



**Objective:** To help gain familiarity with the characteristics of a complex aircraft.



## Common Errors

- Failure to confirm that the landing gear is down and a green light is illuminated before landing
- Failure to lower the landing gear
- Reaching for or using the wrong control lever
- Failure to establish the appropriate aircraft configuration at the proper time and sequence
- Failure to use proper checklist
- Failure to crosscheck & correctly interpret outside and instrument references
- Fixation, omission errors



## Retractable Landing Gear

- Retractable landing gear is designed to streamline the airplane by allowing the landing gear to be stowed inside the structure during cruising flight.
- Landing gear extension, retraction, and main gear down lock release operation is accomplished by hydraulic actuators powered by an electrically driven hydraulic power pack located aft of the firewall between the pilot's and copilot's rudder pedals.
- Controls
  - The landing gear lever has two positions, gear up and gear down. From either position, the lever must be pulled out to clear the detent before it can be repositioned.
- Indicator Lights
  - Installed to help the pilot track where the gear is in the gear cycle
  - System consists of two position indicator lights located adjacent to the landing gear lever with amber indicating gear up and green indicating gear down.
  - Both lights are push to test type and incorporate dimming shutters for night operation.
  - If an indicator light bulb should burn out during flight, it can be replaced with the bulb from the remaining indicator light
- Emergency Hand Pump
  - Hand operated hydraulic pump located between the front seat for manual gear extension
  - Landing Gear Malfunction Procedure (Landing gear fails to extend)
    1. Master Switch – ON
    2. Landing Gear Lever - DOWN.
    3. Landing Gear and Gear Pump Circuit Breakers – IN.
    4. Emergency Hand Pump - - EXTEND HANDLE, and PUMP (approximately 35 cycles)
    5. Gear Down Light - ON.
    6. Pump Handle...STOW
- Warning System
  - Audible warning system to help prevent the pilot from inadvertently landing with the wheels-up
  - Gear warning horn will sound when the aircraft is configured for landing and the gear is still in an unsafe position
    - Activated when the landing gear is not down and the throttle lever is positioned below approximately 12" of manifold pressure
    - Activated when the landing gear is not down and the wing flaps are extended beyond 20°
- Safety Switch
  - A safety squat switch, actuated by nose gear strut compression, electrically prevents the inadvertent retraction of the landing gear when the aircraft is on the ground
- Airspeed Limitations
  - Established to protect the gear components from becoming overstressed during flight
  - $V_{LE}$  maximum landing gear extended speed /  $V_{LO}$  maximum landing gear operating speed

## Landing Gear Operation

- Landing gear retraction can begin when proper ground clearance is obtained and the runway remaining is impractical for landing. Before retracting the gear the brakes should be applied to stop wheel rotation.
- Landing gear should be extended before entering the traffic pattern and confirmed down on downwind, base and final
- Leave the landing gear extended in go-around procedures or traffic patterns for touch-and-go landings
- Avoid raising the flaps while rolling out after landing, reconfigure aircraft once clear of the runway