

<h1>R44 Study Guide</h1>		Part:	Appendix to Training Manual
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**Engine:**  
Raven I Lycoming O-540-F1B5  
Raven II Lycoming IO-540-AE1A5

**Airspeed limits**  
Vne below 3000' DA below 2200 LB TOGW  
over 2200 LB TOGW 130 KIAS  
Vne above 3000' DA 120 KIAS  
Above MCP See Placards  
Any doors removed 100 KIAS  
100 KIAS

**Recommended Airspeeds**  
Autorotation 70 KIAS  
Auto Min ROD/Max climb 55 KIAS  
Auto Max Glide 90 KIAS  
Max Range 100 KIAS  
Takeoff & Climb 60 KIAS  
loss of TR thrust 70 KIAS

**Altitude limits**  
Max operating DA 14,000 FT  
Max operating AGL altitude 9000 FT

**Weight limits**  
Max Gross Weight  
Raven I 2400 LBS  
Raven II 2500 LBS  
Min Gross Weight  
Raven I 1550 LBS  
Raven II 1600 LBS  
Max per seat 300 LBS  
Max In baggage 50LBS  
Min Solo Pilot + Baggage 150 LBS  
With all doors on

**Engine limits**  
Manifold Pressure See Placards  
Max CHT 500° F  
Max Oil Temp 245° F  
Oil Pressure:  
Min during idle 25 PSI  
Min during flight 55 PSI  
Max during flight 95 PSI  
Max during start up 115 PSI  
Min Oil Quantity 7 QTS  
Max Oil Quantity 9 QTS

**Rotor limits**  
Power On  
Raven I 99%-102%  
Raven II 101% - 102%  
Power Off 90% - 108%

**Fuel limits**  
Approved Fuel Grades 100LL  
100/130  
Main Usable Fuel  
Raven I/II with bladder 29.5 GAL (112L)  
Raven I/II without bladder/Raven II 30.6 GAL (116L)  
Aux Useable Fuel  
Raven I/II with bladder 17.0GAL (64L)  
Raven I/II without bladder/Raven II 18.3 GAL (69L)  
Fuel Weight 6 LBS/GAL  
Fuel Burn 16GAL/HR

**Carburetor Heat (Raven I only)**  
Yellow Arc -19 to 3° C  
During Run-up Full carb heat on  
In flight Apply to stay out of  
Carb Heat Assist yellow arc  
Unless conditions obviously Unlatched  
not conducive to carb icing

**Dimensions**  
Main Rotor 33'  
Tall Rotor 4'10"  
Overall Length 38'3"  
Skid Width 7' 2"  
Raven I 6' 11"  
Raven II

**Definitions**

**Land Immediately**  
land on the nearest clear area where a safe normal landing can be performed. Be prepared to enter autorotation during the approach, if required.

**Land as soon as practical**  
land at the nearest airport or other facility where emergency maintenance may be performed.

**Warning lights**  
Oil Check engine tach for power loss  
Check for oil pressure loss  
If confirmed, Land Immediately  
Possible fire in engine compartment  
Check for noise, vibration, or temprise  
If confirmed, Land Immediately  
If no other Indication,  
land as soon as practical  
same as MR TEMP  
same as MR TEMP  
LOW FUEL Indicates 3 GAL useable fuel remaining  
Ten minutes at cruise power  
Raven II only; low fuel pump pressure  
No other Indications - land as soon as practical  
Erratic engine - land Immediately  
Raven II only; fuel strainer contamination  
No other indications - land as soon as practical  
Erratic engine or AUX FUEL PUMP light on  
**land Immediately**  
Indicates clutch actuator circuit is on  
Light on momentarily Is normal  
If light flickers or  
does not go out In 10 seconds:  
Pull clutch circuit breaker  
Reduce power, land Immediately  
Be prepared to enter auto  
Turn off nonessential electrical equipment  
Recycle ALT switch  
If light stays on, land as soon as practical  
If alt falls, loose electronic tachometer  
Indicates rotor brake Is engaged  
Release In flight or before starting  
Indicates starter motor Is engaged  
Light on when Ignition switch Is released,  
Pull mixture to Idle cut-off  
Master switch off  
Indicates engine RPM throttle governor off  
Indicates elevated levels of CO In cabin  
Open nose an door vents, shut off heater  
In hover, land or transition to forward flight  
If symptoms of CO poisoning  
**Land Immediately**  
Rotor RPM may be below safe limits  
Roll throttle on, lower collective  
In forward flight, apply aft cyclic  
Horn and light disabled  
with collective full down

ENG FIRE  
MR TEMP

MR CHIP  
TR CHIP  
LOW FUEL

AUX FUEL PUMP

FUEL FILTER

CLUTCH

ALT

BRAKE

STARTER-ON

GOV OFF  
CARBON MONOXIDE

LOW RPM

**Loss of Tail Rotor Thrust**  
Failure Right Yaw  
Enter Auto Maintain at least 70 KIAS  
throttle to overtravel spring  
Vertical fin may permit limited controlled flight at low power settings and airspeeds above 70 KIAS

**Engine Fire During Start on Ground**  
Continue cranking and attempt to start  
If engine starts  
run at 60-70% for short time  
then shut down

**Fire In Flight**  
Enter Auto  
Master Battery Off  
Cabin Heat Off  
Cabin Vent Open  
If engine running: Normal landing  
Shut off fuel valve  
If engine out: Shut off fuel valve  
Autorotation

**Electrical Fire In Flight**  
Master Battery Off  
Alternator Off  
Land Immediately w/ manual throttle  
Low RPM warning system and governor Inop with master and alternator off

**Tachometer Failure**  
Use remaining tach to monitor RPM  
If both tachs malfunction  
Allow governor to control RPM  
Land as soon as practical

**Hydraulic System Failure**  
Heavy or stiff cyclic and collective  
Adjust airspeed for comfortable control  
Verify HYD switch ON  
If not restored, HYD switch OFF  
Land as soon as practical

**Governor Failure**  
Grip throttle firmly to override governor  
Switch governor off  
Use manual throttle control