

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

R0014DE
Revision 0
Tandem Rotor, LLC

CH-47D

21-October-2016

TYPE CERTIFICATE DATA SHEET NO. R0014DE

This data sheet, which is a part of type certificate No. R0014DE, prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the 14 Code of Federal Aviation Regulations (14 CFR).

Type Certificate Holder Tandem Rotor, LLC
124 W. Pine Street
Missoula, MT 59802

Type Certificate Holder Record: N/A

I - Model CH-47D (Restricted Category Military Surplus Helicopter) Approved August 16, 2016

Engine Two (2) Honeywell T55-GA-714A

Fuel ASTM-D1655 JP-8, JP-5, JP-4, (Jet A, Jet A-1, Jet B) (See Note 11 for Alternative and Emergency Fuels)

Engine Operating Limits - (Normal Operation)

Rating	Torque (% Q)	Gas Gen. Speed (%Ng)	Power Turbine Speed (%Np)	Power Turbine Inlet Temp (PTIT) °C
Dual Engine Limits				
Take-Off (10 Min.)	100%	111%	111.5%	899
Military Power (30 Min.)	100%	-----	-----	854
Normal Continuous	100%	-----	-----	815
Contingency Power (Max. for not more than 2.5 minutes)	-----	-----	-----	932
Maximum Transient (for not more than 12 seconds)	100%	111%	111.5%	943
One Engine Limits				
One Engine Inop (10 Min.)	123%	111%	111.5%	899
One Engine Inop (30 Min.)	123%	-----	-----	854
Normal Continuous	123%	-----	-----	815
Contingency Power (Max. for not more than 2.5 minutes)	-----	-----	-----	932
Maximum Transient (for not more than 12 seconds)	123%	111%	111.5%	943

Rotor Limits

	<u>Power Off</u>	<u>Power On</u>
Minimum	91% r.p.m	91% r.p.m
Maximum	108% r.p.m	111% r.p.m

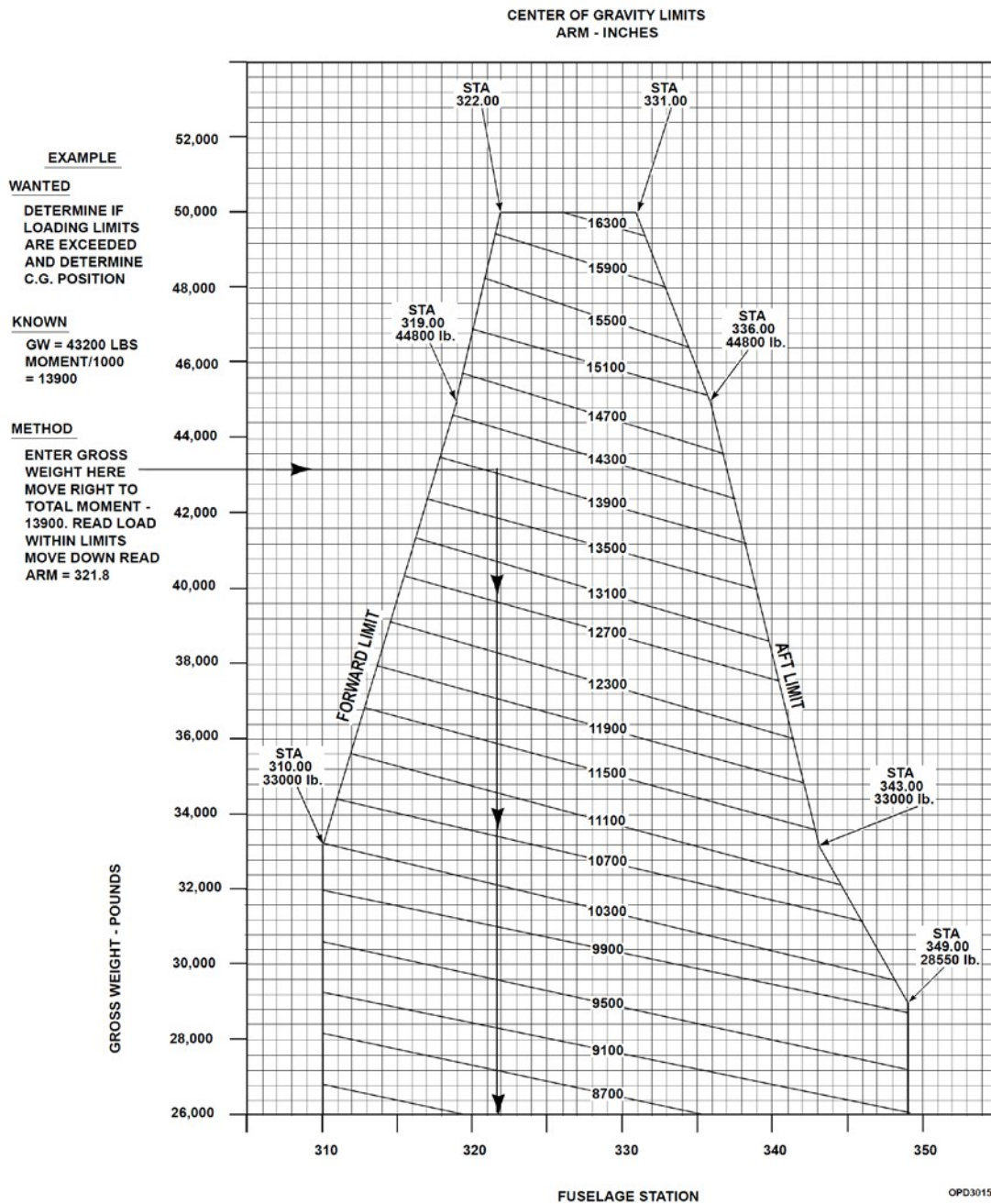
Airspeed limits

Vne (never exceed): 170 KIAS at Sea Level. See the appropriate Tandem Rotor, LLC, CH-47D Rotorcraft Flight Manual per Note 5 for variations of Vne with rotor r.p.m., gross weight, pressure altitude and temperature.
Sideward Flight (maximum): 45 KIAS
Rearward Flight (maximum): 45 KIAS

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C.G. range

Most forward C.G. Sta. +310.00
 Most Aft C.G. Sta. +349.00
 (+322.00) to (+331.00) at 50,000 lb.
 (+319.00) to (+336.00) at 44,800 lb.
 (+310.00) to (+343.00) at 33,000 lb.
 (+310.00) to (+349.00) at 28,550 lb. or less



Empty weight C.G. range

None

Datum	Station 0 (datum is 21.5 inches forward of the most forward point of the nose section)
Leveling means	Plumb bob hook at top of main cabin door interior trim forward of Sta. 150. Plumb target under main cabin door sill forward of Sta. 150 at BL 48.3. Plumb line from upper hook to target.
Maximum weight	50,000 lb.
Cargo Hook Limitations	The limits presented below are structural limitations only. a. The structural limit of the forward and aft hook is 17,000 pounds each. b. The maximum single load that can be suspended as a tandem load from the forward and aft hooks is 25,000 pounds. c. The center cargo hook is limited to a maximum load of 26,000 pounds.
Minimum Crew	3 (1 pilot, 1 copilot, 1 crewmember)
No. of Seats	Refer to Tandem Rotor Operators Manual no. TAN-210 "Rotorcraft Flight Manual for the Tandem Rotor, LLC CH-47D Helicopter" Rev. IR, Dated October 20, 2016.
No. of Passengers	None (see Note 10)
Maximum Compartment Weights	Refer to the Operators Manual no. TAN-210 "Rotorcraft Flight Manual for the Tandem Rotor, LLC CH-47D Helicopter" Rev. IR, Dated October 20, 2016.
Fuel Capacity	1028 gal. (total); 278 gal. (Left Main Tank) Sta. +317.30 274 gal. (Right Main Tank) Sta. +317.30 122 gal. (Left Fwd Aux Tank) Sta. +214.00 119 gal (Right Fwd Aux Tank) Sta. +214.00 118 gal. (Left Aft Aux Tank) Sta. +414.00 117 gal. (Right Aft Aux Tank) Sta. +414.00 Unusable fuel; 1) 4.0 gal. Sta. +316.00 2) 5.8 gal. Sta. +357.00 The full tank usable fuel weight will vary depending upon fuel specific weight. See the appropriate Tandem Rotor, LLC, CH-47D Rotorcraft Flight Manual per Note 5.
Oil capacity	3.75 gal. per engine, Sta. +480.7 These are maximum capacities which include residual and trapped oil/fuel. Servicing capacities will be less. See the appropriate Tandem Rotor, LLC, CH-47D Rotorcraft Flight Manual per Note 5.
Rotor Blade and Control Movements	For rigging information see Note 3.
Serial No. Approved	U.S. Military Surplus CH-47D helicopters as identified in Tandem Rotor, LLC, Serial Number Report, Restricted Category Type Certificate, Model CH-47D Helicopter, no. TAN-204 Rev. 0 or later FAA approved revision.
Date of Application	24-February-2016

Certification basis	<p>Part 21 § 21.25(a)(2) for the special purpose of:</p> <ol style="list-style-type: none"> 1) Agricultural § 21.25(b)(1) 2) Forest and Wildlife Conservation Operations under § 21.25(b)(2). Note: In accordance with § 36.1(a)(4), compliance with the noise requirements was not shown. Therefore, aircraft certificated under this type certificate are only eligible for aerial dispensing of liquids and forest conservation material excepted by § 36.1(a)(4) and defined under § 137.3. 3) Other Special-Purpose Operations under § 21.25(b)(7). Includes external load operations for the carriage of cargo external to the fuselage. Note: In accordance with § 36.1(a)(4), compliance with the noise requirements was not shown. Therefore, aircraft certificated under this type certificate are only eligible for carrying external loads excepted by § 36.1(a)(4) and defined under § 133.1(b). <p>Any alteration to the aircraft for Special Purposes not identified above require further FAA approval and in addition, may require noise and/or flight testing.</p> <p>This aircraft approved for Day or Night VFR operations only. Flight into known icing conditions is prohibited.</p> <p>General Note: Any subsequent modifications to the helicopters type certified under this Type Certificate are to have the certification basis for that modification established under 14 CFR § 21.101. Non-significant modifications are to meet the requirements of 14 CFR § 29 dated February 1, 1965, including Amendments 29-1 through 29-20 and 14 CFR § 29.1529, Instructions for Continued Airworthiness, Amendment 20, effective October 11, 1980.</p>
Production basis	None. No helicopters may be produced under this approval. No helicopter serial number may be added to this type certificate unless approved by the cognizant Aircraft Certification Office.
Equipment	The basic required equipment as prescribed in the applicable airworthiness regulations (See Certification Basis) must be installed in the helicopter for certification. In addition, the appropriate Tandem Rotor, LLC, CH-47D Rotorcraft Flight Manual per Note 5 is required with each helicopter.

NOTES

- NOTE 1. A current weight and balance report including a list of equipment included in the certificated empty weight, and loading instructions when necessary, must be in each helicopter at the time of original airworthiness certification and at all times thereafter. The certified empty weight and corresponding C.G. locations must include unusable fuel. Refer to the appropriate Tandem Rotor, LLC, CH-47D Rotorcraft Flight Manual per Note 5.
- NOTE 2. The following placards must be displayed in front of and in clear view of the pilots:
- Placard No. 1
- THIS HELICOPTER MUST BE OPERATED IN COMPLIANCE WITH THE OPERATING LIMITATIONS SPECIFIED IN THE APPROVED ROTORCRAFT FLIGHT MANUAL.
- Placard No. 2
- THIS ROTORCRAFT MUST BE OPERATED IN ACCORDANCE WITH THE RESTRICTED CATEGORY OPERATING LIMITATIONS OF 14 CFR PART 91 § 91.313.
- NOTE 3. These helicopters must be serviced, maintained, inspected, repaired, and overhauled in compliance with the documents specified in Tandem Rotor, LLC, Applicable ICA, CH-47D Helicopter, document TAN-202 Rev. IR, Dated 5-April-2016, or later FAA approved revision or in accordance with any other FAA accepted maintenance program. Retirement times and FAA required inspections are listed in FAA approved Airworthiness Limitations Section III of the ICA. An FAA approved/accepted copy must accompany each helicopter on delivery.

- NOTE 4. The builder's data plate must be installed in accordance with Tandem Rotor, LLC, Serial Number Report, Restricted Category Type Certificate, Model CH-47D Helicopter, document TAN-204 Rev. IR Dated October 20, 2016. or later FAA approved revision.
- NOTE 5. This helicopter must be operated in accordance with Tandem Rotor, LLC, CH-47D Rotorcraft Flight Manual no. TAN-210 Rev. IR, Dated October 20, 2016., or later FAA approved revision.
- NOTE 6. This helicopter is prohibited from carrying cargo for compensation or hire. Carriage of cargo is limited to such cargo that is **incidental to the helicopter owners/operator's business**, which is other than air transportation.
- NOTE 7. A restricted category helicopter may not be operated in a foreign country without the express written approval of that country.
- NOTE 8. This helicopter has not been shown to meet the requirements of the applicable comprehensive and detailed Airworthiness Code as provided by Annex 8, to the Convention of the International Civil Aviation Organization.
- NOTE 9. The U.S. Army Safety Messages for the helicopter and engine contained in Tandem Rotor, LLC, Configuration Report, Restricted Category Type Certificate, Model CH-47D Helicopter, document TAN-205 Rev. IR, Dated 09-April-2016, or later FAA approved revision, must be complied with prior to original airworthiness certification.
- NOTE 10. No person may be carried in this helicopter during flight unless that person is essential to the purpose of flight.
- NOTE 11: Alternative and emergency fuels are listed in Chapter 8 of the appropriate Tandem Rotor, LLC, CH- 47D Rotorcraft Flight Manual per Note 5.
- NOTE 12: Any alteration to the type design of this aircraft may require Instructions for Continued Airworthiness. Changes to the type design by means of a Supplemental Type Certificate requiring ICAs or changes too existing ICAs must be submitted and received by the Fort Worth Evaluation Group (FTW-AEG). Type design changes by means of an FAA Field Approval that require ICA's must have those ICA's reviewed by the Flight Standards District Office managing the Field Approval or the FTW-AEG.
- NOTE 13: No helicopter may obtain a Restricted Category Airworthiness Certificate under this type certificate unless it is included in the "Serial No. Approved List" document no. TAN-204 Rev. IR or later approved revision.

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