

N260KM Mayeux RV-7A “Kelli Girl”



Pilot’s Operating Handbook

Integrates Hartzell BA prop, IFR avionics, dual PMAGs, counter-weighted EarthX battery, smoke system, and RV-8 rudder.

**File name:
N260KM POH V9.doc**

PERFORMANCE – SPECIFICATIONS

SPAN: 25' 0"
 LENGTH: 20' 4"
 HEIGHT: 7' 10"

SPEED:
 Maximum at Sea Level 200 KTAS
 Cruise, 75% Power at 8,500 Ft 135 KIAS

RANGE (includes 4 gal. for taxi, takeoff & climb):
 60% @ 8000', no reserve 630 nm
 60% @ 8000', one hour (10 gal) reserve 455 nm

MAX RATE OF CLIMB AT SEA LEVEL 1,800 FPM

SERVICE CEILING 19,500 FT

TAKEOFF DISTANCE: 545 Ft

LANDING DISTANCE: 500 Ft

STALL SPEED (CAS):
 Flaps Up, Power Off 50 KIAS
 Flaps Down, Power Off 47 KIAS

MAXIMUM GROSS WEIGHT (Normal Category): 1800 lbs

EMPTY WEIGHT 1220 lbs

MAXIMUM USEFUL LOAD: 580 lbs

BAGGAGE ALLOWANCE 100 lbs

WING LOADING (Pounds/ sq. ft with 121.6 sq. ft. wing area) 14.8 lbs

POWER LOADING (Pounds/ HP) 10 lbs

FUEL (100LL):
 Capacity 42 Gal Total
 Useable Fuel 40 Gal

OIL CAPACITY 8 qts

ENGINE: Lycoming Y10-360-M1B

PROPELLER: Hartzell Blended Airfoil Constant Speed HC-C2YR-1BFP/F7497

- **2700 max RPM, with momentary surge ≤ 2970 for 20 secs max**
- **Service with NYCO GN3058 grease ONLY**

AIRSPEED LIMITATIONS

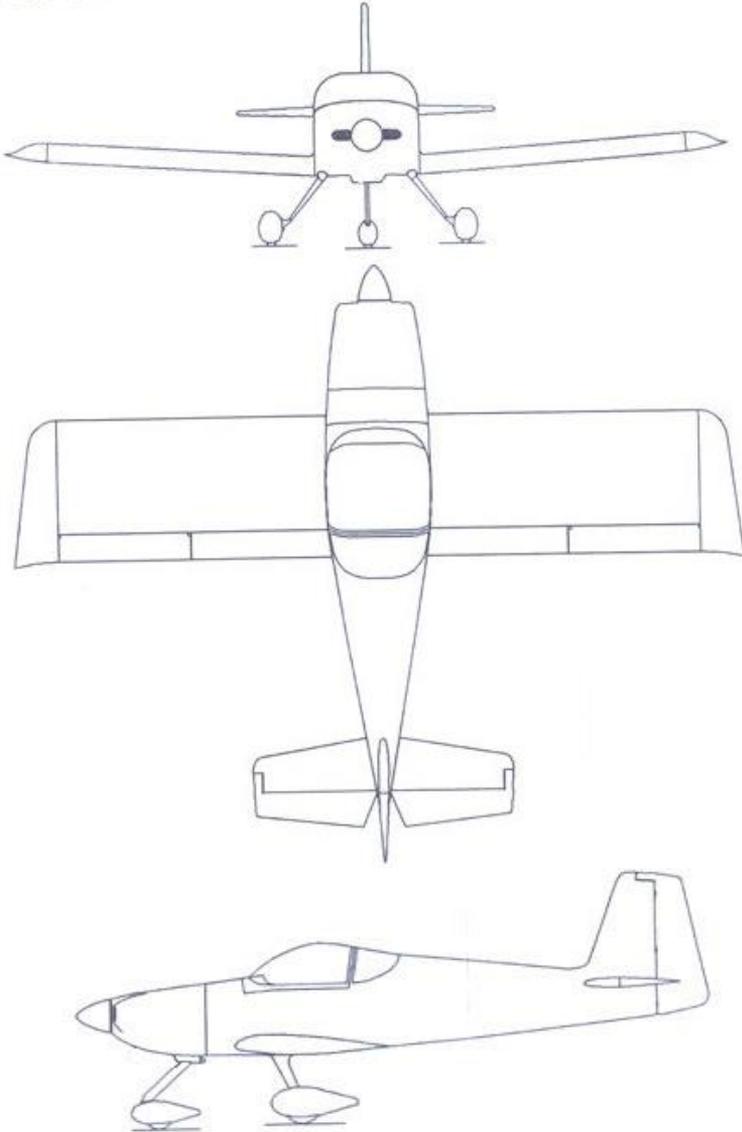
	SPEED	IAS	REMARKS
V_{NE}	Never Exceed Speed	200 KTAS	Do not exceed this speed in any operations.
V_{NO}	Maximum Structural Cruising Speed	168 KIAS	Exceed this speed only in smooth air.
V_A	Maneuvering Speed	120 KIAS	Do not make full control movements above this speed. Full elevator deflection will result in a $\geq 6g$ load at this speed.
V_{FE}	Maximum Flap Extended Speeds	95 - Flaps 1/2 87 - Flaps Full	Do not exceed this speed with flaps down
V_y	Best Rate of Climb	95 KIAS	
V_x	Best Angle of Climb	70 KIAS	
V_s	Stall Speed Clean	50 KIAS	
V_{so}	Stall Speed Landing Configuration	47 KIAS	

AIRSPEED INDICATOR MARKINGS

MARKING	LIMITING AIRSPEEDS	SIGNIFICANCE
White Arc	47-87 KIAS	Full Flap Operating Range. Lower limit is V _{so} . Upper limit is maximum speed with full flaps extended
Green Arc	50-168 KIAS	Normal Operating Range. Lower limit is V _s . Upper limit is maximum structural cruising speed
Blue Line	120 KIAS	Max Maneuvering Speed for full control application. Full elevator control input above this speed will exceed aircraft load limits.
Yellow Arc	168-200 KIAS	Operations must be conducted with caution and only in calm or light turbulence conditions.
Red Line	200 KTAS	V _{ne} , Maximum TRUE airspeed for all operations. HDX automatically adjusts red line for TAS.

AIRCRAFT DEPICTIONS

RV-7A



AEROBATIC INFORMATION

Weight Limitation: 1600 Pounds maximum

G Load Limits: +6 to -3 Gs

Recommended Entry Speeds:

Loops, Horizontal 8s, Lazy 8s	120-165 KIAS
Immelmann Turns	130-165 KIAS
Aileron Rolls, Barrel Rolls	105-165 KIAS
Split-S	85-95 KIAS

CAUTION:

*All other aerobatic maneuvers, including negative-G maneuvers, are **prohibited**. This aircraft does not possess negative-G fuel and oil equipment.*

ELECTRONIC DEVICE USE IN IFR (FAR 91.21)

The following electronic devices do not interfere with nav or comm systems and may be operated in this aircraft: iPhone and iPad (and Android equivalents), GoPro camera, CO detector, portable backup ADIs, noise-cancelling headsets.

PASSENGER BRIEFING

- a) Smoking Prohibited
- b) Seatbelt Requirements, Operation
- c) Seat Adjustment
- d) Emergency Exit Procedure
- e) Survival Equipment
- f) Fire Extinguisher
- g) Use of Flight Controls
- h) Transfer of Aircraft Control
- i) Traffic Avoidance
- j) Headset/Intercom Usage
- k) Radio Protocol
- l) Sterile Cockpit Environment
- m) Airsickness (*puke bag within easy reach*)
- n) Cabin Vents and Heat
- o) Lights
- p) Experimental Aircraft Placard

PREFLIGHT INSPECTION

1. COCKPIT

- a) Documentation – Available In Airplane
- b) Control Stick/Aileron/Rudder Locks – **REMOVE & STOW**
- c) Circuit Breakers – **CHECK IN**
- d) PMag Ignition Switches (both) – **OFF**
- e) PMag CB Switches (both) – **OFF**
- f) Master and Avionics Switches – **ON**
- g) Flaps – **DOWN**
- h) Elevator Trim – **SET TO NEUTRAL**
- i) Fuel Quantity – **CHECK INDICATED QUANTITY**
- j) VPX CB Values – **CHECK/RESET** (if necessary)
- k) Wheel Brakes – Test, Parking Brake **SET** (if necessary)
- l) Strobes/Beacon/Landing/Taxi Lights – **ON**, check ops, **OFF**
- m) Master and Avionics Switches – **OFF**

2. LEFT WING

- a) Flap – **CHECK**, undamaged, hardware secure
- b) Aileron – **CHECK**, free movement, hardware secure
- c) Nav/Strobe Lights and Lens – **CHECK** Condition
- d) Landing Light – **CHECK** condition
- e) Wing Tie-Down – **DISCONNECT**
- f) Pitot Tube – **REMOVE & STOW** cover, **CHECK** pitot & AOA tubes for blockage
- g) Left Wing Tank – **SUMP**, **CHECK** drain fairing security
- h) Fuel Quantity – **CHECK VISUALLY**
- i) Fuel Filler Cap – **SECURE**
- j) Main Wheel Tire – **CHECK** for proper inflation
- k) Main Gear Fairings/Pants – **CHECK** for security, damage
- l) Chock – **REMOVE & STOW**

3. NOSE

- a) Cockpit Air Vents – CHECK for blockage
- b) Cowl Camlocks and Screws – CHECK for security
- c) Fuel Tank Vents – CHECK for blockage, security
- d) Landing Gear Fairings – CHECK for security, damage
- e) Chock – REMOVE & STOW
- f) Nose Tire – CHECK for proper inflation
- g) Propeller & Spinner – CHECK for nicks and security, oil or grease leaks
- h) Cowl Inlet Covers – REMOVE & STOW
- i) Cowl Air Inlets – CHECK for restrictions, bird nests
- j) Air Filter – CHECK for contamination, blockage
- k) Engine Oil Level – CHECK, 4-8 quarts (6 optimum)

4. RIGHT WING

- a) Right Wing Tank – SUMP, CHECK drain fairing security
- b) Main Wheel Tire – CHECK for proper inflation
- c) Main Gear Fairings/Pants – CHECK for security, damage
- d) Chock – REMOVE & STOW
- e) Fuel Quantity – CHECK VISUALLY
- f) Fuel Filler Cap – SECURE
- g) Wing Tie-Down – DISCONNECT
- h) Taxi Light – CHECK condition
- i) Nav/Strobe Lights and Lens – CHECK condition
- j) Aileron – CHECK, free movement, hardware secure
- k) Flap – CHECK, undamaged, hardware secure

5. EMPENNAGE

- a) Beacons (top & bottom) – CHECK condition
- b) ELT Antenna – CHECK condition
- c) Static Sources (both sides of fuselage) – CHECK for blockage
- d) Control Surfaces – CHECK, free movement, hardware secure
- e) Tail and Strobe Lights – CHECK condition
- f) Tail Tie-Down – DISCONNECT
- g) OAT Probes – CHECK condition

BEFORE STARTING ENGINE

- a) Preflight Inspection – COMPLETE
- b) Passenger Briefing – COMPLETE
- c) Engine – PREHEAT as necessary (cold weather)
- d) Cargo – SECURE or Remove
- e) Seat Belts and Shoulder Harnesses – ADJUST and LOCK
- f) Fuel Selector Valve – DESIRED TANK
- g) Alternate Air – OFF (handle in)
- h) Ignition, Master, Avionics, Alternator, Electrical – All OFF
- i) Circuit Breakers – CHECK IN
- j) Brakes – SET, Parking Brake ON
- k) Canopy – CLOSED, propped open as desired

STARTING ENGINE

- a) Master, PMAG CB, and PMag Switches – **ON**
- b) Alternator Switch – **OFF**
- c) Prop and Mixture Controls – FULL FORWARD
- d) Fuel Boost Pump – ON
- e) Throttle Full OPEN 3-5 secs fuel flow observed, then...
- f) Fuel Boost Pump – OFF
- g) Throttle – OPEN ¼ inch
- h) Propeller Area – “PROP CLEAR!”
- i) Starter Button – PRESS to crank engine
 - DO NOT CRANK for more than 10 seconds
 - Allow 20 seconds to cool down between attempts
 - Repeat ≤6 times, then let starter cool for 30 minutes
- j) Oil Pressure – CHECK, ≥25 psi at idle (pressure in 30 seconds)
- k) Alternator and Avionics Master Switches – **ON**
- l) Flaps – UP
- m) Nav Lights & Strokes – ON
- n) Engine – WARM UP at apprx 1400 RPM
 - *2200 RPM MAX on the ground!*

HOT START, FLOODED/OVERPRIMED ENGINE

- a) Throttle – WIDE OPEN
- b) Prop Control – FULL FORWARD (high RPM)
- c) Mixture – FULL RICH
- d) Fuel Boost Pump – On for 6-8 seconds (flood the engine)
- e) Ignition Switches (both) – ON
- f) Throttle – WIDE OPEN
- g) Mixture – IDLE CUT-OFF
- h) Starter Button – CRANK UNTIL ENGINE CATCHES

As Engine RPM Smooths –

- i) Mixture – ENRICHEN to normal range, while...
- j) Throttle – SIMULTANEOUSLY RETARD to 1000 RPM

BEFORE TAKEOFF/GROUND RUN-UP

- a) Brakes – SET
- b) Fuel Selector Valve – DESIRED TANK
- c) Mixture – RICH (below 3000' PA)
- d) Engine Run-up – 1800-2000 RPM, Oil temp 90° *minimum*
 - PMags – CHECK (*175 max drop, 50 diff. max*)
 - PMag CBs – Open individually, then close (*0 RPM drop*)
 - Prop – CYCLE x3, CHECK ops (*RPM drop ≤500 RPM*)
 - Oil Pressure/Temp – in the green, *110° min for takeoff*
 - Alternator – CHECK
 - Throttle – 1000-1200 RPM
- e) Flight Controls – FREE and CORRECT
- f) Flight Instruments – SET
 - Altimeters – SET local baro, BUG the target altitude
 - Compass – BUG the target heading
- g) Transponder – SET, 'GND' or 'ALT' engaged
- h) Radios – SET
- i) Fuel Boost Pump – ON
- j) Passenger – READY and willing

NORMAL/SOFT FIELD TAKEOFF (*rolling takeoff*)

- a) Wing Flaps – UP (*1/4 for soft field*)
- b) Elevator Control – LIFT NOSE WHEEL (ASAP)
- c) Mixture – RICH (above 3000' lean to obtain max RPM)
- d) Prop Control – FULL FORWARD (high RPM)
- e) Throttle – FULL OPEN
- f) Climb Speed – 95-110 KIAS

SHORT FIELD TAKEOFF

- a) Wing Flaps – 1/2
- b) Brakes – *HOLD!*
- c) Mixture – RICH (above 3000' PA lean to obtain max RPM)
- d) Prop Control – FULL FORWARD (high RPM)
- e) Throttle – FULL OPEN
- f) Brakes – RELEASE
- g) Climb Speed – 70 KIAS (V_x) until clear, then 95 KIAS (V_y)

ENROUTE CLIMB

- a) Airspeed – 110-130 KIAS (for best engine cooling)
- b) Throttle – 25" MAP, or FULL THROTTLE
- c) Prop Control – ≤2500 RPM
- d) Mixture – LEAN above 3000' PA
- e) Fuel Pressure – CHECK
- f) Engine CHTs – Manage (prop RPM, mixture)
- g) Oil Temperature – CHECK

CRUISE

- a) Boost Pump – OFF after climb
- b) Throttle – as desired/optimal
- c) Prop Control – 2400 RPM, or as desired/optimal
- d) Mixture – LEAN
 - Max Power Cruise (~75%): 50°-100° F rich of peak
 - Best Economy Cruise (~65%): 30° lean of peak
- e) Fuel Tank – SWITCH every 30 minutes
 - Fuel Boost Pump – ON during switch-over

DESCENT, BEFORE LANDING

- a) Fuel Tank – SELECT fullest or top-side tank
- b) Boost Pump – ON
- c) Mixture – RICH (above 3000' PA lean to obtain max RPM)
- d) Prop Control – FULL FORWARD (high RPM)
- e) Base Leg – Flaps 1/2, speed 85-90 KIAS
- f) Final – Flaps Full, speed 70-75 KIAS

NORMAL or SOFT FIELD LANDING

- a) Wing Flaps – FULL (as required for winds)
- b) Approach Speed – 65-70 KIAS on short final
- c) Approach Path – Normal to *slightly* low
- d) Touchdown – SMOOTH with power on
- e) Elevator Control – KEEP NOSE WHEEL UP

SHORT FIELD LANDING

- a) Wing Flaps – FULL (as required for winds)
- b) Approach Speed – 65-70 KIAS until past obstruction
- c) Touchdown – FIRM (dissipate airspeed)
- d) Wing Flaps – UP on rollout
- e) Wheel Brakes – MAX without skidding tires

AFTER LANDING

- a) Boost Pump – OFF
- b) Mixture – LEAN (to avoid fouling plugs)
- c) Transponder – ensure GROUND engaged

ENGINE SHUTDOWN

- a) Wing Flaps – DOWN full
- b) Throttle – IDLE until CHT decidedly dropped
- c) Mixture – IDLE CUT-OFF
- d) PMag Switches (both) – VERIFY **OFF** *after prop stops*
- e) PMag CB Switches (both) – VERIFY **OFF**
- f) Hobbs & Tach Times – RECORD
- g) Pitot Heat and Light Switches (*except Nav Lights*) – OFF
- h) Alternator, Master, and Avionics Switches – OFF

SECURING AIRCRAFT

- a) Alternator, Master, and PMag Switches – CHECK ALL OFF
- b) Wheel Chocks –INSTALLED (if required)
- c) Aileron/Rudder Gust Locks, Pitot Tube and Intake Covers – INSTALLED (if required)
- d) Wings & Tail Tie-Downs – INSTALLED (if required)
- e) Canopy – CLOSED, *LATCHED* (if required)
- f) Canopy Cover – INSTALLED (if required)

REQUIRED EQUIPMENT LISTs (14 CFR 91.205)

DAY VFR

- One operable EFIS with:
 - Engine Tach
 - Oil Pressure Gauge
 - Oil Temperature Gauge
 - Manifold Pressure Gauge
 - Altimeter
 - Fuel Gauge, each tank
 - Airspeed Indicator
 - Mag Direction Indicator
- ELT
- Safety Belts & Harnesses

NIGHT VFR: All Day VFR Equipment plus...

- Landing Light (or Taxi)
- Anti-Collision Lights
- Position/Nav Lights
- Operable Alternator, Ship’s Battery, both EFIS batteries

IFR: All Day/Night VFR Equipment plus...

- Two operable EFIS with:
 - Rate of Turn Indicator
 - Slip/Skid Ball
 - Attitude Indicator
 - Timer (GTN650 OK)
 - Clock (hrs, mins, secs)
- GTN650 NAV
- One operable Comm Radio
- Operable Alternator, Ship’s Battery, both EFIS batteries

PERFORMANCE

SPEED! Cruise Performance at 8,500' MSL,
With **LEANEST** Cylinder EGT 100° **RICH** of Peak:

% Power	MAP	RPM	Fuel Flow	KIAS / KTAS
75%	22.9"	2600	11.5 GPH	148 / 168
70%	22.3"	2500	10.5 GPH	143 / 163
65%	21.6"	2400	9.7 GPH	138 / 157

ECONOMY! Cruise Performance at 8,500' MSL,
With **RICHEST** Cylinder EGT 30° **LEAN** of Peak:

% Power	MAP	RPM	Fuel Flow	KIAS / KTAS
71%	22.9"	2600	8.6 GPH	144 / 165
70%	22.9"	2500	8.5 GPH	143 / 163
65%	22.6"	2400	7.8 GPH	138 / 157
60%	21.0"	2400	7.3 GPH	132 / 150

Best Economy Range at 8,500' MSL:

- Best Economy (RICHEST cylinder 30° lean of peak EGT)
- 4 gal. for engine start, taxi, takeoff, full-power climb
- 2 gal. unusable fuel (40 gals. total useable fuel).
- Zero wind (TAS = GS)

One hour (10 gallon) reserve: Endurance Range
60% Power3+40..... 534 nm

No Reserve:
60% Power5+00..... 750 nm

High Altitude Range at 15,500' MSL, No Reserve:

WOT 17.2" MAP, 2500 RPM, 46% power: 145 KTAS, 109 KIAS
Range: 932 nm Endurance: 6+24 hrs

INSTRUMENT PANELS and CONTROLS

Left Outer Instrument Panel

1. Alternator Master Switch
2. Battery Master Switch
3. Avionics Master Switch
4. Oil Cooler Door
5. PMag Switches (L and R)
6. Starter Switch
7. Ipad Mounting Ball
8. Pitot Heat Switch
9. Pilot's Map Light Switch
10. Pilot's Map Light
11. Pilot's 12v DC Power Plug
12. Pilot's Headset Plugs
13. Pilot's Air Vent



Left Inner Instrument Panel

1. Left PMag Ship's Power CB (3a)
2. Right PMag Ship's Power CB (3a)
3. EMS Master Caution Light CB (1a)
4. Alternator Warning Light CB (1a)
5. Shunt High CB (1a)
6. Shunt Low CB (1A)
7. EarthX Battery Warning LED
8. EMS Warning Light
9. Alternator Caution Light
10. "Smoke On" Indicator Light
11. Rudder Trim
12. Pilot's SkyView HDX EFIS Display



Right Inner Instrument Panel

1. Smoke Pump CB (7.5a)
2. *inop*
3. Cargo Area Light
4. Glareshield LED Strip Lights Power/Dimmer
5. FAA Experimental Aircraft Warning
6. Copilot's SkyView HDX EFIS Display



Right Outer Instrument Panel

1. SkyView Back-up Battery Bypass Switches
2. Passenger Eject Button (joke, *inop*)
3. ELT Control Panel
4. Foot Heat Control
5. EarthX Ship's Battery Jumper Connection
6. Copilot's Map Light Switch
7. Smoke System Master Arm Switch
8. Copilot's Air Vent
9. Copilot's Headset Plugs
10. Copilot's 12v DC Power Plug



Center Instrument Panel

1. Electric Fuel Boost Pump Switch
2. Beacon/Strobes Switch
3. Nav/Position Lights Switch
4. Landing Light Switch
5. Taxi Light Switch
6. Autopilot Mode Control Panel
7. Autopilot Heading/Baro/Alt Panel
8. Garmin GMA245 Audio Panel
9. Garmin GTR200 VHF Comm Panel
10. Garmin GTN650iS GPS/Nav Panel
11. Parking Brake
12. Engine Throttle Control
13. Approach 'Go-Around' switch (toGA)
14. Propeller RPM Control
15. Engine Mixture Control
16. Engine Alternate Air Control



Instrument Panel—Panoramic View



CONTROL STICK SWITCHES



Flaps Toggle Switch:

- Bump down once: Flaps 20 (Flaps Half)
- Bump down second time: Flaps 40 (Flaps Full Down)
- Bump up once: Flaps return to UP
- Bump at any time while in transit: Flap movement stops.

Smoke Sub-Trigger: Recessed under the Red PTT trigger. Each push activates, then deactivates, the smoke pump. Use caution against inadvertently activating the pump. (The Smoke System Master Arm Switch must be on for this switch to function).

Note: To engage Copilot Control Stick switch functions, activate the COPILOT SWITCH FUNCTIONS switch on the FUEL TANK SELECTOR VALVE housing left side under the Pilot's right knee (red guarded switch).

WEIGHT AND BALANCE DATA (as of 13 Jan 2023)

Manufacturer: Sidney F. Mayeux Model: Van’s Aircraft RV-7A
 Serial: 73802 Registration: N260KM

Maximum Weights:

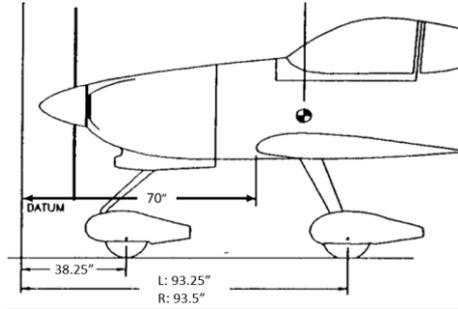
Aerobatic Category	1600 lbs
Utility Category	1700 lbs
Normal Category	1800 lbs

Datum = 70 inches forward of wing leading edge (L.E.)

Design C.G. Range =

- 15% to 29% of wing chord
- 8.7” to 16.82” aft of L.E.
- 78.7” to 86.82” aft of Datum

Wing L.E.: 70” aft of datum
 Rt Main Tire: 93.5” aft of datum
 Lt Main Tire: 93.25” aft of datum
 Nose Tire: 38.25” aft of datum



Fuel (42 gals max): 80” aft of datum
 Pilot and Pax: 97.48” aft of datum
 Baggage (100 lbs max): 126.78” aft of datum

Aircraft weighed empty in level flight attitude (includes 8 qts of oil, no fuel, smoke system installed/empty). Sample:

	Weight	Arm	Moment
Aircraft (empty).....	<u>1,220</u>	<u>80.86</u>	<u>98,648.0</u>
Fuel (42 gal, 6lbs/gal).....	<u>252</u>	<u>80</u>	<u>20,160.0</u>
Pilot	<u>200</u>	<u>97.48</u>	<u>19,496.0</u>
Passenger	<u>120</u>	<u>97.48</u>	<u>11,697.6</u>
Baggage	<u>0</u>	<u>126.78</u>	<u>0</u>
Total	<u>1,792</u>	<u>83.71</u>	<u>150,001.60</u>

CG = Total Moment / Total Weight

CG Range = 78.7 min to 86.82 max inches aft of datum

Empty CG = 80.86 Empty Weight = 1220 lbs

WEIGHT AND BALANCE DATA (continued)

As of 13 Jan 2023

*All CG ranges for possible flight conditions are within design limits.

Component	Weight	Arm	Moment	CG Range
L main tire	471	93.25	43,920.75	78.7 to 86.82 inches aft of datum
R main tire	472	93.5	44132.0	
Nose tire	277	38.25	10,595.25	Empty C.G
Total Empty	1,220	80.86	98,648.0	80.86

Max. Gross, Pilot, Pax, No Bags			
Item	Weight	Arm	Moment
Aircraft	1,220	80.86	98,648.0
Fuel (42 gal)	252	80	20,160
Pilot	200	97.48	19,496.0
Passenger	120	97.48	11,697.6
Baggage	---	126.78	---
Total	1,792		150,001.6
CG:	83.71		

Full Bags, Full Fuel, No Pax			
Item	Weight	Arm	Moment
Aircraft	1,220	80.86	98,648.0
Fuel (42 gal)	252	80	20,160
Pilot	200	97.48	19,496.0
Passenger	---	97.48	---
Baggage	100	126.78	12,678
Total	1,772		150,982.0
CG:	85.20		

Pilot, Pax, Full Bags, Fuel to Max Gross Weight			
Item	Weight	Arm	Moment
Aircraft	1,220	80.86	98,648.0
Fuel (26 gal)	156	80	13,920
Pilot	200	97.48	19,496.0
Passenger	120	97.48	11,697.6
Baggage	100	126.78	12,678
Total	1,796		154,999.6
CG:	86.30		

MOST FWD CG Pilot, Fuel, No Pax, No Bags			
Item	Weight	Arm	Moment
Aircraft	1,220	80.86	98,648.0
Fuel (42 gal)	252	80	20,160
Pilot	200	97.48	19,496.0
Passenger	---	97.48	---
Baggage	---	126.78	---
Total	1,673		138,430.78
CG:	82.74		

MOST AFT CG (Pilot, Pax, 5 gals Fuel, Full Bags)			
Item	Weight	Arm	Moment
Aircraft	1,220	80.86	98,648.0
Fuel (5 gal)	30	80	2,400
Pilot	200	97.48	19,496.0
Passenger	120	97.48	11,697.6
Baggage	100	126.78	12,678
Total	1,670		144,919.6
CG:	86.78		

Pilot, No Pax, 5 gals Fuel, No Bags			
Item	Weight	Arm	Moment
Aircraft	1,220	80.86	98,648.0
Fuel (5 gal)	30	80	2,400
Pilot	200	97.48	19,496.0
Passenger	---	97.48	---
Baggage	---	126.78	---
Total	1,450		120,544.0
CG:	83.13		

Engine Information

Model: Lycoming Y10-360 M1B, Fuel Injected
HP: 180 hp at 2700 rpm (full power)
135 hp at 2450 rpm (75% cruise, 11.0 gph)
117 hp at 2350 rpm (65% econ cruise, 8.5 gph)
Fuel: 100LL (normal), B91/115, 91, 100/130, or 115/145 octane

Oil: Phillips 100AD (preferred)

Average Ambient Air	Mineral Oil (1 st 50 hrs)	Ashless Dispersant Oil
All Temps	--	SAE100 (preferred), SAE15W50, SAE20W50
Above 80°F	SAE60	SAE60
Above 60°F	SAE50	SAE40 or 50
30° - 90°F	SAE40	SAE40
0° - 70°F	SAE30	SAE30, 40 or SAE20W40
0° - 90°F	SAE20W50	SAE20W50 or SAE15W50
Below 10°F	SAE20	SAE30 or SAE20w30

- Oil Min/Max Capacity: 4-8 U.S. quarts (6 qts optimum)
- Max oil consumption: 0.45qts/hr. at 75% cruise
- Oil Filter (spin-on): Champion CH48110-1 or Tempest CH48110

Spark Plugs: NGK BR8ES (available at most auto parts stores)

- Gap: 0.035", Plug Torque 18 ft/lbs, 216 in/lbs.

Fanbelt: Gates XL 7360

Air Filter: K&N 33-2060

Operating Limits—Pressure

Fuel Pressure: 35 psi max; -2 psi min

Oil Pressure: 115 start; 95 psi max; 55 psi min; 25 psi idle

Operating Limits—Temperatures

Cyl. Head Temp: 150°F to 400°F normal, 350°F to 390°F optimum, 500°F max
Below 435°F for max performance cruise.

Oil Temp:	<u>Min</u>	<u>Desired</u>	<u>Max</u>
	140°F	160°F at <10°F ambient 170°F at 10-30°F ambient 180°F at >30°F ambient	245°F

OPTIMUM: 165°F to 225°F (>110° for takeoff)

Propeller

Hartzell CS HC-C2YR-1BFP/F7497 (*service with NYCO GN3058 grease only*)

Tires, Brakes

Tire Pressure: 45-50 PSI all tires
 Main Gear Tires: Aero Classic 5.00-5 6-ply, tube type, Type III AA4D4
 Main Gear Tubes: U 5:00X5-6IT
 Nose Gear Tire: 11x4.00-5" tubeless
 Brake Pads: Grove P/N 066-111
 Brake Piston O-rings: P/N M83248/1-214

ICAO ID Codes for N260KM Mode S Transponder

Hex A27FEA = Decimal 10649578 =
 Octal 50477752 = Binary 10100010 01111111 11101010

Vertical Power Pro VPX License: 4D770C

NOAA ELT Beacon ID: 2DC87 DD73E FFBFF (ELT: Artex ELT1000, s/n 251-11167)

Battery Fault Guide: EarthX ETX900 12V lithium iron phosphate (*if equipped*)

LED Light	Voltage	Possible Cause	Recommended Action
Slow Flashing (5s on/5s off)	Less than 12.8V	Battery over-discharged (due to faulty charging system)	Charge battery. Once charged, the light will stop flashing.
Slow Flashing (5s on/5s off)	Less than 13.2V	Weak or failing cell	Charge battery. If voltage drops below 13.2V within a few days, discontinue use.
Slow Flashing (5s on/5s off) (> 1 hour time period)	13.2V-14.6V	Weak or failing cell	Discontinue use. If in flight, this is not an immediate issue unless it is in conjunction with a charging system failure.
Slow Flashing (5s on/5s off)	Greater than 15.2V	Over-charging (due to faulty charging system)	If in flight, shutoff charging system immediately. Aircraft over-voltage protection is required if alternator charging system is greater than 20 amps (i.e. over voltage crowbar circuit)
Slow Flashing (5s on/5s off) (< 30 min. time period)	13.2V – 14.6V	Cell to cell charge levels are not balanced	May come on briefly during periods of high current charging until the cells are automatically balanced. Try charging with a plugin charger, like an Optimate Lithium charger.
Solid Light	Any voltage	BMS electronic issue	Discontinue use. If in flight, this is not an immediate issue unless it is in conjunction with a charging system failure.
Solid Light that turns off after 3 minutes	Any voltage	Short Circuit protection was activated	Nothing needs to be done.
Short Flashing (2s on/2s off)	Any voltage	High battery temperature (> 65°C / 150°F)	Let battery cool down prior to cranking or charging.

EMERGENCY PROCEDURES FIRES

FIRE DURING ENGINE START ON GROUND

1. Cranking – CONTINUE, to get a start which would suck flames and accumulated fuel through fuel injector and into the engine.

If engine starts:

2. Power – 1700 RPM for a few minutes
3. Engine – SHUTDOWN and inspect for damage

If engine fails to start:

4. Throttle – FULL OPEN
5. Mixture – IDLE CUT-OFF
6. Cranking – CONTINUE
7. Fire Extinguisher – OBTAIN
8. Engine – SECURE

ENGINE FIRE IN FLIGHT

1. Mixture – IDLE CUT-OFF
2. Fuel Selector Valve – OFF
3. Master Switch – OFF
4. Cockpit Heat and Air – OFF

ELECTRICAL FIRE IN FLIGHT

1. Master, Alternator, Avionics Switches – OFF
2. All Other Switches (except ignition) – OFF
3. Ignition Switches (both) – **ON**
4. Vents, Cockpit Air, Heat – CLOSED
5. Fire Extinguisher – ACTIVATE (if available)

COCKPIT FIRE

1. Master Switch – OFF
2. Vents, Cockpit Heat – CLOSED
3. Fire Extinguisher – ACTIVATE (if available)

WING FIRE

1. Beacon & Strobe Lights – OFF
2. Nav Lights – OFF
3. Landing Light – OFF
4. Taxi Light – OFF
5. Autopilot – DISENGAGE
6. Pitot Heat (right wing) – OFF

EMERGENCY PROCEDURES ELECTRICAL

ELECTRICAL / ALTERNATOR FAILURE

1. Alternator Field Switch – OFF
2. Avionics – OFF
3. Master Switch – OFF, then ON
4. Alternator Field Switch – ON, see if it works

IF ALTERNATOR IS STILL OFF-LINE:

5. Alternator Field Switch – OFF
6. Master Switch – ON
7. Ignition Switches (both) – ON
8. Avionics – ON as required
9. Copilot HDX screen – Turn off (#1 key), save for later
HDX backup batteries last 45-60 minutes
10. *NON-Essential* Electrical Equipment – OFF
11. *Essential* Electrical Equipment – ON, as required
12. Flight – TERMINATE as soon as practical, aircraft is on battery reserves only.

EMERGENCY PROCEDURES ENGINE AND PROP FAILURES

ENGINE FAILURE DURING TAKEOFF RUN

1. Throttle – IDLE
2. Brakes – APPLY
3. Wing Flaps – RETRACT
4. Mixture – IDLE CUT-OFF
5. Ignition Switches (both) – OFF
6. Master Switch – OFF

ENGINE FAIL IMMEDIATELY AFTER TAKEOFF

1. MAINTAIN AIRCRAFT CONTROL
2. Airspeed – 70 KIAS
3. Mixture – IDLE CUT-OFF
4. Fuel Selector Valve – OFF
5. Ignition Switches (both) – OFF
6. Wing Flaps – AS REQUIRED
7. Master Switch – OFF

ENGINE FAILURE DURING FLIGHT

1. Airspeed – 75 KIAS
2. Boost Pump – ON
3. Fuel Selector – SWITCH TANKS
4. Mixture – RICH
5. Ignition Switches – BOTH, LEFT, RIGHT
6. Landing spot – IDENTIFY
7. Transponder – 7700

ENGINE WINDMILLING, LITTLE/NO POWER

1. Throttle – PUSH FULL FORWARD/OPEN
2. Prop Control – PULL FULL OUT to reduce disk drag
3. To add power if needed, Prop Control – PUSH BACK IN

ENGINE SHAKING

If engine shaking so badly that it could come loose:

1. Mixture – IDLE/CUT-OFF
2. Put aircraft in power-off stall to stop the prop
3. Reestablish best glide 75 KIAS
4. Complete “ENGINE FAILURE DURING FLIGHT” checklist

PROP RPM SURGES DURING CRUISE FLIGHT

1. Try varying prop control position
2. If unable to correct, Prop Control – FULL FORWARD
3. Land as soon as possible

PROP OVER-SPEED

1. Throttle – BACK to avoid further over-speed
2. Slow to Vy 95 KIAS speed (min power for sustained flight)
3. Land as soon as possible

OFF-FIELD LANDING, WHEN COMMITTED

1. Prop – FULL OUT
2. Radios:
 - a. 121.5 – “Mayday” 3 times, who/what/where
 - b. Transponder – 7700
 - c. ELT – ON
3. FLY THE AIRPLANE!
 - a. Get over landing spot and spiral down
 - b. 1500’ AGL key position
 - c. Key for downwind base turn
4. All Unnecessary Switches—OFF
5. Canopy – UNLOCKED AND CRACKED OPEN
6. Seat Belt & Harness — SECURE & VERY TIGHT
7. Flaps – AS REQUIRED (Flaps Full preferred)

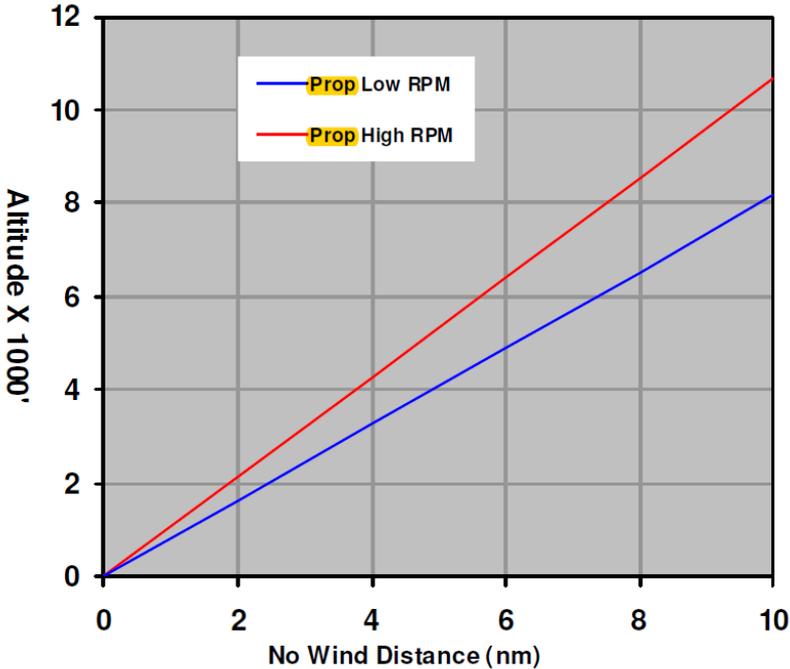
JUST BEFORE TOUCHDOWN:

8. Fuel Valve – OFF
9. Master Switch – OFF

AIRSPEDS FOR EMERGENCY OPERATIONS

Engine Failure After Takeoff:

- Wing Flaps Up or Down..... 75 KIAS
- Maneuvering Speed (Va) 120 KIAS



75 KIAS GLIDE RATIO @ PROP HI RPM = 1250 VVI

- 5 NM = 5000' altitude LOST 1000' Glide = 1 NM
- 10 NM = 10,000' altitude LOST 1 NM = 1000' glide

75 KIAS GLIDE RATIO @ PROP LOW RPM = 1100 VVI

- 5 NM = 4000' altitude LOST 1000' glide = 1.3 NM
- 10 NM = 8000' altitude LOST 1 NM = 800' glide

INTERCEPTING SIGNALS				
Signals initiated by intercepting aircraft and responses by intercepted aircraft				
Series	<i>INTERCEPTING</i> Aircraft Signals	Meaning	<i>INTERCEPTED</i> Aircraft Responds	Meaning
1	DAY-Rocking wings from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft and, after acknowledgement, a slow level turn, normally to the left, on to the desired heading. NIGHT-Same and, in addition, flashing navigational lights at irregular intervals.	You have been intercepted. Follow me.	AEROPLANES: DAY-Rocking wings and following. NIGHT-Same and, in addition, flashing navigational lights at irregular intervals.	Understood, will comply.
2	DAY or NIGHT-An abrupt break-away maneuver from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.	You may proceed.	AEROPLANES: DAY or NIGHT-Rocking wings.	Understood, will comply.
3	DAY-Circling aerodrome, lowering landing gear and overflying runway in direction of landing or, if the intercepted aircraft is a helicopter, overflying the helicopter landing area. NIGHT-Same and, in addition, showing steady landing lights.	Land at this aerodrome.	AEROPLANES: DAY-Lowering landing gear, following the intercepting aircraft and, if after overflying the runway landing is considered safe, proceeding to land. NIGHT-Same and, in addition, showing steady landing lights (if carried).	Understood, will comply.

INTERCEPTING SIGNALS

Signals and Responses During Aircraft Intercept

Signals initiated by intercepted aircraft and responses by intercepting aircraft

Series	INTERCEPTED Aircraft Signals	Meaning	INTERCEPTING Aircraft Responds	Meaning
4	DAY or NIGHT-Raising landing gear (if fitted) and flashing landing lights while passing over runway in use or helicopter landing area at a height exceeding 300m (1,000 ft) but not exceeding 600m (2,000 ft) above the aerodrome level, and continuing to circle runway in use. If unable to flash landing lights, flash any other lights available.	Aerodrome you have designated is inadequate.	<p>DAY or NIGHT-If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear (if fitted) and uses the Series 1 signals prescribed for intercepting aircraft.</p> <p>If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft.</p>	<p>Understood, follow me.</p> <p>Understood, you may proceed.</p>
5	DAY or NIGHT-Regular switching on and off of all available lights but in such a manner as to be distinct from flashing lights.	Cannot comply.	DAY or NIGHT-Use Series 2 signals prescribed for intercepting aircraft.	Understood.
6	DAY or NIGHT-Irregular flashing of all available lights.	In distress.	DAY or NIGHT-Use Series 2 signals prescribed for intercepting aircraft.	Understood

FAR 91.125 - ATC Light Signals

Color / type of signal	Meaning with respect to aircraft on the ground	Meaning with respect to aircraft in flight
Steady green	Cleared for takeoff	Cleared to land
Flashing green	Cleared to taxi	Return for landing
Steady red	Stop	Give way to other aircraft and continue circling.
Flashing red	Taxi clear of runway in use	Airport unsafe—do not use
Flashing white	Return to starting point on airport	N/A
Alternating red and green	Exercise extreme caution	Exercise extreme caution

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