

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

A-816  
Revision 6  
Acro Aeronautical  
D.H. 114 Heron  
Series 2A  
Series 2DA  
Series 2X  
  
July 21, 2016

TYPE CERTIFICATE DATA SHEET No. A-816

This Data Sheet, which is part of Type Certificate No. A-816 prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder                      Acro Aeronautical Services Ltd.  
Culham Science Centre,  
Abingdon, Oxon, OX14 3DB.  
United Kingdom

Type Certificate Holder Record            The de Havilland Aircraft Co. Ltd. transferred TC A-816 to Hawker Siddeley Group in 1960.

Hawker Siddeley Group transferred TC A-816 to British Aerospace plc (BAe) in 1977.

British Aerospace plc (BAe) transferred TC A-816 to BAE Systems plc in 1999.

BAE Systems transferred TC A-816 to de Havilland Support Ltd. in 2000.

de Havilland Support Ltd. transferred TC A-816 to Acro Aeronautical Services Ltd. on February 25, 2015.

I - Model D.H.114 Heron: Series 2A, Approved June 24, 1957; Series 2DA, Approved May 19, 1958; Series 2X, Approved August 29, 1960

Engines    4 de Havilland Gipsy Queen 30 Mark 2

Fuel    Minimum grade 91/96  
Maximum lead content 4.56 mls. TEL/U.S. gallon

Engine limits                                      Maximum continuous (Sea Level) (Full throttle)            2500 rpm (250 bhp)  
Maximum Weak Mixture, 2,500 ft. (26 in.Hg.)            2500 rpm (225 bhp)  
Maximum takeoff (5 min.), full throttle                    2500 rpm (250 bhp)  
Maximum Overspeed, full throttle                            2625 rpm

Propellers    Series 2A and 2DA

<u>Design No.</u>	<u>Hub Assembly</u>	<u>Blade Assembly</u>
PD 190/212	PPX 21206	PPR 2911456A-116-1

Types:            2-bladed (Metal) feathering  
Pitch:            Variable  
Diameter:       7 feet

Page No.	1	2	3	4	5
Rev. No.	6	6	6	6	6

## Propellers (cont'd)

## Series 2X

<u>Design No.</u>	<u>Hub Assembly</u>	<u>Blade Assembly</u>
PD 170/212/1	PPX.21205	PP.1111456A-59
		or PP.1111456A-59-1

Types: 2-bladed (Metal)  
Pitch: Variable  
Diameter: 7 feet

or PD 190/212                      PPX.21206                      PPR 2911456A-116  
or PPR 2911456A-116-1

Types: 2-bladed (Metal) feathering  
Pitch: Variable  
Diameter: 7 feet

Airspeed limits	Normal operating limit	174 knots I.A.S.
	Never exceed	200 knots I.A.S.
	Flaps extended (See NOTE 3 for 20° setting)	100 knots I.A.S.
	Landing gear extended	135 knots I.A.S.

C.G. range (with landing gear extended)

Series 2A and 2DA  
(-0.14) to (+8.10) at 13,500 lb.  
(-6.35) to (+8.10) at 8900 lb. or less

Series 2X  
(-1.46) to (+8.10) at 12,499 lb.  
(-6.35) to (+8.10) at 8900 lb. or less

Distances shown are plus (+) behind and minus (-) ahead of the datum.  
Straight line variation between points given.  
Landing gear retraction moment +3180 in.lb.

Datum 86.7 inches aft of the front leveling peg on the port side of the fuselage.

Leveling means Straight edge placed upon 2 pegs on the port side of the fuselage, parallel to fuselage horizontal datum line.

Maximum weight

Series 2A and 2DA  
Takeoff 13,500 lb., Landing 13,150 lb.

Series 2X  
Takeoff 12,499 lb., Landing 12,499 lb. with de Havilland Heron Mod. 757  
11,900 lb. without de Havilland Heron Mod. 757

No. of seats 10; 13; 16, 17 or 19

## 10 seater location:

	Seat	Occupant		Seat	Occupant
2 (crew)	(-109.2)	(-109.2)	2 (rearward facing)	(-63.36)	(-59.76)
2 (forward facing)	(- 7.44)	(-11.04)	2 (rearward facing)	(+38.64)	(+42.24)
2 (forward facing)	(+94.44)	(+90.84)			

## 13-seater location:

	Seat	Occupant		Seat	Occupant
2 (crew)	(-109.2)	(-109.2)	2 (forward facing)	(- 82.2)	( -82.2)
2 (forward facing)	(- 49.8)	(- 49.8)	2 (forward facing)	(- 17.4)	( -17.4)
2 (forward facing)	(+54.96)	(+58.56)	2 (forward facing)	(+103.8)	(+100.2)
1 (forward)	(+144.6)	(+144.6)			

No. of seats (cont'd)

16, 17 or 19-seater location:

Seat & Occupant		Seat & Occupant	
2 (crew)	(-109.2)	2	(- 82.2)
2	(- 49.8)	2	(- 17.4)
2	(+ 15.0)	2	(+ 47.4)
2	(+ 79.8)	2	(+112.2)
1	(+144.6)	2	(+177.0)

Maximum baggage

Maximum floor loading:

Front locker	100 lb. per sq. ft.
Cabin	75 lb. per sq. ft.
Rear locker	150 lb. per sq. ft.

Maximum load:

Front locker	300 lb.
Rear Locker, Version A (14 passenger seats and toilet and 8 passenger seat version)	850 lb.
Version B (15 passenger seats and toilet and 11 passenger seat version)	700 lb.
Version C (15 passenger seats, no toilet)	750 lb.
Version D (17 passenger seats, no toilet)	450 lb.

Overall maximum load, including chair weight:

Total for front locker plus cabin forward of front face of front spar	1400 lb.
Total for cabin between rear face of front spar and center line of rear spar (49.3 in. aft of datum)	550 lb.
Total for cabin aft of center line of rear spar including rear locker	2000 lb.

Fuel capacity  
(usable)

Series 2A and 2DA

494 U.S. gallons (in wings):

Two tanks 67 U.S. gallons each (-5.5)

Two tanks 122 U.S. gallons each (+21.6)

Two pairs of tanks 58 U.S. gallons per pair (-4.56) required when de Havilland

Heron Modification 918 is not incorporated. When de Havilland Heron

Modification 918 is incorporated the installation of these tanks is optional.

Series 2X

378 U.S. gallons (in wings):

Two tanks 67 U.S. gallons each (-5.5)

Two tanks 122 U.S. gallons each (+21.6)

Oil capacity  
(usable)

43.2 U.S. gallons in engine nacelles

Two tanks 10.8 U.S. gallons each (-13.2)

Two tanks 10.8 U.S. gallons each (-8.4)

Control surface movements

Elevator	Up 24° 30' ± 1°	Down 16° 30' ± 1°
Elevator trim tab	Up 16° ± 1°	Down 16° ± 1°
Rudder	Right 19° ± 1°	Left 19° ± 1°
Rudder trim tab	Right 18° ± 0° 45'	Left 18° ± 0° 45'
	(with rudder neutral)	
Aileron	Up 19° ± 1°	Down 19° ± 1°
	with reference to the initial setting 3°15'	
	trailing edge of float.	
Flaps	Down 60° ± 1°	
Stabilizer fixed		

Serial Nos. eligible	Series 2A, 2DA and 2X (See NOTE 5) The United Kingdom Certificate of Airworthiness endorsed as noted below under "Import requirements" must be submitted for each individual aircraft for which application for certification is made.
Required equipment	(1) de Havilland D.H. 114 Heron Maintenance and Repair Manual. (2) de Havilland Aero Engine Gipsy Queen 30 Mark 2 Operation, Maintenance and Overhaul Manual. (3) Publication 5030 for Series 2A, 2DA and 2X with feathering propellers, or D.H. Heron Publication 2BCS for Series 2X with non-feathering propellers. (4) A.R.B. approved Flight Manual for Heron Series 2A (Doc. D.H. 1.4)
or	(5) A.R.B. approved Flight Manual for Heron Series 2DA (Doc. No. D.H.1.4).
or	(6) A.R.B. approved Flight Manual for Heron Series 2X with non-feathering propellers (Doc. No. D.H.1.4) (Amend P/7 and P/8) or with feathering propellers (Doc. No. D.H.1.4) (Amend P/7, P/8 and P/10)
Certification basis	CAR 10. Type Certificate No. A-816 issued June 24, 1957. (This certification equivalent to CAR 4b effective December 31, 1953, plus Amendment 4b-1)
Import requirements	Each aircraft and any replacement parts manufactured in the United Kingdom must be clearly identified as imported. A U.S. airworthiness certificate may be issued on basis of a United Kingdom certificate of airworthiness signed by a representative of the Ministry of Aviation containing the following notation: "The aircraft covered by this certificate has been examined and found to comply with British Civil Airworthiness Requirements published January, 1948, and with the special requirements notified by the United States Government to the Government of the United Kingdom and conforms to T.C. A-816".
Service Information	Each of the documents listed below may state that it is approved by the United Kingdom Civil Aviation Authority (UK CAA). <ul style="list-style-type: none"> <li>• Service bulletins</li> <li>• Structural repair manuals</li> <li>• Vendor manuals</li> <li>• Aircraft flight manuals</li> <li>• Overhaul and maintenance manuals</li> </ul> <p>The FAA accepts such documents and considers them FAA-approved for type design data unless one of the following conditions exist:</p> <ul style="list-style-type: none"> <li>• The documents change the limitations, performance, or procedures of the FAA approved manuals.</li> </ul> <p>The FAA uses post type validation procedures to approve these documents. The FAA may delegate case-by-case approval to the UK CAA on behalf of the FAA for the U.S. type certificate. If this is the case it will be noted on the document.</p>

## NOTES

- NOTE 1. Current weight and balance report including list of equipment included in certificated weight empty, and loading instructions when necessary, must be provided for each aircraft at the time of original certification.
- NOTE 2. The following placards must be displayed as indicated:
- (a) In front of and in plain view of the pilot:  
"This airplane must be operated in compliance with the operating limitations specified in the A.R.B. Approved Flight Manual for Heron Series 2A" (or "Heron Series 2DA" or "Heron Series 2X" when applicable.)
  - (b) On the lavatory door:  
"This room must not be occupied during takeoff and landing."

NOTE 3. The following partial flap setting and corresponding limiting airspeed may be used:

20° 135 knots I.A.S.

NOTE 4. Smoking may be permitted in passenger compartment only, except during takeoff and landing.

NOTE 5. Heron 2X airplanes are eligible for issuance of a U.S. airworthiness certificate in accordance with the certification basis defined in this specification at a maximum weight of 12,499 lb. When any Heron 2X airplane incorporates all the modifications shown in de Havilland Document No.: M.60343 Issue 7 it may be designated as a Heron 2DA.

....END.....