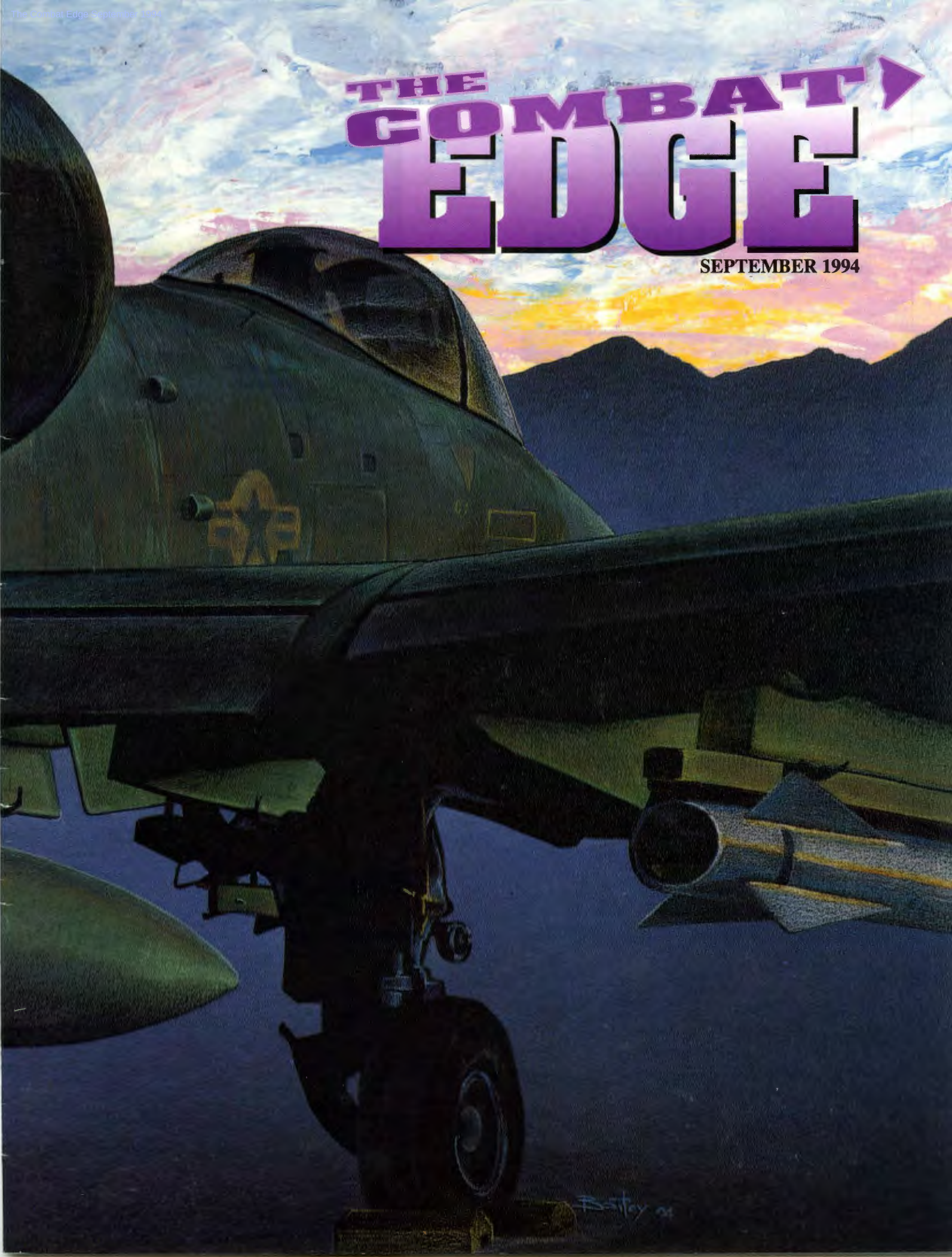

THE COMBAT EDGE

Air Combat Command Safety Magazine

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FEATURES

DEPARTMENTS

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ABOUT THE COVER

The A-10A is the first US Air Force aircraft designed specifically for the close air support of ground forces. Many of the lessons learned in Korea and Vietnam helped establish the sort of aircraft that was needed. Though primarily intended for European operations, the A-10 performed admirably during DESERT STORM.

ACCent on Safety

Greetings again! It hardly seems like a year has passed since I took over the helm here at ACC Safety but here it is time to move on already. I want to formally thank all commanders from Gen Loh, COMACC, to each and every squadron commander for helping make Safety a culture and way of life rather than merely another program to be managed. We have made some significant strides in ACC over the past year as a direct result of the hard work of all of the command's safety professionals aided by your command-level support and leadership. Good on you all!!

We set some very ambitious command objectives for FY 94 and I owe all of you a stakeholder's report as I depart for the north country of Alaska. As I write this article, the command's Class A flight mishap rate stands at 1.8 mishaps per 100,000 flying hours. This is against an objective for FY 94 of 1.6. We're slightly over our objective at present; however, it's still easily within reach barring any more Class A flight mishaps for the command. **YOU CAN MAKE IT HAPPEN!** Turning to weapons safety, the command objective was to experience less than 0.5 Class A weapons mishap per 100,000 flying hours—a very ambitious goal. This area has been our real success story to date. At present, our weapons performance has been super with a current Class A rate of 0.4, 20 percent below our objective! My hat's off to the weapons safety professionals throughout the command. Finally, we set an equally demanding 0.8 Class A ground mishaps per 20,000,000 man-hours in the ground safety discipline and I'm proud to report that at present, the rate stands at 0.8—right on target. I might add that we are over half way through the 101 Critical Days and thus far have experienced 9 Class A off-duty mishaps versus 11 last year—again, an improvement. To sum up **your** performance, it's been very solid thus far this year. The caution as always is to **NOT** let down! **Lives, resources and combat capability are at stake!** Protect them for your own and the American taxpayers(our ultimate customers) benefit.

Finally, I know you are all in the midst of final preparations for, or executing, your September Safety Day. This one is intended to assess the lessons learned from FY 94 and use them to make it better in FY 95 (not only safety but other areas as well). Use this day wisely and really focus on those areas where sound risk management techniques can be applied to make your flight, weapons and ground operations better and, of course, safer as a result. It may seem trite but safety really is a by-product of good training, sound planning and preparation, and a mindset that is intolerant of unnecessary risk taking. This translates to the cultural attitude that will make your safety personnel's jobs easy—as a matter of fact, a safety office may eventually be an unnecessary thing in the future if the culture grows as it should.

As I turn over the reins here at the Office of Safety to Col Fack Acker, I would ask that you give him the same great support you've given me during my tour. Fack brings a lot of operational experience to the safety office and will continue to push you equally hard towards our ultimate stretch goal of **ZERO Class A mishaps.** The objectives for FY 94 I discussed above were tough but wait 'til you see Gen Loh's challenge for FY 95! The new goals and objectives for safety are going to be stretched even further. I know you're all up to the challenge. Good luck to you all and keep up the great work!!

Colonel Bob Jones
Chief of Safety

TEST AND EVA

"5-4-3-2-1, launch!" Engine ignition is followed by the deafening roar of rocket blast and billowing smoke. A "missile" leaps from the seaside launch pad, streaking downrange to a prebriefed rendezvous. While this sequence might resemble a shuttle launch from Kennedy Space Center, it is instead that of a subscale drone launch supporting Air Combat Command's Air-to-Air Weapons Evaluation Program (WSEP), Combat Archer, at Tyndall AFB, Florida.

Major General Carl E. Franklin
Commander, USAF Air Warfare Center
Eglin AFB FL

F-16s "on-station" 80 NM south over the Gulf pick up the target. The lead aircraft maneuvers; locks up the target; receives clearance to fire; and launches an AIM-9. Miles away in a windowless building, a controller ignites a "flare pod" on the drone and maneuvers the target to evade the missile, but to no avail. The missile "homes in on the target," a tailfin slices through the flare pod, and the weapon system has scored "a kill." The F-16s return safely to base and the controller directs the drone to an overland parachute recovery in a "plowed" field, where it lands with minimum damage. This target drone will fly "another day," thanks to the recommendations of a Quality Process Action Team.

Seemingly, a "benign" enough operation. But only so when things happen as planned; when equipment operates "as advertised," when every person effectively handles assigned responsibilities.

Simultaneously, 50 miles to the west in the Gulf of Mexico, an overwater "shoot box" has been

ALUATION SAFETY

established to support the operational test of an AIM-120, Advanced Medium Range Air-to-Air Missile. This "live-fire mission" will produce data to assess operational capability at the outer limits of the weapon's performance envelope in a scenario against a full-scale drone, QF-106. On this mission, the drone will be "killed" as planned.

Both scenarios depicted are daily occurrences in ACC's support of the warfighters. Neither are "business as usual;" safety is paramount and doesn't happen automatically. For the Air Warfare Center teams supporting these missions, this is only a representative cross-section where integration and teamwork are absolutely essential to insure operations are accomplished in a safe, effective manner. The customers — elements of the Combat Air Forces — are key players in this process, both as beneficiaries and as participants. Knowledge, thorough preparation, attention to detail, and absolute discipline are mandatory in effective test and evaluation of weapon, weapon system, and aircrew. There is no room for complacency, assumptions, or guessing. Not on the part of the "shooters," and certainly not on the part of the professionals that support and control the operations.

And while the test scenario and its objectives are very much different than the Combat Archer mission, the basic components are the same, as are the demands of flight safety. Discussion of these similar yet different missions will reveal application throughout our force.

The very nature of the test business — putting personnel and equipment at the edge of the performance envelope — can lend itself to personnel injury and the loss of valuable assets. Therefore, safety must be the bedrock from concept development to the final product...safety is there from start to finish. The foundation lies in the development of a thorough test plan that sets forth project objectives, assigns tasks, and sets timetables. It is the roadmap which guides the efforts of our people. Key to every test plan is the safety annex, where general and specific guidelines are laid down defining the safety parameters for each test.

The safety process shifts into high gear as soon as the plan is written. A safety review board is convened and insures that the experts are on hand. The test project manager is present as are key personnel charged with conducting the test. If the test is to evaluate a new component, the engineers and contractors who designed and built the equipment are consulted. Every aspect of the test is scrutinized for potential hazards, and every safety issue is resolved to the satisfaction of all involved in the test.

But safety oversight does not stop here. Throughout the course of testing, safe conduct and individual involvement are emphasized. Anyone can call a "halt" for an observed or suspected safety problem. It doesn't matter who sounds the alarm — the important point is that it is sounded when a problem is suspected. Testing stops; the review process is repeated; and only when the issue is resolved can the test proceed.

In the final report, any safety deficiencies discovered during the process will be evaluated and classified. Appropriate corrective action will be recommended; and all relevant safety issues will be thoroughly addressed.

The thorough preparation so critical to the test mission is also critical to the Air-to-Air (Combat Archer) and Air-to-Ground (Combat Hammer) WSEP pro-

grams. In Combat Archer, deployed aircrews fire both radar and infrared air-to-air missiles at full/subscale target drones over the Gulf of Mexico. In Combat Hammer, based at Eglin AFB, Florida, deployed aircrews employ a variety of air-to-ground weaponry against fixed and mobile land targets within the Eglin range complex. Hammer, like Archer, is a live-fire exercise. In both, before the first missile is fired or the first bomb dropped, a number of safety related steps must be taken.

Before leaving home station, deploying Archer and Hammer participants receive applicable academics and conduct necessary "spin-up" training. Once deployed, area and range orientation briefings familiarize the crews with local operating procedures. Training missions are flown, allowing additional airborne practice. All the while, deployed weapons personnel build-up the required munitions under the watchful eye of Air Warfare Center munitions experts.

On shoot day, weapons are up-loaded and crews receive final briefings. The continuity of all command and control nodes is checked and verified. Essential to a safe missile launch is the development and use of a "shoot box." When a missile or bomb is deployed from inside this imaginary box, the limits of its kinetic energy will keep it inside the designated area should problems develop. For Combat Archer, and E-9 radar-array aircraft is used to define the box parameters and check for unauthorized entry (civilian boaters are a constant concern). For Combat Hammer, the shoot box is already known based on the type of weapon being employed and its blast footprint. To assist mission controllers in safety oversight, an electronic picture of each shoot box is relayed to the applicable ground-based mission control facility. The aircraft involved - the shooter, chase, and target drone (for Archer missions) - transmit electronic positioning data to the control facility to give mission controllers a complete, real-time picture of the mission as it unfolds. If available, live video from the chase aircraft and TV-guided missiles are also displayed. As an additional safety measure, for all Archer and Hammer sorties, the chase aircraft is flown by a Center-assigned pilot. He uses his knowledge of the area, the munitions, and the training procedures to provide assistance and, if needed, terminate the mission if safety is compromised. All these efforts serve one purpose — to give the mission controller the information needed to safely say, "cleared to fire."

In both of these brief descriptions of two closely related missions, what should stand out is the criticality of thorough preparation, close integration of responsibilities, and disciplined execution. Every participant must now his part, be aware of every other players role, and be alert to potential problems.

In both of these brief descriptions of two closely related missions, what should stand out is the criticality of thorough preparation, close integration of responsibilities, and disciplined execution. Every participant must now his part, be aware of every other players role, and be alert to potential problems. There is no room for complacency; complacency is the enemy of the inexperienced and experienced alike. In both missions, as in our operational units, attention to the basics goes hand-in-hand with preparations to accomodate the demands of a complex mission. Skilled professionals will be attentive to the basics and learn to "expect the unexpected." The results will be reflected in mission success: capable systems and aircrews operating at peak efficiency. Clearly as we downsize, these are imperatives. Optimizing the capabilities of our people and weapons systems will serve us well in sustaining the legacy of "the world's most respected air and space fore...global power and reach for America." ■

Mr. Bob Kerr
CALL, Air Force Program Manager
Wright-Patterson AFB OH

LESSONS LEARNED (LL): A KEY IN THE ACQUISITION PROCESS

Spiraling costs and limited funds define the world in which we live and add new challenges to the business of supporting our fighting force. You can help us do more with less by sharing your experience with deployed systems and past programs to influence and improve the design of future weapon systems and equipment.

We have the method to capture and record these valuable experiences so they are not lost. The Combined Automated Lessons Learned (CALL) Program comprised of the Air Force, Navy, FAA and NASA LL programs is that method.

The Government has not yet reached the point where flightline maintenance personnel and retired program managers look over the shoulders of new system designers to ensure future successes without stumbling into past pitfalls. However, the next best thing does exist in the CALL Program. The program is the corporate memory of all Air Force, Navy, FAA and NASA lessons learned. The data base houses over 5,000 validated lessons. In most cases, the use of these lessons can help lower the life cycle cost of new equipment and systems.

The purpose of LL is to gather and record experiences (positive and negative) from past and present programs and systems, conduct research needed to verify their accuracy and then make these recorded experiences available to you by request for our PC version or the CALL Bulletin Board (BB). Lessons are maintained in the CALL Data Base and cover such topics as environmental issues, accessibility, base stock levels, computer software, data rights, engines, packaging, support equipment, etc.

The application of lessons is aimed at program improvement. For the Next Generation Trainer and Advance Tactical Fighter, groups of lessons addressing the programs' conceptual phase were provided. A B-1 package was built around full-scale engineering development. Use of these lessons will ensure that we make informed decisions without repeating past mistakes.

There are several important facts that need to be stressed:

* The purpose of lessons learned is to provide solutions and assistance, prevent repetition of mistakes and to share proven techniques.

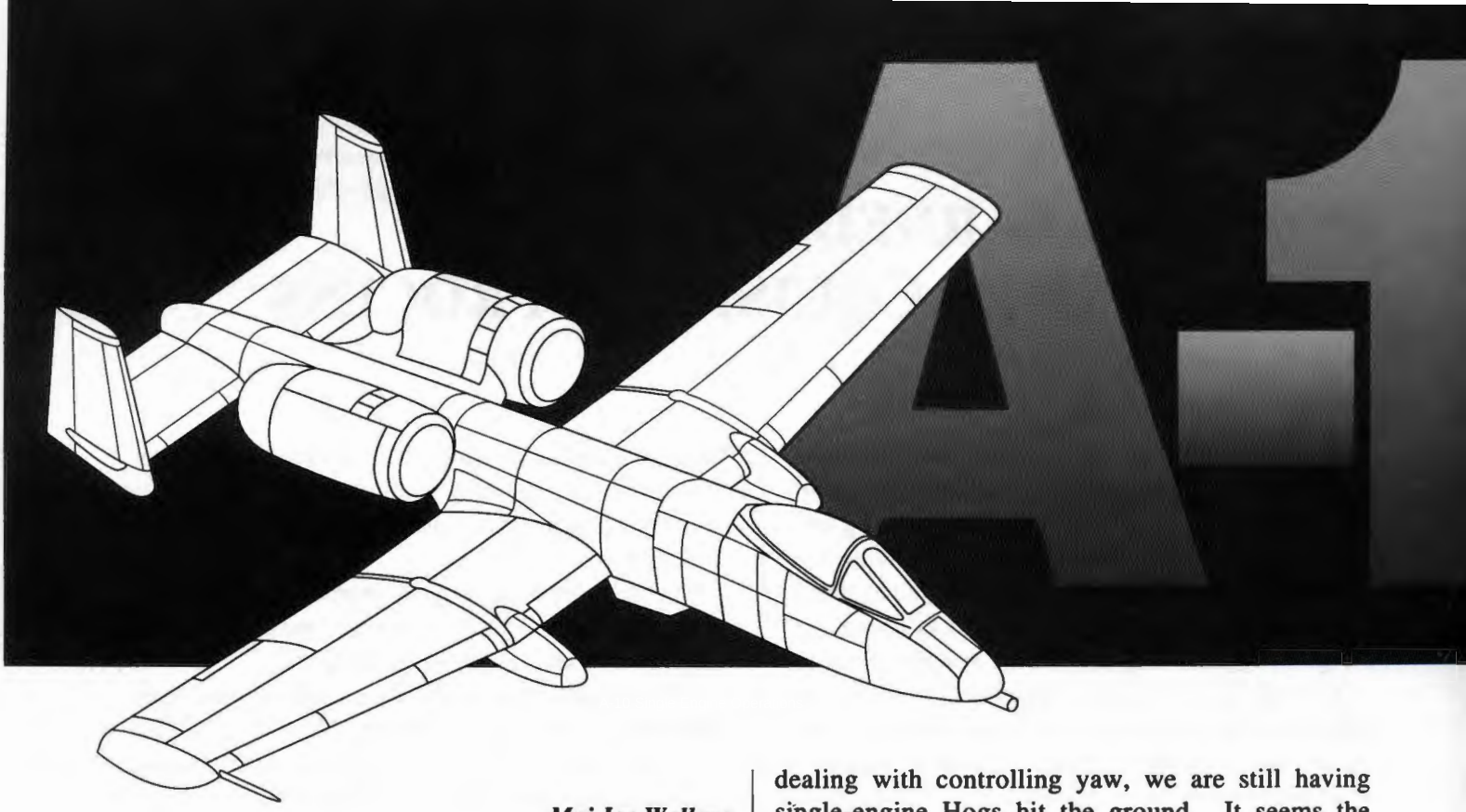
* The data base is available to all US government employees and their qualified contractors. To date, we have received an enthusiastic response from industry, particularly in the area of system/equipment design.

* For the program to remain viable, we need your inputs. If you have a problem, let us know about it. If you have a solution, we will be happy to receive it. If you have used the lessons, we need your feedback so that we can continue to assess the value of each one.

CALL is continually receiving feedback from users which ensures that lessons in the data bank are current and helpful. We review the data base annually to update or delete lessons as appropriate.

CALL can be enhanced, but we need YOUR participation. Are you using an innovative technique? Can a design be improved upon? Did we buy the correct data? The list of questions is endless. Our objective is not to point the finger at anyone but to avoid repeating the same mistakes and to pass on the good ideas. The Government can benefit from your experience and from your participation in this vital program. Use the services of CALL and provide input by contacting ASC/CYM, 2060 Monahan Way, Wright-Patterson AFB OH 45433-6503, DSN 785-3434 or Commercial (523) 255-3434. FAX (513) 255-4102.

The use of LL is a means to improved quality, reliability, maintainability, supportability and readiness of present and future weapon systems. ■



Maj Joe Wallace
47 FS/DOV
Barksdale AFB LA

They teach us in Total Quality Management training that there are no bad people, just bad processes. Well then, folks, we must have a bad process in the A-10 community when good, experienced pilots let otherwise flyable single-engine Warthogs hit the ground.

Hog drivers know the problem (single-engine operations) has been with us since we've had the A-10 and that the most critical situation is a one-engined beast on a hot day in the landing configuration or just after liftoff with the gear still down. Asymmetric thrust and the yaw it generates are the natural and mortal enemies of the Warthog. Airspeed, or the lack thereof, negates or amplifies the danger of these enemies.

Every section of the A-10 Dash One dealing with single engine operations carries a warning that states: **"...failure to use sufficient rudder...can result in large sideslip angles and yaw rates. It is possible to create a condition where the yaw rate becomes so high that there is insufficient rudder available to correct it, and the aircraft will depart controlled flight."**

Despite this emphasis, and numerous comings and goings over the years of critical action procedures dealing with controlling yaw, we are still having single-engine Hogs hit the ground. It seems the typical crash is not an engine failure on takeoff, but of a previously flying Hog that gets away from its driver. Why? It sounds like a basic airmanship problem, right? We all know that the way to keep the nose pointed in the right direction is to mind the rudder.

I think I know what the problem is, and those of us in the Stan/Eval community share a large portion of the blame. The root of the problem is not a lack of airmanship but a misplaced emphasis on rudder control over airspeed in single-engine approach situations.

In takeoff engine failure situations we know that gaining airspeed is the key — we jettison stores and disable temperature control on good engines to help us go faster. The Dash One also has several admonitions about gaining a minimum speed of 150 kts to enhance yaw control and climb capability.

If you want to aggravate your single-engine rudder control problems in the A-10, just get slow. As the warning quoted above indicates: The slower you go, the more rudder you need, the more rudder you use the more drag you create, the more drag you create the more thrust you need, the more thrust you need, the more rudder...well, I think you get it.

The cure for the problem is to not get slow! And that is where the process is broken in the single-engine Hog arena. For single-engine approaches, our Dash One says, **"Fly no-flap approach at 150 KIAS plus 1 knot for each 1,000 pounds of aircraft gross weight over 30,000 pounds until landing is as-**

SINGLE ENGINE OPERATIONS

sured." There are many references about rudder forces and effectiveness, but that reference is the only one about airspeed.

While there are many references to the bad things that can happen to a Hog driver who fails to use enough rudder, there are no references to what can happen if he fails to use enough airspeed. In fact, those of us in the Stan/Eval and instructor world have grabbed hold of the **"fly no-flap approach *at* 150 KIAS..."** and turned it into a mantra. Over the years we have developed it into a precision maneuver and expected our examinees and students to establish single-engine landing configuration and airspeed prior to the final approach fix on an instrument approach and hold it with great precision.

Wrong, Hogbreath!

The expression "speed is life" is never more true than on an A-10 single-engine approach. It is, by definition, a non-precision, emergency event and our emphasis should be on a controlled approach that can be landed from (and then stopped from), not precise plus or minus airspeed control from 9 miles out on final.

We should warn Hog drivers not to be stingy with airspeed on single-engine approaches for the same reason we already warn them to be generous with the rudder. OK, we'll take care of that with a trusty AF Form 847. It seems the bone of contention is the word *at* in the phrase ***"...at 150..."*** Let's make it say **... at a *minimum* of 150...until landing is assured."** Then we need to move on to the bigger problem of our misplaced emphasis in the Stan/Eval and instructor worlds.

Even if we are not successful in getting the Dash One changed, we should not be writing up examinees and students for holding extra airspeed on final on a simulated single-engine approach. If the pilot can fly a controlled approach above 150 KIAS and then use available drag devices to slow to normal touchdown speed once "landing is assured" as our Dash One now allows, he should be congratulated for using the common sense and basic airmanship he was issued.

I can hear the Jurassic Hog driver's objections to the more speed on final idea now. They are as old as the A-10. and usually come in two flavors: "Some Lieutenant will fly final at 200 kts and run off the runway," and, "When you do it for real, you'll be landing on 5,000 feet of wet autobahn." Both objections are wrong and helped us get where we are today.

Many experienced Hog drivers have forgotten or misplaced the current emphasis in our Dash One on slowing from single-engine approach speed to normal touchdown speeds and using available drag devices once landing is assured. One thing no Hog driver will argue about — THE A-10 KNOWS HOW TO SLOW DOWN IN A HURRY!

When the Hog stuff has hit the turbofan, we need all the help we can get. But, if we are flying our single-engine approaches with no margin for error, it becomes more likely we will make one. ■

BLIND SPOTS

Looks can be deceiving, but few would disagree: operating a school bus is not easy. Switches, blinking lights, levers, retractable stop-arm, mirrors and doors And that's the view while stationary!

Although routes can become familiar, drivers must keep constant vigils for the vagaries of traffic, not to mention the unpredictable behavior of up to 60 highly energetic kids.

Not surprisingly, the stress experienced by the bus drivers is high. While a degree in child psychology could be helpful, what a driver really needs is an extra set of eyes. Drivers are taught to count the number of children entering and exiting the bus to make sure that all of them actually move safely into or away from the vehicle. Zones around the front, curb side and underneath the bus are blind spots particularly troublesome to drivers.

MSgt James K. Kivell
HQ ACC/SEG
Langley AFB VA

Summer is over and children around the country are back in school. Having survived another summer, a lot of parents accept this with a big sigh of relief. At the same time, many of us have discovered that we should leave for work a little earlier and accept getting home a little later because school zones and bus stops (all of which create delays) are active again. Stay alert and pay extra close attention as we adapt to this change in our daily routine. We need to be especially careful around residential areas, cross walks, and school crossings. The school area speed zones mean exactly what they say!

School buses have blind spots just like cars, so be

BACK IN SCHOOL

extra careful when you're passing one. Remember, those alternating red flashing lights on the front and back of the big yellow vehicle mean **STOP** because school children are loading or unloading. Keep in mind that not all our children ride a bus, nor do they all use cross walks — so slow down.

Children see the end of summer as a challenge to pack in all the fun they can after school and before it "gets dark." This means that those younger folks are not considering the consequences of their actions while playing outside after school. So, since the kids are not paying attention to what, where, and how they are having fun, we adults must stay even more alert to prevent potential tragedy from occurring. Yes, I said adults, not parents, because while many of us may be parents with special concern for a very few number of children, as adults, we must have concern for all of the children.

Safe driving can be measured in terms of quantity and quality. A unit of driving is the trip. This is measured in terms of the distance between the point where you get into your car, drive to your destination, secure your car, and leave it. A trip can be short or long, but it is the quality of the trip that is important. This also can be measured very simply. The trip can be perfect or less than perfect. Perfect driving means that you complete every trip without mishaps, without traffic violations, without injuring someone, without excessive delays, and without displaying or experiencing discourtesy.

By driving safely you can make sure you arrive alive, have a quality trip, and protect our children!

■

WHAT DO YOU WANT

Last month we included two surveys in each magazine so you could tell us how we can better serve you. Since we only distribute one magazine for every ten people in our audience, we know that many of you didn't have a chance to give us your opinions — so here's your opportunity. Complete a survey and send it to us.

We know how busy you are, but please take a few extra minutes to tell us how to do our job better. We've included one survey in each copy of this magazine and encourage local reproduction of the form so everyone can let us know what they think. Make as many copies as you need! If only a few people give us their opinions, or we only receive surveys from people sitting behind desks like us, we may wander off course without knowing it. You can keep us on track and make us better.

Don't let the personal questions bother you. We're not trying to invade your privacy; we just want to know, more clearly, who it is we're communicating with. By knowing you, we will be better able to tailor the magazine to your interests and needs. Please, **no names.**

The rest of the survey lets you sound off to us. Tell us what you honestly think about the way we're doing our job. Don't worry about hurting our feelings. Be as honest and accurate as you can. When you're finished, fold and **TAPE** (no staples please) the survey so that the address shows, and send it to us through your official mail channels.

To best serve you, our customer, we need to know what you want. Be candid, be bold, be imaginative! Give us your best ideas for improving **YOUR** magazine and we'll give you the best product we can.

There's another thing you can do to improve The Combat Edge — **WRITE!** We rely on your articles. Don't think you have to be a great writer; just communicate your message. Send it to us and we'll take care of the rest.

Remember —**The Combat Edge** is **YOUR** magazine! it will only be as good as **YOU** make it through **YOUR** articles, inputs and feedback. If you aren't seeing a particular type of article — it's because you haven't written it. We are committed to giving you the best quality product possible, but we can't do it alone.

WE NEED YOU!

Branch of Service/Agency _____ Rank _____ AFSC _____ Age _____ Sex: M F

Duty Status _____ Time in service _____ Education (highest level completed) _____

Job title/description _____

1. How often do you read this magazine?
   a. Very often (every issue)
   b. Often (most issues)
   c. Sometimes (some issues)
   d. Seldom (very few issues)
2. How do you normally obtain this magazine?
   a. Official USAF distribution (PDO)
   b. GPO subscription/direct mail
   c. Library
   d. Co-worker, associate, friend
   e. Other
3. How much of each issue of this magazine do you read?
   a. All
   b. Most
   c. About half
   d. Some
   e. A little
   f. Look at but seldom read
   g. None

4. List the following magazines in your order of preference for reading (which one would you read 1st, 2nd, etc.):
   a. **The Combat Edge** _____
   b. **Flying Safety** _____
   c. **Road & Rec** _____
   d. **Mobility Forum** _____
   e. **Approach** _____
   f. **TIG Brief** _____

Why? _____

5. How soon do you see a copy of this magazine after it is published?
   a. One week or less
   b. One to three weeks
   c. Three weeks to a month
   d. A month or more
6. What magazines or newspapers do you regularly read?

We are interested in your assessment of ***The Combat Edge*** *magazine. When choosing an answer, write in the number corresponding to the extent you agree or disagree with each statement.*

Strongly Agree	*Agree*	*No opinion*	*Disagree*	*Strongly Disagree*
1	*2*	*3*	*4*	*5*

8. **The Combat Edge** satisfactorily presents safety information.
9. **The Combat Edge** is as interesting as other publications I read.
10. **The Combat Edge** is as informative as other publications I read.
11. The level of reading in **The Combat Edge** should not be higher.
12. The articles in **The Combat Edge** are technically accurate.
13. Overall, the appearance of **The Combat Edge** is good.
14. Coverage of flight safety issues is adequate.
15. Coverage of ground safety issues is adequate.
16. Coverage of weapons safety issues is adequate.
17. The number of photos, illustrations and charts in **The Combat Edge** is sufficient.
18. **The Combat Edge** articles are informative.
19. **The Combat Edge** articles are interesting.
20. **The Combat Edge** magazine is useful to me personally.
21. Article topics are in tune with important trends.
22. **The Combat Edge** is an effective mishap prevention tool.

For the areas listed below, please rate each using the following scale:

Poor	*Fair*	*Satisfactory*	*Good*	*Excellent*
1	*2*	*3*	*4*	*5*

23. Covers
24. Layout (professional appearance)
25. Article quality
26. Photographs
27. Illustrations
28. Information value
29. Use of color
30. Thought provoking nature
31. Type (size and style)
32. General interest/entertainment value
33. Article thoroughness
34. Article variety
35. Awards coverage (number and frequency)
36. Award write-ups
37. Usefulness in my job
38. Timeliness of articles/issues
39. Accuracy
40. Usefulness in increasing professional expertise
41. Attractiveness
42. Overall value

42. Has a **Combat Edge** article ever saved your life or kept you from doing something dangerous? If so, briefly describe the situation.

43. How would you rate this magazine in comparison with other publications dealing with the same or similar subject matter?

a. The best
b. Better than most
c. Average
d. Worse than most
e. The worst
f. Don't know

Please tell us how you would improve **The Combat Edge**:

What kinds of articles should we print **more** of? **Less** of? **Additions**?

Other comments:

---------- FOLD ----------

C
U
T

---------- FOLD ----------

Official Business

Editor, The Combat Edge
HQ ACC/SEP
130 Andrews St Ste 301
Langley AFB VA 23665-2786

LOOKING FOR SAFETY FEATURES WHEN SELECTING YOUR NEXT CAR

MSgt Gary Reniker
442 FW/SEW
Richards-Gebaur AFB MO

Automotive safety features have improved greatly over the last few years. Here are some safety considerations when you look for your next car:

* Three-point seat belts in front and rear seats. Three-point simply means the belts attach at three points, usually on the floor on each side of the driver/passenger and again on the frame. Virtually every car made has three-point seat belts up front, but you might have to search a bit to find them for the rear passengers.

* Passive seat belts. All car manufacturers are required to include passive seat belts in a certain percentage of their vehicles. These are seat belts that automatically engage with no help from the driver/passenger, thus the name. As a rule, only the shoulder harness engages and the driver must manually buckle the lap belt. Although the driver/passenger, as in an active system, must still engage one buckle, the movement of the passive belt is a good reminder to do so.

* Air bags for the driver or for the driver and front passenger. As helpful and desirable as they are, air bags aren't a complete remedy. For maximum front and side impact crash protection, seat belts must also be used.

* Knee bolsters. These are padded areas on the vertical part of the dash that absorb the energy of passenger/driver impact and can save your kneecaps.

* Anti-lock braking system. They can bring your car to a safe, sure and straight stop under adverse conditions, such as icy or wet roads. This system automatically pumps the brakes faster than the driver could and keeps the wheels from locking and the car from skidding. Once the driver applies full brake pressure, the system does the rest.

* The best tire offered by the manufacturer. No one feature can affect the handling and safety characteristics of your car as much as tires. The few extra dollars invested in the best tire (it will probably be an option) not only ensures maximum road safety, but also better handling, performance and ride.

* Dual side-view mirrors. Don't drive a car without a passenger side-view mirror. Make sure your car has two mirrors, even though the second may be optional. Two mirrors allows you to scan the side in question before making a move.

* Delay head lamps that keep the headlights lit for 30 seconds or so after you've turned off the ignition. This helps light the way into your home or a strange parking area.

* Good headlights. Not all cars have comparable lighting systems. Some headlights seem twice as efficient as others. The only way to tell is to drive the vehicle at night. A night test-drive should be on every new car buyer's list of things to do.

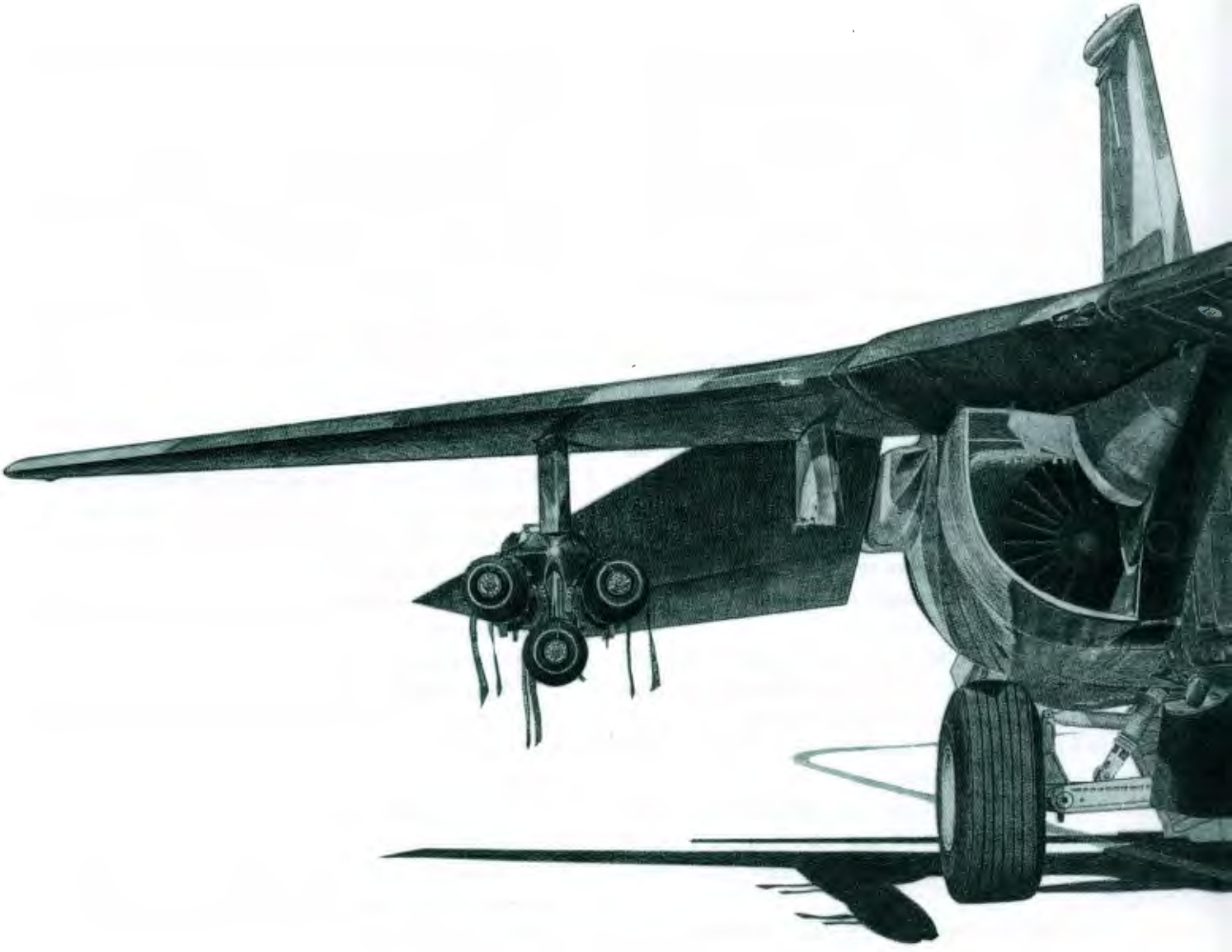
* Ingress/egress lighting. Usually a light on the inside of the doors that illuminates the way into and out of the car. Some vehicles also have red warning lights on the open door.

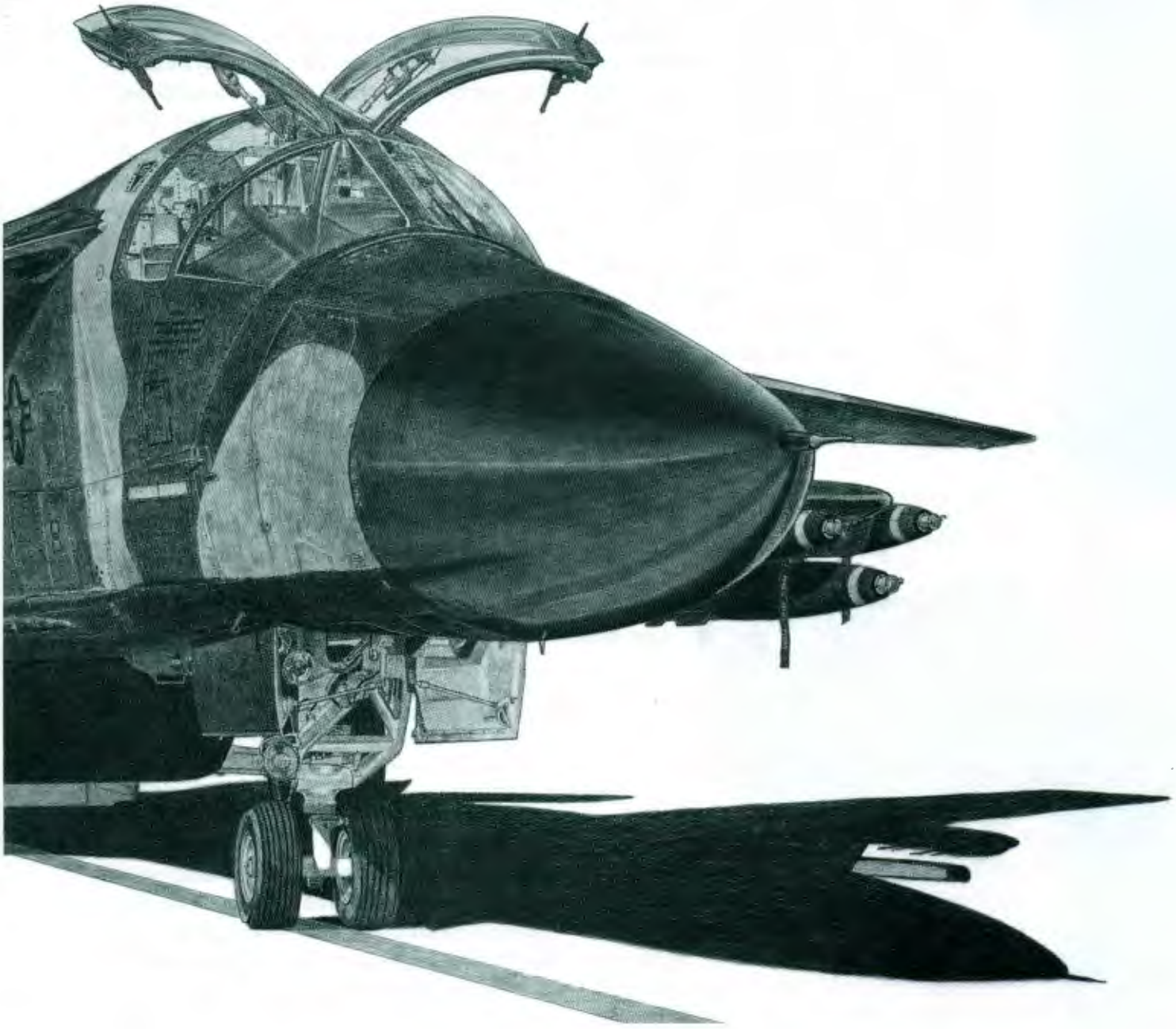
* Selective four-wheel drive or full-time four-wheel drive. If you live in an area where bad weather is the norm, these systems could prove valuable.

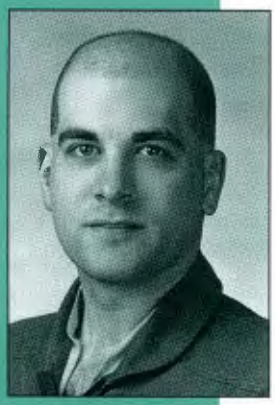
* Good washers/wipers including one for the rear window.

* An engine with enough power for passing or for emergency situations. Even though you won't always use the power, it's nice to know it's there just in case.

Although you may not be able to find all these features on any one car, each one you include in your car will help make it safer. Be sure to check with your insurance company for premium reductions or discounts for safety features such as airbags, anti-lock brakes, etc. Not only will you be safer, you may be able to save some money. ■







PILOT SAFETY AWARD OF DISTINCTION

2Lt Scot D. Zamolyi, 357 FS, 355 WG, Davis-Monthan AFB AZ

I was number two on a two-ship Surface Attack (SA) mission at Davis-Monthan AFB. After successfully completing the weapons delivery portion of the sortie, I was flying Low Altitude Tactical Formation (LATF) for the second time ever in my short A-10 career. Just as my Instructor Pilot (IP) directed a change from line formation to wedge, a large red-tailed hawk struck my center windscreen with a loud thud. The hog's armored center windscreen splintered under the impact, completely obscuring my forward visibility. The remains of the hawk destroyed my view through the left windscreen. I started an immediate climb and called a "knock-it-off." My IP acknowledged the call, rejoined to chase formation and suggested I slow down to reduce airflow over the canopy. I climbed to a safe altitude and assessed my situation. There was no damage to the engines or the flight controls (confirmed after performing a controllability check). I had no forward visibility unless I put the aircraft into at least 30 degrees of left skid. With less than 40 hours in the jet, the SOF and my IP suggested that landing with a 30 degree crab was not the best option. So, with one formation landing under my belt, high winds and moderate turbulence we decided to attempt a wing landing. My IP expertly led, and I successfully landed, out of our first formation approach.

AIRCREW SAFETY AWARD OF DISTINCTION

Capt Matthew A. VanWinkle, III, 1Lt Thomas J. Quick Capt Kenneth L. Ludden, Maj Kenneth D. Ellis Capt Bruce L. Goree, Capt Roger K. Norris Capt James D. Herndon, Flt Lt Matthew L. Roper CMSgt Alan B. Howes, Sgt Keith W. Endsley, II SSgt Mark L. Ballinger, Sgt Charles R. Hasty SSgt James D. Adams
966 AWACTS, 552 ACW, Tinker AFB OK

While on orbit in the W151 airspace just off the Florida coast, the Airborne Warning and Control Training Squadron (AWACTS) E-3B crew received a "MAY DAY" call from a distressed aircraft. The pilot (Sentry 65) responded to the call and learned the distressed aircraft was a twin propeller Piper Seneca, approximately 200 miles off shore with only 15 minutes of fuel on board. At the same time, two Coast Guard aircraft (Coast Guard 2120/2137) contacted the distressed pilot. For the next hour and a half, the AWACTS crew served as the linchpin in the ensuing rescue effort. Functioning as a team, the crew provided vectors to the distressed aircraft, US Coast Guard aircraft and the rescue helicopter as well as providing communications relay and serving as the on-scene coordination agency. Following the successful SAR effort, Sentry 65 completed their scheduled mission and returned to Tinker AFB. Sentry 65 has subsequently received praise from ATC, the Coast Guard and SEADS. All said, had it not been for the AWACTS, the rescued pilot would probably have died.

CREW CHIEF EXCELLENCE AWARD

SSgt Daniel Myers, 12 AF/DEMO, 388 FW, Hill AFB UT

On 1 May 94, Staff Sergeant Daniel Myers was waiting to recover F-16 tail number 88-467 after a demonstration flight for the El Toro MCAS air show. After landing, the pilot smelled ammonia indicating a possible leak of highly toxic hydrazine gas. The pilot taxied down to the end of the runway as far as possible from the crowd of 600,000 spectators and called for the fire department to respond. Sergeant Myers, sensing something was wrong, commandeered a pickup truck and drove out to the aircraft. When he arrived, the fire department was sitting 100 yards form the aircraft breathing from their airpacks, undecided on how to proceed. Sergeant Myers took charge of the situation by donning an airpack, coveralls and helmet and approached the aircraft with one of the firemen backing him up. Risking possible exposure to this deadly gas, he checked the external indicators for hydrazine leaks and established communication with the pilot. He determined the fumes in the cockpit were not caused by hydrazine and diffused the situation. His actions ensured the safety of the crowd and allowed the next scheduled event, the Navy Blue Angels, to perform on time.

FLIGHTLINE SAFETY AWARD OF DISTINCTION

TSgt Scott W. Floyd, 390 FS, 366 WG, Mt Home AFB ID

Finishing up a swing shift, I was parked in front of our maintenance building dropping off some maintainers and toolboxes. When I looked back at the flightline, there, it was—a two-ton civilian truck crossing the restricted area's security line and going directly at a parked F-15 aircraft. I immediately responded to the suspected intruder. I was in such a hurry to stop this uninvited guest that I also drove over the security line. My best guess was the truck was going about 5 to 10 miles per hour. I pulled along side the truck to tell the driver to stop. Much to my surprise, there wasn't a driver! The contractor doing our ramp repair had apparently failed to set the parking brake or leave the manual transmission in gear, and high winds were pushing this unmanned monster dangerously close to a multimillion dollar aircraft. The runaway truck was within 100 yards of taking the nose off an aircraft. I immediately stopped my van and jumped onto the running board of the truck. Once again, the contractor evidently failed to do something right because the truck's doors were unlocked. This time their apparent oversight was in my favor. I found myself in the truck's seat frantically pumping the brakes and much to my dismay discovered they didn't work. My thoughts were " this can't be happening," but it was! I once again pumped the brakes—they still didn't work! I then pushed the clutch all the way to the floor, jammed the manual transmission into first gear and released the clutch—the truck came to an immediate stop! A few minutes later, the security police arrived at the scene and had the truck towed from the flightline.

GROUND SAFETY INDIVIDUAL AWARD OF DISTINCTION

SSgt Vernon C. Helms, 347 SUPS, 347 FW, Moody AFB GA

Sergeant Helms' progression from Element Safety Representative to Flight Safety Representative, and eventually to Squadron Safety Representative, demonstrates his willingness to accept additional responsibilities. Sergeant Helms displays an effective, productive management style, encouraging all flight representatives to work together. He has spent over 400 hours developing programs and determining ways to improve the effectiveness of the Squadron Safety Program. Sergeant Helms' specific achievements in safety deserve more than a casual mention. He single-handedly conducted a validation of the Ozone Depleting Chemicals (ODCs) based on concerns and problems identified by the Department of Defense Inspector General. Additionally, Sergeant Helms expertly managed the squadron's Hazardous Material Program to include loading over 6,000 health hazard indicators and monitoring over 1,000 health hazard items and ODCs. These actions resulted in the proper identification, reporting and issuing of ODCs. As a member of the Hazardous Materials Analysis Committee, he is responsible for establishing procedures to track the reduction of base hazardous materials, dollars spent on purchasing hazardous materials, quantity of residue materials turned in and dollar savings. As a direct result of his creative ability, he developed clear-cut, cost avoidance procedures for hazardous materials that substantially improved the management and control of all hazardous materials for the entire base.

FY 1993
USAF SAFETY AWARDS

CONGRATULATIONS TO EVERYONE WHO CONTRIBUTED TO THESE SIGNIFICANT ACCOMPLISHMENTS. YOU CAN BE PROUD OF A JOB WELL DONE!

USAF FLIGHT SAFETY PLAQUES are awarded to the following organizations for outstanding mishap prevention:

366 WG, MT HOME AFB ID
92 BW, FAIRCHILD AFB WA
388 FW, HILL AFB UT

USAF EXPLOSIVES SAFETY PLAQUES are awarded to the following organizations for their outstanding achievement and contribution to explosives safety:

366 WG, MT HOME AFB ID
4 WG, SEYMOUR JOHNSON AFB NC
58 FW, LUKE AFB AZ
388 FW, HILL AFB UT
2 BW, BARKSDALE AFB LA
314 AL, LITTLE ROCK AFB AK (While in AMC)

MISSILE SAFETY PLAQUES are awarded to the following organizations for their outstanding achievement and contribution to missile safety:

366 WG, MT HOME AFB ID
92 BW, FAIRCHILD AFB WA
58 FW, LUKE AFB AZ
341 MW, MALMSTROM AFB MT
351 MW, WHITEMAN AFB MO
314 AL, LITTLE ROCK AFB AK (While in AMC)

NUCLEAR SURETY PLAQUES are awarded to the following organizations for their outstanding achievements or contributions to the Air Force nuclear weapon system and nuclear power programs:

341 MW, MALMSTROM AFB MT
410 BW, K.I. SAWYER AFB MI
2 BW, BARKSDALE AFB LA
351 MW, WHITEMAN AFB MO

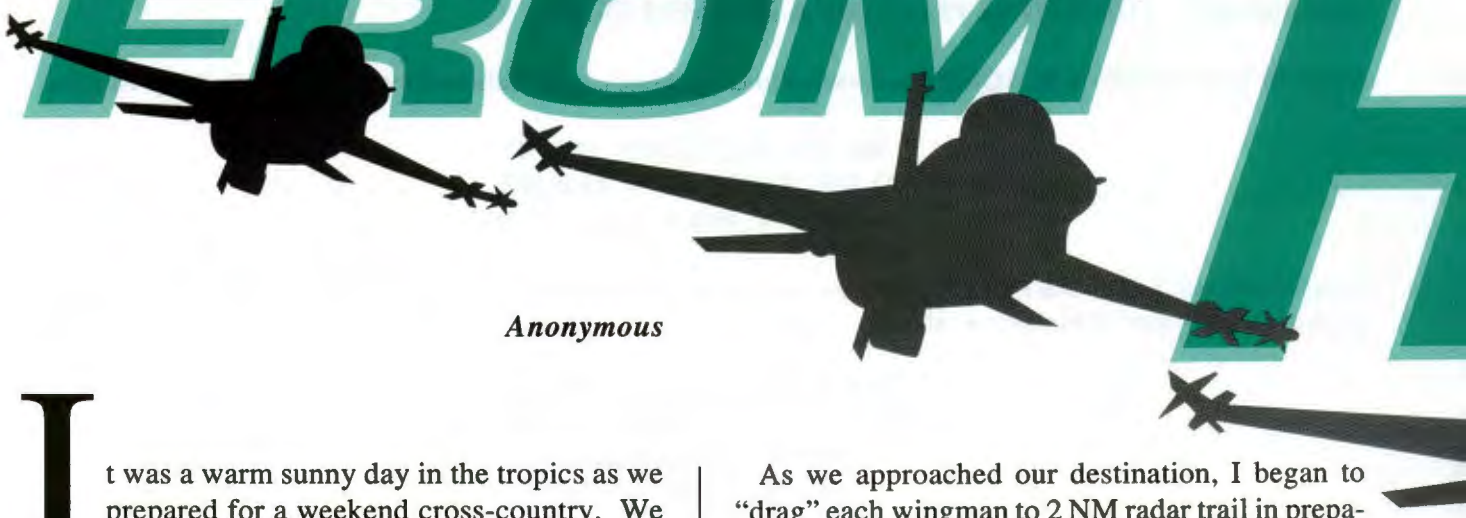
AERO CLUB SAFETY CERTIFICATES are awarded to the following bases for flight safety achievements:

BARKSDALE AFB LA
BEALE AFB CA
DAVIS-MONTHAN AFB AZ
GRIFFISS AFB NY

CHIEF OF STAFF INDIVIDUAL SAFETY AWARD is awarded to the following individual (formerly ACC, now AFSPC) for his significant contributions to safety:

MAJOR ROGER A. FORSYTH
90 MW
F.E. WARREN AFB WY

THE ILS FROM H



Anonymous

It was a warm sunny day in the tropics as we prepared for a weekend cross-country. We planned on a 1-hop to a tremendous location in the Far East. With shopping list in hand our wives had sent us off! The preflight planning had all gone well. The forecast weather at the destination was better than 3000 feet and 5 miles with calm winds and a temperature just above freezing. The squadron was supplying us with 4 great jets, and we thoroughly prepared for a simple navigation hop.

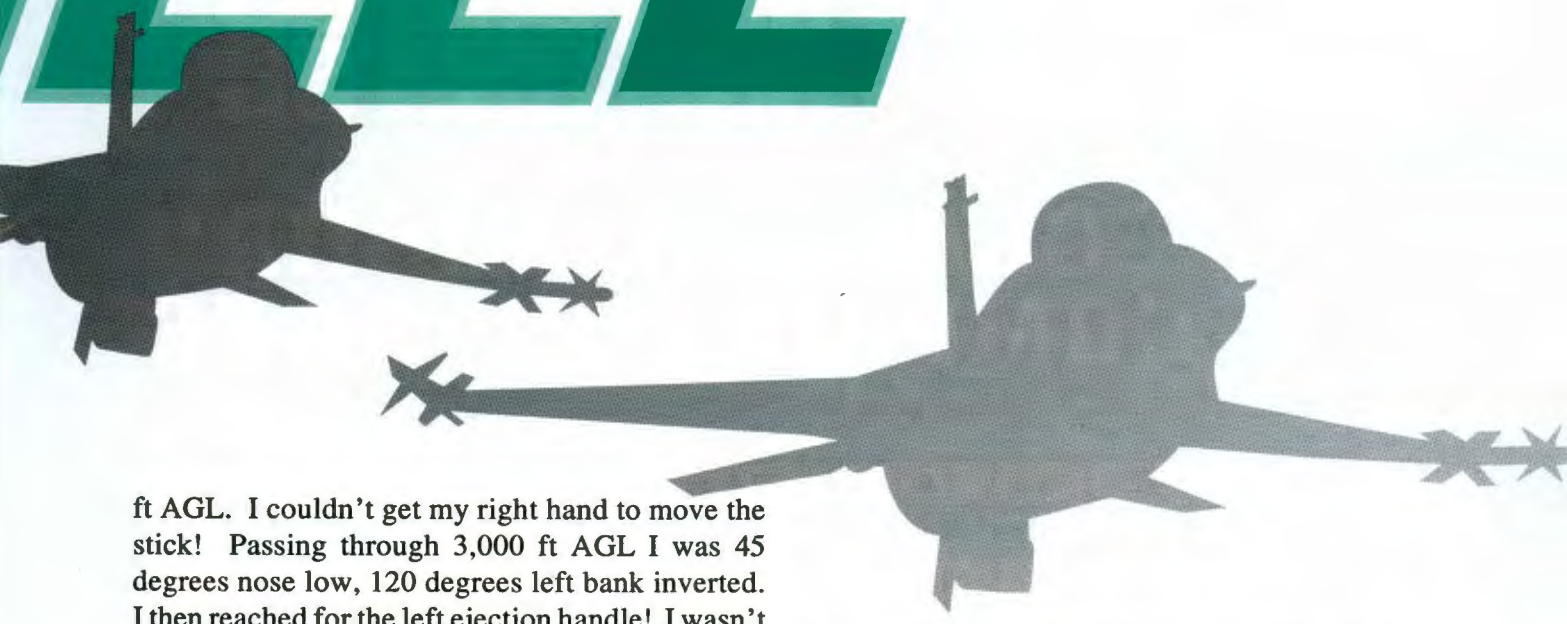
The brief went well; we planned to execute 2 wing takeoffs with the en route formation being spread (3-4000 ft separation, line abreast). I conducted a thorough briefing and discussed several weather contingencies (to include our divert locations)! All went well until about 100 NM from our destination. We were still in our spread formation when the weather up ahead began to look a little different than it had for the last 600 NM. While cruising at FL390, I noticed the weather gradually beginning to climb and meet us. I made a call to metro and received what I never expected: "Weather 500 obscured in ice fog, visibility 1 1/2 miles, with patchy ice on the runway." I then asked what the weather was like at other bases on the peninsula and got the same answer! Our options were to penetrate and land at our destination (still well within our weather categories), or divert to an island location 300 NM to the East. I chose the former!

As we approached our destination, I began to "drag" each wingman to 2 NM radar trail in preparation for the ensuing descent (before the restriction on radar trail recoveries). It seemed like forever, but at about 50 NM "center" allowed us to descend out of FL390. I was now due south of our destination, in the weather, descending. All of my training said that this was more than sufficient altitude for a planned landing on an east/west runway; I didn't plan on a level off at FL250 when 30 NM out. Still in the weather, we continued in our 4-ship trail formation and all flight members were doing fine.

As we got closer to the field, we contacted "approach control" who gave us a right turn to the Northeast and descent to FL200. I began to query the controller about further descent. He told me to "stand by." At 15 NM, heading 030 degrees at FL200, we were cleared for the ILS Rwy 27 and asked "Can you make it?" Being the consummate fighter pilot I said "affirmative" and began a left-hand spiraling descent to final (with 3 aircraft in radar trail behind me)! All was going well when I began to notice the localizer course go from right to centered to right and the attitude going from a left 30 degree bank turn to a left 120 degree bank turn passing through approximately 10,000 ft MSL. At this time I forgot the rest of my flight and was doing the best that I could to fly the jet!

I continued to be a passenger for what seemed like an eternity! The attitude was about 120 degrees left bank inverted, descending through 5,000

WELL



ft AGL. I couldn't get my right hand to move the stick! Passing through 3,000 ft AGL I was 45 degrees nose low, 120 degrees left bank inverted. I then reached for the left ejection handle! I wasn't going to die on an instrument approach! As I grabbed the ejection handle, it occurred to me that my left hand was working and I immediately grabbed the stick and rolled upright on the attitude indicator added max power and pulled full aft stick. I remember seeing the ground come up as I recovered the jet and did my best to cage my brain! Reentering the weather I became severely disoriented, but was able to fly straight and level and reintercept the localizer at about 8 NM final. I was able to lower the gear and somehow continue the approach.

Throughout the episode I had totally disregarded the aircraft in trail behind me. The "event" confused my #2 man; I had gone from a normal position on his radar to gimbaled left. To his credit he flew his instruments rather than follow what he thought was a faulty lock (this one thing averted what could have been a catastrophic mishap).

All was not over, as I broke out of the weather at 500 ft my wingman and I were flying within visual range of each other to an icy runway. Still disoriented, I added power to extend in front as he "S" turned. We all landed, with minor braking problems, and taxied to parking.

During the debrief we discussed what had happened and learned some valuable lessons:

1. If the weather at the destination is not as planned, it is better to do single-ship approaches.
2. You can always say "unable." Never accept "poor" vectors from approach control.
3. Believe and fly your instruments.
4. Don't chase the radar in a trail recovery (refer to lesson #3).

We all felt that our preparation for the mission was adequate, but you must always be prepared for the unexpected! Thorough planning can never replace sound common sense and basic airmanship! ■

ACColades

QUESTIONS OR COMMENTS CONCERNING DATA ON THIS PAGE SHOULD BE ADDRESSED TO HQ ACC/SEF, DSN: 574-7031

	TOTAL			ACC			ANG			AFR		
	JUL	THRU JUL		JUL	THRU JUL		JUL	THRU JUL		JUL	THRU JUL	
		FY94	FY93		FY94	FY93		FY94	FY93		FY94	FY93
CLASS A MISHAPS	2	18	18	1	8	9	1	9	8	0	1	1
AIRCREW FATALITIES	0	8	7	0	6	6	0	2	1	0	0	0
* IN THE ENVELOPE EJECTIONS	2/0	15/1	17/0	0	4/0	7/0	2/0	11/1	9/0	0	0	1/0
* OUT OF ENVELOPE EJECTIONS	0	0/2	0	0	0/2	0	0	0	0	0	0	0

* (SUCCESSFUL/UNSUCCESSFUL)

CLASS A MISHAP COMPARISON RATE

(CUMULATIVE RATE BASED ON ACCIDENTS PER 100,000 HOURS FLYING)

ACC	FY 93	2.0	3.1	2.2	1.6	1.7	2.1	1.7	1.7	1.7	1.6	1.6	1.8
	FY 94	0	1.1	1.5	1.8	2.4	2.4	2.0	1.7	1.7	1.8		
8 AF	FY 93	0	5.2	3.7	2.7	2.1	1.6	1.4	1.2	1.0	0.9	0.8	2.3
	FY 94	0	0	0	0	0	0	0	0	0	0		
9 AF	FY 93	6.7	6.5	4.4	3.3	3.9	3.1	2.7	2.3	2.7	2.4	2.2	2.0
	FY 94	0	0	0	2.1	3.3	4.0	3.2	2.8	2.2	2.1		
12 AF	FY 93	0	0	0	0	0	0	0	0	0	0	0	0
	FY 94	0	0	2.0	1.6	1.3	1.1	.9	.8	1.4	2.0		
DRU	FY 93	0	0	0	0	0	2.8	2.4	4.2	3.7	3.3	4.4	4.0
	FY 94	0	14.9	8.6	6.7	11.2	9.5	7.9	7.0	6.3	5.7		
ANG	FY 93	0	2.2	2.9	2.1	3.5	2.9	3.1	2.7	3.4	3.0	3.2	3.3
	FY 94	0	1.9	2.6	2.2	2.7	3.7	3.2	3.4	3.5	4.0		
AFR	FY 93	0	0	8.0	5.9	4.8	4.0	3.4	3.0	2.7	2.4	2.2	4.0
	FY 94	0	0	0	0	0	0	0	0	0	1.4		
TOTAL	FY 93	1.3	2.7	2.7	2.0	2.4	2.4	2.2	2.1	2.3	2.1	2.1	2.4
	FY 94	0	1.2	1.7	1.8	2.3	2.7	2.1	2.1	2.2	2.4		
MONTH		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

* (HOURS NOT AVAILABLE)

ACColades

Units without a "Command-Controlled" Class A flight mishap since the stand-up of ACC on 1 Jun 92, or their respective assimilation into the command.

1 FW	109 AG	138 FG	175 FG	416 BW
4 WG	113 FW	139 AG	177 FG	419 FW
5 BW	114 FG	142 FG	178 FG	440 AW
6 ABW	116 FW	143 AG	179 AG	442 FW
24 WG	117 RW	144 FW	180 FG	482 FW
27 FW	118 AW	145 AG	181 FG	507 FG
28 BW	119 FG	146 AW	185 FG	509 BW
33 FW	120 FG	147 FG	187 FG	552 ACW
35 WG	122 FW	148 FG	189 AG	906 FG
42 BW	123 AW	149 FG	191 FG	908 AG
55 WG	124 FG	150 FG	192 FG	910 AG
65 ABW	125 FG	152 ACG	301 FW	911 AG
79 TEG	129 RQG	152 RG	302 AW	913 AG
93 BW	130AG	153 AG	314 AW	914 AG
94 AW	131 FW	154 ACG	347 FW	916 ARG
99 WG	132 FW	156 FG	355 WG	924 FG
102 FW	133 AW	157 ACG	388 BG	926 FG
103 FG	135 AG	165 AG	366 WG	928 AG
104 FG	136 AW	166 AG	388 FW	930 OG
106 RQG	137 AW	167 AG	403 AW	934 AG
107 FG		169 FG		939 RQW
		174 FW		

COMBAT EMERGEN PROCEDU

Maj Philip M. Ruhlman
ALSA Center Joint Action Officer
Langley AFB VA

CY RES

"VIPER 1, Break left! SAM launch, left nine o'clock, low!"

"Tally Ho SAM, defending..."

"VIPER 1, second SAM launch, same location!"

No joy SAM... (KAHWUMP!) ...MAYDAY, MAYDAY, I'm hit! I'm hit! VIPER 1 is egressing south!"

Roger VIPER 1, the visual is your right two o'clock. You're trailing black smoke. What's your status? Say intentions?"

What's next? As you can tell from the above situation, things have gone to Hades in the proverbial hand basket real quick. One moment the pilot is in a perfectly good aircraft, the next moment he is fighting to keep the aircraft and himself "alive." How do you prepare for this emergency situation, one that is complicated by the stress of combat and the threat of enemy SAMs/AAA ripping your aircraft out from underneath you?

This may surprise you, but handling a combat emergency procedure (EP) is relatively straight forward. The three basic rules you train with in peacetime still apply in combat:

1. Maintain aircraft control.
2. Analyze the situation and take proper action.
3. Land as the situation dictates.

However, it's equally true that combat EPs carry with them that "added bit of excitement." Your actions in those initial critical moments after you've taken enemy fire will determine whether or not you recover the aircraft, or more importantly, survive. Your quick assessment with a proper focus is the key.

This article explains a combat EP technique my F-16 squadron developed while we were deployed to SWA during Desert Storm. (NOTE: Although this was developed by single seat fighter pilots, it can be universally applied to all aircrews and aircraft.) The pilots in my squadron agreed that most emergency procedures were straight forward if you were well trained and had rehearsed the problem frequently in the simulator. Sitting at zero knots, reading a checklist while drinking a diet soda and discussing emergency procedures among your buddies was relatively stress free. It was true that things were different with actual airborne EPs, but it seemed that the annual checkride and EP evaluation from the Flight Examiner did a reasonable job of simulating (and stimulating) stress. However, it was also apparent that no one knew how to prepare for the stress of a combat EP occurring over enemy territory, much less one caused by a SAM or AAA. Needless to say, you have a totally different predicament with a very high "pucker factor" when you're being shot at. Add to that the fact that there would be no Supervisor of Flying (SOF) and no expeditious ATC assistance but, plenty of enemy threats, "bad guy" territory, FEBAs, more SAMs/AAA, and you have a whole new ball game.

We decided that the way to successfully cope with combat EPs was by following three rules which quickly handled the situation after it occurred (either due to being hit or simply an aircraft malfunction). Surprisingly enough, these rules were **exactly what had been taught to us throughout our flying careers.** All we did was expand on them by adding a combat perspective.

Rule 1: MAINTAIN AIRCRAFT CONTROL

This rule is simple. If the aircraft cannot be controlled, get out! Worry about being a POW during the "silk letdown."

Rule 2 (part one): ANALYZE THE SITUATION

This part of Rule 2 is the **most** critical since it is, undoubtedly, complicated by the added stress of combat and bullets zipping across the canopy. Here is a simple technique to rapidly make an accurate and (most importantly) **focused** analysis under this stress. Similar to the famous Maslow Hierarchy of Needs, ask yourself these questions, starting at the bottom of what I call, "The Combat EP Pyramid." (See Figure 1).

FIRST PRIORITY CAN I SURVIVE?

At first impact of the SAM or AAA round, you must quickly determine if you are going to survive the next volley of lead aimed your way. Your first action is to do **whatever it takes** to get out of the threat area *before* you look at lights and gauges. If the aircraft is still flying, **immediately** move away from the threat so you can buy time to figure out the problem.

SECOND PRIORITY CAN I MANEUVER?

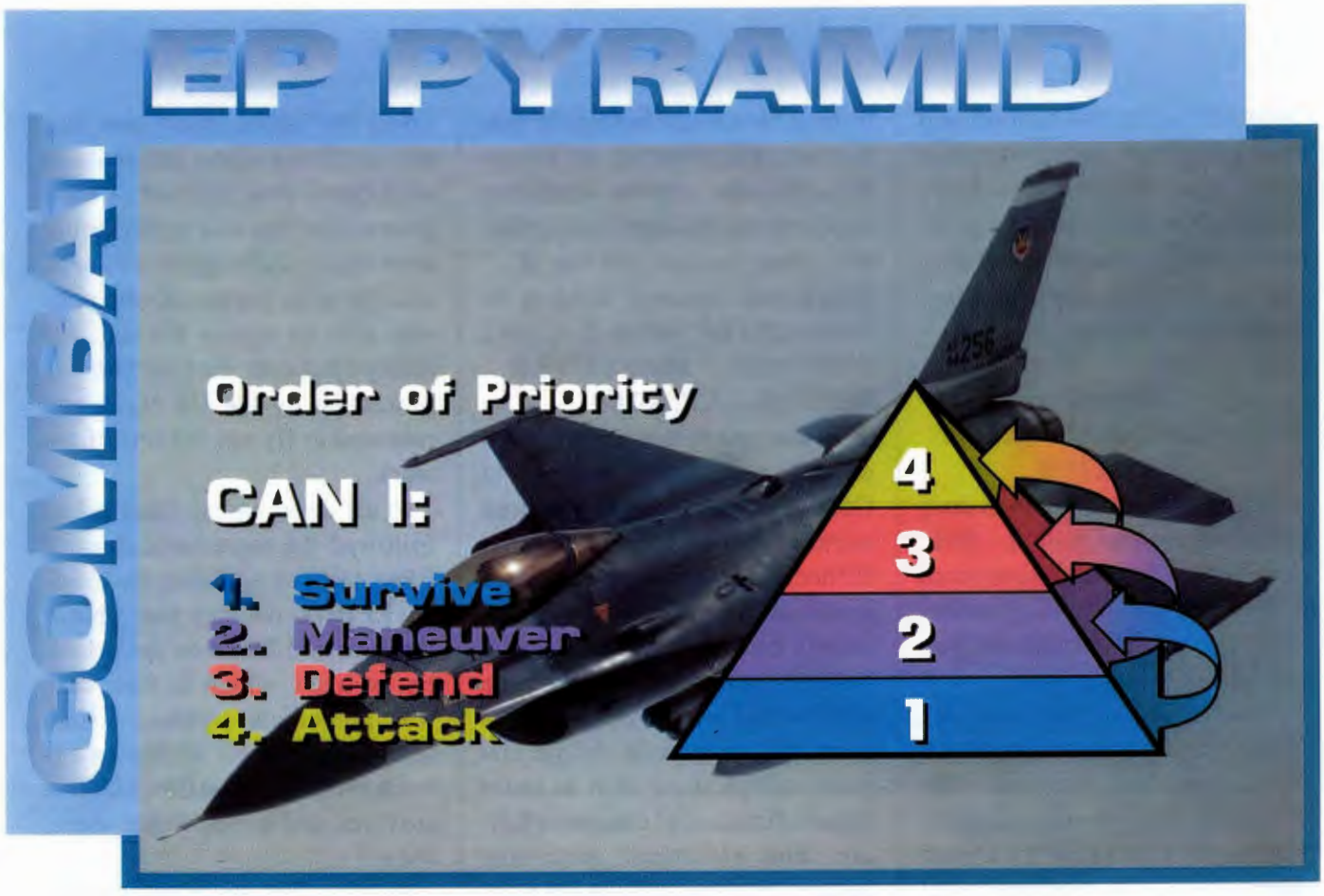
Having survived the threat, quickly "access" your systems knowledge and assess the problem. Just how wounded is your aircraft? How maneuverable are you? Is the aircraft as controllable as before? How fast can you go? Are you limping about or still zipping along with only a few lost systems? What about fuel? Should you press to the target or RTB?

Remember little time is available to read checklists and there is no SOF! Turning around in the middle of a strike package and making a bee-line home may be the right choice. Then again, turning tail from deep in enemy territory with just you and your wingman may not be smart. You must consider Wild Weasel/escort support, and the inherent protection the strike package provides. Take a few seconds to "wind the clock" before you commit to a decision. If a quick exit is advantageous due to an open escape route and proximity to friendly territory, by all means take it.

Once in "good guy country," you will have to determine recovery, air refueling, or divert options. Above all, remember, once you make a decision, **stick with it!**

THIRD PRIORITY

FIGURE 1



CAN I DEFEND?

Whether you are egressing home or pressing to the target, the next step is to assess how much defensive capability you have left. What is the status of your threat warning system? What about chaff and flares? Electronic countermeasures pod? Gun? Missiles? Specific system failures affect these components, but there may not be time to dig out the checklist. You must know your systems cold, and be able to determine your defensive capability without wasting time by systematically testing and trying everything out.

FOURTH PRIORITY
CAN I ATTACK?

Finally, you reach the last rung in the decision pyramid. If you decide to press to the target, you must figure out what you can attack with. What will be your weapons effectiveness? What backup aiming sensors can be used to get reasonable weapons results? What about manual delivery?

Other considerations must be addressed. Are you on a close air support mission (CAS) supporting troops in contact, or fragged against a large, area target? What about the rules of engagement? Are you required to deliver with precision accuracy? What is the requirement for target identification?

In any case, you must assess your degraded systems to determine if you can effectively carry out an attack with a reasonable expectation of success balanced against the risk. If you can't execute an effective attack, then why risk it? On the other hand, even if you can't attack, can you assist in providing mutual support to other flight members? Does your plan make sense?

Rule 2 (part two):
TAKE PROPER ACTION

Once you have accomplished your analysis of the situation using the combat EP pyramid, it's time to deliberately execute the proper course of action. An effective analysis using the pyramid should help you to quickly arrive at the best decision amidst the confusion, stress, and "fog of war."

Follow the procedures prescribed in your checklist. Chances are you have them memorized anyway. Rely on your

wingman for mutual support and to help key your mind to critical action items. By all means, don't invent new and cosmic procedures. Stick to the basics. Try to stay cool, calm, and collected. Don't "John Wayne" it.!

Rule 3: LAND AS THE SITUATION DICTATES

Believe it or not, this is an easy rule compared to Rule 2. Still, you cannot afford to let your guard down until the aircraft is safely shutdown on the tarmac and you are debriefing your boss.

"Landing as soon as possible" versus "landing as soon as practical" is your next decision. The checklist will be very explicit. Follow it! Don't pass up a good divert base in an attempt to get the aircraft back so it can get fixed for tomorrow's war. The success of the war does not depend solely on your aircraft.

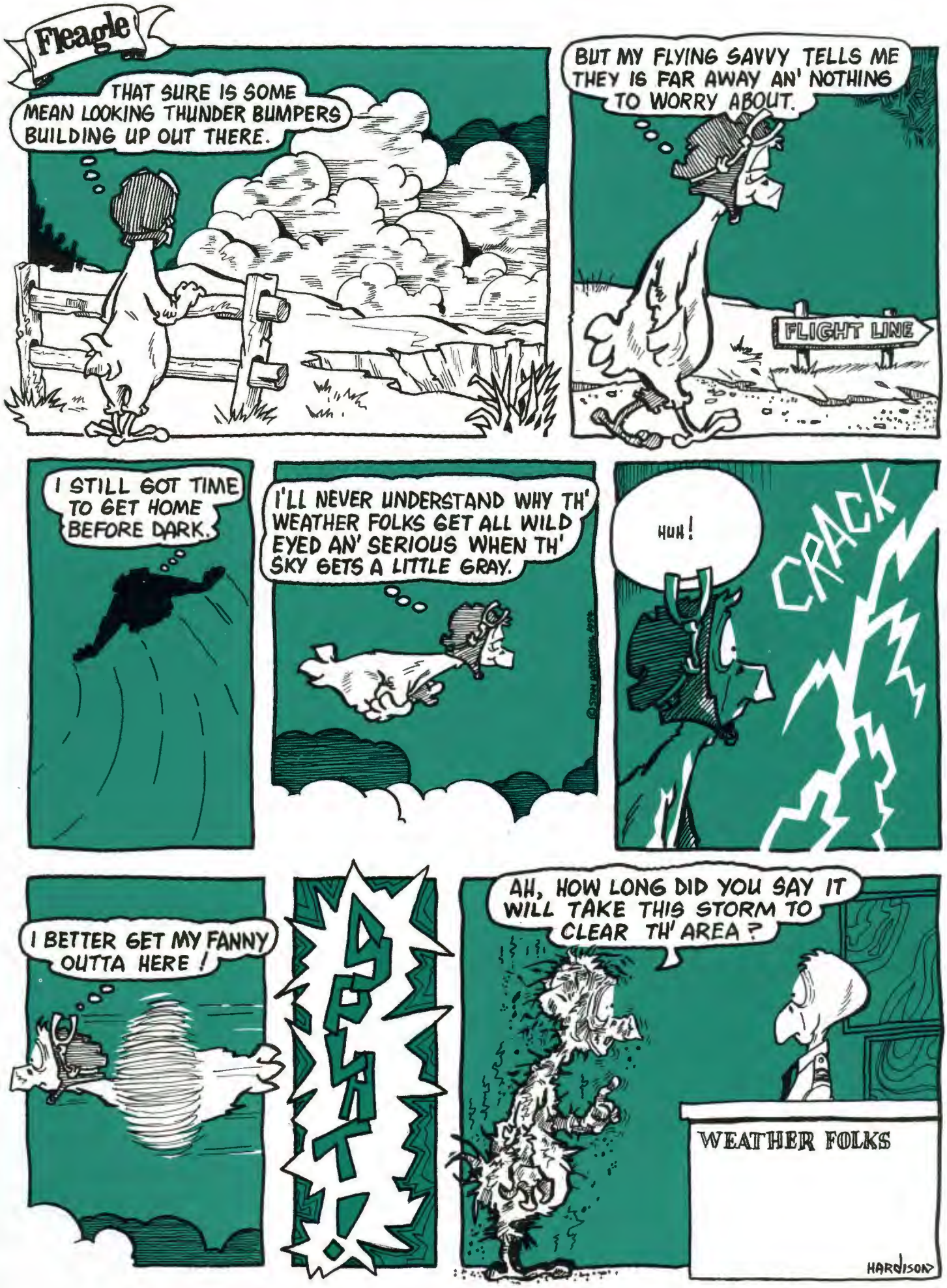
If you plan to divert, contact a controlling agency (such as AWACS) to get guidance on whether your divert base of choice is available. Quite possibly, it could be under SCUD or chemical attack. In addition, although landing at a base with like aircraft is a good consideration, don't let it be the primary one. Use common sense.

Without getting into the gory details, let me take a few moments to relate just how my squadron applied these combat EP rules during Desert Storm. Our EP training, while deployed, focused on intense systems knowledge and "the basics." We trained for months before the war started, concentrating on countless different combat scenarios in which we quizzed each other on "what would you do if..." These quiz sessions focused on the combat EP pyramid: CAN I SURVIVE... MANEUVER... DEFEND... ATTACK?

By the time January 17th rolled around, each pilot, from Lt to Col, was confident and prepared to make the appropriate combat EP decisions should they be faced with one. This served us well, as shortly thereafter, we had our first taste of combat. Throughout the war, we had our fair share of EP's over Iraq, to include simple aircraft malfunctions such as radio failure, fire control computer failure, and electrical generator failure. Each pilot made the right decisions and was able to return himself and his aircraft safely. Some were able to continue their missions and score effective results. We also had more than our share of SAM hits. Over Baghdad, we lost two jets in one day. In one case, the pilot never got past Rule 1 as his jet went out of control after being hit. He made the obvious decision to eject and was captured. The other jet was also hit by a SAM. After careful analysis, the pilot determined he could still maneuver and defend. Deciding to egress the target area (he had already destroyed his target), he continued to defend against additional SAMs fired at his aircraft. Finally, the aircraft's engine seized and he was forced to eject. He too was captured. Still, he survived the initial threat and was able to calmly assess his situation as he egressed homeward. A third jet was lost due to a bomb fusing at release. Although unaware of exactly what happened, the pilot was able to egress Kuwait and safely eject over the Gulf (he was picked up by the US Navy and returned to fly out the rest of the war).

In all three cases, these pilots followed the three basic rules of EPs. Also, by applying the Combat EP Pyramid, they were able to **analyze** and **focus** on the priorities at hand, which in their case was immediate survival. As a testament to their ability to execute proper combat EPs, all three survived and are on flying status today!

Combat EPs are nothing more than EPs with a little extra "spice." The three basic rules of EPs still apply in combat. There is nothing cosmic about it, only a little more preparation and thinking ahead are required. The Combat EP Pyramid is merely a decision tool to help you get your priorities (read "ducks") in line. The next time you study a checklist take the time to study it from a combat perspective. Set up different scenarios and ask others what they would do. Memorize classic system failures and apply the pyramid. Remember, the more time you invest planning for combat EPs while sitting at zero knots sipping a soda, the less time you'll spend sweating it out when the bullets are flying! ■


Fleagle
THAT SURE IS SOME MEAN LOOKING THUNDER BUMPERS BUILDING UP OUT THERE.
BUT MY FLYING SAVVY TELLS ME THEY IS FAR AWAY AN' NOTHING TO WORRY ABOUT.
FLIGHT LINE
I STILL GOT TIME TO GET HOME BEFORE DARK.
I'LL NEVER UNDERSTAND WHY TH' WEATHER FOLKS GET ALL WILD EYED AN' SERIOUS WHEN TH' SKY GETS A LITTLE GRAY.
HUH!
CRACK
I BETTER GET MY FANNY OUTTA HERE!
SPLAT!
AH, HOW LONG DID YOU SAY IT WILL TAKE THIS STORM TO CLEAR TH' AREA?
WEATHER FOLKS
HARDISON