Diagram, text

Description automatically generated**C172M N12935** Revised: Dec 20th, 2022

**BEFORE STARTING ENGINE**

**Preflight- COMPLETE**

**Passenger Brief (S.A.F.E.T.Y.)- COMPLETE**

**Circuit Breakers- CHECK**

**Avionics Power Switch- OFF**

**Electrical Equip/Autopilot- OFF**

**Brakes- CHECK (positive pressure, no fluid)**

**Seats/Seatbelts- SECURED**

**STARTING ENGINE**

**Ignition Key- INSERTED**

**Carb Heat- OFF**

**Beacon- ON**

**Mixture- FULL RICH**

**Prop Handle- FULL IN**

**Throttle- SLIGHT ¼”**

**Primer- PRIME AS REQUIRED, IN and LOCKED**

**Brakes- HOLD**

**Aux Fuel Pump- ON**

**Prop Area- CLEAR (visually and verbally)**

**Master- ON**

**Ignition- START (hand on throttle)**

**Throttle- 1000 RPM**

**Oil Pressure- CHECK**

**Ammeter- POSITIVE CHARGE**

**Aux Fuel Pump- OFF**

**Avionics- ON and SET**

**Nav Lights- ON**

**PRE-TAXI**

**Mixture- LEAN AS REQUIRED (1”)**

**Flaps- UP, visually verify**

**Heat/Air Vent/Defrost- AS REQUIRED**

**Radio- CHECK**

**Transponder- VFR/1200**

**ATIS/AWOS/Advisories- RECEIVED**

**Flight Instruments- SET (Altimeter + Heading)**

**Airspeed-0, Attitude- blue over brown, wings level, +/- 5 degrees bank, Altimeter- +/- 75 ft field elevation, VSI +/-100 ft., Heading Indicator-to compass, Compass-full of fluid no cracks leaks or bubbles, Compass Deviation Card- Visible and legible, Turn Coordinator- wings level, ball in bracket and full of fluid**

**TAXI**

**Radio Calls- Taxi Clearance (AS REQUIRED)**

**Taxi Light- ON**

**Brakes- TEST (positive pressure, no fluid)**

**Flight Controls- FOR WIND**

**Instrument Function Check- COMPLETE**

**RUN- UP**

**Brakes- HOLD**

**Flight Controls- FREE and CORRECT**

**Instruments- CHECK (Altimeter and Heading)**

**Fuel- BOTH**

**Trim- TAKEOFF**

**Mixture- FULL RICH**

**Primer- IN and LOCKED**

**Throttle- 1800 RPM**

**Mags (L&R)-TEST return to BOTH (125 Max, 50 Diff)**

**Propeller- CYCLE**

**Carb Heat- ON/ CHECKED (50-100 RPM drop)**

**Ammeter/Voltmeter- CHECK**

**Suction- CHECK (4.6-5.4)**

**Oil Temp/Pressure- CHECK**

**Throttle- CHECK IDLE (+600 RPM, Doesn’t quit)**

**Throttle- 1000 RPM**

**Carb Heat- OFF/CHECK (50-100 RPM rise)**

**Throttle Friction- ADJUST**

**Flaps- 0 to 10 AS REQUIRED**

**Mixture- LEAN 1”**

**Radios/Navaids- SET AS REQUIRED**

**Pre-Takeoff Brief- BRIEF**

**This will be a (normal/short field/soft field) takeoff.**

**For any malfunction prior to Rotation we will announce, “ABORT ABORT ABORT,” bring the power to idle, and stop on the runway.**

**Our Go/No-Go point is \_\_\_\_\_\_\_\_\_\_\_\_.**

**If we lose the engine below 800 AGL, which is \_\_\_\_\_ MSL, we will**

**land ahead.**

**For any engine malfunction after 800 AGL we will circle to land.**

**(You/I) will fly in an emergency.**

**We will depart (departure instructions).**

**(You/I) have the flight controls.**

**PRE- TAKEOFF**

**Power- 1000 RPM**

**Frequency- Tower/ Dep. in Standby as necessary**

**Heading Indicator- TO COMPASS**

**Doors/Windows- SECURE**

**Landing Light- ON**

**Strobes- ON**

**Transponder- ALT MODE**

**Mixture- FULL RICH**

**Airspeed Indicator- Verify Knots or MPH**

**TAKEOFF-Normal**

**Heading Indicator- Verify RWY HEADING**

**Throttle- FULL**

**Engine Instruments- CHECK**

**Heels to the Floor**

**Maintain Centerline**

**Rotate- 60 MPH**

**CLIMB**

**Airspeed- Vy-85MPH or Vx-65 MPH**

**Mixture- FULL RICH (Lean Above 3000 MSL)**

**500 AGL:**

**Throttle- 2500 Manifold Press.**

**Propeller- 2500 RPM**

**Aux Fuel Pump-OFF**

**Engine Instruments- CHECK**

**Taxi/Landing Light- OFF**

**CRUISE**

**Throttle- 2300 Manifold Press.**

**Propeller- 2300 RPM**

**Mixture- LEAN AS REQUIRED**

**Trim- SET**

**Engine Instruments- CHECK**

**Heading Indicator- TO COMPASS**

**PRE- MANEUVER**

**(CGUMPSS)**

**Carb Heat-ON**

**Fuel- BOTH**

**Mixture- RICH**

**Propeller- Full (Caution Overspeed)**

**Landing Light- ON**

**Seatbelts- SECURED**

**DESCENT**

**Heading Indicator- TO COMPASS**

**Mixture- RICHEN**

**Fuel- BOTH**

**Carb Heat- AS REQUIRED**

**Power- AS DESIRED**

**ATIS/AWOS- RECEIVED (Altimeter Set)**

**Engine Instr.- CHECK**

**PRE-LANDING/LANDING**

**(CGUMPSS)**

**Seats/Seatbelts/Harnesses- SECURED**

**Fuel- BOTH**

**Aux Fuel Pump-ON**

**Mixture- RICH**

**Propeller- Full (Caution Overspeed)**

**Carb Heat- AS REQUIRED**

**Taxi/Landing Light- ON**

**Final Approach- 70-75 MPH**

**AFTER LANDING**

**Runway- CLEAR**

**Brakes- HOLD**

**Throttle- 1000 RPM**

**Frequency- Ground (if required)**

**Flaps- UP visually verify**

**Mixture- LEAN FOR TAXI (1”)**

**Carb Heat- OFF**

**Aux Fuel Pump- OFF**

**Landing Light- OFF**

**Strobes- OFF**

**SECURING**

**Transponder-VFR**

**Throttle- IDLE (Doesn’t quit)**

**Throttle – 1000 rpm**

**Avionics Switch- OFF**

**Mixture- CUTOFF**

**Mags- OFF (when propeller stops)**

**Master- OFF**

**Keys- ON FUEL SELECTOR**

**Interior/Exterior Lights- OFF**

**Control Locks- SET**

**Sunshade- INSTALLED**

**Hobbs/Tach- RECORDED**

**Cabin/Baggage Doors- SECURED**

**Chocks- SET**

**Tie Downs- SET**

**V-SPEEDS**

**Vso- 54 mph**

**Vs- 61 mph**

**Vr- 60 mph**

**Vx- 75 mph**

**Vy- 85 mph**

**Va- 112 mph**

**Vfe- 100 mph**

**Vno- 145 mph**

**Vne- 182 mph**

**POWER LOSS IMMEDIATEY AFTER T.O.**

**Fly the Airplane**

**Airspeed- BEST GLIDE (80 MPH)**

**Fuel Selector- OFF**

**Mixture- IDLE CUTOFF**

**Flaps- DOWN (When landing assured)**

**Master- OFF**

**Mags- OFF**

**Doors- UNLATCHED**

**POWER LOSS IN FLIGHT**

**A-B-C**

**Airspeed- Best Glide 80 MPH**

**Best Field- SELECT**

**Fuel- BOTH**

**Mixture- RICH**

**Propeller- IN**

**Throttle- FULL**

**Carb Heat- ON**

**Mags- START (then on both)**

**Master- ON**

**Primer- IN and LOCKED**

**ENGINE FAILS TO RESTART**

**Airspeed- MAINTAIN BEST GLIDE (80 MPH)**

**Fuel- OFF**

**Mixture- IDLE CUTOFF**

**Propeller- Feather**

**Throttle- IDLE**

**Mags- OFF**

**Primer- IN and LOCKED**

**Transponder- 7700**

**Radio- 121.5 (unless already in contact with ATC)**

**DECLARE EMERGENCY**

**Seatbelts- SECURED**

**Passengers- BRIEFED**

**Field- LANDING PLANNED and ASSURED**

**Flaps- AS REQUIRED**

**Doors- UNLATCHED**

**Battery Master Switch- OFF**

**ELECTRICAL FIRE IN FLIGHT**

**Master and all Electrical Equipment- OFF**

**Cabin Heat/Air Vents- CLOSED until fire is out, then OPEN. After fire is out, only turn on Master and essential systems or reset circuit breakers if CRITICAL to Safety of Flight**

**ENGINE FIRE IN FLIGHT**

**Mixture- IDLE CUTOFF**

**Fuel- OFF**

**Master- OFF**

**Cabin Heat and Air- OFF (overhead vents may remain open)**

**Increase airspeed to extinguish if possible and land ASAP**

**ENGINE FIRE DURING START**

**Mags- CONTINUE CRANKING**

**If engine starts- RUN ENGINE FOR 15 SECONDS**

**If engine does not start- CONTINUE CRANKING**

**Fuel- OFF**

**Mixture- IDLE CUTOFF**

**Throttle- FULL OPEN**

**Mags- OFF**

**Master- OFF**

**EVACUATE and DO NOT ATTEMPT TO FIGHT FIRE**

**ICING**

**Carb Heat- ON**

**Pitot Heat-ON**

**Cabin Heat and Defrost- MAXIMUM**

**Get out of icing.**

**Land fast, do not use flaps.**

**OTHER**

***Excessive Rate of Charge-* Recycle master. If the problem continues turn the master off and terminate the flight.**

***Insufficient Rate of Charge*- Turn off nonessential electronics and terminate the flight.**

***Radio Out-* Check circuit breakers, frequency, and volume. Recycle the master. If IFR or VFR in B, C, or D airspace and radio is still out, squawk 7600.**

**S.A.F.E.T.Y- BRIEF**

**Seatbelts**

**Air vents**

**Fire**

**Egress/Exits**

**Talking/Traffic**

**Y-Questions**