Miltech Simulations U-2

Landing Gear, Brakes and Ground Handling

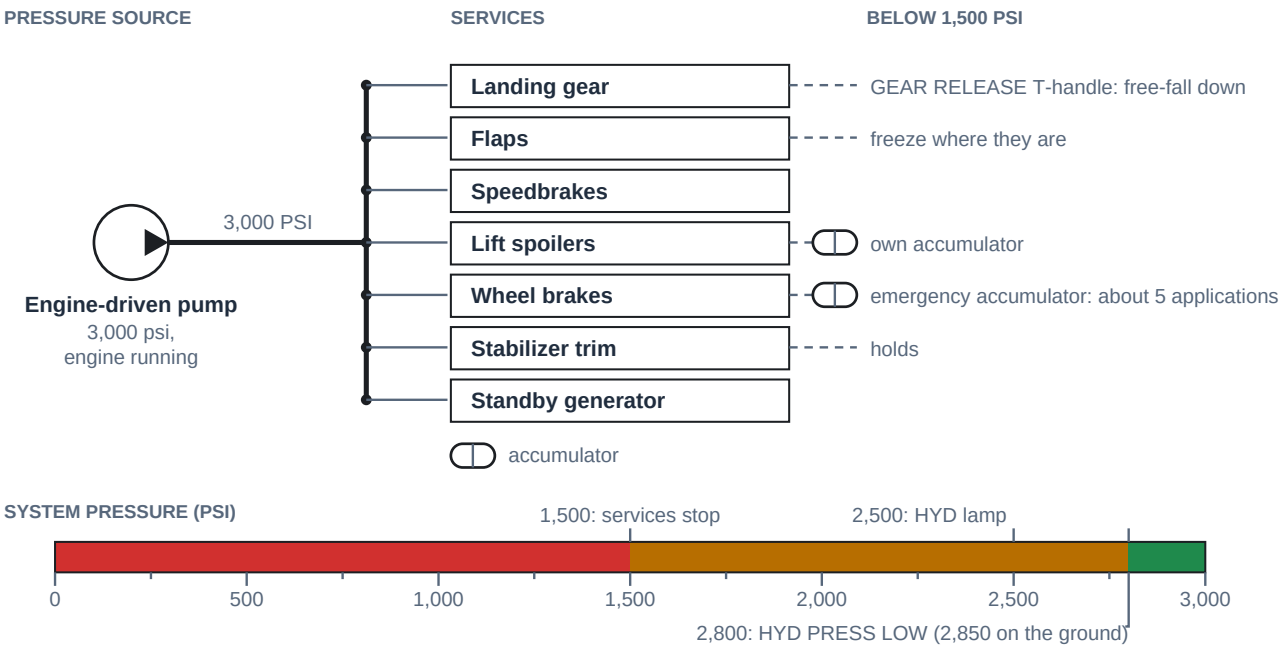
The U-2 sits on one main gear under the fuselage and a steerable tailwheel, with the pogos holding the wings level on the ground. The pogos are explained under Introduction; this page covers the rest.

Note
Sim values. Performance values are measured in the sim. They may not accurately represent (nor do they intend to accurately represent) the performance of the real aircraft.

Hydraulic System

One engine-driven pump, nominally **3,000 psi**, reached about ten seconds into the engine start. It powers the landing gear, flaps, speedbrakes, lift spoilers, wheel brakes and the standby generator. With the engine stopped on the ground the pressure bleeds away within seconds.

After a flameout in flight the pump runs down with the engine: under 2,500 psi after about 100 seconds, under 1,500 psi after about 2.4 minutes. The HYD lamp lights below 2,500 psi and the MFD shows HYD PRESS LOW below 2,800 psi in flight (2,850 psi on the ground), after 5 seconds.



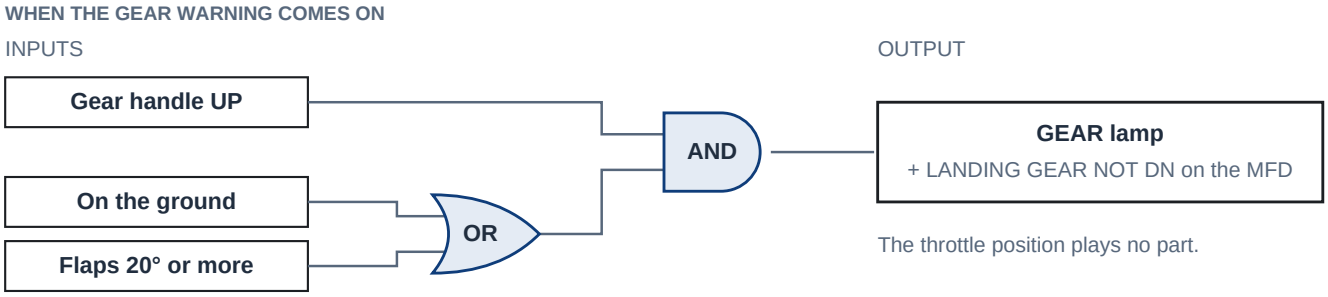
What the one hydraulic pump powers, the back-ups when the pressure is gone, and the pressure at which each warning comes on.

Below 1,500 psi the hydraulic services stop: the flaps freeze where they are, the stabilizer trim holds, the gear no longer follows its handle in flight, and the normal brakes are gone. What you still have: the GEAR RELEASE T-handle lets the gear free-fall down (it cannot be raised again), and an emergency brake accumulator gives about five firm brake applications.

The lift spoilers have their own accumulator - see Speedbrakes and Lift Spoilers. The flight controls are on cables and stay free without pressure.

Landing Gear

- **Gear handle** (left of the main panel, UP / DOWN): click, drag or scroll. The gear moves with hydraulic pressure; below 1,500 psi, or with ESS DC SHED on (the gear control is on the shed bus), it does not follow the handle in flight. MANUAL GEAR RELEASE still lets it down.
- **MAIN GEAR and TAIL GEAR indicators** beside it show each gear up or down. The light in the gear handle is on while the gear is not where the handle says.
- **Gear warning:** GEAR and LANDING GEAR NOT DN with the handle up and the flaps at 20° or more, or on the ground.
- **MANUAL GEAR RELEASE** (pull handle, tooltip MANUAL GEAR RELEASE): lets the gear free-fall down without hydraulic pressure. It is one way - the gear cannot be raised again, by handle or key, until the flight is reloaded.
- **Touchdown:** above 750 ft/min of sink the gear is damaged (with MSFS crash damage on). Above 8.3 ft/s (500 ft/min) up to 24,300 lb, falling to 2.4 ft/s at 40,000 lb, the cyan HARD LANDING advisory shows the sink rate of the touchdown in ft/s, on the MFD alert line and in STAT/HIST. It stays until you have been back in the air for 30 seconds.



Lower the gear before the flaps pass 15°.

Brakes

- The brakes act on the main wheel only. Either pedal (or brake key) brakes it - there is no differential braking, so you steer with the tailwheel, and there is no antiskid.
- **Normal brakes** use hydraulic pressure through the gear-down line: they need the gear handle DOWN, DC power and pressure; full braking from about 2,000 psi.
- **Emergency accumulator:** charged from the hydraulic system to 3,000 psi, it takes over on the ground (or without DC power) when there is no pressure - about five applications, each weaker than the last. Do not pump the brakes.
- **PARKING BRAKE**: T-handle at the lower right of the main panel, left of the electrical panel; pull to set, push to release. The EFB Ground tab and the ground carts (ground power, starting air, oxygen servicing) need it set; the runway crew does not. The EFB **Set up aircraft** presets set it for you.
- **Wheel chocks**: separate from the parking brake and from the EFB Settings option **Cockpit handle**. Click them away in the walkaround or with **Wheel Chocks Off** on the EFB Ground tab, and put them back with **Wheel Chocks On** there, stopped on the ground. The carts need the parking brake set or the chocks in place.
- **Gear pins**: one click on the main or tail gear pins in the walkaround removes both; the EFB **Set up aircraft** *Ready* presets remove them too. The pogo pins are the runway crew's - see Takeoff.

Steering and Taxiing

- The tailwheel steers with the rudder pedals. It follows them about half a second late and eases in, so plan your turns ahead. Full pedal holds a 189 ft radius at the main wheel, with the wheel turning between 6.5° and 20° as needed. The full turn is there up to about 20 kt and fades to about 1.4° by 25 kt, where the rudder takes over. With the outside wing tip on the ground the turn comes out wider.
- **Breakaway:** stopped with the engine running, the aircraft stays put at idle, with the brake pedals about a third down. It starts to roll at about 78 % N2 (a little more when heavy); then ease the power back to what keeps it rolling.
- Taxi slowly and use wide turns: the long wing and the pogos need room. Without the pogos keep the yoke fully into the turn, or the outer wing goes down.

Related pages: Introduction · Flying the U-2S · Chase Car and Ground Support Equipment

Miltech Simulations U-2. SIMULATION USE ONLY. This documentation describes the simulated aircraft as delivered in the add-on and must not be used for real-world aviation.