

SECTION 2 - LIMITATIONS

Operating Limitations

Rutan Model 33 VariEze N112EZ S/N 43

Airframe Limitations

Vne.....	220 MPH
Va (with 2.5g restriction).....	95 MPH
Vmca.....	53-57 MPH
Vle.....	163 MPH
Vlo.....	135 MPH
Vab max-speed.....	105 MPH
Vx.....	80 MPH
Vy.....	96 MPH
Propeller minimum windmilling speed.....	70 MPH
Propeller recommended windmilling speed CP-50.....	92 MPH
Propeller restart speed (prop stopped) steep dive most efficient use of altitude.....	150 MPH
Maximum Demonstrated Crosswind Component.....	25 MPH
Maximum Wind for Taxi.....	52 MPH

Aerobatics Prohibited

Intentional Spins Prohibited

Avoid aggravated full-rudder, cross controlled side-slips at low altitude

During taxi tests use of wheel pants prohibited due to possible heat damage to main gear legs

Prior to refueling each fuel tank - touch the refueling bonding (grounding) wire to each fuel cap Dzus fastener prior to opening each cap, then attach the refueling bonding (grounding) wire to the aircrafts fuel cap attach wire. Note: the fuel tanks are not electrically bonded to the engine or the exhaust pipes.

Engine Limitations

Maximum RPM (5 Minutes).....	2575 RPM (3000 RPM per Rutan in this application)
Maximum Continuous RPM.....	2575 RPM (3000 RPM per Rutan in this application)
Normal Oil Pressure Operating Range.....	30 - 40 PSI
Minimum Oil Pressure (Idle).....	10 PSI
Minimum Oil Temperature for Takeoff	75 F
Maximum Oil Temperature (Inlet).....	225 F
Maximum Cylinder Head Temperature.....	540 F
Static Fuel Pressure at Carb Inlet Min/Max.....	.5 PSI / 6 PSI

Electrical Limitations

Maximum Battery Voltage.....	14.4 Volts
Minimum Battery Voltage.....	Discard battery below 6 Volts
Battery Temperature limitations.....	0 – 140 Fahrenheit

SECTION 3 - EMERGENCY PROCEDURES

COMPLETE POWER LOSS IN FLIGHT:

1. Airspeed..... 92 MPH - BEST GLIDE (85 MPH) / 9:1 RATIO
2. Best Field.....SELECT
3. Checklist.....RESTART
 - Carb Heat.....ON LECT
 - Fuel Selector..... FUSELAGE or DESIRED TANK LECT
 - Mixture.....RICH/ REQUIRED
 - Ignition..... CHECK L&R / THEN BOTH LECT
 - Airspeed..... 92 MPH (70 MIN)- 150MPH RESTART LECT
4. Declare Emergency..... 121.50 MHz
5. Emergency Landing..... EXECUTE
 - Fuel Selector.....OFF LECT
 - Mixture..... CUTOFF
 - Ignition.....OFF LECT
 - Master and Alt Field.....OFF LECT
 - SeatbeltsSECURE LECT
 - Flare.....SLIGHTLY TAIL LOW LECT

ELECTRICAL FIRE IN FLIGHT:

1. Emergency Descent..... EXECUTE
2. Throttle IDLE
3. Air Brake.....EXTEND
4. Nose Wheel.....EXTEND
5. Declare Emergency..... 121.50 MHz / 7700
6. Master..... OFF
 - IF NO INDICATION SMOKE OR FIRE:
7. LandNEAREST SUITABLE AIRPORT
 - IF SMOKE OR FIRE PERSIST:
8. Emergency Landing.....EXECUTE IMMEDIATELY

ENGINE FIRE DURING START:

1. Mixture..... IDLE CUT-OFF
2. Fuel Selector..... OFF
3. Ignition..... OFF
4. Master..... OFF
5. Aircraft / CO2 Fire Ext.....EVACUATE / DISCHARGE

LOSS OF OIL PRESSURE IN FLIGHT:

1. Land.....NEAREST SUITABLE AIRPORT
2. If Oil Temp Increasing..... ANTICIPATE POWER LOSS

CONTINUED NEXT PAGE

SECTION 3A - ABNORMAL PROCEDURES

CARBURETOR ICING:

1. Carb Heat..... ON
2. MixtureLEAN FOR SMOOTH OPERATION

ENGINE OVERHEAT:

1. Power..... REDUCE
2. Airspeed..... INCREASE
3. Mixture..... ENRICHEN

PARTIAL POWER LOSS - ENGINE ROUGHNESS:

1. Carb Heat..... ON
2. Mixture..... ADJUST FOR SMOOTH OPERATION
3. Ignition..... CHECK
4. Land NEAREST SUITABLE AIRPORT

LANDING WITH PITCH TRIM INOPERATIVE:

1. Elevator Control Forces..... MAY BE INCREASED

LANDING WITH LOSS OF AIRSPEED:

1. Pitch and Power..... NORMAL OR SLIGHTLY STEEPER
2. Runway..... SELECT LONG RUNWAY

NOSE GEAR DOES NOT EXTEND:

1. Normal Landing..... EXECUTE
2. Pitch Attitude SLOWLY FLY THE NOSE TO RUNWAY

LANDING WITH A FLAT MAIN:

1. Normal Landing..... EXECUTE
2. Ailerons USE TO KEEP WEIGHT OFF BLOWN TIRE
3. Pitch Attitude..... DEROTATE SMOOTHLY
4. Wheel Brakes..... USE FOR DIRECTIONAL CONTROL

STRUCTURAL ICING:

1. Carb Heat..... AS REQUIRED
2. Airspeed Indicator ANTICIPATE LOSS
3. Approach Airspeed..... HIGHER THAN NORMAL
4. Runway..... SELECT LONG RUNWAY

CONTINUED NEXT PAGE

SECTION 3A - ABNORMAL PROCEDURES (CONTINUED)

DITCHING:

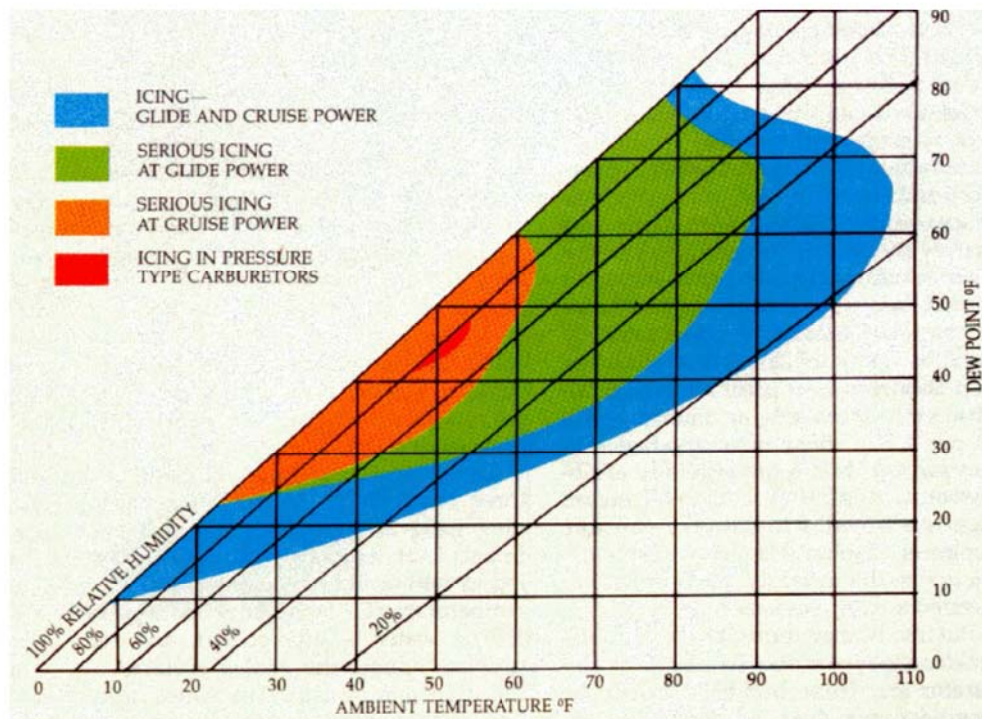
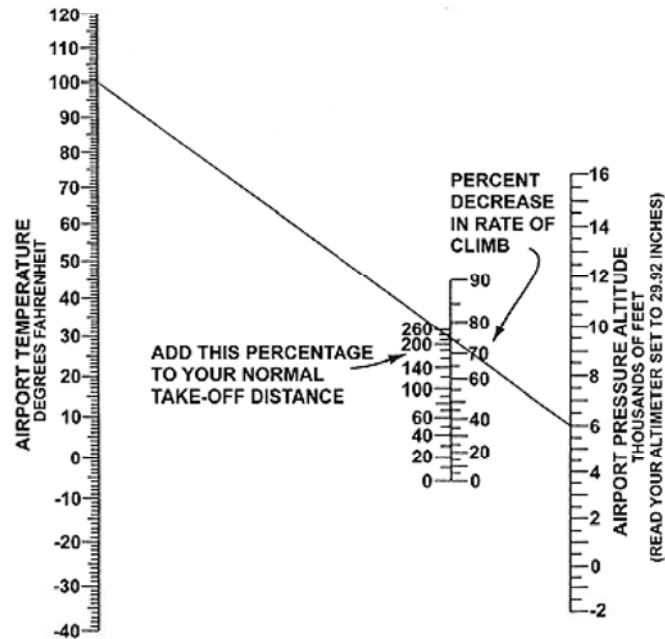
1. Life Jacket DON FOR OVERWATER FLIGHT
2. Canopy Safety Catch .. BEND AWAY BUT DO NOT OPEN
3. Nose Wheel.....EXTEND
4. Speed.....APPROACH INTO THE WIND AT MIN SPEED
5. Approach.....LAND ON BACK OF SWELL
6. Approach..... or PARRALLEL TO SWELL

BEST GLIDE 85 MPH IAS					
ENGINE OUT WINDMILLING Sink Rate 900 FPM			ENGINE IDLING Sink Rate 550 FPM		
Glide ratio	Altitude AGL	Range SM	Glide ratio	Altitude AGL	Range SM
9:1	10000	18	16:1	10000	32
	5000	9		5000	16
	1000	1.8		1000	3.2

Ditching in water

Actual ditching has not been experienced to test the following procedure. However, this should provide the best chance for success. Wear your life jacket for overwater flying. On descent, bend safety catch away but do not open canopy. Extend the nose gear. Touchdown should be planned at minimum speed, landing into the wind. Land on the back side of a swell, or parallel to the swells. The aircraft or major components of the airframe should float and support occupants and equipment due to the large amounts of structural closed cell foam.

SECTION 5 - PERFORMANCE (CONTINUED)



SECTION 10 -SAFETY AND OPERATIONAL TIPS (CONTINUED)

CAUTION

CP55 - FLIGHT IN PRECIPITATION AND THEN ENTERING AIR BELOW THE FREEZING LEVEL MAY RESULT IN AILERON CONTROLS FREEZING. RECOMMEND DRY AIRFRAME PRIOR TO ENTERING FREEZING AIR

CAUTION

CP63 - AIRCRAFT MUST BE IN LEVEL (NOSE GEAR EXTENDED ATTITUDE) TO FUEL AIRCRAFT TO MAXIMUM CAPACITY.

CAUTION! CONTROL SYSTEM FRICTION

The presence of friction in the pitch controls of an EZ will result in serious degradation in flying qualities. Mike recently installed a different shape canard tip and when reinstalling the elevators one of the pivot bolts was adjusted to bind an elevator. Sally and Mike both flew the aircraft with friction and reported PIO tendencies and over-control difficulty. Adjusting out the bind immediately returned the excellent pitch control and smooth flying qualities.

STOPPED PROPELLER WINDMILLING RESTART NOTE

A windmill start uses less altitude if you initially dive steeply to rapidly attain 135 knots

CANARD PITCH CHANGE IN PRECIPITATION

Canard Nose up or Nose down in rain. Maybe nose up in light rain and nose down in heavy rain.

VORTILONS FOR VARIEZES

These little wing leading edge fences, or more properly, vortilons, have been seen by many builders on Mike and Sally's Long-EZ N26MS. Since Oshkosh '84, we have been testing them on several airplanes including the prototype Long-EZ, N79RA. We also received expert assistance from Chuck Richey who installed and tested them on his VariEze, and from Gary Hertzler who did essentially the same thing on his VariEze and from Bruce Evans who installed them on his VariEze and test flew it to Oshkosh.

We are pleased to be able to report that the vortilons, as shown here (full sized patterns) are approved for installation on VariEzes as called out. They replace the leading edge cuff, which should be removed if using the vortilons. There is little or no speed penalty caused by the vortilons, but there is a very noticeable improvement in takeoff and climb performance. Visibility over the nose during rotation for lift off as well as in the flare for landing is greatly improved. Stall characteristics are also improved at all weights to gross and at all c of g conditions from 97" to 102.2".