



Cessna

and Air Racing's Golden Age

by Bob Hirsch

All photos from author's collection

Many associated with flying know the name CESSNA and think it synonymous with private flying, namely high-wing, single-engine monoplanes and, more recently, twin-engine, low-wing executive aircraft. There are very few who know how greatly Clyde Cessna and his son Eldon were involved in Air Racing's Golden Age. It is also noteworthy that Wichita, Kansas, played a historically significant part in influencing progress during civil aviation's formulating years.

Born in Kansas in 1879, Clyde was managing an automobile agency at Enid, Oklahoma, when flying was in its infancy. Attending an Oklahoma City air show in 1910, he saw the Curtiss aerial exhibition and the Wright Flyers with Walter Brookins, Arch Hoxsey, and John B. Moisant with his Bleriot. These aviationists captured Clyde's interests greatly, so greatly that his brother, Roy, and he sought out the Queens Aeroplane Company in New York. From this licensed firm of the Bleriot Company, Clyde bought an unassembled Bleriot without an engine and brought it back to Enid. Upon his return, he immediately rented a garage and began to build his first aeroplane.

Building one's first airplane and teaching one's self to fly there is a better than even chance for failure. Relating to *Chirp*, the Early Bird's journal for a society of aviators soloing before World War I: "I had my trials and heartbreaking experiences, for a wreck was as sure

to occur as was the trial. For those days there was no such thing as aeroplane information available. In fact, I approached the subject with no more knowledge of the problem than a nursing baby. My experiences there on those salt plains in continually rebuilding and attempting to fly with an Elbridge two-cycle engine, which would overheat in about 10 minutes of operation, was one that I shall never forget."

Frequently, Clyde and Roy spent their scant finances on repairs instead of food, salting their flapjacks with crude salt from the



A rear view of the same aircraft. Most of these flew in the 1928 Air Races.

plains. Rebuilding and modifying his damaged examples eventually brought success and effective flights near Jet, Oklahoma, in 1911. Around Jet and Cherokee, Oklahoma, in the fall of that year, he set up his first series of exhibitions. Clyde experienced mishaps twice during a given show severely damaging the plane. Like the crashes on the salt plains and the modifications learned from them, rebuilding innovated his craft greatly until it only slightly resembled a Bleriot. Finally, in 1912, during a rebuild, he replaced the engine with an air-cooled Anzani. He christened his new plane *Silver Wings* and used it extensively in his 1912 flying exhibitions.

Renovation further lessened flying hazards during Clyde's tinkering on the *Silver Wings* in 1913. He had built a total of nine airplanes and seven different models before constructing the *Comet* in 1917. On July 5th of that year, flying the *Comet* from Blackwell, Oklahoma, to Wichita, Kansas, in 36.5 minutes, Clyde set a speed record of 124.62 mph. After this, Clyde settled to his farm in Rago, Kansas, remaining out of the airplane picture until 1925.

In the early '20s, Wichita became the focal point where airplane design and construction talents congregated. Jacob Moellendick, a Wichita oil man, founded the Wichita Airplane Company in 1919 and purchased some World War I surplus, *Curtiss Jennys* and *Standards*. The company provided flight instruction and local passenger hops. William S. Burke influenced the company to build their own airplanes for marketing. Traveling to Chicago he also recruited E.M. "Matty" Laird, bringing him back to Wichita. The company was changed to E.M. Laird Airplane Company with Jake Moellendick still financially backing and controlling it.

The first commercial aircraft, first flown in July 1921, was a twin-engined Laird *Limousine* biplane, using two OX-5 engines. A second revised version, which was a smaller version, used a single 300-hp Packard engine and later this was replaced with a 450-hp *Liberty*.

In 1920, Lloyd Carlton Stearman joined the company as a clean-up man, but Matty soon had him designing layout drawings, parts and components. By 1921, Stearman and Laird's efforts produced the first *Swallow*.

In 1921, the shops and hangar of the Williams-Hill Airplane Company of Arkansas City, Kansas, burned to the ground destroying all usable equipment and tooling. Pete Hill and Walter Beech, part of that ill-fated Arkansas City company, migrated to Wichita and to the E.M. Laird Company where Jake Moellendick hired them. Walter Beech became the *Swallow's* company pilot, general mechanic, and sales representative. Pete Hill became a constructor and mechanic.

Wanting to change from a wood frame to a steel one, Matty left the company to return to Chicago to build his own biplanes after disagreements with Jake. The company was changed to Swallow Airplane Manufacturing Company but still owned by Moellendick, but now with Lloyd Stearman, at age 23, as chief engineer. Lloyd successfully recruited the retired Clyde Cessna back into aviation to work part time on the *Swallow* design.

In 1923, Stearman and Beech left the Swallow company and rented a building at 471 First St. West in Wichita. Having bought a *Swallow* and familiar with its performance, Clyde Cessna joined Stearman and Beech, putting up \$5,000 of his own. He would help design and build a better airplane. They had several lesser backers, but the main funding came from Walter P. Innes, Jr. Together they formed the Travel Air Manufacturing Company. Across town, with Bob Phelps and Melvin Wheeler at the helm, the Swallow Manufacturing Company managed to stay alive at the Swallow airport on North Hillside Avenue for some years later until it was hopelessly outclassed by better designs.

Travel Air accrued materials, tools and design layouts, building and flying in 1925 the first T.A. Model A. This craft made extensive use of welded steel tubing, used an OX-5 engine, and carried three passengers. Of this company, Walter P. Innes, Jr., was president; Clyde V. Cessna, vice president; Lloyd C. Stearman, chief engineer; William "Bill" Snook, factory manager; and Walter Beech was chief pilot and sales manager. Charles G. Yankey was a major backer and stockholder. On May 22, 1925, Clyde put up a badly needed



Cessna design No. 2 used for racing. Only one was built and was powered by early Wright engine.



The Mayer Red Wing from Pittsburgh, Pa., flew in the 1928 Air Races.



Cessna Model B racer of J.W. Smith being refueled during cross-country race from East Coast to Los Angeles in 1928.



J. Sodowsky's Cessna Model B Miss Margaret preparing to take off on 1928 cross-country air race.



Cessna AW much modified for cross-country racing.

\$23,000 and became president. He was the force behind the Travel Air monoplane even though models 5000 and 6000 were developed after he left the company. The "Wooleroc," a 6000 series, flown by Art Goebel in the Pineapple Derby of 1928, made this model series popular. Walter H. Beech became president and continued through 1930 and building the Lamons racer. He eventually sold the Travel Air Company to Curtiss Wright Corporation to start his own company there at Wichita.

CESSNA

Born on May 5, 1907, Eldon V. Cessna was growing up when Clyde was experimenting and was well aware of aviation. Then as a young man and after seven hours and ten minutes solo flying the Cessna AW NC7107 he received his student permit on November 21, 1929. After getting his private pilot license on January 18, 1932, he acquired his FAI license certificate, No. 7892, on July 14, 1931, Orville Wright himself signing it. Later, after obtaining his A&E license (No. 11259 on February 12, 1932), Eldon was kept busy designing and constructing racers. After leaving Wichita prior to World War II, he worked for Northrop and then NAA aircraft up through the B-70 project. Retiring after 31 years at LAX area in May 1969, he became president of the OX-5 Aviation Pioneers, Southern California Wing.

On January 29, 1927, Clyde V. Cessna sold his 179 shares of Travel Air Manufacturing Company stock at \$90/share which was a loss of his investment. Then joining with Victor H. Roos of Omaha, they formed the Cessna-Roos Aircraft Company on September 8, 1927. Opening their own shop at 1520 W. Douglas in Wichita, they built their first full cantilever wing aircraft. Design No. 1 (known as the Cessna-Roos airplane and not really commercially competitive) was, however, fast because of its small size and 120-hp Anzani engine. Its original DOC number of X1626 and serial No. 1 was changed to c/n 1628 and later to c/n 112 and a DOC No. 4165.



The same aircraft at the Los Angeles Races. This ship flew to Alaska and back and set several speed records.

That same year, Victor Roos sold out to Clyde and then became the Swallow Company's general manager. Without Roos, the company's name changed to Cessna Aircraft and was incorporated on December 31, 1927. On First Street at Glenn Avenue a 50 by 100 foot factory building with separated paint shops arose on 11 newly purchased acres and became Cessna's beginning. Borrowing ideas from the *Comet* and the c/n 112 which he built at Travel Air, he built his second design—the Model AA, using the 120-hp Anzani 10-cylinder engine. There were some 117 Model As built using various engines such as Siemons-Halske, Comet, Axelson, Floco and Warner, but the airframe became the Model B, using the Wright *Whirlwind*. Twelve of these were built in 1928 developing into the CW-6, and the DC-6 series, a six-passenger monoplane. The C-3 was a special and extensively modified Model AA, using a NACA cowl-ing, Warner engine, DC-6 year arrangement, and streamlined parts—its cabin being four-place. Its construction was during the Cessna hibernation period, within the same time-frame when the racers were being built.

Wingspan of the A series was 40 feet with a root chord of 86



A much modified Cessna DC-6A at the 1930 Races.



A Cessna DC-6B Scout at the 1930 Air Races. The aircraft used a Wright R-760 Whirlwind and 22 were built.



Cessna FC-1 and EC-2 (reg. no. 405W) and an unknown aircraft on the left. The EC-2 wing is a development of the Baby Cessna the Aeronca type.



Cessna Cirrus-powered FC-1. This aircraft was owned and flown by Eldon Cessna. Only one was built but the wing, engine and empennage design was used on the GC-1 racer.

inches, an MAC of 66 inches, and a tip chord of 58 inches before rounding out. Its wing area was 224 square feet; the airfoil section was a modified M-12. That era's racers also used modified M-12 sections so speed was expected from the Cessnas. Its empty weight was 1275 pounds; it grossed out at 2260 pounds, and its fuselage length was 24 feet 9 inches.

From the AW model's parts, in 1928 a hybrid racer built by Cessna plant workers, mechanics, and test pilot Earl Rowland, was created in the plant during the dormant period. Powered by a 225-hp Wright J-5, it was designated CM-1. The CM-1 could have been for Cessna Mail No. 1 design, since it could carry 500-800 pounds of cargo. It later was called the MW-1 with c/n 195 and registration X9860. Having a Warner Scarab engine and carrying race numbers 95 and 99 it was entered in the Gardener Cup Race at the St. Louis Races. Flights starting from Buffalo, San Antonio, Jacksonville, Denver and Fargo, North Dakota, all ending in St. Louis, two flyers from each city would make the first and second place. These winners raced a second time from St. Louis to a pylon at the Indianapolis race track and return. Held on May 30, 1929, the first prize was \$5,000. The first winners, the city groups, were:

STARTING POINT	PILOT AND AIRCRAFT	SPEED
Fargo	Speed Holman in a Laird	152 mph
	John P. Woods in a Waco	150 mph
Jacksonville	Snyder Hall in a Travel Air	143 mph
	Dale Jackson in a Curtiss Robin	130 mph
Buffalo	Marvin O'Dell in a Cessna AW	132 mph
	Art Davis in a Waco	129 mph
Denver	Stan Stanton in a Cessna AF	118 mph
	D.C. Warner in a Travel Air	116 mph
San Antonio	Earl Rowland in a Cessna CM-1	98 mph

Having carburetor trouble during both races, Earl lost the second race although he was favored to win.

This CM-1 had a Model A wing with four feet removed from the center section. Having landing gear, empennage and parts on the fuselage from a Model A, similarity ended there. It was built with a mid-wing open single cockpit. It had a vaguely round-to-oval fuselage and no pilot headrest. It was painted deep red with black registration numbers and white race numbers. It had a top speed at around 175 mph and was well suited for cross-country racing but it



A highly modified Cessna DC-6B at the 1930 Races after completing the On-to-Chicago competition. Since Cessnas were sturdy and inherently a clean design, many underwent modifications to keep them in competition. Models A, B and DC-6s were popular among sport pilots.

was never entered in any during its heyday. A windstorm destroyed it in 1929 while it lay in storage at the Cessna airfield.

Being the first with Swallow, then with Stearman, Earl Rowland left that company when they wouldn't let him enter a Stearman against Lairds and Wacos in the 1928 Transcontinental Race. Joining the Cessna company he entered the stock Cessna backed by the White Castle Hamburger franchise which was owned by Billy Ingraham of Columbus, Ohio, and Walter L. Anderson of Wichita. Rowland and Art Goebel had special long-range, coast-to-coast ships designed by Cessna for speed attempts and long-range races. Goebel's ship made construction; Rowland's craft didn't. Earl Rowland became a civilian instructor for the Army Air Corps at Randolph Field, Texas, in 1939 and 1940. Rowland also taught at Love Field near Dallas in later 1940 and flew helicopters in 1945 for a Dallas outfit. He once raced a Knoll biplane from Wichita to Mexico City. Flying a Cessna on the way back, the engine quit and he was forced to land breaking a wheel. He escaped revolutionists by leaving the Cessna and hiking to the coast and returned to the U.S. by boat.

The 1928 National Air Races (NAR) held at Los Angeles Mines Field, now LAX, promoted, via Cliff Henderson, an east-to-west cross-country race broken into four classes. Entering a Cessna AW in the Class A division and taking the lead from the beginning he held it until just after leaving Abilene, Texas. Dake and Taney overtook Earl Rowland in their No. 83 American *Moth* sports plane. Regaining the lead after leaving El Paso, he won the Class A race.

The Class B division had four Cessnas entered: Mr. E. Schultz in a J-5 powered Model B donning No. 96 and taking off in 13th place and placing 4th. There were J.W. Smith in another Model B racer donning No. 52; J. Sodowsky in his bright red Model B with race No. 100; and Mr. G. Quick in an AA model with race No. 97 who, taking off 5th, placed last. In this division, there were four Waco Taperwing models and two special Lairds—one being flown by Speed Holman. They made this division competition very stiff. Even without the two accompanying Lockheed *Vegas* this was a grueling tournament.



Pilots in this race carried compressed air bottles for blowing up the flat tires they would incur before takeoff and then landing on them while flat. Over the New Mexico, Arizona and California deserts they used railroad tracks to navigate through the bleak and barren landscape. Arriving near the coastal mountain ranges of San Bernardino, two ships found it almost impossible in ascending this barrier and reaching their goal, Los Angeles. Rowland flew full throttle most of the time and had engine trouble during the first two legs which turned out to be ignition problems. Rowland feared most his oversleeping rather than his engine.

After winning the Class A race, Earl Rowland entered No. 99 in the first civilian race at the L.A. races, a 50-mile race for Class A aircraft. Flying at 107 mph he won, with Mr. C. Dake in the No. 83 American *Moth* coming in second, repeating the same performance



Stan Stanton in front of the Cessna GC-1. Powered by the Cirrus High Drive, it was entered in the 1930 Cirrus Derby cross-country race.



Cessna C-34 at the 1934 Air Races. Powered by Warner Super Scarab engine.



Cessna C-34 flown by George Hart at the Miami Air Races in 1935 and 1936 and won both years.

on Saturday at 11.74 mph. He also entered his No. 99 in the Los Angeles to Cincinnati race on September 23. J. Sodowsky entered his red No. 100 in the Los Angeles Event No. 5 pylon race, a speed and efficiency race. Disqualified for failure to take off in under 600 feet, he captured awe from the crowd as he overlapped all other contestants, averaging 128.5 mph, whereas the winner's averaging was only

118.4 mph.

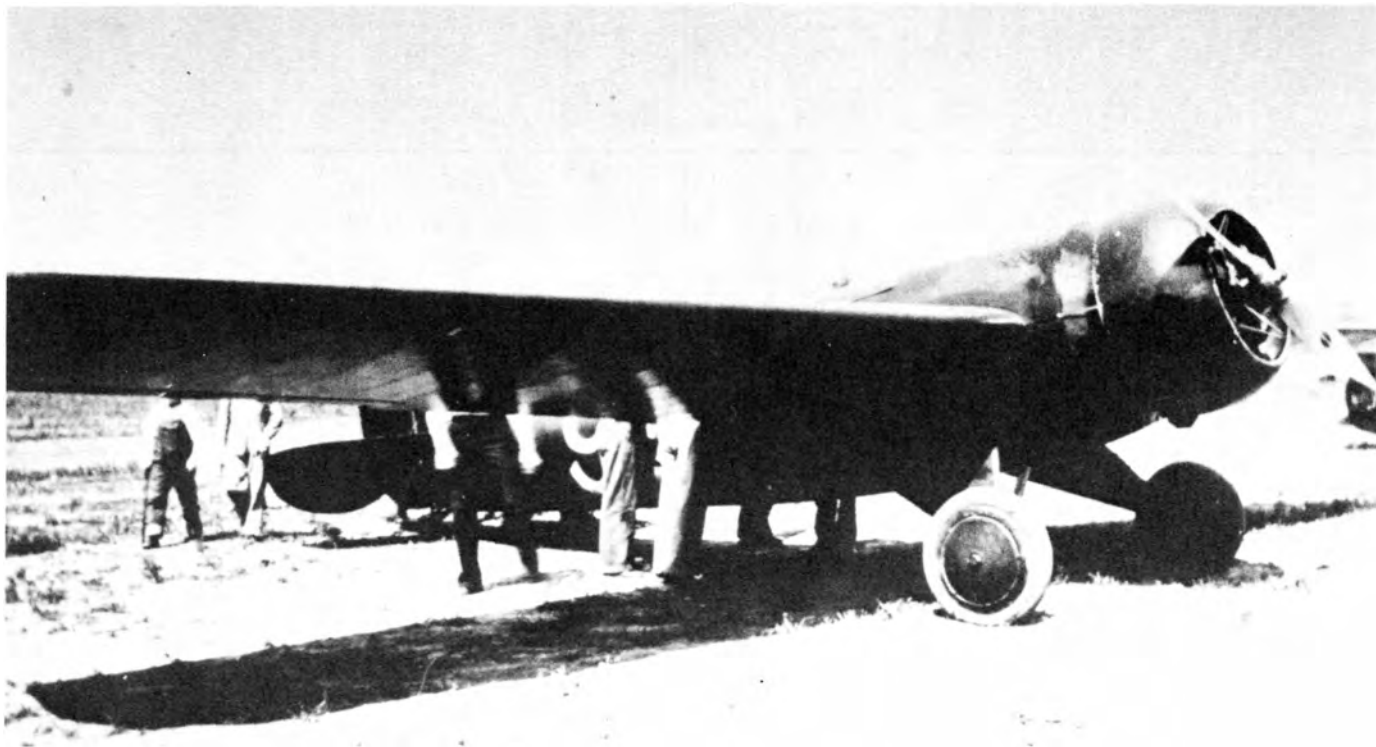
Like the Travel Air ships' construction, the Cessnas made extensive use of welded chrome molybdenum steel tubing on the fuselage but with wood wings. Cessna at that time only built monoplanes having full cantilever wood construction with one-piece tapered spars of laminated spruce with the leading edge of the wing and the rounded tips being plywood covered. Cessna, the only manufacturer building an unbraced wing covered by fabric instead of plywood or metal, had some troubles with the higher powered models due to the ailerons' lack of balance. This was corrected quickly by counterbalance methods. The wing was stress tested with 14,800 pounds of sandbags and 952 pounds between six men standing on the sand bags for a total of 15,752 pounds. Diving tests were from a 5000-foot height and a 300-mph power dive to a quick zooming climb. The wings held through repeated testings.

The Model D followed, a single model CW-6 having a Wright J-6 engine. At Cessna the C stood for the third model and W for the Wright engine, but on the D series a change in systems evolved. Where D was the fourth model, the C at first stood for Curtiss engine but when the basic DC series had a *Challenger* engine installed the DC remained with the C now meaning Cessna, and the A and B added to the -6 denoted the larger engines. The C, now signifying Cessna, remained on through the G series.

Just prior to the air tour, Earl Rowland's AW had made a trail-blazing trip of over 10,000 miles into Siberia and returned. Of the three Cessnas entered, and sporting a few new modifications, the DC-6A was the fastest, with only one plane faster—a Lockheed Pratt & Whitney-powered *Vega*.

In 1929, three Cessnas entered in the "Ford Air Tour": Earl Rowland's AW, with new No. 33, a DC-6A numbered 34, and a DC-6A numbered 35.

On January 7, 1929, at the All American Air Races in Miami, Florida, S.T. Stanton won Event No. 5, a 15-mile race for cabin planes, in his Wright J-5-powered Cessna, beating Frank Hawks in his Pratt & Whitney-powered Lockheed *Vega*. At the National Air Races at Cleveland, Ohio, the race had many Cessnas entered including Earl Rowland's AW now painted red and maroon with No. 30 painted in white on the fuselage. It sported an NACA cowl and pants and several other mods. He placed first in the Class D division



Only known photo of the elusive Cessna MW-1. Most of the parts such as the wing, tail, wheels, engine and cowling are from the Cessna Model AW.

of the Miami-to-Cleveland Derby, turning in the fastest time of all the derby's classes. CD. Bowers placed third, the fourth fastest overall in his *Comet*-powered Model AC.

At Cleveland, in Event No. 5 for engines of 500 cubic inches and under, two Cessnas were entered: an AW flown by R.D. Cramer placing 9th in a field of 23 starters, and Earl Rowland's sour-engined plane which he nursed to 16th place. Event No. 13 for 720-cubic-inch engines saw CD. Bowers place fourth in his AC model at 126.61 mph. Flying a J-6-powered Cessna, Mrs. E. Smith placed 7th in Event No. 30, a woman's handicap. Although her speed was recorded among the top three, handicapping didn't favor speed alone. In Event No. 35, Bowers again entered and placed second in his AC model, just behind a Wright J-6-powered *Bellanca*. Known basically for their speed for a given power, Cessnas seldom took honors in efficiency competitions; Event No. 35 was an efficiency race. Showing up at nearly all minor racing events in 1929, Cessna's DC-6 won many events. The On-to-St. Louis race from Denver, Buffalo and San Antonio was won by a DC-6. This year saw changes to Cessna Aircraft Company and a greater move toward race plane development.

The Depression hit the whole industry just as Cessna's production had undergone a full manufacturing swing. Sales dropped to almost nothing during the first part of the Depression. Trying for a market the CG-2 glider was selling for under \$400. Building 200 of them during 1929 and 1930, only 54 of these appeared on the FAA records. Registration of a glider in the '30s could easily have been overlooked by an owner for various reasons. Attempting even a CPG-1, using a 10-hp Cleone engine with a 5-quart fuel capacity (pickins were slim), Eldon Cessna developed the Baby Cessna with a 25-hp Cleone engine out of the glider. This model never reached the market but a final refined version, the EC-1, had three built. One, c/n 251 registered N403W, having competition No. 115 painted on the sides, entered in lightplane class events at Chicago. The EC-2 was the ultimate in this lightplane's evolution using an Aeronca E-107A engine. It was listed as entered in an event in the Chicago Air Races in 1930. Not being completed until 1931 the second EC-2 could not have been in this race. An EC-1 or the first EC-2 must have flown this race because of its completion date being July 25, 1930, and with a registration of N405W. Using an EC-1, attaching DC-6 landing gear for added weight hanging an American *Cirrus* on it and



Named *Blackwell Oklahoma* this Cessna GC-1 is waiting for coming action. This was after the *Cirrus* Derby.

registering it N138V with c/n 248, Eldon Cessna created the FC-1, a two-place cabin plane for competition with Monocoupe. Only one emerged but didn't race. It did, however, evolve into a racer.

In 1931 the plant closed down and its buildings rented. Cessna did not file for bankruptcy but they did not build marketable airplanes during 1931 through 1933. Clyde and Eldon could not use the closed plant. Convinced renting was more profitable than constructing, the Board of Directors sold space to acquire money during the Depression. But air racing was becoming the money in private flying and flyers sought the Cessna brothers for building their racers. Opening a small shop on the property now Stearman/Boeing of Wichita, they operated as the C.V. Cessna Aircraft Company, building the CR-1, CR-2 and CR-3, rebuilding an AA into a custom cabin airplane designated C-3 and named the *Walt Anderson*, registering NC12568 and having race No. 2 on its side. It used the DC-6 landing gear struts and sported an NACA cowling and pants and carried four aloft. Color seems to have been red trim and yellow body basic with white race number on its after part of fuselage.

In early 1929, after winning the Dole Pineapple Race, Art Goeble commissioned Cessna to build him a long-range aircraft for cross-country races. It was completed May 1, 1929. A Pratt & Whitney *Wasp* engine of 420 hp was furnished for the Goeble Special. Having the CW-6 airframe it had to have larger fairings for fattening up the fuselage and fitting it for the large diameter P&W engine. Carried in



Cessna GC-1 after the 1930 National Air Races, with new race number and chin inlet to carburetor.



Two photos of the Cessna GC-2. It was the same as the GC-1 but powered by a Warner Scarab engine.

the cabin space in tanks totaling 600 gallons, the fuel and the craft grossed out at 4250 pounds. It was entered in a race from San Francisco to New York but could not complete the race because of leaking fuel tanks. Rebuilt back into the CW-6 body by Cessna a hangar fire ultimately destroyed it. It was designated CPW-6 in the fat fuselage configuration.

Cessna's main income for their 1930-31 activities became their glider production. The plant all but shut down completely so activities were restricted to aircraft building only on special orders. Frank Muonz, a stockholder, tried forcing the plant into receivership proceedings in the courts. The courts dropped this. In early 1930, from

frustration in a dwindling market, Clyde and Eldon became interested in the \$25,000 prize money the American Derby offered for an award. The American Derby was sponsored by the American Cirrus Engines Inc. Clyde and Eldon interested a group of five businessmen from Blackwell, Oklahoma, headed by Carl Haun, in obtaining financing for building a racer, the GC-1, and posted the \$250 entry fee required to show evidence for a real intent to compete. The FC-1 was utilized for design data and parts such as wing, engine mounts, empennage and other small components. The fuselage and cockpit, very narrow on the GC-1, required a smaller pilot. It was fitted with a Cirrus high-drive, supercharged engine and grossed out at only 1450 pounds. With the 95-hp engine, this bird looked like a good bet to win or to place high in the upcoming derby. Having a 27-foot wingspan, a 21-foot fuselage, 20 by 4 General tires, and a top speed of 175, it had a bright red body with a black registration number, NR-144-V, and No. 16 in a white oval on the sides. Her name was *Miss Blackwell*.

Carl Haun and Stanley Stanton, who flew *Miss Blackwell* in the derby, worked with Clyde and Eldon during her construction. One needed a close look to see any resemblance between the FC-1 and the GC-1. Eleven of the 18 starters were equipped with supercharged engines, five of them being inverted high-drive type. There were two other high-drive engines being non-supercharged. Of the 10 upright engines, five were supercharged.

Globe Oil Company provided for the fuel and oil via arrangements with Carl Haun, stockpiling the petrol in five-gallon cans at various designated stops along the route. Finished in time for this event, however, the GC-1 had little time left for flight testing and modifications possibly needed, but she handled well. So it was sent straight to the derby plagued by engine problems from the beginning. Leaks from the gas tank and oil, and parts falling off the plane along the way became the normal, and finally Stanton broke a wheel in a rut and had to make a wooden wheel with no tire to use for takeoff and landing until the next stop could supply another one. Winning only one leg of this race, he placed seventh in the derby. After the derby, the GC-1 was sold to J.T. Haun, Carl's son, and Earl Smith. They removed the troublesome supercharger, making some other engine changes but none major to the airframe. Repainted a bright red again and given a new race number, 89, a five-foot, seven-inch pilot of about 140 pounds best suited this racer's cockpit.



Cessna CR-2 as first flown by Eldon Cessna. This is a stretched version of the CR-1 which was about 2 feet, 8 inches shorter. It is not known if the CR-1 actually flew or was redesigned during construction. There are no public photos of it.



This is a company retouched photo of the CR-2 with landing gear retracted.



Roy Liggett standing beside his CR-2 shortly after taking delivery. Note the almost full-span ailerons. Roy was killed in this ship. He had installed a larger engine and improved the streamlining. It was bought and modified by R.O. Herman and called CR-2A.

Miami held the second annual All-American Air Meet on January 13 through 15, 1930, and it was a real competition event. Despite the increasing number of special machines being entered, Cessna monoplanes took five first places, four second places, and two third places in pylon races for planes up to 1000-cubic-inch displacement.

Spread over 10 days and having about 50 race events, 45 being civilian contests and the others being military interservice competitions, the 1930 American National Air Races had more competition added to it and again offered the famous Thompson Trophy to all comers. The Curtiss Page racer's ill-fated entry ended in service competition in racing events, save for smaller special interservice events which soon evolved into special demonstration events of aerobatic nature.

The GC-1 prompted another racer design, the GC-2, which was similar but had a 100-hp Warner engine. It sported a NACA full cowling, a fuel capacity of 50 gallons in two tanks, five gallons of oil, 304

a Standard steel propeller ground adjustable, a bright red fuselage with race No. 44 in white, and a registration number of NR-404W, c/n 252. From the front, the fuselage faired to streamline with the radial engine, but from the cockpit back it still held the GC-1's design, save for a streamlined headrest and a wingspan of 27 feet and a length of 20 feet 5 inches. Built for the 1930 NAR held in Chicago by Cessna it was to be readied for the races. Earl Rowland placed fourth in the 1000-cubic-inch event at 137.4 mph pylon speed. Rowland also flew a Verville monoplane in some events. The GC-2, flown by Bill Ong and Mary Haizlip, placed second in the 450-cubic-inch and the 65-cubic-inch events and third in the 800-cubic-inch event, placing second in the Women's Free-For-All. Restricted to racing the CAA, as the GC-1 and other specially built racers, it had its license renewed on November 25, 1930, after the Chicago races, standing until March 1, 1931. Again renewed, cancellation on August 15, 1931, came from removal of the engine card. The books carried it as unlicensed and belonging to Earl Rowland up to January 8, 1937. It flew in several small race meets throughout the midwest and at the Miami All-American Air Races in January 1931 with a best speed of 148.42 mph on pylons. The probable reason for the unlicensed condition was that it had been involved in an accident at Waco, Texas, by an interested pilot wanting to purchase it. The final GC-2's disposition has remained unknown. Skyways Inc. owned the GC-1 when fire destroyed it during a hangar fire in March 1932.

Raced in the various events of the 1930 American National Air Races, other Cessna monoplanes resulted as follows:

Event 17: 450 cubic-inch cabin planes . . . William Ong placed second.

Event 20: 650 cubic-inch for men . . . William Ong placed second in an AW.

Event 23: 800 cubic-inch for men . . . J.H. Gridges entered a Cessna with a Wright J-6 and Casey Jones flew a *Whirlwind-powered* B model.

Event 24: 800 cubic inch Free For All. . . Bill Ong placed third in an AW and Casey Jones fell out in the second lap in his B model.

Event 27: 1000 cubic-inch cabin planes . . . Casey Jones placed first in this *Whirlwind-powered* Cessna with G.L. Harte placing second in his 300-hp Wright-powered Cessna.

Event 28: 1000 cubic-inch Free For All . . . Cessnas placed third, fourth and fifth, with Casey Jones going out in the ninth lap dropping out of second place.

Cessnas started a new name for themselves. They were beginning to be known as the "Cabin Racer" and "Poor Man's Lockheed."

In the 1931 National Air Tour, Eddie Schneider entered and flew an AW, coming in third. The Nationals began to see special racers for pylon racing along with highly modified sports planes, creating faster and more difficult competition. Cessnas were still being entered in events and still taking honors. Eldon Cessna entered an AW in the Santa Monica-to-Cleveland Race and came in third. At Cleveland, G.L. Harte entered his Cessna DC-6A in Event 14 and took second at 142.79 mph. In Event 28, a woman's 1000 cubic-inch ATC race, Florence Klingensmith, flying a Wright J-5 Cessna, received third place at 133.36 mph. Entering in Event 29, a woman's 1875 cubic-inch race, she placed first at 141.36 mph. Then, entering Event 33 she took third at 160.33 behind a *Wasp-* powered Gee-Bee Model Y and the Laird *Solution*. In Event 36A, a speed and efficiency contest, Eldon Cessna placed first with Walter Carr taking second, both flying in AWs. Cessnas also received two first and two second-place honors in the men's dead stick landing contest. No special racers built by Cessna flew at the 1931 Nationals.

During the period the Cessna plant remained in limbo, Clyde, Eldon and a few others, mostly old-timers, became interested in the air races' prize monies being made available and the publicity involved. Evidently influenced by the short-coupled Gee Bee designs of 1931, they designed and built the CR-1, c/n 1, of the C.V. Cessna Company. This was never registered by CAA so summarization arises that they were not happy with the handling characteristics of this short-coupled configuration. They did, however, have it registered as the CR-2 c/n 2, NR-11717, by lengthening the fuselage to 17 feet



6 inches. From the CR-1 the wing was shoulder high and elliptical in planform, giving a reactively low aspect ratio for the full cantilever construction. Similar to the Grumman biplanes of the time, landing gear retracted straight up into the body and finally had a Warner 422 cubic-inch *Scarab* housed in an NACA full cowl. Eldon Cessna performed all the flight testings on the CR-1's and the CR-2's changes.

In 1932, Roy Liggett of Omaha, Nebraska, showed up at Cleveland with a specially streamlined, high shoulder-winged, small displacement, radical engined racer painted bright red with black registrations and numbered 35, built by Cessna. It was named *Miss Wanda*, and designated CR-2. Roy won second in the 510 cubic-inch event flying just behind Benny Howard's *Ike* and took third in the 800 cubic-inch event. George Hart placed seventh in this DC-6A. The CR-2's best pylon speed was 176.52 mph which means about 200 mph on straightaway runs. Roy also placed third in the Cleveland-Cincinnati-Cleveland race.

Earlier, at the Omaha races on May 30, George Harte won the 15-mile ATC race for unlimited displacement at 121.32 mph, beating out a Lockheed *Vega* of much greater power. Also, at the Cleveland NAR in the Cross-Country Cord Cup for the Pacific Division, Eldon entered his AW and placed second in a field of 31. He also took first in pylon Event 10 for NC aircraft with his AW model, now sporting pants, cowlings and some of his special clean-up innovations. George Harte had his DC-6A entry in Event 12, withdrawing on the second lap while scrambling for first place on the course.

1933, a confusing year for racing, saw more than 40 special racing planes either rebuilt, completely redesigned, or newly built, with engines ranging from 150 hp to 900 hp. Held on the circuit of the American Air Racing Association from May through July brought confusion with all three big events being scheduled so closely to each other. Los Angeles held Cliff Henderson's NAR, since Cleveland was expanding. The Gee Bees, Wedel Williams, and other biggies attended this race, while at the same time the Chicago Air Race Corp. ran the American Air Races, negotiated by retired Major R. W. Schroeder. The Curtiss-Reynolds Field held the second Chicago Races, sponsored by the Chicago International Air Races. This race came on September 1 through 4 one month after the other two were held on July 1 through 4. The Cessna CR-2A and CR-3 showed up during these Chicago competitions.

Bringing his modified CR-2, now designated CR-2A, still in a bright red color with the registration numbers remaining black but

The Cessna CR-2 with race number and name *Miss Wanda*. Color was bright red with black lettering and white race number. Note addition of headrest.

now using race No. 77, Roy Liggett had his Warner *Scarab* replaced with a *Super Scarab* of 145 hp and also making a few changes to the windshield and headrest. Rocker box cover bumps which tightly cowed the new engine were the most noticeable. Roy had started the Liggett Racing Planes Inc. in partnership with A.R. Burnham as vice president and C.S. McCollam as secretary. They were to build another racer in the Rapid Airlines Omaha ships. It was being engineered by Harold Phillips of Omaha from design sketches of Liggett's and Warner's Engine Manufacturing Company which furnished the *Super Scarab* engine. It would have had a variable pitch propeller and a top speed of around 300 mph. However, nothing of this sort materialized.

At the Chicago Air Races Event 3, Roy Liggett took second place at 191.14 mph, right behind Roy Minor in the Howard *Ike*. The *Ike* took the Greve Trophy at the Los Angeles Races. In the Chicago Races and in the Baby Ruth Trophy, a Free-For-All race, the CR-3 grabbed first and the CR-2A took second. This was repeated in the Aero Digest Trophy at 204.54 mph and 202.88 mph. Eldon Cessna submitted his AW in the Atlas Brewing Company Trophy and placed fifth. Jonny Livingston beat the world speed record for under 500 cubic inches in a four-run timed speed dash at 237.44 mph average. The fastest run was 242.34 mph, exceeding the 1932 record set by Benny Howard in his *Ike* at 213.8 mph. Destroyed at the Chicago races in attempting a dash for the speed trophy the CR-2A disintegrated in midflight before the spectators, killing Roy Liggett instantly. The CR-3 was obliterated about a month later on a flight from Detroit to Columbus, Ohio. Livingston could not get its landing gear down and in locked position circling the countryside for about 30 minutes Jonny Livingston bailed out. The CR-3's full potential was never realized.

After seeing the end of his monocoque's potential, Livingston had Cessna construct him a racer similar to Liggett's. He was once quoted as saying he was just tired of chasing that Cessna around pylons. Being shut down during the three racers' construction, they were serial numbered -1, -2 and -3 respectively. Clyde, Eldon and a few others built the CR-3 heavier and slightly wider than its predecessor. Livingston was looking ahead at a possible larger engine with a possible higher speed and G forces, so the CR-3 was purposely heavier. Its powerplant came from Livingston's monocoque, which



Side and front view of the Cessna CR-3 of John Livingston. This is original configuration with canopy. Note cylinders are baffled.

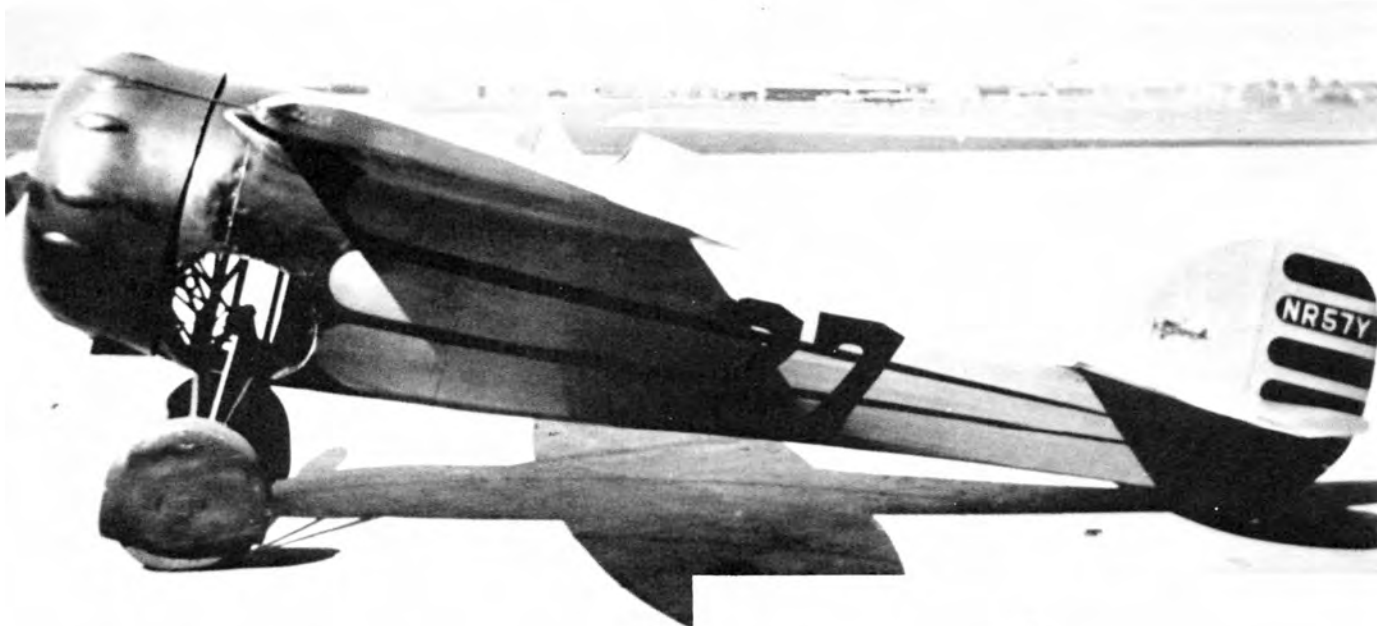


Johnny Livingston standing beside his **new** Cessna CR-3. All the design **kinks** of the CR-2 were excluded in this design. It won **every** race it **entered**. It **did** 237.7 mph average of four clocked laps. **Its** top speed was 255 mph.

he replaced with a stock engine. This today is owned by Al Allin of Denton, Texas. A special Hamilton Standard propeller with a shorter diameter and a wider blade powered this craft because of the short gear couplings. It had 20x4-inch wheels as compared to the 20x3 on the CR-2. Added for cleaning up the airflow around the wheels when they retracted, an outer panel covered the manually retractable landing gear, retracted by a hand crank lever. With the gear fully extended the downlocks prevented any upward movement. They were hand released. The tailskid was retracted separately by another hand crank. The bubble canopy looked like a large greenhouse. It was later lowered with a small opening on top. This was done at Aurora, Illinois, during a stopover before the Chicago races. The plane also raced at Omaha and Minneapolis prior to the Chicago races.

The CR-3 had a top speed of about 285 mph, with a stalling speed of 67 mph, but was usually landed at about 95 mph. It weighed 750 pounds and was painted yellow with red trim and ID markings. Its color was the same as the monocoque No. 14, with the race number on the ship in black. It had race No. 27 for all the races. Livingston paid Cessna \$2,700 for the ship less an engine. Longitudinal trim was missing due to the thin stabilizer construction and so the aircraft was balanced for level flight by installing the oil tank last and with Livingston in the cockpit. Then it was located to create zero degrees static balance at the designed wing center pressure point. It was first flown on the 11th of June and it was so sensitive longitudinally it was difficult to fly. This was solved by putting a split piece of copper tubing over the horizontal stabilizer leading edge which decreased elevator sensitivity. The engine baffle plates created some airflow problems too and so they were removed. Livingston had plenty of time to get the bugs worked out before coming to the Chicago races, which accounted for his fine performance.

The Detroit News Trophy Race for aircraft efficiency was not held as part of the NAR from 1932 to 1934. But in 1934 the NAR held at Cleveland August 30 through September 2 was again an event. Cessna's No. 4 production model C-34 was taken to Cleveland. It won the News Trophy race and the 550 cubic-inch displacement sweepstakes. It repeated the Detroit News Trophy win in 1935 at Cleveland. In 1936 a Cessna painted light green with chrome yellow trim and dark yellow pinstripe and a black 75 painted on the fuselage won the Detroit News Trophy race at the Miami All American Air Races. The pilot was Dwayne Wallace. Eldon Cessna had won it



Side and three-quarters rear view of CR-3 after Livingston's modifications of lower canopy with open headroom at top and wheel enclosure panel added to gear. Livingston's license number was 1427. He used 14 for the race number on his Monocoupe and 27 on the Cessna.

in 1931 with an AW, so Cessna came into permanent possession of the trophy.

Publicity resulting from the Cleveland and Miami races plus several other smaller events resulted in bringing customers to Cessna and by the end of 1936 production rose to 33 aircraft. On October 8, 1936, Clyde Cessna announced his retirement. He sold his stock to Dwayne and Dwight Wallace in 1936 but remained as president until retirement. He returned to his 640-acre farm near Rago and was content inventing farm implements until he died at 74 in 1954. Eldon came to the West Coast and worked as an engineer for Northrop and then North American until his retirement. The C-34s became C-37 (46 built) and then C-38 (16 built) before the change of the model designation system. The new ones were C-145s and C-165s based on horsepower rating of engine. Production soared to 50 planes a year and they were known as *Airmaster*. From 1936 on, Cessna quickly slipped out of the air racing limelight and began making a name for himself in commercial aviation and receiving some military orders. Almost every pilot knows the Cessnas but few know of what Cessna did in the air racing historical records.



ABOUT THE AUTHOR

Bob Hirsch served 22 years in the Army Air Corps and USAF as a Crew Chief, Flight Engineer, Cadet, Fighter and Bomber Pilot in combat, Test Pilot, Engineering Officer, and Air Technical Intelligence. He accumulated a little over 4000 hours in 72 different types of aircraft. He married a young, beautiful girl in Germany and left the service for an engineering career in Aerospace, where he has worked on projects such as B-20, DC-8, A-4M, Apollo, Moll, Space Shuttle and most recently the Space Station. He was five years in the college educational media and is certificated. His hobby is researching Air Racing history and makes scale drawings of them. He receives mail from 17 countries outside the U.S.A. He is working on a book of the Wedell-Williams Air Service.



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