

# All Attitude Flight Safety

## Phase 1

### Spin and Upset Recovery

Division of



**Mission:**

Decrease the number of pilot error related accidents

**Prerequisites:**

Private Pilots License or better

**Skills acquired in Phase 1:**

Stick and rudder coordination

Stall/ spin entry, recovery and prevention

Unusual attitude recovery

Correct and precise actions dealing with in-flight emergencies

Aircraft control at all corners of the flight envelope

FAA spin endorsement

**Flight School:**

Olmsted Aviation LLC

**Location:**

Santa Paula Airport (KSZP)

**Aircraft used:**

Pitts S-2A

**Number of flight lessons:**

Five

**Flight time per lesson:**

60 minutes

**Ground instruction per lesson:**

60 minutes

## **Phase 1 Lesson 1**

### **Coordination exercise:**

coordinated climbs & coordinated power on & off descents  
wing-overs

### **Entry/ recovery from power off upright stalls at first indication and from fully developed:**

wings level  
coordinated turns  
accelerated stalls  
slipping turns  
skidding turns

### **In-flight simulated emergencies:**

engine failure at  $V_x$   
engine failure at  $V_c$   
forced landing

### **Entry/ recovery from upright spins:**

base to final stall/ spin entry  
simulated power loss on take off stall/ spin entry

### **Introduction to aileron rolls, inverted flight and unusual attitude recovery**

## **Phase 1 Lesson 2**

### **Coordination exercise:**

½ roll (inverted check)  
wing overs  
left dutch rolls at Va  
right dutch rolls at Va  
dutch rolls at 0 G's at Va

### **Unusual attitude entry/ recovery:**

high airspeed, low pitch attitude, power off  
high airspeed, low pitch attitude, power on

### **Aileron rolls and ½ rolls:**

left rolls at Va  
right rolls at Va

### **Entry/ recovery from power on upright stalls at first indication and from fully developed:**

wings level  
coordinated turns  
accelerated stalls  
slipping turns  
skidding turns

### **Entry/ recovery from upright spins:**

take off climb stall/ spin entry  
go around stall/ spin entry

### **Introduction to developed spin**

## **Phase 1 Lesson 3**

### **Coordination exercise:**

- ½ roll (inverted check)
- left dutch rolls at Vat
- right dutch rolls at Vat
- dutch rolls at 0 G's at Vat
- gyroscopic precession exercise

### **Unusual attitude entry/ recovery:**

- low airspeed, high pitch attitude, power on
- low airspeed, high pitch attitude, power off

### **Aileron rolls and ½ rolls:**

- left rolls at Vat
- right rolls at Vat

### **Inverted flight:**

- climbs
- descents
- level flight

### **Entry/ recovery from upright aggravated spins:**

- power on spin left
- power on spin right
- elevator forward with in-spin rudder

### **Introduction of inverted slow flight and inverted stalls**

## **Phase 1 Lesson 4**

### **Coordination exercise:**

½ roll (inverted check)  
gyroscopic precession exercise  
aerobatic competition style turns

### **Unusual attitude recovery review**

### **Flight control failures:**

rudder  
aileron  
elevator

### **Entry/ recovery from upright aggravated spins:**

aileron left spin left  
aileron right spin right

### **Entry/ recovery from upright aggravated spins initiated with unusual attitudes:**

immelman spin entry  
stalling loop spin entry

### **Upright flat spins**

### **Introduction of inverted turns and inverted spins**

## **Phase 1 Lesson 5**

### **Coordination exercise:**

½ roll (inverted check)

inverted slow flight

inverted stalls

inverted turns

inverted dutch rolls

### **Unusual attitude recovery review**

### **Flight control failure review**

### **Entry/ recovery from upright aggravated spins initiated with unusual attitudes:**

vertical line cap-off spin entry

optional snap roll spin entry

### **In-flight simulated emergencies:**

wake turbulence recovery

### **Entry/ recovery from non-aggravated inverted spins**

### **Introduction to aggravated inverted spins**

### **Introduction to competition aerobatic style rolls**