

Initial Condition Inspection

I certify that this aircraft has been inspected in accordance with the scope and detail of appendix D to Part 43 and has been found to be in a condition for safe operation.

Owner's Signature: _____, owner Date: 11-20-17

FAA Airworthiness Inspection

I find this aircraft meets the requirements of a special airworthiness certificate for the purpose of operating as an amateur built aircraft, and have issued a special airworthiness certificate and operating limitations dated 11/21/2017. The next condition inspection is due 11/30/2018. N804AL

Stanley P. Faske
Aviation Safety Inspector

REGISTRATION NOT TRANSFERABLE

UNITED STATES OF AMERICA DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION CERTIFICATE OF AIRCRAFT REGISTRATION		This certificate must be in the air- craft when operated.
NATIONALITY AND REGISTRATION MARKS N 804RL		AIRCRAFT SERIAL NO. 83272
MANUFACTURER AND MANUFACTURER'S DESIGNATION OF AIRCRAFT JON S THOCKER VANS RV-8		
ICAO Aircraft Address Code: 52571073		
I S S U E D T O	THOCKER JON S 	
	Individual	
It is certified that the above described aircraft has been entered on the register of the Federal Aviation Administration, United States of America, in accordance with the Convention on International Civil Aviation dated December 7, 1944, and with Title 49, United States Code, and regulations issued thereunder.		
DATE OF ISSUE October 2, 2017 EXPIRATION DATE October 31, 2020		 ADMINISTRATOR

AC Form 8050-3 (10/2010) Supersedes previous editions

This certificate is issued for registration purposes only and is not a certificate of title. The Federal Aviation Administration does not determine rights of ownership as between private persons.



U.S. Department
of Transportation
**Federal Aviation
Administration**

UNITED STATES OF AMERICA DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION SPECIAL AIRWORTHINESS CERTIFICATE			
A	CATEGORY/DESIGNATION EXPERIMENTAL		
	PURPOSE OPERATING AMATEUR-BUILT AIRCRAFT		
B	MANU-FACTURER	NAME	N/A
		ADDRESS	N/A
C	FLIGHT	FROM	N/A
		TO	N/A
D	N-804RL		SERIAL NO. 83272
	BUILDER JON S THOCKER		MODEL VANS RV-8
E	DATE OF ISSUANCE 11/21/2017		EXPIRY UNLIMITED
	OPERATING LIMITATIONS DATED 11/21/2017		ARE A PART OF THIS CERTIFICATE
	SIGNATURE OF FAA REPRESENTATIVE S.P. FASKE		DESIGNATION OR OFFICE NO. GL05

Any alteration, reproduction or misuse of this certificate may be punishable by a fine not exceeding \$1,000 or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE FEDERAL AVIATION REGULATIONS.

RV8 N804 RL FAR 91.411 and 91.413

DATE	RECORDING TACH/ HOUR METER TIME	TOTAL TIME IN SERVICE	DESCRIPTION OF WORK PERFORMED			
			2480 Greentree Rd. Lebanon, Ohio 45036 FAA Repair Sta. #8WCR657C			
			W.O. No: <u>60645</u> Tech: <u>[REDACTED]</u> A/C Reg. No: <u>N804RL</u>			
			2-13-2018 RV This is to certify that the 43 Appendices E&F has			
			Altimeter Correction Card SIN: <u>2 SH003944</u> <u>684-25</u>			
			Alt	Error	Alt	Error
			-1000	+20	10,000	+20
			0	0	12,000	+10
			500	0	14,000	6
			1,000	0	16,000	+20
			1,500	0	18,000	0
			2,000	0	20,000	0
			3,000	+20	22,000	7
			4,000	0	25,000	
			6,000	0	30,000	
			8,000	0	35,000	
			This is to certify that the Installed in this aircraft, r			
			This is to certify that the procedures outlined in 1			
			For details see Work Or			
			Signed <u>[REDACTED]</u>			
			31.411 and as outlined in 14 CFR <u>2000</u> <u>4YU 000573</u> as outline in FAR43 appendix F.			
			performed in accordance with the <u>SM</u> avionics Road. 5036			



U.S. Department
of Transportation
**Federal Aviation
Administration**

Cincinnati FSDO
4358 Ferguson Drive
CINCINNATI, OHIO 45245
513-842-9600

November 21, 2017

**EXPERIMENTAL OPERATING LIMITATIONS
OPERATING AMATEUR-BUILT AIRCRAFT**

**MAKE: JON S THOCKER
MODEL: VANS RV-8**

**REGISTRATION NO: N804RL
SERIAL NO: 83272**

ALL OPERATIONS

- (1) This aircraft does not meet the airworthiness requirements specified in Annex 8 to the Convention on International Civil Aviation. Operations in airspace outside of the United States will require the permission of the applicable foreign authority. That permission must be carried aboard the aircraft together with this U.S. airworthiness certificate and, upon request, be made available to an FAA inspector or the applicable foreign authority in the country of operation. Operations may be further restricted by the foreign authority. This may include not allowing use of an airport, requiring specific routing, and restricting flight over specific areas. The operator must comply with any additional limitation prescribed by the applicable foreign authority when operating in its airspace. (1)
- (2) These operating limitations do not provide any relief from any applicable law or regulation. This aircraft must be operated per applicable regulations and the additional limitations prescribed herein. Note that a clearance from air traffic control (ATC) is not authorization for a pilot to deviate from any rule, regulation, operating limitation, or minimum altitude, or to conduct unsafe operation of the aircraft. If ATC issues a clearance that would cause a pilot to deviate from a rule, regulation, or operating limitation, or in the pilot's opinion, would place the aircraft in jeopardy, it is the pilot's responsibility to request an amended clearance. These operating limitations are a part of FAA Form 8130-7 and are to be carried in the aircraft at all times and to be available to the pilot in command of the aircraft. (2)

- (3) This special airworthiness certificate is not in effect during public aircraft operations (PAO). Concurrent public/civil operations are not permitted; the aircraft cannot be operated as a civil aircraft and as a public aircraft at the same time. No weapons or special military mission systems may be added to the aircraft. This airworthiness certificate is not in effect during flights related to providing military services (that is, air combat maneuvering, air-to-air gunnery, target towing, electronic countermeasures simulation, cruise missile simulation, and air refueling). These activities are inherent military, not civil activities. The FAA makes the distinction between the authorized flights for experimental purposes, and PAO. Before operating this aircraft under this special airworthiness certificate following a PAO, the aircraft must be returned to the condition and configuration at the time of inspection for the issuance of this airworthiness certificate. This action must be documented in the maintenance records. The maintenance records and entries must clearly differentiate between a civil experimental flight per this certificate and any other flights. (3)
- (4) Application to amend this certificate must be made to the local Flight Standards District Office (FSDO) or Manufacturing Inspection District Office (MIDO). (4)
- (5) No person may operate this aircraft for other than recreation and education. (5)
- (6) The pilot in command of this aircraft must hold an airplane category and single engine land class certificate or privilege. The pilot in command must hold all required ratings or authorizations and endorsements required by FAR Part 61. (7)
- (7) When filing a flight plan, the experimental nature of this aircraft must be listed in the remarks section. (11)
- (8) This aircraft must not be used for towing, including, but not limited to glider towing, banner towing, target towing, or towing electronic receivers or emitters. This aircraft must not be used for intentional parachute jumping. (13)
- (9) If aircraft, engine, or propeller operating limitations are exceeded outside of planned test conditions, an appropriate entry will be made in the maintenance records. (14)
- (10) No person may operate this aircraft unless within the preceding 12 calendar months it has had a condition inspection performed in accordance with the scope and detail of FAR Part 43, appendix D, manufacturer or other FAA-approved programs, and was found to be in a condition for safe operation. The inspections must be recorded in the aircraft maintenance records showing the following, or a similarly worded, statement: **"I certify that this aircraft has been inspected on [insert date] per the [insert either: scope and detail of FAR Part 43, appendix D; or manufacturer's inspection procedures] and was found to be in a condition for safe operation."** The entry will include the aircraft's total time-in-service (cycles if appropriate), and the name, signature, certificate number, and type of certificate held by the person performing the inspection. (15)
- (11) An experimental aircraft builder certificated as a repairman for this aircraft under FAR Part 65.104, or an appropriately rated FAA-certificated mechanic, may perform the condition inspection required by these operating limitations. (18)

(12) The aircraft may not be operated unless the replacement for life-limited articles specified in the applicable technical publications pertaining to the aircraft and its articles are complied with in one of the following manners:

- (a) **Type-Certificated Products:** Replacement of life-limited parts required by FAR Part 91.409(e) applies to experimental aircraft when the required replacement times are specified in the U.S. aircraft specifications or type certificate data sheets.
- (b) **Non-Type-Certificated Products:** All articles installed in non-type-certificated products operated under an airworthiness certificate issued for an experimental purpose, in which the manufacturer has specified limits, must include in their program an equivalent level of safety for those articles. These limits must be evaluated for their current operating environment and addressed in the approved inspection program. All articles installed in non-type-certificated products in which the manufacturer has specified limits, must include in their program an equivalent level of safety for those articles. The article must be inspected to ensure the equivalent level of safety still renders the product in a serviceable condition for safe operation. (20)

(13) For aircraft originally incorporating fatigue life recording systems, the owner/operator must maintain and use the system as prescribed by the aircraft manufacturer and comply with the manufacturer's fatigue life limits. (21)

(14) After incorporating a major change as described in FAR Part 21.93, the aircraft owner is required to reestablish compliance with FAR Part 91.319(b) and notify the geographically responsible FSDO of the location of the proposed test area. The aircraft owner must obtain concurrence from the FSDO as to the suitability of the proposed test area. If the major change includes installing a different type of engine (reciprocating to turbine) or a change of a fixed-pitch from or to a controllable propeller, the aircraft owner must fill out a revised FAA Form 8130-6 to update the aircraft's file in the FAA Aircraft Registration Branch, AFS-750. All operations must be conducted under day visual flight rules (VFR) conditions over a sparsely populated area in compliance with FAR Part 91.305. The aircraft must remain in flight test for a minimum of 5 hours. The FSDO may require additional time (more than 5 hours) depending on the extent of the modification. Persons nonessential to the flight must not be carried. The aircraft owner must make an aircraft maintenance record entry describing the change before the test flight. Following satisfactory completion of the required number of flight hours in the flight test area, the pilot must certify in the records that the aircraft has been shown to comply with FAR Part 91.319(b). Compliance with FAR Part 91.319(b) must be recorded in the maintenance records with the following, or a similarly worded, statement: "I certify that the prescribed flight test hours have been completed and the aircraft is controllable throughout its normal range of speeds and throughout all maneuvers to be executed, has no hazardous characteristics or design features, and is safe for operation. (23)

THE FOLLOWING LIMITATIONS ONLY APPLY DURING PHASE I

- (15) No person may operate this aircraft for other than the purpose of meeting the requirements of FAR Part 91.319(b). The pilot in command must comply with FAR Part 91.305 at all times. The aircraft is to be operated under VMC, day only. This aircraft must be operated for at least 40 hours within a 75 nautical mile radius of Hamilton Airport, Ohio (HAO), within the State of Ohio, with 20 takeoffs and landings to adequately determine takeoff and landing performance. The size of the area must be that required to safely conduct the anticipated maneuvers and tests. This aircraft may only operate from Hamilton Airport, Ohio (HAO). (42)
- (16) Unless operating in accordance with AC 90-116, Additional Pilot Program for Phase I Flight Test, only the minimum crew necessary to fly the aircraft during normal operations may be on board. (44)
- (17) Upon completion of phase I flight testing, compliance with FAR Part 91.319(b) must be recorded in the maintenance records. The following or similar statement must be recorded in the maintenance records: **"I certify that the prescribed flight test has been completed and the aircraft is controllable throughout its normal range of speeds and throughout all maneuvers to be executed, has no hazardous operating characteristics or design features, and is safe for operation."** If aerobatic maneuvers are intended to be performed during phase II, those maneuvers must be satisfactorily accomplished and recorded in the maintenance records. Aerobatic flight testing is not complete until sufficient flight experience has been gained to establish that the aircraft is satisfactorily controllable during the aerobatic maneuver tested. Upon completion of flight testing, the owner/operator must make the following or similar entry in the maintenance records: I certify that the following aerobatic maneuvers have been test flown, and the aircraft is controllable throughout the maneuvers' normal range of speeds. The flight-tested aerobatic maneuvers and speeds are _____ at _____. During phase II operations, aerobatic maneuvers that were not documented per this limitation may not be performed. The owner may place the aircraft back into phase I for the sole purpose of adding additional aerobatic maneuvers to the aircraft authorized maneuvers. (45)
- (18) If the aircraft will have removable externally mounted equipment, it must be test flown in all configurations. An entry must be made in the maintenance records indicating the configurations flight tested, unless the original manufacturer's flight test data for that equipment is included in the aircraft limitations. If relying on the manufacturer's data, the aircraft and load must conform to the manufacturer's design and be maintained to manufacturer's instructions. Otherwise, the aircraft owner/operator must conduct test flights in all configurations and make an entry in the maintenance records indicating the configurations flight tested. (46)

THE FOLLOWING LIMITATIONS ONLY APPLY DURING PHASE II

- (19) Instrument flight operations are authorized if the instruments specified in FAR Part 91.205(d) are installed, operational, compliant with the performance requirements of, and maintained per the applicable regulations. All maintenance or inspection of this equipment must be recorded in the aircraft maintenance records and include the following items: date, work performed, and name and certificate number of person returning aircraft to service. (49)
- (20) The pilot in command must not perform any maneuvers that have not been flight tested or operate the aircraft outside the weight, airspeeds, and center of gravity limits tested. (51)
- (21) Flight over a densely populated area or in a congested airway is authorized for the purpose of takeoff or landing; or unless sufficient altitude is maintained to make a safe emergency landing in the event of a power unit failure, without hazard to persons or property on the ground. (55)
- (22) This aircraft is prohibited from flight with any externally mounted equipment unless the equipment is mounted in a manner that will prevent in-flight jettison. The aircraft must be configured as documented in the aircraft's flight test records or as allowed in the original manufacturer's aircraft limitations. If relying on the manufacturer's data, the aircraft must conform to the manufacturer's design and be maintained to manufacturer's instructions. No change in external loading for the aircraft (for example, a change in a pylon, rack, or external store) from configurations approved by the manufacturer is allowed, except to prevent jettison. Compliance with all manufacturer limitations when any external stores or fuel tanks are installed is required. (39)

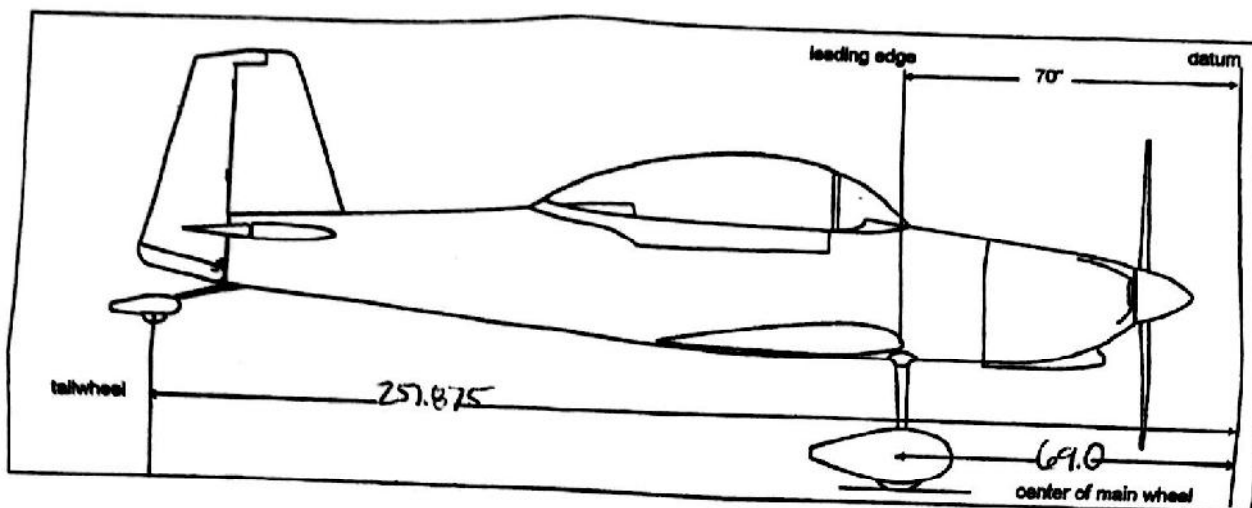

Stanley P. Fiske
Principal Maintenance Inspector

RV-8 WEIGHT AND BALANCE CALCULATIONS

aircraft weighed in a level attitude with oil

AC registration N804RL Date 11-16-17 Performed by Jon Thacker**DATUM** (70 inches forward of leading edge)**CG RANGE** 78.70 inches aft of datum
86.82 inches aft of datum

ARMS		
FWD BAGGAGE	58.51	inches
FUEL	80.00	inches
PILOT	91.78	inches
PASSENGER	119.12	inches
AFT BAGGAGE FLOOR	138.00	inches
AFT BAGGAGE SHELF	152.91	inches

**EMPTY AIRCRAFT**

	WEIGHT	ARM	MOMENT
RIGHT WHEEL	531.5	64.0	34033.5
LEFT WHEEL	527.5	69.5	36661.25
TAILWHEEL	50.5	257.87	12719.69
TOTAL	1109.5		86054.44
CG	77.56		

CG = MOMENT DIVIDED BY WEIGHT

SAMPLE 1: TYPICAL LOADING, STD PILOT WEIGHT

	WEIGHT	ARM	MOMENT
EMPTY AIRCRAFT	1109.5		86054.44
FWD BAGGAGE	45	58.51	2632.95
FUEL	252	80.00	20160
PILOT	170	91.78	15602.6
PASSENGER		119.12	
AFT BAGGAGE FLOOR		138.00	
AFT BAGGAGE SHELF		152.91	
TOTAL	1576.5		124450
CG	78.94		

CG = MOMENT DIVIDED BY WEIGHT

N804 RL

[illegible]