The Industry

CHEMICALLY FUELED Mach 3 jet airliner envisaged by Lockheed would be able to cross Canada in 80 minutes, enable Londoners to breakfast at home, do business in Vancouver same morning, return home for dinner.

Avrocar Prototype Completed

After six years of interesting though unconfirmable rumors, Avro Aircraft's famous "saucer" is reportedly ready for first tie-down tests at the Malton, Ontario plant. Recently the Space Committee of the U.S. House of Representatives was given a briefing on the highly-secret Avrocar, which has been financed since 1955 by the U.S. Department of Defense. To date, this program is said to have cost the American government some $5.5 million.

The Avrocar's performance is unknown, but reputed to lie within the 300 mph top speed, 1000 mile range bracket. The second prototype is expected to be ready for flight testing in the full-scale wind tunnel facility at the NASA's Ames Research Centre.

New Canadian Rotorcraft

Plans to produce a unique rotating wing two-place aircraft, the Avian 2/180 Gyroplane, have been announced by Avian Industries Ltd., Georgetown, Ont., a new company that was formed by a group of ex-Avro engineers immediately after the cancellation of the Arrow program and the subsequent mass lay-offs.

The Gyroplane, essentially an autogyro but with the added feature of a VTOL capability, employs ducted fan propulsion. Powerplant is a 180 hp Lycoming.

First flight is scheduled for the end of September of this year.

Rotor tip-jets utilizing stored compressed air are used for take-off and landing, thus briefly converting the autogyro into a helicopter during the take-off and landing phases. Vertical take-off to a height of 200 ft. is possible.

The compressed air is continuously stored in a fibreglass bottle at a rate of 5 bhp. during cruising flight and is released at a rate of 250 bhp. through the tip-jets for take-off and landing.

Avian Industries describes the Gyroplane as a personal aircraft which possesses the performance and operating costs of a conventional light plane. The handling characteristics are the same as for a conventional fixed wing aircraft and no special rotary wing training is required to fly the new machine. Flight characteristics differ in that it cannot be stalled and that gust response is around one tenth that of a fixed wing aircraft, "making for unparalleled smoothness of flight at low altitudes".

The Gyroplane has a design maximum cruising speed of 150 mph., minimum flying speed of 0 mph. (vertical descent), and a maximum rate of climb of 1500 fpm. Other leading particulars: all-up weight, 1600 lb.; empty weight, 1000 lb.; normal fuel capacity, 26 Imp. gal.; normal still air range, 450 mi.; rotor diameter, 26 ft.; overall length, 14.6 ft.; width in cockpit, 35 in.

Initial cost, given by Avian with tongue in cheek, will be about $8000 ex factory, to which must be added sales tax and distributors profit, handling and service charges, all of which are expected to bring the customer's price up to at least $10,000.

Operating costs, on the basis of 300 hours logged per year, are estimated at 8.76 cents per aircraft mile and 4.38 cents per seat mile; 500 hrs., 6.81 cents per aircraft mile and 3.41 cents per seat mile; 700 hours, 5.96 cents per aircraft mile and 2.98 cents per seat mile.

Avian Industries is headed by Peter Payne, president, who, while with Avro Aircraft, initiated a new rotating wing project that because of its commercial promise was financed by the company for the 18 months prior to last Feb. 20, with some 60 engineers being engaged on its prior to the lay-off.

Other company officers include E. Howard Smith, vice pres.; G. C. Hewson, treas.; W. H. Carr, secretary; G. B. Sampson, H. Bairstow and J. Malcolm, directors.

The company is pushing for a small Army order, pointing out that no Government subsidy is being sought, as the enterprise is prepared to stand on its own feet. The announcement of the new Avian project concludes by explaining that the company "is seeking a small fixed-cost Army order because the need for such an aircraft apparently exists and Avian believes that no one else can fill this need at the present time."

Canadair On Time... Again

Canadair began on-schedule deliveries of Bomarc components to Boeing Airplane Co. of Seattle, on May 6. Since that time, delivery has been made of several more sets of wings and ailerons for the ground/air missiles, the first items to be produced under the new defence production sharing arrangements between the two countries.

At the time the contract between Canadair Ltd. and Boeing was announced in Washington Feb. 23, it was interpreted as a test of Canadian production facilities, even though the money value ($1.7 million) was small.

In the intervening ten weeks between signing of the contract and start of deliveries, an accelerated production program was carried out at Canadair in order to meet the exacting delivery schedule. In that time, shipments of tools from Seattle had to be installed

at Canadair, production crews trained and assembly areas organized. Moreover, permanent sources of supply had to be established, and many new manufacturing processes introduced.

None of the components contracted for so far at Canadair will go into Bomarcs planned for Canadian installations; all are earmarked for Bomarc A's for the USAF. At this time it is not known if recent substantial cutbacks in U.S. government funds for Bomarc A production will have any effect on this Canadair subcontract.

Thanks Anyway

The Boeing B-47 which has been in use as a flying test bed for the Orenda Iroquois has been returned to its owners, the U.S. Air Force. The B-47 was borrowed by the RCAF from the USAF on Orenda's behalf in 1956. The modification work necessary to accommodate the Iroquois installation was carried out by Canadair Ltd. and test flights with one of the turbojets installed began in mid-1957.

The aircraft was flown back to the U.S. by Mike Cooper-Slipper, Orenda's chief test pilot.

CMA Doppler Output Grows

Canadian Marconi continues in full production of its FM/CW airborne Doppler navigation aid. The second series, the CMA-620 series, is presently in use with several international airlines. One production model installed on a commercial jetliner, functioned accurately at an airspeed in excess of 500 knots at altitudes above 40,000.

Pan Am recently published a report on its operations with the Marconi aid. Said the report: ". . . the CMA-621 Doppler Sensor provided ground speed to an accuracy of 1% or better and drift angles to plus or minus ½ degree or better with an exceptionally high degree of reliability."

The original engineering model, first evaluated by PAA for a period of 1000 hours, continues to function in service. The unit has performed without failure for 3000 hours of service.

EXECUTIVE GYROCOPTER: Known as the Umbaugh Gyrocopter, this unusually designed two-man helicopter is presently undergoing CAA certification. The Umbaugh is expected to sell for between $8,000 and $10,000 depending upon optional equipment installed. The tiny machine cruises at 100 mph; is powered by a 180 h.p. Lycoming or Continental engine. Avro Aircraft is reported to be studying possibility of producing this aircraft in Canada.

Lear Production in Canada

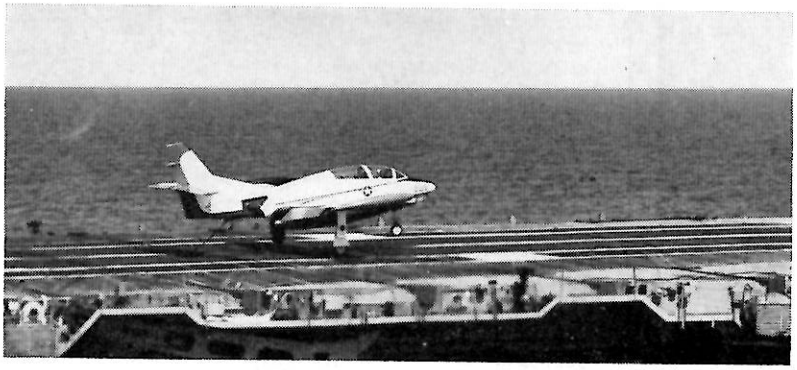
A group of Canadian companies have formed a team for the manufacture in Canada of equipment designed by Lear Inc.

Railway & Power Engineering Corp. Ltd. will perform the overall management function and will be responsible for coordination of the activities of the manufacturing associates as well as for the conformance of products with conditions of contract and specification.

Servomechanisms (Canada) Ltd., will be assigned manufacturing responsibility for electronic assemblies. With extensive experience in the manufacture of air data computers, range servos, amplifiers and power supply and control equipment, Servomechanisms has facilities well adapted to produce electronic assemblies used in Lear equipment.

Canadian Flight Equipment Cobourg Ltd. will produce mechanical components. This company has had wide experience with cartridge actuators and time release mechanisms; is well equipped to handle Lear components requiring precision machining.

Tamper Ltd., the largest wholly Canadian-owned producer of electric motors, is active in the design and production of airborne rotating electric equipment such as dynamotors and target towing motors. Tamper will manufacture similar apparatus designed by Lear.



T2J JET TRAINER: The U.S. Navy's new T2J jet trainer is shown landing aboard the USS Antietam during testing for carrier operation by Navy pilots. The carrier suitability trials were done on the Antietam, the first of the USN's canted deck carriers. Trials included catapult launches from the ship with varying wind conditions, varying catapult pressures to establish minimums needed to launch.

Rent Avro Space

Canadian Pacific Airlines has rented hangar space from Avro Aircraft Ltd. at Malton Airport. The space will be utilized for minor repair work on CPA's Bristol Britannia trans-continental service. Last month CPA began its Britannia service between Montreal

and Vancouver; with stops at Toronto and Winnipeg.

Servomechanisms Merger

The parent firm of Servomechanisms (Canada) Ltd., Servomechanisms Inc., is moving toward a merger with Laboratory for Electronics Inc., of Boston, Mass. It is planned that Henry Harding, president of Laboratory for Electronics Inc., will become president of the combined company, and William Shannon, pres. of Servomechanisms Inc., will become chairman of the board.

With the merger may come additional work in radar and pure electronics for the Canadian subsidiary, Servomechanisms (Canada) Ltd.

CPA Britannia Checks

It has been reported from the U.K. that a contract has been signed between CPA and Bristol Aircraft Ltd. to carry out Check 4's on CPA's six Britannias. The first aircraft was flown to Filton early in May and is expected to be back in service in Canada in early June. Each aircraft will take about a month to process, and Bristol estimates that each check will require about 15,000 man hours of work.

1000 Hrs. for Allison 501

Allison 501 turboprop engines, used in the Lockheed Electra, have been approved by the FAA in the U.S. for 1000 hrs. operation before overhaul. The announcement confirms an FAA 1000 hour authorization given last summer to a sampling inspection of four engines at 800 hours and two more at 900 hours.

Less than 24 hours later, Eastern Air Lines was notified that it could fly 1000 hours an engine. This is the longest time yet authorized for an American gas turbine engine.

Germany to Build Orpheus

An agreement has been signed between the Federal German ministry of defence and Bristol Siddeley Engines Ltd., providing for the manufacture under licence in Germany of the Orpheus 803 turbojet.

The Orpheus is considered to be the most advanced medium-thrust jet engine in production in the world today; the 803 version has the highest thrust/weight ratio of any jet engine presently in service. It is rated at 5000 lbs. thrust.

The Orpheus 803 to be built in Germany will power the Fiat G-91 lightweight tactical strike fighter, also being built in Germany under licence.

P & W Buys Jetstar

Pratt & Whitney Aircraft has purchased a Lockheed Jetstar four-engine executive transport for use both as a transport and as a flying test bed for P & W's own JT 12 light weight high thrust jet engines. The production model Jetstar is scheduled for delivery to the East Hartford, Conn. plant in September 1960.

Contracts Awarded

Contractors awarded business in excess of $10,000 by the Department of Defence Production during the period March 16 to April 15, 1959, include the following. The list does not include orders placed by the Department outside Canada, or with other agencies or increases in orders placed earlier—nor do orders classified as secret appear here.

Names appearing in bold face are current AIRCRAFT advertisers.

Aeroquip (Canada) Ltd., Toronto, $10,218 for aircraft components.

Aircraft Appliances & Equipment Ltd., Toronto, $197,615 for motor generator sets.

Aircraft Appliances & Equipment Ltd., Toronto, $25,622 for drawings.

Aro Equipment of Canada Ltd., Toronto, $10,339 for aircraft oxygen equipment.

Avro Aircraft Ltd., Toronto, $25,975 for airframe components.

British American Oil Co. Ltd., Toronto, $43,850 for aviation turbine fuel during year ending March 31/60.

Canadair Ltd., Montreal, $17,736 for airframe components.

Canadian Applied Research Ltd., Toronto, $107,032 for aircraft navigational equipment.

De Havilland Aircraft of Canada Ltd., Toronto, $351,462 for aircraft components.

Dunlop Canada Ltd., Toronto, $38,183 for aircraft tires and tubes.

B. F. Goodrich Canada Ltd., Kitchener, Ont., $10,833 for aircraft components.

Walter Kidde & Co. of Canada Ltd., Montreal, $16,000 for repair & overhaul of oxygen equipment during year ending March 31/60.

Ernst Leitz Canada Ltd., Midland, Ont., $49,407 for spares for aircraft cameras.

North Star Oil Ltd., Winnipeg, $2,806,400 for aviation turbine fuel during year ending March 31/60.

Patlon Aircraft of Canada Ltd., Toronto, $24,876 for aircraft oxygen equipment.

Royalite Oil Co. Ltd., Calgary, Alta., $741,100 for aviation turbine fuel during year ending March 31/60.

Texaco Canada Ltd., Montreal, $2,072,350 for aviation turbine fuel during year ending March 31/60.

Wainwright Producers & Refiners Ltd., Edmonton, Alta., $138,050 for aviation turbine fuel during year ending March 31/60.

Brown Boveri (Canada) Ltd., Montreal, $44,700 (Uplands, Ont.) transformer for high speed wind tunnel.

Aircraft Industries of Canada Ltd., St. Johns, Que., $11,648 for maintenance of aircraft.

Aviation Electric Ltd., Montreal, $32,675 for aircraft components.

Bristol Aero Industries Ltd., Winnipeg, $11,319 for aircraft modification kits.

Bristol Aero Industries Ltd., Montreal, $10,000 for repair & overhaul of aero engines and aero engine components during year ending March 31/60.

British American Oil Co. Ltd., Toronto, $18,308 for aviation gasoline during year ending March 31/60.

British American Oil Co. Ltd., Toronto, $1,318,632 for aviation turbine fuel during year ending March 31/60.

Brunswick-Balke-Collender Co. of Canada Ltd., Toronto, $54,250, for repair and overhaul of radomes during year ending March 31/60.

Canadair Ltd., $43,000 for modification of aircraft.

Canadair Ltd., Montreal, $35,266 for spares for cargo carrier.

Canadian General Electric Co. Ltd., Toronto, $26,136 for aero engine components.

Canadian Petrofina Ltd., Montreal, $2,122,360 aviation turbine fuel during year ending March 31/60.

Canadian Pratt & Whitney Aircraft Co. Ltd., Longueuil, Que., $10,000 for repair & overhaul of aero engines and aero engine components during year ending March 31/60.

Carriere & MacFeeters Ltd., Toronto, $10,000 for repair & overhaul of aeronautical instruments and electrical equipment.

De Havilland Aircraft of Canada Ltd., Downsview, Ont., $60,233 for aircraft components.

Dowty Equipment of Canada Ltd., Ajax, Ont., $27,135 for aircraft components.

Edo (Canada) Ltd., Cornwall, Ont., $11,264 for sonar equipment.

Found Bros. Aviation Ltd., Malton, Ont., $61,360 for aircraft servicing equipment.

Goodyear Tire & Rubber Co. of Canada Ltd., Toronto, $55,934 for aircraft components.

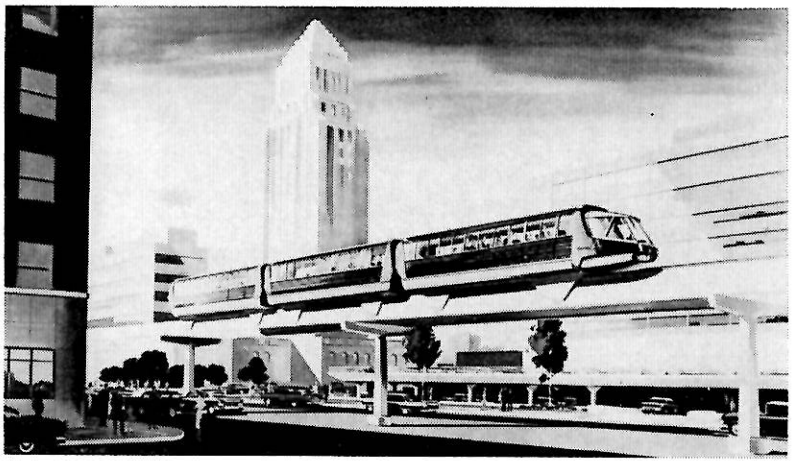
Imperial Oil Ltd., Ottawa, $270,587 for aviation gasoline during year ending March 31/60.

Northwest Industries Ltd., Edmonton, $221,633 for repair & overhaul of aircraft.

Shell Oil Co. of Canada Ltd., Toronto, $1,528,800 for aviation turbine fuel during year ending March 31/60.

Standard Aero Engine Ltd., Winnipeg, $10,000 for repair & overhaul of aero engines and aero engine components during year ending March 31/60.

Texaco Canada Ltd., Montreal, $980,720 for aviation turbine fuel during year ending March 31/60.



LOCKHEED MONORAIL: How supported monorail would look is shown here. T-columns in middle of street hold steel beams containing single rail. Lockheed have been named prime contractor to build system for city of Seattle. A similar vehicle has been proposed by Avro Aircraft, and is presently under consideration by Metropolitan Toronto for interurban travel.