

# Project Silver Bug

It was born in the Cold War era as a possible way of hiding high performance aircraft from Russian A-bombs, but it remains shrouded in mystery. The only mention the Air Force makes of that project is in *The Report on Project Silver Bug*, written in 1955 by the Air Technical Intelligence Center and Wright Air Development Center. It proposed the mounting of a research and development project into the building of a jet-propelled flying saucer, capable of both vertical takeoff and landing along with supersonic speeds up to 1,500 mph. If successful, the craft would have been based underground, thus avoiding the need for long runways and easily-distinguished bases which would have been easily taken out by a single nuclear bomb or missile warhead.

It was a great idea, actually. The U.S. government had taken the idea seriously enough to import a group of German aeronautical experts to this country after World War II. Some of those German experts had allegedly worked on similar projects under Hitler during the war. Hopefully, they would be capable of building a combat saucer for us under Operation Paperclip, the program which brought them to the United States.

The entire Silver Bug project remained clouded in secrecy and security classifications until the decade of the 1990s, when the one report was finally declassified and released by the Air Force. There is a semi-official story floating around that the Silver Bug project resulted in the ill-fated Avro Car, which only got a few feet off the ground, and the project was ultimately scrapped due to instability of the craft and an inability to fly. But public information officers at Wright-Patterson Air Force Base in Dayton, when asked if further reports on Project Silver Bug are available and if the project ever resulted in an operational aircraft, said no further reports on that project are currently declassified.

Persons who have investigated the Silver Bug project find that Air Force statement quite interesting, since it was not a flat denial that anything operational was ever produced from that R&D project ... if the project was a failure, why are any other reports on it still classified? A lot of experimental test aircraft have been checked out by the Air Force, are found to be failures, and are scuttled. Some of those investigators are convinced that Silver Bug actually flew, and that at least some of the resulting craft were and are in existence.

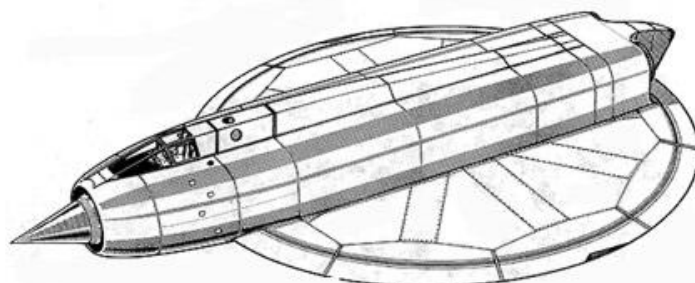
Whether or not the craft actually turned out to be powered by jet aircraft or some other propulsion system is unknown, as well as other aircraft features including size and the use the Air Force would put the aircraft to.

Those questions, as well as others, have no publicly known answers. What the investigators and everybody else are left with at present are only sketchy facts and a lot of speculation ... as well as some sightings of strange aircraft that could be of something Silver Bug resulted in.

What Project Silver Bug was set to begin work on in 1955 was the research and development project to field jet propelled flying saucers which could be dispersed underground in an attempt to get away from the air bases of the day which featured long runways. The jet-propelled disks were to be capable of vertical takeoffs and landings, and would be capable of Mach 3.48--faster than the SR-71 Blackbird.

**The Rush To  
Develop A Craft  
With Saucer  
Performance**

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A design for a circular-wing fighter-bomber that was never built.

Abbreviated Development Plan, (U)  
**AVRO Vertical Take-Off Aircraft, Weapon System 606A**

USAF Contract # AF33 (600) - 39722

26 June 1959,

AVRO Aircraft Ltd, Malton, Ontario, Canada

(NOTE: Although the 1958-59 re-direction of funds from this contract to help support the subsonic AVROCAR (USAF/Army Contract # AF33 (600) - 37496 development was detrimental, it should have nonetheless returned on-track by 3rd quarter 1960.)

This program called for development and manufacture of a prototype weapon system resulting in first flight of a vehicle in the 2nd Qtr of 1964. the Category I and II flight testing should have been completed by late 1965. The Contractor's Estimate for the prototype program was about 50 Million, and was to have provided 3 Supersonic Disc aircraft.

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What Batts and his buddy Joe saw at a range of approximately 200 yards in 1977 was a 200-foot diameter flying disk rising out of the ground of the desert with a bright light on its belly and flashing sequential lights at its center. It was silver in colour and Batts says there is no way it could have been a case of mistaken identity through swamp gas or a multitude of other common UFO debunking postulations put forward by debunkers.

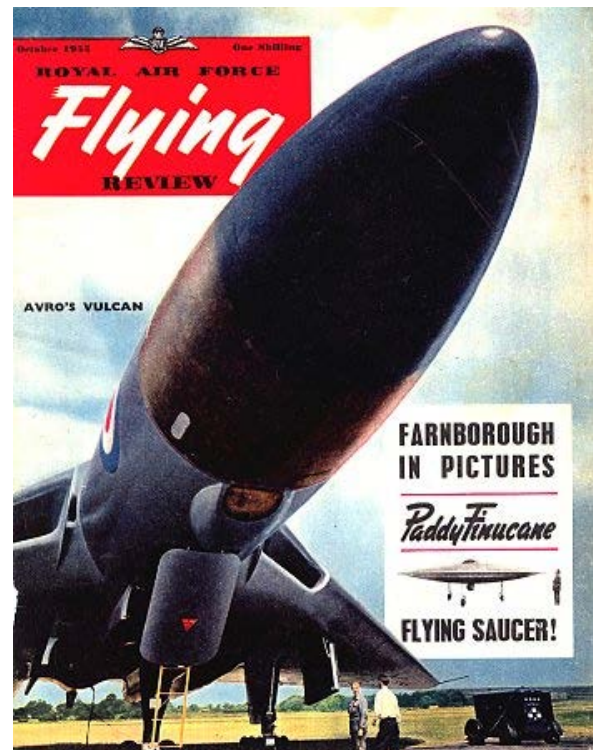
The Report on Project Silver Bug, dated Feb.15, 1955, and declassified on March 29, 1995, proposed the development of such a disk-shaped interceptor aircraft. The proposed craft would be capable of vertical takeoff and landing; a maximum level speed of 2,300 mph with reheat (afterburners); a ceiling of 80,600 feet; and a climb rate of 1.76 minutes to 36,090 feet.

Those performance figures were very advanced for 1955, and are not too shabby today. Top speeds of American fighter-interceptor aircraft of 1955 were around 1,000 mph, and they had a lower ceiling than what the disk would have. But the big thing as far as the Air Force was concerned was the potential such flying disks had for being dispersed in underground facilities.

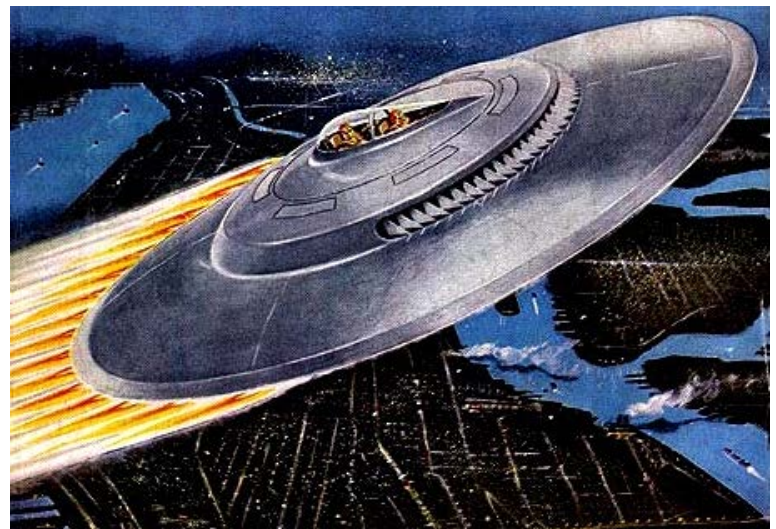
*The Report on Project Silver Bug* was issued by the Air Technical Intelligence Center along with the Wright Air Development Center at Wright-Patterson AFB in Dayton, Ohio. While the Silver Bug project has been officially claimed to have resulted in the ill-fated Avro Car, which turned into perhaps the world's first air cushion vehicle instead of a supersonic interceptor disk, UFO researchers have long questioned whether the project actually came to a sudden stop with development of the Avro Car, which was a flop at flight.

Recent enquiries to the Public Information Office at Wright-Patterson prior to Batts' account garnered the response that no further information on the Silver Bug project has been declassified at this time. That is not quite the same as an outright denial that Project Silver Bug actually came up with a workable prototype craft, or an operation disk-shaped interceptor. Nor does it rule out whether or not the project originally resulted in a flop at first with continued research into making a flying saucer actually work.

The Silver Bug report noted that a pair of ongoing U.S. projects involving the building of vertical takeoff aircraft had already occurred, after a discussion of the perceived need to get away from long, vulnerable runways was addressed briefly. The report noted that vertical takeoff craft were the way to get around the vulnerability of conventional air bases but "tail sitter" types of aircraft, equipped with turboprop engines, were found to lack the ability to join VTO



Royal Air Force Flying Review No.1  
October 1955

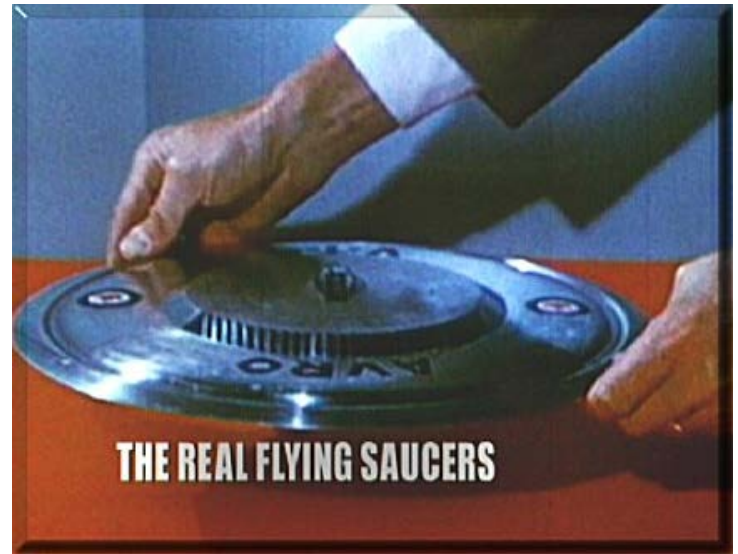


The MX-1794 Silverbug;  
an attempt by the US Air Force & Avro Canada  
to build a supersonic flying saucer in the 1950s.  
A product of true vision, the only thing that kept this machine  
on the ground was the annoying fact that it didn't work.



and landing abilities with the high performance of a fighter aircraft.

The report was more enamoured of a proposed classic flying disk aircraft, which exhibited performance characteristics that were greatly advanced even by current standards. The largest of the proposed disks weighed 26,000 pounds, was powered by a radically new type of jet engine, and could climb to 36,090 feet in approximately one minute and 45 seconds. This is in the performance range of the current F-15 fighter the Air Force uses, and was attributed to a machine in 1955, some 20 years prior to the F-15's first flight.



But the Silver Bug report was not the only publication in 1955 that contained information relating to the development of flying saucers by the federal government.

*Look Magazine*, in June 1955, said in an article that persistent and fairly credible accounts claimed that A.V. Roe, Canada, Ltd., a Canadian aircraft manufacturer, had a saucer design under development since 1953. It had been abandoned since the cost factor was too high for the Canadians--over \$75 million to get a prototype model into the air.

That 1955 issue of *Look* also noted that at a meeting of engineers it was indicated that while flying saucer or sphere projects might have been purely hypothetical then, new air defence problems were setting up requirements for aircraft performance which would apparently be best met by a saucer aircraft.

Brig. Gen. Benjamin Kelsey, deputy director of research and development for the Air Force, was quoted as saying that ``Airplanes today spend too much time gathering speed on the ground and not enough time flying in the air.'' The fighters of that time, Kelsey said, needed extremely long runways and there were few in existence then that were long enough.

Those few, he said, and the concentration of planes using them, provided a worthwhile target for an A-bomb. With one blow, the enemy might cripple a substantial portion of the American air defence.

Vertical takeoff planes would not need long runways, he said, and could be dispersed widely and safely. Future airports built for vertically rising flying saucers would have no need of the many vulnerable runways the fighters of 1955 (and of today) require. The complete operation could go underground, the *Look* article noted, with tunnels with takeoff shafts set in the ground, complete with maintenance bays, fuel, and crew quarters.

Those underground bases, the article said, would be bombproof shelters for a saucer squadron. The shafts would be sealed after takeoff for camouflage and protection. The *Look* article also detailed what some of the requirements of an ideal defence fighter would be. Those attributes would be the ability to take off and land vertically; a high speed of over Mach 2 (more than 1,500 mph); high rate of climb; excellent manoeuvrability; heavy armament; and the ability to operate at 60,000 feet.

It should be noted that the one disk craft noted in the Silver Bug report met and exceeded all of the criteria listed in the *Look Magazine* report. But *Look's* report also noted that such a disk-shaped craft might include a one-man crew, housed in a glass bubble that would provide excellent visibility. The prone position of the pilot would not only allow improved streamlining, but also enables (original wording) the pilot to withstand high accelerations and quick turns. There were some American disk-shaped craft that were developed publicly, namely the Flying Flapjack and/or The Flying Flounder, which did not come to operational use.

Avro-Canada, meanwhile, was reported to be working in 1953 by the *Toronto Star* to be working on a new flying saucer at their plant in Malton, Ontario. On Feb. 16, 1953, the Minister for Defence Production informed the Canadian House of Commons that Avro was working on a 'mock-up model' of a flying saucer which would be capable of flying at 1,500 miles per hour and climbing vertically.

The president of Avro-Canada also wrote in *Avro News* that the prototype being built was so revolutionary that it would make all other forms of supersonic aircraft obsolete. The new plane's official name was the Avro Car.

By 1960 it was being claimed officially that the design had been dropped, and the so-called prototype of the Avro flying saucer is reported to be housed in the U.S. Air Force Museum in Fort Eustis, Virginia.

A number of German aeronautical engineers were reputedly brought to the United States after World War II to continue their work on VTO flying disks which had originated as a Luftwaffe research and development project, *Popular Mechanics* said in its August 1997 edition. The Germans, in the closing days of World War II, had one big aeronautical problem--their airfields were under constant Allied aerial attack which kept what fighters they had left from being an effective deterrent against American and British heavy bomber raids on German industrial targets. U.S. Army intelligence officers combed Europe for two brothers called Walter and Reimar Horten following the war, certain U.S. government files say. The brothers were trained as pilots and engineers, and reputedly had close connections to the Reich's high command.

The two brothers were believed to have persuaded German leaders to construct a fleet of saucer-shaped bombers, a *Popular Mechanics* story in August 1997 said. U.S. military historians acknowledge the Horten brothers built and flew prototypes of circular and flying wing aircraft, the PM story said, but the historians also discount the craft as aeronautical curiosities with no military value.

A service-wide request for information about the two brothers showed the two men had already been found, PM's report said. They had already been released by the UK for exploitation and allocated to the United States on Nov. 15, 1946, via Operation Paperclip.

Operation Paperclip was the American program that put a lot of German scientists and engineers on the U.S. payroll following World War II. These included Wernher Von Braun and some of his associates, who were ultimately responsible for building the American ICBM force and space program rocket boosters.

But the existence of Paperclip was not released publicly until Americans first set foot on the moon, due to the fact that the laboratories at which many of the former German scientists had worked were also Nazi slave labor and death camps. Apparently negative public reaction was the reason the news was kept secret until the space program resulted in a record-breaking moon landing.

The Horten brothers, according to PM and the files it got, had been working on a design for a new generation of circular VTO craft just prior to their capture--with specifications much like those described in the *Report on Project Silver Bug*.

Other records, PM said, show that models of the Hortens' design, possibly constructed by the brothers themselves, were tested in the wind tunnel at Wright Field, now Wright-Patterson AFB. While the Air Force acknowledges the Hortens were working on a flying disk craft, PM said, the AF also says it was inherently unstable.

Other declassified records gained by PM in the course of its investigation, the magazine article said, suggest the Avro Car built for the Army and a deteriorating plywood Horten flying wing were both shells intended to disguise the existence of more formidable flying machines.

One of the more potent of those flying machines, the PM report said, was developed under the secret Project Pye Wacket. Its object was to design a five foot diameter liquid fuelled missile launch platform to protect American bombers penetrating Soviet airspace.

Samisdat Publications, a right-wing organization based in Toronto, Canada, has said that the Nazis did in fact develop the [Flügelrad](#), or 'Wingwheel', a saucer-helicopter which could take off vertically. One of the scientists involved with the early Nazi saucer projects was identified as [Viktor Schauberger](#) by Samisdat. Schauberger was brought to America after the war, where he was rumoured to be working on a top secret flying disk project in Texas for the U.S. government until his death in 1958. Some reports maintain that some prototypes the government is now developing are as advanced in propulsion and other areas over the Schauberger models as the space shuttle is over the biplane. Some of his prototypes include things like the Model I, the most conventional

design by today's concepts, which used a standard German Walther rocket engine and was steered by a rudder.

Model II, an improvement over Model I, had a specially designed ``rotary wing'' which stabilized and steered the craft. This model was more maneuverable and faster.

Model III was supposedly extremely fast, capable of attaining speeds over 6,000 kilometers per hour and using a jet vacuum propulsion system. The fuel mixture produced vapour trails, an acrid smell, and sometimes flames and sparks. The saucer's propulsion system produced high pitched, whining sounds. The craft was also capable of terrific acceleration, or steady hover. It could also climb and bank steeply and often startled observers with loud sonic booms as it accelerated through the sound barrier. This model was reportedly equipped with telescopic landing gear.

Successors of the Model III, still in the planning stages during the middle 1940s, were said to utilize the Earth's magnetic field in their propulsion systems.

And there is also one home-grown American scientist who apparently had some input into the U.S. government's flying saucer project--T. Townsend Brown, and his Project Winterhaven. Brown was an American physicist, who was heavily involved in electrogravitics research. In the middle 1920s, he discovered it is possible to create an artificial gravity field by charging an electrical capacitor to high voltage.

By 1958, he had managed to work his way to the point where he had succeeded in developing a 15-inch diameter model saucer that could lift over 110 percent of its weight. What his experiments had inaugurated was the new field of electrogravitics, or the technology of controlling gravity through the use of very high voltage electric charges.

By 1952, Brown gave a demonstration to an Air Force major general in which Brown flew a pair of 18-inch disc airfoils suspended from opposite ends of a rotatable arm. The discs were electrified with 50,000 volts and circuited at a speed of 12 miles per hour.

Approximately one year later, he flew a set of three-foot diameter saucers for Air Force officials and representatives from several major aircraft companies. These discs were energized with 150,000 volts, and sped around the 50-foot diameter course so fast that the subject was immediately classified. A report by ``Interavia'' magazine noted that the discs would attain speeds of several hundred miles per hour when charged with several hundred thousand volts.

The secret to Brown's discs was that they were charged with a high positive voltage, via a wire, running along their leading edge. A high negative voltage ran along their trailing edge, also on a wire. As the wires ionized the air around them, a study by Paul A. LaViolette said, a dense cloud of positive ions would form ahead of the craft and a corresponding cloud of negative ions would form behind the craft.

LaViolette said that Brown's research showed that, like the charged plates of his capacitors, these ion clouds induced a gravitational force directed in the minus to plus direction. In short, a gravitational well formed ahead of the disc which pulled the craft, while a gravitational hill formed behind the craft and pushed it. As the disc moved forward in response to its self-generated gravity field, it would carry with it its positive and negative ion clouds and their associated electrogravity gradient. The discs in effect would ride their advancing gravity wave much like surfers ride an ocean wave, LaViolette said.

The occupants of one of the saucers, if there were occupants, would feel no stress at all no matter how sharp the turn or how great the acceleration, LaViolette said. This was because the ship and its occupants and the load are all responding equally to the wavelike distortion of the local gravitational field.

Brown by 1952 had put together a proposal, code named ``Project Winterhaven," LaViolette said, which suggested that the military develop an antigravity combat saucer with Mach 3 capability. As early as 1954, according to a report prepared by the private aviation intelligence firm Aviation Studies International Ltd., the Air Force had begun plans to fund research that would accomplish Project Winterhaven's objectives.

That report, issued in 1956 and called ``Electrogravitic Systems: An Explanation of Electrostatic Motion, Dynamic Counterbary and Barycentric Control," was originally classified as ``confidential." That report mentioned the names of more than 10 major aircraft companies which were actively involved in the electrogravitics research in an attempt to duplicate or extend Brown's work. Since that time, LaViolette said, much of the work in electro-antigravity has proceeded in Air Force black projects on a fairly large scale.

LaViolette's study, known as ``The U.S. Antigravity Squadron," has as its main contention that the Air Force is using Brown's antigravity ideas to help the B-2 bomber operate. He says the B-2 accomplishes using high amounts of electric charges on its leading and trailing edges through the same method Brown described in his electrokinetic generator patent.

The saucer craft Brown proposed was to be powered by a flame-jet generator, a high-voltage power supply that had the advantage of being both efficient and relatively lightweight, LaViolette said. That generator design, he said, uses a jet engine with an electrified needle mounted in the exhaust nozzle to produce negative ions in the jet's exhaust stream. The negatively ionized exhaust is then discharged through a number of nozzles at the rear of the craft. By electrically insulating the engines and conveying their positive charges forward to a wire running along the plane's leading edge, the required positively charged ion cloud is built up at the front of the vehicle. Brown, LaViolette said, estimated that such a generator could produce potentials as high as 15 million volts across his craft.

Whether or not Project Silver Bug ever resulted in a prototype or operational jet-propelled flying saucer is publicly unknown, given the fact that cutting-edge military development projects are normally cloaked in tight security. Even the money trail which would normally lead to the existence of top-secret or higher R&D projects is often a closed door. Military aircraft and weapon systems developers normally hide the funding for those projects in other projects, keeping sharp-eyed researchers from finding R&D projects hidden in the federal budget. Various UFO researchers have long been intrigued by the role the Air Technical Intelligence Center at Wright-Patterson AFB has played in various projects like Silver Bug. ATIC has since 1955 been known as the Foreign Technology Division, and is currently called the National Air Intelligence Center.



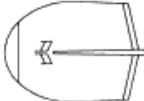


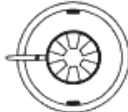
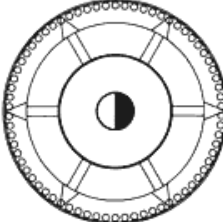
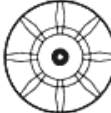
Over the years, despite the name, ATIC has been rumored in UFO circles to be the place where the debris from the [alleged Roswell, NM crash of an alien flying saucer](#) was taken for study. ATIC was also the parent Air Force unit for [Project Blue Book](#), which for several years was the official study center for unidentified flying objects.

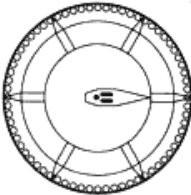

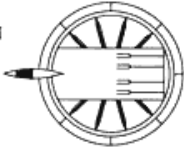
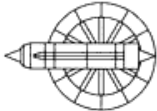



With no further available declassified reports, whatever Project Silver Bug finally arrived at remains as hidden as an underground interceptor craft installation. Or at least there was no information about any disk-shaped craft being tested by the U.S. Air Force ... until Frank Batts and his buddy got their directions wrong in 1997 and wound up on the wrong side of Nellis AFB.

That's where it stands at present. There is a fair amount of information floating around that would indicate Project Silver Bug did result in some type of actually flyable aircraft. But there is no actual proverbial "smoking gun" as yet.

Some persons who have researched Silver Bug, and some persons who claim to have worked on secret government aeronautical projects, are convinced or hint that something did fly as the result of Project Silver Bug. Some even say that some operational circular craft have been stationed at some places ... all underground, in effect hiding them in plain sight. But there is a lack of actual hard evidence that ATIC or WADC ever developed an actual operational flying saucer from Silver Bug. Just enough information exists to tantalize those who have investigated it so far, and a lot of gaps which can at present be filled only by speculation.



AVRO CANADA VTOL AIRCRAFT DESIGNS						
PRE-Y "PANCAKE ENGINE" DESIGN		ROTORS: 1	CONTROL TYPE: GYROSCOPIC	ENGINE TYPE: EXPERIMENTAL	DIAMETER/SPAN: UNKNOWN	WEIGHT: UNKNOWN
PROJECT-Y (Y-1) "AVRO ACE" SPADE SHAPE 1 CREW 2,400 kph. (1,500 mph.) AT (100,000 ft.)		1	GYROSCOPIC	EXPERIMENTAL	7.62 m. (25 ft.)	6804 kg. (15,000 lb.)
PROJECT-Y MILITARY VERSION 2 CREW		1	GYROSCOPIC	EXPERIMENTAL	UNKNOWN	UNKNOWN
PROJECT-Y2 SUBSONIC VERSION 1 CREW		1	GYROSCOPIC	EXPERIMENTAL	UNKNOWN	UNKNOWN
PROJECT-Y2 SUPERSONIC VERSION 1 CREW MACH 2		1	GYROSCOPIC	AS VIPER (8)	10 m. (33 ft.)	9702 kg. (20,000 lb.)
PROJECT-Y2 TEST AIRCRAFT 1 CREW MACH .94		1	GYROSCOPIC	AS VIPER (3)	UNKNOWN	UNKNOWN
PROJECT-1794 1 CREW MACH 4 AT (100,000 FT.)		1	PNEUMATIC DAMPED (ARTIFICIALLY)	AS VIPER (6) R.R. RB-108 (4)	10.75 m. (35.3 FT.)	12,383 KG. (27,300 LB.)
PROJECT-1794 TEST AIRCRAFT 1 CREW		1	PNEUMATIC DAMPED (ARTIFICIALLY)	AS VIPER (8)	UNKNOWN	UNKNOWN

AVRO CANADA VTOL AIRCRAFT DESIGNS					
	ROTORS:	CONTROL TYPE:	ENGINE TYPE:	DIAMETER/SPAN:	WEIGHT:
PROJECT-PV 704 2 CREW MACH 1.74 AT 25,900 m. (85,000 ft.)		2	PNUEMATIC DAMPED (ARTIFICIALLY)	ORPHEUS (6) SOAR (20) SOAR (50) RB108 (4)	18.6m (61 ft.) 10.76m (35.3 ft.) UNKNOWN UNKNOWN
PROJECT-PV 704 ALTERNATE VERSION 2 CREW MACH 1.74 AT (85,000 ft.)		2	PNUEMATIC DAMPED (ARTIFICIALLY)	AS VIPER (6)	UNKNOWN UNKNOWN
WEAPON SYSTEM 606 A FIRST VERSION 2 CREW MACH 3 AT (65,000 ft.)		1	UNKNOWN	AS VIPER (6)	8.84 m. (29 ft.) 8839 kg. (20,000 lb.)
WEAPON SYSTEM 606 A CONFIG. A 1 CREW MACH 2.2		1	UNKNOWN	PW J58 (JT11-B2-58) (2)	UNKNOWN 29,480 kg. (65,500 lb.)
AVROCAR VZ-9-AV ORIGINAL VERSION 2 CREW (362 mph.)		1	MECHANICAL	J69 T9 (3)	5.486 m. (18 ft.) 2,495 kg. (5,500 lb.)
VERSION WITH TAIL 2 CREW (480 mph.)		1	MECHANICAL	GE J85 (2)	6.1 m. (20 ft.) 4,400 kg. (9,700 lb.)
VERSION WITH WING EXTENSION WITH WINGLETS 2 CREW		1	MECHANICAL	GE J85 (2)	7.47 m. (24.5 ft.) 4,400 kg. (9,700 lb.)





## Avro Canada History

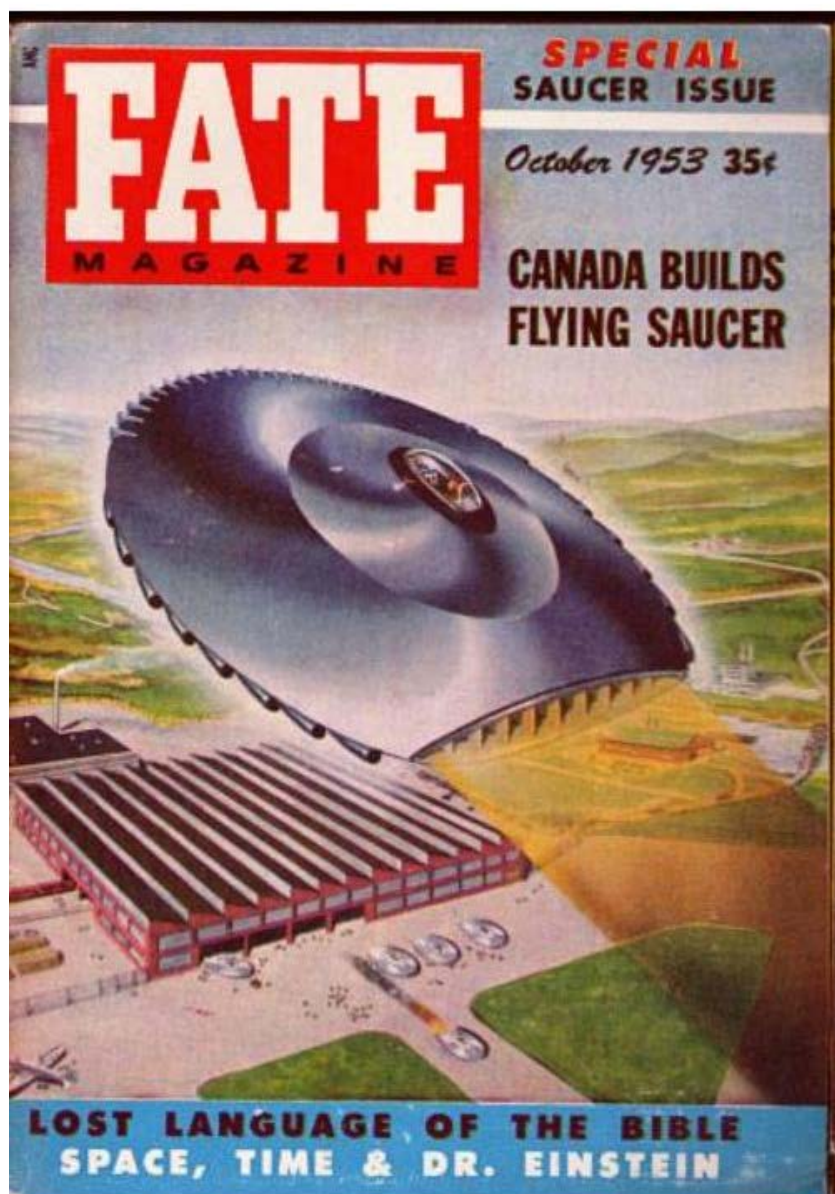
After World War 2, the A.V. Roe aircraft company was restructuring and looking for new projects. During the war the company produced several planes such as the Anson, Lysander and the Lancaster bomber in it's Malton, (Toronto) plant (Victory Aircraft).

It was now peacetime and new aviation ideas were surfacing. The company designed and built the first successful jet turbine powered passenger aircraft in North America called the "Jetliner"

At this time the norm for passenger aviation were propeller powered planes such as the DC 3. The concept was revolutionary. After successful flights, one being to New York city, where the designers and crew were given a ticker tape parade, and heralded as aviation pioneers, the project was scrapped. The U.S. aircraft industry quickly picked up on idea.

At the same time the RCAF required a new jet fighter and the company designed and built the CF-100, "CANUCK" a sub mach fighter plane, 692 were built.

During the 1950's the "Cold War" was heating up between the United States and Russia. Nuclear bombs were everywhere, people lived in fear that a nuclear war would start and everyone would be killed.



### "The Legend That Will Never Die"



The RCAF needing a replacement for the slow Cf-100, drew up requirements for a new "Jet Interceptor" which would fly past the north pole and shoot down the invading Russian planes in the far north before they could reach populated areas in the south. This plane would protect Canada as well as the United States since the shortest flying route to the United States is over Canada.

The revolutionary Mach 2+ "[Avro Arrow](#)" was designed. The "CF-105". It was a large delta winged, twin engine plane that could

leave bases in the south and reach the invaders in minutes.

The company was awarded the contracts and design and testing began. To save design time and costs a prototype was not built, the company used scale models for wind tunnel and high mach tests performed by [CARDE](#). The results from these types of testing went right to the production line.

The rollout was on Oct. 4, 1957 and first flight was on March, 25, 1958, successfully flown by test pilot Jan Zurakowski.

Oct. 4 1957 was the same date that the Russians launched the first space satellite "Sputnik".

The plane was successful and flight testing went on. Five planes flew for almost 70 hrs, the sixth was 99%

completed and was to be a Mark 2, incorporating the newly manufactured "IROQUOIS" engine provided by Avro subsidiary ORENDA. Thirty more were in various stages of production in the plant.

The "IROQUOIS" engine was a technological marvel in itself. Mostly created from titanium, it produced more thrust than any other engine built anywhere in the world and was very lightweight.

Avro Aircraft was also designing and producing "Secret" projects such as "[Project Y](#)", which was a "Flying Saucer" for the United States military.

Suddenly February 20, 1959, Prime Minister John Diefenbaker stood in the house of commons and announced that the Arrow and Iroquois projects were canceled. This immediately put over 50,000 people out of work at the plants and outside suppliers. Avro Canada was closed.

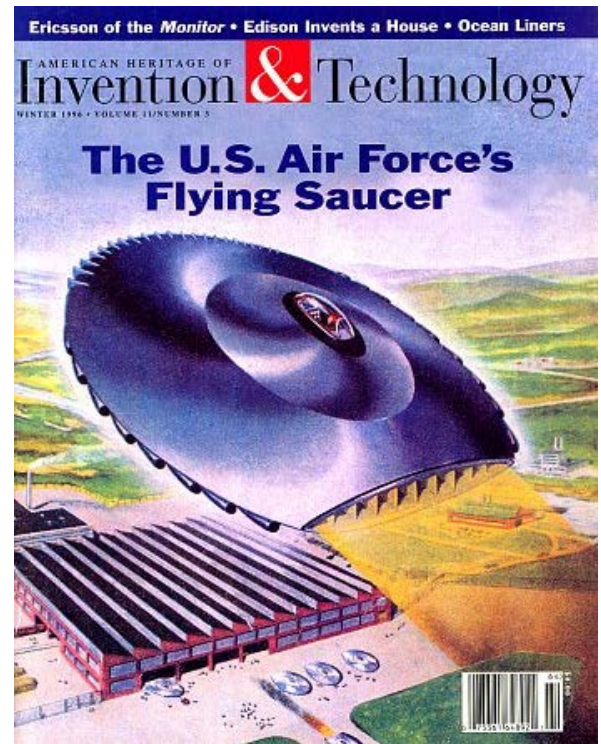
All the planes, in production and flying, with their blueprints, dies, moulds, anything that had anything to do with the plane was ordered destroyed by the government.

The pieces were cut up for scrap and smelted in Hamilton, Ontario.

A large number of engineers were immediately recruited to NASA and worked on every US space project, including "Apollo". [Avro Canada engineers](#) played an important role in putting man on the moon. Some engineers went to the "Concord Project" and continued their work in high mach aviation.

Orenda Engines survived and still produce top line turbine engines for helicopters and aircraft.

The Avro Jetliner and Arrow are long gone, however they remain an important part of Canadian history.









Project Silver Bug - plans that both Canada and the United States had in the 1950s to build and fly UFO-like aircraft.....but they were not alone. A decade before, the Nazis were doing something very similar.

That the Nazis had been working to perfect a circular-shaped aircraft that would broadly fit the classic flying saucer description is a theory that does have some merit.



## VZ-9A AVROCAR

Development sponsored by  
The US Air Force and The US Army

On February 11, 1953 The Toronto Star reported that a new flying saucer was being developed at the Avro-Canada plant in Malton, Ontario.

On 16 February the Minister for Defense Production informed the House of Commons, in Ottawa, that Avro-Canada was working on a 'mock-up model' of a flying saucer, capable of flying at 1500 miles per hour (2400 km/h) and climbing vertically.



The President of Avro-Canada wrote in AVRO NEWS that the prototype being built was "...so revolutionary that it would make all other forms of supersonic aircraft obsolete".

But by 1960 it was being officially claimed that the project had been dropped. The 'prototype' of the Avro flying saucer is now in the U.S. Air Force Museum in Fort Eustis, Virginia.



A true flying saucer. A circular craft with a large central fan that sucked in air from the upper side and expelled it at the edges of the disk. It flew well at low altitudes of five or six feet, but when it tried to rise further it became unstable. Never did more than hover at low altitude, and was abandoned after seven months because of stability problems.

The AVRO Canada VZ-9A AVRO car was, designed, built and tested just outside Toronto was unique in the annals of flight. Shaped like an obese discus, it was intended to use a novel flight mode called GETOL - Ground Effect Takeoff and Landing. The machine would lift into ground effect on a cushion of air expelled from a peripheral slot on its underside and directed by a sliding "focusing ring." The ring would then "focus" the cushion rearward, driving the flying saucer forward. The strange craft would thus taxi in ground effect until it had enough forward speed to climb out of ground effect and fly like a conventional airplane.

In actuality, the prototype never flew out of ground effect. To solve problems of stability in ground effect the designers came up with a pneumatic analogue control system using the huge vertical-axis lift fan as the sensing element. The obvious wobbliness of the ship in its original configuration completely disappeared thanks to this light, simple solution.

The Guardian

09-25-99

## Canada's Avro 'Flying Saucer' - And German Disc Technology

By Julian Borger

In 1954, a memo was fired off to CIA department heads demanding intelligence on new 'saucer-like' flying machines being developed by Britain and Canada. So began the race to develop the most unlikely weapon of the Cold War.

The year was 1952 and the cold war was at full chill. Joe McCarthy's Un-American Activities Committee was looking for reds under beds, and UFO sightings were spreading like an epidemic across the United States. Even air-force pilots reported being pursued by flying saucers. The sense of dread was turning to frenzy and the CIA decided something had to be done.

In one of his many memos on the subject, H Marshall Chadwell, the deputy head of the agency's Office of Scientific Intelligence, declared that "something was going on that must have immediate attention". He and others in the CIA were concerned that the Soviet Union was developing a secret weapon based on the "flying discs" the Nazis were rumoured to have constructed in the last months of the war.

Recently  
released  
documents  
from the CIA

archive are full of accounts by former German scientists of their desperate work to save the fatherland with revolutionary circular aircraft supposedly capable of enormous speeds. But when the CIA set up a study group to look into the phenomenon in 1952, it discovered something extraordinary far closer to home. Just over the border, in Canada, British engineers were in the process of building a flying saucer of their own.

It was called Project Y - a joint British-Canadian venture into the unknown which was, for much of the 50s, perhaps the most secret aviation project in the western world. A half-century on, the Project Y

**CENTRAL INTELLIGENCE AGENCY**  
INFORMATION FROM  
FOREIGN DOCUMENTS OR RADIO BROADCASTS

REPORT NO. OO-W-27432  
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ENGINEER CLAIMS "SAUCER" PLANS ARE IN SOVIET HANDS;  
SIGHTINGS IN AFRICA, IRAN, SYRIA

**GERMAN ENGINEER STATES SOVIETS HAVE GERMAN FLYING SAUCER EXPERTS AND PLANS**  
Athens, 1 Vradyni, 13 May 53

Vladyni (Special Service) -- According to recent reports from Toronto, a number of Canadian Air Force engineers are engaged in the construction of a "flying saucer" to be used as a future weapon of war. The work of these engineers is being carried out in great secrecy at the A. B. Roe Company (transliteration from the Greek) factories.

"Flying saucers" have been known to be an actuality since the possibility of their construction was proven in plans drawn up by German engineers toward the end of World War II.

Georg Klein, a German engineer, stated recently that though many people believe the "flying saucers" to be a postwar development, they were actually in the planning stage in German aircraft factories as early as 1941.

Klein said that he was an engineer in the Ministry of Speer (probably refers to Albert Speer, who, in 1942, was Minister for Armament and Ammunition for the Third Reich) and was present in Prague on 14 February 1945, at the first experimental flight of a "flying saucer."

During the experiment, Klein reported, the "flying saucer" reached --

1952 CIA document mentioning German flying saucers and the Canadian AVRO saucer.

**"The History Of The Flying Discs: A Contribution to its Possible Explanation"**  
by Dr. Eduard Ludwig, Santiago, Chile. Av.Cristobal Colon 1916.

This paper starts in 1915 with a history of aviation and discusses the work of Professor

story remains a remarkable forgotten chapter in the history of aerial design, an idea that came tantalizingly close to breaking all the rules of the sky, before collapsing in bitter

Junkers in Dessau, in relation to his work with gas turbine rotary trust rings. He also talks of Dr Bock, Professor at the Technical High School of Berlin, who, as he says "may have been the greatest genius of German Airplane theoretics..." and later was named "constructor of the Ministry of German Airways and Director of the German Institute of Airways Research in Berlin-Adlershof." He discusses the work of Russian Professor Jukowski of Moscow together with his "esteemed teacher, Dr. Kutta from the Technical High School of Stuttgart, Germany," whom he says "developed the theory of airplane-wingbeam.

In another part of the paper, he states: "It was principally the Aerodynamic Experimental Institute of the Göttingen University, directed by the renowned Professors Prandtl and Betz, and Constructor Flettner, which drew its conclusions from the theory of the airplane-wing beam. Flettner proved that the conditions of a rotating object are similar to those which appear in a 'translatorischen' movement. Thus was evolved the 'Flettner-Rotor'.

Finally, he points out that "the missiles of German anti-tank weapons were coated with chemical substances which melted up to 20 cms of steel plates within fractions of a second.

disappointment for lack of money and faith.

Back in the 50s, the news that British boffins were building a saucer set off alarm bells at the CIA. Was the US being left behind by its staunchest allies in the race for a technological edge? And if Britain and Canada could build a flying saucer, then surely the Soviet Union would be far ahead.

Chadwell wanted answers. The sense of urgency is tangible in a memorandum he sent in June 1954 to his department heads, demanding reports on "the use by any foreign power or nation of non-conventional types of air vehicles, such as or similar to the 'saucer-like' planes presently under development by the Anglo/British Canadian efforts".

While CIA agents were dispatched to watch eastern skies for flying saucers, US Air Force officers were paying a visit to Malton, just outside Toronto, the site of the city's airport and the research headquarters of Avro-Canada. Avro was a subsidiary of the British aircraft firm AV Roe (legend had it that there had not been space on the factory roof to include the "e" from Roe), which was in turn part of the legendary aviation group, Hawker-Siddeley. During the war, its engineers had been famous for the Hurricane fighter and the Avro Lancaster bomber. Now, under the tension of the cold war, they were trying something completely different.

After the war, Malton was the place to be for hotshot aircraft designers fleeing Britain's doomed aviation industry. Among them was a softly spoken, supremely talented 31-year-old called John Carver Meadows Frost, who had already earned a reputation for unorthodox design with the sleek De Havilland 108, a swallow-shaped research plane and arguably one of the most beautiful aircraft of all time.

Frost was brought to Avro-Canada to work on the CF-100 fighter, an ugly pug-nosed design he never really liked. He soon became obsessed with far more radical departures from orthodoxy. It is unclear whether he drew inspiration from the increasingly widespread popular legend of alien-piloted flying saucers skimming through the post-war skies or how much he relied on previous research.

He would have known about the "Coanda effect", named after a French Romanian inventor, [Henri-Marie Coanda](#), who experimented with the first rudimentary jet engine as early as 1910. Coanda found that a turbo-jet would not only provide thrust. By sucking in air, it could also create a vacuum above the wing and thereby produce extra lift.

There is plenty of evidence that in the closing stages of the second world war, as both sides threw jet fighters into the fray for the first time, the Nazis began to experiment with secret weapons built around the Coanda effect. Among the documents in the CIA's "X-file" archives is an interview given by a German aeronautical engineer called Georg Klein, who claimed to have worked on a Nazi flying saucer under the supervision of Luftwaffe designers, [Rudolf Schriever](#) and [Richard Miethe](#).

Another document from the archives is a 1950 article written by a German emigre in Chile calling himself Dr Eduard Ludwig. The article, submitted to a Chilean magazine but apparently never published, was entitled: "The History of 'Flying Discs' - A Contribution to its Possible Explanation". It recounted Dr Ludwig's wartime work



at a Junkers research facility, helping develop a "one-piece metal wing" functioning as a "speedily rotating top" which was capable of vertical take-off and high speeds.

"The experiments turned out to be extremely difficult and involved many casualties," the professor observed drily, clearly rueful that the spinning top experiments had not come to fruition before the arrival of the Red Army.

He concluded: "The future will show whether the 'flying discs' are only the products of imagination or whether they are the results of a far-advanced German science which possibly, as well as the nearly finished atomic bombs, may have fallen into the hands of the Russians."

Some of the Luftwaffe's top engineers did indeed end up in Moscow, while a handful, such as Wernher von Braun and Dr Miethe, were spirited away to the west. Dr von Braun, of course, became the father of the US space programme. No one seems sure what became of Miethe.

In his own work at Malton, John Frost seemed to be groping his way. He was in search of the aeronautical holy grail of the age, the vertical take-off and landing (VTOL) craft, but began his research on a spade-shaped craft before settling in 1953 on a disc. The original concept called for a single flat turbo-jet to draw air in from above and force it out through nozzles around the edge of the craft. It would be kept aloft by a cushion of air and pulled upwards by the Coanda effect.

The early work was carried out in total secrecy. Only a handful of Avro workers were told what was going on, and even some of the engineers fashioning individual components were not informed what they were for.

"It was so secret that when Frost would come to the welding shop, he would sketch the piece he wanted on some paper, and when we had finished we had to put the sketch in a special garbage bag," Alex Raeburn, Avro's workshop superintendent at the time, recalled.

Verne Morse, the company photographer, was made privy to the secret only once it had already begun to take shape. "There was a stupid rumour going around the plant that we were building a flying saucer, and everybody was laughing about it," he said. "Then one day I was called in by security, and I was told I need clearance because we were building a flying saucer.

"My first impression was that this was ridiculous," he said, but when he was taken past the guards, through Project Y's double doors and saw the smooth metal disc taking shape, he was speechless. "It was a sense of 'Wow!' Just real awe."

But Project Y's first year was proving troublesome. The jet engine blew so hot it melted the steel structure of the craft, and its violent shaking would pop the rivets. When the gentlemen from the USAF arrived in September 1953, the Canadian government, having spent \$400,000 on the project, was glad to hand over the reins to a bigger sponsor. AV Roe, having failed to squeeze funds out of the British government, also welcomed the Americans with open arms.

In 1955, Project Y became the US defence department weapon system 606A, and a white USAF star was painted on the prototype's fuselage. Millions were now being poured into the project, and the cult of secrecy deepened yet further.

Alex Raeburn recalled the day in 1959 that the US navy came to take the prototype away for wind tunnel tests near Los Angeles. "We loaded it on a flatbed truck in the middle of the night. The police shut off all the traffic right down to Toronto harbour, and they put it on a US tugboat. They even had one of our men sworn in to the US navy so he could go with it, along the Erie Canal, along the New York intercoastal waterway, and through the Panama Canal."

With the help of the US funding, Frost had redesigned the original concept, placing three small jet engines around a central fan which would suck the air in through a circular intake at the centre of the disc. The pilot would sit in a little oval cockpit to one side under a perspex bubble. But the wind tunnel tests suggested that secret weapon 606A had severe stability problems and was in constant danger of flipping over like a stiff pancake once the throttles were opened on its jets. Frost and his assistants tinkered away at the problems for another year, but had still not mastered them by the winter of 1960 when Spud Potocki, a former Polish air-force flyer, took the prototype for its first flight.

Ernie Happe, another British engineer, was one of the few allowed to watch. "We were standing around it, and it was tethered with three cables to stop it flipping. It just went up a couple of feet off the ground, and

Potocki was sitting in the cabin fiddling around with the controls, trying to make it do what it was supposed to."

Over the next few months, as Potocki attained a feel for the delicate controls, he was allowed to roam around the Avro compound free of his tethers, dodging in and out of the hangars. Raeburn would often look out of his workshop window and see it floating by.

"He would go up and down and hover over the concrete apron and look in the doors of the hangars. I remember the wind would suck the ice off the puddles and they would float around in the air like plates of glass," Raeburn said.

Avro's management was overjoyed to see their flying saucer take to the air. The publicity department began designing brochures to capitalise on the aircraft's boundless potential for the day when the shroud of secrecy would drop away. It was to be called the Avrocar, and it would spawn a string of civilian and military spin-offs. There would be an Avrowagon for the family of the future, an Avroangel (an air ambulance that would zip to the scene of an accident and land on the spot) and an Avropelican for air-sea rescues and anti-submarine warfare.

Ken Palfrey, a draughtsman on the project, remembers Frost's own far-reaching hopes for his project. "He was planning to make one four times as big, to move troops in and out of battle, like helicopters do now."

The giant troop carriers would lurk under the enemy radar, drop their passengers and then zip into the stratosphere before the other side even spotted them. Happe recalls Frost excitedly visualising the craft bouncing off the upper layers of the atmosphere, crossing continents in a single bound.

The reality was more mundane. The Avrocar hovered happily close to solid ground but became dangerously unstable at heights much over eight feet, however much Spud Potocki struggled with the controls. The USAF wanted to fit it with a tailplane to test whether that would correct the problem, but Frost, a design purist, refused to countenance the idea.

"He wouldn't have it. When the Americans suggested that, it was about the only time I ever saw him angry," Palfrey recalls.

Frost insisted he could fix the problems, but the US military was rapidly losing interest. After spending \$7.5m, the defence department pulled the plug at the end of 1961, killing both the Avrocar and inflicting a final fatal blow to Avro, which struggled for a few more years before finally collapsing in 1965.

Frost left the country a bitter man in 1961. "He was completely fed up," Palfrey said. "It was a sad story. He was a fine guy. A gentleman."

The British designer ended up in Auckland, where he spent the rest of his days dreaming up gadgets for Air New Zealand, such as a hydraulic tail dock to allow engineers easy access to commercial planes. But it was small beer compared to the cosmic ambitions of Project Y, and the sense of betrayal was as keen as ever when he finally retired in May 1979.

In his valedictory interviews, Frost told the local press that he had been robbed of credit for inventing the hovercraft by Sir Christopher Cockerell. The irony was that at Malton, Frost's eyes had been so set on the skies he failed to spot the Avrocar's ground-hugging potential under his nose. Within a few days of leaving his job, he died. He was 63.

The legend of Project Y lives on in the web pages of committed Ufologists. Some speculate that it had in fact been a stunning success, and the sad litany of design errors and disappointments recalled by Avro veterans was merely a cover story. Others believe the whole project was merely a smokescreen for the Pentagon's "real" flying saucer project being masterminded in secret bases such as Roswell, perhaps by mysterious superannuated Nazis like Dr Mieth.

As for secret weapon 606A, the prototype is gathering dust in a corner of a Maryland warehouse which serves as a storage facility for the National Air and Space Museum. The burnished metal disc, about 15 yards across, is lying unsung and forlorn under the wing of a second world war Black Widow fighter. The perspex bubble over the cabin has been removed, its instrument panel is lying in a cardboard box somewhere else. But you can still see where the edges were charred in the effort to get John Frost's flawed vision off the ground.



**The Sunday Times**  
**March 26 2000**  
**Revealed - Britain's 1950s flying saucer**

Jonathan Leake, Science Editor

It is the nearest the RAF got to a UFO. Recently discovered photographs taken at a secret laboratory in the 1950s reveal for the first time how close Britain came to developing a saucer-shaped stealth fighter after the Second World War.

The pictures, taken at a research centre in Canada, show a revolutionary ultra-high-speed jet fighter designed by the British engineer John Frost. Aviation experts who studied the pictures last week said the jet incorporated some of the features on America's stealth fighter plane.

Work on the aircraft in the 1950s was code named Project Y. Frost and his team initially set out to build a disc-shaped machine with vertical takeoff, but ended with a sleek, arch-shaped aircraft.

"The pictures are a wonderful find," said David Windle, who has researched the history of Project Y. "It is technology that Britain just lost and it is a pity the project was abandoned. Who knows what would have happened if they had pursued it."

The photographs were taken at a laboratory in Malton, near Toronto, where Frost was working with Avro-Canada, a subsidiary of the British firm AVRO, to develop a jet fighter for the Canadian government. He wanted to create an aircraft which could fly at 2,500mph and take off and land on its tail.

The existence of Project Y has been known about for years, but no pictures of the aircraft have ever been found. An aviation researcher accidentally discovered the photographs in a file at the Public Records Office in Kew.

An elongated saucer shape was used because of the revolutionary "radial flow" jets designed to power it. The engines were designed to emit the exhaust gases from several small nozzles, increasing the thrust of the jet.

Aviation experts said last week that the prototype vehicle would have been almost invisible to radar because of its slim cross-section. It would also have been more likely to evade enemy missiles because of the lower heat output through the numerous jet outlets.

It is not known why the revolutionary jet never went into production, but the project was abandoned before the plane had its first test flight.

Alex Raeburn, then assistant superintendent of manufacturing at AVRO, described the life of secrecy for those on the base. "The security was very tight," he says. "Armed guards were stationed on the doors and drawings were taken away as soon as we'd made the component. In fact, we never knew exactly what it was we were making."

Verne Morse, one of the team who worked on the secret project, said he was amazed any pictures had survived because of the total secrecy surrounding the project. He described how he saw a subsequent model designed by the team.

"When I saw it [the plane] for the first time I was stunned," he said. "I'd heard rumours we were working on a flying saucer, but I dismissed them. Now, here I was looking at it, and I was speechless."

In 1954, the Canadian government decided to end the development of the aircraft. The American air force took over the project and later a scaled-down version of the plane became an "air jeep", which was nicknamed the Avrocar.

Raeburn said he witnessed test pilot Spud Potocki flying the saucer-shaped craft. "I remember him flying up to the hangar windows and looking in like a humming bird might do. When he flew in cold weather the engines sucked pieces of ice off the puddles. They'd float around in the air, shining in the sunlight."

Professor Michael Graham, professor of aerodynamics at Imperial College, said: "In the 1950s there was a

lot of interest in different aircraft shapes. This is built like a kind of flying wing. Its ability to hover is useful for landing in rough places."

While Frost worked on Project Y, American engineers were developing their own ultra-high-speed jets at desert bases in California and Nevada, which led to the development of spy planes such as the U2.

In 1961, however, despite the successful flights of the Avrocar, the American air force halted all funding for the company's researchers. There were no more British-designed flying saucers and Frost left AVRO and moved to New Zealand, where he died.