Kansas State University Parachute Club

Jump number: ~13 (Category E)
Maneuver: 45 sec delay
Altitude: 10,000ft
Price: $34 (+Packer fee if needed)

Objectives: Bomb out exit, 180 degree turn, Barrel rolls, Flaring

In this next category you will be put in positions where you are likely to lose stability. One of the most important skills in skydiving is to regain stability in the air. Once you exit and gain stability, complete a 180 degree turn to the direction of travel of the aircraft.

Now it is time to complete a barrel roll. From the box man position, bring in one arm to your chest, and look in the opposite direction. It is much like you were going to roll over in your bed. Occasionally it is difficult to determine the correct time to stop the roll. This will lead to some instability, but by following the altitude, arch, legs, relax, technique, you will return you to a stable position. Complete as many of these barrel rolls as altitude allows.

Visual altimeters, especially when chest-mounted, may be unreliable during inverted positions.

It is always important that before conducting ANY maneuvers that you check your altitude. All maneuvers should be completed by 5,000ft.

Ensure you wave off and pull by 4,500

Canopy Control - Flaring
Types of stalls

a. An aerodynamic stall is a stable, steady-state stall, or sink, with decreased glide and increased rate of descent.
- **(1) Associated with older designs and specialized accuracy canopies**
- **(2) May not be achievable with newer, flatter-gliding canopies, which often fly flatter almost until a full stall**

b. A dynamic stall occurs at the end of a flare when the jumper begins to rock back under the canopy and the canopy begins to nose forward.
- **(1) Associated with a sharp dive**
- **(2) May signal a full stall**

c. A full stall occurs when the trailing edge (tail) is pulled below the leading edge (nose) and the canopy begins to fly backwards.
- **(1) Collapses the canopy**
- **(2) May result in unrecoverable line twist in smaller canopies**
- **(3) May be contrary to the manufacturer's recommendations**
- **(4) May result in entanglement with the jumper if released too abruptly**
- **(5) May result in injury if done too low**

Raise the controls smoothly after any stall to avoid diving and partial collapse.

Emergency procedure review

Preventive measures for two open canopies

a. Deploy the main parachute at the correct altitude to avoid AAD activation.
b. Initiate malfunction procedures high enough to cut away safely and avoid AAD activation.
c. Maintain and correctly operate hand-deployed pilot chutes, especially collapsibles.
d. Protect your equipment before exit to prevent pins or handles being knocked loose.

e. Some AADs, particularly those used for student jumping, will activate under a fully open parachute when controlled too aggressively at lower altitudes.

2. Review detailed procedures for two canopies out as they pertain to experienced jumpers, found in SIM Section 5-1.

Equipment

1. Learn to Pack
2. Typical characteristics of elliptical canopies, compared to rectangular canopies of the same size and material:
- **a. flatter glide for same airspeed**
- **b. faster turns**
- **c. greater loss of altitude in a turn**
- **d. may continue to dive after stopping control input following a turn**
- **e. slower, less predictable opening (some models)**
- **f. shorter toggle stroke for flare (some models)**
- **g. quicker, more abrupt stall (some models)**

3. The stall speed of any wing increases with higher wing loading.
- **a. more suspended weight**
- **b. sudden maneuvers, such as flaring hard after a dive**

4. Use and limitations of the reserve static line or RSL (SIM Section 5-3).

Aircraft and Spotting

Spotting (pilot or instructor)
- **a. how to read a winds-aloft report**
- **b. jump-run procedures**
- **c. spotting corrections**
  - **(1) manual (hand signals, shoulder taps)**
  - **(2) verbal**

The effect of winds during canopy descent
- **a. A canopy descends at approximately 1,000 feet per minute.**
- **b. Divide the opening altitude by 1,000 feet to determine time of descent, e.g., 3,000 feet = three minutes of descent.**
- **c. Estimate in miles per minute the amount of drift during descent, as in Table 4-E.1:**

MPH	Miles per Minute	Drift from 3,000 feet
60	1	n/a
30	1/2	n/a
20	1/3	1 mile
15	1/4	3/4 mile
10	1/6	1/2 mile
5	1/12	1.4 mile