*The United State of America*

# *Department of Transportation*

*Federal Aviation Administration*

ENGINE

# *Type Certificate*

## *Number* E00060EN

*This certificate issued to* Orenda Recip, Inc.
*certifies that the type design for the following product with the operating limitations and conditions therefor as specified in the Federal Aviation Regulations and the Type Certificate Data Sheet, meets the airworthiness requirements of Part* 21.29 *of the Federal Aviation Regulations.* Engine Model OE600A

*This certificate, and the Type Certificate Data Sheet which is a part hereof, shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.*

*Date of application:* December 12, 1994

*Date of issuance:* May 8, 1998

*By direction of the Administrator.*

*(Signature)* Robert E. Guyotte

Robert E. Guyotte
Manager, Engine Certification Branch, ANE-142
*(Title)* Engine Certification Office

*This certificate may be transferred if endorsed as provided on the reverse hereof.*

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*Any alteration of this certificate and/or the Type Certificate Data Sheet is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both.*

FAA FORM 8110-9 (2-82)

# Orenda V-8 Aero Engine Receives FAA Certification Follows Transport Canada Approval by Seven Weeks

Toronto, May 14, 1998.....Just seven weeks after Transport Canada (TC) approval was gained in March, Magellan Aerospace subsidiary, Orenda Recip Inc., has been granted a type certificate by the US Federal Aviation Administration (FAA), for its the new 600 horsepower OE-600 reciprocating aero engine.

The FAA's Engine Certification Branch has been involved in the approval process from the beginning of the engine development, in 1994. They presented Orenda Recip general manager, Peter Jackson, with the Type Approval on May 8, at the company's headquarters in Toronto. "This closes an important chapter for us, and opens up new vistas," Jackson said. "We can now concentrate our efforts on sales, production, installation and development," he added. "We will be developing further variants, in addition to a retrofittable Full Authority Digital Electronic Control (FADEC) system, to increase further the performance and fuel economy."

Orenda's new engine manufacturing facility in Debert (Truro), Nova Scotia will also serve as the retrofit and airframe remanufacturing center for several aircraft types. The first aircraft is expected to arrive in Debert in September of this year. The company is developing engineering capabilities in Debert to perform economical retrofit packages for other aircraft.

In terms of dollars per horsepower, OE-600 engines and their overhaul are priced in line with lower-output piston engines, and significantly less than currently-available gas turbines of similar output.

The Orenda OE-600 is a liquid-cooled, aluminum block V-8 developing 600 horsepower at takeoff. It is the first new high-output piston engine to be certificated in over 40 years. With its US and Canadian type approvals, the company believes its order book will grow significantly.

Initial applications include the retrofitted Beech King Air C90B and Rockwell Twin Commander business aircraft; de Havilland Canada Beaver and Otter bushplanes; the Airtractor agricultural aircraft; and the Lancair Tigress kitplane. Supplemental Type Certificates are currently underway for these aircraft.

Jackson also revealed two other engineering programs underway. "We have completed favorable engineering feasibility studies on retrofitting the Piper PA-31P Navajo and Cessna 421 piston twins, and we're close to distribution agreements for both these popular types," he said.

Over 180 engines and installation kits valued at more than US $25 million have been ordered or optioned. Stevens Aviation of Greenville, SC has ordered 140 engines and kits.

Orenda is a subsidiary of Magellan Aerospace Corporation, a publicly listed company on the Toronto Stock Exchange (TSE:MAL). Magellan has 2500 employees in seven subsidiaries in Canada and the US: Orenda Aerospace, Orenda Recip Inc., Fleet Aerospace, Aeronca, Inc., Middleton Aerospace, A-R Technologies and Bristol Aerospace. The company specializes in aerostructures, industrial and aero-engines, and turbine engine component manufacture, repair and overhaul. Annual revenues are in excess of $350 million.

Orenda

Transport Canada Transports Canada

# Type Certificate

## E-26

Pursuant to Canadian Aviation Regulations PART V, SUBPART 11, this Type Certificate is issued to:

**Orenda Recip, Inc.**
3160 Derry Road East
Mississauga, Ontario
Canada, L4T 1A9

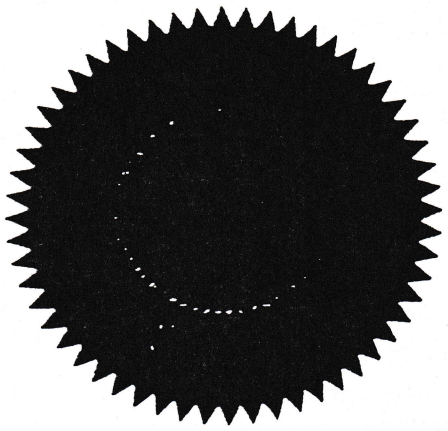
For the Following Aeronautical Product(s):

OE600A

Details of the type design, basis of certification, operating limitations and other associated airworthiness requirements are specified in:

Department of Transport Type Certificate Data Sheet E-26 Issue 1

or latest revision



For Director, Aircraft Certification
for Minister of Transport

March 19, 1998
Date of Issue

Canada

# MAGELLAN AEROSPACE CORPORATION

3160 Derry Road East, Mississauga, Ontario L4T 1A9 Tel: (905) 673-3250 Ext. 3571 Fax: (905) 673-5300


## Orenda OE-600 Receives Transport Canada Certification
## FAA Approval for Liquid-Cooled Aero Engine to Follow Shortly

TORONTO, CANADA, March 25, 1998..... Orenda Recip Inc., a Magellan Aerospace company, was awarded a Type Certification from Transport Canada for its Orenda OE-600A engine, the first high-output reciprocating aero-engine developed in over 40 years.

Peter Jackson, General Manager of Orenda Recip commented "Through a lot of R&D, some trial and error, and absolutely excellent guidance and cooperation from Transport Canada, we've done a lot in a short time. There hasn't been a new-design piston engine certified in Canada since the fifties, so we were essentially re-writing the book. The need for this type of product in today's general aviation marketplace is clearly reflected in the over 180 firm orders and options received by Orenda Recip to date," he added.

The turbocharged, liquid-cooled, V8 OE-600A displaces 495 cubic inches, or eight litres, and is capable of further development. "We are targeting an initial Time Between Overhauls (TBO) of 1,500 hours which we will increase as our on-wing experience grows," Jackson said.

Currently, the twin-engine Beechcraft King Air C90B, the Twin Commander, the Lancair Tigress kitplane, the de Havilland Beaver and Otter all have Supplemental Type Certificate (STC) application programs under development.

The King Air retrofit program is well underway and recently completed test flights have substantiated the predicted performance figures. Stevens Aviation of Greenville, South Carolina has ordered 140 engines, and has exclusive rights to retrofit Orendas on North American King Air airframes. Stevens president, Kurt Herwald, said this milestone allows him to move aggressively in marketing re-engined King Airs. "As of now, we can begin setting delivery targets for a market we think is extremely strong."

Dakota Aero Manufacturing of Bismarck, North Dakota is collaborating with Mr. RPM Inc. to install engines on the Twin Commander. Dick MacCoon, Mr. RPM president, has been involved with engine retrofit programs since the mid-sixties, and added, "The Orenda is a terrific engine that now adds a whole new dimension to the general aviation market. It's a very exciting day for us, and everyone associated with the program."

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Both the de Havilland DHC-2 Beaver and DHC-3 Otter are being retrofitted in Canada, and reflect very strong market demand for these rugged bushplanes.

Prior to the Orenda Series engines, the highest output powerplants available were air-cooled, and produced 350-400 horsepower. The Orenda OE-600A engine has been designed to bridge the price and performance gap between the highest rated piston and the lowest rated turbine enginesavailable in today's marketplace.

Retrofit applications target older piston airframes with insufficient power to maximize performance affordably, or turbine aircraft whose engine overhaul costs exceed the value of the aircraft itself. New aircraft can also be developed based on the availability of 500-750hp engines without the higher cost associated with turbine powerplants.

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