2A-27-80: Gust Lock System

1. **General Description:**

   The gust lock system for the Gulfstream IV provides a means for the flight crew to manually protect the unpowered flight control surfaces from movement by wind gusts while the aircraft is on the ground.

   The gust lock is a mechanical ground safety system that neither affects the flight performance of the aircraft nor receives any flight loads. The ailerons, elevators and rudder are locked against gust loads by mechanical latches operated by the GUST LOCK handle located on the cockpit center pedestal.

2. **Description of Subsystems, Units and Components:**

   A. **Surface Lock System:**

   (See Figure 26.)

   A single T-shaped handle, located on the right side of the cockpit center pedestal and labeled GUST LOCK, controls the gust lock system. A spring loaded trigger is incorporated in the gust lock handle to prevent the handle from inadvertently being pulled. Releasing the trigger and then raising and pulling the GUST LOCK handle aft actuates conventional mechanical linkage consisting of cables, springs, latches and a bungee rod. Moving the ailerons and rudder to the neutral position and the elevator to the trailing edge down position allows the gust lock to engage and lock the flight controls as their linkages reach the locking position. Releasing the trigger and then lowering the GUST LOCK handle releases the gust lock.

   Safety features prevent the gust lock from inadvertently engaging or a failure of the system preventing gust lock release. With the gust lock released, the bungee rod acts as a fixed rod to prevent inadvertent flight control locking. If the gust lock fails when engaged, the springs will unlock the gust lock.

   B. **Mechanical Power Lever Interlock:**

   A mechanical interlock is incorporated in the GUST LOCK handle mechanism that restricts simultaneous movement of the power levers to a maximum of six percent above ground idle with the gust lock engaged. Force applied to advance both power levers simultaneously cannot override the interlock. To prevent any hydraulic forces acting upon an engaged gust lock, the gust lock should be released prior to engine starting and not engaged until all hydraulic pressures read zero.

3. **Controls and Indications:**

   (See Figure 26.)

4. **Limitations:**

   A. **Flight Manual Limitations:**

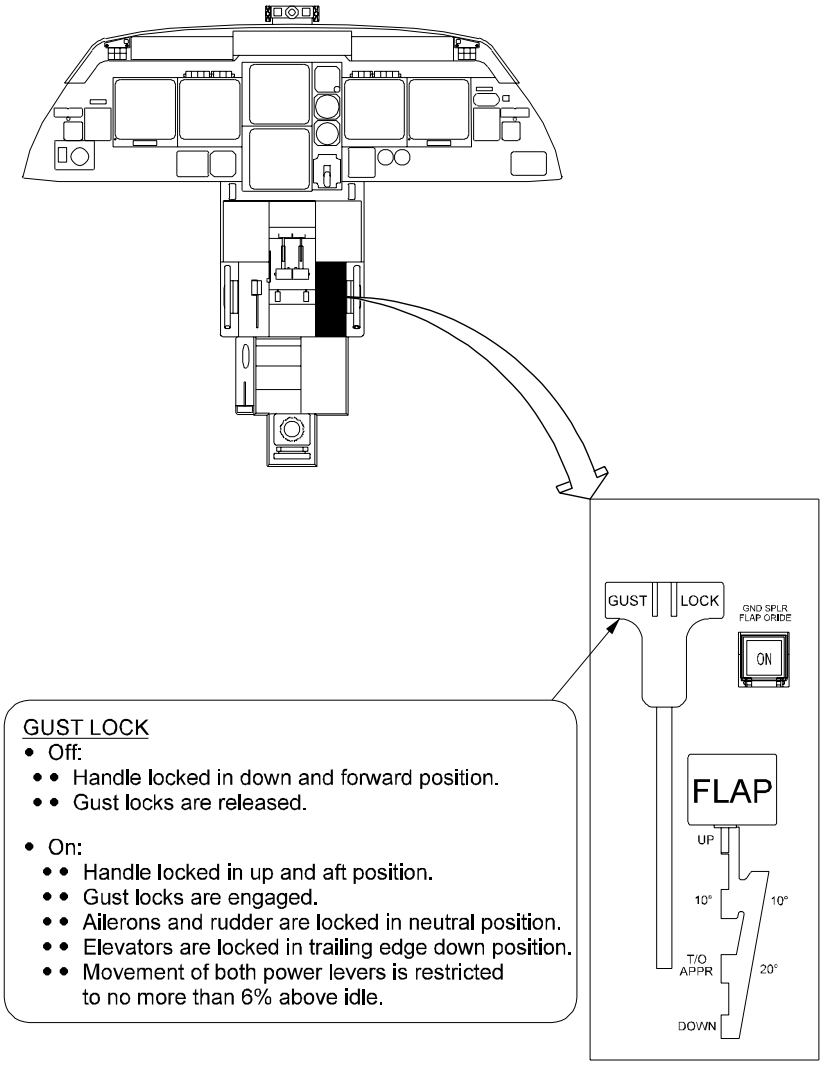
   There are no limitations for the gust lock system at the time of this revision.

B. Other Operational Limitations:

The gust lock is effective in protecting the flight controls in wind gusts up to 60 knots.

CAUTION

ENSURE HYDRAULIC PRESSURE IS DEPLETED PRIOR TO ENGAGING GUST LOCK. CYCLE THE CONTROLS WITH THE CONTROL COLUMN, CONTROL WHEEL AND RUDDER PEDALS TO DEPLETE ANY RESIDUAL PRESSURE.



GUST LOCK Handle
Figure 26