This Airplane Operating Manual (AOM) provides information relevant to operating the aircraft. It is not designed to be a substitute for flight instruction. Changes made to the airplane should be reflected by changes made to this manual.

The aircraft owner is responsible for maintaining the aircraft in airworthy condition. If the aircraft is not airworthy, it should be clearly identified as such. The pilot in command is responsible for ensuring the aircraft is safe for flight and for operating within the limits detailed in this handbook, on placards and instrument markings, and in accordance with the Airworthiness Certificate and Op Limits.

DESCRIPTION

This RV-10 was constructed from a kit manufactured by Van's Aircraft. It utilized Quick Build options for the wings and fuselage. Construction began in May, 2005. The aircraft was first flown on October 10, 2007.

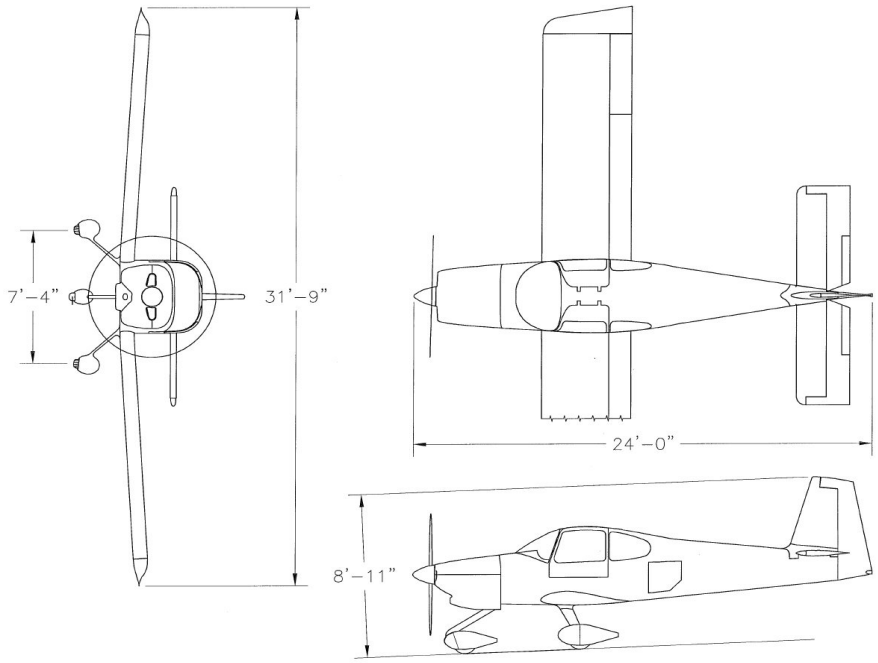
The airplane is a four-seat, low wing, fixed gear design. It consists mainly of traditional aluminum semi-monocoque construction similar to many other general aviation aircraft and all RV series aircraft to date. The RV-10 uses a composite cabin top, doors, cowling, wing tips, and miscellaneous fairings. The landing gear consists of steel spring rods and standard aviation tires, wheels, and brakes. Steering is accomplished by differential braking and rudder inputs to deflect a full-castering nose wheel.

The RV-10 derives its "Total Performance" from a clean, light airframe. The wing airfoil was designed using modern airfoil computer modeling and is unique to the design. Equipped with large slotted flaps, the airfoil provides excellent control response and a wide operating envelope.

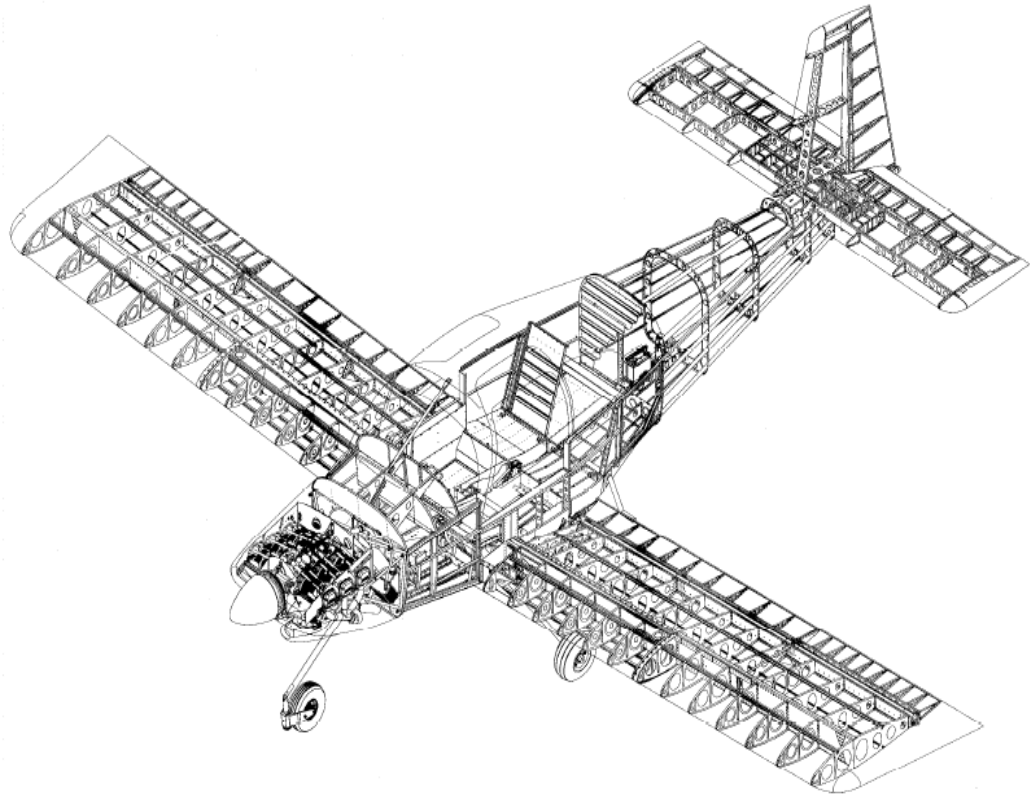
Occupants are protected by harness type seat belts and retractable inertia style shoulder straps. The front seats are designed and tested to absorb loads equivalent to those found in production airplanes. The rear seats feature a center front strap to prevent submarining of the occupant during certain types of crashes. Rollover protection is provided by the robust composite top.

CERTIFICATION

This airplane is certified Experimental by the Federal Aviation Administration for the purpose of operating an amateur-built aircraft. The Airworthiness Certificate must be displayed in the cabin. Operating Limitations are part of the Airworthiness Certificate and must be available to the pilot at all times. The Operating Limitations include important information for operating and maintaining the aircraft. Every owner and pilot of the aircraft should be familiar with the contents of the Operating Limitations.



3-View Drawing



Isometric Cut-Away

ENGINE

Six Cylinder, Direct Drive, Horizontally Opposed, Air Cooled, Fuel Injected

Manufacturer	Lycoming
Model Number	IO-540-D4A5
Rated Horsepower	260
Rated Speed (RPM)	2700
Displacement	540 Cubic Inches
Compression Ratio	8.5:1
Ignition	Dual Electronic Ignitions
Starting	Electric starter

PROPELLER

Aluminum Blended Airfoil, Hydraulic Constant Speed

Manufacturer	Hartzell
Model	C2YR-1BFP/F8068D
Number of blades	2
Diameter	80 inches
Governor	MT
Limitations	None

FUEL

Capacity	60 U.S. Gallons
Fuel Grade	Leaded: 100LL as defined by ASTM D910 Unleaded: UL94 as defined by ASTM D7547 See Lycoming Service Instruction 1070AB

OIL

Capacity	12 US quarts
Normal Operating Level	7-9 US quarts
Preferred Type	Aeroshell 15-50 multi-grade (required with UL94 fuel)

AIRSPEED TERMINOLOGY

GS	Ground Speed
IAS	Indicated Airspeed
KIAS	Knots Indicated Airspeed
TAS	True airspeed relative to undisturbed air which is the IAS corrected for altitude, temperature and pressure.
V_A	Maneuvering speed. Speed at which full application of aerodynamic control will not over stress the aircraft. (Blue Line)
V_{FE}	Maximum Flap Extension Speed. Highest speed permissible with wing flaps in the fully extended position. (Top of White Arc)
V_{NE}	Never exceed speed. Not to be exceeded at any time. (Red Line)
V_{NO}	Maximum Structural Cruising Speed. Not to be exceeded except in smooth air and then only with caution. (Top of Green Arc)
V_S	Stalling Speed. The minimum steady speed at which the Aircraft is controllable. (Bottom of Green Arc)
V_{SO}	Stalling Speed. The minimum steady speed at which the Aircraft is controllable in the landing configuration. (Bottom of White Arc)
V_X	Best Angle of Climb. Airspeed that delivers greatest altitude gain in shortest distance. (Split green bar in AOA display)
V_Y	Best Rate of Climb. Airspeed delivering greatest altitude gain in shortest possible time.

METEOROLOGICAL TERMINOLOGY

OAT	Outside Air Temperature. Free static air temperature. Obtained from meteorological sources or in-flight instruments adjusted for instrument error.
DA	Density Altitude is the pressure altitude adjusted for non-standard temperature. It is the “equivalent altitude” at which the current air density would occur under standard conditions.

END OF SECTION