

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

A2WI
Revision 3
TKEF
44
April 10, 2015

**TYPE CERTIFICATE DATA SHEET NO. A2WI**

This data sheet which is part of Type Certificate No. A2WI 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:                      The King's Engineering Fellowship (TKEF)  
Orange City, Iowa 51041

**I. Model 44, Angel, 8 PCLM (Normal Category), Approved October 20, 1992**

Engines	Two Lycoming IO-540-M1A5 (See Note 5) Or Two Lycoming IO-540-M1C5	
Fuel	100LL/100 minimum grade aviation fuel	
Engine Limits	For all operations, 2700 rpm (300 hp)	
Propeller and Propeller Limits	(a) Hartzell constant speed, full feathering propeller HC-E3YR-2ALTF/FLC7468 (both engines) 3 blades aluminum alloy Diameter: 76 in. nominal Minimum allowed for repair 75 in., no further reduction permitted. Pitch setting at 30 in. station: low $13.2^{\circ} \pm 0.2^{\circ}$ , feather $84.5^{\circ} \pm 1^{\circ}$ (b) Hartzel hydraulic governor V-1-3 for narrow deck engine, V-1-4 for wide deck engine (c) TKEF spinner assembly 4459-3000	
Airspeed Limits (IAS)	Never exceed	209 knots (210 KCAS)
	Maximum structural cruising	174 knots (174 KCAS)
	Maneuvering	139 knots (138 KCAS)
	Flaps extended	104 knots (106 KCAS)
	Minimum control	65 knots (65 KCAS)
	Landing gear extension	130 knots (130 KCAS)
	Landing gear retraction	104 knots (104 KCAS)
C.G. Range	(Landing Gear Extended) (+176.0) to (+186.0) for all operating weights (5800 lbs maximum)	
Empty Weight C.G. Range	None	
Datum	3.0 in. forward of nose gear pivot point	
Leveling Means	Seat tracks	
Maximum Weight	5800 lbs for all operations	
Minimum Crew	One (1) pilot	
No. of Seats	8 maximum (2 at +95, 2 at +128, 2 at +161, 2 at +198)	
Maximum Baggage	200 lbs Bay 1 (+96), 400 lbs Bay 2 (+126), 400 lbs Bay 3 (+161), 400 lbs Bay 4 (+195), 200 lbs Baggage Compartment (+258)	

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Fuel Capacity	224 gal. (222 gal. useable), two 112 gal tanks in wings at +165.5. See NOTE 1 for data on system fuel and oil.		
Oil Capacity	12 qt. (9.25 qt. useable) each engine at +216.5. See NOTE 1 for data on system fuel and oil.		
Control Surface	Wing flaps		Down 37° ±2°
	Ailerons	Up 30° ±3°	Down 7° ±5°
	Spoilers	Up 60° ±4°	
	Rudder	Right 30° ±2°	Left 30° ±2°
	Elevator	Up 30° +0°, -1°	Down 15° ±2°
	Rudder tab	Right 28° ±2°	Left 28° ±2°
	Elevator tab	Up 5° ±1°	Down 24° ±2°
	(with elevator neutral)		
Serial Nos. Eligible	001 and up		
Certification Basis	Part 23 of Federal Aviation Regulations (FAR) dated February 1, 1965, as amended by 23-1 through 23-36 and FAR 36 dated December 1, 1969, as amended by 36-1 through 36-18 and Special Conditions 23-ACE-59. Exemption: Stall warning FAR 23.207(c).		
Production Basis	S/N 001 Manufactured under Type Certificate only by TKEF S/N 002 Manufactured under Type Certificate only by Angel Aircraft Corporation (AAC) of Orange City, IA, under a licensing agreement between TKEF and AAC, dated October 4, 1986. S/N 003 and up Production Certificate 342CE. The manufacturer (AAC) is authorized to issue airworthiness certificates under 14 CFR 21.183 (a). NOTE: This model is listed on the AAC Production Limitation Record and is being produced under Licensing Agreement between TKEF and AAC, dated October 4, 1986.		
Equipment	The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. This equipment must include a current Airplane Flight Manual.		

NOTE 1. Current weight and balance report including list of equipment included in certificated empty weight, and loading instructions when necessary must be provided for each aircraft at the time of original certification.

- (a) Basic empty weight includes unusable fuel of 12 lbs at +165.5.  
(b) Basic empty weight includes engine oil of 45 lbs at +216.5.

NOTE 2. All required placards in the FAA Approved Airplane Flight Manual must be installed in the appropriate locations.

NOTE 3. Mandatory replacement times for structural components are contained in the Limitations Section of the Maintenance Manual.

NOTE 4. All replacement seats (crew and passenger), although they may comply with TSO C39, must also be demonstrated to comply with FAR 23.321, 23.395, 23.561, 23.562, and 23.785.

The foam cushion buildup of all seats (crew and passenger) may not be altered.  
Any deviations in the foam construction or stiffness must be demonstrated by test to comply with the listed FAR 23 paragraphs.

NOTE 5. Lycoming IO-540-M1A5 configured with two impulse magnetos per TKEF Engine Specification 4450-0001.

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