



HOW TO WIN AN AEROBATIC CONTEST 2024

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FRAeS



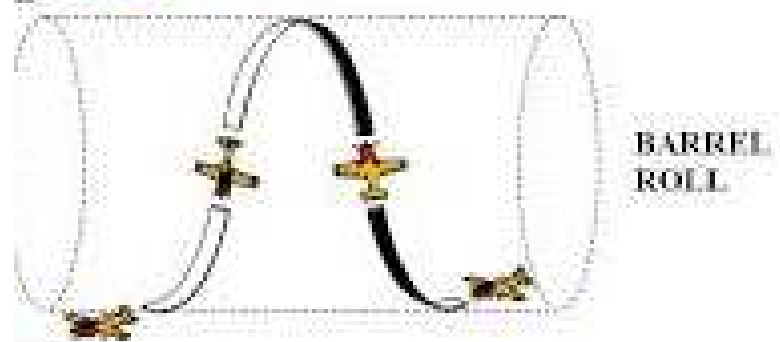
How To Win?



What To
Do?

- Know what the judges want – the judging criteria for the figures

LEARN THE DIFFERENCE



IT COULD SAVE YOUR LIFE

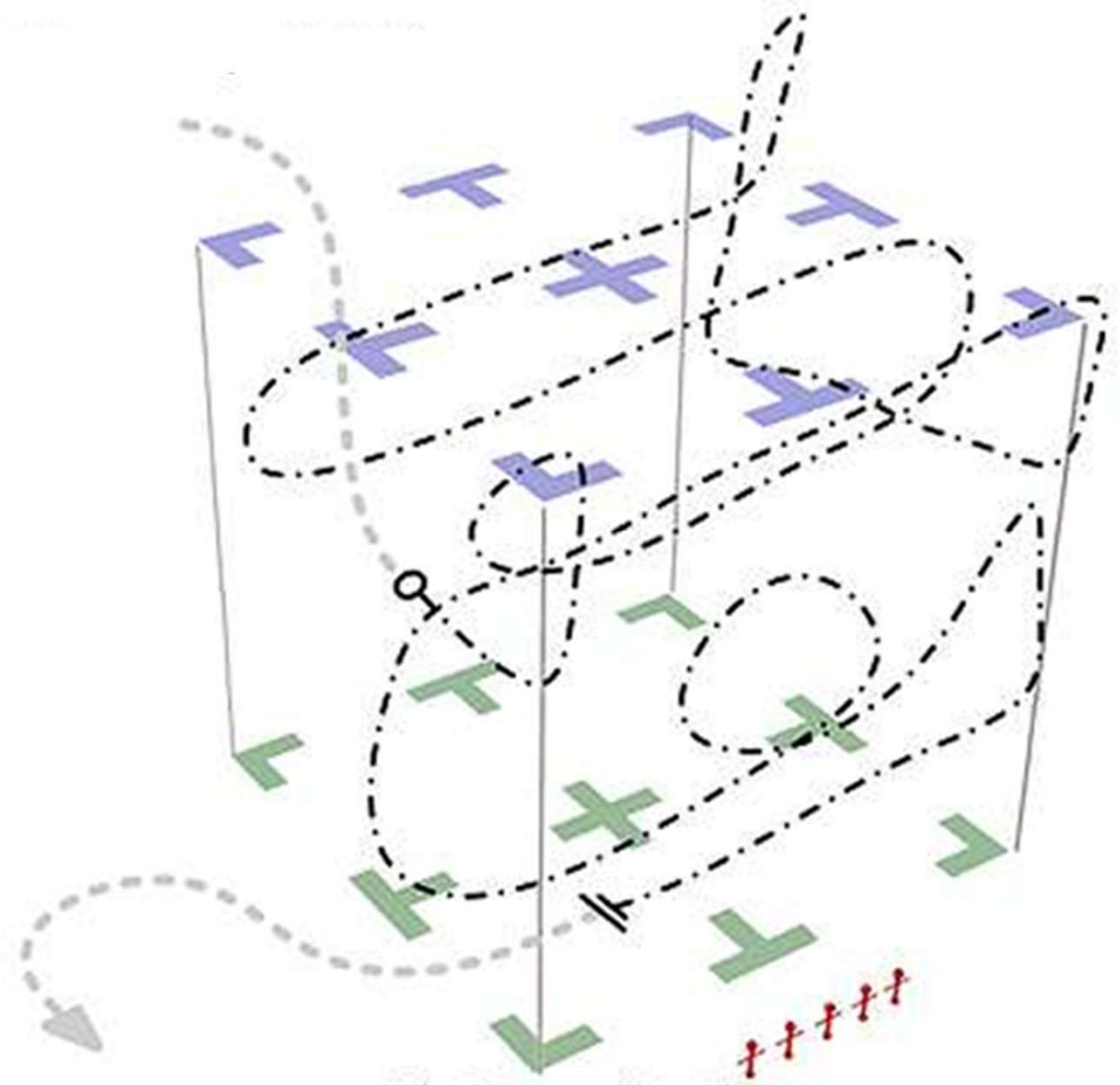
What To Do?



- Know the competition rules to make decisions about:
 - Height
 - Weather
 - Technical issues

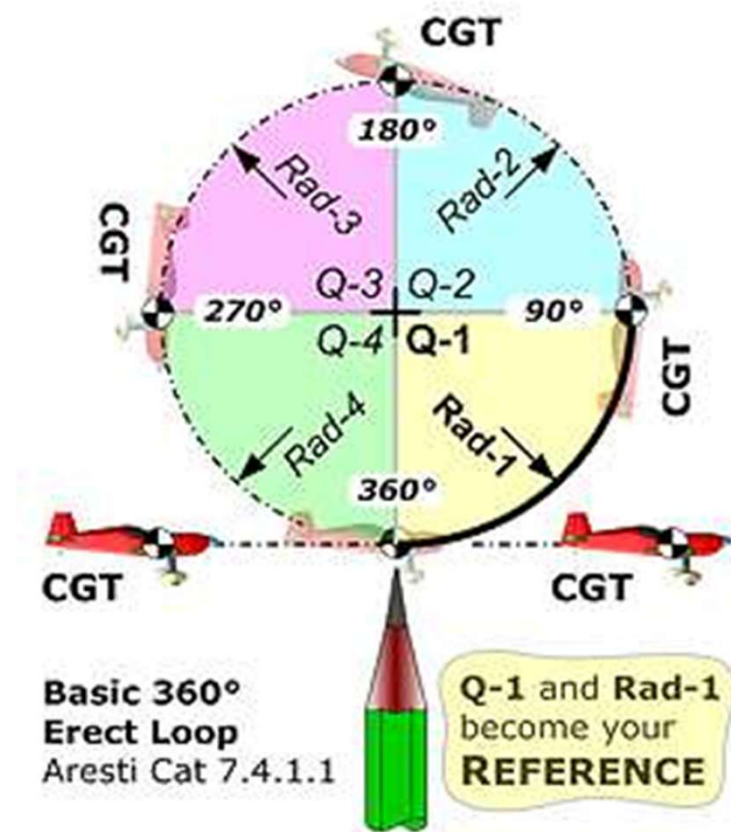
What To Do?

- Practice!
 - The Known Sequence
 - Unknown Sequence Figures
 - Your Free Sequence



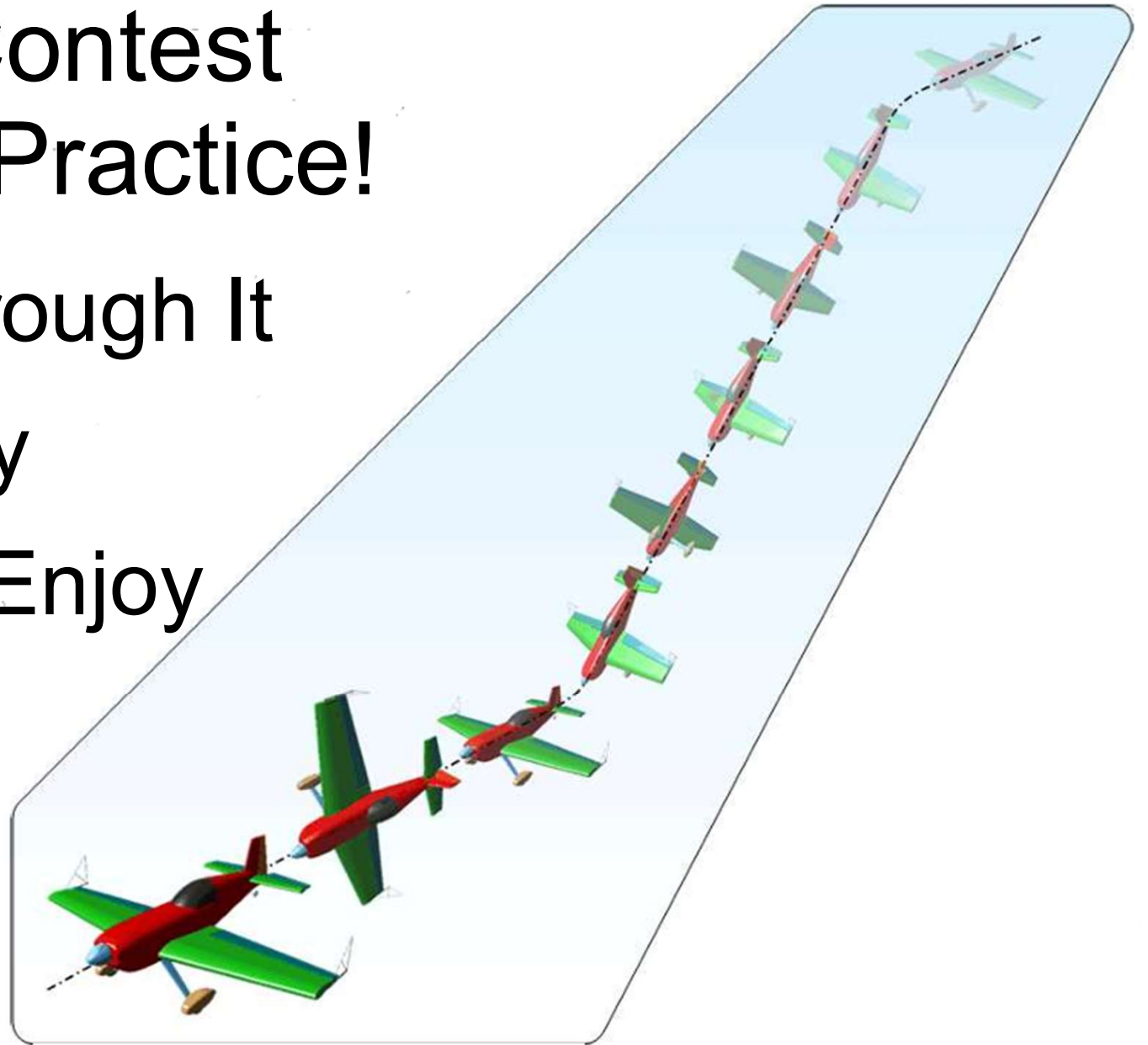
What To Do?

- Design the best Free Sequence
- California Freestyle Guidelines
- Suits you and your airplane

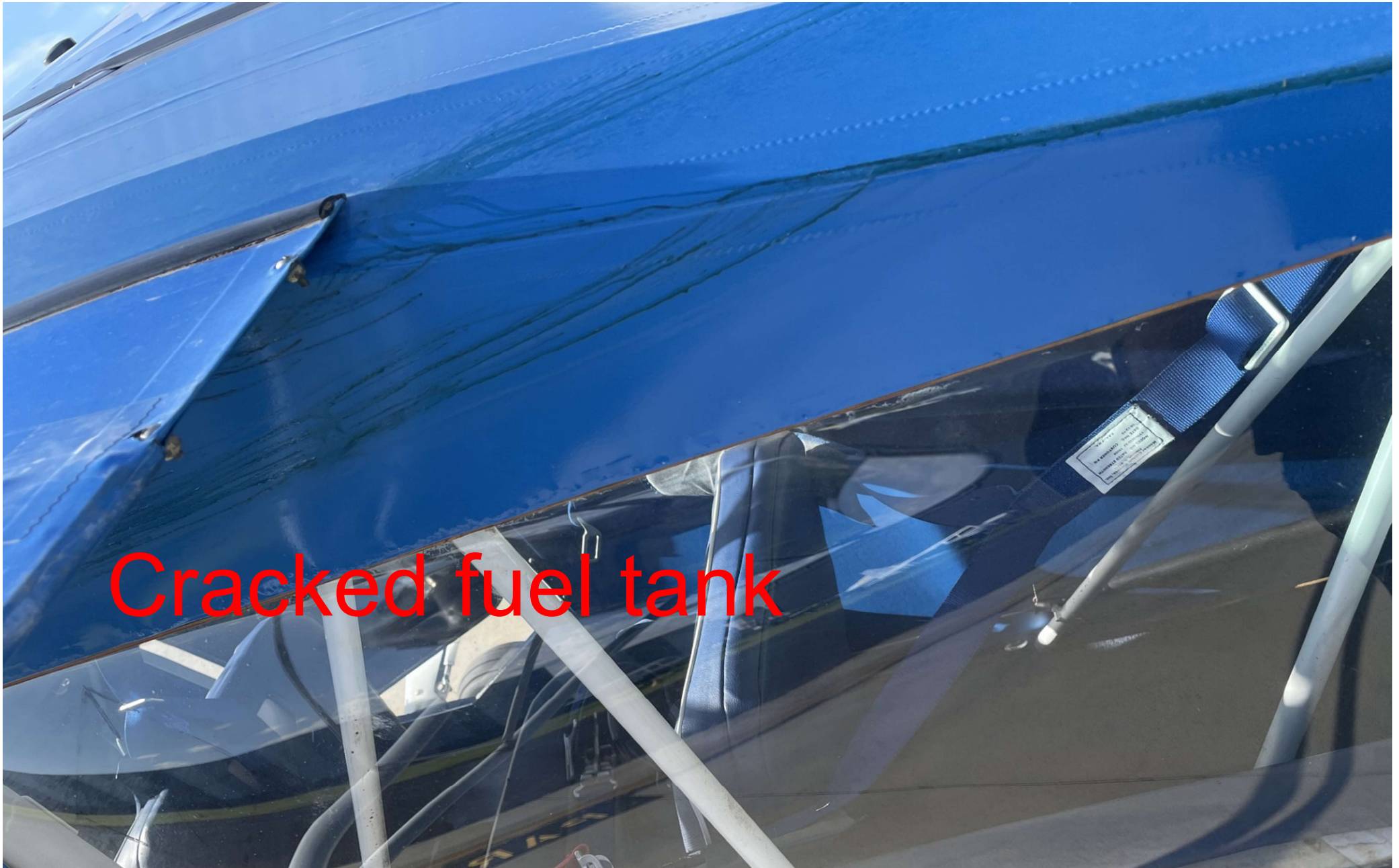


What To Do

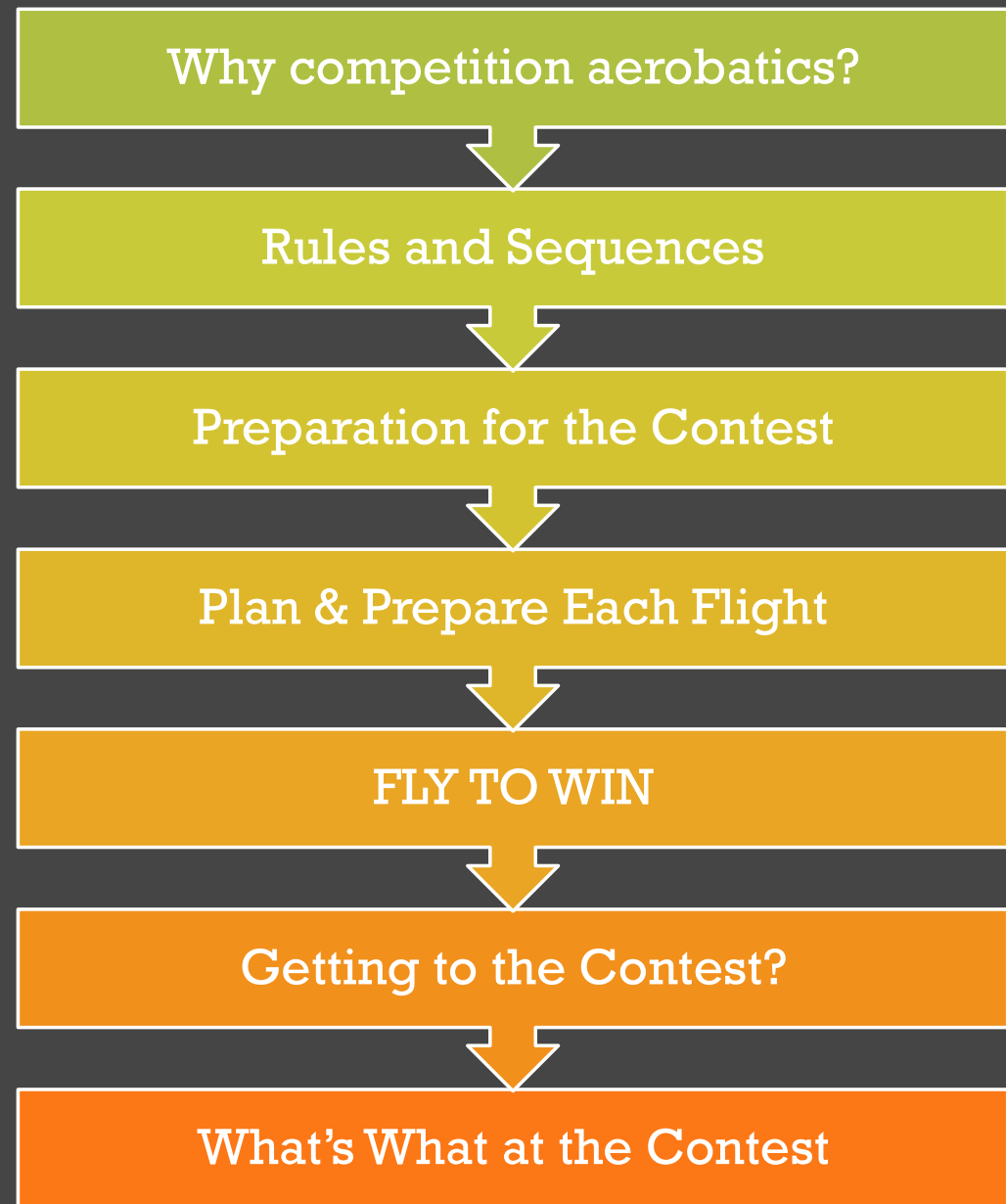
- Fly The Contest Like The Practice!
- Walk Through It
- Box Entry
- Relax & Enjoy



What Not To Do



CONTENT - OVERVIEW



Why Competition Aerobatics

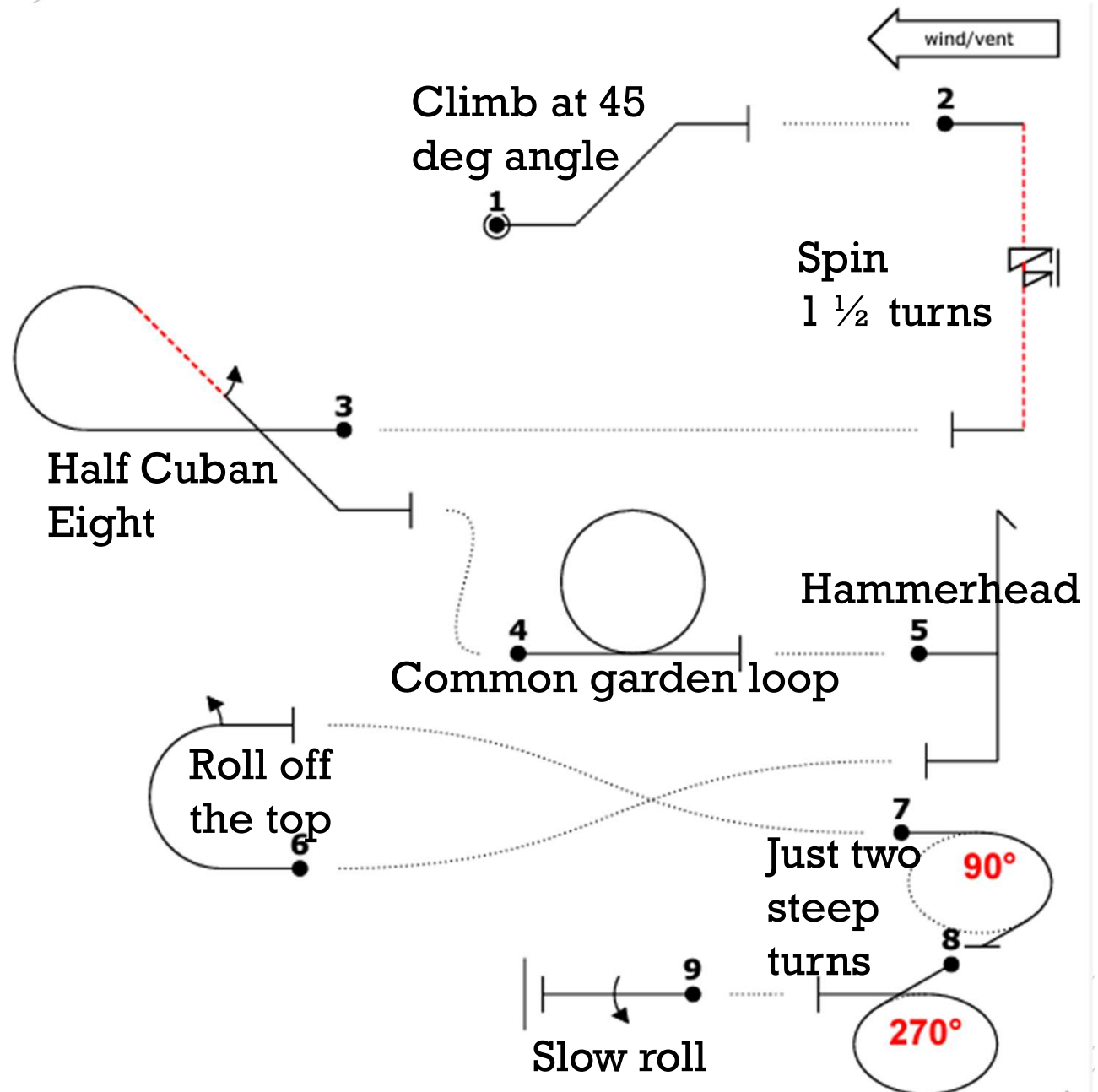
- **Flights are short so good for the budget**
- **Easy step after getting an aerobatic endorsement**

Why Competition Aerobatics

- Fly solo above 3,000 ft or DUAL?
- It is a lot of fun, challenging and educational

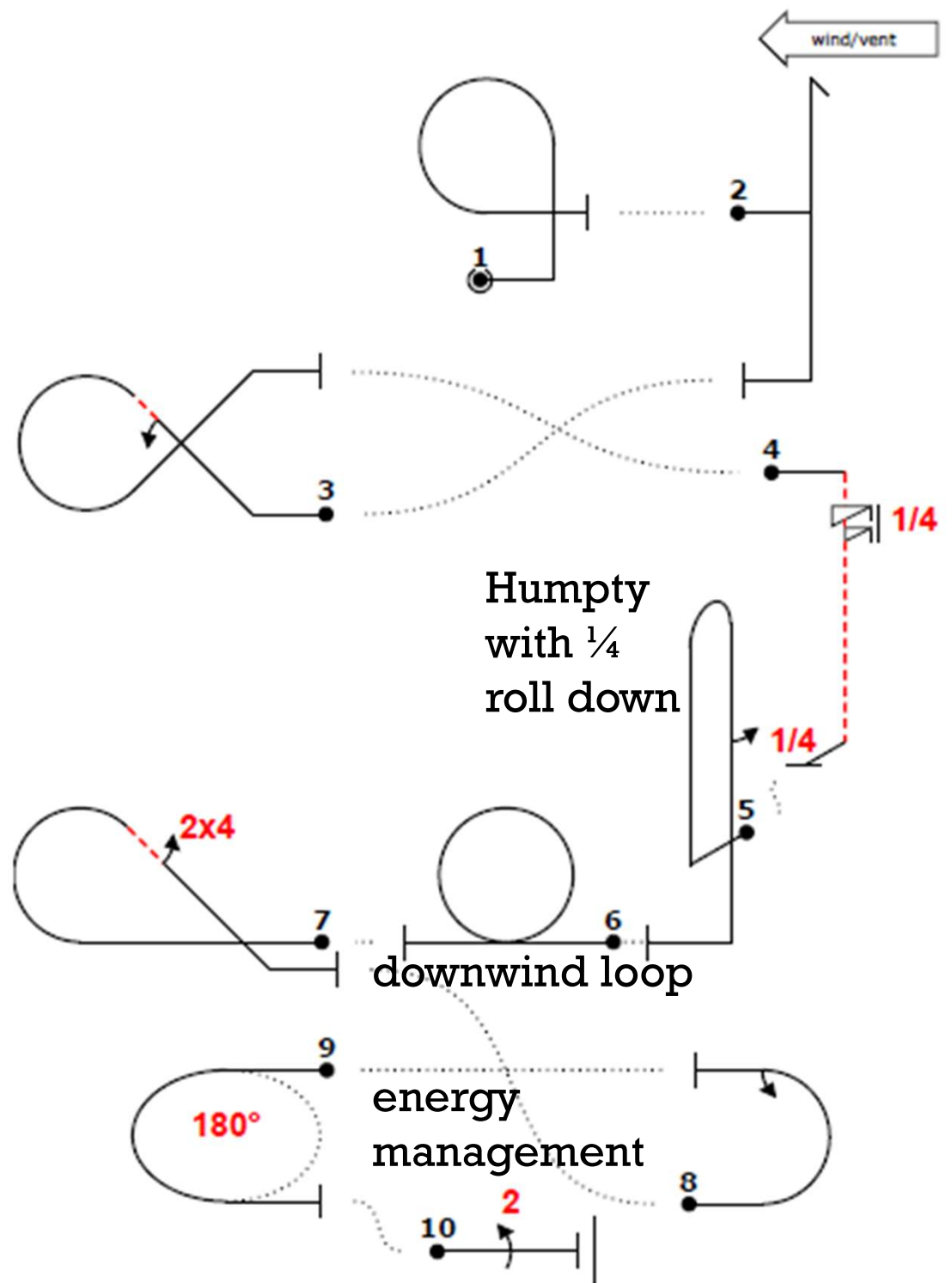
NB: square corners are
flown as a normal radius

GRADUATE SEQUENCE 2024

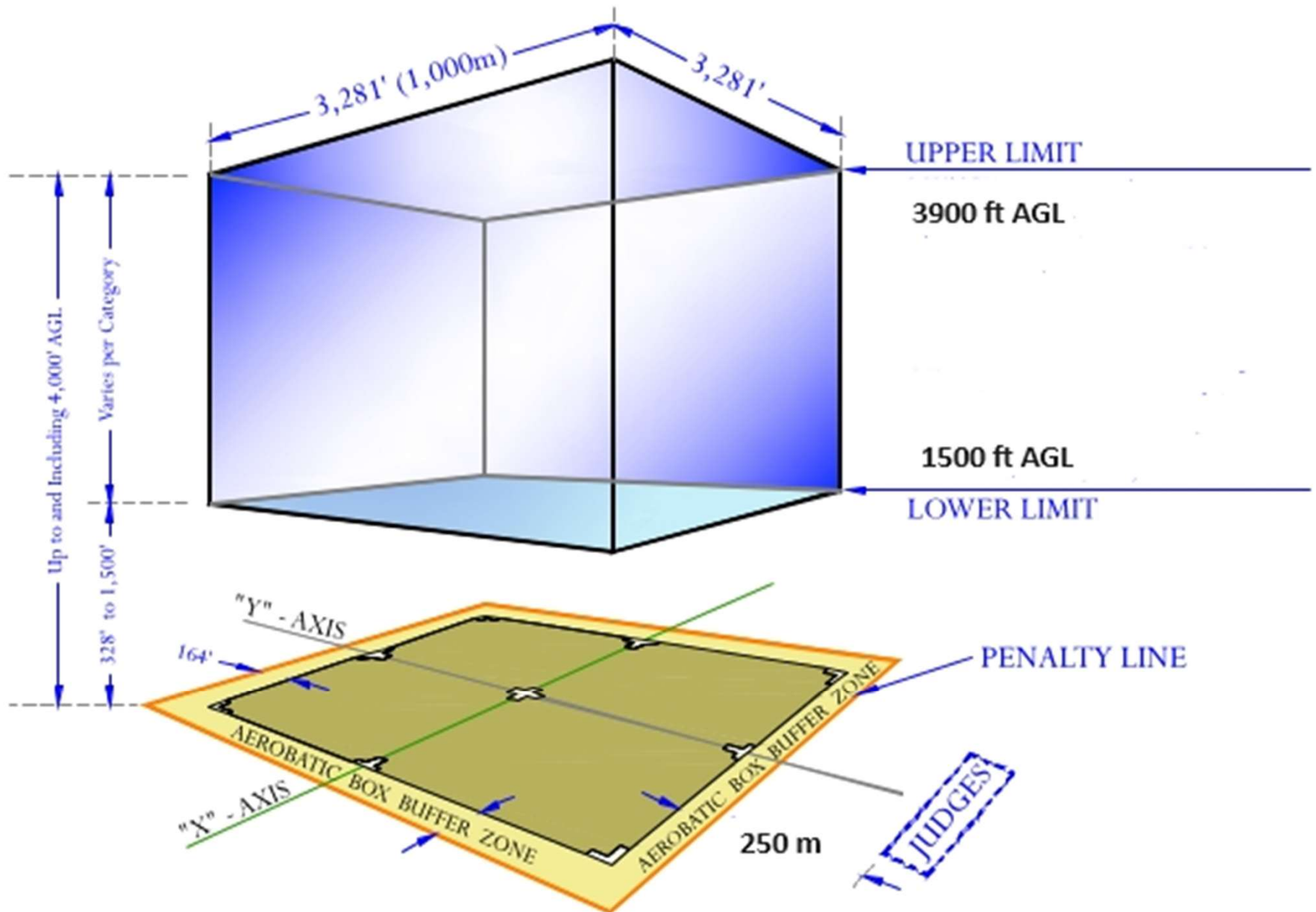


A large red speech bubble graphic with a white outline, pointing downwards. Inside the bubble, the text "SPORTSMAN SEQUENCE 2024" is written in white, bold, sans-serif capital letters. The background of the entire image is a light blue and white striped pattern, resembling a notebook cover.

SPORTSMAN
SEQUENCE
2024

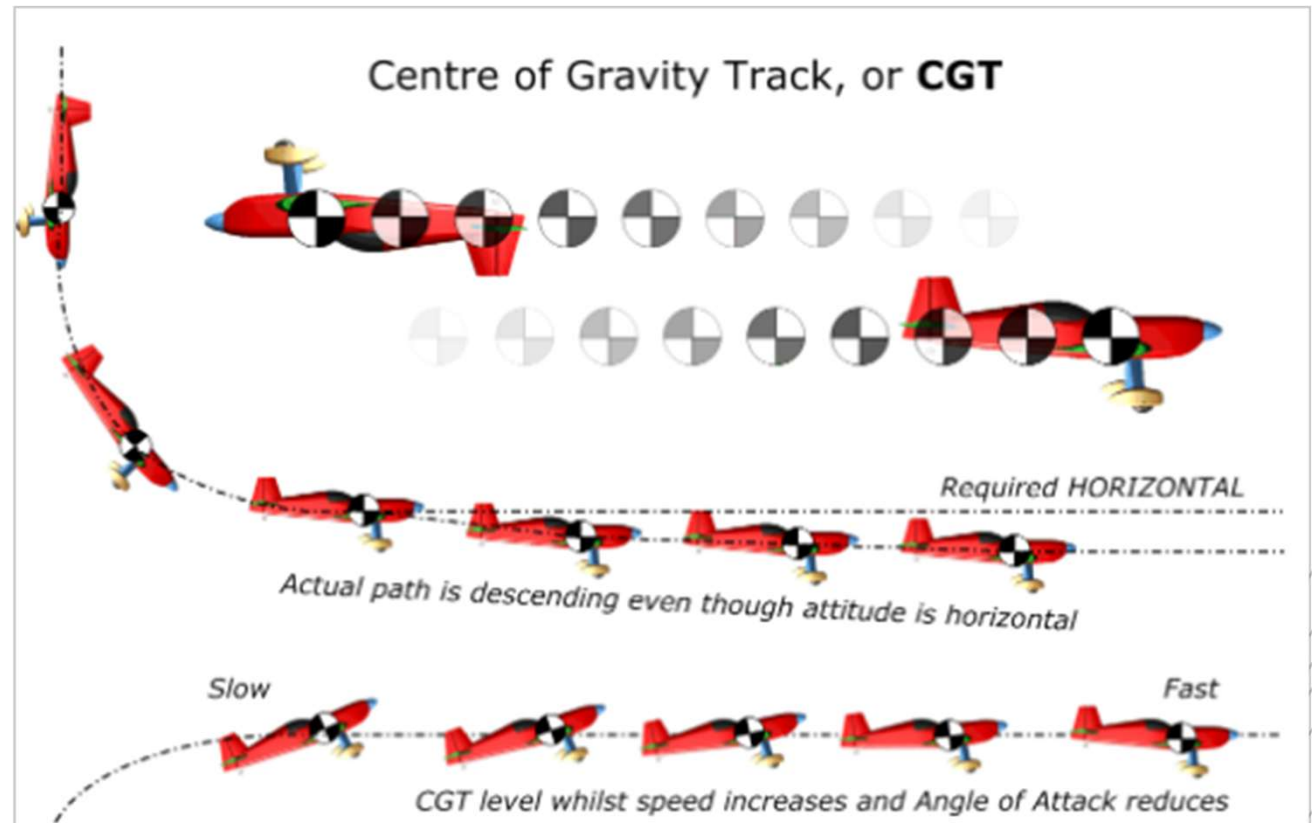


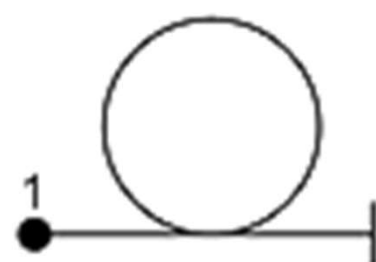
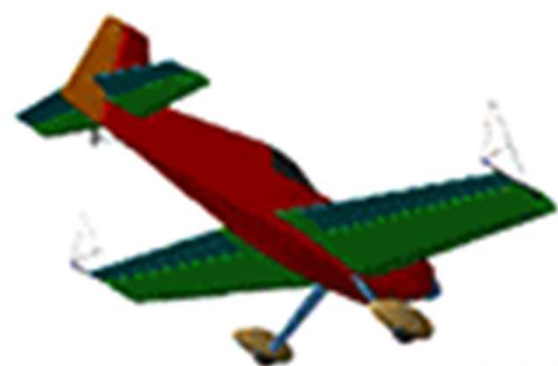
THE AEROBATIC BOX



Judging Criteria

- Figures must start and end in erect or inverted level flight on the "X" or "Y" axis. Powered aircraft must fly with a perfectly horizontal **CGT**





Aresti symbol
Cat No. 7.4.1.1
Erect positive loop



Slow
CGT

*Full and part loops
are all judged on CGT
and the shape must be
wind corrected, ie. all
looping elements
are ROUND!*



CGT



Fast

CGT



Fast

SuperD Optimal Loop Entry Speed? (Aerobatic Exploder 29/10/22)

AFM entry speed is 140mph. Usually in contests you are coming out of something else, so 150-160 mph is more realistic. Faster than that is completely unnecessary, as is more than 4G.

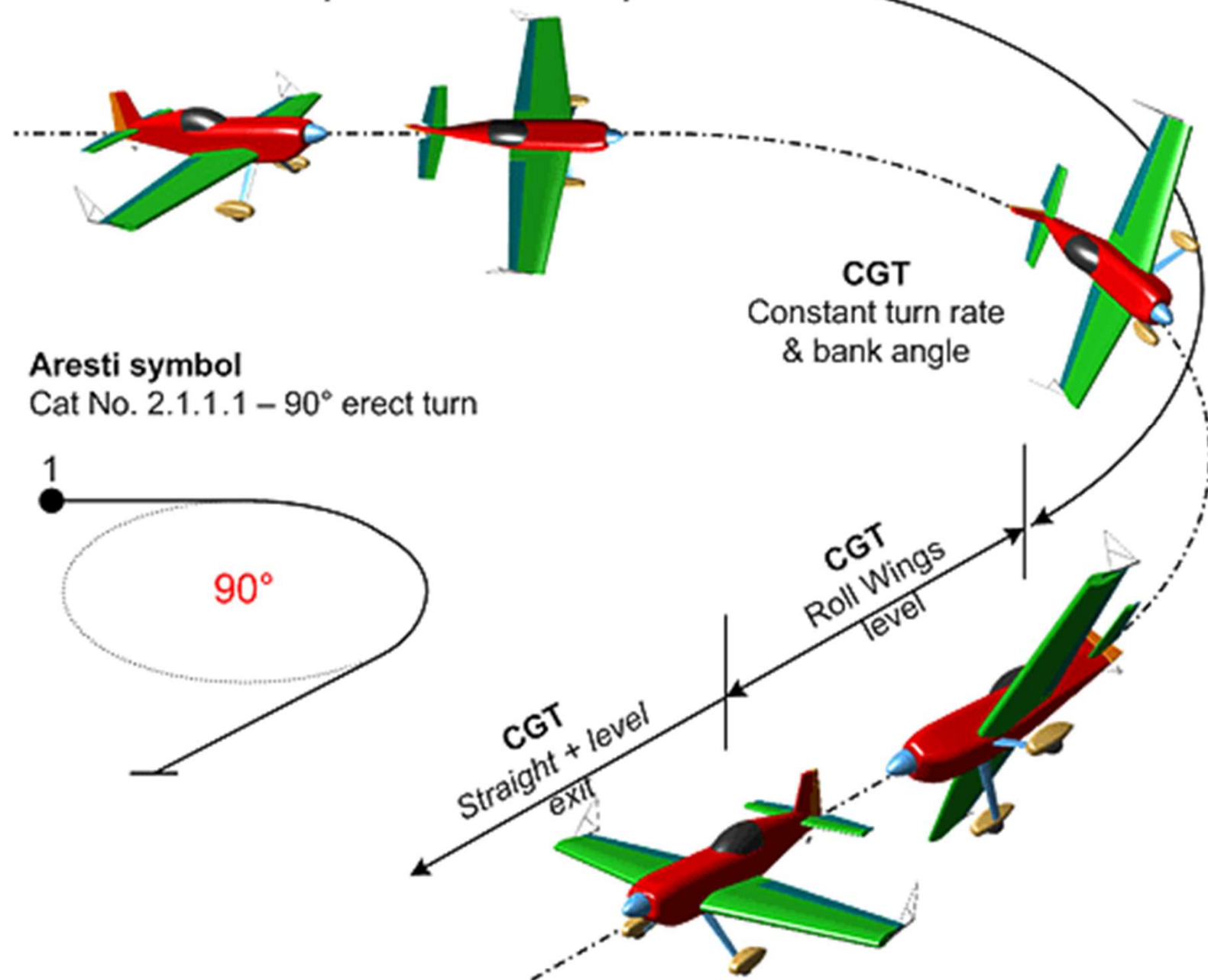
Pull to 4G, then continue to tighten gradually as you slow down and go through vertical. When you get to the Key Point, which is 30 degrees past vertical, start easing off. Going over the top you should be at almost neutral stick and floating at about 1/2G. Hard part for me has always been timing the start of the pull in the 3rd quadrant. Let it float and drop on it's own til you are about 45 degrees down, then gradually tighten up to pull through vertical. You should be at 4G when you are at 45 degrees down on the 4th quadrant. Ease off slightly on the last 8th of the loop to keep the pull at 4G and exit at the same speed and altitude you entered at. When you feel a bump as you finish from flying through your own prop wash, you'll know you have it nailed.

TBH most folks get wrapped up around theoretically perfect round loops, but the judges can't see it that well, especially if your positioning is bad. If you are over the near boundary and they are craning their necks to look straight up at you, it's going to be ugly no matter what. OTOH if you initiate when centered up on the judges, at about 2000 AGL and in the far half of the box, it will look pretty good even if not perfect geometrically.

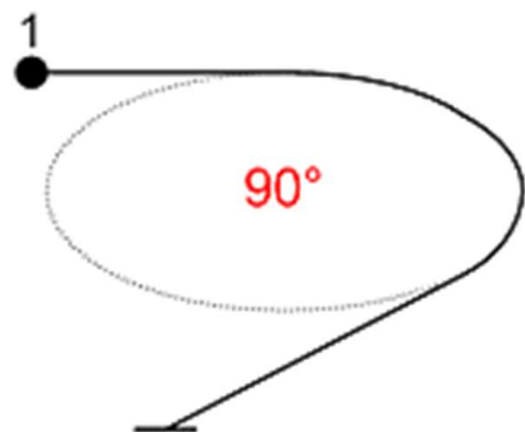
CGT
Straight + level

CGT
Roll 60° min

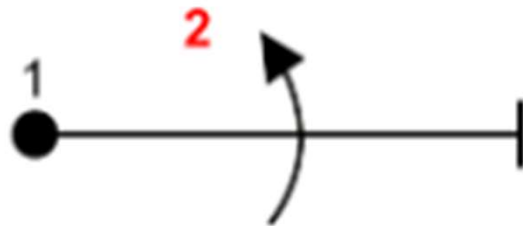
*Briskly initiate
turn here*



Aresti symbol
Cat No. 2.1.1.1 – 90° erect turn



Rolls

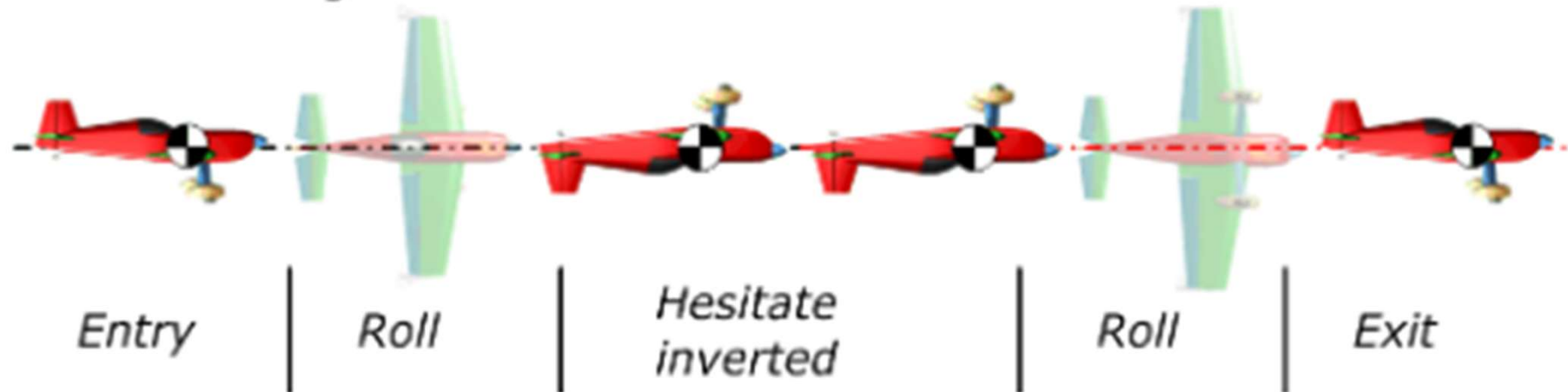


Aresti symbol

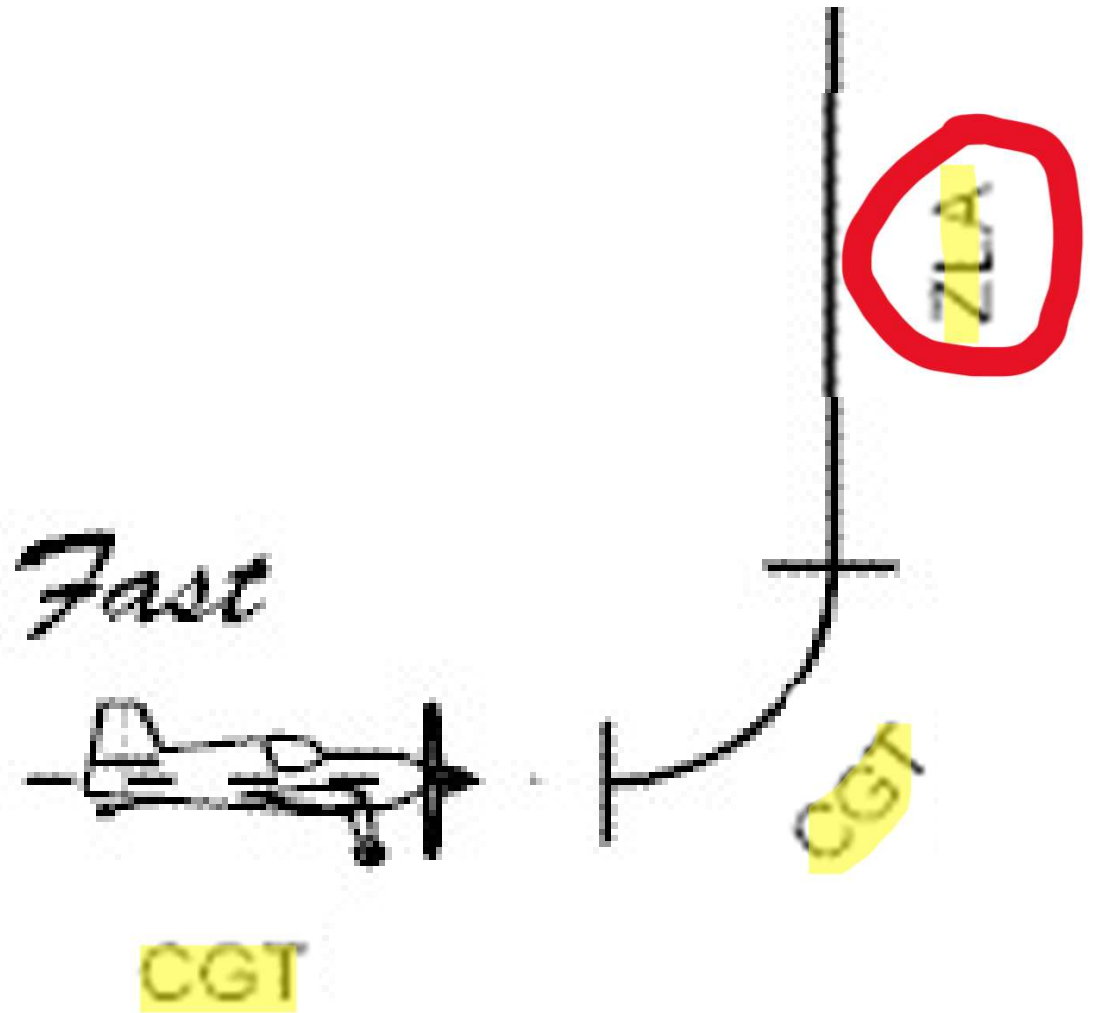
1.1.1.1 - Erect horizontal line

9.2.3.4 - Two point 360° Slow Roll

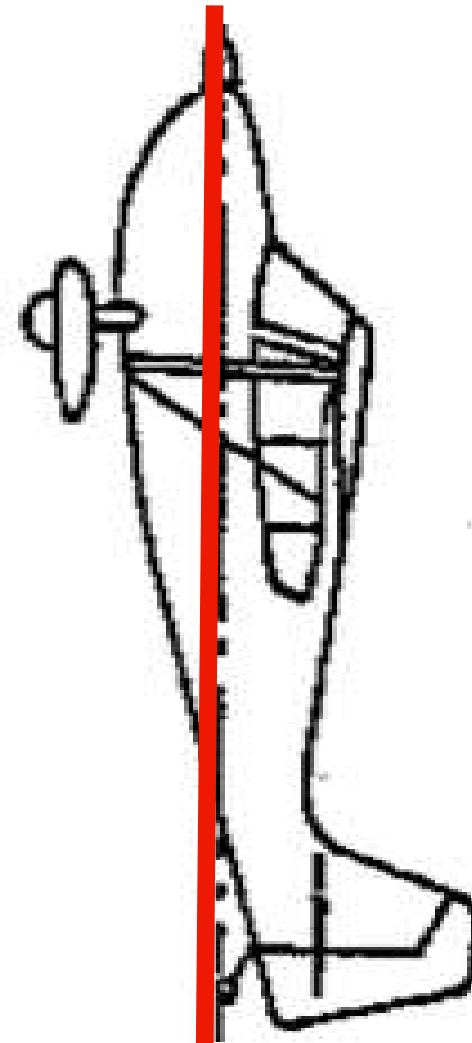
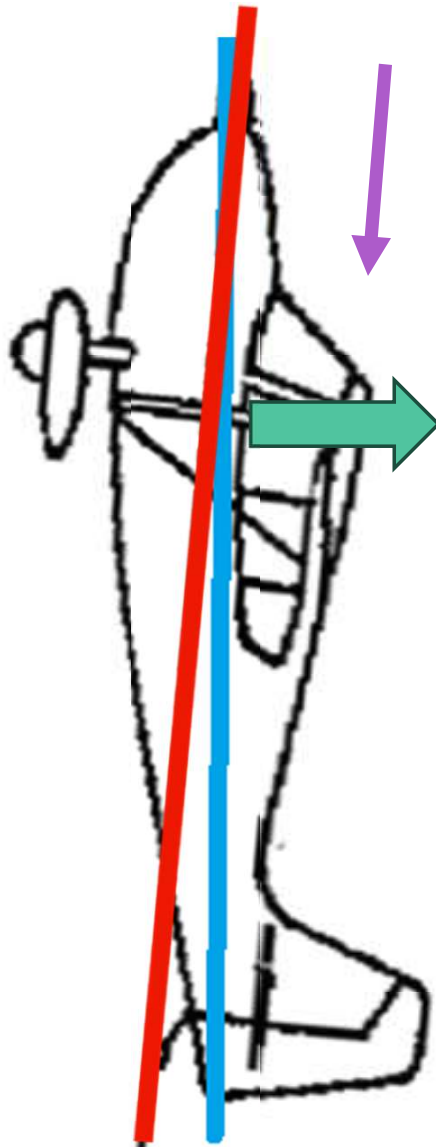
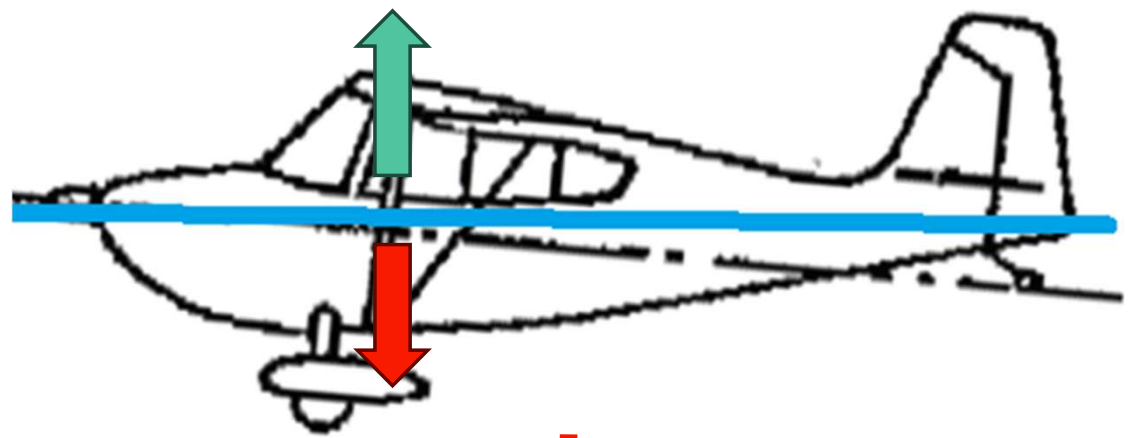
CGT *throughout*

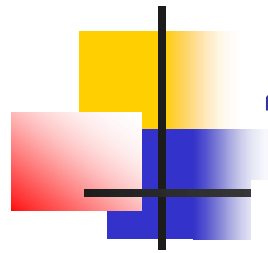


Vertical Lines

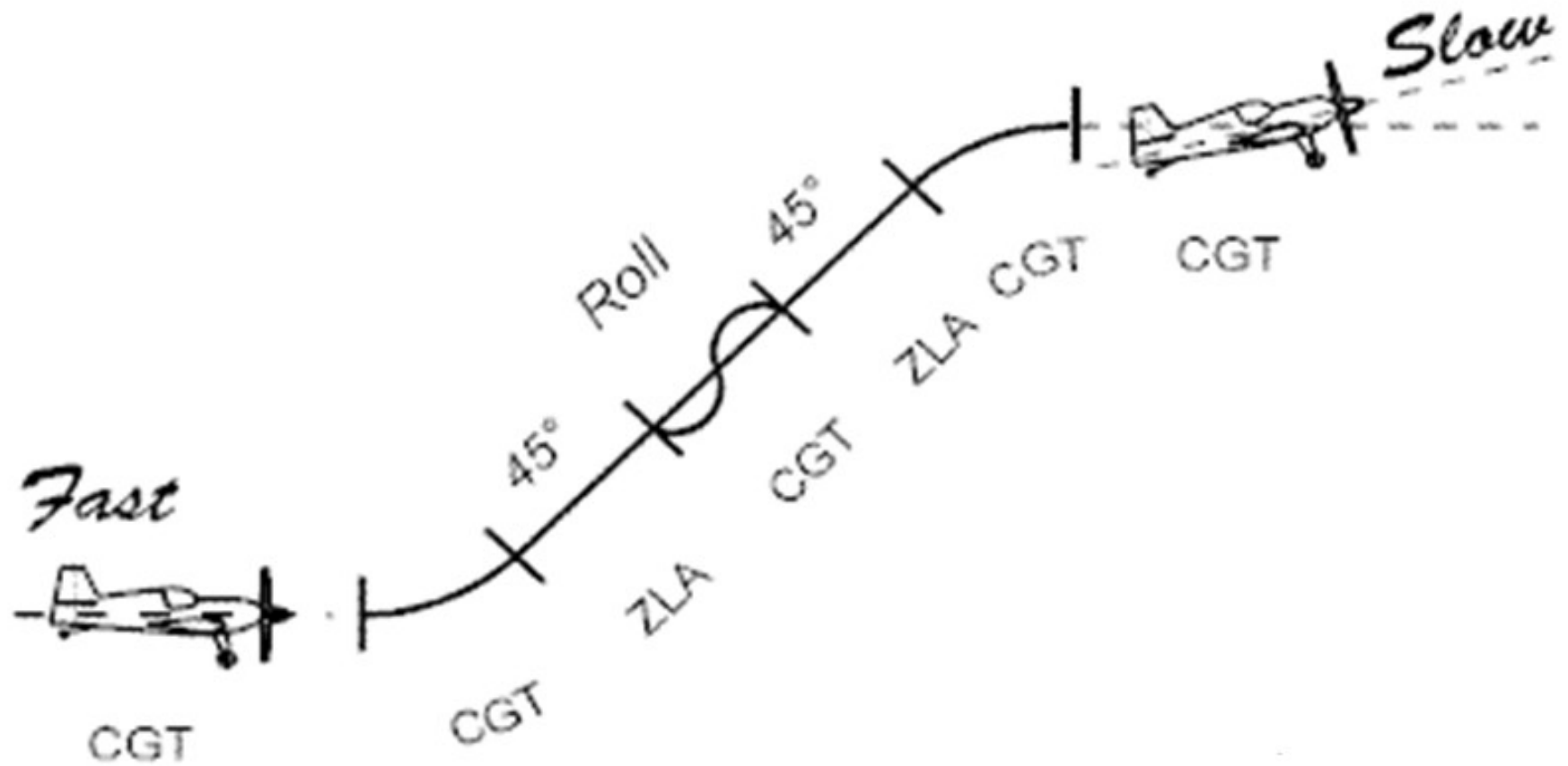


Zero Lift Axis





45° Lines



Marking the figures - the basic rules

- Start with a perfect 10 – deduct errors seen to nearest $\frac{1}{2}$ point
- Every 5° off is 1 point
- Score is multiplied by the K factor (difficulty)
 - eg Loop K = 10 so 100 points
 - Hammerhead K = 17

Marking the figures - the basic rules

- Zero for:
 - Exceeding 90° off line
 - Wrong way on x axis
 - Wrong figure

General – IMPORTANT RULES

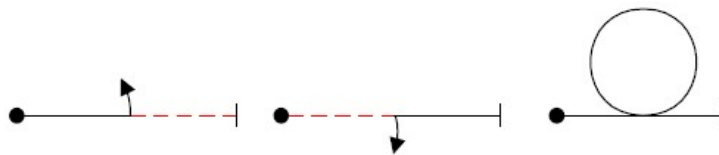
- **No Official Practice flights will normally be allowed** once the contest has commenced
- A competitor must signal **the start and finish of each sequence**, and any interruption, by **distinctly dipping the wing three (3) times** immediately one after the other by more than 45°. For the sake of clarity, “immediately” is defined as within 3 seconds of the previous wing dip.

General – IMPORTANT RULES

- For all Sportsman, Graduate and Entry programmes **the time limit will be 10 minutes**. For timing purposes the program is deemed to start on the return of the wings to level after the wing rock; and is deemed to finish on their return to level after the third of the final wing rocks
- A competitor will be given **penalty points** if he or she interrupts his or her program. **Interruptions** will be signalled by the competitor by **dipping the wing three (3) times** immediately one after the other.

General – IMPORTANT RULES

- Before signalling (wing rocks) the start of a competition flight in all programmes, it is recommended that pilots perform the **following safety figures.**
- optional but, if flown, may only be flown once, in any order, and continuously on the same axis. **They must be flown inside the performance zone.**



Practice:
Box entry
Loop
Two point roll

General – IMPORTANT RULES

- **Low altitude – stay well away from the limit!**
- **Don't fly behind the judges!**
- **PRESENTATION TO THE JUDGES IS IMPORTANT**

If you can see the judges they can see you and vice versa.

Judges want to clearly see the shape of each figure so

ONLY FLY IN THE HALF OF THE BOX AWAY FROM THE JUDGES

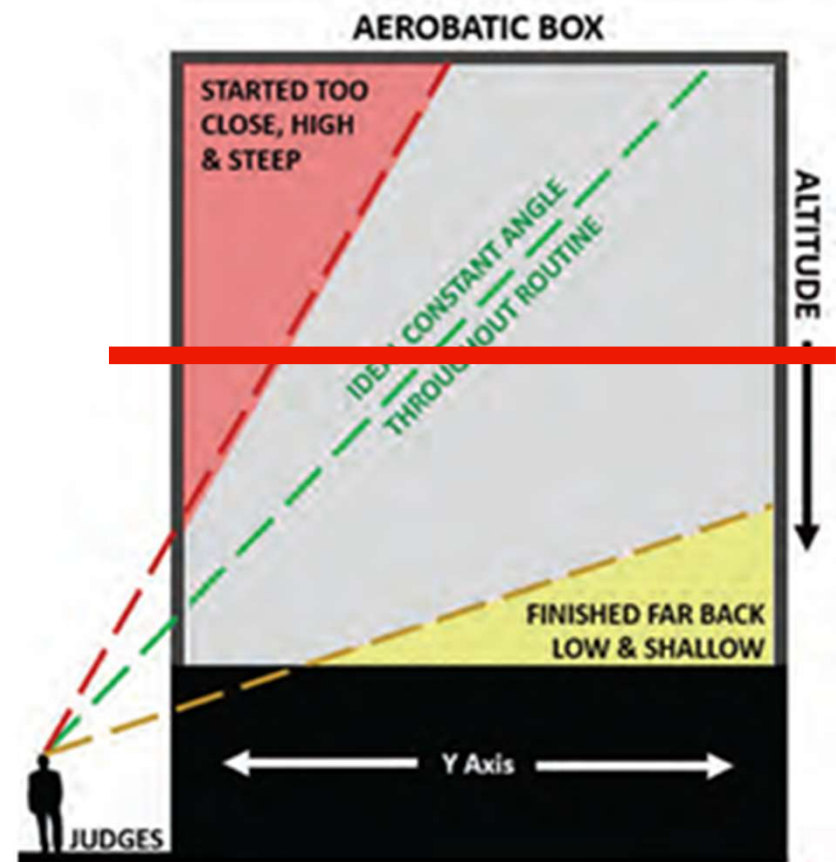


Illustration 1 - Angle to fly for judges' best view is indicated by the green line.

Graduate – IMPORTANT RULES

- **Fly the Known sequence three times**
- Competitors in Entry and Graduate category will receive **automatic approval to compete with a 3000' aerobatic endorsement**, rather than the required 1500' aerobatic endorsement.
- **A Safety Pilot may be used by those pilots lacking a 1500ft Aerobatic Endorsement** in Graduate category otherwise they must fly the sequence not below 3000ft AGL.

Graduate – IMPORTANT RULES

- Upper limit 3,900 ft; lower limit 1,500 ft
 - High altitude infringement – NIL
 - Low altitude infringement – 100 points up to 200 ft lower then zero!
- Programme Interruption – 10 points - cheap

Sportsman – IMPORTANT RULES

- **Fly three sequences:**
 - Known
 - Free (or repeat Known)
 - 12 figures max; same max K as the Known
 - more practice time but can earn an extra 10% points
 - Unknown – so practice typical figures
- **A Safety Pilot may be used by those pilots lacking a 1500ft Aerobatic Endorsement otherwise they must fly the sequence not below 3000ft AGL**
 - The competitor shall apply in writing to the Contest Jury before the use of a safety pilot shall be approved.

Sportsman – IMPORTANT RULES

- Sportsman Pilots flying with a safety pilot at an Australian Aerobatic Championship will be classified as “Hors Concourse” - not ranked or eligible for any awards or medals.
- **Upper limit 3,900 ft; lower limit 1,500 ft**
 - High altitude infringement – 10 points
 - Low altitude infringement – 100 points up to **200 ft lower then zero!**
A Super Decathlon is a lot bigger than a Pitts S-1 so stay above 1800 ft!
- Programme Interruption – 20 points – compare with a loop -100 points maximum

A large red speech bubble graphic with a white border, pointing downwards. It contains the text 'Present to the Judges' in white.

Present to the
Judges

- Forget the box, fly for the judges
- Judging positions will change
- Wind variations
- Mark card – S or O
 - Same or Opposite
 - Plan which way to turn but
- Decide where to start the sequence

Actions Prior to Flight

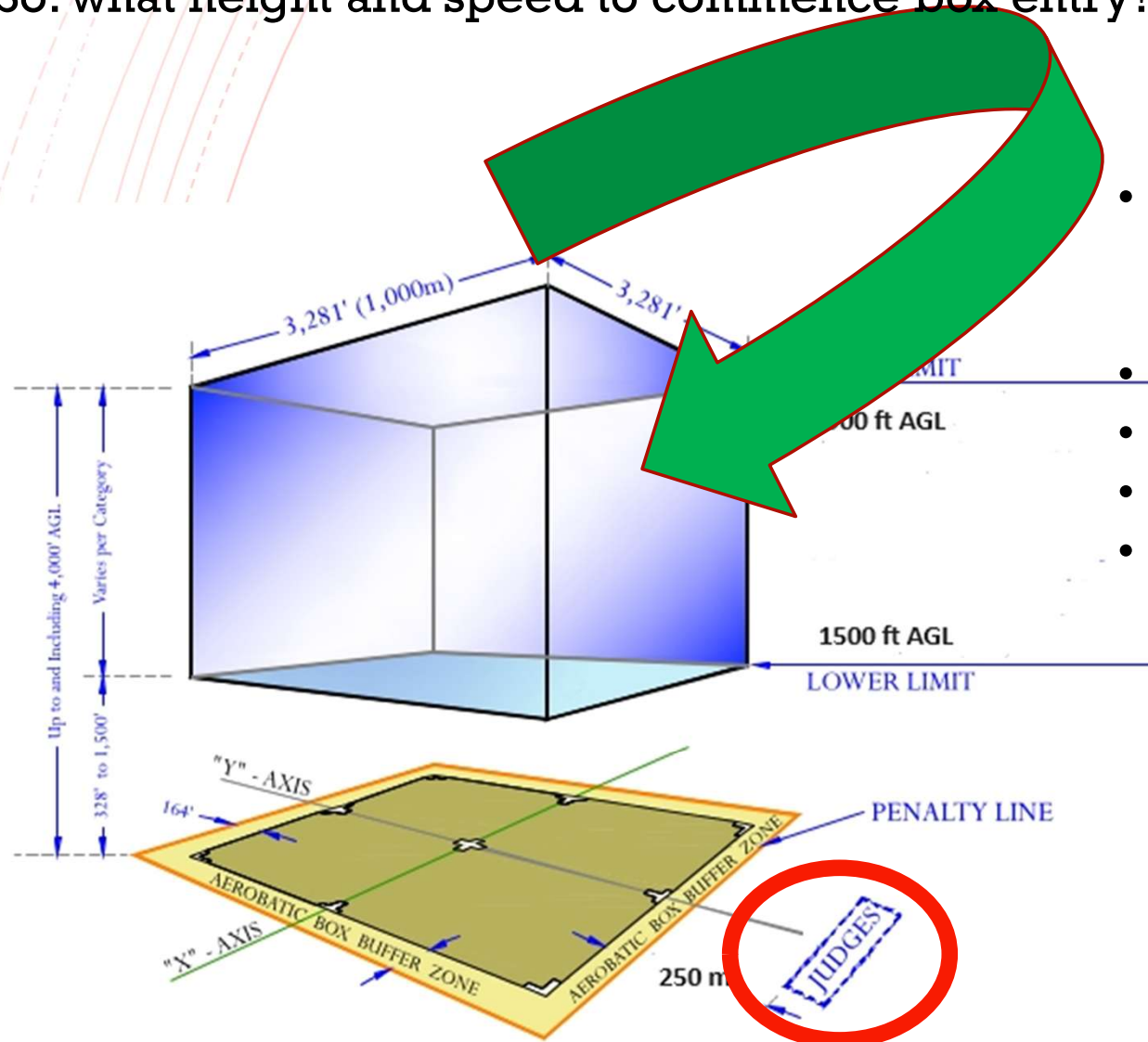
Sequence card
marked up
Blu Tack

- Walk through the sequence
 - Until you are sick of it
- Sit in the airplane:
 - Talk through the sequence
 - Where to look

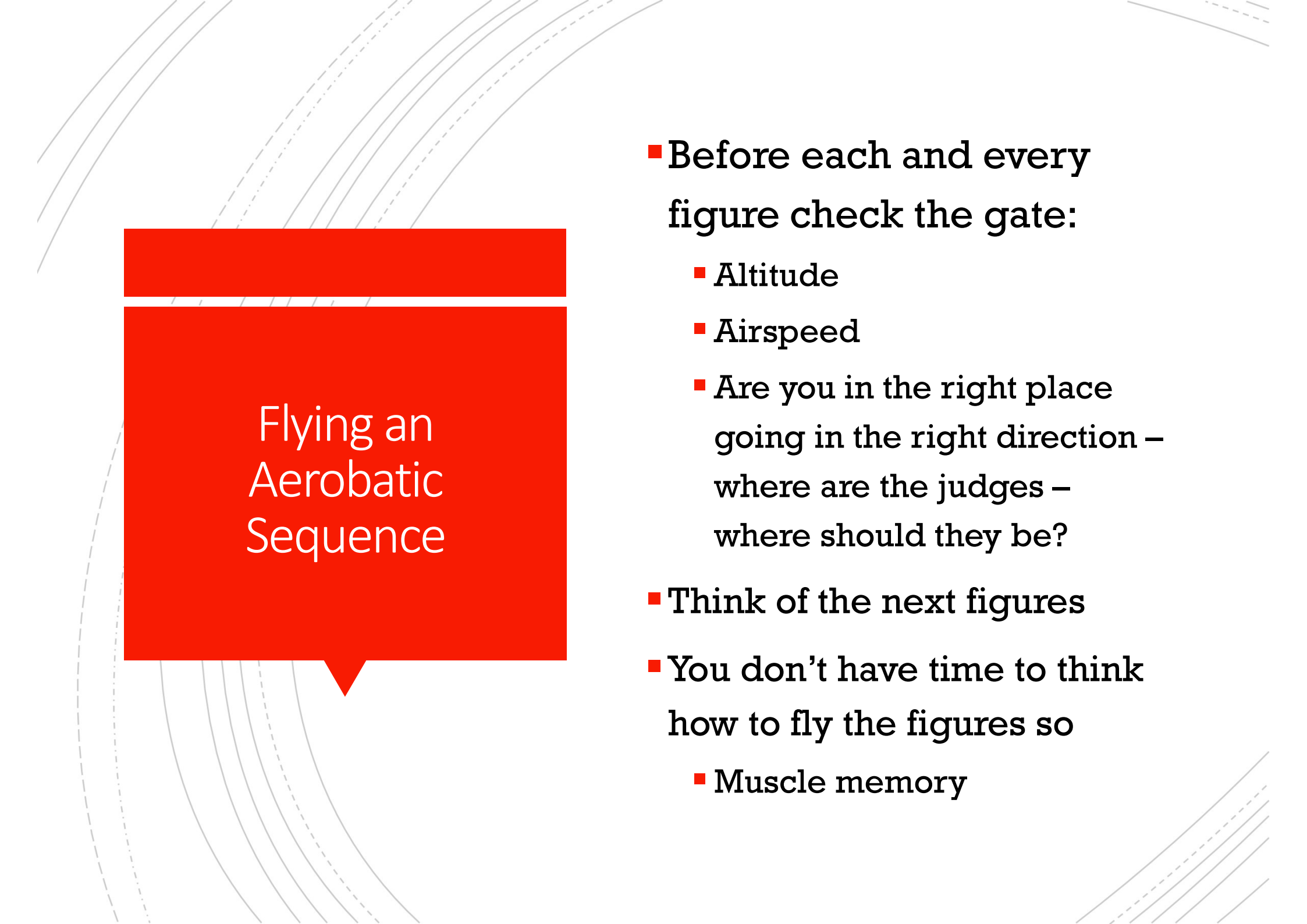


ENTERING THE BOX

- Approach from the holding area unless flying the box lower boundaries
- Fly the safety check manoeuvres in the box – use as practice
- Where to start #1, what height and speed?
- So: what height and speed to commence box entry?



- Long straight-in approaches are easy to misjudge!
- Stay close to the box
- Fly a “base leg”
- Wing dips
- Level - start

The background of the slide features several concentric, curved lines in a light gray color, creating a sense of motion or a stylized orbit. These lines are more prominent on the left side and fade towards the right.

Flying an Aerobatic Sequence

- Before each and every figure check the gate:
 - Altitude
 - Airspeed
 - Are you in the right place going in the right direction – where are the judges – where should they be?
- Think of the next figures
- You don't have time to think how to fly the figures so
 - Muscle memory

A red speech bubble graphic with a white border, containing the text 'FLY TO WIN' in white, bold, sans-serif capital letters. The bubble has a tail pointing downwards and to the right.

**FLY
TO
WIN**

- Fly for the judges
- Fly it like the practice
- Take a break – it is cheap!
- After aeros – forget and focus on rejoining circuit and landing



Swansea Free Programme 27 May 2000

Flight No.

Not a valid
A Competition
1/5

Intermediate Free

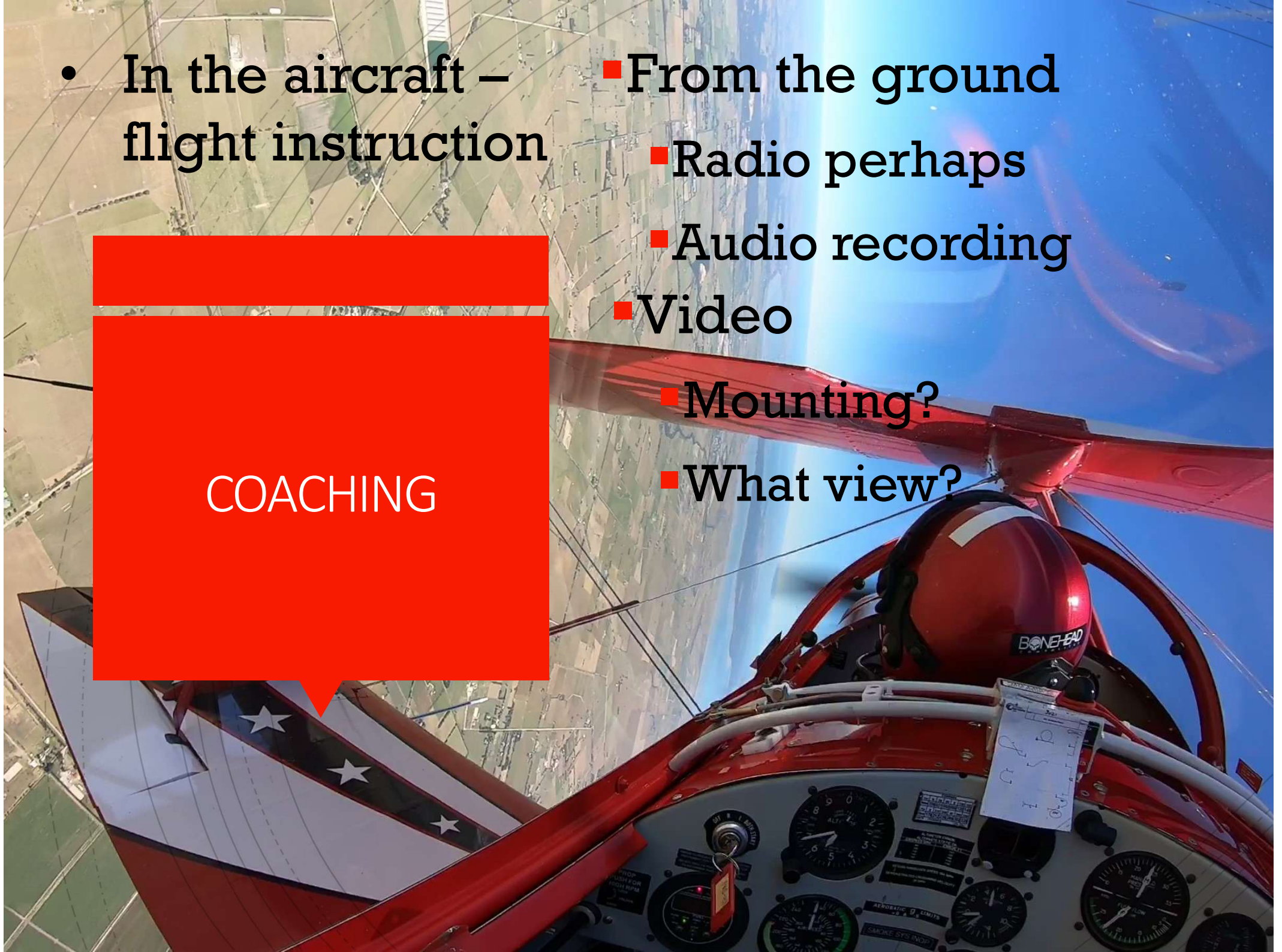
Form A

No	Symbol	Catalogue No.	K	Total K	Score	Remarks	No	Symbol	Catalogue No.	K	Total K	Score	Remarks
1	N	1.3.1	22	22	5.5	Very +ve up	13						
2	1.3.1	1.3.1	18	18	7.5	Over 20°	14						
3	1.3.1	1.3.1	15	15	7.0	Faster 2nd	15						
4	1.3.1	1.3.1	11	11	8.0	Quite nice	16						
5	1.3.1	1.3.1	20	20	7.3	No hesitation!	17						
6	1.3.1	1.3.1	15	15	4.5	70°	18						
7	1.3.1	1.3.1	10	10	7.0	OK	160	190	Framing	30	7.0	Upwind a bit	
8	1.3.1	1.3.1	13	13	9.0	Good	TOTAL SCORED			Judge's Details			
9	1.3.1	1.3.1	11	11	3.5	70° & 110°	PENALTIES	Interruptions				Signature A Judge!	
10	1.3.1	1.3.1	6	6	8.0	OK		Insertions					
								Too high					
								Too low					
								Outs					
11	1.3.1	1.3.1	19	19	7.5	Shallow 45°	T/O time	Other				Name	
								Disqual Flg #				A Judge!	
12							End time	Total penalties				Number	
								FINAL TOTAL				4	

- In the aircraft – flight instruction

COACHING

- From the ground
 - Radio perhaps
 - Audio recording
 - Video
 - Mounting?
 - What view?

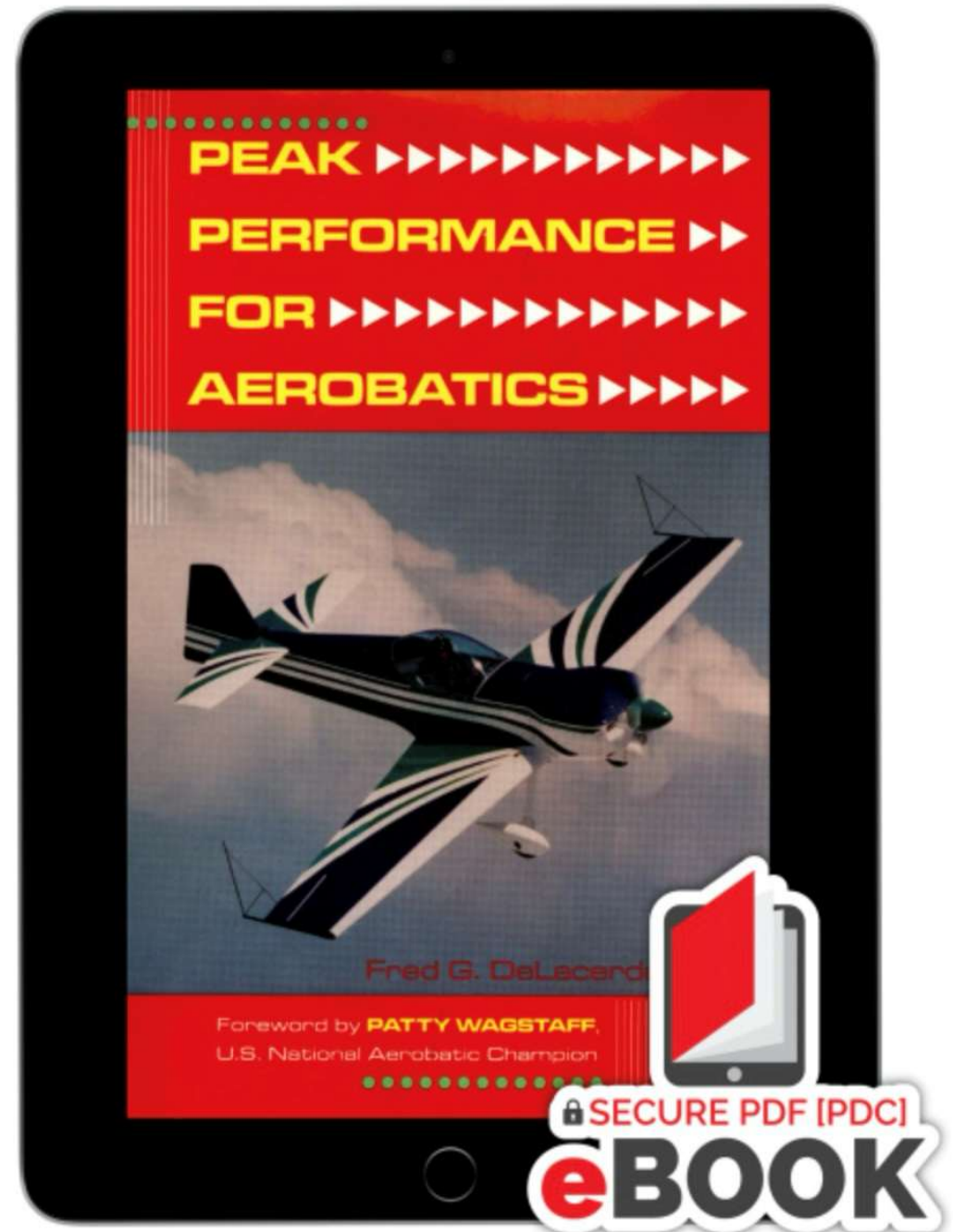




What's What at the Contest?

- Registration – upload documents prior
- Practice/coaching in days prior
- Local landmarks and “the box”
 - Runways
 - Town and river
- Daily Briefing
 - for your safety
 - including practice days
- Jobs – penciller ...

Winning Tips



QUESTIONS?

Save this date in your calendar:

International Aerobatics Day June 22, 2024

Saturday, June 22, 2024 - Celebrate Aerobatics!



International Aerobatics Day will be held on the fourth Saturday of June. Mark your calendars and reserve June 22 for a worldwide celebration of aerobatic flight!

There will be a wide variety of events including practice days, competitions, barbecues, community gatherings, static displays of aerobatic aircraft and seminars.

The International Aerobatic Club exists to promote the safety and enjoyment of this great sport.

Ozaeros will have an event at Moorabbin.