DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

E15EU
ROLLS-ROYCE (1971) BRISTOL
Rev 1
Viper
Mk. 601-22

March 23, 2007

TYPE CERTIFICATE DATA SHEET NO. E15EU

Engines of models described herein conforming with this data sheet (which is a part of Type Certificate No. E15EU), and other approved data on file with the Federal Aviation Administration, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the FAA Regulations provided they are installed, operated and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Type Certificate Holder — Rolls-Royce (1971) Limited, Bristol Engine Division, P.O. Box 3, Filton, Bristol, England.

Model Viper	Mk.601-22
Type Turbojet	8 stage axial compressor, annular combustion chamber incorporating a vaporizing combustion system, two stage turbine.
Rating (static thrust at sea level, lb; See NOTE 5)	
Takeoff (5 min.)	3675
Maximum Continuous	3675
Fuel Controls	
Barometric flow control	Rolls-Royce (1971) BFC 801
Air-fuel ratio control	Lucas Type AFC. 123
Fuel Pump	Lucas MGBB 161
Fuel	See NOTE 7
Oil	Castrol 98 (See NOTE 8)
Oil Capacity (Total/Usable)	15.6/10.8 (U.S. pints)
Principal Dimensions, Ins.	
Length, (Including nose bullet)	113.91
Height	32.15
Width	28.8
Weight (dry)lb.	
Basic engine, including fuel and oil systems, anti-icing system, igniter plugs, accessory drive gearbox and propelling nozzle	810
Installation items supplied by RR (1971), including electrical harness, engine mounting attachment fittings, firewall support, firewire (compressor section), engine nose fairing, tacho generator, blow-off valve solenoid, instrumentation transmitters and slinging attachments	**32**
(The starter/generator is an aircraft accessory and is excluded from the engine weight)	
Center of Gravity, in.	
Forward of mounting trunnion center line	2.5
Below mounting trunnion center line	1.25
Ignition (High Energy System)	Two igniters Smiths SBS 111 Igniter Unit Rotax C44/TS/4E
NOTES	1 through 11

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Certification Basis FAR 21.29 and FAR 33 effective February 1, 1965, as amended by amendments 33-1 through 33-3.

Type Certificate No. E15EU, issued August 17, 1972. Effective date of application for type certificate: August 17, 1969.

Pursuant to FAR 21.29(a)(1)(ii), Type Certificate E15EU was issued in validation of the British Civil Aviation Authority's certification of compliance with BCAR standards, which were found to provide a level of safety equivalent to the above "Certification Basis", as follows:

BCAR Section C, Issue 6, dated June 15, 1966, plus Blue Papers: 415, 435, 436, 464, 468, 474, 476, 480, 481, 482, 499, 506, 544, 550 and 551 (Para. 3.2.2 only).

The United Kingdom Civil Aviation Authority originally type certificated this engine. The FAA validated this product under U.S. Type Certificate Number E15EU. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of UK.

Import Requirements To be considered eligible for installation on U.S. registered aircraft, each new engine to be exported to the United States with Civil Aviation Authority of United Kingdom or EASA airworthiness approval shall have a Joint Aviation Authorities (JAA) or EASA Form 1, Authorized Release Certificate. The JAA or EASA Form 1 should state that the engine conforms to the type design approved under the U.S. Type Certificate E15EU, is in a condition for safe operation and has undergone a final operational check.

NOTE 1. Maximum permissible engine operating rotor speeds are as follows:

Takeoff, r.p.m. Maximum	13,760	(100%)
continuous r.p.m. Momentary	13,760	(100%)
overspeed, r.p.m. (20 second limit)	14,170	(103%)

NOTE 2. Maximum permissible temperatures are as follows:

Jet pipe temperatures	
Takeoff (5 sec.)	725°C
Maximum continuous	715°C
Ground idling	550°C
Starting (5 sec.)	700°C
Oil inlet	145°C
Fuel inlet	50°C

NOTE 3. Fuel and oil Pressure limits:

Fuel Pressure (at filter inlet)	
Maximum	50 P.S. I.
Minimum	10 P.S.I. + true vapor pressure
Oil Pressure:	
Normal	20 -35 psig
Maximum	5 psig
Minimum	40 psig

NOTE 4. Maximum permissible air bleed extraction:

Range of rpm at which air bleed may be used	40% - 100%
Maximum air delivery for aircraft services and engine de-icing (% of no bleed mass flow)	5.5%
Maximum bleed excluding engine de-icing	3.0%

NOTE 5. The ratings are based on static test stand operation under the following conditions:

International Standard Atmospheric Conditions at sea level.
All optional air bleeds closed.
Aircraft service accessory drives unloaded.
Test bed venturi intake to R.R. (1971) Drg. RL.51795/RM.56950.
Exhaust cone with 10° angled propelling nozzle together with trimmers as defined in D.I.S.
Jet pipe temperature measured by thermocouple harness as defined in D.I.S.
Thrust measured with engine angled on test bed to R.R. (1971) Drg. No. RM81236.

NOTE 6. The following accessory drive provisions are incorporated:

Drive	Rotation*	Speed Ratio to Turbine Shaft	Torque (in. lb.) Continuous	Torque (in. lb.) Static	Overhang (in. lb.)
Starter Generator	C	.573	230+	1560	276
A.C. Generator	C	.727	32	580	77
Hydraulic Pump	AC	.232	177	790	23
Alternator (Tachometer)	C	.305	15	400	9

* Clockwise or Anti-Clockwise looking on the drive face of the accessory.
\+ The maximum torque when the machine is operating as a starter is 820 in. lb.

NOTE 7. The following fuels are eligible for this engine. (Latest issues of specifications).

Aviation Kerosene Specifications
- British D.Eng.R.D. 2453, 2482, 2494.
- Canadian 3-GP-23
- American A.S.T.M. D1655 Jet A or A-1
- IATA

Aviation Wide-Cut Specifications
- British D.Eng.R.D. 2454, 2486.
- Canadian 3-GP-22 Wide-Cut
- American A.S.T.M. D1655 Jet B
- IATA

NOTE 8. Approval is given for the use of Castrol 98 oil manufactured by Castrol Ltd. to specification D.Eng.R.D. 2487.

NOTE 9. Viper 600 series models have the following characteristics and application:

Mark 600-22 Basic Model for Hawker-Siddeley 125-600 Series Aircraft:

NOTE 10. The only optional additives that may be used in approved fuels are as follows:

(a) Anti-corrosion additive, "Santolena C" (HITEC E 515) Not exceeding 14.3 hg/liter with a phosphorous content of approximately 0.06 PPM.
(b) Anti-icing additive to specification D.Eng.R.D. 2451 issue 2 (MIL-T-27686E), with and without glycerin, not exceeding 0.15% by volume.
(c) Anti-microbiological additive, intermittent use of Biobar JF, per RR Instructions, not exceeding 270 PPM and BORON not exceeding 20 PPM.
(d) Anti-static additive Shell ASA 3, not exceeding 1 PPM by volume.

NOTE 11. Life limited parts are identified in Chapter 5 of Rolls-Royce Viper 601-22 Overhaul Manual.

NOTE12. Service Information:

Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA) or, for approvals made before September 28, 2003 by CAA (UK). Any such documents including those approved under a delegated authority, are accepted by the FAA and are considered FAA approved.

- Service bulletins,
- Structural repair manuals,
- Vendor manuals,
- Aircraft flight manuals, and
- Overhaul and maintenance manuals.
- Technical Variances

These approvals pertain to the type design only.

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