammed weapon.

who's on first?

The O-2 aircrew completed their walk around preflight and launched on a Functional Check Flight. They completed the feather-unfeather check on the front engine and then shutdown the pusher. It feathered okay, but refused them on restart. They increased airspeed and cranked it with the starter, hoping for a windmill start. It still split the breeze, no unfeather. Convinced, they pulled the bird home with the front fan only.

Maintenance troops found a low air charge in the unfeather accumulator . . . the bird hadn't flown for over a week. After reservicing, it worked fine.

Then they added a ground feathering check after engine start to aircrew FCF check lists to verify prop accumulator servicing. But they made no mention of maintenance troops' responsibility for checking accumulator air loads on their Dash Six preflight. The problem could be solved without adding to aircrews' check lists by following normal maintenance procedures . . . before engine start!

hardening arteries!

The Boxcar pilot started his descent from 8500 feet to a lower altitude. Shortly thereafter, a crewmember smelled heavy fuel fumes in the cargo compartment. A quick aircraft search for gas leaks pinpointed the source: a drain line aft of the right wheel well streamed purple petrol. Concerned about possible fire or explosion, the pilot decided to shut down number two engine to get rid of a ready source of ignition. After a successful single-engine landing the bird leaked fragrant fuel from the right wing root on the outboard side of Two for about 15 minutes.

with a maintenance slant.

Finding the source of the fuel leak was a tough maintenance problem. There are 11 tanks and 90 interconnects in each wing. Any one of them could be the culprit. The bird had undergone a wing corrosion inspection before the flight. It required pulling the fuel cells and their interconnects in order to examine the wing's interior. Re-installation of old tanks generates lots of fuel leak potential; their hardened interconnects make sealing difficult. Tanks and interconnects that hold pressure on ground test sometimes suffer under the weight of full fuel loads and colder inflight temperatures. The unit suggests that new tanks be installed whenever you find an old tank with hardened interconnects. Old birds afflicted with hardening arteries require special maintenance care!

bombs awayyyyy

In the target area the F-100 jock was getting ready to strike. He set up his armament switches correctly, a few seconds later four MK-82HDs released, followed shortly by the remaining two. All bombs exploded on impact. The malfunction could not be duplicated on the ground till the aircraft was jacked up and the gear was retracted. Power was then found going to all ejection breeches with the switches set up as the pilot had them. The voltage was traced to a terminal strip on the right side of the aircraft where they found a small washer shorting two terminals.

Electricity was flowing from the LABS calibrator through the armament select switch to all ejection breeches. Under this condition four bombs would release at once and, after a short pause for the TERs to step, would release the other two. The terminal box was cleaned up and the malfunction could not be duplicated by any other means. Extensive maintenance had been performed on this aircraft prior to this incident. Many shops and personnel had cause to remove the terminal cover.

The unit involved is now activating the "Bomb Arm"

TAC ATTACK

switch after all other armament selection switches have been set. In the future only unarmed bombs will be dropped unintentionally. It's a good idea, but no remedy for sloppy work.

nuts!!!

Following refueling enroute to his target, the SEA F-4 driver found that his left engine could not be retarded from full mil. All engine instruments were normal. He jettisoned his ordnance safe and went home, shutting number one down with the engine master switch. The throttle control banana link holding the throttle, fuel control, and torque booster became separated when a castellated nut backed off, allowing the bolt to fall off.

Somebody failed to install a cotter pin required to retain the castellated nut in place. And "Charlie Babe" watching the Phantom jettison his bombs safe, took an extra dip of nuc-mam in celebration.

phantom jock trap

An F-4 plane captain found the aft canopy safety strut binding and difficult to remove. Since he had just removed the front canopy strut, it was used to knock the aft strut free. Much to his surprise, the canopy immediately closed on his arm. The strut did not fall free and the force of the canopy closing on the strut sheared the left canopy hinge and broke the glass. The control handle for the aft canopy had been moved to the close position after strut installation. The plane captain did not check the control handle position, nor did he investigate the cause of the binding strut before forcefully removing it. Any binding safety/jury strut or attachment should be regarded as a danger signal. When will we learn to recognize this signal and proceed with caution?

U. S. Navy CROSSFEED



winning

the

EGRESS RACE

What's wrong with TAC's ejection success rate?

This initial query can't be avoided after comparing TAC's ejection survival rate with that of combat flying in SEA. Of all statistical comparisons between the two, the following is most shocking: fatal

combat ejections in SEA during the last two years, 2 percent; for the same period in TAC, 11.6 percent! That's almost six times greater! And in TAC, systems effectiveness is not subject to hostile fire!

So TAC really does have a problem. However, in this picture there is one glaring contradiction. The egress systems and supporting equipment in combat zones are no different than that now used by TAC. And aircrews now flying combat missions once were a part of TAC, at least long enough for tactical transition and learning the application of the art. But once in the combat zone, these "TAC" pilots establish a whole new set of survival statistics, or at least on the surface, it seems so. A close look at the figures verifies this assumption.

A report of "Combat Use of Life Support Systems"¹ covering a two year period (1 Jan 67 to 31 Dec 68) provides firm statistics for comparison with TAC egress experience for the same period.

Along with the startling comparison of fatals, the no-injury figures follow suit: 43 percent of combat aircrews emerge unscathed, while only 28 percent of TAC's ejectees walk away without injury. To argue that TAC's losses can be directly related to inexperience in the cockpit may seem logical, but it must be remembered that in almost every training cockpit an IP has the task (among other things) to see that the student/aircraft is preserved for tomorrow's flight. So a detailed look at some of the problems encountered during ejection may be a good point of departure in analyzing how and why the great gap exists between SEA and TAC egress success. (Chart 1)

Several of the problems

Chart 1

SEA AND TAC EGRESS EXPERIENCE
January 1967 to December 1968

INJURY	EJECTIONS		PERCENT	
	SEA	TAC	SEA	TAC
FATAL	3	10	2.0	12.0
MAJOR	22	33	17.0	24.0
MINOR	50	51	38.0	36.0
NONE	56	41	43.0	28.0
TOTAL	131	138	100	100

encountered happened at about the same frequency, that is bad PLFs, survival kit malfunctions, and associated difficulties. SEA pilots seemed to hold fast to ejection seat controls more than those in TAC. The reason may be indicated by SEA's higher frequency of windblast/flailing, seat/chute entanglements, and lost helmets. These problems all occur most frequently as a result of high speed ejections.

The reason for this difference between SEA and TAC is quite simple. A combat pilot's reaction to a hit by enemy fire, or aircraft malfunction, over hostile territory is fast and positive. If the aircraft is still flyable, he heads for the nearest "safe" area for expected bailout. And because speed may be the difference between capture or freedom, it's not uncommon that the aircraft is pushed until it literally becomes unglued.

But during the dash for bailout he has time to make a quick run-through of ejection procedures, even to the point of extreme apprehension resulting in unintentionally holding fast to the only firm structure left; the ejection seat and actuating controls.

Airspeed comparisons are shown on Chart 2. It is readily apparent that SEA aircrews abandon their birds at considerably higher airspeeds than do TAC aircrews. However, the chart also

reveals a factor that is undoubtedly the key to the ejection success rate gap between the two areas of operation. Ejections below 1,000 AGL for TAC are 27.5 percent of their total while only 6.1 percent of SEA ejections occurred at the same altitude. And even more startling, 18 percent of TAC's ejections occurred below 500 feet AGL while SEA recorded none. These facts have an obvious parallel with survival kit deployment shown on Chart 3. Twelve percent of TAC's aircrews reported having no time (or forgetting) to deploy the kit, while less than one percent of SEA crews reported the problem.

Most of the other problems experienced by egressing aircrews (man/seat/chute/survival gear) of SEA and TAC are similar in nature and frequency.

The problem then is not, "What's wrong with TAC's life support system?" But, "Why are TAC aircrews ejecting at high-risk altitudes?"

Is it because there is more low-level flying stateside than SEA? This is a tough question because it depends on the mission. But old heads who have flown both areas are hard put to express any great difference when trying to establish an average for either area.

Is it inexperienced pilots, or at least pilots inexperienced in the aircraft? There is little doubt that inexperienced pilots are more susceptible to allowing their craft to get into a non-recoverable attitude. When learning, mistakes are almost inevitable. Training programs include IPs, simulators, and other ground training to avoid most learning-by-error.

But it can happen, though this is still not a satisfactory explanation for TAC's critical low-level ejections. In many cases, pilots knew they were in trouble but delayed making an egress at safe altitudes/attitudes.

¹By Robert H. Shannon and Major Arthur N. Till, Jr., Directorate of Aerospace Safety, Hq USAF/IG, presented at the 1969 Aerospace Medical Association Convention.

WINNING THE EGRESS RACE

Chart 2

DISTRIBUTION OF SEA/TAC EJECTIONS BY ALTITUDE AND INDICATED AIRSPEED

January 1967 to December 1968

ALTITUDE	INDICATED AIRSPEED												TOTAL	
	0 - 199		200 - 299		300 - 399		400 - 499		500 & OVER		UNKNOWN			
	SEA	TAC	SEA	TAC	SEA	TAC	SEA	TAC	SEA	TAC	SEA	TAC	SEA	TAC
0 - 499	0	2	0	8	0	0	0	2	0	2	0	2	0	25
500 - 999	3	1	2	8	0	0	3	0	0	0	0	4	8	13
1,000 - 1,999	8	6	5	5	4	2	3	0	0	0	0	0	20	13
2,000 - 9,999	11	15	40	21	12	11	8	0	5	1	1	10	77	58
10,000 - 19,999	2	8	11	5	4	5	1	0	1	1	1	1	20	20
20,000 & OVER	0	2	0	0	5	3	0	0	0	0	0	2	5	7
UNKNOWN	0	0	1	0	0	0	0	0	0	0	0	2	1	2
TOTAL	24	43	59	47	25	21	15	2	6	4	2	21	131	138

Why these late decisions?

It becomes a more difficult question when realizing that experienced pilots have been trapped by the same indecision. Perhaps it's fear. A fear of using the last means to safety, a kind of final commitment. Perhaps it's ignorance, not recognizing aircraft recovery is impossible. Or perhaps it's pride and reputation. No one wants to admit that he made a bad move, or an outright mistake. And when you don't have anyone shooting at you, excuses get pretty scarce.

But whatever the reason, indecision is often followed by disaster. And a rationale based on fear, ignorance, or pride is of little value, except to the living.

There's only one name to the game. If you've lost it, get out! Circumstances following the mishap are only temporary... "the farm" will always be around.

Chart 3

SEA AND TAC EJECTION PROBLEMS

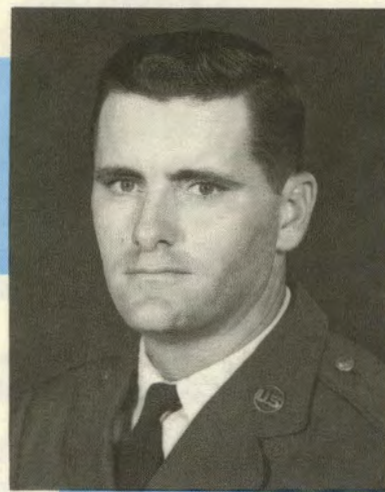
January 1967 to December 1968

PROBLEM	NUMBER		PERCENT	
	SEA	TAC	SEA	TAC
WINDBLAST/FLAILING/EJECTION FORCE	11	1	8.0	0.7
SEAT/CHUTE ENTANGLEMENT	3	1	2.0	0.7
HELD ON TO SEAT CONTROLS	8	1	6.0	0.7
LOST HELMET	29	19	22.0	14.0
NO TIME TO DEPLOY SURVIVAL KIT/FORGOT	1	17	0.7	12.0
SURVIVAL KIT DAMAGED/FAILED	7	6	5.0	4.0
BAD PLF/Dragging/Riser Release	8	6	6.0	4.0

Tactical Air Command

Crew Chief of the Month

Staff Sergeant Kenneth B. Kustenmacher, 4512 Organizational Maintenance Squadron, Luke Air Force Base, Arizona, has been selected to receive the TAC Crew Chief Safety Award. Sergeant Kustenmacher will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.



SSgt Kustenmacher

Tactical Air Command

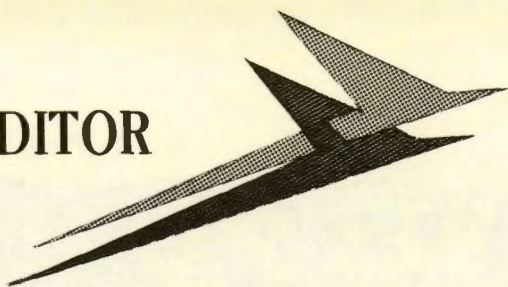
Maintenance Man of the Month

Staff Sergeant Clifford L. Coffey, USAF Tactical Fighter Weapons Center, Nellis Air Force Base, Nevada, has been selected to receive the TAC Maintenance Man Safety Award. Sergeant Coffey will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.



SSgt Coffey

LETTERS to the EDITOR



SABRES AND ANGLES

Reference is made to the article "Sabres and Angles" appearing in the July 1969 issue of TAC ATTACK.

I wish to take exception to some of the technical matter presented and offer the following for consideration.

The second paragraph states, "Aircraft angle of attack is a function of these primary variables: airspeed, dive angle, altitude, gross weight, and G load." This is not correct. By definition, the angle of attack is the angle between the wing chord and the relative wind. The variables listed above are effected by the angle of attack and not vice versa.

Further on the article states "... aircraft handling is a function of one primary factor — angle of attack. Aircraft angle of attack is the most important item affecting the stability and control characteristics of the aircraft ..." It should be pointed out that stability and control, although related, are not the same. Stability is the ability to return to the trimmed condition after an upset (gust, control movement, etc). Control is the transition between the stages of trimmed flight. In the case of stability, angle of attack is not the primary factor, but it is one of three interdependent factors: angle of attack (since it is a function of lift coefficient), pitch moment characteristics, and center of gravity location. Control is primarily governed by size of the control surface and its angular displacement.

Later in the article reference is made to using the G meter as an angle of attack meter. At best I believe this would be an inaccurate approximation unless each pilot memorizes Gs, airspeeds, and aircraft weight across the range of possible flight weights. Altitude would not be a factor since airspeeds are indicated and not true. An angle of attack indicator would indicate when the desired angle of attack is being flown regardless of any other flight condition. It can be a valuable tool for all phases of flight, i.e., takeoff, enroute, maneuvering, and approach. For example, take the enroute situation. If the optimum angle of attack is maintained at a constant altitude, the airspeed for the given weight will be optimum. As fuel is burned and weight is reduced, while still maintaining the optimum angle of

attack and altitude, power would also be reduced; thus utilizing the maximum long range capabilities of the aircraft.

I would appreciate any comments concerning the opinions expressed in this letter.

Maj Douglas W. Haig
Kansas Air National Guard

Your opinions are TECHNICALLY correct. Ed.

MISPELING

Reference your August 1969 TAC ATTACK, page 19, TAC Tips under article LOOK!!! It looks to me that we caught U with your harmless word of INNOCUOUS misspelled.

Interesting article on hurricanes — very much appreciated for we Florida troops.

Lt Col Bill J. Carroll
Commander
4409th Support Squadron
Homestead AFB, FLA.

You caught us. We'll watch our new proof reeder more carefully in the future. Ed.

SUBSCRIPTIONS

Would you please forward me the necessary information to subscribe to TAC ATTACK? Your assistance in this request would be greatly appreciated.

1st Lt John Economidy
Management Analysis Officer
APO SF 96304

The TAC ATTACK cannot be purchased. In the PACAF area our magazine is sent directly to the Chief of Safety at PACAF Headquarters, 5th, 7th, and 13th. In other commands it must be ordered through your local PDO. Please contact your numbered Air Force headquarters for copies. Ed.

TAC TALLY

AIRCRAFT ACCIDENT RATES

MAJOR ACCIDENT RATE COMPARISON

	TAC		ANG		AFRes	
	1969	1968	1969	1968	1969	1968
JAN	6.8	5.6	28.9	0	0	0
FEB	6.2	7.3	12.8	0	0	0
MAR	6.8	7.1	12.6	0	0	0
APR	7.0	8.7	15.1	1.9	0	0
MAY	7.2	8.0	12.9	7.5	0	0
JUN	7.0	8.5	12.6	7.4	0	0
JUL	7.2	9.3	11.3	6.3	0	0
AUG*	7.1	9.4	12.0	8.2	0	2.3
SEP		9.1		7.4		2.0
OCT		9.3		6.7		1.8
NOV		8.6		6.9		1.7
DEC		8.8		7.8		3.2

UNITS

THRU AUG	1969 *	1968	THRU AUG	1969 *	1968
9 AF	2.8	6.4	12 AF	9.9	10.2
4 TFW	5.4	11.0	23 TFW	12.5	23.1
15 TFW	2.9	11.7	27 TFW	4.6	9.5
33 TFW	17.1	10.3	49 TFW	7.3	0
4531 TFW	0	14.4	479 TFW	12.3	10.6
			474 TFW	14.9	34.6
363 TRW	8.7	3.6	67 TRW	0	13.7
			75 TRW	5.5	0
64 TAW	0	0	313 TAW	0	0
316 TAW	0	0	516 TAW	5.7	0
317 TAW	0	0			
464 TAW	0	0			
4442 CCTW	0	0	4453 CCTW	5.0	14.4
4554 CCTW	0	N/A	4510 CCTW	16.0	6.9
TAC SPECIAL UNITS					
1 SOW	3.6	16.6	4440 ADG	0	0
4409 SUP SQ	0	0	4500 ABW	5.8	0
4410 CCTW	12.4	8.4	4525 FWW	18.7	27.0
4416 TSQ	0	55.2			

* Estimated

The month of August took the highest combined toll (TAC and ANG) of accidents and fatalities so far this year. Of the nine major accidents, all but one involved fighter type aircraft — the exception was a B-57. Five accidents caused our six fatalities making August the worst month since June, when we suffered five.

With the exception of two F-4 accidents, one of almost every type of TAC aircraft was involved this month. The others were the F-5, A-37, F-84, RF-84, F-100, F-105, and the B-57 mentioned earlier. In our repeat areas, we had our third F-4 fire major accident and another F-84 came apart following a catastrophic engine failure.

We lost three aircraft on the gunnery range, one went in during a low angle strafe pass and another turning base to strafe. The third is still under investigation; it occurred during a low-angle bomb pass. One pilot lost control during an acrobatic maneuver, and one went in on final

from an overhead pattern.

Our last two are disturbing. One crashed during a low altitude photo mission and the other hit a tree about eighty feet AGL while also on a photo mission. Since these two, we have had another similar incident. This aircraft ran into trees while on a low level nav mission. The first two accidents occurred within two days of each other. The incident about twenty days later — 'NUFF SAID?

Of our six fatals, three were unsuccessful ejections. Two just cleared the aircraft prior to impact, the third ejection was initiated at ground contact. There were a total of seven ejections; four successful isn't a very good percentage. The other three pilots went in with their aircraft. All three were in a phase of flight near the ground.

BARRIER



HOOKWIRE

don't
confuse them
when in the U.K.!



see page 16