

EAGLE FLIGHT TRAINING

LIMITED



Aerobatic Flight

Combinations

Objective

- ◆ To develop an Aerobatic sequence incorporating loops, rolls and stall turns.
- ◆ To learn the Roll of the Top, Cuban Eight, Flick Roll.

Considerations

Revision Exercises:

- ◆ Loop
- ◆ Aileron Roll
- ◆ Barrel Roll
- ◆ Stall Turn

New Exercises

- ◆ Roll of the Top
- ◆ Cuban Eights
- ◆ Flick Roll

Considerations

Energy:

- ◆ Two Types of Energy
- ◆ Potential Energy (Energy of Position/ Altitude)
- ◆ Kinetic Energy (Energy of movement/ Airspeed)
- ◆ Therefore in aerobatics it is important to have one or the other especially when completing sequences.

Considerations

Roll of the Top (Immelman Turn)

- ◆ Initially developed as a method of reversing direction with no loss in altitude
- ◆ Enter at a higher speed to allow the aircraft to have more energy at the top.
- ◆ Commence a loop and at the inverted stage (top of the loop) check to hold the attitude, and roll out to level flight.
- ◆ Can be either an aileron roll or flick roll.

Considerations

Cuban Eight:

- ◆ The basis is a semi complete loop (to nose just below the horizon whilst still inverted) and a roll to wings level, into a second loop with another roll in the same position of the loop to end up in the same direction as initially entered.
- ◆ This manoeuvre if viewed from the side will look like a figure eight.

Considerations

Cuban Eight:

- ◆ Enter a normal loop and as the nose passes the inverted attitude roll the aircraft to the wings level attitude and pause until the loop entry speed has been reached and complete the same again to finish with the aircraft on the initial heading.

Considerations

Derry Turn:

- ◆ Basis is a change in direction from a steep turn by rolling underneath to exit with a steep turn in the opposite direction.
- ◆ Enter from a normal steep turn with full power, pitch the nose above the horizon and commence rolling underneath, use forward pressure while the aircraft is inverted, continue rolling all the way through the bottom to a steep turn in the opposite direction reapplying the back pressure and continuing the turn in the opposite direction.

Considerations

Flick Roll:

- ◆ A flick roll is a manoeuvre where one wing is intentionally stalled just prior to the other, causing the aircraft to roll quickly.
 - ◆ Enter at a low airspeed below:
 - ◆ Pitch the Nose up to climbing attitude
 - ◆ Apply Full Back pressure
 - ◆ Full Rudder in direction of the turn
 - ◆ Full Aileron in direction of the turn
 - ◆ Hold controls firmly on the stops until 45° before wings level.
 - ◆ Centralise all controls and the aircraft will recover
- } Simultaneously

Engine Handling

- ◆ Power (RPM) Smooth movements (red line)
- ◆ Mixture Full Rich
- ◆ Carburettor Heat Normal use
- ◆ T's and P's Monitor green range

Airmanship/ Human Factors

- ◆ **IMSAFE – LOOKOUT– HASELL-HELL**
- ◆ Use well defined ref points and features
- ◆ Flaps up
- ◆ Load factor, airspeed and power limits (AFM)

Air Exercise

Revision of 5 Basic Exercises:

- ◆ Loops
- ◆ Rolls
- ◆ Stall Turns

Introduction to New Exercises:

- ◆ Cuban Eights
 - ◆ Flick Roll
 - ◆ Roll of the Top
- } Instructor to Demonstration &
Students to Practice