



Caption 1

RARE BEAR

The wrecked F8F-2 Bearcat that became Air Racing's winningest Unlimited racer

BY JAN TEGLER

One hundred feet above the Mojave Desert, Lyle Shelton fought to control his famed F8F-2 Bearcat. "The Spirit of '77," as the racer was known at the time, was on a qualifying lap, rounding the 8.5-mile racecourse at close to 420 mph.

Mac McClain, flying the Rolls-Royce Griffon-powered "Red Baron" RB-51, had already qualified ahead of the rest of the field for the 1976 California National Air Races at over 418 mph. But Lyle wanted the top spot.

An oil line not suitable for the modified 3,200-horsepower Wright 3350 radial roaring in front of Shelton had been installed in a thrash to get the Bearcat ready. Suddenly it ruptured and the big engine seized.



Caption 2

Already a two-time national champion in air racing's Unlimited class with thousands of hours as a U.S. Navy pilot flying AD-6 Skyraiders, A-4 Skyhawks, and T-38s on exchange with the U.S. Air Force, Shelton knew what to do. He hauled back on the stick and zoomed up off the course, trading airspeed for altitude. "'77's a mayday!," he said on the air race frequency.

Maydays and deadsticks in the one-of-a-kind racer weren't new to Lyle. In 1970, his second year of racing the Bear, his 3350 developed a serious case of the hiccups when too much nitromethane was added to the plane's water injection/anti-detonation system, causing it to quit running for several two to three-second intervals then smoke badly. Shelton maydayed and landed hot, blowing two tires. Speeding toward the end of the runway, he had to ground loop the airplane in the overrun to save himself and

Caption 3



the racer.

Six years later it was happening again. He set up to land on Mojave Airport's runway 12-30, descending steeply to make the runway and leaving his gear up to preserve airspeed being bled away by the enormous 13-foot, six-inch AeroProducts Skyraider propeller milling in front of him.

Thousands of air race fans watched as Lyle dropped down to the runway and flared sharply. The gear refused to come down and he pitched the nose up abruptly to try shake the mains loose, but it was too late. The Spirit of '77 slid down the runway on a sheet of flame ignited by the oil all over its fuselage and the friction from two blades of the big prop gouging the runway.

"I had already said 'Aw sh*t,' and from that point on I just enjoyed the ride," Lyle remembered in his slight Texas drawl. Never has there been a fiercer competitor or cooler race pilot under fire than Shelton.

Miraculously, the propeller had stopped in a natural "X" configuration and the tailwheel had extended. The racer rode on its prop, tailwheel and pocket gear doors and was only slightly damaged. It was out of action for the next three years. But it wasn't the final chapter for air racing's winningest Unlimited, just a pause in the story that began in 1962 ... before "Rare Bear."

A Bearcat? Not interested ...

Lyle Shelton stood on the ramp at the "Stead Facility," the brand-new home of the Reno National Championship Air Races, on a sunny September afternoon during the 1966 event chatting with the founder of Gulfstream Aerospace, Allen Paulson. The

two aviation legends pondered the right combination of aircraft and powerplant to win consistently in air racing's top category, the Unlimited class.

"Al says, 'You know what I'd do Lyle? I think the airplane to win these races up here is a Bearcat with a 3350,'" Lyle remembered in a 1982 interview with my father, air race historian John Tegler.

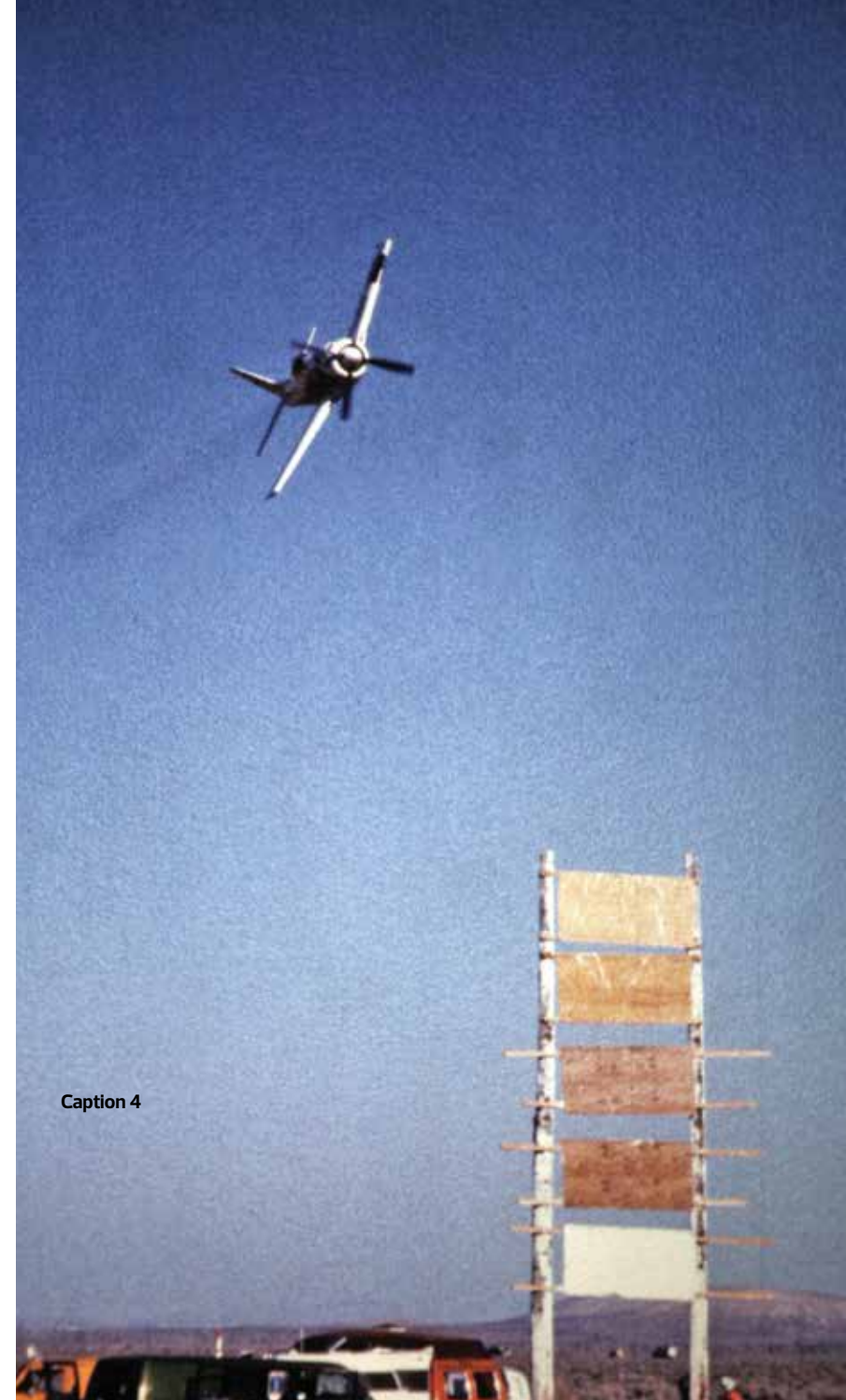
"He just tossed that out," Lyle added. "And I said, 'Gee Al, I've flown that 3350 a lot. I don't think it'll take the punishment.' I had my doubts about the reliability of the engine and plus, the airplane looked a little fat to me by sight."

Lyle's initial skepticism about an airframe and engine combination that would take him to 10 overall wins at races from Florida to California and New Jersey; make him a six-time winner at Reno, propel him to the world 3,000-meter time-to-climb record with a time of 91.9 seconds; and push the world piston-engine, propeller-driven speed record to 528.329 mph is ironic.

But Shelton was intimate with the 3350, having flown Skyraiders equipped with the engine from aircraft carriers for hundreds of hours. He'd already competed in Unlimited races in 1965 and 1966, borrowing a P-51D known as "Tonapah Miss" and a Sea Fury called "Signal Truck Special" that he flew for another owner and raced to a second-place finish in the Consolation race at Reno the day before chatting with Paulson.

"At that time, I had my eyeballs peeled for a P-51, and I was going to put a Griffon engine in it. I'd heard about the Griffon. I thought that was the way to go."

That combination—a Griffon powered



Caption 4



Caption 5

“RB-51” – became Lyle’s competition in 1975. But fate intervened 13 years earlier in northwest Indiana, setting the stage for the creation of the world’s fastest, most famous Bearcat.

The Valparaiso cartwheel

Richard Finnell had a job to do in August 1962. Ensnared in a tight cockpit behind an 18-cylinder Pratt & Whitney R-2800, he was ferrying an F8F-2 registered as N1031B from Georgia to Beloit, Wisconsin on the 21st day of the month.

Accepted into Navy service in 1948, this Bearcat had flown on active duty with squadrons VF-91 and VF-34 between 1948 and 1950. By 1952, the airplane was a Naval Reserve bird, first in VF-742, then as part of the Naval Air Reserve Training Unit at Birmingham, Alabama. Between 1953 and 1956, it was stored at a variety of Navy bases and struck from the USN with 667 hours total in 1957.

Its whereabouts for the five-year period leading to 1962 aren’t clear. But Finnell was taking the Bear to a new owner, William O’Neil of Lake Geneva, Wisconsin.

Porter County Airport in Valparaiso, Indiana was one of at least two stops for fuel Finnell had to make to get to Beloit on that August Tuesday. According to the northwest Indiana town’s “Valparaiso Vidette-Messenger” newspaper, bystanders watching his approach to Porter County saw the aircraft stall “about five feet above the west end” of the airport’s east-west runway where it “dropped to the surface.”

Finnell was an experienced commercial pilot but didn’t have much time in warbirds, and it’s thought that this ferry was his first Bearcat flight. He reportedly told investigators the airplane had a hydraulic system failure. But Guy Campolattara, a Valparaiso native who was a child at the time of the accident, remembers pilots at Porter County speculating that Finnell had “forgotten to lock the tailwheel and lost control of the airplane.”

The blunt-nosed Navy fighter stayed on the runway for approximately 200 feet, then careened alongside it for 1,550 feet, according to the newspaper. It then spun around violently and cartwheeled wingtip-to-wingtip, ending up upside-down. Porter County’s airport manager and several others rushed to the aircraft with shovels to dig a hole deep enough to extricate Finnell from the cockpit. He emerged with just a bruised shoulder, but the Bearcat was a write-off.

“Too Far Gone”

Three years after Mr. O’Neil’s newly-acquired, but never-delivered, F8F-2 turned turtle at Porter County Airport, Shelton was chatting with fellow Navy pilot and Bearcat racer Walt Olrich at the 1965 Los Angeles National Air Races at Fox Field.

“Walt showed me pictures of this Bearcat that I later picked up,” Lyle said. “It was sitting in that backyard after it had been wrecked. He said, ‘Why don’t you get this airplane?’”

Shelton had met Olrich the year before at the Reno Races and was racing “Tonopah Miss” at Fox Field. The

two formed a sort of Unlimited class team, sponsored by the town of Tonopah, Nevada and went to Sky Ranch (where the Reno races were then held) with the Mustang and the Bearcat Olrich was flying called “Tonopah Queen.”

Olrich’s F8F-2 finished fifth, just ahead of “Tonopah Miss” in the championship race. But Lyle wasn’t interested in a Bearcat, particularly N1031B. “I thought, ‘Well it’s too far gone.’”

By 1968, Shelton hadn’t been able to find a P-51 he could afford and had all but given up on the idea of racing in the immediate future. “Finally I decided, I won’t get a racer,” Lyle remembered. “I’ll just get an airplane I can maybe work up an aerobatic routine with. I was looking for maybe a Hellcat or a Wildcat or something.”

Warbird collector, aircraft dealer, and fellow air racer Mike Coutches had an F6F Hellcat for sale in early 1968 that Shelton had his eyes on. He went to Coutches’ dealership in Hayward, California to take a look at the Hellcat.

“Boy it was just rotten with corrosion,” Lyle said. “I got talking to Mike and told him, ‘it’s too eaten up.’ Mike said, ‘I’ve got a Bearcat back in Indiana.’ I said, ‘Yeah, I know about that.’ Mike said, ‘Why don’t you take that thing and make a racer out of that?’”

Shelton asked Coutches to give him a couple days to think about it. He called Coutches a few days later and said, “OK Mike. I’ll give you \$2,500 for it plus five percent California sales tax.” That was “May of 1968,” he recalled.

Rescuing the Bear

Larry Bub opened an aircraft maintenance business in late 1962 at Porter County Airport, not long after N1031B had been crashed. Bub remembers Shelton showing up at the airport in early June of 1968.

“When Lyle showed up, we got the call to take the airplane apart,” he says. “There was a factory splice immediately behind the cockpit and he asked us to split the fuselage there, crate it and truck it to O’Hare and put it on an air freighter to California.”

Shelton had taken a nine-day break from flying Boeing 727s for TWA Airlines to travel to Indiana and rescue the Bearcat. Arriving in Valparaiso, he found N1031B sitting on its gear in someone’s backyard. After being righted following its rough landing, the Bearcat was towed to a house sitting alongside the airport for storage. It remained there for the next six years.

Bub says the aircraft was missing its R-2800 and engine mount and that its outer wingtips had been “cut off by someone just outboard of the wing fold hinges.” The plane’s horizontal and vertical stabilizers been damaged, and its twisted prop was “long gone.” Campolattara remembers crawling all over the wrecked Cat as a 10-year-old, pretending to be “flying it from an aircraft carrier.” He confirms Bub’s recollections and adds that the canopy and windscreen—busted in the accident—needed to be replaced as well.

“We started to get to work on the airplane and Lyle went to Michigan to get some other parts,” Bub adds. “He came back, and we had it pretty well disassembled.”

We put the fuselage on three pallets and loaded it onto a truck and trailer.”

At O’Hare Airport in Chicago, Shelton tried to get the disassembled Bearcat on a cheap, space-available deal with TWA. “But the cockpit-wing center section wouldn’t fit in the cargo door of a Boeing 707, so I had to take it out and store it about 20 miles northwest of O’Hare on a property that belonged to the fellow who had sold it to Mike Coutches—an old junk man and surplus dealer named Earl Reinert.”

Reinert was a warbird collector whose Mundelein, Illinois facility was later known as the “Victory Air Museum.” His collection included all kinds of warbirds, from B-26s and the Hispano Aviacion “Buchons” (Spanish license-built Messerschmitt BF-109Js) used in the 1969 movie “The Battle of Britain” to the P-51 N51EW now owned by actor Tom Cruise.

Lyle had “about half of the airplane” in Los Angeles in early June of 1968. But it would be months before the rest of the wreck could

be transported to California—a task Shelton took on by himself.

“In December of 1968 I went back to Chicago, bought a pickup, bought a trailer and loaded up the rest of the airplane and drove it back out here.”

Lyle’s son, John Slack, remembers that the trailer was actually an old travel trailer. Lyle “demolished the house portion of the trailer, getting down to the bare chassis,” Slack says. A couple of supports were welded onto the trailer to support the wings and “thick carpeting was attached to the supports and a crane was used to place the center section gear up onto the repurposed trailer chassis.”

Shelton hit the road, taking a southern route, hoping to avoid winter weather. He stopped in Brownsville Texas to visit his parents and continued west into New Mexico. “I almost slid off a mountain road in New Mexico in a snowstorm and lost the whole damn thing, pickup, airplane and all.”

By the end of the year, Lyle, the Bearcat, and a pile of parts were back in California with the airplane taking up residence at Compton Airport. There, he enlisted the help of a small crew of talented hard-workers to do what nobody thought he could do: turn the wreck into an Unlimited air racer ready to fly and race at Reno in September 1969.

The “Able Cat” flies

“I remember the first night we ever started the engine at Compton,” Lyle said. “The thing was spitting sand and leaves and trash and mice and bugs and no telling what else for about 30 minutes before it finally cleared out!”

Donated by George Byard of Aircraft Cylinder and Turbine, the engine had been stored outside for many years but ran well enough to go racing. Working night and day from a T-hangar, Shelton and crewmembers including Cliff Putnam, Bill Hickle, Randy Difani, George Williamson, Pete Behenna, Harry Smith, Bill Kientz, and Austin Cranston adapted parts to get the Bearcat on its feet, mounted the 3350 and installed a few modifications.

The racer, dubbed “The Able Cat,” made its first flight just a week before the 1969 Reno National Championship Air Races. “The water injection (anti-detonation) didn’t work,” Lyle said. “It was a pretty much stock airplane. But it had a DC-7 propeller and spinner. It was nose-heavy as could be. I had 300 pounds of lead in the tail of the thing to get it within CG limits.”

At Reno, the Bearcat finished in fifth position in the championship race—quite a feat for an airplane that had been a wreck at the beginning of the year.

Nineteen-seventy-three was the year that everything clicked for the Bearcat known then as “US Thrift 7 1/4 Special.” Lyle won the championship finals at all three Unlimited races that year, finishing on top

Caption 6



RARE BEAR'S OVERALL RACE WINS

Since 1980, #77 has raced as “Rare Bear,” a name coined by John Tegler. Prior to 1980, the Bearcat had a succession of names: “The Able Cat,” “Phoenix I,” “Phast Phoenix,” “7 1/4% Special,” “Omni Special,” and “Aircraft Cylinder Special.” With 16 championships, Rare Bear is the winningest Unlimited ever.

	PILOT	AIRCRAFT	COURSE	AVG. SPEED
New Jersey National Air Races, June 1971	Lyle Shelton	#77 “Phoenix I”	10 laps, 7.25-mi. course	360.15 mph
The Great Miami Air Race, January 1973	Lyle Shelton	#77 “7 1/4% Special”	12 laps, 7.76-mi. course	373.320 mph
Reno National Championship Air Races, September 1973	Lyle Shelton	#77 “7 1/4% Special”	9 laps, 9.8-mi. course	428.155 mph*
California National Air Races, October 1973	Lyle Shelton	#77 “7 1/4% Special”	10 laps, 8.8-mi. course	396.614 mph
Reno National Championship Air Races, September 1975	Lyle Shelton	#77 “Aircraft Cylinder Special”	8 laps, 9.8-mi. course	429.916 mph*
Army Days ‘88 Air Race (Hamilton Field, California), May 1988	Lyle Shelton	#77 “Rare Bear”	8 laps, 9.091-mi. course	412.487 mph
Reno National Championship Air Races - September 1988	Lyle Shelton	#77 “Rare Bear”	8 laps, 9.171-mi. course	456.821 mph
Reno National Championship Air Races, September 1989	Lyle Shelton	#77 “Rare Bear”	8 laps, 9.171-mi. course	450.910 mph
Reno National Championship Air Races, September 1990	Lyle Shelton	#77 “Rare Bear”	8 laps, 9.128-mi. course	468.620 mph*
Reno National Championship Air Races, September 1991	Lyle Shelton	#77 “Rare Bear”	8 laps, 9.128-mi. course	481.618 mph**
The Phoenix 500 Air Races, March 1994	John Penney	#77 “Rare Bear”	8 laps, 8.549-mi. course	434.158 mph
Reno National Championship Air Races, September 1994	John Penney	#77 “Rare Bear”	8 laps, 9.128-mi. course	424.407 mph
The Phoenix 500 Air Races, March 1995	John Penney	#77 “Rare Bear”	5 laps, 7.4-mi. course	443.372 mph
Reno National Championship Air Races, September 2004	John Penney	#77 “Rare Bear”	8 laps, 8.48-mi. course	458.240 mph
Reno National Championship Air Races, September 2005	John Penney	#77 “Rare Bear”	8 laps, 8.48-mi. course	466.298 mph
Reno National Championship Air Races, September 2007	John Penney	#77 “Rare Bear”	8 laps, 8.48-mi. course	478.394 mph

*A new Unlimited class race record speed.
 **A new Unlimited class race record speed and the fastest race flown to date with Bill Destefani’s “Strega” in 2nd place at 478.680 mph and Skip Holm in “Tsunami” 3rd place at 478.140 mph. Some consider the 1991 final the best Unlimited race ever.

Caption 7



at the Great Miami Air Race, at Reno, and the California National Air Races. "We'd had enough races, enough flying, and my crew came together," Lyle recalled, adding "but we had a lot more to do with Rare Bear."

"Rare Bear" wins the best Unlimited Race ever

Shelton's left hand rested on the throttle of "Rare Bear" at 4:43 pm on September 15, 1991. He was in pole position for the Sunday championship race, coming down the chute with Bill "Tiger" Destefani in his modified P-51D "Strega" on his right wing and Skip Holm in the one-of-a-kind racer "Tsunami" on Strega's right wing in third position.

Further to the right were the 4360-powered Sea Fury, "Dreadnought," the P-51D "Risky Business," the 4360-powered "Super Corsair," the P-51D "Pegasus," the R-2800-powered Yak-11 "Perestroika," and the 3350-powered "Fury."

In the next few seconds, Steve Hinton on Lyle's left wing hauled the stick back in the T-33 pace and said, "Gentlemen you look great. Gentlemen you have a race!"

Shelton pushed the throttle forward and Rare Bear accelerated hard, "like no other Unlimited can," said John Slack, its imposing propeller crafted from modified P-3 Orion blades and a Lockheed Super Constellation nose case, pulling the Bearcat ahead.

Eleven years earlier, Lyle had returned the Bearcat to competition as "Rare Bear." Coined by John Tegler, the name stuck for the world's most famous Bearcat.

Between 1980 and 1988, "Rare Bear" experienced a series of mechanical failures that kept it from winning. But in 1986, Wichita Air Services became a sponsor, finally providing Shelton with the resources needed to add talented crewmembers, clean up the Bearcat's airframe, and come up with the right combination of engine tune, supercharger, and systems.

Slack and crew chief Dave Cornell teamed up to adapt a supercharger with a three-planetary gear drive to the 3350 by slightly moving the engine rearward. The newly configured supercharger could be run harder without failing, pushing the 18-cylinder's output from the stock 2,800 horsepower to 4,000 horsepower. Shots

of nitrous-oxide could add another 500 horsepower for 4,500 total—with reliability.

The combination made Rare Bear faster than ever, and in 1988 Shelton went on a championship run that lasted until 1991, setting eye-popping qualifying and race record speeds. At Reno '91, Lyle qualified at a blistering 475 mph, breaking the record he'd set in 1988 at 474 mph. But his competition was probably the strongest ever seen in Unlimited air racing.

"Strega," already a championship winner in 1987 with Tiger Destefani, and "Tsunami" with Skip Holm were at the top of their games. Ranking among the top race pilots ever at Reno, Lyle, Skip, and Tiger had the skill, will, and guts to push to their aircraft to the absolute limit—and beyond—in pursuit of winning. And when everything came together, no one could out-compete Lyle Shelton.

Diving for the course, Shelton fended off Destefani and Holm. In earlier heats during race week, Skip "was cutting in front of Lyle as they came down the chute," Slack remembers. Lyle said that if Tsunami went below Rare Bear, "How would I know where to go? I can't see him." Slack responded, "If you're lower than him, he can't go lower."

That's just what Shelton did, dropping low enough that Tsunami couldn't slip by underneath. But just over Lyle's right shoulder "Strega" perched above and behind with Tiger ready to pounce.

"Rare Bear," "Strega," and "Tsunami" dropped down into the "valley of speed" on the backside of 9.1-mile course, screaming by the crowd in the desert. By the end of the opening lap, the Bearcat was the clear leader, passing in front of the 30,000 people in the grandstands with its distinctive basso-profundo growl. "Strega" was just over 1 second behind with "Tsunami" about 2 seconds back.

The race announcer declared, "I've got a feeling we're going to see a speed record here!"

As the three rounded pylons one and two on lap 2, Rare Bear began to accelerate even more. Slack says the Bearcat's 3350 was probably turning at 3,200 rpm and 68 inches of manifold pressure, but Lyle fingered the button for nitrous oxide and "Rare Bear"



pushed its lead to 2 seconds in the blink of an eye between pylons three and four.

When the race announcer told the crowd that lap one was turned at 479 mph, they whooped and hollered as one. Successive laps were even faster: 480, 483, and finally 487 mph! It began to dawn on everyone watching that they were witnessing history. Cheers and howls came from the crowd: "Go Bear!" "Go Tiger!" "C'mon Tsunami!"

How long could the torrid pace be kept?

You could cut the tension with a knife, but inside the tight cockpit of "Rare Bear," Shelton just kept on flying a low, perfect line around the course with "Strega" behind and higher and "Tsunami" stepped even higher to keep out of the turbulent prop wash trailing "Rare Bear."

"It was great how that three-bladed propeller made it very hard to get around 'Rare Bear,'" Slack remembers.

Lyle made it look easy, but it wasn't. At high speeds, Rare Bear has a tendency to pitch its nose skyward as g-forces pile on in the turns. To keep the pointy end aligned with the horizon, Shelton had push the stick full forward.

By the penultimate lap, "Rare Bear" was nearly 3 seconds ahead of "Strega." Holm in

"Tsunami" added throttle and was closing quickly on Destefani. Tiger responded, keeping him behind but neither could do anything about "Rare Bear."

Lyle flashed past the home pylon winning the fastest Unlimited race ever at that time, averaging 481 mph. Destefani and Holm averaged 478 mph. All three blew away the previous race record average of 468 mph set by Lyle just the year before. Cornell plotted the true airspeeds of the top three and came up with figures well over 500 mph.

Shelton taxied in, stopped before the crowd, shut down, opened his canopy, stood on his seat, and gave the crowd three fist punches in the air. They howled their approval.

It was the last championship the man who created "Rare Bear" would win. The once-wrecked Bearcat would go on to win six more championship races, but the drama of Lyle's final win was unsurpassed. Legendary Lockheed Skunk Works thermodynamicist and air-racing carburetor guru Pete Law, a fixture since the 1960s in air racing, called it "the race of all races." ➔

Caption 8