

ROAD & REC

*The Air Force Journal
of Occupational,
Recreational, and
Driving Safety*

Volume 11, Number 2

Spring 1999



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MSGT CHERYL CLAYTON
HQ USAF/SEGO

If you've been in the Air Force for at least one summer, you are probably well aware of the intense safety campaign run by Air Force Safety each year. We call it the "101 Critical Days" safety program, and it runs from the start of the Memorial Day weekend through the end of Labor Day. The Air Force began the 101 Critical Days program after statistics showed that more Air Force members were hurt or killed during this period than during any other time in the year. We use this program to focus our safety efforts toward activities that traditionally claim lives and cause injuries during the spring and summer months.

The Nos. 1 and 2 killers during the summer months are usually traffic and water recreation mishaps. This was truly evident last year. We experienced 20 fatalities during the 1998 campaign—12 involved private motor vehicles (PMV), and 6 of those 12 were motorcycle fatalities. There were also six drownings during the campaign. We all need to apply risk management more vigorously this summer, especially when we are headed for the highways or water.

Here are some things to consider while you plan this summer's activities.

We have all heard the words "Don't drink and drive," but abusing alcohol can also lead to serious injuries or death in all recreational activities, including swimming. The good news is that mishaps involving alcohol are decreasing. The bad news is that they still happen too often. Keep reminding yourself and others that time spent preventing the death of a friend or yourself is small compared to the years of sorrow brought to your loved ones if you don't.

Know your limits in the water. Last

year all of the drownings occurred in open water (not a pool), and two of the six individuals drowned while attempting to save a child. In both cases, the child survived while the member was unable to remain afloat and subsequently drowned. Neither of the unfortunate rescuers were wearing personal flotation devices.

Know the "personality" of the water you're in—the power of the current and the depth and temperature of the water. Use personal flotation devices when onboard all watercraft. Never enter unknown waters without wearing a personal flotation device. Recognize, evaluate, and implement risk controls to eliminate the hazards before you allow yourself or your children to be exposed to them. In the case of the two drowned rescuers, if reasonable precautions had been taken by providing personal flotation devices, two of our Air Force family would likely be alive today. Above all, use sound judgment when you participate in water sports.

Recognize the hazards when hiking, camping, or picnicking. Do some research on the area to determine known and recorded hazards. If possible, seek the advice of others that have been in the area. Knowledge gives you an edge against being surprised by the natural hazards in the area.

Those are just a few things to talk and think about as the summer season is here and we are about to enjoy traditional summer fun.

It's imperative that we all become more focused on encouraging and preparing safe seasonal activities because, in the long run, we can all be affected by the loss of just one person.

We know the dangers, challenges, and the great opportunity for fun that exists for us during this season. It's up to each of us to be responsible for our own safety. Don't leave your safety to luck. Let's make this the safest 101 Critical Days of summer in the history of the campaign. Let's go for a record of zero fatalities. Please act safely and responsibly as you relax this summer, and take a little extra time to apply risk management not only to your own activities but to those of friends, coworkers, and family. If **you** won't—who will? ■

ROAD & REC

The Air Force Journal
of Occupational,
Recreational, and
Driving Safety

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Short Circuits



NOTEWORTHY NEWS

Reducing Air Bag Injury Risks

Drivers concerned about air bag injuries can reduce the risk to themselves by following two simple safety tips, according to the Insurance Institute for Highway Safety.

First, it's important that drivers don't sit too close to the steering wheel. Research done by Susan Ferguson, the Institute's vice president, found drivers who sit closer than 10 inches to the steering wheel are much more likely to suffer a serious injury from an inflating air bag. While most of the 587 volunteers taking part in the study sat at a safe distance from the steering wheel, there were exceptions. The most notable were short women (5 feet $\frac{1}{2}$ inch or shorter) in large and midsize cars. About 40 percent of these women sat too close to the steering wheel in these vehicles, compared to 27 percent in small cars. Ferguson suggested the problem with the larger cars was the greater distance between the accelerator pedal and the steering wheel. She explained that caused drivers to sit further forward—therefore nearer the steering wheel—in order to reach the pedal.

Correcting the problem is fairly simple and requires "only minor adjustments," Ferguson said. She suggested drivers could get the needed distance and still remain comfortable by tilting the steering wheel down, then pushing the seat back on its track, then raising the seat back to a more erect position.

Second, it's essential to buckle up. "Only a small proportion of belted drivers are potentially at risk," Ferguson said. Also, it's particularly important that drivers wear their shoulder belts. These not only keep drivers from hitting the steering wheel and dash during collisions, they also keep drivers from being thrown forward into the rapidly inflating air bag. (Information provided by the National Highway Traffic Safety Administration.) ■

Recalls

The following vehicle recalls have been announced by the National Highway Traffic Safety Administration.

1997 Jeep Cherokee/Grand Cherokee. Defect: The fuel level sending unit degrades over time, causing the fuel gauge to indicate significantly more fuel than is in the tank. **Consequence of defect:** Owners may not be aware their vehicle is low on fuel, increasing the risk of a vehicle crash if the vehicle engine stops from lack of fuel. (NHTSA Recall No. 97V194, Chrysler Campaign No. 755)

1994-96 Dodge Ram Truck. Defect: A valve on the fuel tank can allow liquid fuel to leak onto the ground under certain vehicle operating conditions. **Consequence of defect:** Fuel leakage could result in a fire if an ignition source is present. (NHTSA Recall No. 97V199, Chrysler Campaign No. 748)

1997 Dodge/Plymouth Caravan/ Grand Caravan (Vehicles

equipped with P215/65R15 Goodyear Conquest tires mounted on steel wheels.) **Defect:** These tires were damaged when installed on these vehicles and may suffer a sudden loss of air pressure without warning. **Consequence of defect:** Sudden tire failure could result in a loss of driver control of the vehicle. (NHTSA Recall No. 97V200, Chrysler Campaign No. 749)

1995-97 Chrysler Cirrus/Sebring, Dodge Stratus, Plymouth Breeze. Defect: The lower control arm ball joint can separate due to loss of lubrication. **Consequence of defect:** Separation of ball joint could cause a loss of steering control, increasing the risk of a vehicle crash. (NHTSA Recall No. 97V201, Chrysler Campaign No. 750)

1992-97 Ford Aerostar. Defect: Vehicles with all-wheel-drive can develop powertrain bending resonance or displacement of transfer case output shaft bushing. The powertrain bending resonance, or the output shaft bushing displacement, can result in structural failure of the transmission and/or transfer case. Fluid expulsion, drive shaft separation, or loss of vehicle drive can result. This condition is more likely to occur as a result of sustained high speed driving and high ambient temperatures. **Consequence of defect:** This condition can cause a loss of vehicle control and, if the expelled fluid contacts the exhaust system, a vehicle fire could occur. (NHTSA Recall No. 97V204, Ford Campaign No. 97S83)

1998 Chevrolet S-10, GMC

Sonoma. Defect: An engine electrical wiring harness clip can melt and drip onto the exhaust manifold. **Consequence of defect:** The clip material dripping onto the exhaust manifold can ignite other combustible components, resulting in a vehicle fire. (NHTSA Recall No. 97V208001, GM Campaign No. 97067)

1996-97 Chevrolet S-10, GMC Sonoma. Defect: The front brake line can contact the left-hand side of the engine oil pan, causing the brake line to wear to the point of brake fluid loss during brake application. **Consequence of defect:** Brake fluid loss can reduce braking effectiveness and increase stopping distances, possibly resulting in a crash. (NHTSA Recall No. 97V146, GM Campaign No. 97049)

1997 Isuzu Hombre Truck. Defect: The front brake line can contact the left-hand side of the engine oil pan, causing the brake line to wear to the point of brake fluid loss during brake application. **Consequence of defect:** Brake fluid loss can reduce braking effectiveness and increase stopping distances, possibly resulting in a crash. (NHTSA Recall No. 97V146002)

1998 Chevrolet S-10 Truck, Chevrolet Blazer, Oldsmobile Bravada, GMC Sonoma, GMC Jimmy. Defect: A fatigue fracture of the rear axle right-hand brake line can occur, causing a slow fluid leak, resulting in a soft brake pedal. **Consequence of defect:** If the brake line breaks, the driver will experience a sudden drop in brake pedal pressure, the instrument panel brake light will illuminate, and there will be a loss of rear brake performance. Partial loss of braking at a time when maximum stopping effectiveness is needed could result in a vehicle crash. (NHTSA Recall No. 97V218, GM Campaign No. 97068)

1998 Mazda B4000 Truck. Defect: The flexible section of the chassis-mounted fuel line that connects to the engine was routed too close to the exhaust manifold and can contact the manifold. **Consequence of defect:** This could potentially result in damage to the fuel line or, in some cases, cause a fuel leak. Fuel

leakage in the presence of an ignition source could result in a fire. (NHTSA Recall No. 97V186002, Mazda Campaign No. 71712)

1992-93 Mazda MX3, 323 (Vehicles equipped with front seat automatic shoulder belts). Defect: The rail of the automatic shoulder belt can wear such that the cable that retracts the buckle assembly can become jammed in the rail, rendering the shoulder belt inoperative. **Consequence of defect:** A seat occupant may not be properly restrained in the event of a vehicle crash. (NHTSA Recall No. 97V211, Mazda Campaign No. 72803)

1995 Dodge/Plymouth Neon. Defect: The steering column coupler can become disconnected when the vehicle sustains an underbody impact. **Consequence of defect:** Loss of steering control can occur. (NHTSA Recall No. 97V169, Chrysler Campaign No. 741)

1997 Chevrolet C10/C20, GMC C15/C25. Defect: One or two of the front seat mounting bolts were not installed. This does not comply with the requirements of Federal Motor Vehicle Standard No. 207, "Seating Systems." **Consequence of noncompliance:** In the event of a vehicle crash, a seat with this condition will not protect the occupant as required by the standard. (NHTSA Recall No. 97V176, GM Campaign No. 97052)

1989-1993 Audi 80/90/100/200/V8/Coupe/S4. Defect: Some air bag sensors do not comply with Audi's durability standards over the lifetime of the vehicle. **Consequence of defect:** In the event the sensor should malfunction, the air bag restraint system could inadvertently deploy. Deployment of the air bag restraint system without warning could cause a driver to lose control of the vehicle. (NHTSA Recall No. 97V172, Volkswagen Campaign No. KF)

1995-97 Audi 90/Cabriolet/A4/A6/A8. Defect: The discharge of static electricity under low humidity conditions can activate the driver-side air bag when the driver enters or exits the vehicle and forms an electrical circuit by touching certain areas of the steering wheel.

Consequence of defect: Activation of the air bag under these circumstances can cause personal injury. (NHTSA Recall No. 97V175, Volkswagen Campaign No. KG)

1995 Ford Escort/Mercury Tracer (Vehicles built at the Hermasillo or Wayne assembly plants and originally sold or registered in Nevada, Florida, Hawaii, Texas, California, Louisiana, Georgia, South Carolina, Mississippi, Oklahoma, Alabama, and Arkansas). Defect: Cracks can develop in the plastic fuel tank near the heat shield attachment, resulting in fuel leakage if the cracks go through the fuel tank wall. **Consequence of defect:** Fuel leakage in the presence of an ignition source can result in a vehicle fire. (NHTSA Recall No. 97V144, Ford Campaign No. 97S79)

1998 Ford Windstar. Defect: The rack and pinion steering gears may have damaged shaft input bearings. **Consequence of defect:** This condition can increase steering efforts, affecting steering control. (NHTSA Recall No. 97V165, Ford Campaign No. 97S85)

1997 Saturn SC1/SC2. Defect: If the driver or front passenger safety belt is pulled out much faster than normal a number of times, the lock-up feature of the retractor will not work properly. **Consequence of defect:** In a rapid deceleration or vehicle crash, the occupant would not be properly restrained, increasing the risk of personal injury. (NHTSA Recall No. 97V161, GM Campaign No. 97-C-03/97042)

Lexus ES300/Toyota Avalon/Camry vehicles originally sold or registered in Alaska, Colorado, Idaho, Illinois, Iowa, Kansas, Maine, Michigan, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New York, North Dakota, South Dakota, Vermont, Wisconsin, and Wyoming. Defect: A condition can occur where accumulated moisture can temporarily freeze in the brake vacuum hose if the vehicle is used in extremely cold climates. **Consequence of defect:** This can result in the loss of vacuum assist to the brakes, which can increase stopping distances and lead to a vehicle crash. (NHTSA Recall No. 97V156)

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Seat Belts —

What's Your Excuse



TSGT (Ret) MARK A. GAPETZ
325 FW Ground Safety
Tyndall AFB, Florida

Most states now have laws requiring drivers and passengers to wear seat belts or pay a stiff fine. Sadly, many people still resist using seat belts and pay an even stiffer price—their lives.

In the course of my job, I've spoken to a lot of drivers who weren't wearing their seat belts. The only thing holding them in the car was their excuses. What's your excuse?

The Excuse

"I don't need seat belts because I'm a really good driver and I have never had an accident."

"I don't want to be trapped in the car by a seat belt. It's better to be thrown free in an accident."

"I only need to wear them on long trips or at high speeds."

"I just don't believe it will ever happen to me."

"It's nobody's business but my own if I wear my seat belt."

The Reality

No matter how good a driver you are, you can't control the other car, and you've got to protect yourself against someone else's poor judgment and bad driving.

Being thrown free is 25 times more dangerous. Wearing your seat belt, you're far more likely to be conscious after an accident...to free yourself and help your passengers.

Eighty percent of deaths and serious injuries occur in cars traveling under 40 miles per hour and 75 percent of deaths and injuries occur less than 25 miles from your home.

Each of us can expect to be in a crash once every 10 years. For 1 out of 20 of us, it will be a serious crash.

A major cause of higher insurance premiums is the cost of medical care for traffic injuries. It costs an average of \$425,000 for each fatality.

The name of the game is to remain secure in the seat of your car if a collision occurs. It takes just 3 seconds to put on your seat belt. Those 3 seconds could well mean the difference between your life or death because...

EXCUSES DON'T COUNT IN A CRASH.



PPE Can Save Your Life

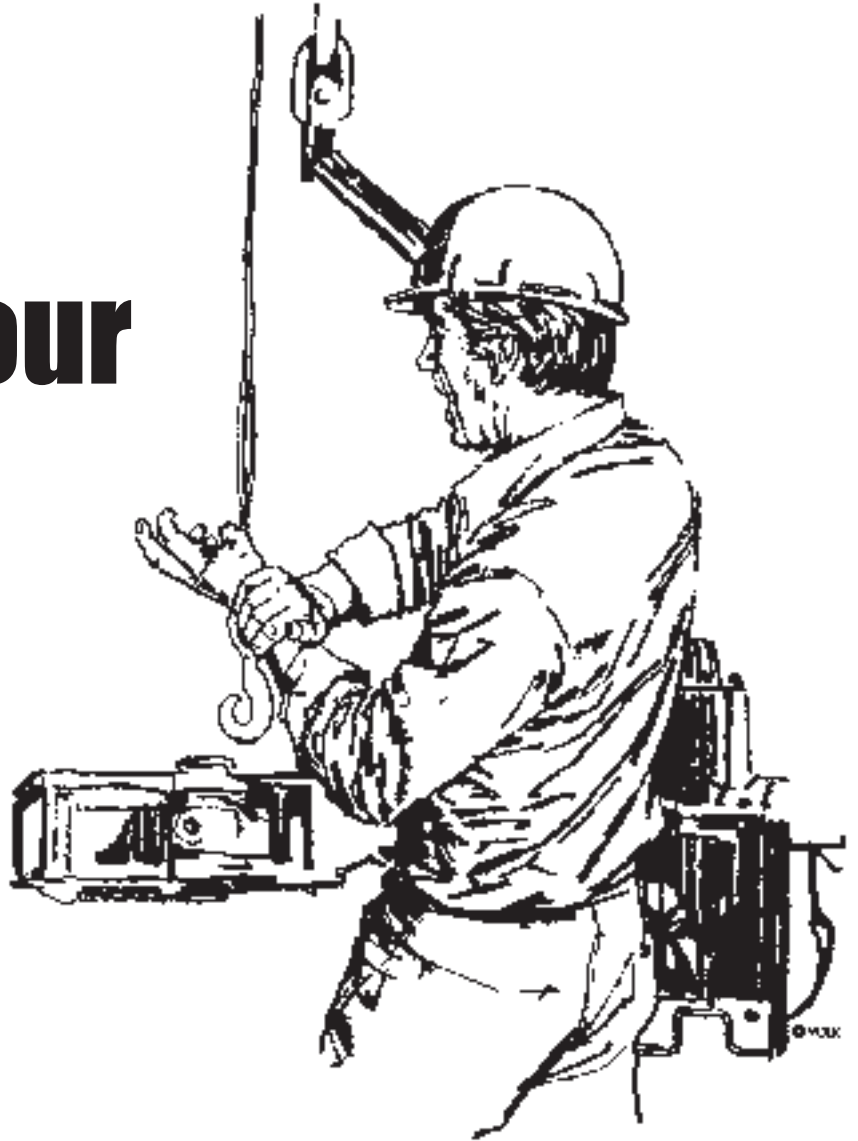
CWO MAURICE "MO" ETIEMBLE
USCGC SWEETGUM
Mobile, Alabama

Years ago, I was reading a Navy Boatswains Mate course in my pursuit of advancement. The specific topic was on the use of personal protective equipment while operating hand or power tools. I remember a quote from that course that read, "The first lieutenant can always issue you another pair of safety glasses, but he cannot issue you a new set of eyes." In all honesty, I probably remembered that line more so because it struck me as humorous rather than as a revelation in personal safety.

Some time has since passed, and now I'm a first lieutenant aboard a Coast Guard seagoing buoy tender. Our mission of Aids to Navigation requires that we use our boom to lift aboard buoys weighing over 9 tons and concrete sinkers that are five times the weight of my sport utility vehicle. The constant attention of all involved is mandatory to ensure safe execution of the task. Even then, the potential for serious injury is always present.

One morning we were in the final stages of deploying a 5.5-ton buoy. The ship was "anchored" to the sea floor by way of the buoy's mooring chain and sinker. The chain was being held by a "chain stopper" (a spring-loaded device with an open top that the chain rests in) to control its deployment. The command was given from the bridge to "set the buoy," and the deck crew started the process of lowering the buoy into the water and releasing the chain mooring. One crewman tripped the chain stopper, and the deck supervisor started lowering the buoy.

This should have been "just like always," but that morning was different. The crewman who tripped the stopper was down on one knee, his safety helmet spinning across the deck and blood streaming from his forehead. In the process of tripping the stopper, either the sledgehammer he was using bounced back or he was caught by the corner of the stopper as it released the chain. Regardless of how it happened, one of our shipmates was down. Immediately, the quartermaster piped over the ship's speakers, "Corpsman to the buoy deck!"



The deck crew immediately started first aid. The almost instantaneous arrival of the corpsman and the captain a few seconds later reinforced the seriousness of the situation. First-aid training is the type we all hope we never have to use, especially on one of our own. Our shipmate was stabilized and medevac'd to a shoreside emergency facility by way of a Coast Guard utility boat deployed from the nearest search and rescue station. What would have normally been a standard response to a call for help for the crew of the 41-foot boat, became a grim reminder of the risks Coast Guard members face every day.

Fortunately, the injury was not as severe as it originally appeared. The crewman was released from the hospital later the same day with a few stitches and a very bad headache. Had he not worn his safety helmet and safety glasses, the results would have been tragically different.

I have come away with a few things as a result of this accident—a dented safety helmet, a shattered and blood-stained pair of safety glasses, and a still-alive shipmate. Just like the first lieutenant in the Navy course, I was able to issue this seaman a new pair of safety glasses. His life, though, could never have been replaced. ■

ROAD RAGE!

(and My 5.0 GT)

When the skidding stopped and the smoke cleared, my car was turned around 180° and sitting in the middle of the median with the engine cut off.



MSGT THOMAS S. FOSTER, JR.
HQ ACC/SEW
Langley AFB, Virginia
Courtesy *The Combat Edge*, Oct 98

Road rage on our nation's highways has grown to new heights. One thing for sure, it doesn't matter if you live in the city or in rural areas. Almost every day you can read about aggressive drivers in our newspapers or hear about their acts of rage on the daily newscast. Needless to say, these people are high-risk drivers who climb into the anonymity of their "vehicular projectiles" and take out their frustrations on anybody at any time. I have experienced this first-hand while stationed here in the Hampton Roads area. Here's my story...

It was an early, crisp, February

morning, and of all days, Friday the 13th! I live approximately 10 miles from my office, and at this particular time, I had to be at work at 0700. So, like any other day, I would head off to work around 0615. As I was merging onto the interstate, I noticed that the traffic varied from moderate to heavy. I merged into the first lane as usual, using my turn signals. After waiting for the center lane to clear, I then merged into the center lane. Because of the high volume of traffic that morning, I stayed in the center lane for approximately 1 mile. Once the far left lane opened up, I merged and continued my usual travel route, maintaining speed to stay with the rest of traffic.

After driving in the left lane for awhile, I noticed in my rearview mirror a pair of headlights coming

up fast behind me. With the traffic situation as congested as it was that morning, I couldn't merge back into the center lane because other cars were already there—all three lanes were bumper to bumper.

It was very evident that "Mr. Excitement" was in a real hurry—his front bumper came to within a foot of my car. Because I was driving a Mustang GT and he was in a Ford 4x4 pickup, his headlights were right smack dab in my rearview mirror. To make matters worse, he began to constantly flash his high beams at me. There was absolutely nothing I could do but wait until the center

lane opened up. I even slowed down some, hoping an opportunity would open up for him to be able to merge into the center lane. But no! He wanted this far left lane, and he wanted it now! For a moment, it got so bad I actually thought he was going to pass me on the far left shoulder of the road just to get in front of me.

Eventually, the center lane opened up for me and I merged. But then I noticed something. He also changed lanes and was still on my rear bumper—flashing his lights. I really didn't know what this person wanted me to do. So I slowed down again, hoping he would pass me and go on his merry way. Well, he did merge to the right of me and started to pass. But instead of passing and going on, he was now beside me, and it looked like he was trying to move back over into my lane.

I checked on my left to see if I could merge back into the left lane, but there was already another car there. I couldn't change lanes. So I got over to the left as far as I could into my lane—without crossing over the lane markers. This is when I noticed that "Mr. Excitement" had rolled down his driver's side window, had his left arm hanging out of the window, and was holding something in his hand—something I could not quite figure out.

Then all of a sudden, he threw whatever was in his hand directly at me. At that same instant, something hit the side of my car—WHAM! My natural reflex prompted me to jerk the car left. As a result, I almost lost control of my vehicle. Then as I attempted to bring my car back over to the right, I inadvertently overcorrected. This is when I lost total control of my automobile and began sliding sideways down the interstate—hanging on for the ride. When the skidding stopped and the smoke cleared, my car was turned around 180° and sitting in the middle of the median with the engine cut off. Fortunately, all the cars behind me had enough time to stop in order to avoid a major accident. From the corner of my eye, I noticed the Ford 4x4 heading up the adjacent off-ramp.



Right then and there, I lost my temper! "Road rage" had taken over me! I was going to get "Mr. Excitement" at any cost—I didn't care! I got my car started again and noticed the long line of previously stopped cars had barely begun to move. I had just enough time to cross over the interstate ahead of the traffic. And up the off-ramp I raced—chasing after my mystery aggressor.

My 5.0 Mustang GT and I were on "Mr. Excitement" in the blink of an eye. I was determined to follow this guy to wherever he was going and get a big piece of his "you know what." But as I was following him, I had a chance to calm down a little and think about what had just happened. That's when I realized this wasn't the smartest thing to do. Not only had I possibly endangered other people around me, but now I didn't even know where this guy was leading me. So I finally did the only smart thing to do. I wrote down a description of the vehicle along with his license plate number, abandoned the chase, and reported the whole incident to the State Police. Within an hour and a half, I received a phone call from the State Police stating they had arrested "Mr. Excitement." They asked me if I wanted to press charges, and my answer was "YES."

Friday the 13th wasn't a very good day for "Mr. Excitement" for sure. "Road rage" is a federal offense, and after his court date, it cost him a permanent mark on his record, \$2,000 in lawyer fees, \$500 in fines, 2 years probation, and \$168 worth of damage to my car. He was fortunate. If he had killed someone, he could still be behind bars.

The bottom line to my story is, "Report acts of aggressive driving to the proper authorities." Most states have a telephone number motorists can use to report dangerous drivers to local law enforcement officials. If you have a cellular telephone in your vehicle, keep that number handy. Then when you see a driver operating a vehicle in a threatening manner, pull over and make the call. In addition, always remember to be courteous when you're driving. Don't get lured into duplicating some of the same irresponsible driving patterns of the aggressor. Every motorist has the ability, as well as the obligation, to set a good driving example for others. By working together, we can help make our roadways safer and prevent unnecessary tragedies. Take this advice from a seasoned weapons troop—the mixture of road rage and vehicular projectiles can be an "explosive" one! ■



Driving at **Night**

National Safety Council

Traffic death rates are three times greater at night than during the day, according to the National Safety Council. Yet many of us are unaware of night driving's special hazards or don't know effective ways to deal with them.

Driving at night is more of a challenge than many people think. It's also more dangerous.

Why is night driving so dangerous? One obvious answer is darkness. Ninety percent of a driver's reaction depends on vision, and vision is severely limited at night. Depth perception, color recognition, and peripheral vision are compromised after sundown.

Older drivers have even greater difficulties seeing at night. A 50-year-old driver may need twice as much light to see as well as a 30-year-old.

Another factor adding danger to night driving is fatigue. Drowsiness makes driving more difficult by dulling concentration and slowing reaction time.

Alcohol is the single most significant factor in fatal traffic crashes, playing a part in more than half of all

motor vehicle-related deaths. That makes weekend nights more dangerous. More fatal crashes take place on Friday and Saturday nights than at any other time in the week.

Fortunately, you can take several effective measures to minimize these after-dark dangers by preparing your car and following special guidelines while you drive.

The National Safety Council recommends these steps:

- ◆ Prepare your car for night driving. Clean headlights, taillights, signal lights, and windows once a week—more often if necessary.
- ◆ Aim your headlights properly. Misaimed headlights blind other drivers and reduce your ability to see the road.
- ◆ Don't drink and drive. Not only does alcohol severely impair your driving ability, but it also acts as a depressant. Just one drink can induce fatigue. Also, avoid smoking when you drive. Smoke's nicotine and carbon monoxide hamper night vision.
- ◆ If there is any doubt, turn your headlights on. Lights will not help you see better in early twilight, but they'll make it easier for other drivers to see you. Being seen is as important as seeing.
- ◆ Reduce your speed and increase your following distances. It's more difficult to judge other vehicle's speeds and distances at night.
- ◆ Don't overdrive your headlights. You should be able to stop inside the illuminated area. If you're not, you are creating a blind crash area in front of your vehicle.
- ◆ When following another vehicle, keep your headlights on low beams so you don't blind the driver ahead of you.
- ◆ If an oncoming vehicle doesn't lower beams from high to low, avoid glare by watching the right edge of the road and using it as a steering guide.
- ◆ Make frequent stops for light snacks and exercise. If you're too tired to drive, stop and get rest.
- ◆ If you have car trouble, pull off the road as far as possible. Warn approaching traffic at once by setting up flares or reflecting triangles near your vehicle and 300 feet behind it. Turn on flashers and the dome light. Stay off the roadway, and get passengers away from the area.

Observe night driving safety as soon as the sun goes down. Twilight is one of the most difficult times to drive because your eyes are constantly changing to adapt to the growing darkness. ■

Photo by SSgt Andrew Dunaway



EDITOR'S NOTE: Point your web browser to [HTTP://www-afsc.saia.af.mil/ground](http://www-afsc.saia.af.mil/ground) for the latest Air Force safety statistics.



WATC

BOB VAN ELSBERG
Managing Editor

Photo by Bob Van Elsberg

“DARN IT!” I realized old habits had kicked in, and I’d pulled up to the wrong side of the gas pump in our new Ford van. I’d been used to our Plymouth Duster which had its fuel cap on the opposite side from the Ford. Oh well, no problem. Nobody was on the other side of the pump. I figured I’d just pull forward, then back up next to the pump so it would be on the proper side.

I pulled the shift lever toward me and down (it was a “three-on-the-tree” stick shift), let the clutch out, and eased forward 10 to 15 feet. Watching the gas pump in my driver’s side rearview mirror, I cranked the wheel to the right to clear the gas pump island, then left to parallel the pump.

While I was busy maneuvering, a farmer in an old pickup pulled up to the gas pump. The pickup was behind and a little to the left of the van and hidden from view from my driver’s side mirror. As I eased back, little did I know I was about to violate a basic law of physics. You know, the one that says two things can’t be in the same place at the same time.

KA-THUD! The sudden jolt gave us a start, and I jumped out of the van to see what I’d hit. I was shocked that something as large as a pickup could have escaped my attention—but it did. I just wasn’t used to backing a large vehicle with limited rear visibility. Fortunately, I was going slowly enough that there wasn’t any serious dam-

WHY YOUR BACK— JACK!

age. Still, my brand-new van had acquired its first scratch—something no one likes getting on their new vehicle.

Although this mishap was minor, it could have been avoided. Here are some risk control measures to help you avoid an accident while backing your vehicle.

◆ **DON'T BACK UP** if you miss an exit or turn. It usually takes only a couple of minutes to reach a point where it's safe to turn around or go around the block.

◆ **BACK IN SO THAT YOU CAN PULL OUT** into traffic if you have to pull into a driveway or alley. It's much safer to back into a quiet area than into traffic.

◆ **GET OUT AND LOOK AROUND**—especially if you're driving a large truck or other vehicle where your vision is poor to the rear. While you're looking around, check for the following:

- Unusual depressions, holes, or ice or snow buildup on the road surface.
- Pedestrian traffic.
- Any fixed objects that could be a problem.

- How much clearance do you have? How wide is the area into which you are backing? Look overhead for wires or overhanging structures, and remember that snow buildup or very hot weather can put you closer to overhanging structures or sagging wires.

◆ **USE HELP IF AVAILABLE.** If at all possible, get someone to help you back. Remember to keep the person in view in your mirror so that you don't hit them and can see their signals. Agree on the signals in advance, and keep in mind that backing safe-

ly is your responsibility.

◆ **BACK FROM THE DRIVER'S SIDE.** Backing from the driver's side normally gives you better control.

- The shorter distance you have to back and the more you can see while backing, the better.

- Begin backing immediately after you've checked around your vehicle so that the situation doesn't change.

◆ **BACK SLOWLY.** Backing a vehicle is awkward compared to normal driving. The faster you back, the harder it is to control your vehicle and judge distance. Also, if you hit an object while backing quickly, you are likely to do much more damage as well.

◆ **CHECK BOTH SIDE MIRRORS AS YOU BACK.** Although carefully judging your clearances during your walk-around should allow you to back safely, that's no excuse for not checking both side mirrors as you back. Pedestrians may suddenly appear, or other vehicles may approach unexpectedly.

◆ **DON'T RELY SOLELY ON YOUR MIRRORS** if you are backing into a dock, loading zone, or parking space and have more than a few yards to go. Stop about three-fourths of the way back, set the brake, then get out and check the remaining distance. Relying only on your mirrors, especially in unfamiliar situations, can be very foolish. ■

Information for this article was provided by the 62d AW/SEG.



Courtesy "Safety Times"

Roxanne and her teenage friends spent the afternoon taking turns on the two-seater personal watercraft (PWC). Riding the waves and splashing around were great ways to enjoy the bay. In a moment of inattention, Roxanne and her partner fell off. Before she could get out of the water, Roxanne was struck by another PWC and died at the scene.

PWCs are not toys, but too many people treat them as if they were. In 1995, 79 people across the country died in accidents involving personal watercraft. While only 5 percent of the boats on the water are PWCs, they account for 30 to 40 percent of boating accidents.

Before You Go

- ◆ Know your craft. Read the owner's manual to learn operating techniques and to develop riding skills. Share this information with others who may ride on it.
- ◆ Check over the craft. Be sure:
 - the throttle and all switches are working properly;
 - the fuel and battery lines are properly connected;
 - you have enough fuel;
 - the cables and steering are functioning properly.
- ◆ Never exceed passenger weight or capacity.

- ◆ Have a Coast Guard-approved fire extinguisher on board.
- ◆ Wear Personal Flotation Devices (PFDs) and a wet suit.
- ◆ PWC riders have an increased risk of abrasions due to contact with their PWC, other vessels, docks, rocks, coral, or the water's surface, particularly as speeds increase. A wet suit also protects you from hypothermia. Consider wearing a helmet, water shoes, gloves, and other protective apparel. Normal swimming attire is not good enough.
- ◆ Know and obey navigational rules of the road and posted instructions.
- ◆ Practice reboarding before going out for the first time.
- ◆ Know local water conditions and where the obstacles are.

The Operator

- ◆ Insist on training when you're renting a craft. Ask questions until you're confident you know how to operate the controls. Be sure the instructor is competent to teach.
- ◆ Never drink and ride. At least 50 percent of all recreational boating fatalities involve alcohol.
- ◆ It is recommended that PWC operators be 16 years old with a valid driver's license. This indicates the operator has demonstrated some degree of maturity, re-

sponsibility, and good judgment.

- ◆ Parents should guide and supervise a teenager's use.

- ◆ Know your limits. Don't stay on the water too long. You will become tired and more prone to accidents.

- ◆ Take time to master the basic techniques before attempting more difficult maneuvers.

- ◆ Many craft have a lanyard connected to the start/stop switch. Never start your engine without attaching the lanyard to your PFD or wrist.

On the Water

- ◆ Ride with someone nearby in case you run into trouble.

- ◆ Allow plenty of room to safely turn when you are near swimmers, scuba divers, surf-boarders, boats, and docks. Remember you don't have brakes.

- ◆ Sailboats, commercial, and fishing vessels always have the right of way.

- ◆ Watch out for sail craft; they cannot maneuver as quickly as you can.

- ◆ Stay to the right of **oncoming** boats. They must pass on your left side. When **overtaking** a boat, pass on the right or left, but stay well clear.

- ◆ Always stay within sight of land.

- ◆ Be especially alert around water skiers, since you may distract the driver or skier.

- ◆ Wake jumping is dangerous. You are a distraction to that boat and a potential hazard to oncoming craft. Also, you may injure yourself or damage your boat when landing. Crossing a wake should always be done cautiously.

- ◆ If you loan your craft to friends, make sure they are of legal operating age for your area and that they know how to operate your craft and follow safe boating rules.

- ◆ Never operate a personal watercraft after dark.

- ◆ Be especially alert at dawn and dusk. The sun's glare makes it harder to see you then.

- ◆ Take a boating safety course and regular refresher courses. For information, call the U.S. Coast Guard Boating Safety Hotline, 1-800-368-5647. ■

Editor's Note: Two Air Force members have been injured during the last year while operating jet skis. One was riding at approximately 20 mph on rough water when he hit a wave while turning and lost control. He was thrown feet first over the handlebars and suffered a sprained right ankle and possible torn ligaments. The other injured member suffered five broken ribs, a partially collapsed left lung, and a fractured left wrist when he was struck in the side by a boat while turning. He had owned the jet ski for only 1 month and had not taken any type of boating safety classes.

Photo provided by Officer Norman Baca

The young rider of this jet ski was hit broadside by a jet ski being ridden by his brother. He spent a week in a coma and suffered serious brain damage.





Photos provided by New Mexico Marine Enforcement Officer Norman Baca

Staying Afloat and Staying ALIVE!

BOB VAN ELSBERG
Managing Editor

Mary Chavez* looked at the clear, blue sky and the rocky, juniper-dotted shoreline and found the view breathtaking. She and her husband Mike*—young parents in their twenties—enjoyed getting away on weekends and seeing the natural beauty of northern New Mexico. Their two young children, Cheryl* and Terry*, sat on cushions in the middle of the boat as Mike gripped the handle on the outboard motor and guided the boat across the lake. Mary enjoyed the feeling of the wind in her face as she sat on the edge of the boat near the bow. She was amused by the gentle rocking as they crossed over the wakes of other boats.

Mike was also absorbed with the beauty of the landscape around them. Sometimes deer came to the shore to get a drink of water, and Mike always watched closely in hopes of seeing them. However, not everyone was enjoying the lake in quite so tranquil a fashion. Just a few yards to their left, a fisherman in a bass boat raced across

the water. Mike noticed the boat's wake—maybe 2 feet tall—was coming straight at them. Before he could warn Mary, the wake hit their boat, lifting the bow and rocking the boat violently. Mary lost her balance and fell into the water.

Mike instinctively steered the bow to the left to avoid hitting her as she splashed into the water just off the boat's right side. Not having been trained in boat handling, Mike didn't realize that boats steer from the back. As the bow of the boat swung to the left, the back of the boat swung to the right—straight toward Mary. Mike killed the motor—but not before it had run straight over Mary. Reaching into the water, he pulled her badly gashed and bleeding body into the boat as the children watched in shock. It was a nightmare the Chavez family would never forget, according to New Mexico Marine Enforcement Officer Norman Baca.

"The lady lived, but she'll be handicapped for the rest of her life," he said. "I can just imagine what it must have been like when her husband pulled her out of the water—the kids seeing their mother and this man knowing what he had done to his wife."

More Dangerous Than Driving

Boating tragedies are not just limited to adults, according to Baca. Last year two pre-teen boys were chasing each other on jet skis when they collided. The impact knocked one boy unconscious and sent him flying into the water. After a week in a coma, the boy awoke but proved to have serious brain damage. As a result, Baca said, New Mexico enacted a law setting a minimum age for personal watercraft operators.

Proper safety training and supervision could prevent accidents like these, Baca said. Boating safety training is something he feels every boat owner, operator, and passenger should have. Comparing boating to driving, he said, "No one would jump into a car and take off without knowing the fundamentals of how to make it go, stop, and turn."

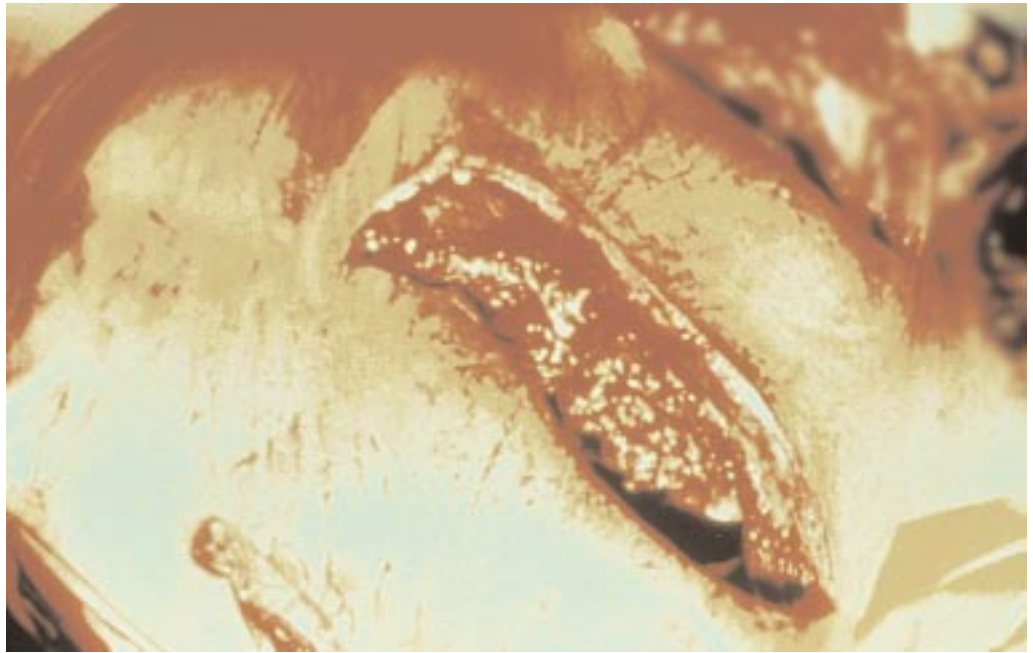
Although many boaters don't think of it this way, boating can be more dangerous than driving, Baca said. He explained, "Boats don't have brakes or seat belts. They don't have cushioned dashboards, air bags, or big bumpers to protect you in an accident. There are no designated driving lanes or speed limits on the water like there are on a highway.... When you get into trouble, you can't just walk away—you're stuck there. You've got to wait until someone comes along to help you out."

As much as anything, attitude is at the root of the problem, according to Baca. He explained, "Boating means freedom to many people—an opportunity to get away from the rules. So, a lot of people think they can go out on the water and do whatever they want."

What Happens When You Add Alcohol?

Unfortunately, one of the things people often feel free to do is boating while intoxicated, a problem Baca has seen often during his 5 years patrolling the state's waterways.

"A lot of people assume boating and beer go together, and that's a bad thing," he said. "We know the facts on how alcohol affects our bodies. It affects our balance, which is already affected by the boat. It's not a stable platform—you've got waves coming from all directions, and the boat is constantly moving." Pointing out that the boat's movement and the hot sun have already taken their toll on boaters, drinking alcohol "just impairs you more," Baca said.



This swimmer died when he was struck by the propeller blades of a power boat. It takes only a moment's inattention while boating to cause a terrible tragedy like this.

There are other problems associated with drinking, Baca said, noting that alcohol also impairs a boater's vision. He explained that boaters already have to deal with the double glare caused by the sun and its reflection off the water. Mixing that glare with the tunnel vision caused by drinking alcohol is "just asking for more trouble," he said.

Overloading and Crowded Water

A third problem Baca often sees on the water is one which has also led to Air Force fatalities in recent years.

"Overloading is a big problem," he said. "We see people bringing everybody they can fit on the boat and taking them out, and that affects the boat's stability.... The problem we've observed is that they'll have too many people on board, and someone will see something off to one side. So, everybody goes to that side to look just as the operator turns, and we now have a capsized boat. We've got people in the water. We have people who may be hurt and not have life jackets on. That's how drownings take place."

And it's not just overcrowding *in* the boat that gets people in trouble. Boaters thronging a lake on a hot summer's day can quickly get themselves or others into trouble.

"We have a minimum distance of 150 feet that all vessels must keep from the shoreline, other boaters, fishermen, water-skiers, marinas, docks, and swimming areas," Baca explained. He added, however, that many people either ignore that rule or are unaware of it. For example, he said one boat might try to come in close and splash another, not realizing there are kids swimming nearby. "You can barely see a small child's head sticking up out of the water. So here this guy comes, try-

continued on next page

ing to show off, and he ends up running over somebody.”

Inattention and Tunnel Vision

One of the big problems on the water, according to Baca, is just plain inattention.

“They’re driving along, talking to their friends, and not observing what’s in front of them,” Baca said. “Because there are no driving lanes like on the highway, they just open up their boats like they’ve got the whole lake to themselves and everybody is going to move out of their way. However, you get another boat coming whose driver is thinking the same thing, and suddenly you have a collision.”

Compounding this problem is the fact many boaters develop a bad case of what Baca calls “tunnel vision.” “They get focused on what’s right in front of them and don’t look from side to side.” Not looking around them, they often stop, run or turn in front of other boats—sometimes causing a collision.” “Your head should be constantly moving while you’re out on the water.... Before making a turn, you should first look to make sure no one is passing you. Before slowing down, you should look behind to make sure no one is following too closely and is going to climb on top of you.”

Essential PFDs

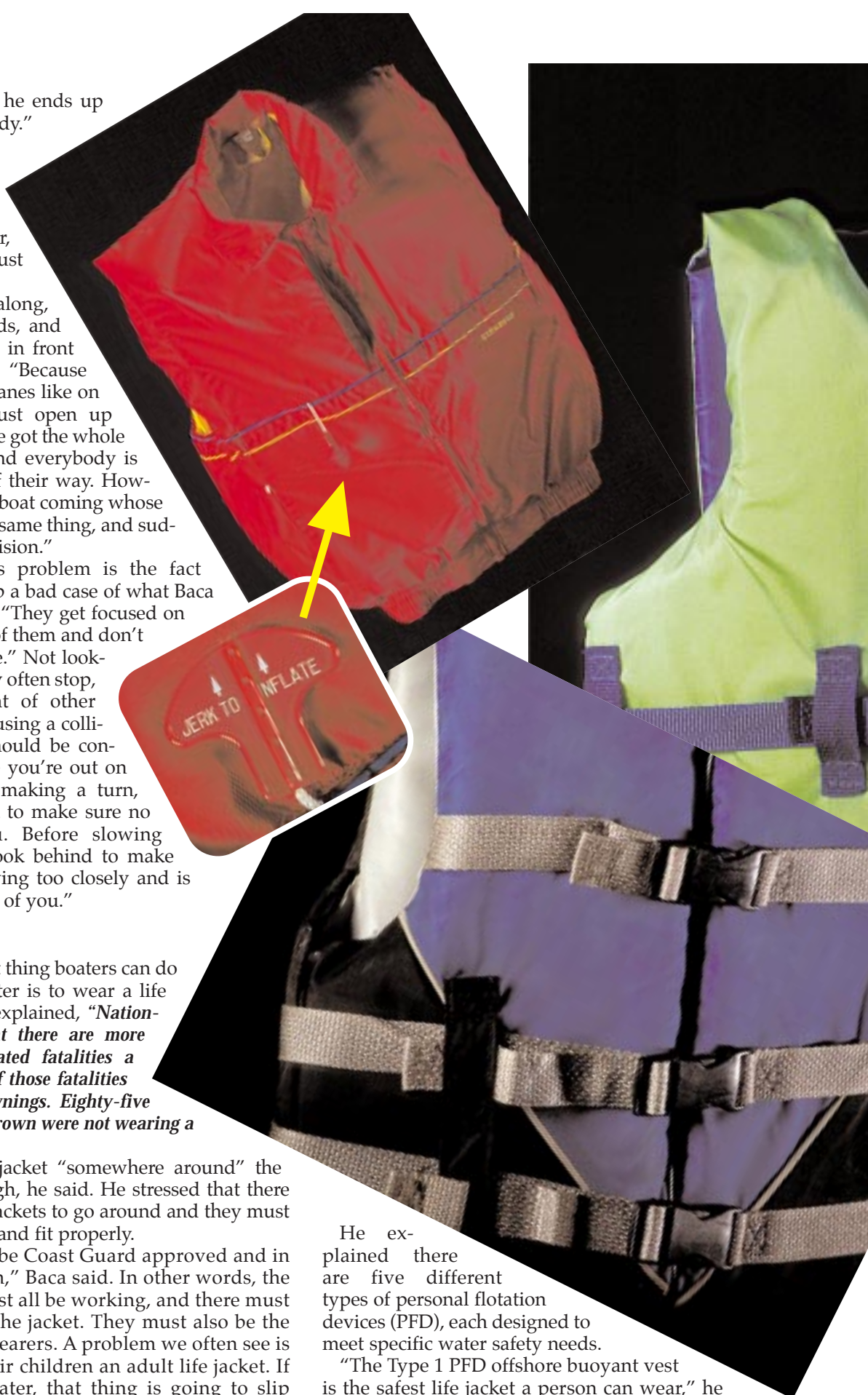
The most important thing boaters can do to be safe on the water is to wear a life jacket, Baca said. He explained, “*National statistics show that there are more than 800 boating-related fatalities a year. Ninety percent of those fatalities are the result of drownings. Eighty-five percent of those who drown were not wearing a life jacket.*”

Just having a life jacket “somewhere around” the boat isn’t good enough, he said. He stressed that there must be enough life jackets to go around and they must be in good condition and fit properly.

“Life jackets must be Coast Guard approved and in serviceable condition,” Baca said. In other words, the straps or zippers must all be working, and there must not be any holes in the jacket. They must also be the proper size for the wearers. A problem we often see is that parents give their children an adult life jacket. If they fall into the water, that thing is going to slip right off of them.”

He explained there are five different types of personal flotation devices (PFD), each designed to meet specific water safety needs.

“The Type 1 PFD offshore buoyant vest is the safest life jacket a person can wear,” he said. “It’s a bulky life jacket that comes in two sizes—a



Photos by MSgt Perry Heimer



child size and an adult size. It's reversible, so you can't get it wrong when you're putting it on. It's also guaranteed to keep your face out of the water if you are knocked unconscious." He added that it's the best choice for anyone who may have to spend a long time in the water.

He continued, "From there, you go to the Type 2 PFD—a very popular, inexpensive life jacket. It's orange and has a collar that goes behind the neck, and two flotation devices in the front. It comes in four different sizes and, like the Type 1, it's designed to float you faceup in the water.

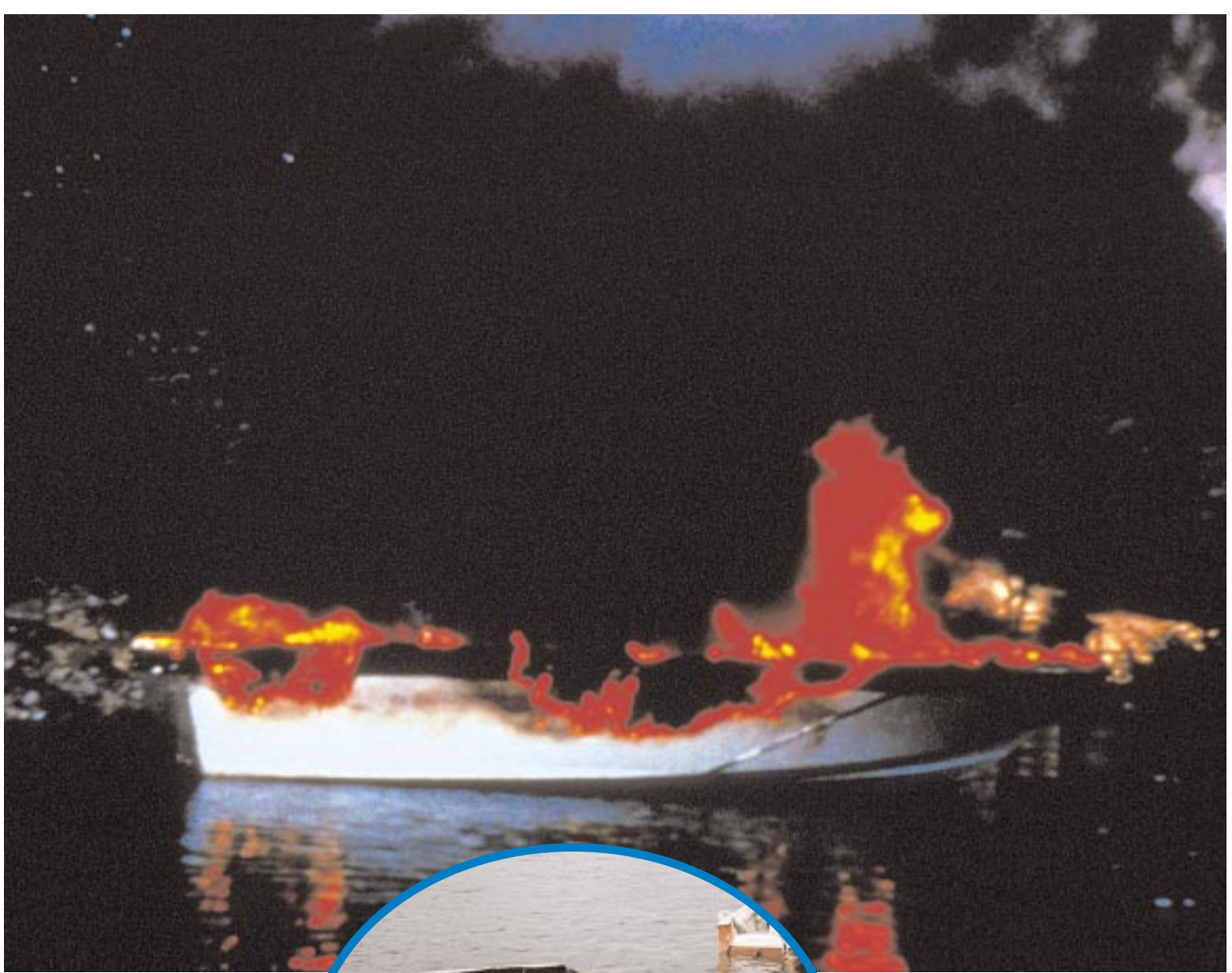
"From there you go into your vest-style Type 3 PFDs," he said.

"They're very comfortable. A lot of people like to use them for water-skiing, swimming, and fishing because they allow you to move your arms easily. The only thing about them is that they float you straight up and down, so if you are knocked unconscious, your face can be down in the water. They come in jackets, overalls, and vests. You can get them in any size and color.

"From there we go into the Type 4 PFDs, which are throwable PFDs like cushions and life rings," Baca said. "The good thing about them is that they're *easily* thrown. When we perform boat inspections on the lake, people will often say, 'We don't have a throw cushion, but we have an extra life jacket.' Well, a life jacket is a lot lighter than a Type 4 PFD. If you throw it and you've got a little bit of wind, there's no telling where it's going to land. If you've got someone in trouble in the water, you're going to want to use a Type 4 PFD because it's heavier, and you get a lot more accuracy with it. You can get it right to the person."

Baca explained that the best way to stay

continued on next page



Photos provided by Officer Norman Baca



afloat with a throw cushion is to put your arms through the handles on the sides and pull it up to your chest, giving it a bear hug. However, a throw cushion can be used improperly—with potentially deadly results.

“There’s a big warning on it that says, **‘Do not wear on back,’**” Baca said. He explained that wearing it on your back would cause you to roll over and float face down. “Because it’s behind your neck, it will tend to push your head down into the water. Now, you’ve also got your arms tied up in it, so you’re getting yourself in a whole mess of trouble.”

Finally, there is the Type 5 inflatable PFD. Typically referred to as a “special use PFD,” Baca explained their minimal inherent buoyancy is meant to be increased by inflating them with an attached CO₂ cartridge. “It’s also got a manual air inflation tube so you can give yourself

a little bit of air,” he said. He added, “These PFDs must be worn to be counted as acceptable.”

Fire! Fire!

Although they are surrounded by water, boaters can face a serious threat from fire and should have a fire extinguisher on board.

“Boat fires account for over \$20 million worth of damage every year in the United States,” Baca said. He explained, “Usually, when a boat fire happens, if you can get to it and put it out right away, you’ll be all right. However, once the fire spreads, the boat’s a complete loss. It’ll burn right down to the waterline.”

Boat fires can be caused by improper maintenance, such as failing to make sure the fuel lines are in good condition. In addition, trying to take shortcuts when doing maintenance can also be a big mistake. One fire, Baca related, happened when a boat owner put a car air filter

on his boat engine instead of a filter approved by the Coast Guard. When the engine backfired, it ignited the gas fumes in the engine compartment and started a fire.

Explosions

In addition to fires, boaters having inboard or inboard/outboard motors can be at risk for dangerous explosions, Baca said. He described an accident where a boater forgot a safety step that cost him dearly.

"He was having trouble starting his boat, and he kept on kicking it over without turning on his blower," Baca said. "He built up enough gasoline vapors inside the engine compartment that the one time he turned it (the engine) over and got a little spark in his starter, the boat exploded. Two passengers sitting in the back next to the engine compartment were burned in the explosion."

While boaters using outboard motors don't face the same threat of an explosion, they can still get into trouble, according to Baca. Because outboard motors occasionally fail, he advised boaters to keep paddles or oars on board just in case. He also recommended boaters keep a bail bucket of at least one gallon capacity on-board and a length of rope at least as long as their boat in case they need to be towed in.



This is not how you dock your boat!

Training Classes

Currently, 17 states require boaters to receive safety training, and most, if not all, of the others make it available to boaters. "As a state, we offer an 8-hour boating basics course which is nationally accredited," Baca said. He added that graduates receive a boating certificate and boating safety card.

The class, he explained, covers six major topic areas. The first discusses different types of boats and hull designs and the basic features of how a boat operates. The second section covers legal issues such as registration requirements and the obligation to have life jackets, fire

extinguishers, throw cushions, and bail buckets on board. The third section covers navigation rules—the basic rules of the road on right-of-way and safe operating distances. He added this section also explains both the state and federal waterways marking systems, including the specially colored buoys that help boaters navigate safely.

The fourth area deals with what he calls "getting underway." This includes everything from safely towing the boat to properly loading and launching it. Part five discusses potential boating accidents. Baca said,

"We talk to them about what happens if you overload your boat or drive too fast and how sharply you can turn. We talk about boating under the influence and basic water safety, such as drownproofing. We also talk about first aid, fires on the boat, and visual distress signals."

"Our last part is our special topics—it's sort of a catchall at the end," he said. "After that, the students take their final examination, and if they pass, receive their certificate on the spot."

Baca suggested that boaters wanting to take state-offered courses can contact any of their state parks where boating is allowed and ask the rangers for information on classes. He added that the Coast Guard Auxiliary offers a

13-week class that allows more time for an in-depth discussion of boating safety topics. He suggested, "If you can take both classes (the state course and the Coast Guard Auxiliary training), do it. The Coast Guard Auxiliary gives a very good class." ■

Editor's Note: Boaters can contact the Coast Guard Auxiliary by checking for a listing in their local phone book or by visiting the U.S. Coast Guard Auxiliary Home Page at www.cgaux.org.

*Not their real names.

Pickup Trucks—

Not as **Tough** as Their Image



The Nissan Frontier's steering column moved up sharply during the offset test. This contributed to the dummy's head bottoming out the air bag and striking the steering wheel. After the dummy moved forward into the air bag, it rebounded into the seat and moved toward the driver door. Then the dummy's head struck the B-pillar. The Frontier earned a poor overall evaluation.

Courtesy "Status Report"
Vol 33, No 6, 6 Jun 98
Insurance Institute for Highway Safety

Editor's Note: *The crash test results in this article reflect what would happen if two similar compact trucks were involved in a 40-mph offset frontal collision. This is a collision where the impact forces are focused on only 40 percent of the bumper—all on the driver's side. While this is a very common type of impact on the road, not all of these collisions occur between similar vehicles. Because of that, it's important to recognize the results shown here do not indicate what would happen in a collision between a compact truck and a different type of vehicle.*

What these tests do provide, however, is a yardstick by which compact trucks can be compared to each other in their ability to absorb a severe impact and protect their drivers. It's reasonable to assume that those trucks which do best in this test can be expected to better protect their drivers in actual highway collisions.

None of the five small pickup trucks the Insurance Institute for Highway Safety tested in a crash a 40 mph earned a good crashworthiness rating.

"These pickups sustained too much damage in our low-speed crash tests, and they didn't pass muster when it came to high-speed crashworthiness tests

either," Institute President Brian O'Neill pointed out. Crashworthiness refers to how well vehicles protect their occupants in serious crashes.

The two best performers in the Institute's 40-mph frontal offset crash test were the Toyota Tacoma and Ford Ranger. The two worst were the Dodge Dakota and Nissan Frontier. The Tacoma and Ranger (plus the Mazda B-series, the Ranger's "twin") are rated acceptable overall. The Dakota and Nissan Frontier are poor overall. The other pickup tested—the Chevrolet S-10—is rated marginal along with the GMC Sonoma and Isuzu Hombre, considered the S-10's "twins."

"We're always disappointed," O'Neill commented, "when no vehicle in a class earns a good evaluation. There aren't any pickups with good crashworthiness performance, and three of the five are marginal or poor overall."

The Institute's crashworthiness evaluations are based primarily on performance in the frontal offset crash test. All vehicles are rated in three categories and then assigned overall evaluations of good, acceptable, marginal, or poor. Head restraint design and bumper performance in low-speed crash tests don't affect the overall evaluations but are considered when establishing vehicle rankings within each class (midsize four-door cars,



small pickup trucks, etc.).

Structural performance:

Manufacturers of the small pickups advertise the vehicles' energy-absorbing front-end crumple zones. "But our crash test calls into question the effectiveness of the crumple zones on these small pickups. We didn't see the kind of structural performance that would back up the manufacturers' claims," O'Neill says.

There was too much intrusion into the footwells of the Dakota, Ranger, and S-10 pickups. Plus the floors buckled extensively under the drivers' seats in the Ranger and Dakota, causing the seats to tilt forward in the crash tests and further reduce the drivers' space.

Even in the Tacoma—the pickup truck that performed the best of the five—intrusion in the driver footrest area contributed to high forces on the dummy's left leg and the likelihood of an

injury. In the Chevrolet S-10, instrument panel intrusion contributed to the possibility of leg and knee injury.

Unlike cars, pickup trucks are built on frames. "Many people think this makes the pickups tough, durable, and therefore safe. Manufacturers push this image of toughness in their advertising. But toughness doesn't necessarily translate into good performance in a high-speed crash," O'Neill explains. "The Chevrolet S-10 illustrates this. In the 40-mph offset crash test, the frame buckled in the middle of the occupant compartment, allowing significant intrusion into the driver's space. So the crash performance wasn't good."

How researchers assess performance: Institute researchers use 40-mph offset crash tests to evaluate three important aspects of passenger vehicle crashworthiness—(1) how well the front-end crush zone manages crash energy and the safety cage limits occupant compartment intrusion, (2) injury risk measured on a dummy representing an average-size male driver, and (3) how well dummy movement is controlled during impact. Vehicle structure, occupant restraints, and injury measures are evaluated separately—even though they're related—because good performance for any one of the three by itself in a single test isn't sufficient to reliably indicate good crashworthiness.

Tests complement each other: The U.S. government has been testing new passenger vehicles in 35-mph crash tests since 1978. This New Car Assessment Program has been a major contributor to crashworthi-

"We're always disappointed when no vehicle in a class earns a good evaluation. There aren't any pickups with good crashworthiness performance, and three of the five are marginal or poor overall."

ness improvements—in particular, improved restraint systems in new passenger vehicles.

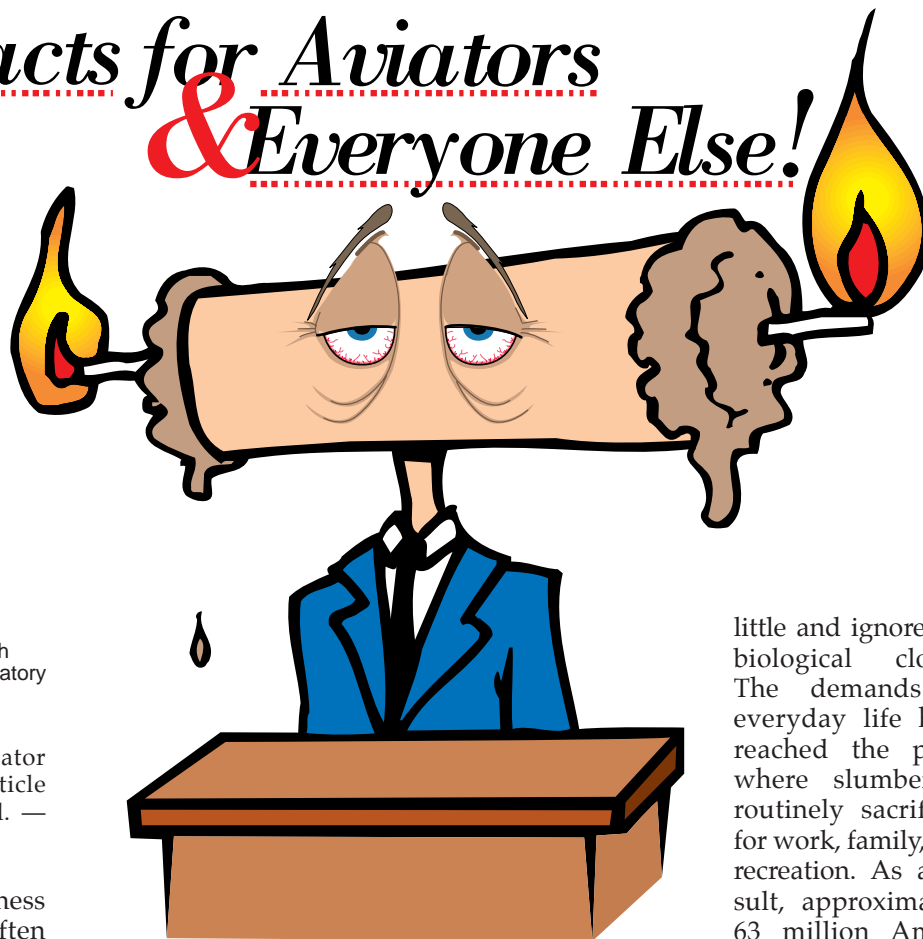
The Institute's offset test, which involves 40 percent of a vehicle's front end hitting a deformable barrier at 40 mph, complements the federal test involving the full width of the front end hitting a rigid barrier. The government test is especially demanding of restraint systems, but not so much so of vehicle structure. An offset test is more demanding of vehicle structure.

Results of the Institute crash tests can be found at www.highwaysafety.org. Federal New Car Assessment Program results are at www.nhtsa.dot.gov. ■



The Ford Ranger's driver seat tilted forward and toward the driver door during the offset test. Plus, intrusion into the driver footwell area contributed to high forces on the right leg. Overall, the Ranger earned an acceptable rating.

Fatigue Facts for Aviators & Everyone Else!



DR. JOHN CALDWELL
Director, Sustained Operations Research
U.S. Army Aeromedical Research Laboratory
Fort Rucker, Alabama

Although written with the aviator in mind, the precepts in this article apply to all Air Force personnel. — Editor

Fatigue impairs alertness and performance, often without your awareness. In fact, sleepiness/fatigue can be as dangerous as intoxication. Just 18 hours without sleep causes mental and motor skills to deteriorate as much as they do when blood alcohol concentration (BAC) reaches 0.05 percent. Twenty-four hours of sustained wakefulness equates to a BAC of 0.10 percent, the legal intoxication limit in most states. Fatigue is a significant risk factor in aviation as well as ground operations, but the consequences of being tired are too often underestimated or ignored.

What Is Fatigue?

The terms “fatigue” and “sleepiness” are often used interchangeably. One definition of fatigue describes it as a subjective state of tiredness associated with prolonged work and/or prolonged wakeful-

ness (or sleep loss). This may be experienced differently by different people. One of the reasons the risks associated with fatigue or sleepiness are underestimated is that no biological markers or “Breathalyzers™” for fatigue exist. Thus, it’s difficult to determine how many accidents and other problems are associated with fatigue. Fatigue-related impairments are underreported because sleepy pilots, drivers, and workers are reluctant to admit they fell asleep (or even became inattentive) on the job, especially if an accident results.

Is Fatigue a Big Problem?

Despite the fact fatigue is difficult to measure, there’s plenty of evidence that fatigue-related problems have reached almost epidemic proportions. As a society, we sleep too

little and ignore our biological clocks. The demands of everyday life have reached the point where slumber is routinely sacrificed for work, family, and recreation. As a result, approximately 63 million Americans chronically suffer

from moderate or severe daytime sleepiness. And because of this, on-the-job concentration, decision making, problem solving, and performance are adversely affected.

Forty percent of adults now say their daily sleep is inadequate. Much of this is simply due to the fact people go to bed too late and get up too early or don’t sleep well due to stress or other factors. Also, the requirement to work rotating shifts leads to disrupted or insufficient sleep. There are over 25 million shift workers in the United States, many of whom find it impossible to stay alert during their night jobs because sleeping during the day is contrary to the body’s internal biological clock. Thus, there are a lot of sleep-deprived people in America, and many of them are in the military.

Interestingly, however, most of us see our sleepiness as a badge of honor rather than as a condition to be remedied. Twenty-six percent of career-minded adults feel sleepiness is part of the price to be paid for being successful. In the military, commanders place a high value on troops who "tough it out" despite the fact these individuals are increasing accident risks because they are suffering from dangerous alertness deficits.

Is Fatigue Worse at Some Times of the Day Than at Others?

The simple answer to this question is yes. Human beings have a number of biological rhythms (for hormone secretions, temperature, etc.) which are synchronized to 24-hour cycles by exposure to daylight, knowledge of clock time, meal intervals, and activity schedules. Because of these rhythms, alertness is greater during the day than the night, and research has shown people not only feel sleepier at nighttime, but perform less skillfully as well.

For instance, it's been found that truck drivers fall asleep behind the wheel more frequently at night (after midnight) than during the day. Also, they are seven times more likely to be involved in a drowsy driving accident between midnight and 0800 than at other times. Studies of truckers have shown that time of day is more likely to impact driving performance than the amount of time on duty or the number of consecutive trips.

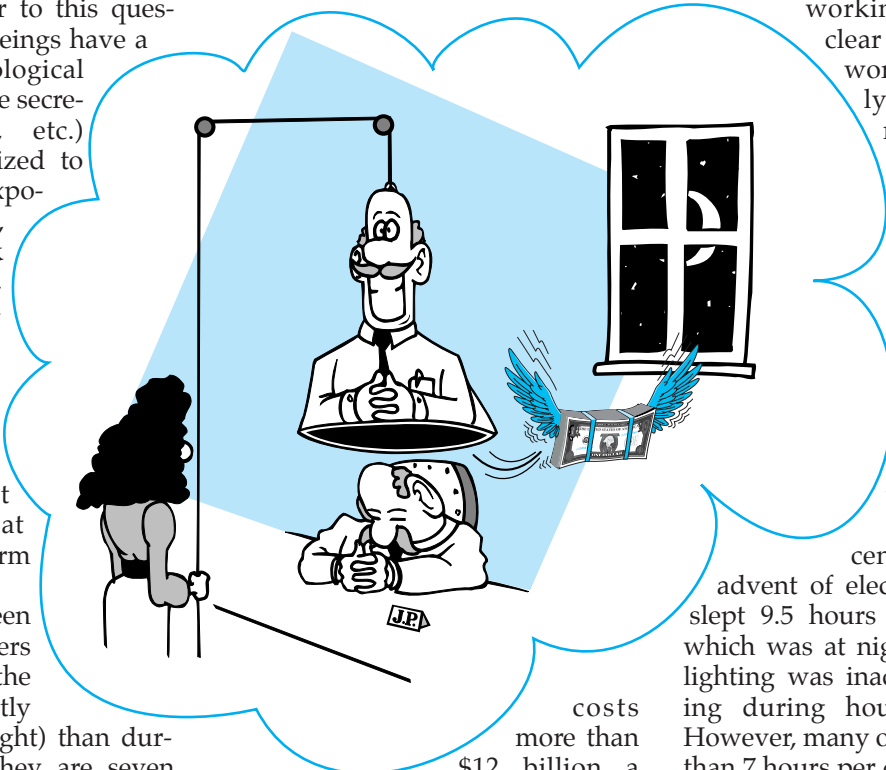
In a variety of other occupations, errors and accidents have been shown to increase at night. Thus, time of day is as important a determinant of fatigue as is the amount of wakefulness since the last sleep period. However, both of these factors work together to influence alertness levels, and because of this,

both must be considered when attempting to minimize sleepiness on the job.

What Are the Costs Associated With Fatigue?

Unfortunately, sleep deprivation affects almost every aspect of daily functioning, but attention, complex thinking, judgment, decision making, and motivation are the most vulnerable. As a result, it's estimated \$18 billion in U.S. industrial productivity is lost every year because of sleepiness on the job.

On the highways, drowsiness



costs more than \$12 billion a year in lost productivity and property damage. About 1,500 deaths and 76,000 injuries occur annually because drivers fall asleep while traveling.

Besides these costs at work and on the highways, many of the over 50 percent of aviation mishaps chalked up to human errors are directly related to fatigue and sleepiness in the cockpit. Some have described flying as "long periods of boredom interspersed with seconds of sheer terror," and it's now known this boredom (associated with flying routine, uneventful missions) places pilots at greatest risk for

falling asleep at the controls. Passive monitoring tasks (such as navigating at altitude) are the most susceptible to being botched as a result of sleep deprivation.

Why Are We So Tired?

Two of the major causes of fatigue are (1) inadequate sleep prior to work and/or (2) extended periods of wakefulness (as in sustained operations). Although the military, the trucking and railway sectors, and commercial aviation have sought to combat fatigue by restricting the amount of time spent working, there's little clear evidence hours of work, per se, adversely affect performance as long as adequate daily sleep is obtained. Instead, the most readily identifiable cause of fatigue is sleep loss. This is alarming since chronic sleep deprivation in America is on the rise.

At the turn of the century, before the advent of electric lights, people slept 9.5 hours per day, most of which was at night (since artificial lighting was inadequate for working during hours of darkness). However, many of us now sleep less than 7 hours per day, and some segments of the population (i.e., shift workers) sleep even less. As a result, sleep deprivation is taking a heavy toll on job productivity, personal safety, and well being.

What Are the Warning Signs of Inadequate Nightly Sleep?

In general terms, excessive sleepiness at work indicates insufficient sleep while off duty. Sleepiness (fatigue) can result either from acute periods of deprivation ("pulling an all-nighter") or from chronically shortened sleep periods across several days (leading to cumulative sleep debt). Indicators of inadequate

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sleep include:

- Difficulty waking up without the aid of an alarm clock.
- Repeatedly pressing the snooze button to sneak in a few extra minutes of sleep.
 - A strong desire to take naps during the day.
 - Difficulty staying awake while in meetings, riding in a car, or watching TV.
 - Falling asleep rapidly after going to bed at night (usually in less than 5 minutes).
 - Looking forward to weekends when one can “catch up on sleep.”
 - Sleeping 2 or more hours than usual on days off.

Many fatigued people blame their sleepiness on boredom or on inactivity. However, in well-rested individuals, boredom causes a feeling of irritation or agitation and not the irresistible urge to nod off which results from sleep deprivation.

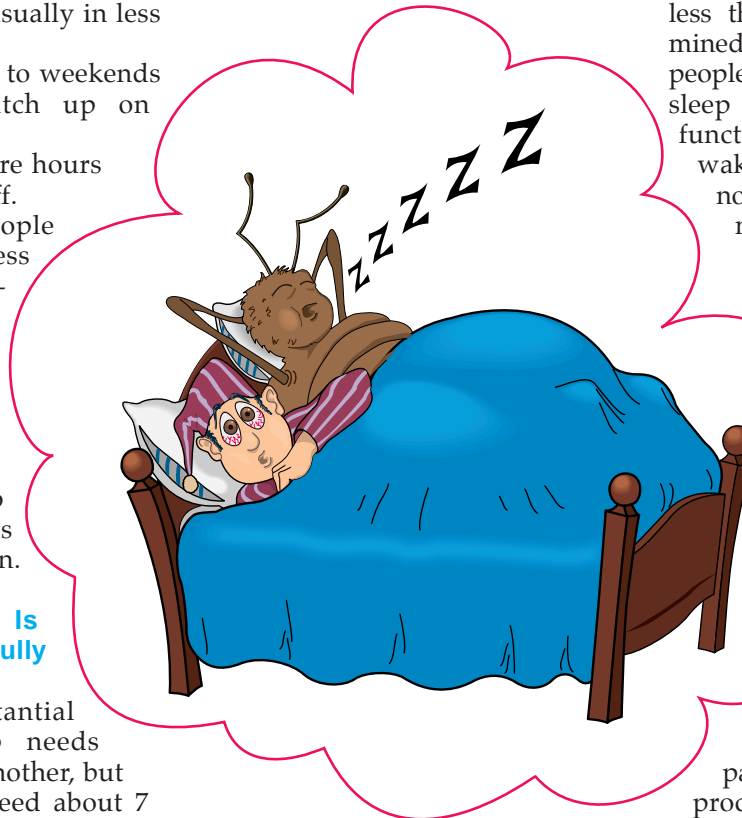
How Much Sleep Is Necessary to Be Fully Alert?

There are substantial variations in sleep needs from one person to another, but on average, adults need about 7 to 9 hours of nightly sleep to be fully alert during the day. Although there are some people who can get by on much less sleep, it's not possible to accurately predict which individuals are “short sleepers” and which are “long sleepers.” Age, fitness level, intelligence, motivation, and personality appear to have no reliable relationship to sleep needs. In fact, the only way to determine sleep requirement is by trial and error. However, learning how much sleep is necessary (and ensuring this much is obtained) is essential to remain fully awake on the job. Studies have shown the loss of even 2 hours of sleep during a single night is enough to significantly

degrade next-day alertness.

How Can I Determine How Much Sleep Is Right for Me?

Individual sleep needs can be determined in two ways. The best way is by studying your own behavior while on your next vacation, particularly if the vacation is a couple of weeks long. However, it's possible to determine sleep needs during nonvacation times as well.



- **While on vacation**, sleep until you wake up without an alarm clock for several days and record the amount of nightly sleep. The average is how much sleep you naturally need. When trying this, start keeping records on the third day after you've overcome any pre-existing sleep debt.

- **While on a regular work schedule**, add 1 hour to your usual nightly sleep and maintain this for a week. At the end of the week, evaluate how alert you felt at work each day. If more sleep is needed, add an hour the next week, and so on.

Once your natural sleep requirement is established, carefully evaluate factors that may be preventing

adequate daily sleep. Usually, reprioritizing or simply rearranging the course of a normal day will help to ensure enough sleep to maximize on-the-job alertness.

Can I Train Myself to Need Less Sleep?

It's a fact some people need more sleep than others. If you're one of those people, there's unfortunately no way to train yourself to get by on less than your biologically determined amount of slumber. Some people think repeated exposure to sleep deprivation improves their functioning during sustained wakefulness. This, however, is not the case. Simple tasks can be made resistant to the effects of sleep loss by overpracticing them to the point they become automatic. **But this won't work with tasks requiring thought and judgment.**

People who think they have made themselves immune to the effects of sleep deprivation through practice have actually just learned to reprioritize work tasks so sleep loss seems to have less of an impact. But their higher mental processes continue to decline while their chances of involuntarily falling asleep increase.

Furthermore, **sleep-deprived individuals are often unaware of their own impairment since sleepiness interferes with accurate self-evaluations.** Just like the drunk who boasts of being able to drive better after several drinks (and actually believes it), the reality is his performance is seriously impaired, but he is simply incapable of realizing it.

How Can I Improve My Nightly Sleep?

If you are allowing yourself a sufficient amount of time to sleep every day but feel your sleep is less than optimal, you may be suffering from bad sleep habits. Everyone struggles

with occasional sleep problems, and one or two nights of trouble is not a major cause for concern. However, if you have insomnia for several days, weeks, or months, something is wrong. One possible cause of chronic insomnia is a medically recognized sleep disorder, but since most aviators are reasonably young and healthy, they are unlikely to be suffering from one of these (such as sleep apnea or nocturnal myoclonus). On the contrary, the sleep problems of most adults stem from behavioral or environmental factors. If you repeatedly are unable to fall asleep at night, make sure you do the following:

- Stick to a consistent bedtime and wake-up time even on weekends.
- Use the bedroom for sleep only and not for watching TV, reading, or working.
- Develop a soothing nighttime routine (take a warm bath, read for a few minutes, etc.).
- If you are a bedtime worrier, set aside an earlier time to resolve daily dilemmas.
- Once in bed, avoid watching the clock (face it away from the bed).
- Include aerobic exercise in your daily routine, but not within 3 hours of bedtime.
- Don't take naps during the day.
- Don't consume caffeine (in coffee, tea, chocolate, or medications) within 4 hours of bedtime.
- Don't drink alcohol within 3 hours of bedtime.
- Don't smoke cigarettes within an hour before going to bed.
- If you can't fall asleep, don't lie in bed awake. Instead, engage in a quiet activity until sleepy.

Adhering to these principles will help overcome chronic sleep problems because they break mental associations that prevent sleep and avoid substances known to delay or disrupt sleep. However, it may take several days or weeks for these new habits to repair the damage done by months or years of poor sleep practices.

Is It Possible That Shift Work (or Reverse Cycle) Is Making Me Sleepy?

If you usually sleep well and feel alert but suffer from fatigue when rotating to a new work/rest schedule, you are experiencing the normal problems associated with disruptions in your body's internal rhythms (referred to as shift lag). Shift lag is similar to jet lag in terms of its effects. The primary problem is that restful sleep during daylight hours is contrary to our normal circadian rhythms. As a result, night workers often become chronically sleep deprived because they sleep 2 to 4 hours less per day than day workers.

Although shifting the biological clock improves daytime sleep (and enhances nighttime alertness), the process is slow, often taking more than a week. Also, the readjustment is hampered by the fact external timing cues (such as sunrise and sunset) conflict with the new sleep schedule. Anyone who has ever traveled from the U.S. to Europe can appreciate the difficulties associated with reprogramming the biological clock.

Even when everything (i.e., sunrise, sunset, meal times, activity, etc.) in the new time zone is fully synchronized with the new sleep schedule, fatigue, gastrointestinal discomfort, concentration problems, and insomnia persist for 8 to 10 days (or 1 day for each time zone crossed). Needless to say, shift workers suffer chronically from such problems because they rarely work the same shift for very long and, therefore, are in a constant state of readjustment. However, there are strategies that can speed adjustment to new work/rest schedules.

What Strategies Promote Adjustment to a New Work Cycle?

Although transitioning from one shift to another will invariably cause feelings of fatigue and discomfort, certain strategies can facilitate readjustment and minimize how long the discomfort will last. These are especially important when changing from day to night shift.

- Maintain the new work/rest schedule even when off duty.
- Rapidly adjust meal times

(breakfast, lunch, and dinner) to agree with the new schedule.

- Talk to friends and family about your need to sleep at a different time than they do and gain their cooperation.

- Unplug the phone, disconnect the doorbell, put blackout shades on the windows and turn on a fan and/or use earplugs to mask out noise.

- When a solid 8 hours of sleep is unobtainable, use napping to get as much as possible.

- If possible, use a sleeping medication **under medical supervision** during the first 3 days of the new rotation.

- Judiciously use caffeine in the middle of the night shift to enhance alertness, but avoid caffeine within 3 to 4 hours of the next sleep period.

- If sleeping during the day, wear dark glasses and limit time outside before bedtime, then take a walk in the sunshine after awakening later in the day.

- If planning a night cycle, (1) try to end the mission well prior to daylight so personnel can get to bed before sunrise, (2) make sure night crews are not required to attend meetings or other activities which will interfere with sleep, and (3) in field scenarios, make meals available at reasonable times so that no one has to make a choice between eating and sleeping.

Consistent rest/activity cycles and "bright light discipline" are the most important factors when adjusting to a new schedule. Circadian rhythms are very sensitive to being reset (or to resisting resetting) by exposure to bright light.

How Can I Safeguard My Alertness Even When I Can't Readjust to a New Shift or When the Long Missions Just Have to Be Done?

Avoiding fatigue during night flights is difficult because few people are able to fully adapt to night duty beforehand. However, even day flights can be challenging, especially when the flights are long and are sandwiched in between additional duties. Obviously, it's best to avoid flying at night if this is your

continued on next page

normal sleep time. Day flights are much safer because of improved alertness. However, if there's no flexibility in establishing when a flight will take place, the following strategies should be implemented:

- Obtain plenty of sleep before the flight (or the duty day when the flight is planned).

- If the flight is late in the day or at night, take a 45-minute nap before takeoff.

- Avoid alcohol consumption within 24 hours prior to night flights because alcohol increases fatigue by interrupting pre-mission sleep and causing blood sugar changes.

- During the flight, swap tasks (navigation, radios, etc.) between pilot and copilot to minimize boredom.

- During the flight (or immediately prior), consume caffeine for the stimulant effect.

- If possible, avoid hot refueling in favor of shutting down and walking around for a few minutes (a break every 2 hours is very helpful).

- Note that increasing radio volume and exposure to cold air do not fight off sleepiness.

- Remember that after being awake for a long time, involuntary sleep episodes will occur despite your best efforts to the contrary.

What Are Some Warnings That Fatigue Is Becoming Too Great?

The dangers of fatigue from prolonged wakefulness, sleep deprivation, or disruptions to the body's internal clock should be obvious at this point. However, optimum mission scheduling is often impossible. When there is no choice but to fly when tired, be attuned to these indicators that falling asleep at the controls may occur in the next few seconds:

- Your eyes go in and out of focus.
- Your head bobs involuntarily.
- You can't stop yawning.
- You seem to have wandering,

disconnected thoughts.

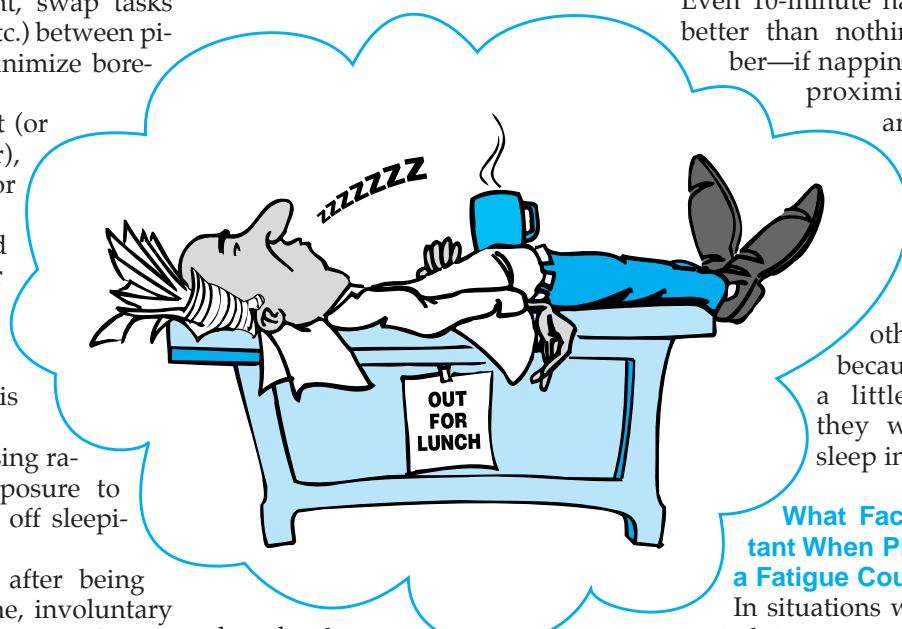
- You don't remember things you did in the last few seconds.

- You missed a navigation check-point.

- You forgot to perform some routine procedure.

- Your control accuracy is degrading (altitude and airspeed fluctuate).

If you experience even one of these symptoms, the safest course of action is to end the flight as soon as possible and get some sleep. Despite popular opinion to the contrary, sleep-deprived people cannot will themselves to stay awake no matter



how hard they try. *Even personnel who think they are staying awake are susceptible to falling asleep for several seconds at a time without realizing it.* This is a serious problem given that an aircraft flying at only 90 knots can travel more than the length of a football field during a micro sleep of only 4 seconds.

Can Napping Help?

Since one of the major contributors to fatigue is the lack of recent, restorative sleep, napping is the best countermeasure for drowsiness in prolonged missions. Several research studies have shown that long (4- to 5-hour) naps during a period of sleep loss can restore performance to near-normal levels. Also,

2- to 3-hour naps taken shortly before a period of sleep deprivation can minimize the loss of alertness and performance that would have occurred without a nap.

How Long Should a Nap Be?

Generally, the longer the nap, the better its ability to lower the impact of fatigue. Although 2-hour naps cannot erase the effects of sleep loss, they are very beneficial because they provide sufficient time to go to sleep and complete one full sleep cycle. It takes about 90 minutes to transition from light sleep to deep sleep and then into dream sleep. Even 10-minute naps appear to be better than nothing. Just remember—if napping is used in close

proximity to the duty area, anyone who naps should be allowed at least 15 to 20 minutes to awaken before they fly or perform other complex tasks because everyone feels a little groggy when they wake up due to sleep inertia.

What Factors Are Important When Planning Naps as a Fatigue Countermeasure?

In situations where a full sleep period is not possible because of work demands, naps can substantially reduce fatigue. When implementing strategic naps:

- Establish a relatively quiet, dark, and comfortable place for napping.

- Use sleep masks or earplugs if necessary to block out sunlight and noise.

- Place the nap when sleep is naturally easy (i.e., 1400 to 1600 or 0220 to 0600).

- Make the nap as long as possible under the circumstances.

- Consider implementing a nap in the afternoon prior to an all-night mission

- Plan the nap early in the sleep-deprivation period rather than late.

- Allow 15 to 20 minutes for sleep

inertia to dissipate before resuming work tasks.

What if a Long Mission Is Necessary Despite No Opportunity for Sleep?

Missions that pop up without warning, those involving unanticipated night flight, and/or those requiring extended periods of sustained wakefulness are inherently risky because many of the normal fatigue countermeasures cannot be employed. Commanders and pilots should consider the following as risk reduction/risk management tools when flights must be completed despite fatigue or inadequate sleep (in an operational environment):

- Be sure to eat high protein foods like yogurt, cheese, nuts, and meats.
- Avoid high fat foods (candy) and high carbohydrate foods (cereals, breads, etc.).
- Drink plenty of fluids since dehydration compounds fatigue.
- Converse with other crewmembers, and rotate tasks to minimize boredom.
- If possible, try to move around in the cockpit. Definitely exercise during refuels.
- Once fatigue becomes noticeable (but not before), take caffeine in some form.
- In combat situations, request a stimulant such as Dexedrine™ from the flight surgeon.

These strategies may provide some short-term enhancement of alertness, *but with the exception of caffeine and dextroamphetamine, they are only minimally effective.* During peacetime, the best countermeasure, other than adequate sleep, is the judicious use of caffeine which is helpful primarily for people who ordinarily don't drink coffee, tea, or caffeinated sodas. However, it's important to remember that regardless of which countermeasures are used, someone who has been awake for 18 hours or more is seriously impaired, particularly if the flight occurs from 0300 to 0900 with no prior sleep. Even the most powerful prescrip-

tion amphetamines are no substitute for sleep!

So What's the Bottom Line?

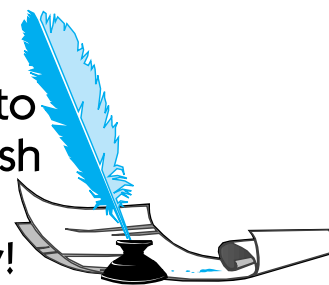
Fatigue is a serious threat to the military as an organization and the individuals who make up each unit, whether ground troops or aviators. Adequate, restful sleep is a biological need like hunger or thirst, and it's the only cure for fatigue—there is no substitute. Recognizing the threat posed by on-the-job sleepiness, identifying the causes of insufficient sleep, implementing countermeasures to ensure proper rest, and developing crew rest cycles that will ensure well-rested and alert crews are among the best force multipliers. ■

Short Circuits... continued from page 5

1991 Volvo 944/945, 1987-91 Volvo 782. Defect: Chafing of the insulation of the cables feeding the seat heater, power seat motors, and seat belt warning indicator situated under the front seat can occur due to limited space and variations in cables. **Consequence of defect:** This chafing can lead to a low ohm short circuit, possibly causing a passenger compartment fire. (NHTSA Recall No. 97V166, Volvo Campaign No. 82)

Owners who take their vehicle to an authorized dealer on an agreed-upon service date and do not receive the free remedy within a reasonable time should contact the following numbers: Volvo, 1-800-458-1552; Toyota, 1-800-331-4331; Isuzu, 1-800-255-5727; Saturn, 1-800-553-6000 (prompt 3); Chevrolet, 1-800-222-1020; GMC, 1-800-462-8782; Oldsmobile, 1-800-442-6537; Ford and Mercury, 1-800-392-3673; Chrysler, Dodge, and Plymouth automobiles, 1-800-853-1403; Jeep and Dodge trucks, 1-800-992-1997; Mazda, 1-800-222-5500; Audi (Volkswagen of America) 1-800-822-2834. ■

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Story!



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We look forward to hearing from you and sharing your story!!!

Where the Rubber Meets the Road



BOB VAN ELSBERG
Managing Editor

There's an old saying that goes, "They don't make cars like they used to." Well, that's true. These days they make them a lot better. They also make tires a lot better than they used to, and some are now sold with limited warranties for as long as 80,000 to 100,000 miles. Still, unless you trade in your car for a new one every 2 or 3 years, you're probably going to have to buy a new set of tires for your vehicle.

For some people, that might seem like a pretty easy decision—just replace the tires with the same type that originally came on the car. For other drivers, that decision can be a bit more complicated, especially if they want different traction or wear characteristics than provided by the original tires. And for those who have bought used cars, there is a good chance they don't know what kind of tires the vehicle had when it was new.

Why should this even make a difference? If you put the same size and type of tire (passenger, performance, or truck) you had on your vehicle previously, won't it handle the same? Maybe—but not necessarily.

For instance, I'd put more than 50,000 miles on a set of Goodyear™ tires I had on my compact truck and no-

ticed the tread was getting pretty worn. I'd done the "penny test"—inserting a penny into the tread to see if it was so shallow that I could see the top of Lincoln's head. I could. My stepdad—a former long-haul truck driver—has often reminded me, "Your tires are your life." With that tape playing in the back of my mind, I decided not to wear out the last little bit of tread trying to get every possible mile out of the tires. We're into fall, and I'd already driven on rainy roads and felt the traction was getting a bit "iffy." Since it's a lot cheaper and less painful to be safe than sorry, I bought a new set of tires, albeit from a different manufacturer. The tread design promised good traction on snowy, slushy roads—something that I encounter every winter here in New Mexico.

However, as I drove home for the first time on my new tires, I discovered some drastic changes in my truck's handling. The power steering felt extremely light—so much so that I began to wonder if I had some play in my steering. However, I tested the steering and didn't find any play or looseness. What I did find, however, immediately got my attention.

Whether it was a function of new versus worn tires, or the contrast in performance between different tire brands, my truck's handling had significantly changed. From running down the road like it was on rails, my truck now responded noticeably to even the slightest steering inputs. Staying centered in the lane took a lot more effort and concentration. I found the same

amount of turn that previously resulted in a smooth lane change now caused my truck to swerve. The handling had changed so much that I felt like I was driving a different vehicle. That made me a bit uncomfortable, so as I drove home, I found an isolated section of road and practiced rapid lane changes and dodged imaginary obstacles. I didn't want to be surprised by my truck's handling if I suddenly faced a real emergency-maneuvering situation on the road.

This experience brought to mind an important point. Whenever you change your vehicle's tires, shocks, springs, or brakes, it's a good idea to go out and see what effect that has had on your handling. Pay attention to how your vehicle corners in normal driving and also in emergency situations such as rapid lane changes or when dodging obstacles in the road. Check your braking effectiveness on different road surfaces and in wet and dry conditions—especially if you have new tires or have had a brake job. Also, if you've changed the shocks or springs, see how far your vehicle leans when turning and how well your tires maintain contact with rough road surfaces. The handling differences may be much more than you expected.

Most highway emergencies happen quickly and unexpectedly. The one thing you shouldn't be surprised by during an emergency is how your vehicle handles. ■

A MESSAGE FROM THE CHIEF OF SAFETY

MAJOR GENERAL FRANCIS C. GIDEON, JR.

As I write this, more than 20 Air Force civilians and military members have lost their lives in fatal mishaps this fiscal year. The majority of these were ground mishaps, and **all** the ground fatalities involved motor vehicles—on- and off-duty. Last year was our safest year in Air Force history. We lost 71 Air Force members—52 in ground mishaps.

Since 1988, safety professionals have investigated more than 80,000 mishaps in the ground, flight, and weapons arenas. Of those, more than 75 percent were ground mishaps. Thankfully, the vast majority of those mishaps were not fatal and did not cause permanent disabling injuries. As you would expect, our biggest killer (nearly three-fourths of our fatalities), has been motor vehicle off-duty. I can assure you, the motor vehicle was not guilty of complacency, poor judgment, or failure to use Operational Risk Management. No—**human** factors were the biggest part of these mishap equations.

We are about to enter the 101 Critical Days of Summer, running from Memorial Day to Labor Day. Our mishap database tells us this is the most dangerous time of the year. How dangerous is it? Since 1988, 366 Air Force members have lost their lives during this 3-months period. Last year, before our campaign had even officially started, the Air Force had reported nine motorcycle fatalities, six during the month of May. By year's end, 15 Air Force members had paid the ultimate price for riding their motorcycles. Our second biggest killer last summer was open water, resulting in nine drownings by the end of FY98. Seventy-one Air Force members died last year, 22 due to ground mishaps last summer. Will we—will YOU—learn from these numbers?

The Chief of Staff, General Ryan, ascribed our excellent record last year to sound use of three things—leadership, accountability, and ORM—and I heartily agree. Here is an excerpt from his 19 October 1998 message to the field.

"For leaders, successful risk management begins with knowing your people, your equipment, and the pressures—including Ops and Pers Tempos—that contribute to potentially dangerous situations. For individuals, it is knowing yourself, your challenges, your limitations, and the risks involved in our daily activities. Every Air Force team member has my total commitment and support should they make the decision to 'knock it off.'"

Mishaps **can** be avoided. It's human nature to believe that mishaps only happen to "the other guy," but remember, every person who died, was injured, or was operating an aircraft or wheeled vehicle that was destroyed in FY98 believed the same thing.

As you prepare for work each day, remember that risk is inherent in everything you do, and one of your duties is to minimize risk to yourself and your coworkers. If you see someone commit an unsafe act—or about to commit an unsafe act—then stop that person. Likewise, as you prepare to engage in recreational activities in your off-duty time—whether it's a family outing or a cross-country run—think before you act. Imagine everything that can go wrong and **then** take preventive measures. Do it for yourself. Do it for your loved ones. Do it for your country. ■

Best wishes for a safe and enjoyable 101 Critical Days of Summer!



This Is
NOT
Where a Helmet Belongs!

