

MARKER'S CLUNK

This ex-Royal Canadian Air Force all-weather fighter has found an unusual home

BY ROBERT S. GRANT

PHOTOGRAPHY BY ROBERT S. GRANT EXCEPT WHERE NOTED



Sunday afternoon drivers cruising countryside east of Belleville in southern Ontario, Canada, sometimes discover a picturesque road crossing two pairs of rusty railway tracks. Called the "Shannonville Gravel," despite a coat of pavement applied decades ago, this quiet north/south thoroughfare intersects County Road 18. Anyone turning here, back toward the city of approximately 40,000, soon passes the turf-gravel airstrip of Belleville's airport.

In 1962, James E. Marker, originally from a farm near Dayton, Ohio, built the airport and encouraged many to fly. From

private to commercial license, gliders or multi-engine, he opened his costly facilities to anyone with the slightest interest in aircraft. I picked a million rocks from his runway and, with Marker's encouragement, logged hundreds of hours on my Household Finance-financed clipped-wing Piper J-3 until someone finally gave me my first flying job. I was not the only airplane nut — many left the grass field and moved into a career they enjoyed.

Today, nearly two dozen light aircraft — Cessna 172s, Piper Cherokees, Christavia homebuilts, etc. — dot a carefully leveled grass parking area. What often

causes non-aviation Sunday drivers to mow down a mailbox or two is a tremendous twin engine jet aircraft facing the road. From a few hundred yards away, the Canadian-designed and built Avro CF-100 Mk.4A Canuck looks capable of taxiing to Runway 26-08 and blasting off. However, chances of the "Clunk," as mili-

Unlike most jet fighter aircraft, the CF-100 had external rubber boots on the mainplanes and horizontal stabilizer. At one time, Avro considered placing Bristol Orpheus engines to each wing tip. This would have permitted routine flight beyond 50,000 feet, but the project ended.



tary pilots and navigators nicknamed it, moving from its present position are unlikely. Many years before, someone removed the powerful Orenda engines.

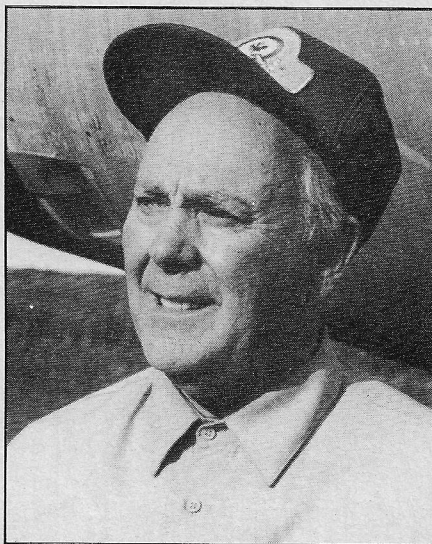
Shortly after incompleting high school and working in Oshawa as a General Motors assembly line laborer, I occasionally drove along Hwy. 401 to visit my parents in Belleville. En route, the Bell Museum in Cobourg displayed an aluminum finish CF-100 from a hilltop above the passing traffic. After leaving the province of Ontario and pursuing an aviation career, thoughts of that straight-wing fighter faded almost completely from my mind until 20 November 1978.

A newspaper clipping described a military jet undergoing reassembly at the Belleville airport. A five-day auction at the Cobourg museum had taken place beginning 13 September, during which Jim Marker purchased the CF-100 and hauled it to Belleville on a flat bed transport. During my next visit home, I discovered the aircraft's serial number (18241) and learned from a flight manual the aircraft was a Mark 4A model. For over twelve years, the ex-Royal Canadian Air Force (RCAF) fighter drew its share of airport visitors from the Shannonville Gravel and Country Road 18.

James E. Marker, who also operates Loyal-Air, a flight school/charter organization, had watched my fumbling aviation career since I threw an empty soft drink bottle too close to his Luscombe on floats. Over the years, I observed his progress in trying to maintain an airport in Belleville and the regrettable fact that his efforts have remained almost unrecognized for his contributions to Canadian aviation.

Marker's CF-100 has its origin as far back as 1945. At the time, the RCAF issued specifications for a twin-engined jet fighter and A.V. Roe Canada Ltd. acquired a manufacturing plant at Malton, Ontario (today's Lester B. Pearson International Airport at Toronto). The company began building an advanced transport called the Avro C-102 Jetliner which flew as CF-EJD-X in 1949. Unfortunately, the short-sighted, stultified minds of Canadian politicians canceled the C-102 project when they did not grasp the concept that Canada could produce a sophisticated aircraft far ahead of its time.

Design of the CF-100 paralleled the Avro Jetliner. According to aviation historian Larry Milberry's *The Avro CF-100*, A.V. Roe managed to present preliminary drawings of a potential airplane to the RCAF in August 1946. Two years later, plant tooling began.



James E. Marker, Belleville Airport owner.

Canada's CF-100 Mk.1 made its first flight on 19 January 1950 with test pilot William Waterton at the controls. Despite its tremendous size, the straight wing fighter rolled a mere 1500 feet before leaving the runway. After attending to some design faults, Avro arranged demonstration flights throughout Canada and the United States. Washington, D.C. and Boston, Massachusetts, hosted the revolutionary two-place CF-100 and the USAF carried out evaluations at Wright Field in Ohio. The RCAF accepted its first at Malton on 17 October 1951.

Eventually, 692 CF-100s of five marks rolled off the assembly line at Malton. The prototype cost approximately \$CAN-5,350,000. James E. Marker's MK.4A model came in at more than \$420,000 per airframe and spent most of its flying career at RCAF Station Clinton near London, Ontario. During the 1960s, CF-100s went to scrap dealers for \$300 to \$350 per unit. Today, observers speculate that serial number 18241 sold at Cobourg for \$5000.

"By late 1952, a wide range of CF-100 variants was in the works from MK.4X to Mk.8. These were to feature such changes as greater wing area, thinner wings, up-rated engines, afterburners and improved fire control systems," wrote Milberry. "But, by early 1953, only the MK.4, MK.5 and MK.6 were actually being pursued."

Canada's first MK.4 flew on 11 October 1952 and differed from previous CF-100s by a longer, blunter nose which accommodated a larger radar scanner. Although Marker's MK.4A never had automatic pilot installed, flight testing took place in December 1952 at Minneapolis to perfect a system coupled to the fire control unit.

Powered by two Orenda 9 engines, producing 6300 pounds of thrust, the Mk.4A had a loaded weight of 37,000 pounds and cruised at 525 knots. Its basic weight, according to faded stencil lettering on 18241's fuselage, was 24,682 pounds. With a wing span of 49 feet, 10.6 inches, without tip tanks, and 57 feet, 5.6 inches with them, Marker's aircraft has a height of 14 feet, 6.4 inches and, said author Ken Molson in his *Canadian Aircraft Since 1909*, managed a combat ceiling of 41,000 feet climbing at 7600 feet per minute.

Intended as an all-weather fighter, Canada's CF-100 had not been designed as a day-only airplane. Sabre pilots denigrated the heavy Lead Sled, but far from being a sitting duck, it held its own. One pilot described the CF-100 as the "Dakota (DC-3) of the jet world" and reliable, once initial faults were understood. Landings did not present problems considering the wide track gear and flaps could be extended 60 degrees. Finger-type dive brakes had full movement to 35 degrees up and 45 degrees down.

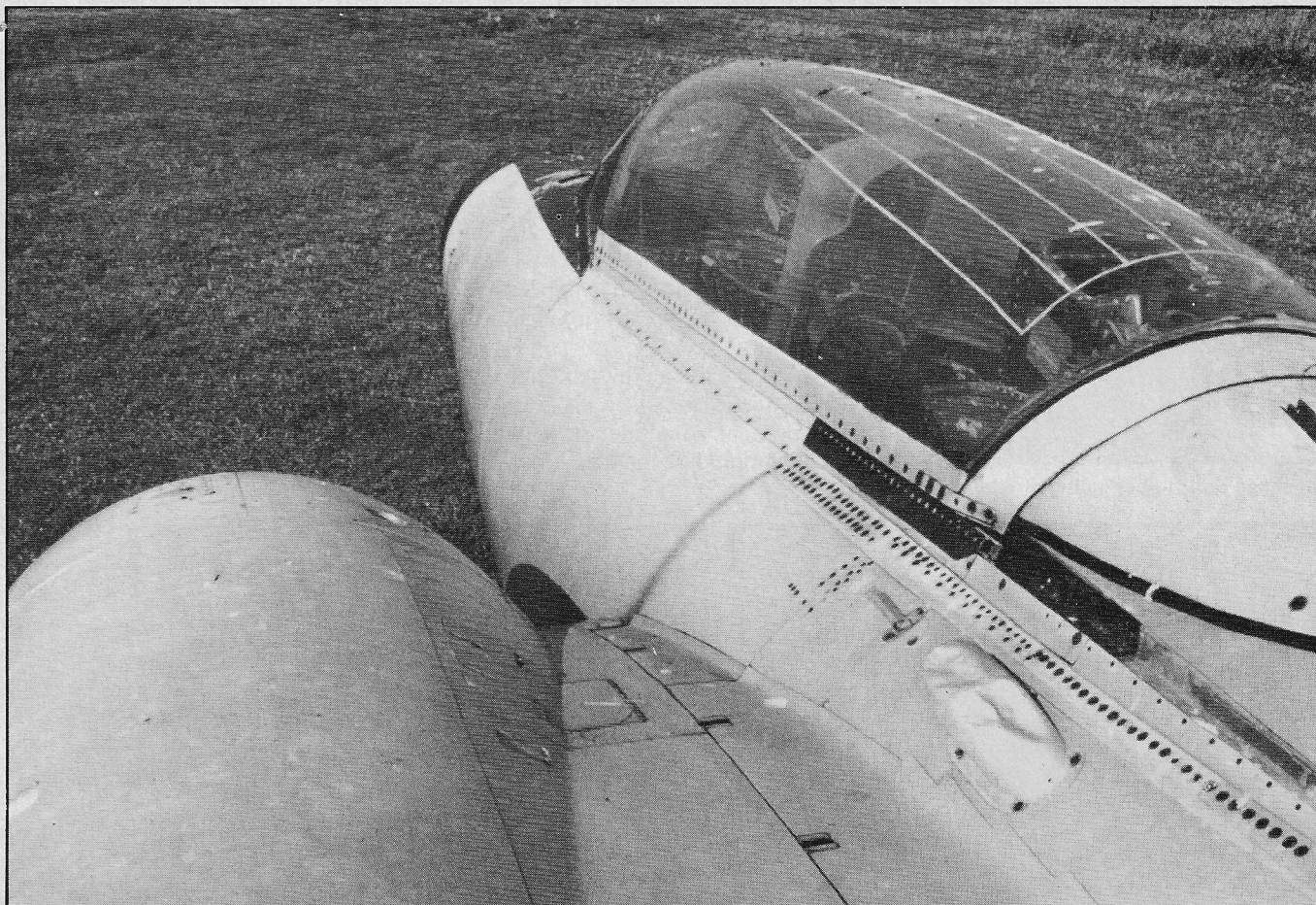
For several weeks in 1952, test pilots carried out Jet Assist Takeoffs at Ottawa with as many as six bottles at one time. Apparently, the additional thrust prevented the pilot from easing the control column forward until the JATO fuel burned out.

"Where the rig and empty bottles are jettisoned after use, a warning should be issued concerning the nose down change of trim, as this might prove embarrassing if the aircraft was below 150 feet," wrote a pilot.

At the time of introduction, the Clunk had few competitors in the United States. As the first straight wing aircraft to break the sound barrier, one CF-100 rival turned out to be the Northrop F-89D Scorpion with the same ceiling and range (2000 miles), but a cruise of 600 mph. Lockheed's F-94C cruised ten mph faster and the Westinghouse-powered Douglas F3D-2 staggered behind at only 530 mph.

Closer examination of 18241 revealed details of its metal frame windshield. Corroded shut, it consists of a small piece of armor plating and three pieces of bullet-proof glass. The front section has electrical de-icing via a transparent conductive coating, but armor plate glass side panels lack electrical wiring.

Unusual for a supersonic fighter, the CF-100 Mk.4A had rubber de-icing boots with a series of internal electrical heating elements. A cockpit cycle control regulated current to the eight boots heated for ten



An ejection gun provides power for the Martin Baker seat and is located between the CF-100's seat guide rails. The gun has a percussion-fired primary charge and a secondary one in an outer cylinder. The CF-100 Mk.4A's system did not allow the parachute to open until the "ejectee" had fallen below 10,000 feet.

seconds each. As part of the de-ice procedure, a control unit waited 140 seconds and then performed a shed-off cycle. It could not be checked while the aircraft remained on the ground or the system burned out after three minutes.

Marker's airplane held 1933 Imperial gallons of fuel in two complete systems known as left and right. Each consisted of four interconnected fuselage cells and twelve interconnected cells in the double-skinned wing. An auxiliary tank in the fuselage connected both sides. Wing tip tanks contained 580 gallons. Unlike many modern aircraft, the tips could not be released while airborne.

"A jettison system of air from a bottle charged to 1800 psi is stored in the fin. To jettison, this air is passed through a solenoid valve to an annular space in the jettison housing," stated a Mk.4A flight manual. "This attaches the tailcover to the up tank which breaks off the tail portion allowing the fuel to flow out under gravity."

Inside Marker's CF-100 cockpit, al-

most all instrumentation has been removed. Several pressure gauges remain and a switch on the left side of where the control column would have been, reads "2.75 ROCKET AUTOMATIC/MANUAL." Both Martin Baker Automatic Ejection Seats Mk.2E could not be seen inside the fuselage.

Outside, the three spar wing houses the retracting Dowty landing gear struts and a serial number on one stated December 1954. Marker placed huge steel plates under the nosewheel and mainwheels. At the time of writing, the black tires showed the strain of supporting the heavy Clunk or "Lead Sled" but Marker replenishes them occasionally and generally keeps the airplane in reasonable condition. In the past, vandals somehow found their way inside and smashed much of the panel. On each engine, immense red-painted plywood plugs cover the nacelles which housed the Orenda engines.

Now, the CF-100 placidly rests near a huge white hangar and still draws passers-by. "Quite a showpiece," Marker said re-

cently when asked why he purchased a non-flyable aircraft.

However, almost from the first day of ownership, the lethal-looking fighter with a belly gun mechanism still intact, drew attention of the wrong kind.

"When we were taking it apart at Cobourg, two guys, in a very official way, wanted to know who owned the airplane," recalled Marker. "When I told them, they asked what I planned to do with it. They asked if I intended to fly the airplane but I said no. Later, the guy who sold it to me asked for the invoice back so he could write on it, 'Sold for Display Purposes Only'."

Marker has no intentions of restoring 18241 to flying condition. Despite its exposure to over a dozen Canadian winters, the Clunk remains in far better shape than could be expected. One observer remarked how it needed "mostly paint and patience." Attempts have been made to purchase the craft since it became Belleville Airport's star attraction. Frontier Aviation Museum near Montreal has shown interest, but Marker does not plan to sell.

"Eventually, I suppose it'll go to a museum somewhere, but even without tender loving care, it'll last forever," Marker said.

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