

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

A00068CE
Revision 0
Harbin Hafei Aviation Industry Co., Ltd.
(HAIC)
Y12F
February 22, 2016

TYPE CERTIFICATE DATA SHEET No. A00068CE

This data sheet, which is part of Type Certificate No. A00068CE, prescribes conditions and limitations under which the product meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder: Harbin Hafei Aviation industry Co., Ltd.
Northeast side of Jiangnanzhonghuan Road, Nancheng second road of Hanan Industrial Park, Harbin, Heilongjiang, China.
Post Code: 150060

I. Model Y12F (Commuter Category), Approved February 22, 2016

Engine 2 Pratt & Whitney Canada PT6A-65B
FAA Engine Type Certificate: E4EA

Fuel Commercial grades:
International Jet A, Jet A-1 and Jet B,
Chinese.....No.3 Jet fuel
Military grades:
InternationalJP-4,JP-5,JP-8
Emergency commercial aviation gasoline:
specificationAll usable aviation gasoline (NOTE 4)
other approved fuel see P&WC S.B. N0.13044

Oil Follow P&WC SB 13001: Mobil Jet Oil Type II and Mobile Jet Oil 254

(Engine & Gearbox)
Engine Limitations

Operating Conditions	Time Limits	Power	TRQ ⁽¹⁾	ITT	Ng	NP
		SHP	lb-ft	°C	%	rpm
Take off	5	1000	3090	820	104	1700
Max. Continuous		1000	3090	810	104	1700
Max. Climb /Normal Cruise		1000	3090	750	104	1700

(1)Torque limit applies within range of 1000 to 1700 rpm propeller shaft; below 1000 rpm torque is limited to 2000 lb. ft.
Other Engine Limitations refer to AFM

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Propeller And Propeller Limitation

2 (two) Hartzell Propeller HC-B5MP-3D/M10876ANSK

FAA Propeller Type Certificate: P44GL

Hartzell five bladed aluminum constant speed, full feathering reversible propeller with electric deice boots

- Diameter: 2824mm(111.2 inches);
- Minimum Allowable For Repair 2812mm(110.7 inches);
- Pitch Setting:
 - With respect to 42 inches radius (75.54% radius);
 - Reverse: $-11^{\circ} \pm 0.5^{\circ}$;
 - Feather: $+79^{\circ} \pm 0.5^{\circ}$;
 - Low pitch: $+14.5^{\circ} \pm 0.1^{\circ}$;
- Rotate speed:
 - Maximum operation speed: 1700rpm;
 - Maximum over-speed :1870 rpm;
 - Ground taxi: 900~1170rpm;
 - Feather: less than or equal to 400rpm.

Airspeed limits

V _O (Operation Maneuvering Speed)	144 knots(267 km/h)(CAS)
V _{FE} (Flap Extended Speed)	130 knots (241 km/h)(CAS)
V _{LO} (Maximum Speed For Landing Gear Operation)	137 knots (254 km/h)(CAS)
V _{LE} (Maximum Speed For Landing Gear Extension)	137 knots (254 km/h)(CAS)
V _{MCA} (Minimum Control Speed In The Air)	87 knots (161 km/h)(CAS)
V _{MO} (Maximum Operating Speed)	209 knots (387 km/h)(CAS)

Center of Gravity Range

7800mm(307.09 inches) to 8007mm (315.24 inches)(25.00% ~ 35.00%MAC)at 8400kg(18,520 lb);

7766mm(305.76 inches)to 8007mm (315.24 inches)(23.36% ~ 35.00%MAC)at 8000kg(17,640 lb);

7613mm(299.72 inches) to 8007mm (315.24 inches)(16.00% ~ 35.00%MAC)at 6200kg (13,668 lb);

7593mm(298.94 inches) to 8007mm (315.24 inches)(15.00% ~ 35.00%MAC) below 5700kg (12,566 lb).

Straight line variation between points given.

Datum

Located at 1000mm(39.37 inches)in front of the airplane nose in forward and rear directions

Located at the symmetric center line of airplane in left and right directions

Located at horizontal plane, 750mm(29.53 inches) above cabin floor, in up and down directions

Empty Weight C.G. Range

None.

Mean Aerodynamic Chord (MAC)

2074 mm (81.65 inches)

The horizontal dimension of MAC leading edge to Datum : 7282mm (286.69 inches)

<u>Leveling Means</u>	See Leveling Diagram: YF082101H003151		
<u>Maximum Weights</u>	Max Ramp Weight	8450 kg (18,630 lb)	
	Max Take-off Weight	8400 kg (18,520 lb)	
	Max Landing Weight	8000 kg (17,640 lb)	
<u>Minimum Flight Crew</u>	Two (2) pilots. Pilot-in-Command is on the left viewed looking forwards except for training and checking		
<u>Number of Seats</u>	Maximum 21 seats(Including pilot and copilot seats)		
	Item	Arm mm(inches)	Quantity
	Crew	4052(159.5)	2
	Passengers Row 1	6082(239.4)	3
	Passengers Row 2	6892(271.3)	3
	Passengers Row 3	7702(303.2)	3
	Passengers Row 4	8512(335.1)	3
	Passengers Row 5	9322(367.0)	3
	Passengers Row 6	10132(398.9)	2
	Passengers Row 7	10942(430.8)	2
<u>Maximum Compartment Weights</u>	Front baggage compartment	50 kg (110 lb)	2420 mm (95.3 inches)
	Rear baggage compartment	250 kg (550 lb)	12760 mm (502.4 inches)
<u>Fuel capacities</u>	Left fuel tank	1252kg (1584.5 L,418.6 gal) at 8110mm (319.3 inches)	
	Right fuel tank	1252kg (1584.5 L,418.6 gal) at 8110mm (319.3 inches)	
	Each tank unusable fuel 25kg (31.5L, 8.3 gal).		
	(Fuel Density:0.79kg/l)		
<u>Oil capacities</u>	11.7 L(12.3 US quart) each engine at 6843mm (269.41 inches)		
	Each engine unusable oil 4.08L (4.3 US quart)		
<u>Maximum Operating Altitude</u>	7000 m(23000 ft)		
<u>Control movement</u>	Flaps Positions:	0°(±0.5°)	
		10°(±0.5°)	
		20°(±0.5°)	
	Elevator	Up 24°(+2°,0°)	Down 15°(+1°,-0.5°)
	Elevator Trim Tab	Up 16°(+1°,0°)	Down 11.5°(+2°,0°)
	Rudder	Left 20 °(0,-0.5°)	Right 20 °(0,-0.5°)
	Rudder Trim Tab	Left 12 °(±1°)	Right 12°(±1°)
	Aileron	Up 30°(±1°)	Down 20°(±1°)
	Aileron Trim Tab	Up 20°(±1°)	Down 20°(±1°)
<u>Serial Nos. Eligible</u>	Y12F Serial Number: 001 and on.		
	The CAAC Certificate of Airworthiness for Export must be submitted for each individual airplane. See "Import Requirements."		

Import Requirements

A United States Certificate of Airworthiness may be issued on the basis of a CAAC Certificate of Airworthiness for Export, signed by a representative of the CAAC Authority, containing the following statement: "The airplane covered by this certificate has been examined, tested and found to conform to the type design approved under FAA Type Certificate A00068CE, and is in a condition for safe operation."

Instructions for Continued Airworthiness (ICA) complying with FAR 23.1529, must be furnished before delivery of the first airplane or issuance of a US standard certificate of airworthiness, whichever occurs later.

Certification Basis

The regulations (unless otherwise stated) are Title 14 of the Code of Federal Regulations (14 CFR):

- 1) FAR 21.29, 21.183(c) and FAR 23, effective February 1, 1965, including Amendments 23-1 through 23-61 for Commuter Category.
- 2) FAR 36, effective December 1969, including Amendments 36-1 through 36-29.
- 3) FAR 34, effective September 10, 1990, including Amendments 34-1 through 34-5.
- 4) Equivalent Level of Safety per 21.21(b)(1):
 - a) ACE-15-16 of July 21, 2015, landing gear handle location, § 23.777(g) at amendment 23-51;
 - b) ACE-13-04 of December 7, 2012, Engine Display Requirements, § 23.1305(a)(2), (a)(3), (c)(2) and (c)(5) at amendment 23-52 and § 23.1549 (a), (b) and (c) at amendment 23-45;
 - c) ACE-13-07 of March 18, 2013, Storage Battery, § 23.1353(h) at amendment 23-49;
 - d) ACE-10-13 of July 23, 2010, Circuit Protective Devices, § 23.1357(b) at amendment 23-43;
 - e) ACE-10-12 of July 23, 2010, ASI Flap Markings, § 23.1545(b)(4) at amendment 23-50.
- 5) No Exemptions
- 6) No Special Conditions
- 7) The airplane is approved for ditching.
- 8) This airplane is not approved for flight into known or forecasted icing.
- 9) The Civil Aviation Administration of China (CAAC) issued CAAC Type Certificate No. TC0024A on December 10, 2015.

Date of application for original Type Certificate: August 30, 2006

Validation Basis

The applicable airworthiness requirements for a U.S. certification under 14 CFR 21 section 21.29 identified above were established considering the airworthiness requirements applied by the responsible exporting Civil Aviation Administration of China (CAAC) under the Bilateral Aviation Agreement (BAA) - Schedule of Implementation Procedures (SIP), between the United States (U.S.) and the People's Republic of China (P.R.C.) dated March 23, 1995.

Equipment

The basic required equipment prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane. In addition, the following equipment is also required:

FAA approved Aircraft Flight Manual Y12F, Document No. Y12FTP-AFM, revision Initial dated Jan. 30, 2016 or later approved revision.

Service Information

Each of the following service information documents must state that it is approved and/or accepted by the Civil Aviation Administration of China (CAAC).

In accordance with the US/People's Republic of China Bilateral Airworthiness Agreement and the associated Schedule of Implementation Procedures (BAA-SIP) paragraph 226, any future changes that affect the US type design, including but not limited to, the following documents must be coordinated with the FAA through the CAAC for direct FAA approval or acceptance as required.

These documents will show this FAA approval and/or acceptance along with the CAAC approval and/or acceptance:

- Y12F Aircraft Flight Manual Y12FTP-AFM
- Y12F Aircraft Scheduled Maintenance Requirements Y12FTP-SMR
- Y12F Aircraft Maintenance Manual Y12FTP-AMM
- Y12F Aircraft Airworthiness Limitations Y12FTP-ALS

Additional changes that must be coordinated with the FAA includes any other service documents that:

- make changes to any other FAA approved limitations
- requires a US type design change
- requires an ELOS, Special Condition or Exemption
- makes an acoustical or emissions changes to this product's U.S. type certificate as defined in 14 CFR § 21.93

Any other service documents that do not affect changes to US type design (such as customer unique designs, service bulletins and product improvements) that are not dealt with by the BAA-SIP paragraph 226(a) will be accepted by the FAA and will be considered FAA approved data upon the CAAC approval statement.

Available Documents for the Y12F are: (Note 5)

FAA approved Aircraft Flight Manual Y12F, Document No. Y12FTP-AFM, revision Initial dated Jan. 30, 2016 or later CAAC/FAA approved revisions. (Note 2)

Y12F Aircraft Scheduled Maintenance Requirements Y12FTP-SMR, Revision Initial dated Dec. 15, 2015 or later CAAC accepted revisions.

Y12F Aircraft Maintenance Manual Y12FTP-AMM, Normal Revision RN001 dated Jan. 30, 2016 or later CAAC/FAA accepted revisions.

Y12F Aircraft Airworthiness Limitations Y12FTP-ALS, Initial Issue dated Dec. 22, 2015 or later CAAC/FAA approved revisions. The ALS dated Dec. 22, 2015 is Chapter 4 of Y12FTP-AMM Normal Revision RN001. (See Note 3)

NOTES

- NOTE 1 Current weight and balance data, loading information, and a list of equipment included in empty weight must be provided for each airplane at the time of original certification.
- (a) Basic empty weight includes unusable fuel of 50kg (110 lb) at 8110mm (319.3 inches)
 - (b) Basic empty weight includes engine oil of 22.3kg (49.2 lb) with 3.9 kg (8.6 lb.) being unusable.
- Note 2 Airplane operation must be in accordance with the CAAC-approved Aircraft Flight Manual Y12FTP-AFM listed above. All placards listed in Section 2 of the FAA approved AFM must be displayed in the appropriate locations. The US versions of the Y12F AFM limitations may not be changed without CAAC and direct FAA approval.
- Note 3 Y12F mandatory retirement times for all structural components are contained in Aircraft Airworthiness Limitation Section document Y12FTP-ALS Initial Issue (or later versions). The US versions of the Y12F limitations may not be changed without CAAC and direct FAA approval.
- Note 4 Emergency AVGAS Limitations:
- a) Operation is limited to 150 hours between engine overhauls;
 - b) The fuel system must be flushed after using the 80 aviation gasoline;
 - c) Before the flight, make sure that all the fuel booster pumps are operative.
- Note 5 Master Manual Document Number: Y12FTP-MTM Normal Revision RN001 dated Jan. 30, 2016 (or later revisions) lists all the Y12F technical publications and their corresponding revision (version) levels that are delivered to the customer with each airplane. This includes all the ICA documents.

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