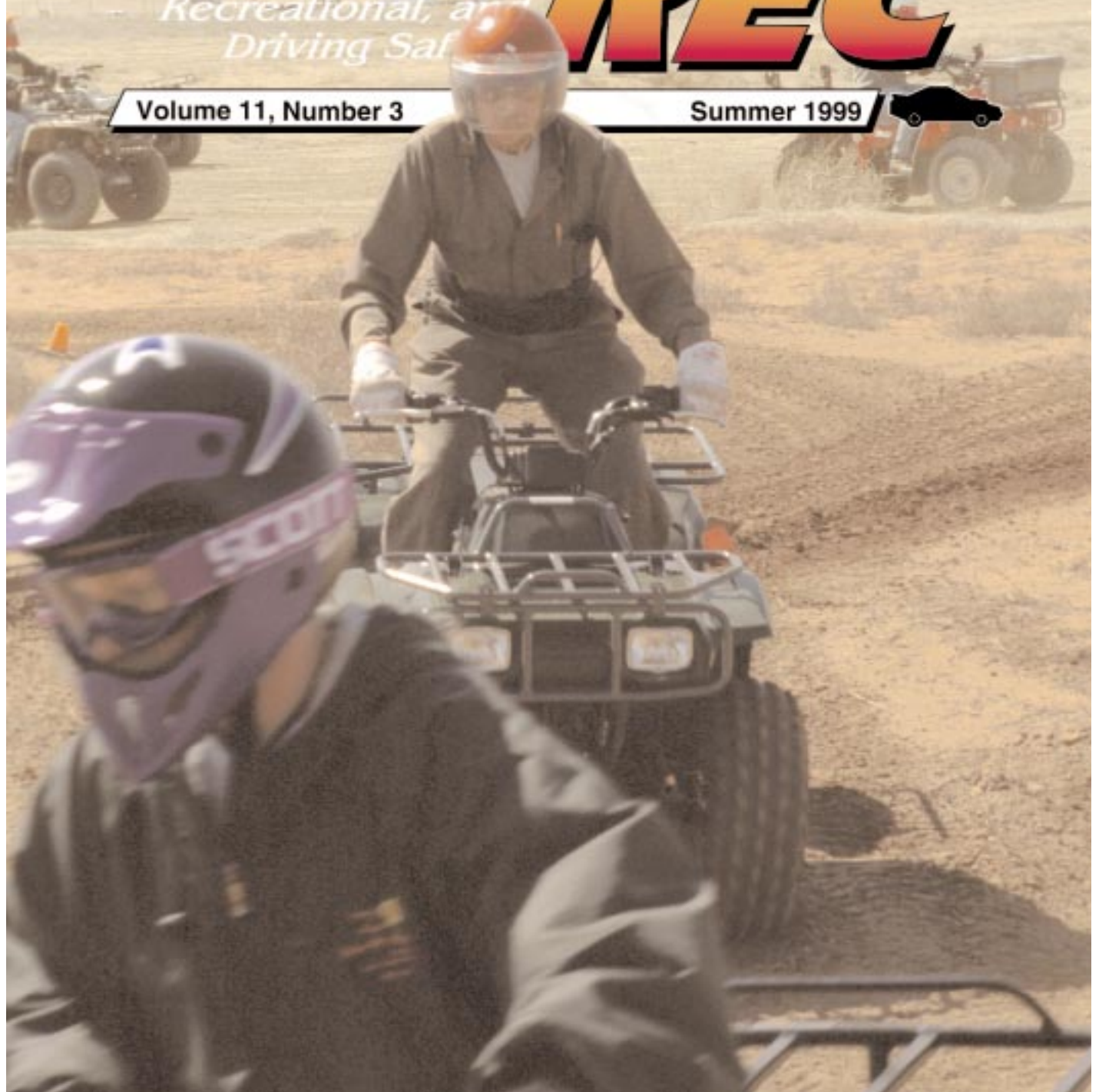


ROAD & REC

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

Volume 11, Number 3

Summer 1999



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Cover photo by Bob Van Elsberg
Back cover photo provided by Lori Ann Lopez,
Albuquerque Police Department

What to Do When Your Brakes Fail



National Safety Council Fact Sheet, May 98

Having your brakes fail while you are driving is a dangerous and horrifying experience, especially when you are traveling on an interstate highway or other high-speed roadway.

The National Safety Council has these tips for coping with brake failure:

▲ At the first sign of trouble, try not to panic. Instead, work your vehicle into the right lane and then toward the shoulder or, if possible, toward an exit. If it's necessary to change lanes, do so smoothly and carefully, watching your mirrors and the traffic around you very closely.

▲ Remember to use your directional signal to indicate your intentions to other drivers. When you reach the right lane, turn on your emergency hazard lights.

▲ Let the car slow down gradually by taking your foot off the gas pedal. Simply steer as your vehicle slows, and *shift the car into a lower gear* to let the engine help slow the car.

▲ Once off the traveled roadway, gradually apply the parking brake until the vehicle stops. If that brake has also failed, direct the car onto a soft shoulder or rub the wheel

against a curb which will help you to slow down. Get the car off the roadway and to a safe place to avoid stopping traffic or being involved in a rear-end collision.

▲ When safely off the road, put out flares, warning flags, or reflective triangles beside and behind your vehicle to alert other drivers. Keep your emergency flashers going.

▲ You will need professional assistance. Raise your hood and tie something white to the radio antenna, or hang it out the window so police officers or tow truck operators will know you need help. Don't stand behind or next to your vehicle. If possible, stay away from the vehicle and wait for help to arrive.

▲ All interstate highways and major roads are patrolled regularly. Also, some highways have special "call-for-help" phones. Of course, if you have a CB radio or cellular mobile phone, you can call from your vehicle.

▲ It's inadvisable to walk on an interstate. However, if you can see a source of help and are able to reach it on foot, try the direct approach by walking, but keep as far from traffic as possible.

▲ A final caution: Don't be tempted to drive your vehicle, no matter how slowly, without brakes! Call for help to get your disabled vehicle towed, and then have the brakes repaired by a qualified mechanic. ■

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The Air Force Journal
of Occupational,
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Driving Safety

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Why I'm Known as the "Barbecue Guy"

LCDR PAUL J. JENNINGS
Courtesy *Safetyline*, Sep/Oct/Nov 98



I'd recently received my pilot wings and had been ordered to NAS Whidbey Island to train in A-6 Intruders. Life was good: I had a wife, a water-view apartment in "downtown" Oak Harbor, and an awesome gas grill perched on my third-floor balcony.

Since I had yet to start my training, my days weren't busy. One afternoon, I decided to cook over the fire, thinking I could score big points with the missus by having dinner on the table when she came home from work.

I hadn't used the grill since I had filled and reconnected the propane tank. With meat seasoned to perfection, I fired up the grill to preheat it. Much to my dismay, the flame coming out of the burner was less than inspiring. The familiar hissing sound the grill normally made at full power was absent. I began to troubleshoot the problem.

Since the tank had been newly filled, the grill should have been blazing away. Zeroing in on the tank as the source of my difficulties, I began to fiddle around with the connections. I tried to hand-tighten the gas line that came out from the nozzle of the tank and fed the burner assembly. Righty tighty, lefty loosey. Right? Wrong.

I was about to learn the hard way that the connections on a

propane tank are threaded backward. So, as I turned the nut connecting the gas line to the tank's nozzle to the right, thinking I was tightening it, it came off in my hand. I heard the hiss of escaping gas, followed immediately by a loud roar as the 5-gallon propane tank became a 5-gallon blow torch. I jumped back in panic and stared at my grill as flames engulfed it. I thought I was going to be blown to bits any second. After what seemed like a long time, I convinced myself that I wasn't going to be blown up, but man, the neighbors were going to be mad at me for burning down their apartment complex.

Still gripped by panic and operating on sheer adrenaline, I reached my bare right hand into the

I jumped back in panic and stared at my grill as flames engulfed it.

inferno to try to close the valve on top of the tank and extinguish the flames. After maybe an eighth of a turn on the valve, I learned it was hot in there. Maybe the left hand would work better? Nope, flames still hot.

I ran inside the apartment and grabbed a towel to wrap around my hand. Once again I reached into the flames. Still pretty hot! My hands, though now badly burned, didn't hurt

because of the adrenaline high I was on. Things began to look pretty bleak. The flames were starting to blacken the cedar siding of the apartment building, and I was running out of ideas.

I glanced over the balcony's railing and noticed a guy working on his car in the parking lot below. He was looking up at me and asked if I needed help. I asked him to call the fire department. Then he asked the question I should have asked myself a long time ago. "Do you have a fire extinguisher?" The words hit me like a bucket of cold water.

I ran out the front door of the apartment and there, in the stairwell, was an extinguisher in a glass case. I busted the glass with my right hand—putting a pretty good gash in it—grabbed the extinguisher and headed back out to the balcony to battle the flames. One burst with the extinguisher did the trick. The flames were gone. My grill was now a smoking, misshapen mass of black debris. And the tank was still hissing as the gas escaped. I shut off the valve and tried to calm myself. As the adrenaline wore off,

the pain set in. My hands hurt!

The guy in the parking lot offered to give me a ride to the emergency room on base. I sheepishly accepted, since I couldn't do anything with my burned, cut, and blistered mitts. At the hospital, after convincing docs that my story was true, they fixed up my first- and second-degree burns and wrapped my hands in gauze. From the elbows down, I looked like a mummy.

After a few painful days at home to recover, I returned to the squadron. Who was the first guy I ran into? The safety officer. Just my luck. At the next all-officers' meeting, I was the star attraction, telling my story to the ready room and ending up on the receiving end of lots of jokes. I hadn't even started the training syllabus, but suddenly I was the best-known student there.

Eight years and three squadrons later, I'm still at Whidbey. And occasionally I get an "old-timer" who comes up to me and asks, "Aren't you the barbecue guy?" Yeah, that's me.

Here are some of the things I learned from this incident.

- ❖ Always operate your gas grill in accordance with the instructions that came with it. Use it in a well-ventilated, open area that is away from flammable materials and other structures.

- ❖ Always check gas connections for leaks. If you find any, don't use it.

- ❖ If you do suspect a problem with the operation of your grill, turn it off before troubleshooting! Call the manufacturer or other expert if you can't readily find and fix the problem.

- ❖ Have a fully charged fire extinguisher available for household use. Know where it is! I walked by a fire extinguisher every time I went through the front door of my apartment, but it never registered in my head that there was one there when I needed it. ■

LCdr Jennings is the safety officer for VAQ-129 at NAS Whidbey Island and now grills strictly with charcoal.





You Want to Be Superman?

Courtesy *Ashore*, Winter 1998-1999

Actors often portray quadriplegics, who are paralyzed from the neck down, and paraplegics, who have the entire lower half of their body paralyzed. Except for having to sit in wheel chairs until the show ends, they look normal and have well-toned bodies. That's because they're actors and are playing parts. But one actor isn't playing a part. He is Christopher Reeve, perhaps the most famous quadriplegic in the world. Reeve, who brought Superman to life on the screen, is still broad-shouldered and handsome, still has muscular thighs and a full chest, and seeing him in a tuxedo sitting in his industrial-strength wheelchair, you may think that life for him is not so bad after all.

Think again.

Reeve has written a book titled *Still Me* that tells how his life changed drastically since 27 May 1995 when he fell from a horse during a jumping competition. For reasons he will never know, his horse, Buck, put on the brakes in midjump. The actor went flying over the horse's head, unable to break his fall because his hands were tangled in the reins.

Reeve was taken to the University of Virginia Hospital in Charlottesville, where doctors devised a never-before-performed operation to reattach his skull to his spinal column. He had what is called a hangman's injury—the same trauma produced by being dropped through a gallows trapdoor with a noose around your neck.

This kind of injury can happen if you dive in shallow water, get knocked down in waves, fall off a motorcycle, slam into the roof or windows of a car during a wreck, or get ejected during a collision. Since 1993, 23 Marines and 9 Sailors have suffered hangman's injuries and are quadriplegics or paraplegics.

Despite having the best available medical care since his mishap, Reeve has been in shaky health since his fall. Eleven times he has returned to the hospital, often with life-threatening trouble: pneumonia, a collapsed lung, two blood clots, and an infection that nearly forced doctors to amputate part of his leg.

In his book, Reeve describes what his life is like as a quadriplegic. There are days when the ritual of getting up in the morning and getting in bed at night takes 5 hours.

A nurse and her aide appear at 8 a.m and serve him 20 pills—vitamins plus drugs to control spasms, keep his

bladder from shrinking, and maintain bowel function.

He sleeps in arm and foot splints, and after being in one position all night, his joints and muscles are frozen. His arms and legs go into wild spasms when the splints come off, and it takes the full power of the nurse and the aide to hold them down.

Then follows the morning hello from his 5-year-old son and an hour or so of "ranging"—the slow manipulation of his limbs by the nurse. This prevents atrophy, for as Reeve notes, you can't stand or walk with atrophied leg muscles. *[Reeve has vowed to*

walk again by the time he turns 50. That will happen in September 2002.—Editor] After that, he's ready to be dressed. "When two people have to roll you back and forth in order to put on your underpants at age 45, it's a difficult lesson in acceptance," he writes.

"I used to have to control my anger with myself for having ended up in this situation. Often I listen to music or watch TV so I don't have to think about being taken care of like a baby."

Frequently through the day, he blows into a little tube that's placed before his face. This causes the chair to shift his weight, helping prevent the ulcers that are a constant worry.

The nighttime ranging is almost pleasant after so many hours in the chair, but it is followed by perhaps the hardest part of the day: the "bowel" program.

"I'm turned on my side, and the aide pushes on my stomach with his fist to force stool down through the intestines and out onto plastic sheets placed under me. Sometimes it can take nearly an hour...It seems like an eternity."

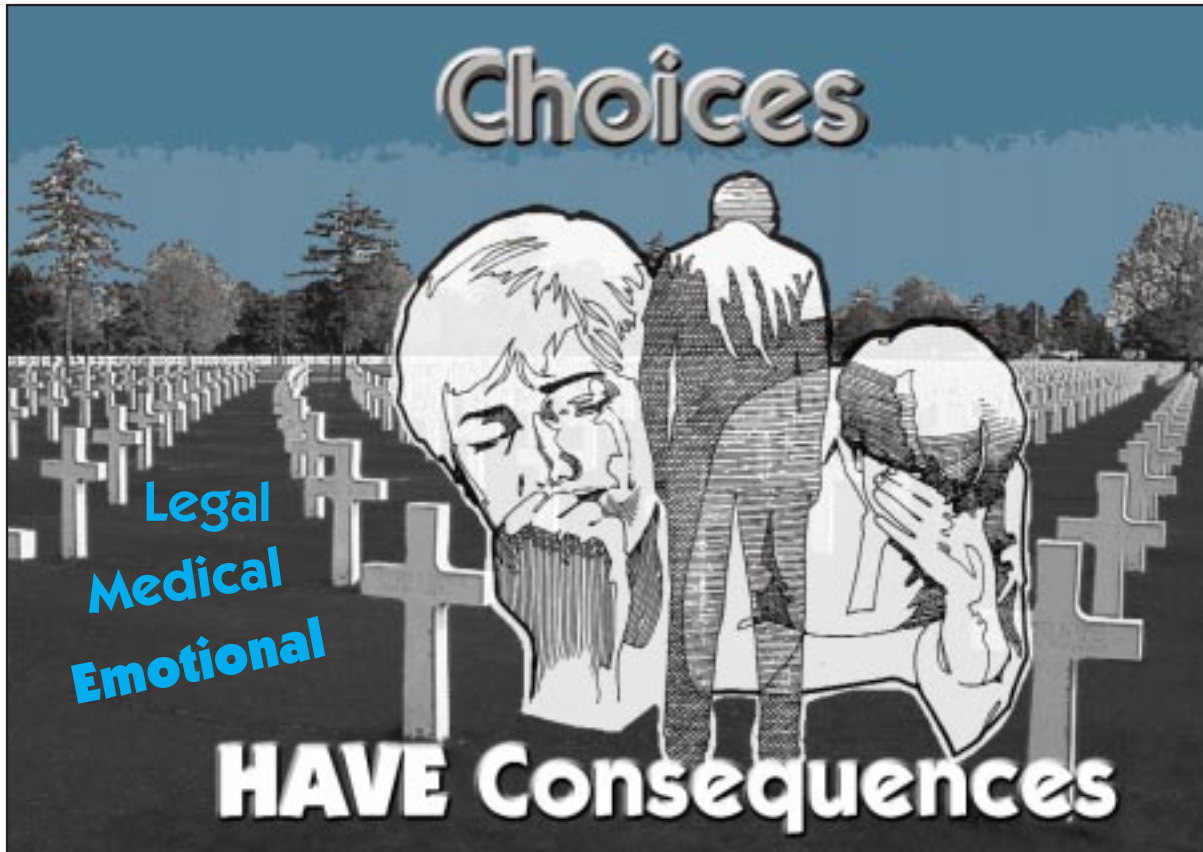
Reeve takes a sedative to control nighttime spasms and finally drifts off to sleep.

That's how a privileged person with the resources to pay for round-the-clock nursing care at \$40 an hour spends his days. That care costs him \$960 a day, or \$350,400 a year. He has three medical insurance policies, one of which has run out. And his exercise equipment cost him more than \$100,000.

The lance corporal who dove headfirst off a boat ramp into shallow water, the AO2 who dove headfirst into a 3-foot-deep children's wading pool, and the SH3 who fell out of a tree in his backyard don't have these resources. Neither do most of the civilian employees of the Navy and Marine Corps.

How would you fare if you were in the same situation as Christopher Reeve? Think about this before you dive into shallow water, before you drive around without being buckled up, or before you ride that ornery bull at an amateur's rodeo. ■

Editor's Note: Early in 1998, an Air Force member who was snowboarding lost control and slid into a metal pole, suffering a compression fracture of two vertebrae. As a result, he suffered a partial loss of feeling from the waist down—a high price to pay for a first-time snowboarder.



CHAPLAIN THOMAS AZAR

Mike and Mary* were both on active duty, engaged, and serving overseas. They often went touring on weekends, exploring the local culture with friends from their squadron. Because the troops had done a good job and there hadn't been any DWIs for 6 months, the commander had given everyone a 3-day weekend. This weekend, a coworker and his wife came along for the trip.

It was raining as they set out for an evening drive. Although Mary hadn't touched any alcohol that night, the others had already put away a case of beer and were working on a second. As they went down the road, Mike lost control of the vehicle, which skidded, hit a bridge beam, then went over a cliff into the river below. All four escaped being drowned in the car, but Mike injured his shoulder and right leg while the coworker and his wife suffered minor cuts and bruises. Mary, however, was less fortunate. Thrown from the car, she landed on her back, crushing two vertebrae and injuring her head. The injuries were fatal.

When the call came over the beeper, I rushed to the hospital to try to help the victims. They were in shock. They had drunk so much they didn't even remember I'd spoken to them when I saw them 2 days later. As the three began to recover, the chapel team supported them

through the ordeal that was to follow—the legal, medical, and emotional consequences of their tragic evening.

As I think about tragedies such as this, I can't help wondering: What motivates people to drink and drive when the results are so often either death or serious injury? What leads people to get drunk and gamble their future against a moment's pleasure?

When I counsel drunk drivers, I often hear the same rationalizations: "I never thought I would get caught," or "My friends and I have been doing it for months," or "We thought we were invincible."

In Mary's case, what had started out as a "goodbye party" with her friends ended up being "goodbye forever" because she never regained consciousness. Her fiancée and family suffered immensely as they tried to make sense out of this accident. Gone forever was this young, vibrant person they loved. The squadron's record of 22 mishap-free months ended with the death of a friend. The grief, anger, and shock were felt throughout the unit. The irony of it all was that the three people who'd been drinking survived while Mary died.

We all know the effects of drinking and driving and the legal penalties involved. Still, many people continue to place their own lives—as well as those of their loved ones—at great risk because they carelessly think, "It will never happen to me." ■

*Not their real names.



ADMITTING



Why Bother With ORM?

MAJ PHILLIP P. TABER*
8 AF/SEF
Barksdale AFB, Louisiana

During the past year, I have taught operational risk management (ORM) to more than 800 people as part of the 8th Air Force ORM Roadshow. While some embraced the ORM concepts enthusiastically, I encountered many skeptics who thought this was just a passing fad. Although I truly believe in the concepts and tools provided within ORM, my belief is irrelevant. You must decide for yourself.

Just Another Fad?

The idea of weighing risk and

balancing it against a desired outcome or mission is not a new concept. Many personnel have used some form of risk management with great success throughout their careers. Although not a "new" concept, ORM merely offers a more formalized process that can be easily understood and used daily by anyone in their job.

Why go to the pain of formalizing this systematic process of risk management? Primarily, because not everyone understands or uses the concepts of risk management—not everyone possesses this "sixth" sense often referred to as common sense.

Common Sense

One of the most common reactions to ORM is, "It's just common

sense." On the surface, this reaction seems rational and logical; however, military and civilian mishap statistics reveal that over **80 percent of ALL mishaps** are a result of or can be attributed to human factors/error.

A review of these mishaps normally reveals an *obvious* absence of common sense in combination with other human inconsistencies that caused the human error mishaps. A lack of apparent common sense can simply be described as not possessing a systematic or logical process to analyze and manage risk.

Just What Is Common Sense, Anyway?

Quite often the term "common sense" is overused or used out of

context. How do you define common sense?

Some would suggest common sense is simply possessing situational awareness, while others would define common sense as the ability to apply sound and consistent judgment regardless of formal education.

For the sake of this discussion, we will assume you are new to your unit and are attempting to learn a new task for which you have no previous exposure. Without some type of directions or formal guidance, you would likely develop your own technique or set of directions through trial and error. Even with technical directions or technical orders (T.O.), you would still lack the depth of knowledge required to complete this new task with the skill and efficiency of a new craftsman.

A true craftsman represents the culmination of countless iterations of experimentation, searching for efficiency and mastery of a craft or process. Craftsmen know the “tricks of the trade” which were handed down to them from their mentors or teachers—from craftsman to apprentice. What is *common sense* to a craftsman is not necessarily *common sense* to an apprentice. Only after you observe and work with the craftsman do you begin to fully understand and learn their *secrets* and, in a sense, graduate to their level of *common sense*.

Trial and Error

Currently, the US military is facing monumental challenges in trying to accomplish its mission in the face of shrinking budgets, extremely low retention rates, and high operations tempo. Unlike the previous “days of Camelot,” the abundant supply of parts, equipment, and experienced personnel no longer exists. The exodus of our experienced personnel (craftsmen) is dramatically lowering our corporate knowledge. Without the benefit of our craftsmen, we are forcing our apprentices to perform

“One of the most common reactions to ORM is, “It’s just common sense.” On the surface, this reaction seems rational and logical; however, military and civilian mishap statistics reveal that over 80 percent of ALL mishaps are a result of or can be attributed to human factors/error.”

at levels previously reserved for our most experienced personnel.

To prevent or lessen the mistakes made during the inevitable trial-and-error process, we must capture and transfer our collective experience and craftsmanship to our apprentices, thus avoiding potential losses to our combat resources—our personnel and equipment.

The Perfect Tool

ORM uses numerous tools which are perfect for capturing and retaining valuable experience before it is forever lost. Many of the ORM hazard identification/analysis tools, such as the Operations Analysis, Preliminary Hazard Analysis, Change Analysis, or the “What If” Analysis, are ideal for capturing and incorporating the irreplaceable wealth of experience and knowledge still in the military. These types of structured tools are far more reliable in securing information than current processes, such as word of mouth or out-of-date continuity books.

Can Common Sense Be Taught?

It would be simply naïve to imply everyone who enters the military understands the concepts of risk assessment and possesses a systematic approach to risk management. Most basic/entry-level technical schools currently teach a

compliance-oriented/“no brainer” concept of safety. While this isn’t a completely bad mindset, it’s sometimes too rigorous and doesn’t allow any room for flexibility and adaptation in a rapidly changing environment, such as contingency operations.

Additionally, pure compliance-oriented safety can have a negative impact on mission outcome. This is one of the reasons personnel are willing to ignore or violate T.O.s or existing safety procedures during “real world” operations to ensure mission success.

In contrast, formal ORM emphasizes mission success through the identification and control of hazards/conditions that could lead to mission failure. Although not the focus of ORM, safety does indirectly benefit. How many times have you heard, “If you do the smart/tactical things, safety will take care of itself”? Lower mishap rates are a by-product of ORM—not its focus!

Bottom Line

ORM is not just another management initiative or safety program designed to be eyewash hanging on the wall for an inspector, or an annoying, time-consuming paperwork drill. Once fully implemented, ORM can provide the backdrop and tools to maximize combat capability and ensure mission success! ■

***About the Author:** Maj Phillip P. Taber is currently the Chief of Flight Safety for Eighth Air Force, Barksdale AFB, Louisiana. His current duties within flight safety include developing a viable training program for the integration of Operational Risk Management into ACC and 8 AF units. He also facilitates Class B mishap investigations, coordinates safety investigation board (SIB) members for ACC Class A mishaps, and provides guidance to the 8 AF commander on all issues involving the convening of an 8 AF Class B SIB. In addition, he provides guidance/interpretation to 8 AF assets on AFI 91-204 and AFI 91-202 issues. Maj Taber serves as the 8 AF representative to several system safety group conferences and coordinates all formal safety training billets for 8 AF.





Driving Like C



In our haste to get home, we risked everything, including the lives of our children, for the sake of a day we ended up wasting anyway.

MAJ MARK CARTER
Courtesy *Torch*, May 98

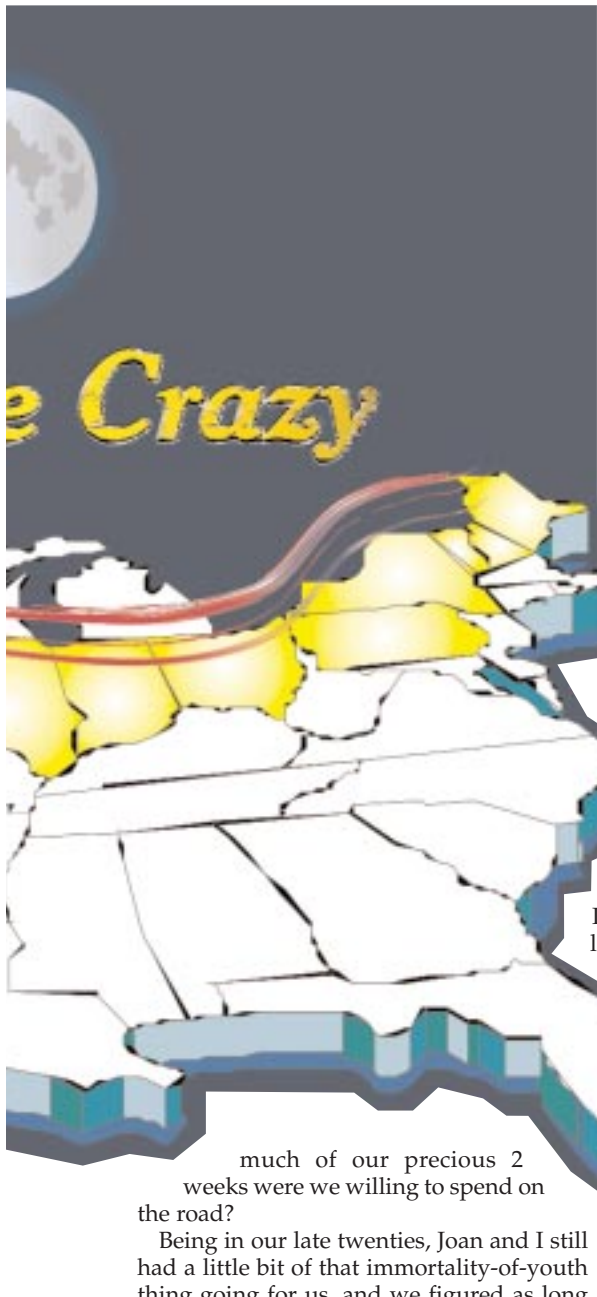
We still talk about that trip, even though it's been close to 12 years. It's not that it was the trip from hell—amazingly, nothing bad happened at all. We used to talk about the trip like it was a major accomplishment, and it actually was; it's the circumstances—the might have beens—that bother us today.

Uncle SAC had seen fit to assign me—read Joan, our two young children, and me—to the land of great hunting and fishing, potatoes, broccoli and cheap lobster—northern Maine and Loring AFB. While the lobster was great (we still miss it), we were over 1,900 miles away from friends and family back in Omaha, Nebraska. As you can probably tell from the tone, this was not our favorite place to be.

One of the complexities of being a navi-

gator on a KC-135 crew was I had to take leave in a 2-week block with the rest of the crew. Now this in itself wasn't really a problem; the problem came from the fact that buying four round-trip airline tickets from Presque Isle International Airport to Omaha and back was not a viable option (this was before airline deregulation) if we wanted to keep payments going on the house and car and take care of the monetary incidentals—like buying food. So when leave time rolled around, we had a choice to make: not go home, fly and not eat, or drive. Options one and two not really being options in our eyes, we chose option three. Once that decision was made, another choice presented itself: How





much of our precious 2 weeks were we willing to spend on the road?

Being in our late twenties, Joan and I still had a little bit of that immortality-of-youth thing going for us, and we figured as long as the minivan stayed healthy and the kids weren't too cranky, we could make the 1,900 miles in 3 days. Hey, we were young—it seemed reasonable. But this meant 6 out of 14 days spent on the road—not a real pleasing thought since we've never considered road time to be vacation time. In a moment of sheer brilliance, we decided our best move was to drive straight through. Since we weren't in any big hurry to get back, we'd do the return trip in 3 days, but we figured we'd save at least a day on the way to Omaha. The added bonus was we'd be traveling a goodly portion of the trip at night, so the kids would be asleep. Was risk management at work

here or what?

Before we left, we did show a little common sense—maybe just a glimmer of risk management. We had the minivan checked out by a qualified mechanic, and we bought extra oil, transmission and brake fluid, antifreeze, and a portable emergency CB radio (we even managed to load all this into the vehicle emergency kit we always carried). We also always carried extra water. We made sure we'd laid in a supply of snacks, including caffeine-injected pop, M&Ms, sunflower seeds, and some new rock cassettes to help keep yours truly awake. Before we loaded the kids in, we made sure the child safety seats were properly secured. The vehicle didn't (and still doesn't) leave the driveway—not that we had one at Loring—unless everyone is buckled up.

Being a navigator by trade, I did do some mission planning, deciding to go via the TransCanada Highway from Grand Falls, Nebraska, to Riviere Du Loup PQ, southwest by Quebec City, through Montreal and Toronto, and reentering the United States at Niagara Falls. The speed limit in Canada was roughly 60 mph, while the limit through most of New England was 55; I figured we'd save a couple hours just on this leg of the trip, and we'd get to see Niagara Falls at night. From there, it was south on I-90 through Buffalo and by Cleveland and Toledo, veering off onto I-80 at Chicago, and straight into Omaha. No sweat!

When the appointed day rolled around, we set off on the grand adventure—late, of course. We didn't get out until about 0900, but we managed to make up a little time

thanks to the sandwiches we packed—no lunch break, you know. But this set us up for Montreal at rush hour—people drive crazy all over, although I still think they've taken it to a new level in Texas. The experience didn't do much for my nerves, but it did make Toronto at midnight seem like a breeze. That's really about the last thing I remember from the trip. I think I slipped into a coma just before we got into St. Catherines, Ontario, because I have only very vague memory shadows of Niagara Falls.

I do remember pulling over somewhere around the Pennsylvania-Ohio border to stretch, close my eyes for about an hour,

continued on next page



and reload on sugar until I was higher than Pikes Peak; otherwise, the only stops we'd made to this point were for gas and to use the facilities. Joan drove through most of Ohio, but because she hadn't slept much while I'd been white-knuckling it the night before, she wasn't in much better shape than I was, and I didn't sleep much while she was driving either. I think we both knew what we were doing wasn't safe, but we were committed—isn't pride a wondrous thing! We were too tired to complain about the tolls across Indiana and too numb to really mind the bad roads and idiot drivers around Chicago. I have no recollection of the drive across Illinois or Iowa at all—the memories failed to register. Miraculously, we did make it into Omaha after about 40 hours, with minimal breaks and stops on the road. The kids were great, thank goodness, and the minivan worked as advertised (still does, more or less). Joan and I were useless for about the next 24 hours, but we'd made it—we had our story to tell.

As I said at the beginning, we used to proudly tell this story—with about the same enthusiasm as a kid who's borrowed the family car without getting caught. Maybe that's really what we did: didn't get caught—no accidents or injuries—cheated death. In our advancing years, Joan and I are both rather shocked at the thought of how the trip might have come out—four bodies in a crunched minivan in a ditch somewhere in the Midwest. Today, we know there is a better way; too bad we didn't realize it then.

We really should've started with a look at what was at risk and what our goals were: everyone in the family and getting us to Omaha—**SAFELY**. If we'd had the clear view—you know, like we do 12 years later—we'd have realized staying home was our safest option, although not our best since the mission part (getting to Omaha) would not have been accomplished.

All things considered, flying to Omaha would've been our safest choice, even though it would've cost us more, fol-

lowed closely by spreading the trip over the 3 days we'd originally planned. Taking a realistic view, we probably could've handled the expense of flying, and it would've gotten us there sooner and in better shape. Even stretching the drive—driving about 12 hours per day, with regular breaks, between the two of us—would've been infinitely more safe than pulling the 40-hour marathon; in the end, we were so wasted we lost the day we saved at the expense of putting our lives on the line. We were so into getting there we totally blew off the potentially disastrous consequences of our mad dash.

Basically, it gets down to failing the Operational Risk Management (ORM) test. About the only risk we really identified and assessed was the fact that the

Joan and I are both rather shocked at the thought of how the trip might have come out—four bodies in a crunched minivan in a ditch somewhere in the Midwest. Today, we know there is a better way; too bad we didn't realize it then.

trip would be tiring, but our efforts at establishing risk control and making risk control decisions fell far short of what we really needed. Loading up on sugar and taking only minimal rest breaks when we absolutely had to was not exactly an example of implementing effective risk control measures. And supervision? Yeah, right! Essentially we relied on dumb luck, rather than careful fore-

thought and risk management, to keep us safe and alive. In our haste to get home, we risked everything, including the lives of our children, for the sake of a day we ended up wasting anyway—**UNACCEPTABLE!**

As you start heading into your summer vacations, take the time to really think about what you're getting yourself into. Consider your goals, and make sure what you're planning is realistic and safe. Achieve your goals—getting you and your family there safely and in one piece—by knowing the risks, not accepting unnecessary risks, making well-thought-out risk control decisions, and only accepting the risks when the benefits outweigh the cost or potential cost. Yes, it's ORM—the right thing to do—in everything we do. ■



Courtesy *Safety Times*

According to A. C. Nielsen estimates, about 64.5 million Americans go camping, and sometimes it seems they're all cramped into your campground. Regardless of the form or duration, camping gets us away from our living rooms and into a close communication with nature.

Like any worthwhile endeavor, camping is only as good as the preparation and planning that goes into it. Here are some tips to make your visit with Mother Nature more friendly.

What to Take

Never leave home without a well-stocked first aid kit and proper, comfortable clothing. Take time to thoroughly consider the things you will need, including cooking utensils, insect repellents, lanterns, tool kit, sunscreen, matches in a waterproof container, toilet paper, soap, hooded sweat-shirts for children, a hat, and a compass.

In a Trailer or RV

- ◆ Don't endanger your family's lives by overpacking, which will affect your vehicle's handling.
- ◆ Drive only on roads which your vehicle is designed to travel, and use only marked RV campsites.
- ◆ Arrive before sundown to select a suitable camp site.
- ◆ Beware of trees with dead branches and low areas that could flood or become muddy in heavy rain.
- ◆ Inspect the area for poison plants, bees' nests, and other dangers.
- ◆ Clear away any rocks, roots, or debris that might present hazards.
- ◆ Use only electrically operated lights in a trailer or RV.

"Atenting" to Safety

- ◆ Read the labels before buying a tent. Only buy a tent that is flame resistant.
- ◆ Pitch your tent at least 15 feet upwind from grills and fireplaces.
- ◆ Use only flashlights or battery-powered lanterns inside a tent.

Fire: Friend and Foe

- ◆ Check and maintain gas connections and fume vents. Turn off an RV's LP-gas tank before traveling. Do not use LP-fueled appliances while in motion.
- ◆ Store flammable liquids only in safety cans a safe distance from your tent, camper, or any source of heat or open flame.
- ◆ Use a funnel to pour flammable liquids. Wipe up spills.
- ◆ Fill lanterns and stoves a safe distance downwind from heat sources.
- ◆ Keep a fire extinguisher or pail of water available at all times.

Roughing It



- ◆ Do not use a flammable or combustible liquid to start a fire.
- ◆ Develop a fire escape plan with your family. Get out first.

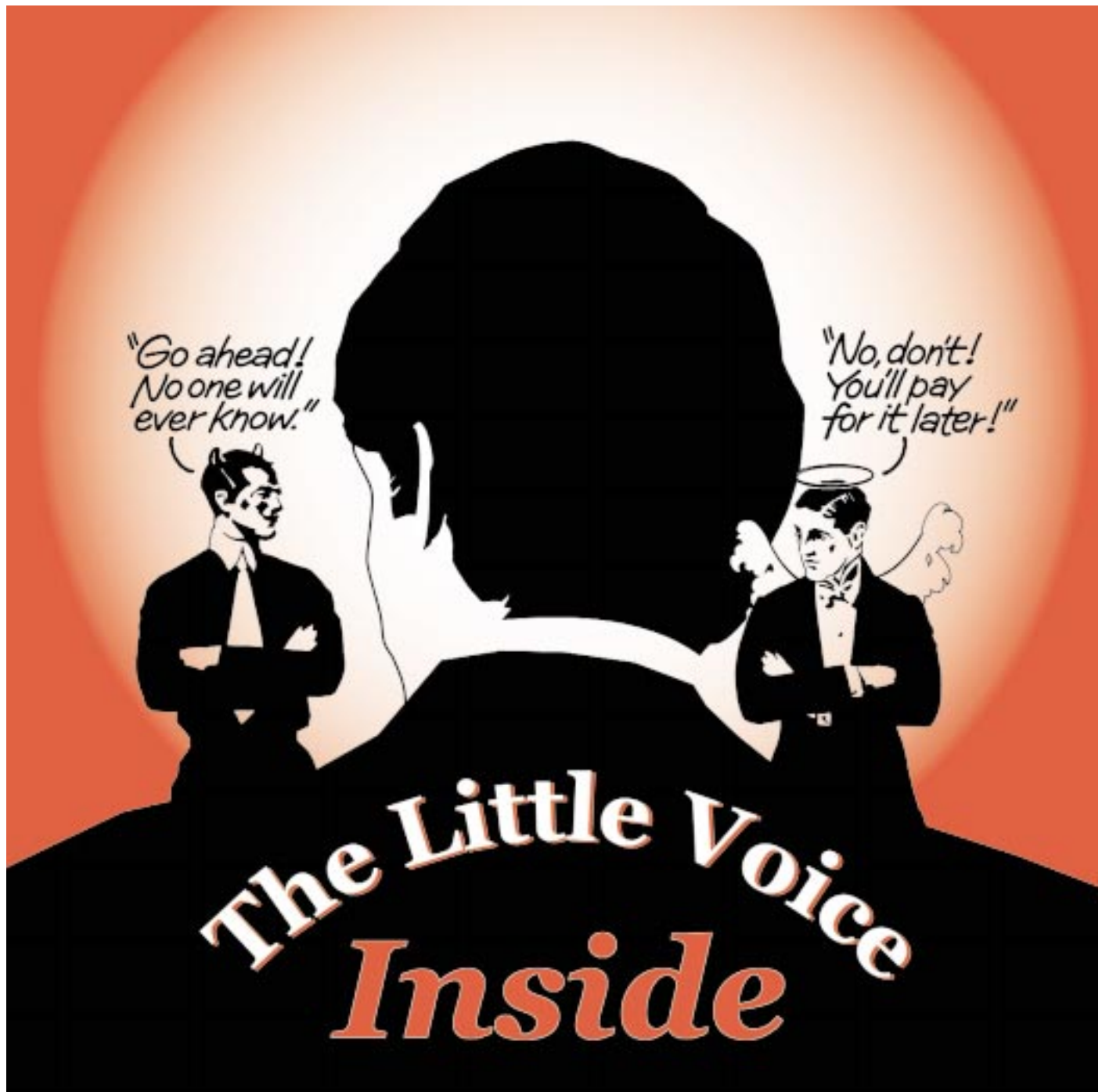
Campfires and Grills

- ◆ Build a campfire where it cannot spread. Never leave a burning fire unattended. Put it out with water and soil.
- ◆ Leave at least a 3-foot area clear of leaves, dry grass, and pine needles around grills, fireplaces, and tents.
- ◆ Don't pour fire starter on a smoldering fire.
- ◆ Do not dump hot charcoal on the ground where someone can accidentally step on it.
- ◆ Do not put a grill in a car or RV unless it's cold and has been thoroughly cleaned of cinders.
- ◆ Supervise children at all times.
- ◆ Don't wear loose-fitting clothing around fire.
- ◆ Teach and practice the STOP, DROP, and ROLL method of putting out a clothing fire.

While Exploring

- ◆ Children should carry a loud whistle in case they are lost or injured.
- ◆ For long treks into the deep woods, wear long pants and hiking boots (instead of sneakers), with jeans tucked into boots or long socks. A long-sleeved shirt with the collar up is also a sound idea.
- ◆ Do not pet or feed wild animals, no matter how cute they may seem.
- ◆ To avoid beestings, do not wear bright-colored clothing, and do not use cologne or scented cosmetics, especially florals. Avoid rapid movements around bees.
- ◆ Learn to identify the three most common poisonous plants—poison ivy, poison oak, and poison sumac. If you come in contact with one of them, quickly wash the affected area with soap and cool water. ■





Anonymous

We all have it—at least, we should. It speaks louder to some of us than others. It's that little voice that says, *"That's a crazy thing to do!"*

Why do we do crazy things? Is it the adrenaline rush or the escape

from boredom? Perhaps it's just to be able to say we did it—and survived the experience.

Well, there I was...just outside the front gate of Howard AFB, Panama, on my usual Thursday bicycle ride. I thought to myself, *Should I go the same old route down to the bottom of Rodman and back, followed by a quick run out to the end of the road past Cocli? No, that's getting too familiar.*

When they close Rodman, I'll need an alternate route. I need a route that covers all new ground from start to finish. Why don't I take a quick shot down the highway to the Vera Cruz road and ride back around to the back gate.

Traffic was light, visibility was good, and road conditions appeared favorable. I had the basic safety equipment—helmet, safety vest, covered shoes, etc. I even had emer-

gency equipment for anything unexpected—patch kit, drinking water, etc.

I had been bicycling and motorcycling for years and had recently started 13- to 15-mile bike hikes once a week. Riding on a busy highway had never bothered me. I hadn't performed an "emergency egress" (also known as falling down) off a bicycle since I was 8 years old. That fall caused about a dozen stitches in my chin. But I'm older and wiser now, so what could go wrong?

As I left Howard's front gate, I noticed I was picking up a little speed going downhill. I got the bike in top gear and made the best of it. I was almost keeping up with traffic, and I thought back to the good old motorcycling days when I didn't have to pedal so hard to enjoy such speeds.

And then there it was! I called it a pothole when I filled out the safety report, but "pothole" doesn't give it due credit. It was huge, even by Panama standards. If it had been a state, it's name would have been Texas. This crater would have been at home on the lunar surface.

I tried braking with both brakes, but since my bicycle bears most of the weight on the front tire, I probably overdid it. If memory serves correctly, I performed about a half-gainer twisting flip over the handlebars. I'm sorry there's no video clip because I'm certain that if I didn't get style points in Olympic freestyle bike crashing, I'd probably get at least some money from "America's Funniest Home Videos."

I crawled out of the ditch next to the crater and asked myself the same question everyone does when they do something embarrassing, *Did anyone see me?* I was about to jump back on my bike and, bicycle permitting, continue the ride. Then I looked at my right hand and thought to myself, *Self, you're not an orthopedic surgeon, but until recently, there wasn't a second joint 2 inches below the wrist. This could be a problem.*

Assessing the situation, I determined the front gate was about half

a mile away, so I started my walk back, pushing my bike with my left hand, and my right hand hanging at a rather bizarre angle about 60 degrees from normal. After reaching the visitor's center, I leaned my bike against the outer wall, walked in, and exchanged some small talk with the guard on duty. I asked him how his day was going and thought I'd cheer him up by informing him his day was probably progressing much better than mine. That's when he

"Listen for the little voice inside. It might be just a whisper, but it could be the last whisper you'll ever hear. Heed it!"

noticed the angle of my hand.

Another Security Forces member was dispatched to the visitor's center to take me to the hospital. He proved to be a perfect gentleman, opening doors, fastening my seat belt, etc., etc. He assured me he treats his wife equally well.

I was met by several dedicated professionals when we reached the hospital. My doctor determined I had a "collies fracture." I had minimal pain the first night due to the shot the doctor gave me. It wasn't until the next week I discovered the real meaning of pain.

After a short convalescent leave that was both boring and uncomfortable, I returned to the hospital for more X-rays, to have my splint replaced with a cast, and for the real fun—resetting the finer aspects of my fracture. For those who haven't experienced this, it involves hanging a finger and thumb in traction by a Chinese finger trap with a weight hanging off your bicep, and stretching everything. This form of torture must have been used during the Spanish Inquisition.

My doctor told me he'd have to push a few bones around, this time

without anesthesia (something about blood clotting negating the shot of the good stuff). The next thing I knew, the doctor squeezed my wrist with both hands as hard as he could, moving things around. At that moment, if asked, I probably would have confessed to anything from the Lindbergh kidnapping to being the man on the grassy knoll in Dallas. My bones turned out to be a little more stubborn than average, so I got the chance to enjoy this procedure twice. (If my doctor sees this, I want him to know I hold no hard feelings.)

As I write this, I'm wearing a cast halfway up my bicep. Everything is a one-handed operation—the wrong hand. Am I out of the woods yet? Next week I go in for more X-rays. If anything has slipped, I'll need an operation and an "external fixator" attached (a device with several screws, nut bolts, and other items to "screw" things back in place).

What have I learned? First, listen for the little voice inside. It might be just a whisper, but it could be the last whisper you'll ever hear. Heed it! If the voice says what you're about to do is unsafe or crazy, it no doubt is.

Second, I learned when doing dangerous activities, you need to be 100 percent focused. My mind might have wandered to an upcoming leave incorporating my parent's fiftieth anniversary and seeing my wife and children after a 6-month separation. Ironically, if things don't go well with my arm, I may have to postpone this leave.

Third, safety equipment is vital. I was wearing a helmet and didn't suffer any head trauma. I also had my safety vest on and didn't get hit by another vehicle, so the safety stuff works.

Finally, when riding in an unfamiliar area, top speeds are not advised.

Am I lucky? Yes! I'm alive and a much wiser person than a week ago. Learn from my mistake! ■

Editor's Note: This mishap occurred during September 1998.



BOB VAN ELSBERG
Managing Editor

The bushes melted into a blur along the trail as A1C Michael Spence* sped up to 30 mph on his four-wheel-drive All Terrain Vehicle (ATV).

The trail was unfamiliar—which made it all the more exciting. Spence found the speed exhilarating as he leaned quickly and jabbed the throttle to blast around the turns. As he tore down the trail, the fat, knobby tires kicked up a sizeable cloud of pine straw and sand behind him. Ahead, the trail doglegged to the left around a large pine tree. Shoving the throttle with his right thumb, Spence quickly shifted his weight and leaned hard to the left to keep the ATV on the trail.

The knobby tires dug into the soft, sandy soil. He'd barely rounded the tree when he gasped in shock. A metal cable stretched between two wooden posts blocked the trail where it crossed a private road. Panicking, he grabbed the brake lever and jabbed down on the brake pedal. The tires locked just before the cable "clotheslined" him off the ATV and threw him to the ground. The riderless ATV veered off the path and slammed into a tree.

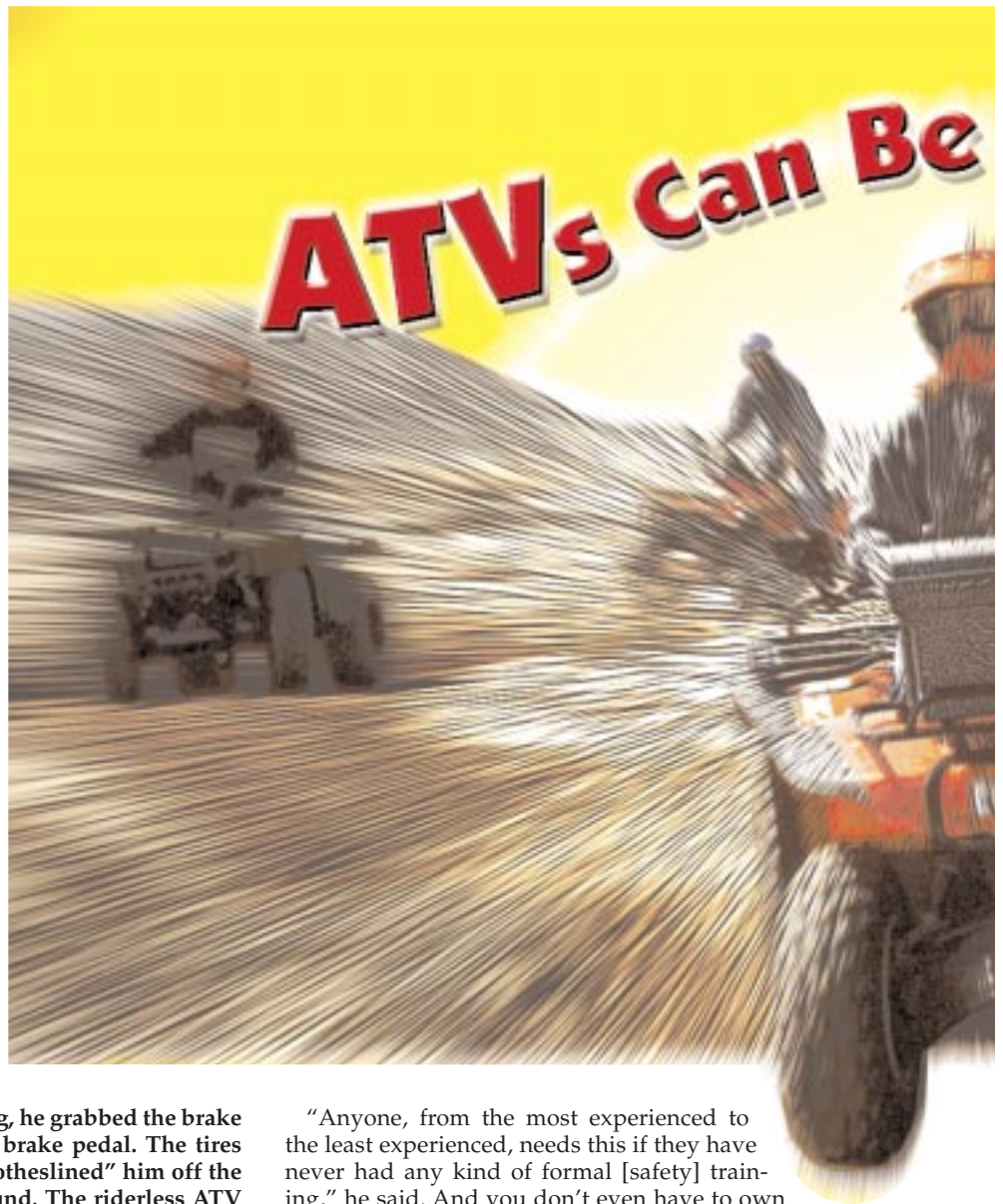
Spence hit the ground with a thud. Gasping to regain his breath, he felt a severe pain in his abdomen. He found out later he'd punctured his small intestine.

When this happened early in 1998, Spence hadn't gotten any kind of ATV safety training. If he had, he might have avoided an operation, a lot of pain, and a 10-day stay in the hospital. Training *was* available for him, just as it is today for anyone who'll take the ATV Safety Institute's course. It's training people need, perhaps more than they realize.

"Nobody realizes how dangerous these machines are," said Sal Partolan, a 6-year veteran instructor for the ATV Safety Institute. "ATVs are outdoor vehicles, and people need to learn how to ride them correctly. If they don't, they're sure to get injured."

Which people need to get training? Partolan's classes include everyone from kids who ride for fun to ranchers who use ATVs as utility vehicles.

*Not his real name.



"Anyone, from the most experienced to the least experienced, needs this if they have never had any kind of formal [safety] training," he said. And you don't even have to own an ATV, he said. He explained that local dealerships provide new ATVs for the students to train on. In fact, he added, they often give a cash incentive to those who have bought new ATVs to encourage them to take the training. Because youthful exuberance often translates into a hefty push on the throttle, younger students are given smaller, less powerful ATVs. Adult students—under Partolan's watchful eye—pick the ATV that best fits them.

Before they straddle an ATV seat, they first perch on folding chairs in Partolan's outdoor classroom. There they're taught riding safely begins with using the most important piece of safety equipment—the brain—to measure the risks before getting into trouble.

"We teach the students to use the acronym 'SIPDE,'" Partolan said. He explained SIPDE stands for the following: "**S**" for scan/search the terrain and environment, "**I**" for identify hazards or specific problems within your path, "**P**" for predict what may happen and think of the consequences, "**D**" for decide what to do



based on your riding abilities and the capabilities of your ATV, and “E” for execute your decision. Many of Partolan’s students are airmen at Kirtland AFB, New Mexico. For them, SIPDE is basically ORM with a different name.

Dressing for Safety

Once the students have learned to *think* about safety, they then learn to dress safely. That includes a helmet—but not just *any* helmet, according to Partolan. He explained that athletic helmets used for hockey, football, bicycle riding, or skateboarding don’t cut the mustard. To be sturdy enough to give real protection, riders should look for new helmets bearing stickers showing they’ve been certified by one or more of the following agencies: U.S. Department of Transportation, Snell Memorial Foundation, or the American National Standards Institute. Pointing out that many people follow the lead of motorcyclists who wear a three-quarter helmet with either goggles or a face shield, Partolan suggested a full-faced helmet is a better choice. He pointed out a full-faced helmet protects the rider’s mouth from pebbles and rocks that can chip teeth.

Goggles do a better job keeping out dust and other debris than face shields. He explained, “You’re talking about an outdoor environment where you’re going to be kicking up dust. Remember, you’re not always the ‘lead dog.’ If you don’t have good eye protection—preferably goggles—your eyes will pay the price.”

There are other parts of the anatomy which also need protection. For protection against road-rash and sunburn, Partolan recommended a pair of off-road-style gloves, a long-sleeved shirt, a pair of long pants, and a pair of over-the-ankle boots, or, better yet, boots that cover the rider’s calves. And, if you really want to be an off-road warrior, you *can* armor yourself even more.

“There are shoulder pads that go inside your jersey,” he said, adding riders can also wear pads for their elbows, hips, and knees, along with skin guards and ankle braces. “You name it, they’ve got it.”

Hands-On Training

Once they’ve put on their safety gear, they’re taught how to properly get on an ATV and use its controls such as the shifter, throttle, and brakes. From then on, it’s learning by doing. Anyone who has taken the Motorcycle Safety Foundation Course will feel right at home. Many of the same skills are emphasized.

“We start with ovals first,” he said, explaining that gives the students an opportunity to learn how to properly lean while turning. “The turns [then] get a little tighter—which requires them to lean a little bit further in. Then we get into the circles—which makes them lean even more so they’ll know, ‘Yes, I *can* turn that tight.’”

Then the students get a chance to practice their SIPDE, riding in a figure-eight pattern requiring them to watch out for, and avoid, other riders. “They’ve got to know they’re not the only ones out there riding.”

Once they’ve mastered the figure eight, they’re taught how to turn sharply in order to stay on winding trails. They’re also taught emergency maneuvers to help them avoid obstacles while they’re riding. “We go through the quick turns—which gives them the quick-turn response,” Partolan said. He added, “Then we’ve got the emergency stops and swerves.”

continued on next page





Partolan pointed out that goggles do a better job of protecting an ATV rider's eyes than a full-face shield.

Those, he explained, are designed to get riders to use BOTH brakes during emergency stops and rise slightly off their seat when turning quickly.

Because ATVs are often ridden on steep hills, Partolan showed the students how to safely ride uphill, make a U-turn, and then come back down. He also showed them how to ride along a hillside without tipping the ATV over. Once the students mastered the course's skills, it

was follow-the-leader as Partolan led them on a trail ride designed to put all of their skills together.

He explained that during his years as an instructor, most of his students have done well with the training. Some, however—particularly those who've been riding for awhile—bring bad habits with them.

"I've had experienced students come in and all they would use is the back brake," Partolan said. He explained many got into this habit out of a fear that using their front brakes could flip their ATV. That's a false perception, Partolan explained, one that often leads riders to sacrifice braking efficiency—possibly at a crucial moment. "Imagine you're going around a turn in the mountains. There's no guardrail, and there's a cliff on the other side. You panic and try to stop using [only] the back brakes and then begin sliding. The machine is going to go over the cliff with you if you don't jump off."

He added he often sees riders who use poor riding posture on their ATVs. "A lot of them like to lean back (sitting as far back on the seat as possible)," he said. He explained this puts the center of gravity too far back, increasing the chances the ATV will tip over backwards while riding uphill.

Training Goals

Partolan has a goal for the students' training, a place he wants them to be at the end of the day.

"I'd like to see them be at least at the beginner-intermediate level," he said. "That way they're confident in their riding, and when they leave, they know they can ride safely without injuring themselves."

Getting to that level is important because "this is a lot more dangerous than riding a motorcycle on the road," Partolan said. "Motorcyclists on a road can expect to



Throughout the training, Partolan gave the student opportunities to practice the skills he'd taught them.

meet other vehicles. However, when you're out in the middle of nowhere on an ATV and you're going around a turn, you really don't know what to expect. You can't anticipate like you can when you're riding on the street."

Training Saves Lives

The training, which began in 1989, has paid off in reduced accidents, according to Partolan. Citing statistics provided by the ATV Safety Institute, he pointed out that the Institute's rider safety programs and other industry efforts have helped reduce injuries by 42 percent during the past 9 years.

In addition to safety issues, Partolan pointed out the future of the sport depends on staying on the public's good side by being courteous and taking environmental issues into account when riding.

"You need to contact the proper authorities and find out where you can legally ride," he said. "Otherwise, if

you don't, you're going to jeopardize not only your riding privileges but everyone else's. If you go someplace and tear up the environment, it'll end up being closed off for riding. That's what happened at Glamis (an extensive set of sand dunes in California). Eighty percent of that area is now off limits to riding." ■

Editor's Note: Readers interested in attending training provided by the ATV Safety Institute can call 1-800-887-2887 for the location of a training course offered in their state.

Photos by Bob Van Elsberg

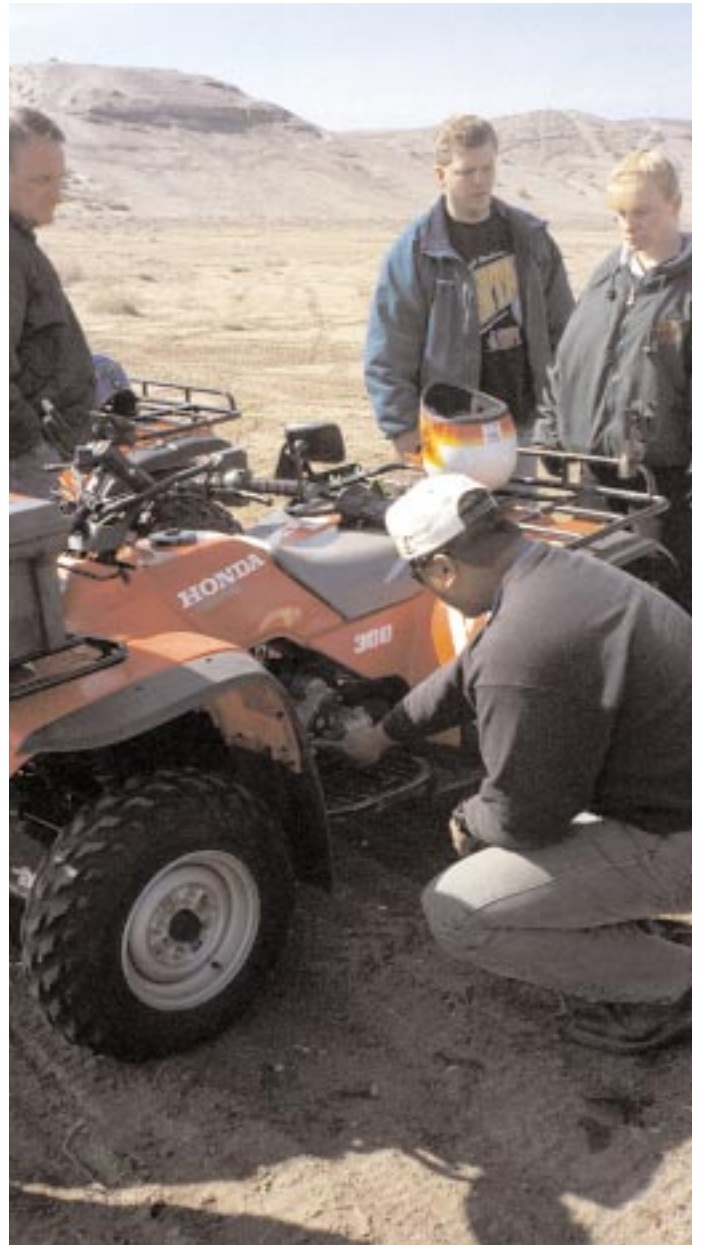
BUYING AN ATV

ATVs come in different sizes and power ranges and offer a variety of features. Some are four-wheel drive while others power only the rear wheels. Most come with four-stroke engines, which offer good low-speed torque and power, while others have two-stroke engines designed for high performance at high engine speeds. Trying before buying is the best method, Partolan suggested.

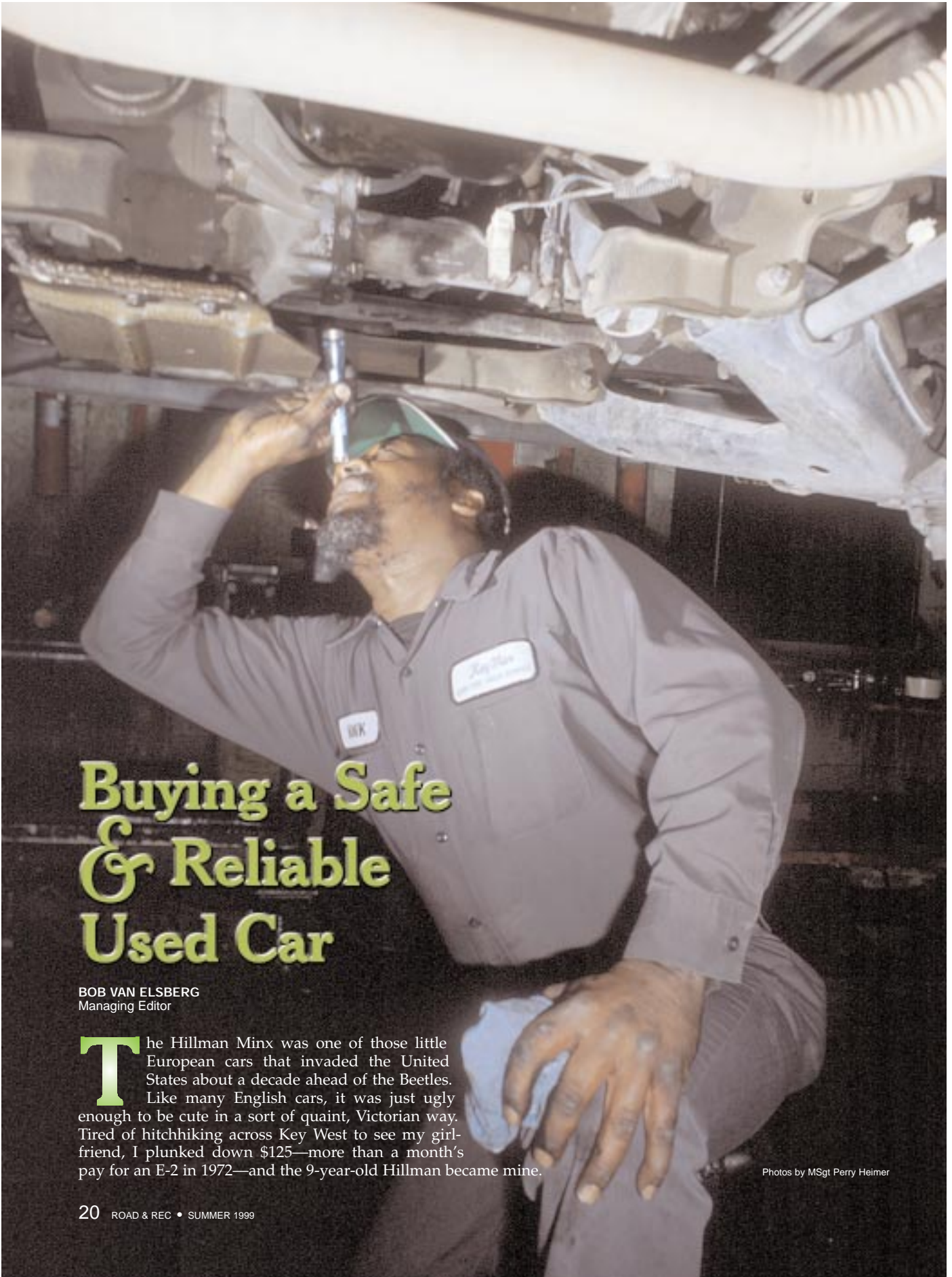
"Find friends or family members who have an ATV already," he said. "Try out their machines and figure out which one best fits your lifestyle." And for those who don't have friends or family members with ATVs, Partolan explained the safety class can be an opportunity to try before they buy. For the price of the class, they can train on a brand-new ATV. That experience can help them choose the ATV that's best for them. "I would say that's a small price to pay compared to paying from \$4,000 to \$6,000 on a machine and wind up making a mistake."

Parents looking to buy an ATV for their kids also need to look for certain characteristics. The ATV Safety Institute recommends the following ATV engine sizes according to the rider's age: under 70cc for children 6 years and older, 70-90cc for children 12 years and older, and over 90cc for children 16 years and older.

"They need proper size and fit," he said. "Not just that it fits the child physically, but mentally also. Some kids could be older, but still immature. They shouldn't be on a bigger machine—it's that simple." ■



Before the students began riding, Partolan pointed out the ATV's operating controls and described how they work.



Buying a Safe & Reliable Used Car

BOB VAN ELSBERG
Managing Editor

The Hillman Minx was one of those little European cars that invaded the United States about a decade ahead of the Beetles. Like many English cars, it was just ugly enough to be cute in a sort of quaint, Victorian way. Tired of hitchhiking across Key West to see my girlfriend, I plunked down \$125—more than a month's pay for an E-2 in 1972—and the 9-year-old Hillman became mine.

Photos by MSgt Perry Heimer

It was the perfect car for a young sailor spending a year on Key West. On a good day, the Hillman would just make it across the island before the radiator boiled over. Blessed with typical English gaskets, I never spent a dollar on an oil change. Each week I just added a quart to replace what had leaked out. The car did have its good points—I never got a speeding ticket. There wasn't a long enough road on the island to get the wheezy old Hillman much over 35 mph. It didn't take long for me to know I'd been had. The Minx soon became—my "Jinx."

With a poker face worthy of Bart Maverick, I convinced a buddy the Minx was just what he needed for commuting around the island. After paying \$40 against the \$75 selling price, he took the keys, jumped into the car, then headed out the main gate. The Minx was never seen on the base again. Maybe he exceeded the 7-mile cruising range, or the jinxes all conspired against him. As he was going down a road, the engine suddenly caught fire and the brakes gave out. At that point, the Hillman's modest top speed became a virtue. Executing a "zero altitude ejection," my buddy bailed out of his rolling "flaming marshmallow" with only a few scrapes. The car sputtered to the side of the road, stopped against the curb, then slowly disappeared under a pall of smoke. No one even called the fire department. Needless to say, I never got the rest of the money.

You Don't Have to Get Burned

As the story above points out, it is *literally* possible to get burned on a used car. However, even when the vehicle doesn't immediately go up in flames, you can easily be stuck with an unsafe, unreliable car. Individuals and unscrupulous used car dealers have rolled back odometers, put on cheap paint jobs to cover body rust and other problems, and even sold vehicles with bad brakes and other serious safety problems. However, buyers willing to spend the money to have a used car professionally inspected before purchasing can avoid being stuck with

these unsafe, unreliable "lemons," said Jerry Haag, service manager for Ray Mar Automotive in Albuquerque, New Mexico. It's a service, he pointed out, that far too few car buyers take advantage of.

"There's a market for it, but I don't think most people realize this is done," he explained. Most of Haag's customers who come in to have a used car inspected before buying do so because they know he offers the service and they want the *facts*. "They want an overall picture—'what's it going to cost me?' Most people realize when you buy a used car you're going to have to put some work into it. It's not so bad if you go in understanding this, but you also have to figure out, 'How much do I want to spend on top of the purchase price to make this car dependable?'"

Don't Just Buy on Looks

Unfortunately, most used car buyers are motivated by the car's appearance, Haag said. "The vehicle could be totally trashed underneath—it might not even last a day. But if it looks nice, many people will buy it."

Haag has seen the results of that mistake.

"I had a customer whose vehicle we'd worked on for years," he said. "The engine finally went out, and he decided to get another truck. He bought a '97 Ford and had it 6 days when the clutch went out. He'd spent all of his money on the down payment, and now he needed \$750 to replace the clutch. Why didn't he have the truck checked *before* he bought it? We could have found the problem. The hydraulic system for the clutch was leaking fluid. If he'd had that checked, he would have known up front that he had a problem. Now he was stuck with a vehicle he couldn't drive or repair. So he had to take out a loan to get it fixed—and he'd just gotten a loan to buy the truck."

Some of the used cars that have come in "looking good" have been downright dangerous to drive.

"I had one customer come in all the way from Santa Fe," Haag said.

We'd done several inspections for him on Ford Broncos because he was looking to buy one. One of the Broncos he brought in had a crack in the front of the frame (chassis) that was about to come apart. The Bronco had been very heavily abused, but the vehicle *looked* great. When I showed the problem to the man, he got ahold of the owners and had them come and pick it up. He wasn't about to drive it back to Santa Fe."

That inspection may have saved the man's life, Haag said. Had the man been driving the vehicle and the frame gave way, the Bronco would probably have veered out of control and rolled over. Had that occurred on the interstate returning to Santa Fe, the result would have been a horrible accident.

And that isn't the only horror story Haag has seen come rolling into his shop. One customer brought in a used car she'd bought 2 weeks earlier because the front brakes "sounded funny." The mechanic pulled one of the wheels and was amazed to find a brake pad had worn through the rotor disc and was grinding against the cooling fins in the middle (see photograph on page 24). Sooner or later the pad would have grabbed those fins and locked up that brake, according to Haag. "That would've yanked the steering wheel right out of her hands (and swerved the car) to the side the bad brake was on. If she'd been doing 45 or 50 mph—well, you can imagine what would've happened."

A Thorough Inspection

Having a used car professionally inspected is an involved process. The mechanics follow a detailed inspection form to locate mechanical problems the average car buyer wouldn't be aware of.

Haag explained, "One of your tattletales is the body. They (the mechanics) will walk around the body and look it over closely. If the vehicle has been given a cheap paint job to cover something up, you'll have overspray on your chrome and door jams."

A used car's problems can be a lot

continued on next page





During his under-the-hood checks, the mechanic tops off the brake fluid reservoir.

more than just skin (or sheet metal) deep. Once the mechanic has checked the car's outside and interior, he begins looking at the "guts"—searching for clues of structural and mechanical problems.

"They'll lift the hood to look at the cross members in the engine compartment," he said. "If the car has been in an accident, the cross members where the radiator supports are located will often be bent and crinkled."

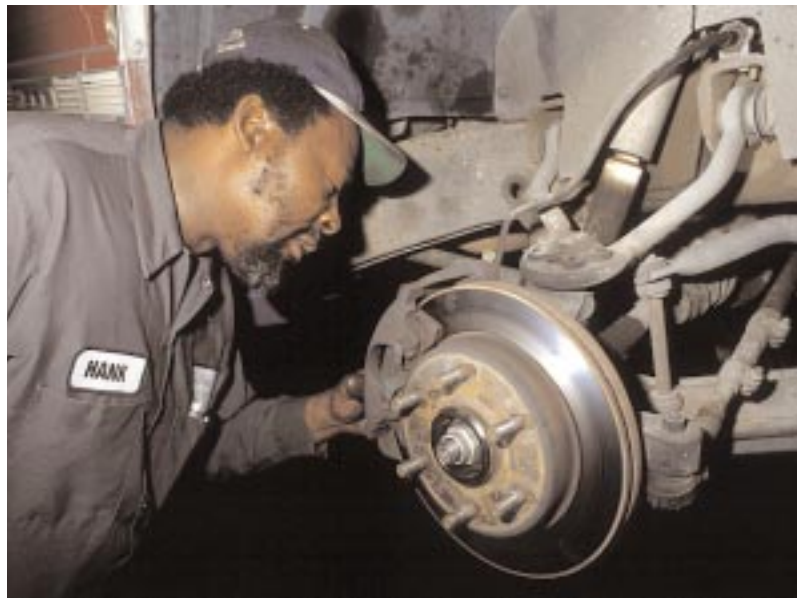
The mechanics look for more than just signs the car has been in an accident. They also look for wear on critical mechanical parts—especially in the vehicle's front end. This is particularly important because this is where the steering system's moving parts are located.

"They'll look at the tie rods, ball joints, steering gears—any parts that might be worn," Haag said. Finding excessive wear in these areas is a cause for concern, especially from the standpoint of safety. He described some of the problems that could occur.

"You can have 'road-walking,'" he said, explaining this is where the car

wanders from side to side in its lane and can be difficult to keep on the road. The culprit, he explained, is often a worn tie rod creating a lot of looseness in the steering. And the results can be MUCH worse than

just road-walking. "If a tie rod comes apart, your steering will just go either direction—depending on which side the tie rod is on. Most of the time, you'll have an accident because you no longer have control



The mechanic checks the amount of wear on a disc brake's pads.

over the steering.”

When the inspection is over, the customer receives a copy of the checklist and is given an explanation of each problem the mechanic has found.

Haag said, “The inspection form will tell you if something needs to be repaired or adjusted or if everything is okay. If something does need to be repaired, there will be an explanation on the bottom stating, for example, ‘front brakes are low,’ or ‘right axle seal is leaking.’ The form will go to the customer, and they will usually take it to the person selling the car. I’ve seen a lot of times where the seller has said, ‘Hey, I’ll fix this before you take it,’ or, ‘I’ll drop part of the price to help you repair it.’ If the seller is willing to work with you, then you know that he or she is pretty dependable.”

However, some sellers have something to hide—at your expense, Haag said.

“I’ve seen a lot of times when a customer wanted to bring a vehicle in to have it checked but the seller said, ‘No! You can do that AFTER you buy it.’ Well, if they’re afraid to have it checked out, they’re hiding something. I see a lot of that—especially from the small used car lots you see up and down the street.”

While no mechanic is perfect, Haag’s mechanics try to give the customer an accurate picture of the car’s mechanical condition.

“If we don’t feel the car is right, we’re going to tell you right up front,” he said. “We try to cover all the bases with our inspection. If we don’t feel comfortable with a vehicle, we’ll tell you why.”

Getting the “bad news” on a used car may be initially disappointing, but it can lead to a more satisfying choice later. Haag described one customer who brought in several used cars until he found one worth buying.

“He was looking for a vehicle for his son,” Haag said. “He’d come in, we’d do the inspection, then he’d look at the list and ask me, ‘What do you think about this car?’ I’d tell him, ‘Right now you’re going to spend \$1,000 to \$1,200 to put this car

continued on next page



The mechanic checks a vehicle’s drive shaft to ensure the universal joints are not worn out.

Red Flags to Watch For

There are warning signs even the inexperienced used car buyer can look for when buying a used car.

Look for oil underneath the vehicle—that’s the biggest red flag of all. Oil leaks indicate worn engine gaskets and may indicate other problems—ones you don’t want to have to pay to fix.

Some used car sellers may try to hide an oil leak by moving the vehicle just before you arrive to look at it. To avoid being taken advantage of, ask to take the car for a drive, then stop for a half hour or so along the way and park the car over clean pavement. Before leaving, look underneath to see if any oil or coolant has leaked onto the pavement. Also, if you’re buying from a private individual, look for oil spots on the driveway, the road in front of the house, and the garage floor. **IN ADDITION**, glance around the property to see if there is a piece of oil-stained cardboard. Putting cardboard under the car then removing it just before a prospective buyer arrives is an old trick used to hide oil or coolant leaks.

Ask the owner to let you see repair receipts. This will give you some idea if the vehicle has been regularly maintained. Also, check the odometer reading against the mileage listed on the receipts. Some sellers will either roll back the mileage on an odometer or replace it with one showing fewer miles than the car actually has (This once happened to the author.)

Also, stand behind the car and watch the tailpipe when the engine is first started. While steam is normal when an engine is started on a cold day, a big cloud of blue smoke isn’t. Smoke indicates the engine is burning oil, a clue the valves and/or rings may be badly worn. ■





Jerry Haag displays a disc brake rotor from a used car. The rotor is worn all the way through to the cooling fins. Haag has seen used cars offered for sale with disc brakes in the same condition.

into shape...Personally, I wouldn't feel comfortable taking a 17-year-old boy and putting him in the vehicle.

"This went on, and five or six vehicles later we finally found a Mazda 626. It was an '87, and about the only thing it needed was a brake job. He paid \$90 to repair the brakes, and I've seen the car on the road several times since then. He and his son have been perfectly happy with it. He has told me it was worth every bit of the money he spent having those used cars inspected."

Finding a Good Repair Shop

Finding a reliable auto shop to do a pre-purchase inspection on a used car or to repair currently owned vehicles can be challenging. To help consumers do this, Haag offered the following tips.

"The biggest thing you need to look at is the number of years someone has been in business," he said. "If they're not any good, they won't stay in business for long."

Haag also suggested looking for auto shops that work on government or commercial vehicles.

"If you walk into a shop and see government, fleet, and commercial vehicles, that's a real indicator," he said. "Those commercial accounts aren't going to just take their business anywhere. If the shop isn't any good, they won't be there. If you walk in and see government vehicles or police cars...you can feel a bit more comfortable with that shop."

It's also important, he explained, to pick a shop that can work on the kind of vehicle you're interested in buying. He explained that just because your regular mechanic has been doing a good job on your domestic car doesn't mean he can work on an import. "You need to ask yourself, 'Will this company be able to deal with my foreign car?'"

The bottom line is: With vehicles, reliability IS a safety issue. Haag explained, "I'm not going to put my wife and son inside a vehicle going down the highway at 70 to 75 miles per hour with bad tires, bad brakes, or other mechanical problems. There's just no logic to it." ■



BOB VAN ELSBERG
Managing Editor

I was driving to work one morning on New Mexico Highway 47 when an older model, cream-colored Volvo passed me on the left. Normally I wouldn't have paid much attention, but I noticed something was definitely wrong. As the driver went by at about 60 mph, I could see the right front tire was almost flat. The driver obviously didn't know he was driving a vehicle that could go out of control, perhaps with fatal results.

Recognizing the danger, I pulled in behind him, hoping we would stop at one of the signal light-controlled intersections before the on-ramp for Interstate 25. As luck would have it, one light was a stale red, and I had just unbuckled my seat belt and started to get out when he began to pull forward. The other light was green, so I just continued to follow, and, fortunately, he stayed on 47. Pulling alongside his car, I rolled down my window, honked, waved, and smiled so he'd know this wasn't a case of road rage, then pointed at his right front tire. Then I made a collapsing motion with my hands. It took a couple of times for him to get the idea, but it finally sank in.

As I saw him nod his head in acknowledgement, I thought back on all of the times I had seen other drivers in a similar predicament and had not been able to warn them. Many of them drove onto the freeway and, for all I know, may have been the accidents I heard about on the evening news. In fact, only a week before, I'd noticed one

of the new tires on my truck looked low, so I aired it up, then had it checked. As I thought about all of this, I wondered how often people had been involved in accidents—maybe even killed—because they didn't take a few seconds to look at their tires before driving off.

It's probably a habit not to worry much about our tires these days. Steel-belted radials are marvelous things. They last much longer than the old bias ply tires cars had when I began driving. Also, those steel belts make them a lot more resistant to road hazards. Still they are **NOT** bulletproof. Picking up a nail—something easy to do if you're driving around a lot of construction work, or hitting a deep pothole or sharp curb, can let air out of your tires—often without your being aware of it.

What can you do to protect yourself? Aside from making a brief visual check before you get into your car to drive, it's a good idea to buy a tire pressure gauge so you can check your tires and **KNOW** they are properly inflated. You probably needn't do this every day, but once a week wouldn't be a bad idea. A slow leak—just the loss of a couple of pounds of air pressure a day—might be hard to notice at first by a visual inspection. However, if you keep your tires properly inflated and check them frequently, chances are you'll catch the drop in tire pressure before it becomes a danger on the road.

What should you do if you find a leak? If you bought road hazard protection on your tires when they were new, your tire dealer will normally fix the leak at no cost. If you didn't buy road hazard protection, it still pays to shell out the bucks to have the tire properly fixed. Taking the cheap shortcut—using a can of tire sealer—may seal the hole. However, these tire repair products often use flammable gas as a propellant, and you could be putting a tire repairman at danger in the future.

Also, and I can say this from personal experience, there are some flats that cannot be properly or safely fixed. For instance, if a nail penetrates the tire at the junction between the tread and the sidewall, that tire cannot be repaired. A can of tire sealer might temporarily seal the hole, only to blow out later and perhaps cause an accident.

And there are other problems associated with using canned tire sealers, according to Bob Schmidt, owner of Gibson Goodyear in Albuquerque, New Mexico.

"Putting tire sealer in a tire can cause internal damage to the tire and wheel," he said. "For instance, it can corrode a steel wheel—which is what most cars have from the factory—and it can also damage the steel belts when it seeps between the plies of the tire."

He explained what can eventually happen.

"When people use a tire sealer and leave it in for a long time—maybe 6 months or longer—they'll often come in complaining of a vibration problem. What we find is that the tire plies have separated because of the tire sealer." He added, "A lot of people don't know that using a canned tire sealer will void the warranty on most major-brand tires."

Making sure your tires are in good condition may be a mundane chore, but it's worth it. After all, your life is riding on them. ■



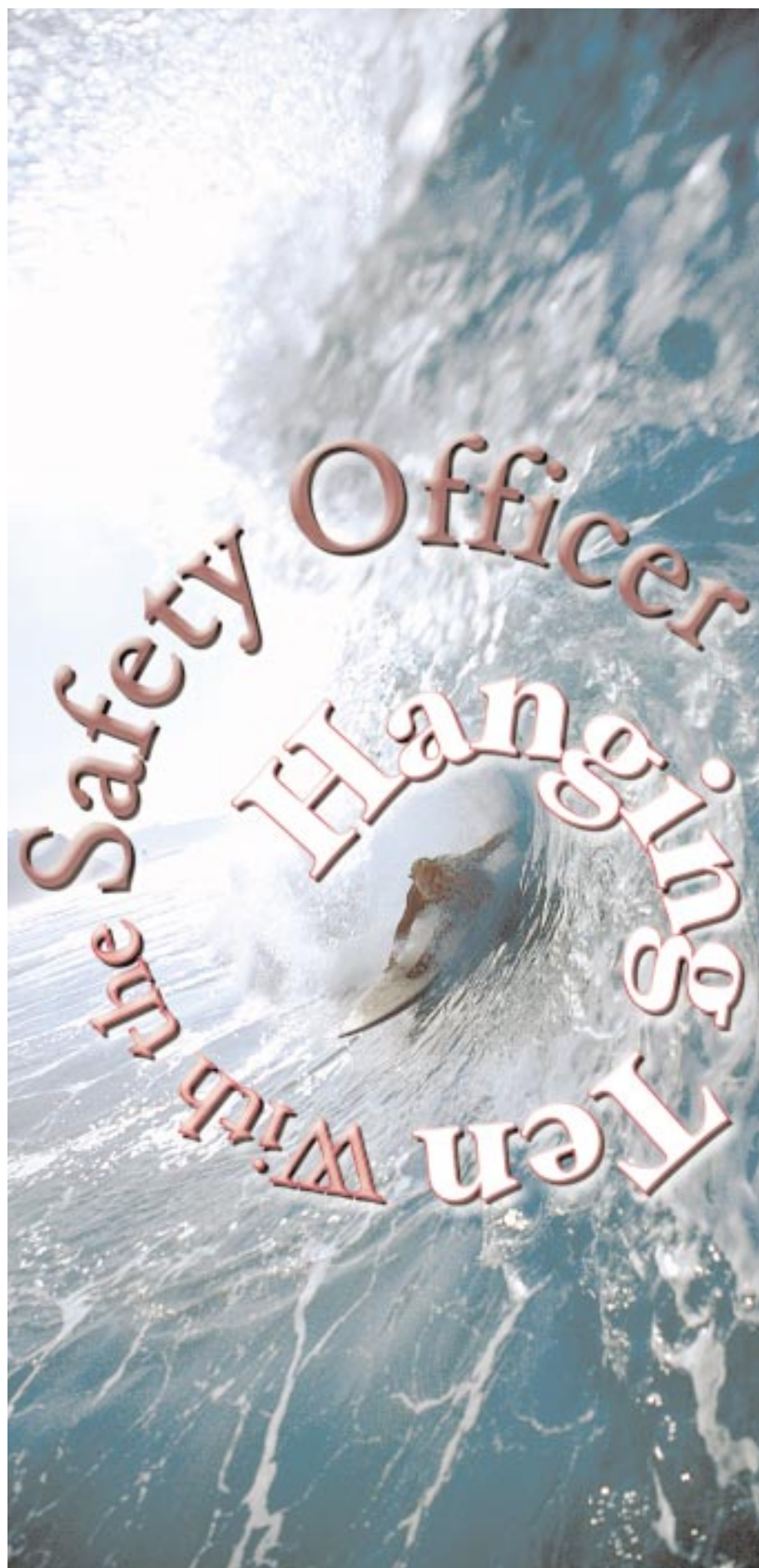
CDR J. N. LEWIS
Patrol Squadron One
Whidbey Island, Washington
Courtesy *The Combat Edge*

I recently read an article from a safety publication entitled, "How the Safety Officer Fell Off the Roof." I remember asking myself what kind of bungler would first pull a stunt like that and then compound the mistake by publishing it. Since then, I have reassessed what this brave soul did. In concert with my duty as squadron safety officer, I put away my pride and now offer up my blundering tale for your review...the working title of which is, "Don't Go Surfing in the Hurricane When the Waves Are the Size of City Blocks and Can Snap You in Two Like a Toothpick." I know the title is awkward, but it's very accurate. The surfing experience I'm about to tell you left a lasting impression upon me. In this particular case—speaking from the perspective of a unit safety officer—I exhort you to "do as I say and not as I do" (i.e., don't try "hanging ten with the safety officer").

I was on a good-deal detachment as Officer-in-Charge (OIC) from Naval Air Station (NAS) Cold-and-Dreary to NAS Warm-and-Sunny. Apart from the improvement in the weather, I had been looking forward to seeing some old friends from my first tour and maybe borrowing a surfboard and getting in a few sessions—flight schedule permitting. I was stationed in Hawaii, where, in my humble opinion, I mastered the long-board and sorely missed those days of daily surfing (always after normal work hours, of course).

A Harrowing Experience

One of my friends was able to hook me up with a nice 10-foot thruster. I took it out on a calm day, caught a few nice waves, and felt that old skill come back—you know, ready for anything. I stored the surfboard in my BOQ room, conveniently lo-



cated near the beach. Now all I needed was some tasty waves to pop up and I could be in the water in mere minutes.

Fortunately, some waves did pop up; or more accurately, rose to astronomical heights and pounded the beach unmercifully. A hurricane was forecast to come our way—a pretty rare occurrence for that area—and the storm surge was predicted to produce some excellent surfing. After work, I grabbed my board and hurried to the beach to check out the action. From the parking lot, I could see the surf breaking and a few riders already out in the lineup. COW-ABUNGA! There was one obstacle; a red flag was flying from the lifeguard stand. The beach was closed for swimming. But all hope was not lost. This time of year, the lifeguards were not on duty on the weekdays; so I reasoned it must have been left up from the previous weekend. Besides, the signs said, “Enter at Your Own Risk.”

My view from the parking lot was not as impressive as the view from the beach, but the waves still did not appear to be the epic size that all the radio surf reports had called for. The swell looked to be running about 4 feet, with the wave faces about 6 feet as I tried to paddle out.

My first clue that there was something wrong was the effort it was taking to paddle out to the lineup—I wasn’t making any progress. After getting blasted back to the beach three or four times, I decided to reevaluate my desire to surf. A couple of the local surf rats were waxing up and observing my belated progress (and, I’m sure, laughing with me; not at me). I couldn’t let them think I was a quitter, so I decided to make one more valiant attempt.

Back into the surf I went, and good timing was on my side. There was a momentary break in the swell, and I finally made it out into the lineup. I paddled about 50 yards offshore and turned my board around to take a look at the break and pick my wave. Odd, I thought; the swell is lifting me up high enough to see all the way into the parking lot. It wasn’t like this a couple of days ago!

After watching a few gargantuan waves pulverize the surf zone, reality set in. This surf was too big for me to handle. The smart play would be to head in and try it another day, maybe in a tropical storm next time instead of an actual hurricane. You know, start small and then work my way up.

Getting back in presented a new set of problems, however. Now I had to ride into the beach on the same waves I had judged too dangerous to drop in on. Simple, I thought. All I have to do is wait for the kind of lull that allowed me to paddle out, so I bided my time and looked for a break to paddle in on.

A small glitch developed in my plan, though. As the storm got closer to the coast, even the lulls were building up to some seriously large waves. After about an hour of biding my time, I was beginning to get cold. The sun was going down, and pretty soon I had to make a decision. I paddled in as close as I could to get a better look at the break—while still not getting pulled in—when suddenly the decision-making process became real simple. I got caught inside. The swell began to break, and I had no choice but to try and ride it in.

I would have looked real cool to the guys on shore if I had stood up, made the drop, and surfed the wave in. But survival was on my mind, and I thought the best tactic would be just to hold onto my board and hope the sound of the breaking surf would cover the sound of me screaming. I went over the falls going something near the speed of sound with my surfboard pointed straight down at the earth. Of course, this was a nonstandard surfing maneuver. In Hawaii, we used to refer to it as getting “pearled.”

The board was torn from my death grip, and I experienced the feeling of being trapped in a washing machine with a nasty penchant for dismembering its occupants. It was at this point that I rediscovered the flexibility I could achieve when exposed to thousands of pounds of hydraulic force. Imagine my astonishment when I found out that the

back of my head could actually touch my posterior!

Finally released from the ocean’s clutches, I stood up in the inside break covered with seaweed and sand. Fortunately, the leash on my board had stayed in place, which made the search for my trunks all that much easier. I gathered myself together as best I could, brushed off the larger pieces of seaweed, and bravely walked past the small crowd on the beach. Naturally, one of them had to say, “Nice ride, brah.” Not willing to let that remark pass, I asked when they were going out. Their response: “Are you nuts? We just came out to barbecue. That surf is too dangerous today.” I limped back to my car with the smug satisfaction that I had at least tried, even if it was one of the dumbest things I had ever done.

Safety Lesson Learned

There’s a moral to my story. Not carrying the safety ethic from work to your home—or recreation—has accounted for many injuries. Every time you take an old sport up again, there is the desire to start at the same level of skill you had at the end of the last season. Unfortunately, nature doesn’t support that.

I realize now that some value does come from near-death experiences. From this one, I learned (as trite as it sounds) that a person should never go surfing in a hurricane—or any large swell, for that matter—particularly if you are out of practice. I try to apply this lesson to other things I used to be good at but do not regularly practice anymore.

Since this experience, I learned not to try the double-diamond slope the first time off the lift. Guess how? I keep hoping wisdom will start coming with age and not from physically painful lessons that require the application of heating pads and aspirin.

On a more positive note, my wife saw this nerve-racking experience as an excellent opportunity to put my surfboard collection in our next garage sale. This year, I may not argue.

Hmmm, now where did I leave that mountain bike...■



Spiders, Friend, or Foe?



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Photos by SSGT Bryan E. Reynolds

Since seeing the movie *Arachnophobia*, do you get chills every time you see something moving along on eight legs? Do you find yourself either trying to escape so it can't bite you or looking for some way to squash the unwanted intruder?

If you do, you're like many people. The truth is, however, only a few spiders—the black widow, brown recluse, and the hobo spider—pose a danger to people. Even then, deaths from their bites are rare.

Black Widows

Among the dangerous spiders, the one most people are familiar with is the black widow. Typically found occupying its sturdy cobweb, when it's mature, it's a shiny black spider with a red- to orange-colored hour-glass mark on the abdomen. There might be some variation in the red mark, but the shiny, round, black body is unmistakable. In some areas of the country, they can be quite numerous. While photographing them in

prime areas, I have been able to find over 100 per hour during the right time of the year. For as common as they are, bites are very rare.

Black widows do, however, have very potent venom. In fact, black widow venom is **15 times stronger** than rattlesnake venom. Widow venom is a neurotoxin, so it affects the nerves of the body. A bite from a widow causes muscle spasms, cramping, nausea, sweating, breathing difficulty, and very rarely, death. Usually only the elderly, very young, or people with an existing medical condition are at risk of severe complications after a bite.

Medical Treatment

If you are bitten, go to an emergency room immediately. There is an antivenin available. If it's possible to bring along the spider, do so. Even if the spider is dead and a little squished, it can still be identified. This may aid hospital personnel. Also, there will be no doubt as to what bit you.

Black widows are extremely shy animals, and the slightest disturbance will normally send them hiding. If you happen to come across a black widow, just observe. Unless you violently disturb it, the spider won't even know you're there. If you find one that you must get rid of, a vacuum cleaner works just fine.

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Black Widow with egg case



Male Black Widow



Baby Black Widow nest



Black Widow

Who Are These Miniature Predators?

What exactly is a spider, and how do spiders live? Even though spiders and insects both have exoskeletons that act as a suit of armor and protect the soft inner organs, spiders are not insects. Rather, spiders are classified as arachnids. A spider's body has eight legs and two main body segments, the cephalothorax and abdomen. A spider's eyes are arranged on the front of the cephalothorax, which also contains the eight legs, a pair of pedipalps, and chelicerae (jaws). At the tip of the chelicerae are the fangs. Silk comes out of the spinnerets, which are attached to the end of the abdomen.

Silk is an amazing substance which spiders use for hunting, lining their homes, as a safety line to keep them from falling, and lining their egg cases. Some silk is stronger than steel thread of the same size, while other silk is elastic and can stretch to twice its original length before breaking. Most people are familiar with the wheel-like orb webs spiders use for ensnaring small flying insects. There are also funnel webs that look like a sheet with a hole at one end. The spider waits in the hole for food to come along. If an unsuspecting insect lands on the sheet, the spider will rush out and grab it. There are also tangled-looking webs that are called cobwebs. These webs are great at catching crawling insects, such as beetles and cockroaches.

Scientists have discovered 36,000 different species of spiders so far. It's estimated that is only about one-fourth of the total number. Spiders can be found everywhere—from deserts to tropical jungles, mountains to seashores, even high atop Mount Everest. Some spiders dig deep burrows while others string silken webs high in the trees. Even your yard, garden, and house have spiders. Scientists have calculated there are approximately 2.5 million spiders in an acre of undisturbed grassland! Most of these spiders are less than 1/2-inch long. The smallest spider in the world is the size of a printed period (.) on this page. The largest is almost a foot across!

All spiders are predators. They eat mostly other insects. However, some spiders are large enough to catch and eat small mice, snakes, lizards, and birds. Some spiders even eat other spiders. Once a spider has its victim, the spider will use its fangs to inject venom into it. The venom works quickly on insects and other small animals.

Spiders don't eat solid chunks of food. They can eat only liquid food. The spider does this by regurgitating digestive juices into the prey. The digestive juices break down the insides of the prey into soup, which the spider is able to eat.

Spiders are neat and interesting creatures that perform a very important function in nature. The more you know about spiders, the better you can avoid any that may be harmful. ■

The Brown Recluse ►

The brown recluse is another spider to avoid. This spider is very common in the central states such as Missouri, Oklahoma, and Arkansas. However, as its name implies, it is very reclusive. It's a small brown spider with a violin-shaped mark on the top of its front body segment. Hence, its other common name—the violin spider or fiddle back. In its range, these spiders can be common in homes. They usually like dark, undisturbed places like attics or storage areas. They usually don't build webs, preferring to wander in search of prey.

Brown recluse venom is not deadly. However, it does leave a nasty wound that can be severe enough to require skin grafts after the wound heals. Recluse venom is a hematoxin. It affects the tissues of the body. A person's response to a recluse bite may vary depending on their sensitivity to the venom. The result of a bite can range from a small bump, such as from a mosquito bite, to a large gaping wound that takes months to heal. Depending on the expert you talk to, there are at least 56 species of recluse spiders, 54 from North and South America.



Photo of Brown Recluse by David C. Lightfoot

The Hobo Spider

The hobo spider, also referred to as the **aggressive house spider**, is found primarily in the Pacific Northwest. Brown with gray markings, these spiders typically build funnel-shaped webs in dark, moist areas such as woodpiles, crawl spaces, or around the perimeters of homes. They're not noted for climbing and are uncommon above basements or ground level. The males,

which have stronger venom than the females, are most abundant during the summer and fall when they wander in search of females. The wound, like that of the brown recluse, can result in a large, open lesion that may require months to heal and leave a permanent scar.

According to the Centers for Disease Control (CDC), people who live where the hobo spider is found should take measures to protect themselves rather than try to eradicate the spiders. To protect themselves, people should wear



Funnelweb Spider with prey



Big hairy deal?

Despite their formidable appearance, the tarantulas found in North America pose little threat to people. However, Old World tarantulas, such as those found in Asia or Africa are much more aggressive and should be avoided.

gloves and other clothing that covers the skin when working in crawl spaces or similar locations and when retrieving firewood or other items from areas likely to be infested with these spiders. In addition, screens on basement and ground floor windows and insulation strips under doors will reduce the likelihood of these spiders entering the home.

Individuals bitten by this spider generally experience the following symptoms: A small, red area typically appears within 30 minutes surrounded by an expanding red welt. Blisters typically form within 15 to 35 hours, which eventually crust over the cratered wound. A scab can develop over the dying tissue that will eventually slough off. In some cases, the tissue loss is so severe that surgical removal of the tissue and reconstructive surgery may be necessary. The wounds may take several months to heal and often leave a permanent scar. Because of the severity of these symptoms, individuals who believe they've been bitten by a hobo spider should seek medical help as soon as possible.

Tarantulas—Scary But Not Dangerous

Even though tarantulas look very formidable, they are fairly harmless. In fact, the tarantulas found in the Southwest are very docile. Just like any animal, if they are provoked they will protect themselves. Unless you have a particular allergy to the venom, tarantula bites are no worse than a beesting. The worst part of the bite is that the fangs may cause a secondary staph infection in the puncture wounds. North American tarantulas do have a defensive tactic they use more often than biting.

They have microscopic barbed hairs on their abdomen, which they flick off with their hind legs. These hairs may cause a rash on sensitive people.

No matter how much bug spray a person uses, they will never eradicate all of the spiders. In fact, the sprays alone are far more harmful than the spiders they kill. The best way to avoid a bite is to keep things picked up. Woodpiles, borders made of railroad ties, and weeds that have overgrown around your house will all attract widows. Piles of clothing, old boxes, and furniture in the attic will attract recluses.

When moving these things, wear gloves, lift them up, and look underneath them before you grab. If you leave shoes out on the patio overnight, shake them out before sticking your feet in them. Common sense will go a long way in avoiding a bite from a dangerous spider.

Despite the sinister reputation of these spiders, they are like all other spiders, still our ally. For as common as spiders are, their bites are rare, and they eat hordes of harmful insects. If you take the time to watch spiders build their beautiful webs or hunt down their prey, you might begin to appreciate and not fear these amazing eight-legged animals. ■

Editor's Note: SSgt Reynolds has been a member of the American Arachnological Society for the past 7 years. An avid wildlife photographer with a particular interest in insects and spiders, his photographs and articles have been published in regional and international magazines and journals.

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