

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

R00024LA
Revision 1-
Unical Aviation, Inc.
CH-47D

August 13, 2021

TYPE CERTIFICATE DATA SHEET R00024LA

This data sheet, which is a part of Type Certificate No. R00024LA, 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: Unical Air Inc.
1240 Oakhaven Lane
Arcadia, CA 91006

Type Certificate Holder Record: Unical Aviation, Inc. transferred to Unical Air Inc. on August 13, 2021

I Model CH-47D (Restricted Category Rotorcraft) Approved April 08, 2018.

Engines (2) Honeywell T-55-GA-714A

Fuel ASTM-D1655 Jet A, Jet A-1, Jet B, JP-4, JP-5, JP-8. Alternative and emergency fuels are listed in Chapter 2, Section III of the Unical Aviation Inc. Rotorcraft Flight Manual.

Engine and
Transmission Limits

Rating	Torque (% Q)	Gas Gen. Speed (%N1)	Power Turbine Speed (%N2)	Power Turbine Inlet Temp
Dual Engine Limits				
Take-Off (10 Min.)	100%	111%	111.5%	899
Military Power (30 Min.)	100%	-----	-----	854
Normal Continuous	100%	-----	-----	816
Contingency Power (Max for not more than 2.5 min.)	-----	-----	-----	932
Maximum Transient (Max for not more than 12 sec.)	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%	-----	-----	816
Contingency Power (Max for not more than 2.5 min.)	-----	-----	-----	932
Maximum Transient (Max for not more than 12 sec.)	123%	111%	111.5%	943

Refer to Unical Aviation, Inc., Rotorcraft Flight Manual no. CH-47D-RFM "Unical Aviation Inc., Model CH-47D Helicopter", Rev. IR, dated March 28, 2019 or later FAA-approved revisions for additional limitation data.

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Rotor Speed Limits

	Power Off	Power On
Minimum	91% r.p.m.	91% r.p.m.
Maximum	111% r.p.m.	106% r.p.m.

See Unical Aviation Inc., CH-47D Rotorcraft Flight Manual per Note 4 for additional rotor speed limits.

Airspeed Limits

Vne (never exceed) 170 KIAS at Sea Level. See Unical Aviation Inc., CH-47D Rotorcraft Flight Manual per Note 4 for variation of Vne with rotor RPM, gross weight, pressure altitude and temperature.

Sideward Flight (maximum): 45 KIAS

Rearward Flight (maximum): 45 KIAS

C.G. Range

Most Forward C.G. Station +310.00
 Most Aft Station +349.00
 (+322.00) to (+331.00) at 50,000 lbs
 (+319.00) to (+336.00) at 44,800 lbs
 (+310.00) to (+343.00) at 33,000 lbs

EXAMPLE**WANTED**

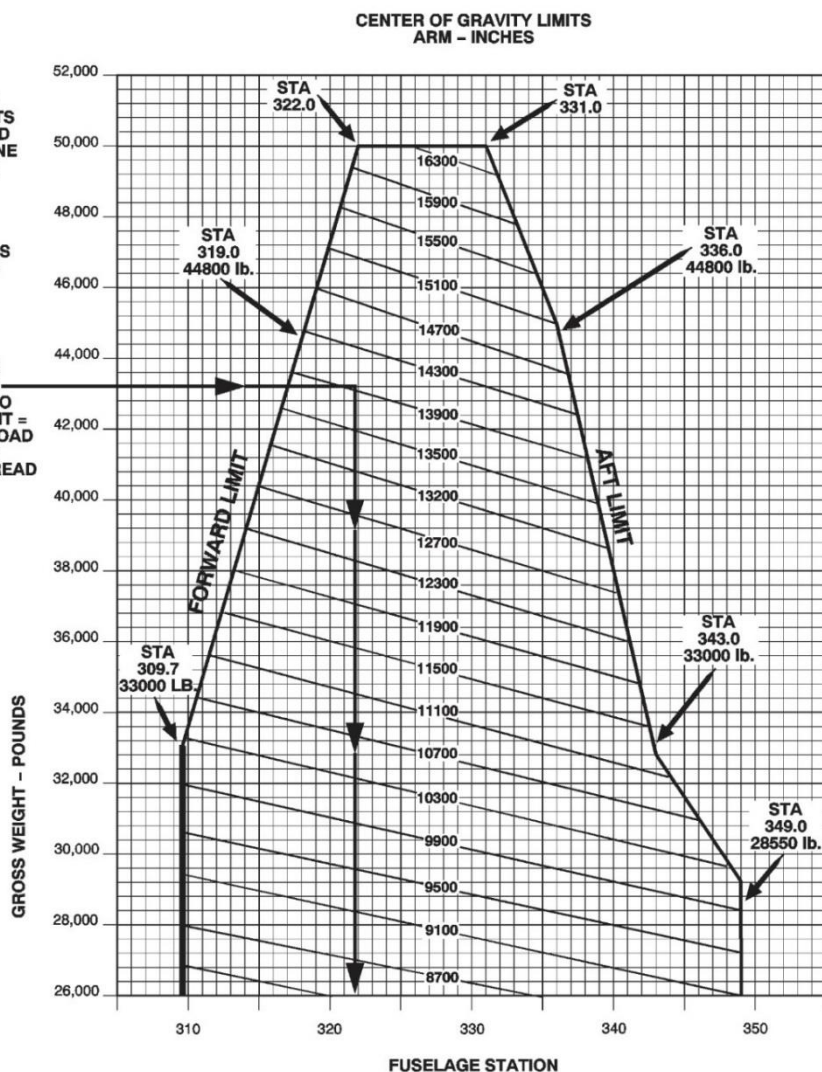
DETERMINE IF
LOADING LIMITS
ARE EXCEEDED
AND DETERMINE
C.G. POSITION

KNOWN

GW = 43200 LBS
 MOMENT/1'000
 = 13900

METHOD

ENTER GROSS
WEIGHT HERE
 MOVE RIGHT TO
TOTAL MOMENT =
13900. READ LOAD
WITHIN LIMITS
MOVE DOWN READ
ARM = 321.8



C.G. Range and Limits

Empty Weight C.G.	None
Datum	Station 0 (Datum is 21.5 inches forward of the forward most point of the nose section).
Leveling Means	Plumb bob hook at top of main cabin door interior trim forward of Station 150. Plumb target under main cabin door sill forward of Station 150 and RBL48.3. Plumb line from upper hook to target.
Maximum Weight	50,000 lbs.
Cargo Hook Limitations.	<p>The limits presented below are structural limitations only.</p> <p>a. The structural limit of the forward and aft hook is 17,000 pounds each.</p> <p>b. The maximum single load that can be suspended as a tandem load from the forward and aft hooks is 25,000 pounds.</p> <p>c. The center cargo hook is limited to a maximum load of 26,000 pounds.</p>
Minimum Crew	3 – (1) pilot, (1) copilot, (1) Flight Crewmember
No. of Passengers	None (see Note 9)
Maximum Cargo	Refer to Operators Manual CH-47D-RFM “Unical Aviation Inc., Model CH-47D Helicopter”, Revision IR dated March 28, 2019 (or later FAA-approved revision) for various configurations.
Fuel Capacity	6887 lb. (1028 Gallons) Refer to Operators Manual no. CH-47D-RFM “Unical Aviation Inc., Model CH-47D Helicopter”, Revision IR, dated March 28, 2019 (or later FAA-Approved Revision) for various configurations.
Oil Capacity	7.5 gal. (3.75 Gal per engine). This is the maximum capacity which includes residual and trapped oil. Servicing capacities will be less.
Rotor Blade and Control Movements	For rigging information, refer to TM 1-1520-240-23 series Technical Manuals.
Other Limits	Refer to Unical Aviation Inc., CH-47D-RFM “Unical Aviation Inc. Model CH-47D Helicopter”, Revision IR, dated March 28, 2019 or later FAA-Approved revision. Flight hours are counted from takeoff to landing.
Serial No. Approved	No helicopter may obtain Restricted Category Airworthiness Certificate under this type certificate unless it is included in the Unical Aviation Inc., Approved Serial Number List, Report Number CH-47D-SNL, Revision IR, dated April 08, 2019, or later FAA-approved revision.
Certification Basis	<p>14 CFR Part 21 §21.25(a)(2) for the special purposes listed in 14CFR Part §21.25 (b)(1)(2)(7) through Amendment 21-21 as defined below:</p> <p>(1) § 21.25(b)(1) Agriculture Operations</p> <p>(2) § 21.25(b)(2) Forest & Wildlife Conservation</p> <p>(3) § 21.25(b)(7) External Loads</p> <p>Note: In accordance with 14CFR Part 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.</p> <p>Any alterations 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>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</p>

§21.101. Non-significant modifications shall have a certification basis of 14 CFR §29 dated February 1, 1965, including Amendments 29-1 through 29-17 (amendment effective as of 12/1/1978) and §29.1529, Instructions for Continued Airworthiness, Amendment 29-20, effective September 11, 1980.

Date of Application	October 16, 2018
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 responsible Aircraft Certification Office.
Equipment	The basic required equipment necessary for the particular special purpose operation must be installed for certification. In addition, the following item of equipment must be on board the helicopter and available to the flight crew: CH-47D-RFM, FAA Approved Rotorcraft Flight Manual for the Unical Aviation Inc., Model Ch-47D. Revision IR, dated March 28, 2019, or later FAA-approved revision.

NOTES

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| NOTE 1. | A current weight and balance report, including a list of equipment included in the certified empty weight, and loading instructions when necessary, must be provided for each helicopter at the time of original airworthiness certification. |
| NOTE 2. | All placards required by either the FAA-approved Rotorcraft Flight Manual, the applicable operating rules, or the Type Certificate Data, must be installed on the helicopter. Required placards are contained in the Unical Aviation Inc., Drawing UC10001, Revision A, dated February 20, 2019 or later FAA-accepted revision. |
| NOTE 3. | The helicopter(s) must be serviced, maintained, inspected, repaired and overhauled in accordance with the requirements specified in Unical Aviation Inc., document number CH-47D-ICA, Instructions for Continued Airworthiness, Revision IR, dated March 14, 2019, or later FAA-accepted revision, or in accordance with any other FAA-accepted maintenance program that applies to this helicopter. The service life limited part retirement intervals for these helicopters are specified in the FAA-approved Airworthiness Limitation Section of CH-47D-ICA. An FAA-approved/accepted copy of this ICA must accompany each helicopter delivery. |
| NOTE 4. | This helicopter must be operated in accordance with the CH-47D-RFM, Rotorcraft Flight Manual for Unical Aviation Inc., Model CH-47D Helicopter, Revision IR, dated March 28, 2019, or later FAA-approved revision. |
| NOTE 5. | This helicopter is prohibited from carry cargo for compensation or hire. Carriage of cargo is limited to such cargo that is incidental to the helicopter owner/operator's business, which is other than air transportation. |
| NOTE 6. | A Restricted Category helicopter may not be operated in a foreign country without the express written approval of that country. |
| NOTE 7. | 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 on International Civil Aviation. |
| NOTE 8. | The US Army Safety Messages that must be complied with for the helicopter and engines prior to certification are contained in Unical Aviation Inc., De-Configuration Report document no. CH-47D-CR-1, Revision IR, dated January 15, 2019, or later FAA-accepted revision. |
| NOTE 9. | No person may be carried onboard this aircraft unless that person is a flight crewmember; is a flight crewmember trainee; performs an essential function in connection with a special purpose operation for which the aircraft is certificated; or is necessary to accomplish the work activity directly associated with that special purpose. Reference 14 CFR §91.313(d). |

- NOTE 10. 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 to existing ICAs must be submitted and accepted by the FAA Fort Worth Aircraft Evaluation Group (FTW-AEG). Type design changes by means of an FAA field approval that require ICAs must have those ICAs reviewed by the Flight Standards District Office managing the field approval or the FTW-AEG.
- NOTE 11. The builder's data plate required by 14 CFR §45.13 must be installed in accordance with Unical Aviation Inc., Drawing , UC10001, Rev. A, dated February 20, 2019, or later FAA-accepted revision.
- NOTE 12. Compliance must be shown for each airworthiness directive listed in Unical document CH-47D-AD-1, Revision IR, dated January 21, 2019, or later FAA-accepted revision.

END