

Lateral and Directional Control

Unusually large amounts of aileron and spoiler input may be required to recover from an upset / unusual attitude.

If during an upset / unusual attitude, the angle of attack increases beyond a certain value (stick shaker and buffeting), then the airflow over the wing separates and the efficiency of ailerons and spoilers decreases.

CAUTION

At high angles of attack, pilots must be extremely careful when using the rudder for assisting lateral control. Excessive rudder can cause excessive sideslip, which could lead to departure from controlled flight.

Recovery Techniques

The techniques assume that the airplane is not stalled. If it is, recovery from the stall must be accomplished first.

Stall Recovery

To recover from the stall, the angle of attack must be reduced.

Nose down pitch control must be applied and maintained until wings are unstalled. Under certain conditions, it may be necessary to reduce thrust in order to increase the nose-down pitching moment necessary to reduce the angle of attack.

Once unstalled, unusual attitude recovery actions may be taken and thrust reapplied as needed.

Recovery from a Nose High, Wings Level Upset / Unusual Attitude

Indications:

- Pitch attitude is unintentionally more than 25 degrees nose-up and increasing.
- The airspeed is decreasing rapidly.

As airspeed decreases, the pilot's ability to maneuver the airplane also decreases. If the pitch trim setting is nose-up, as for low speed flight, it partially reduces the nose-down authority of the elevator. As the airspeed decreases, the pilot could intuitively make a large thrust increase; this will cause additional pitch up effect further complicating the situation. At full thrust setting and very low airspeed and with pitch trim set for low speed, the elevator may have only very limited ability to reduce pitch attitude.

In this situation, the pilot should trade altitude for airspeed. This is accomplished by an input of up to full nose-down elevator accompanied by some nose-down pitch trim.

NOTE

Pilots should not fly the airplane using pitch trim only.

If altitude permits, reducing thrust may help to achieve a nose-down pitch rate.

If normal pitch control inputs do not stop an increasing pitch rate, it may be necessary to roll the aircraft to a bank angle sufficient to bring the nose down. A bank angle of between 45 and 60 degrees could be needed.