Let’s say it’s 1934 and you’re a shiny new Army Air Corps lieutenant who’s terribly proud of his equally shiny new Boeing P-26, the hottest new fighter the government has to offer. According to the test pilot who checked you out, this, the first all-metal fighter and the first monoplane fighter in AAC service, will hit an unbelievable 234 mph flat out. Then you’re cruising along and you look over and there’s a tiny, obviously civilian, airplane sitting off your right wing, matching your speed. So you edge the throttle up. You’ll show him! But he’s still stuck to your wingtip. So the throttle goes up more. Then more, until it’s against the stop and this civilian dart of an airplane is still out there, its pilot grinning over at you. Just when you realize your airplane has given all it can give, the other pilot waves at you, switches his attention ahead as he moves his own throttle forward and, in seconds, he’s a rapidly disappearing speck in the distance. He had an easy 50 mph on you, and you can feel your ego shrinking at the same rate he is disappearing.

To put the above in a modern context for comparison: you’re cruising
along in your F-15 Eagle, and a home-built civilian airplane comes up alongside, matches your best speed (after you've gone into burner), then effortlessly disappears in the distance. To do that, he'd have to be doing something on the high side of Mach 3.0, or faster than a 30-06 rifle bullet. If you put that into historical context, that's what the golden age of racers represented in their time. Here were a bunch of homebuilders chalking out airplanes on their hangar floors that could eat the lunch of anything the military could put in the air by a wide margin. During a golden decade that began in the late '20s and ran until the late '30s, the military was consistently playing second fiddle to backyard speed demons.

The golden age racers that flew the various competitions (Thompson, Bendix, Greve, etc.) were almost always designed and constructed by self-taught engineers who knew the basics of speed: Keep it small, keep it light, and stuff as much horsepower as you can fit ahead of the firewall. It was an exciting time during which glory and death were separated by nanoseconds and race pilots became national heroes. Today, those who understand what that period represented are driven to replicate the airplanes,
Tom Wathen: Aviation Enthusiast Extraordinaire

If you want to have a fun experience, sit down at a picnic table at Oshkosh with Tom Wathen and start talking airplanes. You don’t have to know anything about him to quickly realize that this is a gentleman who takes airplanes (though not necessarily himself) seriously. Self-effacing is the term usually used to describe him, but it’s a description that includes liberal sprinklings of humor and raw enthusiasm.

Yes, Wathen is wealthy. However, to say that is to trivialize not only how he got that way, but to ignore that he was an aviation nut long before he had the money to indulge his passion at the level he does today.

Tom made his mark on business by paying attention to the basics: He recognized a need (security services) and came up with a way to provide it at a profit. That’s marketing 101. But it doesn’t work if you don’t throw yourself into it, and Tom did just that in 1988, heading one of the largest security entities on Earth. Does the name Pinkerton mean anything to you?

Long before his career climb began, Wathen owned, and was into, airplanes. Airplanes of all sorts. Immediately after getting out of the Air Force in the early ’50s, for instance, he bought an Aeronca L-3 and partially restored it. Then there was a long line of “normal” airplanes from 182 RGs to cabin-class twins, but there were always the “interesting” airplanes.

He hung out at Flabob airport, which means he had no choice but to fall under the spell of one of aviation’s most interesting characters, the late Bill Turner. Turner was cranking out replica racers as fast as he could find sponsors, and Tom Wathen became involved in backing some of the most ambitious replication projects in history, including the twin-engine de Havilland Comet and the hulking, otherworldly Turner-Laird (this Turner was Roscoe, not Bill) Meteor. Beyond the recently completed Firecracker project, Wathen and his team of enthusiastic aeronuts are working on a Caudron 460, and he’s eyeing the Folkerts series of racers.

One of Wathen’s more noteworthy achievements and one that is going to prove to be of long-lasting benefit to aviation is the saving of what should be recognized a need (security services) and came up with a way to provide it at a profit. That’s marketing 101. But it doesn’t work if you don’t throw yourself into it, and Tom did just that in 1988, heading one of the largest security entities on Earth. Does the name Pinkerton mean anything to you?

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Wathen’s achievements and contributions to aviation are too long to list almost anywhere, much less here, but among them is the restoration and donation of the Piper PT trainer in the EAA AirVenture Museum. An EAA member since 1959 (he has a four-digit number), he has served on the President’s Council for years and is a central character in EAA fund raising for the museum and other projects.

Wathen’s aviation background runs wide and deep, and if you see him hanging around Flabob, Oshkosh, or any of the other fly-ins he attends, try to stay within earshot. You’ll be eavesdropping on conversations we can guarantee you’ll find both interesting and illuminating. partially to honor those high-speed pioneers but also to taste just a little of the adrenaline themselves. One of these is Tom Wathen, who has captained (from the wings, so to speak) a loosely knit team of what many would consider “eccentric” (it sounds better than “nut case”) pilots and builders who included the likes of the late Bill Turner and Ed Marquardt, both legendary builders, as well as many others. From that small group of hyperenthusiasts, most of whom were based out of SoCal’s Flabob Airport in Riverside, a steady stream of golden age replicas have taken to the sky to delight audiences and often as not to terrify pilots—though in a good way. The most recent of the breed is the Rackleff/Halloran/McCombs/Wathen (we’ll explain all of that in a second) reproduction of the Schoenfeldt Firecracker, one of the best-known and most successful rocket ships of its day.

The Firecracker was originally the Keith Rider R-4 but was bought by Bill Schoenfeldt, a wealthy sportsman, shortly after it was built in 1936. He immediately had the original Menasco Buccaneer six-cylinder (489 cubic inches) replaced by a supercharged version, the 545-cubic-inch Super Buccaneer, which cranked out as much as 350 hp when tweaked by the racers. This was 350 hp on a tiny 900-pound, retractable-gear airframe the size of a Pitts Special (18-foot span) with the drag of a knitting needle.

The airplane consistently took home gold with lap speeds above 250 mph and straightaway dashes reportedly over 300 mph. It took a special kind of pilot to fly these kinds of airplanes, because there was nothing comparable in the civilian inventory to prepare them for what they were about to fly. Take the most successful of the Firecracker pilots, a young man named Tony LeVier. LeVier was a low-time pilot typical of the period: He had flown nothing but lightly loaded general aviation airplanes and the occasional cabin biplane. To him, 130 mph was lightning fast. Then there he was, squeezed into a tiny cockpit with 350 hp up front and handling characteristics that have often been
described as “evil,” coupled with 100 mph over-the-fence speeds and zero visibility. He flew it exactly once before he started running the pylons in it and won two of the first three races. Only a few years later he was to become the legendary Lockheed test pilot we all know so well, but the first time he took to the air in the Firecracker he was, like most race pilots of the time, inexperienced to a truly frightening degree.

Now flash ahead to the 1970s. Golden Age racing fever had infected a small but enthusiastic group of builders. Flabob Airport was seeing a wide range of golden age racer replicas popping out of the hangars, notably those of Ed Marquardt and Bill Turner. Bill was first to replicate a golden age hot rod with his Brown Miss Los Angeles racer and the building race was literally on, as old-timey, go-fast machines, big and little, took to the skies. It was impossible to be on that airport and not catch just a little of the fever yourself, and Stan Rackleff, a retired member of EAA Chapter One, located on Flabob, proved he wasn’t immune to the virus: He took up the challenge and put the Shoenfeldt Firecracker in his sights.

When building a famous airplane for which no plans exist, the first and most necessary part of the project is research. You can’t just wing it and do a sort-of-looks-like airplane, because everyone knows exactly what it’s supposed to look like and you’ll catch an enormous amount of grief if it isn’t right or very close to it. Rackleff spent several years unearthing every bit of photographic and written data he could find on the airplane. Luckily, because of their position in the public spotlight, many of the racers were photographed regularly both at races and while being rebuilt after crashes and races. It’s from studying details in the photos that Rackleff figured out how the knock-kneed landing gear worked, as well as many other construction details. Unfortunately, Stan Rackleff passed away midway through airframe construc-
tion, so he never got to see the completed project.

The airplane sat derelict in one of Flabob’s less frequented hangars until Tom Wathen, Flabob’s savior (literally: see sidebar), saw the pieces and recognized it as an airplane that should be finished. Wathen had been the money and much of the spirit behind a number of Bill Turner’s more ambitious racer reproductions, including the de Havilland Comet and the Turner-Laird Special—both monstrous projects—so he was no stranger to reproducing racers. By comparison, the tiny Firecracker looked almost like a weekend project, something he laughs about today because it took nearly 10 years to finish. But he didn’t know that’s what it would take and neither did his friend and Comet demonstration pilot Air Force Maj. Gen. Pat Halloran, a retired fighter pilot (100 missions in Korea, 600 hours of SR-71 time), when Wathen asked him to take over the responsibility of getting the Firecracker finished.

Halloran says, “In 1998, I arranged to haul two big loads of Firecracker pieces along with at least three old, partially complete Ranger engines to my place on Meadow Lake Airport in Colorado Springs.”

The Rangers were along for the ride because they were to substitute for the Super Buccaneer that is now one of the world’s rarest engines, with only a few extant even in museums. The Ranger was only 200 hp, but would do the job, since it is nearly the same weight and outline, although it would require minor reshaping of the nose profile. This is always the case when substituting Rangers for Menascos, because the top of the crankcase on a Menasco is extraordinarily shallow and many racers minimized their frontal area by forming the cowl-
A crowd of AirVenture admirers milled around this meticulously crafted replica of the Firecracker, asking questions of Thomas W. Wathen, entrepreneur, former Air Force officer, private pilot, and owner of historic Flabob Airport near Riverside, California. Accompanying Wathen was retired Air Force Maj. Gen. Patrick J. Halloran, primary pilot of the Firecracker with more than 60 hours. According to Maj. Gen. Halloran, “That’s probably more time than anyone else.” He’s also logged more than 600 hours in the SR-71.

I wanted to get closer and take some photos, but the curious people surrounding this gem made it impossible. Eventually I got my chance for a close inspection.

What a beauty! That long nose contains an inverted 440-cubic-inch, six-cylinder Ranger “that runs like a sewing machine and looks like a crown jewel,” says Halloran. The tail end is just the opposite—tiny and with very little rudder. The cockpit is snug. I thought I could fit nicely.

The Firecracker is a 1930s replica, but well-appointed to navigate in today’s airspace. One thing that made me curious was a small 4-by-6-inch video screen in the center of the glare shield obstructing any forward vision, if there is any. Halloran explained that, no, it wasn’t a GPS or weather radar, but a video monitor connected to a tiny “lipstick” camera in a fairing under the nose to provide better forward vision. What a neat gadget, I thought, without considering the significance of this safety feature.

The fact is, most taildraggers, especially the long-nosed racers, suffer greatly from a lack of forward visibility. The Firecracker, completed at Meadow Lake Airport in Colorado Springs, Colorado, is no exception. The runway at Meadow Lake is only 60 feet wide and the runway is only 50 feet across at Firecracker’s home field, historic Flabob.

“‘They didn’t design planes in the 1930s like they do now, and this pony wanted to do lots of things in the air I wasn’t agreeing with,” Halloran said. “Just keeping the pointy end forward was a full-time task, and keeping the ball in the middle? Forget it.”

Firecracker can’t be slipped and visibility on takeoffs and landings is nonexistent. “You never see a landing area from the cockpit until the plane is just inches from the ground,” he adds.

Gen. Halloran first saw a camera system installed in James L. Wright’s Howard Hughes H-1 reproduction at AirVenture 2004. Wright thought it was useless, but only because it wasn’t installed to give him a proper field of vision. Firecracker’s system was installed at Flabob Airport by mechanic Mike McCue. The components were acquired at a local electronics warehouse for less than $400. The $170 weatherproof CCD security camera was available in various focal lengths, and they found one to meet their vision requirements. The LCD monitor is full-color and bright enough to see in all but direct sunlight. The 12-volt system, connected to the primary battery, could be powered by a lighter type connection.

Now on final there really is a runway and a centerline. When taxiing, the need for S-turns is eliminated. The system doesn’t replace normal visual indications but greatly enhances your situational awareness, “Very comforting,” remarks Gen. Halloran.

Another example of a camera installation is in Jon and Patricia Sharp’s Nemesis NXT of Nemesis Air Racing Inc. The airplane (certainly not vintage) has a forward vision system installed on the landing gear that, when retracted, fits snugly in the engine cowling. Pat says the moment the gear drops, the world appears in the monitor but speeds by so fast, they turn the system on only for taxiing. The Sharps refer to it as their “taxi camera.” Where did they acquire their system? It’s a system for backing up, sold by an RV supply company. Most RV systems seem to range from less than $500 to several thousand dollars. Wireless backup systems are available for as little $130 at local auto supply stores, but have small viewing screens (2.5 inches) and may severely limit your field of vision.

Gen. Halloran believes Wathen’s 1934 twin-engine British de Havilland Comet and the Roscoe Turner’s 1939 brute force Meteor are both likely candidates in the future for similar systems. In an unforeseen emergency, your forward vision of a highway, grass strip, runway, or FOD on the taxiway may be greatly enhanced by this simple technology.
ing to hug the engine’s outline. The Ranger’s crankcase is deeper and forces the slightly modified lines.

When seeking someone to build the airplane, Halloran found two sets of talented hands right on his own airport.

“I persuaded the father-and-son team of Bruce and Evan McCombs to take on the project. It was slow work, as some partially completed structures had to be redone to meet the high standards of the McCombs.

“The engine components were meticulously inspected and refurbished as needed. When finished, the engine was beautiful and ran like a sewing machine. Since major airframe construction had yet to be done, along with more historical research, progress was slow, because the McCombs had to fit the project around their normal heavy business of aircraft maintenance and repair.

“Finally, the big day arrived when it was rolled out the hangar door in preparation for its first flight. For nearly eight years, I’d been like an expectant father watching this project come to fruition. I’d been dreaming of making this first flight, but it was not to be.

“A few days before it was to happen, I had a pain in my chest followed by a very inconvenient heart bypass. So a good friend of mine, Les Tugaw, did the first flights while I sucked on oxygen and watched. Bummer!”

In short order, Pat Halloran got his own airframe straightened out, including jumping through the FAA’s required hoops to get his medical back, and he was ready to start flying the airplane.

“In the first place,” he says, “they didn’t design planes in the 1930s, especially the racers, like they do now, and this pony wanted to do lots of things in the air that I wasn’t agreeing with. Just keeping the pointy end forward is a full-time task, and keeping the ball in the middle? Forget it!

“Even making the left turn onto base or final takes a little RIGHT rudder to be coordinated. That’s an uncomfortable control input. The reason? They didn’t bother to design a respectable-sized tail for conventional flying, as the racing crowd is only concerned with ‘go fast, turn left.’ Less stability margin means more speed (to a point) and more agility around the pylons. It’s a real handful to fly, but a very satisfying challenge.

“Visibility from the cockpit,” Halloran says, “is nonexistent, so takeoff and landing give about as much excitement as a man cares to enjoy. The runway at Meadow Lake is only 60 feet wide, and you never see a landing area from the cockpit until the airplane is just inches above the ground. You just hope that ground is covered with asphalt. Knowing that the runway back at historical Flabob, where I was to eventually land, was only 50 feet wide meant I procrastinated on making such a delivery.

“I eventually built my time to 60 hours and finally hit upon a solution:
I installed a tiny 'lipstick' video camera in a fairing under the nose and a small 4-by-6-inch video screen on the glare shield in front of me. Eureka! There was a runway out there! It was great for taxiing, but on final approach was where it really paid off. The comfort factor went way up. Now I thought I was ready for that 50-footer at Flabob."

Gen. Halloran missed ferrying the airplane to Oshkosh because of some medical tests, so famed race pilot Skip Holm was called on to make the flight. (The general did get to fly the Firecracker for the photos you see on these pages.) The airplane created a minor sensation out in front of the Red Barn in the Vintage area. More than one pilot was seen to visibly shudder when looking at those tiny, highly tapered wings and that long, brutish nose that rose higher than the windsreen.

In perusing the airplane at Oshkosh, it didn’t take a historian to know that pilots who stepped out of wallowing biplanes directly into the likes of the Rider R-4 Schoenfeldt Firecracker were a special breed. And many didn’t survive. Those who did, however, helped bring the technology of speed to more purposeful aircraft during the war that ended the golden age of air racing. Team Wathen’s (our term, not his) reproduction of the Firecracker serves to remind us of a generation of men who were unafraid to “ . . . go where no man had gone before,” and, in so doing bring back knowledge that benefited us all.