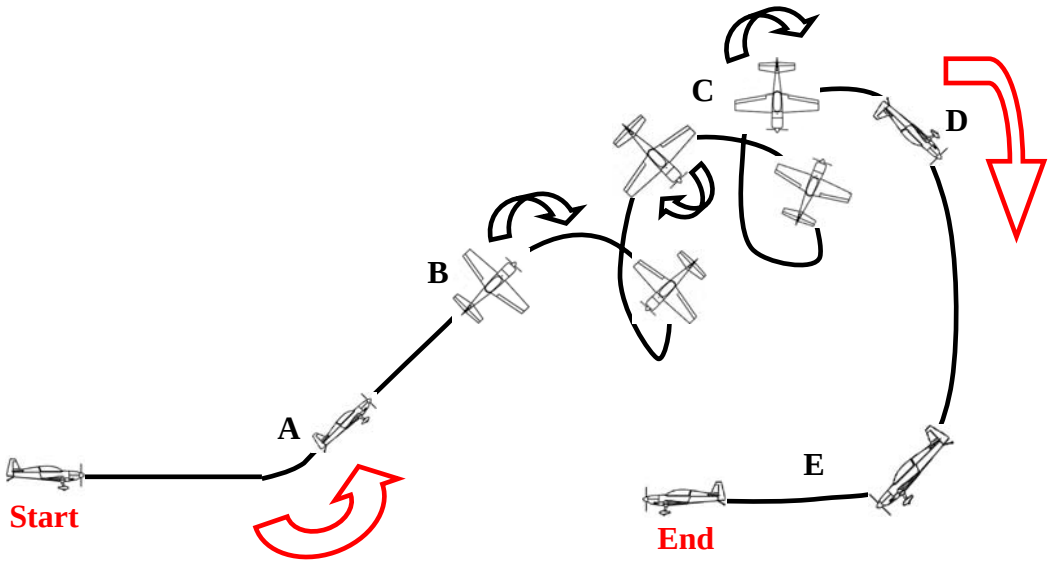
Aerobatic Maneuver Identification Competition Series 2001

866-FLY-HARD
fightercombat.com

Maneuver Name:	**45° Up Lomcevak**
Category:	Advanced

Speed Envelope		**G Forces**	
Entry Speed	160 kts +	Maximum G	+ 5 G
Minimum Speed	< 20 kts	Minimum G	- 2.5 G
Exit Speed	140 - 160 kts +		



Maneuver Description: The 45° Up Lomcevak begins with an aggressive pull to the 45° up line "A". Once established on the 45° up line, the aircraft is smoothly rolled to the left knife-edge position "B". With little or no hesitation in the knife-edge position the aircraft is then yawed approximately 70 degrees off of the normal flight path while the control stick is simultaneous shoved fully forward creating a tumbling end-over-end-over-end negative-G gyroscopic condition "C". The aircraft is recovered to the inverted 45° nose low position "D" and a recovery is accomplished, in this case, by pulling the aircraft through the vertical down position to a recovery in the opposite direction to the original entry heading "E".

45° UP LOMCEVAK

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866-FLY-HARD
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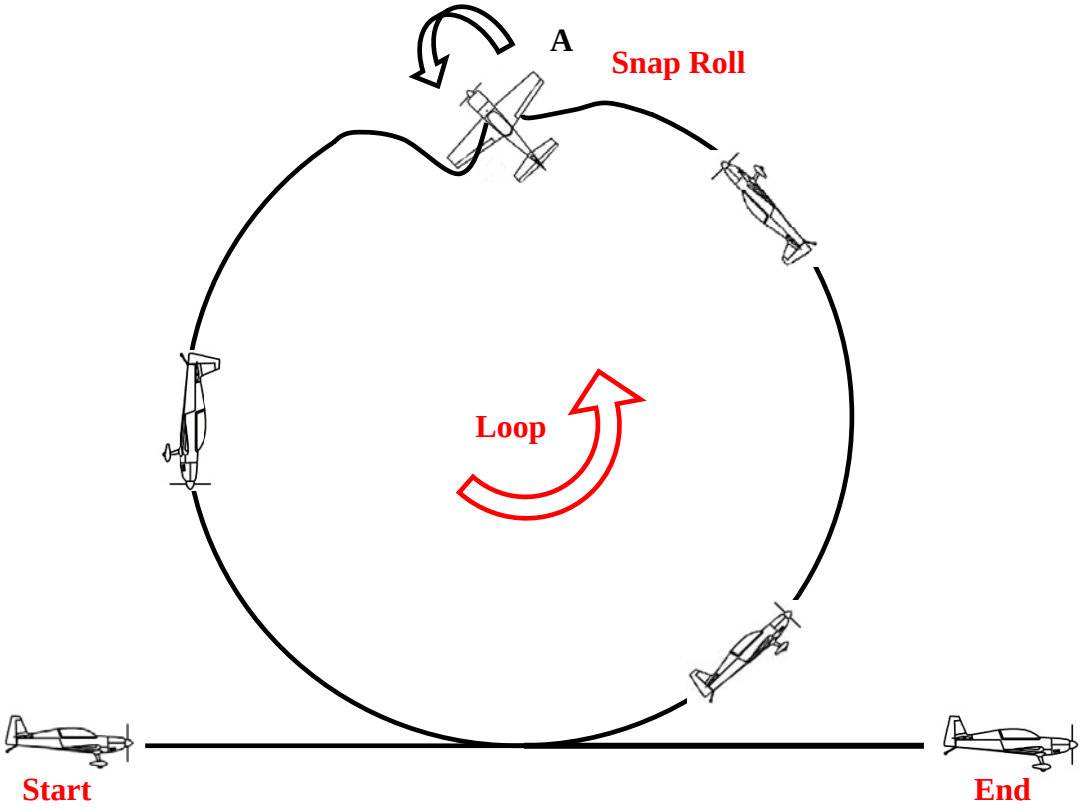
Maneuver Name:	**Avalanche (Combination Loop / Snap Roll)**
Category:	Basic

Speed Envelope		**G Forces**	
Entry Speed	160 kts +	Maximum G	+ 5 G
Minimum Speed	40 kts	Minimum G	+0.5 G
Exit Speed	160 kts +		



Maneuver Description: The avalanche is an inside loop with a snap roll over the apex of the loop (Depiction "A"). The snap roll begins in the inverted position and ends in the inverted position. Following the snap roll over the apex of the loop, the aircraft continues from the inverted position to complete the loop as shown.

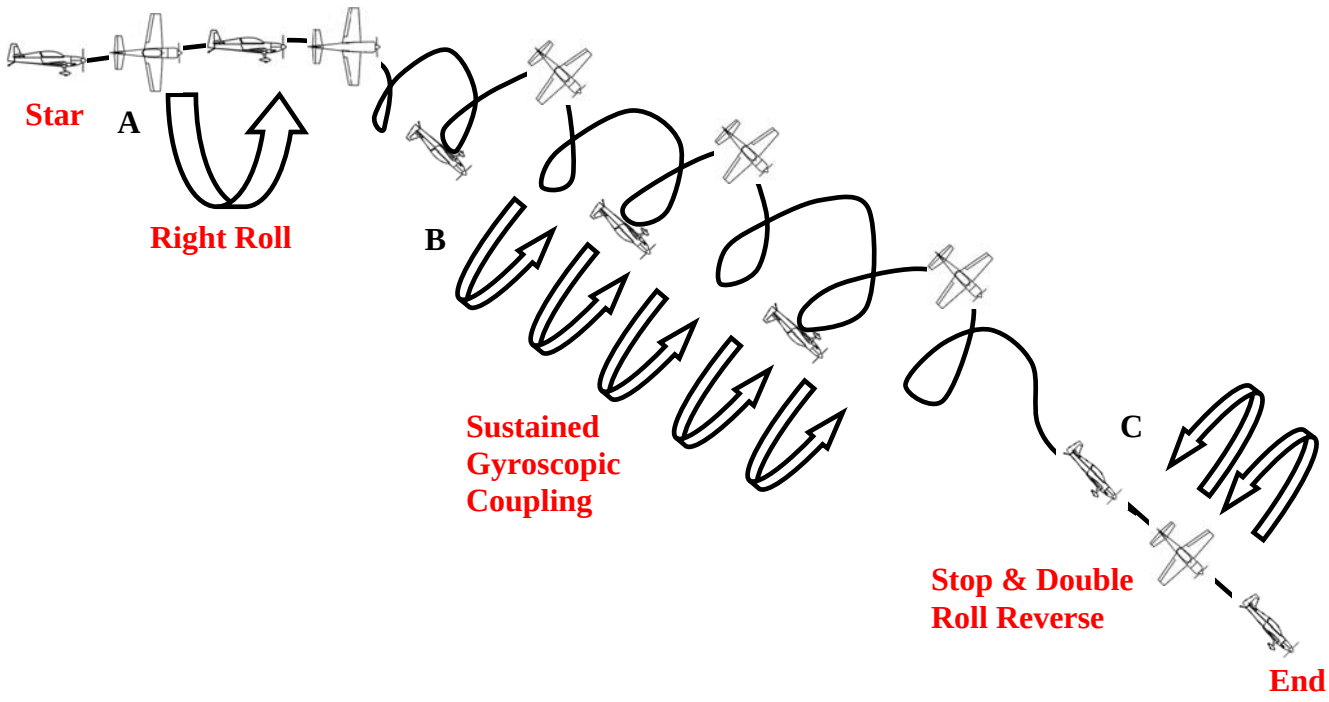
AVALANCHE

Aerobatic Maneuver Identification Competition Series 2001

866-FLY-HARD
fightercombat.com

Maneuver Name:	**Centrifuge Reverse Rollout**
Category:	Extreme

Speed Envelope		**G Forces**	
Entry Speed	140 – 160 kts	Maximum G	+ 4 G
Minimum Speed	120 kts	Minimum G	- 4 G
Exit Speed	160 kts +		



Maneuver Description: The Centrifuge Reverse Rollout maneuver is started in a level, to slightly climbing, flight attitude at a minimum of 140kts. The maneuver is commenced with an aggressive right roll “A” while simultaneously feeding in right rudder causing the aircraft to accelerate its roll rate into a negative-G sustained snap rolling maneuver “B” commonly known as a Centrifuge. At the completion of five to seven rotations (judged as a function of aircraft attitude and altitude), the rotation is abruptly stopped “C” in 45° nose low wings-level flight. Immediately, the aircraft is reversed in a double roll to the left and finally terminates 45° nose low wings-level.

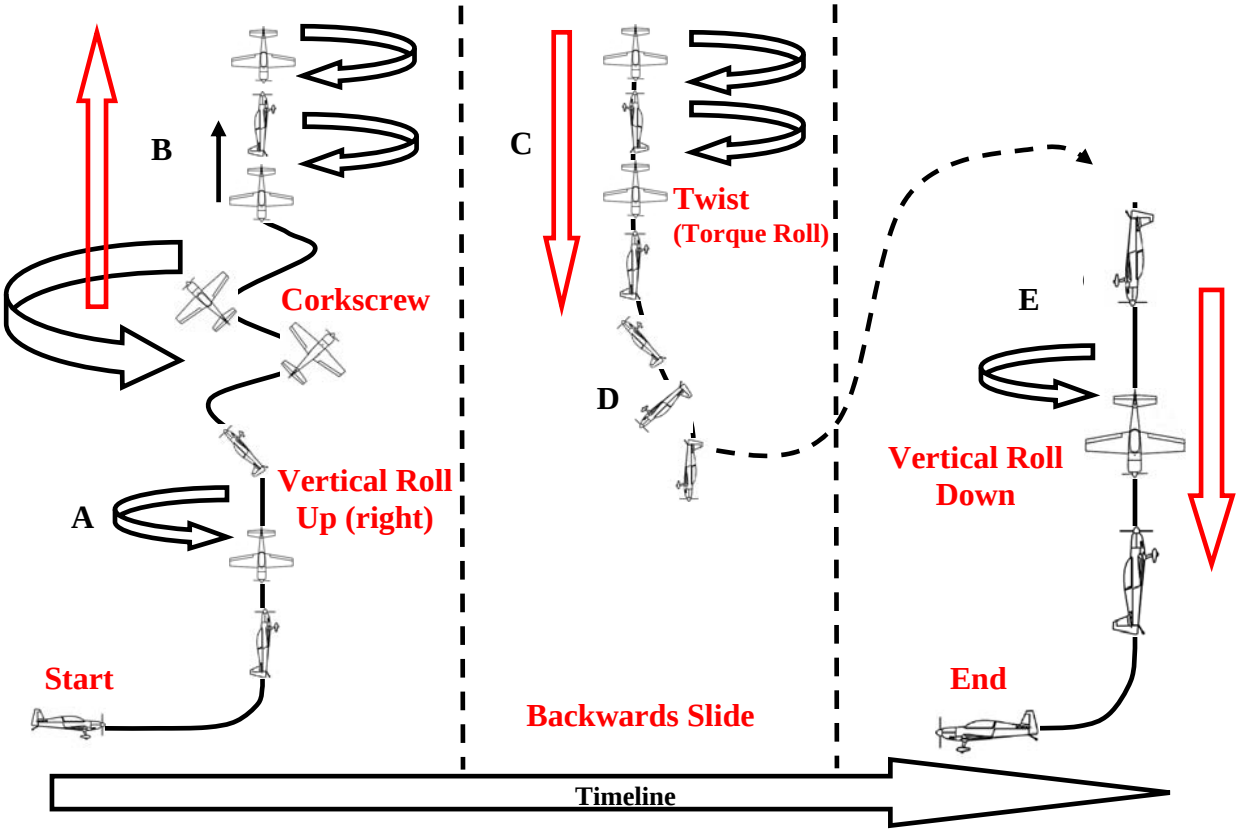
CENTRIFUGE REVERSE ROLLOUT

Aerobatic Maneuver Identification Competition Series 2001

866-FLY-HARD
fightercombat.com

Maneuver Name: **Corkscrew Twist**
Category: Extreme

Speed Envelope		G Forces	
Entry Speed	180 - 200 kts	Maximum G	+ 8 G
Minimum Speed	0 kts	Minimum G	- 3.0 G
Exit Speed	160 kts +		



Maneuver Description: The Corkscrew Twist is a complex maneuver combining sequential advanced aerobatics. From level flight the aircraft is pulled to the vertical using moderate G and immediately rolled to the right “A” combined with right rudder. The aircraft creates a “corkscrew” smoke trail as the energy slows. At this point, the controls are abruptly reversed “B” into a left-rolling torque roll. The “twisting” roll slows its vertical climb as the airspeed goes to zero and the aircraft continues to roll as it slides backwards “C”. When the aircraft swaps ends “D”, a vertical roll “E” immediately precedes the recovery to level flight.

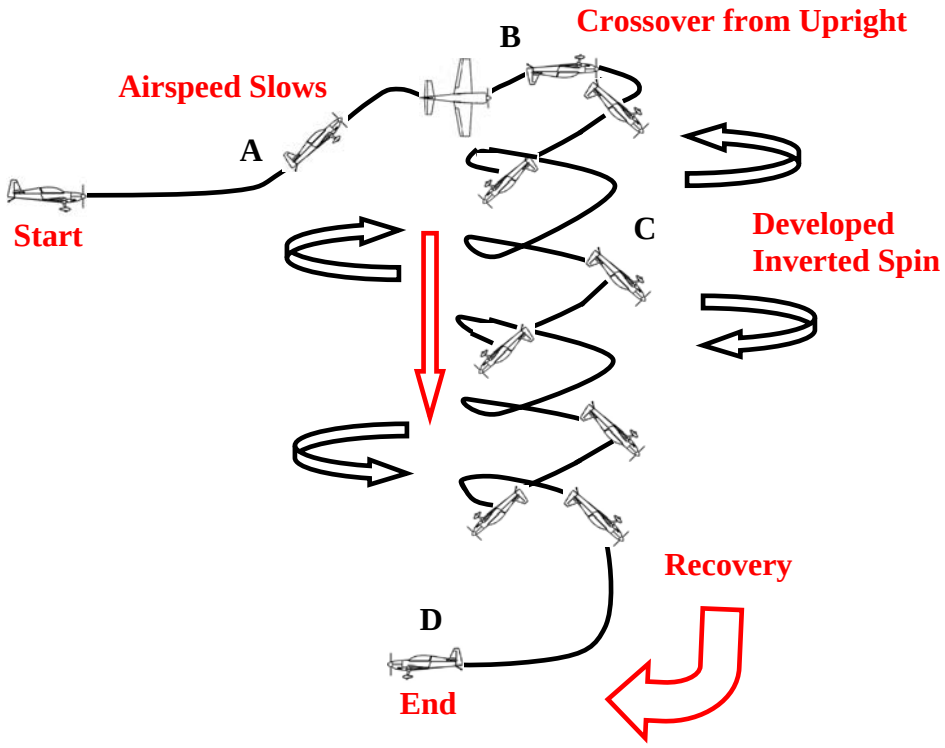
CORKSCREW TWIST

Aerobatic Maneuver Identification Competition Series 2001

866-FLY-HARD
fightercombat.com

Maneuver Name:	**Crossover to Inverted Spin**
Category:	Advanced

Speed Envelope		**G Forces**	
Entry Speed	65 kts +	Maximum G	+ 4 G
Minimum Speed	< 10 kts	Minimum G	- 2.5 G
Exit Speed	140 kts +		



Maneuver Description: The Crossover to Inverted Spin is entered from upright flight. To begin, the nose of the aircraft is pulled up 30° "A" and power reduced to idle. The airspeed slows. At approximately 5 kts above the stall, the pilot sequentially inputs full right rudder and full forward stick causing the aircraft to slow-speed tumble to the inverted position "B". The aircraft will hesitate in the inverted position with yaw increasing to the left (the pilot's right) as the spin proceeds from the incipient phase to the fully developed inverted spin "C" with a sink rate of approximately 8000 feet per minute. After approximately five rotations the aircraft is recovered to level flight 'D".

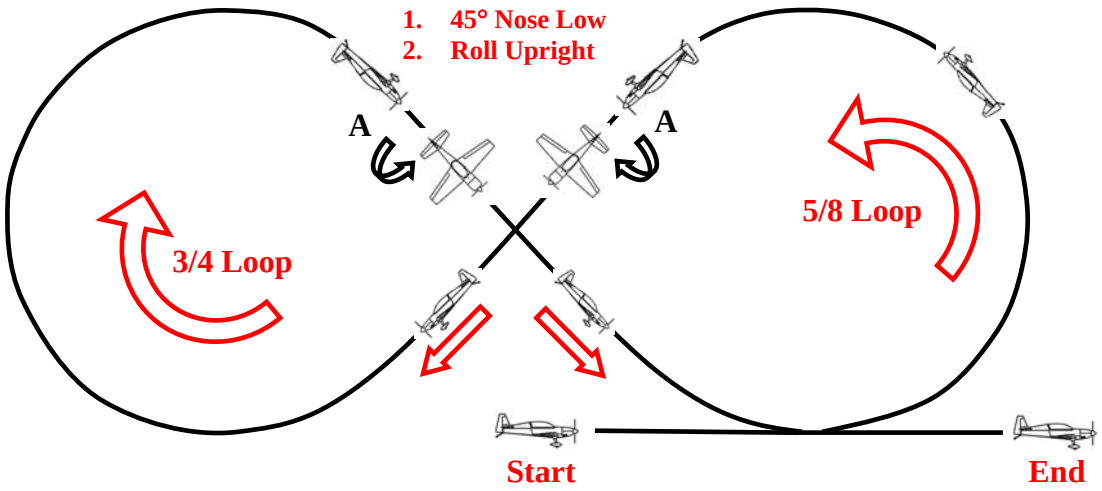
CROSSOVER TO INVERTED SPIN

Aerobatic Maneuver Identification Competition Series 2001

866-FLY-HARD
fightercombat.com

Maneuver Name:	**Cuban Eight (Combination Loop / Aileron Roll … X Two)**
Category:	Basic

Speed Envelope		**G Forces**	
Entry Speed	160 kts +	Maximum G	+ 5 G
Minimum Speed	80 kts	Minimum G	+0.0 G
Exit Speed	160 kts +		



Maneuver Description: The Cuban eight is a combination of two partial loops with an aileron roll to the upright flight attitude from the inverted 45° nose down position (Depiction "A"). This position "A" occurs after crossing the inverted/top position of each the looping maneuver.

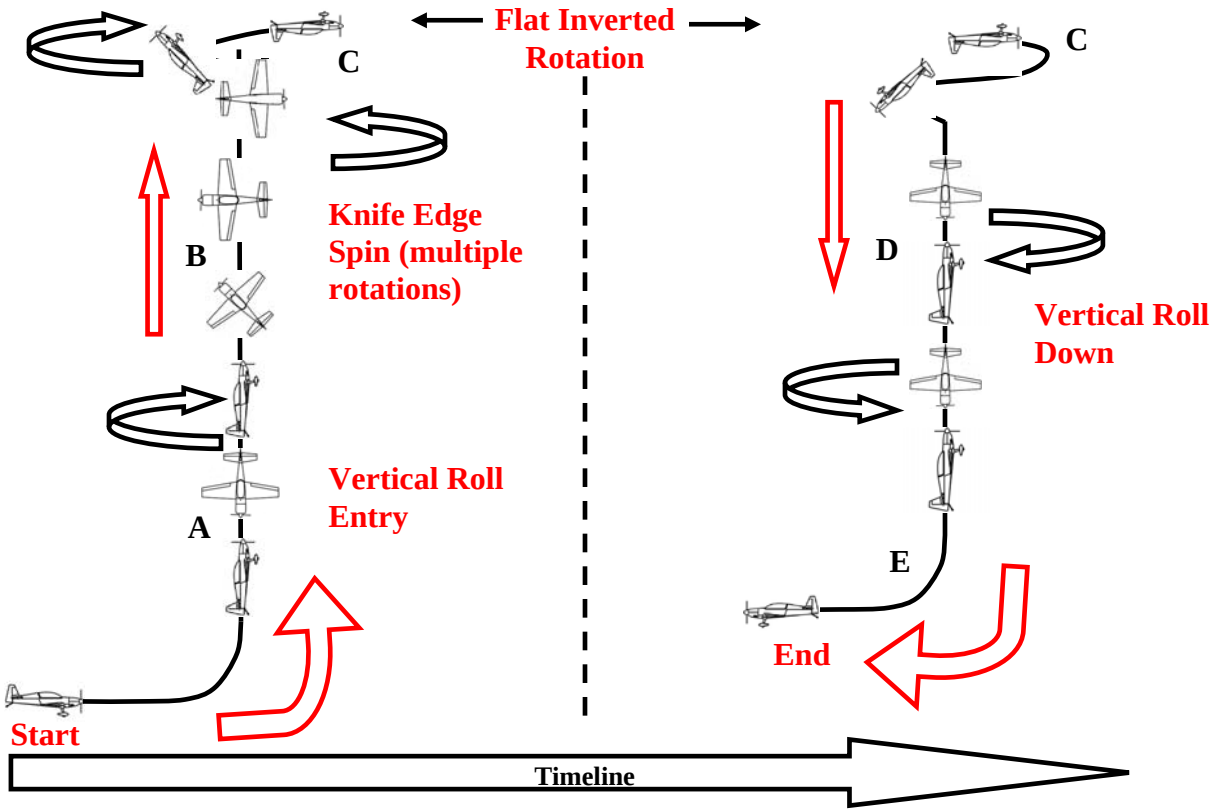
CUBAN EIGHT

Aerobatic Maneuver Identification Competition Series 2001

866-FLY-HARD
fightercombat.com

Maneuver Name: **Knife Edge Spin Up**
Category: Advanced

Speed Envelope		G Forces	
Entry Speed	180 kts +	Maximum G	+ 8 G
Minimum Speed	0 kts	Minimum G	- 4 G
Exit Speed	180 kts +		



Maneuver Description: The Knife Edge Spin Up begins with a pull to the vertical up line followed immediately by aggressive vertical rolls to the left "A". Without delay, the aircraft is then yawed 90° off the flight path "B" placing the nose of the aircraft horizontal while the wings remain in a knife-edge flight attitude. Full forward stick is used to sustain this negative-G flight condition until airspeed has been reduced to zero and the aircraft re-orients into a flat inverted rotation "C" as the upward momentum subsides. The recovery is a series of vertical rolls on the down line "D" and recovered to level flight "E".

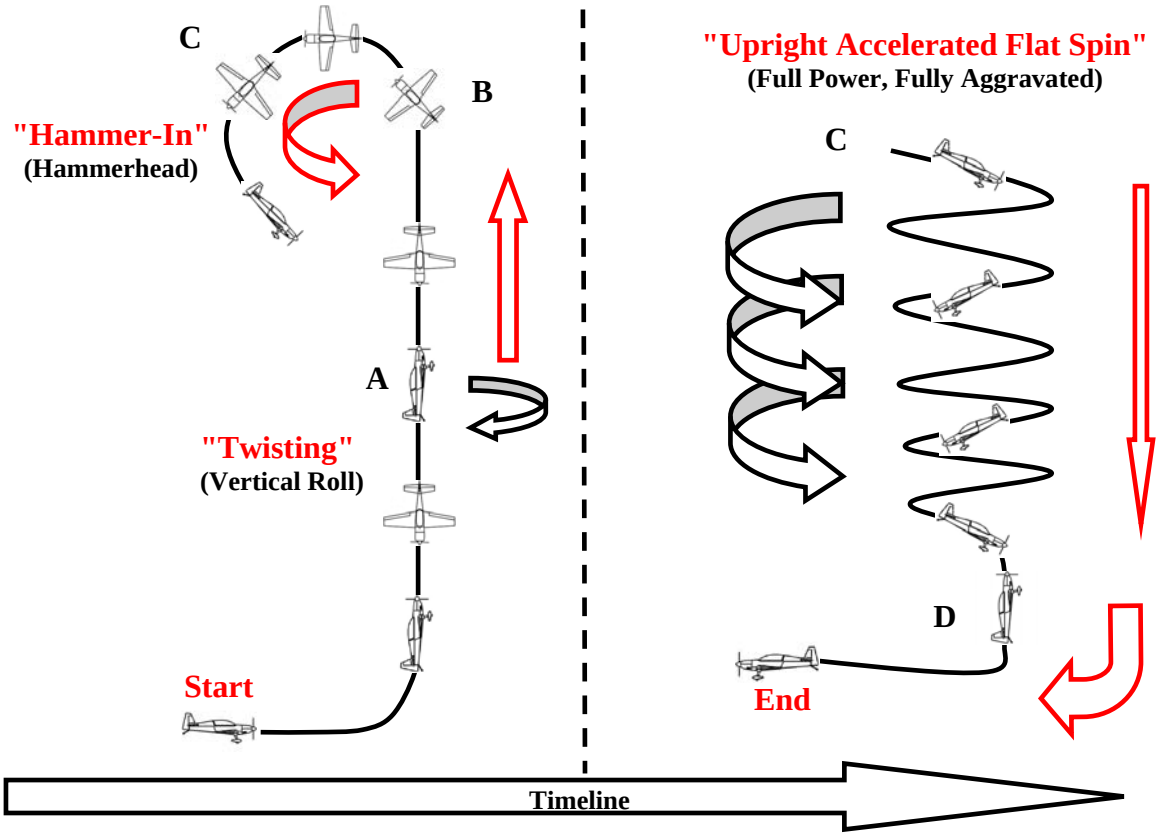
KNIFE EDGE SPIN UP

Aerobatic Maneuver Identification Competition Series 2001

866-FLY-HARD
fightercombat.com

Maneuver Name:	**TWISTING-HAMMER-IN UPRIGHT ACCELERATED FLAT SPIN**
Category:	Extreme

Speed Envelope		**G Forces**	
Entry Speed	160 - 200 kts	Maximum G	+ 5 G
Minimum Speed	0 kts	Minimum G	0.0 G
Exit Speed	160 kts		



Maneuver Description: This maneuver is entered by pulling up into a vertical roll "A" followed by a hammerhead "B" until the nose of the aircraft rotates mid-way in the hammerhead "C". At "C", the aircraft is pulled toward the horizon wings level. Just below the horizon, the stick is moved to the rear right quadrant aggravating this full-power flat spin further. The stick is then pushed into the far right forward quadrant producing an Upright Accelerated Flat Spin. After five (or more) rotations, 1500' of altitude loss, the aircraft is recovered to level flight.

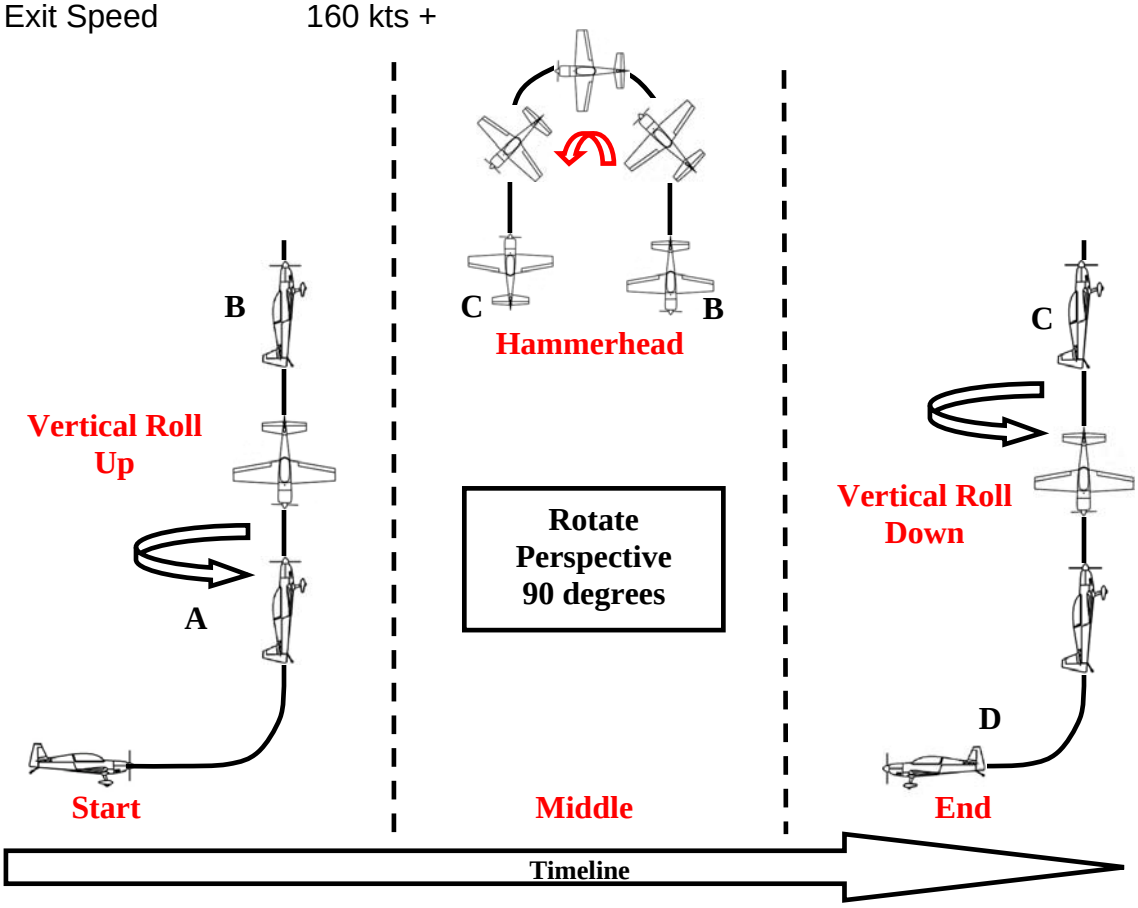
TWISTING-HAMMER-IN UPRIGHT ACCELERATED FLAT SPIN

Aerobatic Maneuver Identification Competition Series 2001

866-FLY-HARD
fightercombat.com

Maneuver Name:	**Vertical Roll to Hammerhead** **(Vertical Roll Up - Hammerhead - Vertical Roll Down)**
Category:	Basic

Speed Envelope		**G Forces**	
Entry Speed	160 kts +	Maximum G	+ 5 G
Minimum Speed	0 kts	Minimum G	+0.0 G
Exit Speed	160 kts +		



Maneuver Description: This is a vertical maneuver that is entered by an aggressive pull straight up. Once established on the vertical up-line "A", the aircraft is rolled one turn. As the airspeed approaches zero "B", the rudder is used as the primary control surface in rotating the aircraft through 180 degrees from this vertical up position to the vertical down position "C". At vertical down position "C", the aircraft is rolled one turn and then recovered to level flight "D".

VERTICAL ROLL TO HAMMERHEAD