UPSET RECOVERY INTRODUCTION FLYING COURSE

BRIEFING

- Approx 2 hrs
- Extracts from the Airplane Upset Recovery Training Aid
- Plus stall revision and additional advanced stalling - effects of skids and slips.

FLIGHT EXERCISES

- Co-ordination exercise – roll side to side 30^{O} AOB and maintain heading.
- Steep turn – as part of pre-stall checks.
- Stalling:
    - power off, normal recovery
    - full power, normal recovery
- "Falling Leaf"exercise. Idle power. At the stall, maintain full aft stick and apply full rudder to initiate a wing drop then full opposite rudder and hold until the opposite wing has dropped. Continue for several cycles and then recover from the stall.
- Roll damping exercise.
    - Very slow flight at $1.2V_S$ – approx 55 kts. Power for level flight approx 1700 RPM. Turn left and right with 30^{O} AOB.
    - At approx 45 kts, below V_S but power on, approx 1800 RPM, to achieve extremely slow level flight. Important to be approx 1 kt above the stall. Gingerly attempt to roll to 30^{O} AOB, taking care to maintain the same airspeed. When aileron is applied to return to S&L note the negative roll damping – or wing drop due to stall on the wing with downgoing aileron. Important – be aware of high nose attitude and poor view for traffic.
- Stalls in a turn at 30^{O} AOB. Set up S&L at approx 2000 RPM, so that airspeed is not too high, then commence the turn. When stable move the stick back, maintaining the same AOB, until the stall then recover normally.
    - For the first exercise maintain balanced flight.
    - For the second exercise the turn is skidded by significant rudder into the turn.
- Stall in a sideslip. Trim for airspeed of 70 kts and power approx 1600 RPM. Maintain heading in a sideslip with full rudder. Move the stick back, ensuring that the aircraft does not turn, until the stall then recover normally.
- Zoom manoeuvre. 120 kts entry to a climb 45^{O} nose up. Maintain angle of climb and keep straight with rudder as speed decays. Approaching V_S gently move the stick forward a small amount to slowly pitch nose down with slightly less than 1G ensuring that the speed decays well below V_S.
- Loop – correlation with nose low recovery.
- Aileron roll – correlation with high bank angle recovery.
- Recovery from inverted.
    - Split-S – half roll to inverted then pull through to upright with a half loop.
    - Upset Recovery Technique – roll.

- Application of Upset Recovery Techniques.
    - The startle effect – eyes closed then take over – recognise and confirm the situation.
    - Over-banks to spiral dives.
    - Nose high.
    - Over-banked to inverted – low airspeed, nose high or level.
    - Nose low and stalled.

(additional notes required for the instructors)