

# The South African Model Aircraft Association



# Standard Operating Procedure

**Turbine Jet Proficient**

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## 1. Introduction

- 1.1 The emphasis of the SAMAA Turbine Jet Proficiency is on the safe operation of turbine powered fixed wing aircraft. Both safe turbine operation and safe flying skills are required to qualify for this proficiency.
- 1.2 An individual **does not** have to be a SAMJA member to obtain his and retain his proficiency rating.
- 1.3 Any member who wishes to be tested for his proficiency must do so more than five days before the event. No proficiency shall be issued within five days of an event.
- 1.4 The purpose of the flight test is for the turbine applicant to demonstrate his/her skills, knowledge, and understanding of how to safely operate and fly a turbine model aircraft.
- 1.5 The SAMAA Turbine Jet Proficiency can be acquired in two ways:
- Firstly, by the applicant passing a formal test.
  - Secondly, by the applicant citing an official SAMJA-run contest where the candidate realised a flight score of 60% or more in the basic / scale sport jet class. The onus is on the candidate to submit a copy of the published results of the contest which is cited (within 6 months).
- 1.6 The examination of proficiency must be conducted by SAMAA approved qualified judges. At a minimum, the two judges elected must have the following proficiency, of which one must always have a Turbine Jet proficiency.
- SAMAA Turbine Jet Proficiency.
  - SAMAA Gold Fixed Wing Proficiency.
- 1.7 To operate a fixed wing turbine aircraft at any SAMAA established flying site (club) in South Africa, the following minimum proficiency requirements apply:
- Under Training (Obtaining Jet Proficiency):  
The pilot must hold a SAMAA Silver Fixed Wing rating and operate under the direct supervision of a SAMAA Turbine rated Pilot.
  - Solo Operation:  
The pilot must hold a SAMAA Silver Fixed Wing rating and have obtained SAMAA Turbine proficiency.
- 1.8 To operate a fixed wing turbine aircraft at any SAMAA established flying site in South Africa during a club organised “*fly-in*” or a “*fly-in*” at either your home club or away from your home club, where members of the public will not be present as spectators, the following minimum proficiency requirements are required:
- SAMAA Silver Fixed Wing rating; and
  - SAMAA Turbine Jet Proficiency
- 1.9 To operate a fixed wing turbine aircraft during an “*airshow*” or “*public*” display”, at any SAMAA established flying site in South Africa, or an event at a non-registered (but temporary- approved) field in the presence of spectators, the following minimum proficiency requirements are required:
- SAMAA Gold Fixed Wing rating; and
  - SAMAA Turbine Jet Proficiency
- 1.10 To operate a fixed wing turbine aircraft during a full-size airshow (if invited), the following minimum proficiency requirements are required:
- SAMAA Fixed Wing Instructor or Airshow Display rating; and
  - SAMAA Turbine Jet Proficiency
- 1.11 To compete at any SAMJA competitions (F3S, F4J and any National Team selection event) at any SAMAA established flying site in South Africa, the following minimum proficiency requirements are

required:

- a) SAMAA Silver Fixed Wing Proficiency; and
- b) SAMAA Turbine Jet Proficiency

1.12 The above only affects turbine activities and not Electric Ducted Fans.

1.13 Pilots with SAMAA Turbine Jet proficiency qualifications must be aware that a lapse of three years in SAMAA membership will automatically cancel the SAMAA Turbine Jet Proficiency.

1.14 Turbine Jet Instructor Judge - After a pilot has obtained his Turbine Jet proficiency, he could be appointed as a Turbine Jet Instructor Judge at the discretion of the SAMAA management committee, provided he fulfils the following criteria.

- a) Shall be a paid-up member of SAMAA and be in good standing with regards to previous payments.
- b) Shall have a minimum of five years' involvement in Turbine Jet model flying.
- c) Shall be mature and shall be respected in the flying fraternity and at his club.

It is the decision of the SAMAA management committee as to how many judges are appointed in a region, and instructor judges shall only be appointed when the need arises, with no limit of the number of instructor judges in a region/club.

An application shall be made in writing to the SAMAA office, and must be properly motivated, endorsed by the applicant's club chairman and another club committee member. This application is tabled at a SAMAA management committee meeting, for approval of the appointment.

This instructor judge status may be revoked by the SAMAA management, if the appointee becomes inactive, irresponsible, or does not perform the duties and responsibilities. The appointment is one of responsibility, and service to the aeromodelling community, and must not be seen as a status symbol or a personal achievement.

**SEE BELOW FOR SCORESHEET & DECLARATION**

2. Scoresheet



Proficiency test score sheet & Declaration  
**TURBINE JET PROFICIENCY**

NB. Please check SAMAA membership card, to validate membership

No.	Description/name of manoeuvre	Judge 1		Judge 2	
		Flight 1 (a)	Flight 2 (b)	Flight 1 (c)	Flight 2 (d)
	Pre-flight check of aircraft and radio, and five questions answered. (tick only) ✓				
1	Take-off into wind				
2	Straight and level flight (5 seconds)				
3	Horizontal figure 8				
4	Inverted flight (3 seconds)				
5	One loop				
6	Cuban 8, 1/2 rolls on center				
7	Split S				
8	High speed pass (minimum of 20meters away from the runway not lower than 3 meters)				
9	Landing approach				
10	Landing				
Total score for Judge 1 and Judge 2					
Passing percentage is... 60%		60%			
If less than a score of four (4) is achieved for any manoeuvre, the attempt is deemed a failure.					

Please complete the following information, to be captured/verified on the SAMAA database.

Date of test .....

Test location .....

Pilot's name .....

Pilot's home club .....

Pilot's SAMAA no. ....

Expiry date of membership .....

Pilot's cellphone no. ....

e-mail address .....

Pilot's signature .....

### 3. Declaration

#### Judges Declaration:

##### Judge 1:

I, \_\_\_\_\_, am currently a SAMAA Turbine Jet Qualified Judge / Instructor / Contest Director / experienced Fixed Wing Gold pilot with the South African Model Aircraft Association.

##### Judge 2:

I, \_\_\_\_\_, am currently a SAMAA Turbine Jet Qualified Judge / Instructor / Contest Director / experienced Fixed Wing Gold pilot with the South African Model Aircraft Association.

We, the judges, hereby declare that \_\_\_\_\_ has successfully demonstrated and explained the required turbine ground and safety operations and has performed the turbine flight proficiency sequences as outlined in this document.

Judge 1 signature \_\_\_\_\_

Judge 2 signature \_\_\_\_\_

#### Turbine Jet Pilot Declaration:

I, \_\_\_\_\_ hereby declare that:

- a) I am currently a member in good standing with the South African Model Aircraft Association
- b) I have successfully completed the qualification test flight for turbine powered model aircraft under the supervision of two experienced turbine pilots, one of whom is a SAMAA Turbine Jet Qualified Judge / Instructor / Contest Director, their report which is appended to this document,

**Or**

- c) I have obtained a flight score of 60% or more in the Class Sport Jet (F3S) or Basic Jet at the SAMJA contest on the \_\_\_\_\_ (date), of which a copy of the official published results is appended to this application.


Pilot Signature \_\_\_\_\_

Application approved / rejected: \_\_\_\_\_

Judge signature \_\_\_\_\_

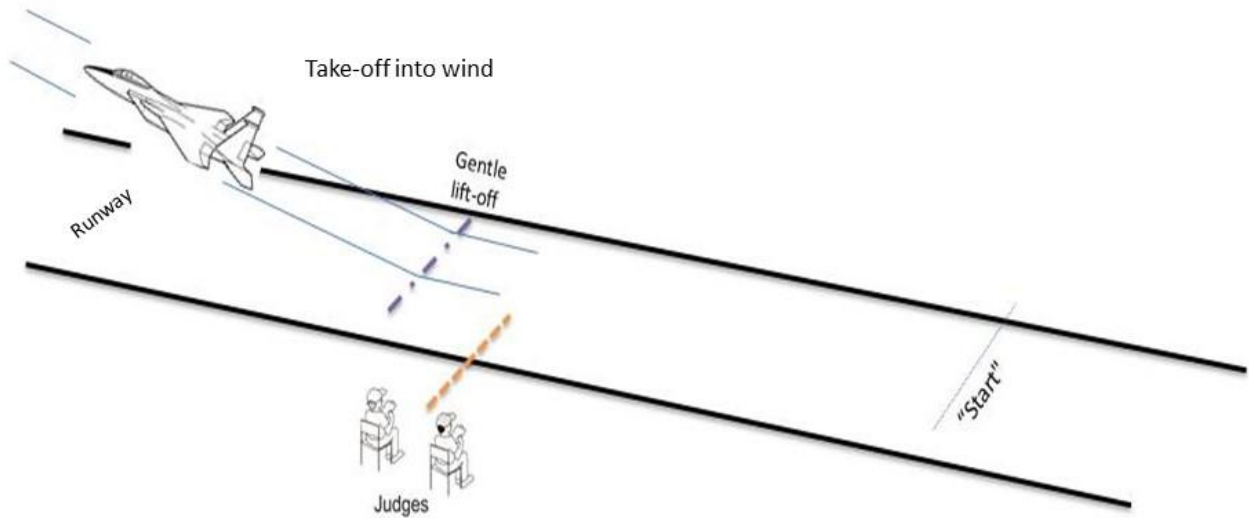
## 4. Flying Schedules

### Basic Sport Jet / Scale / Turbine Jet Proficiency Schedule

 - The purpose of the flight test is for the turbine jet applicant to demonstrate his/her skills, knowledge, and understanding of how to safely operate and fly a turbine model aircraft.

**1. Take-off** – The model shall take-off from the ground after the judge’s centreline into wind and climb away on a constant heading and climb angle for a duration of minimum five seconds. During this time the landing gear sequence has to be initiated.

*Downgrades:* •Model is touched after calling “now” (zero marks). •Model veers off runway direction on take-off. •Acceleration too rapid. •Climb-out track deviates.

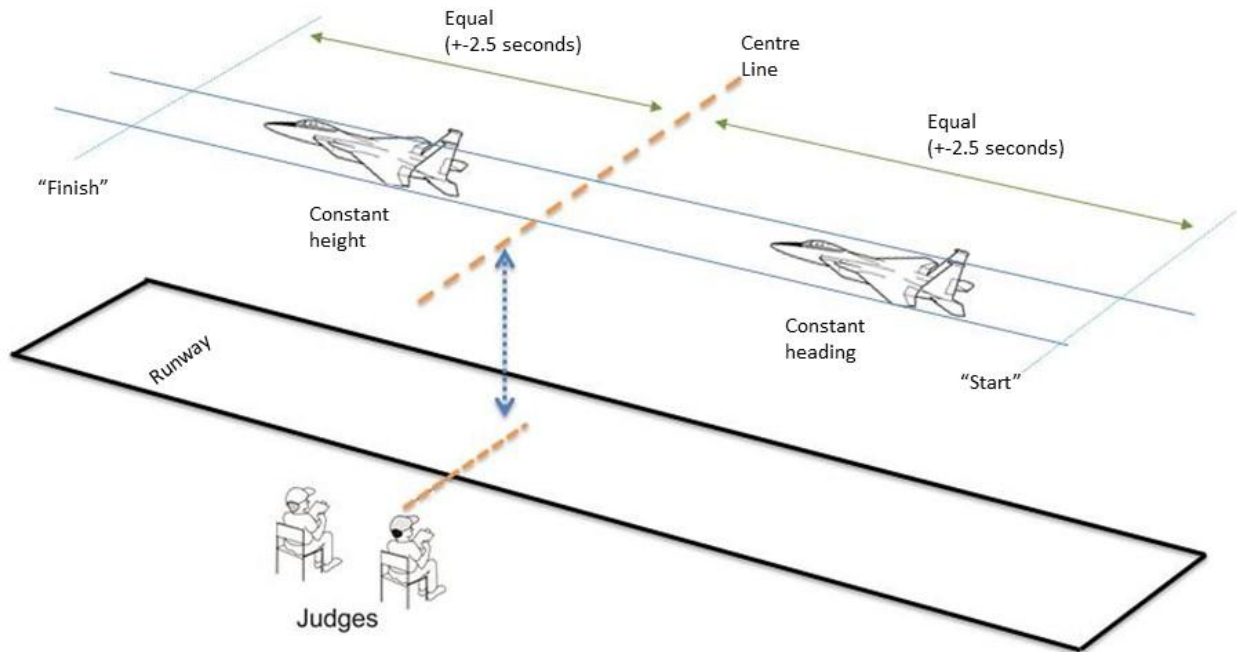


SEE BELOW – STRAIGHT & LEVEL FLIGHT

### Basic Sport Jet / Scale / Turbine Jet Proficiency Schedule

**2. Straight & Level Flight** – The model approaches in straight and level flight parallel to the runway centreline and at a constant height. The height must be kept constant and straight for a minimum of 5 seconds. The beginning and end of the manoeuvre must be spread in equal lengths on both sides of the centre line in front of the judges.

*Downgrades:* •Constant height not maintained. •Flight level direction not kept for 5 seconds. •Manoeuvre not centred on judges position. •Entry and exit path not parallel with judges line. •Model flight path not smooth and steady. •Manoeuvre too far away, too close, too high or too low.

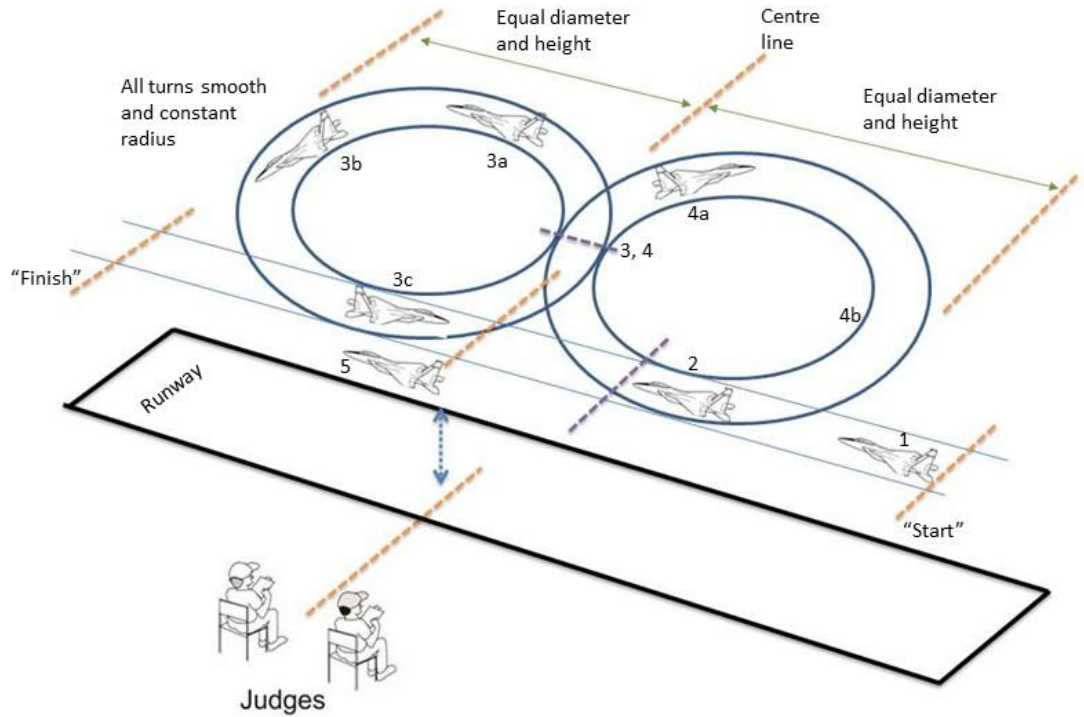


SEE BELOW – HORIZONTAL FIGURE OF EIGHT

### Basic Sport Jet / Scale / Turbine Jet Proficiency Schedule

**3. Horizontal Figure of Eight** – The model approaches in straight and level flight. (1), then makes (2) a one-quarter circle turn in a direction away from the judges, followed (3) by a 360 degree circle turn (3a, 3b, 3c) in the opposite direction. This is followed by (4) by a three-quarter-circle turn (4a, 4b) in the same direction as the first turn, completing a figure-of-eight, parallel to the runway centreline and at a constant height. The manoeuvre ends (5) on the same height and heading as the start, and should be centred on the judges centreline.

*Downgrades:* •Entry into first circle not at right angles to original flight path, •Circles are of unequal size, •Circles misshapen, •Constant height not maintained, •Intersection not centred on judges position, •Entry and exit path not parallel with judges line, •Model flight path not smooth and steady, •Manoeuvre too far away, too close, too high or too low.

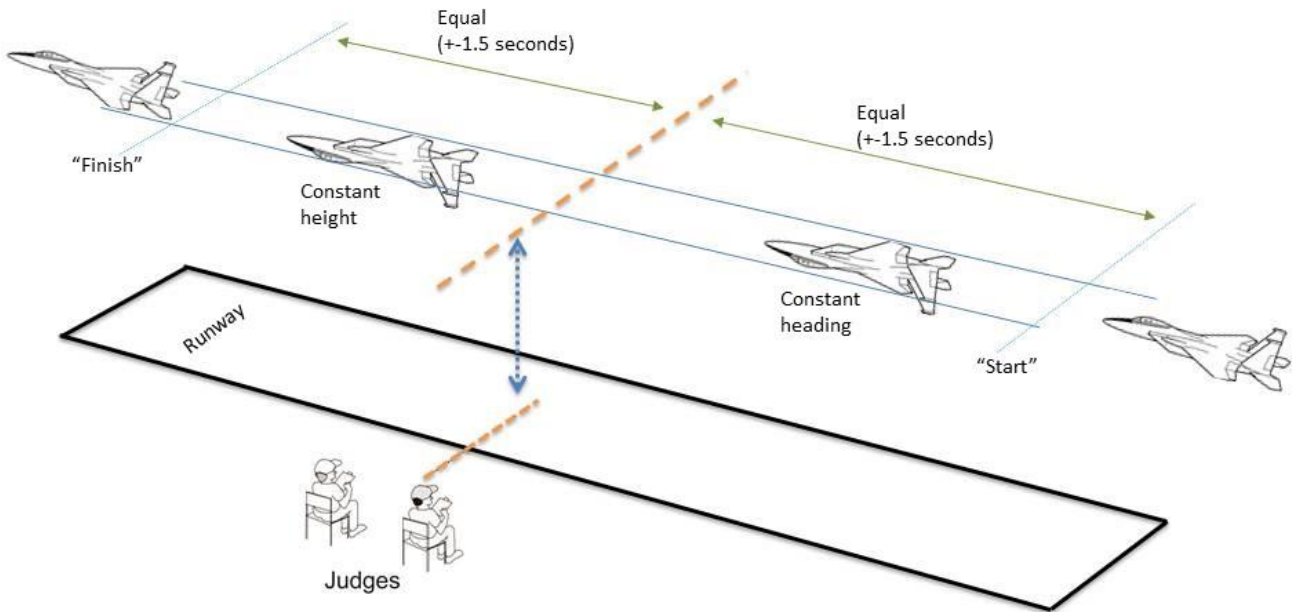


SEE BELOW – INVERTED STRAIGHT AND LEVEL FLIGHT

### Basic Sport Jet / Scale / Turbine Jet Proficiency Schedule

**4. Inverted Straight and Level flight** – The model approaches in straight and level flight parallel to the runway centreline and at a constant height. The model rolls into inverted flight path and flies inverted for a minimum of 3 seconds. The model rolls into an upright flight path. The beginning and end of the manoeuvre must be spread in equal lengths on both sides of the centre line in front of the judges

**Downgrades:** •Constant height not maintained, •Flight level and directions not kept for 3 seconds, •Manoeuvre not centred on judges position, •Entry and exit path not parallel with judges line, •Model flight path not smooth and steady, •Manoeuvre too far away, too close, too high or too low.

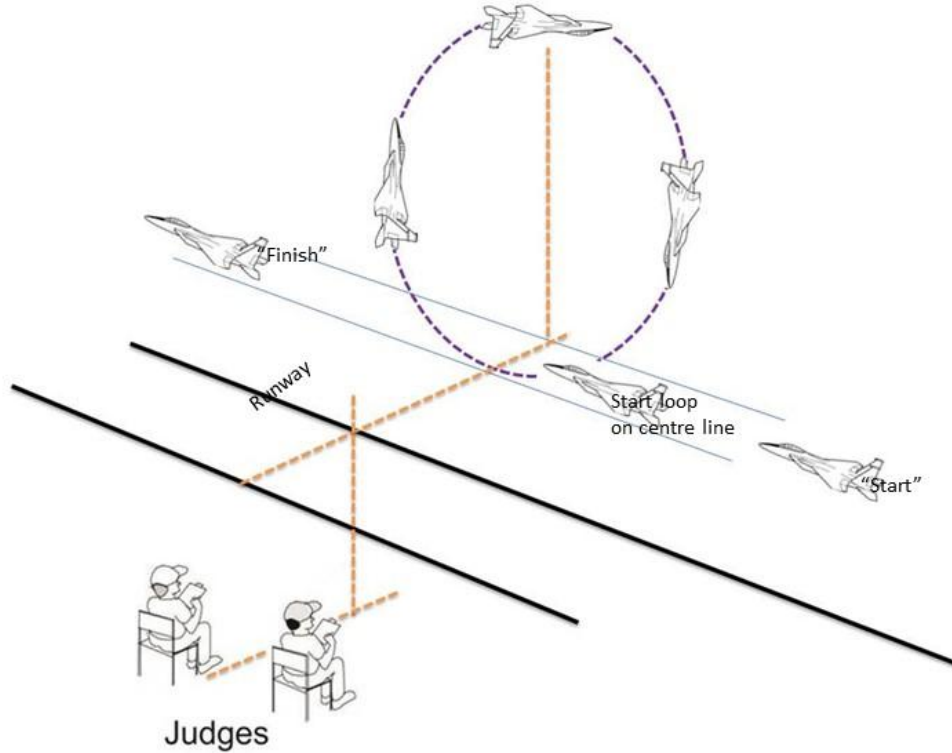


SEE BELOW – ONE INSIDE LOOP

### Basic Sport Jet / Scale / Turbine Jet Proficiency Schedule

**5. One inside Loop** – From straight and level flight, parallel to the runway, the model executes a 360 degree circle in a vertical plane, and resumes level flight at the same height as entry, and on the same track and heading as it started.

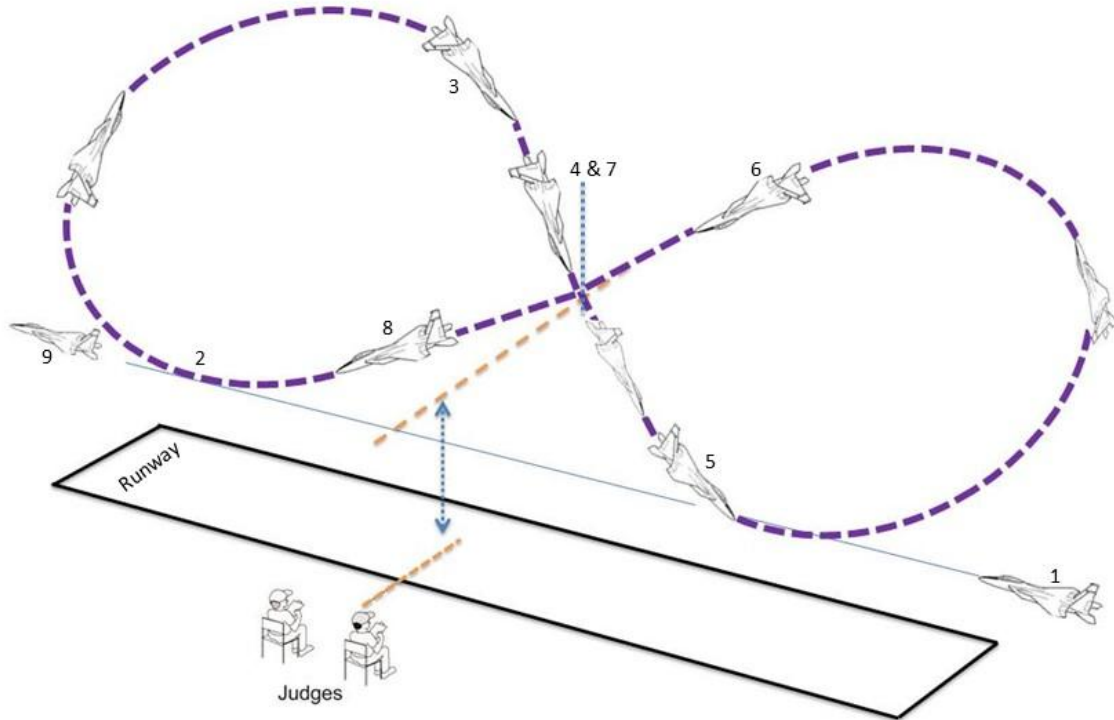
*Downgrades:* •Plane of loop not vertical, •Manoeuvre not centred on the judges position, •Model does not resume straight and level flight on the same track and height as entry, •Manoeuvre not flown parallel with the judges line, •Manoeuvre too far away, too close, too high or too low.



SEE BELOW – CUBAN EIGHT

Basic Sport Jet / Scale / Turbine Jet Proficiency Schedule

**6. Cuban Eight** – The model approaches parallel to the runway (1). After passing the judges’ centreline model pulls up (2) into approximately 5/8ths of an inside loop and continues heading toward (3) at 45 degrees, inverted. The model performs a half roll (4) on the 45-degree downline on the judges’ centreline; followed (5) by another approximately 3/4 inside loop to 45-degrees inverted (6). The model then executes a half-roll to normal flight (7) on the judges’ centreline, and then recovers (8) to straight and level flight (9) on the same track, heading and height as the start.  
*Downgrades: Manoeuvre not performed in a constant vertical plane that is parallel with the judges line, Loops are not the same size, Half rolls are not centred on judges position, 45 degree descent path not achieved, Model does not exit manoeuvre at same height as entry, Model does not resume straight and level flight on same track as entry, manoeuvre too far away, too close, too high or too low.*

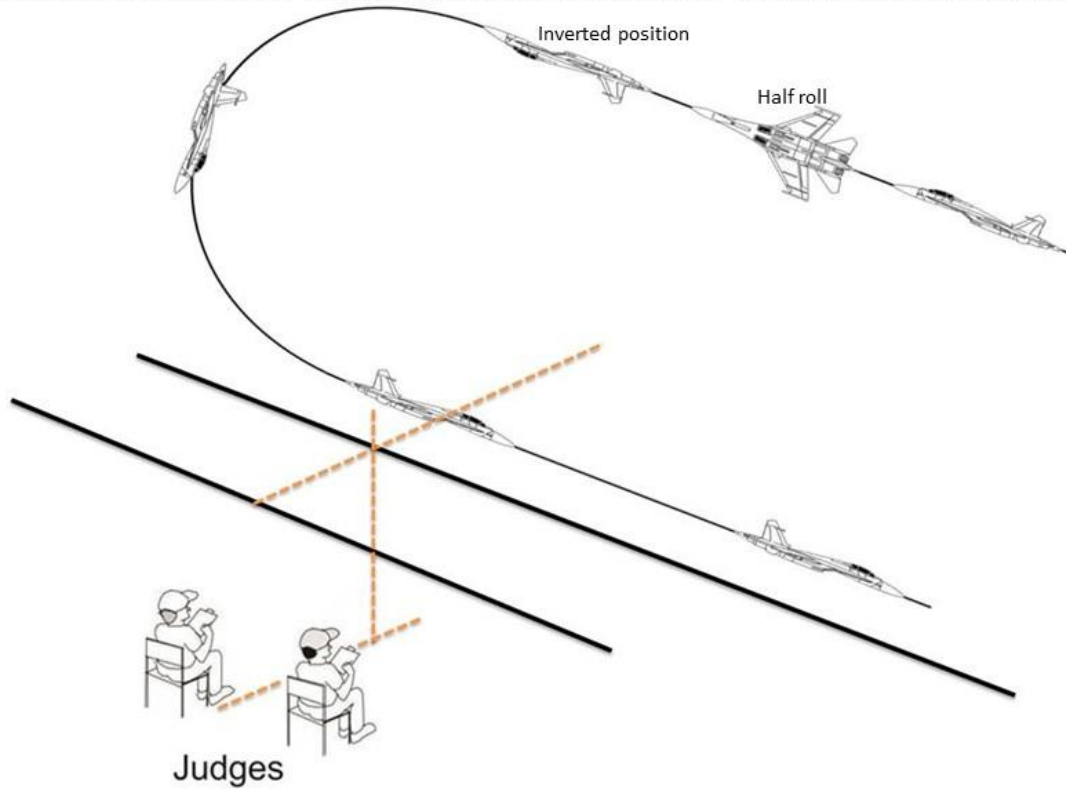


SEE BELOW – SPLIT “S”

### Basic Sport Jet / Scale / Turbine Jet Proficiency Schedule

**7. Split "S"** – The model commences the manoeuvre parallel to the runway, performs a half roll to arrive in the inverted position at the judges' centreline, and then immediately a half inside loop downwards, and resumes normal level flight on a reciprocal track to that at the start.

Downgrades: •Roll starts too early or too late, track veers during half roll, •Excessive height loss in the roll, •Model inverted for too long before commencing half loop, •Plane of the half loop not vertical or on line, •Half loop not centred on judges position, •Model does not resume straight and level flight on the opposite track to entry, •Manoeuvre not flown parallel with judges line, •Manoeuvre too far away, too close, too high or too low.

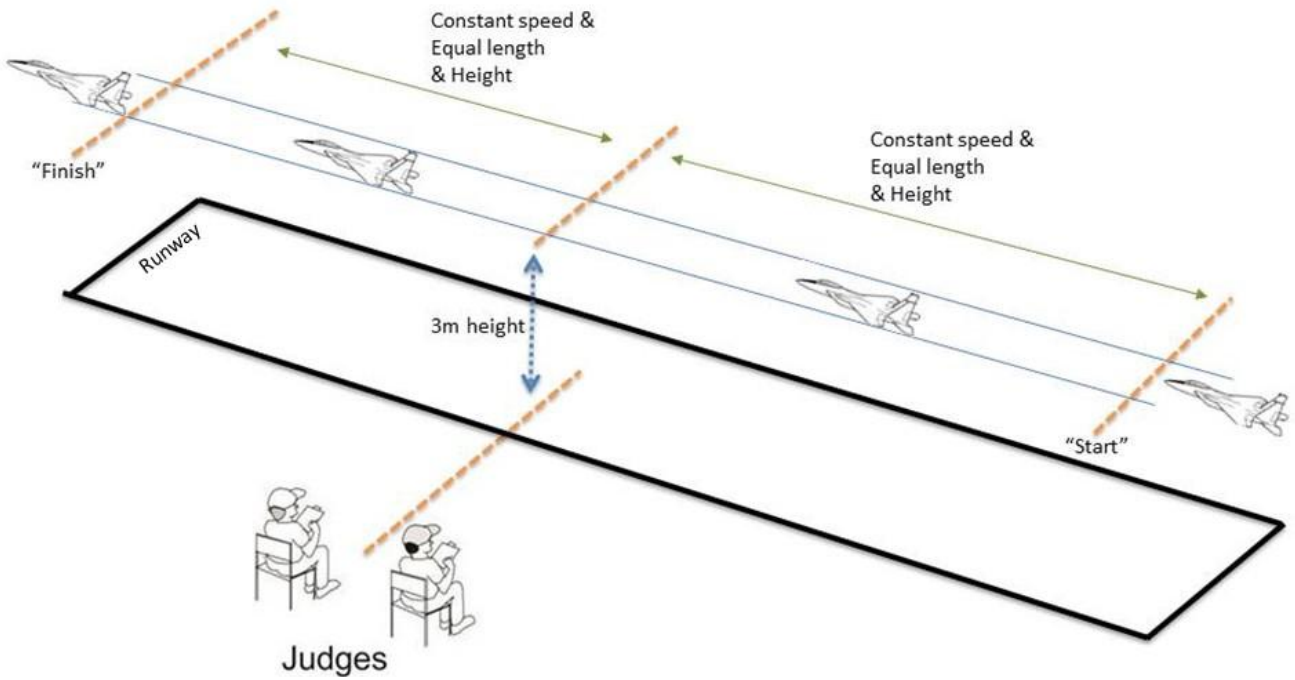


SEE BELOW – HIGH SPEED PASS IN STRAIGHT AND LEVEL FLIGHT

### Basic Sport Jet / Scale / Turbine Jet Proficiency Schedule

**8. High speed pass in straight and level flight** – The model approaches at high speed in straight and level flight parallel to the runway centreline and at a constant height of approximately 3 meters. The height must be constant and straight after the manoeuvre is announced. The manoeuvre must be spread in equal length on both sides of the centre line in front of the judges.

Downgrades: •Constant height not maintained, •Flight level and direction not kept, •Manoeuvre not centred on judges position, •Entry and exit path not parallel with judges line, •Model flight path not smooth and steady, •Manoeuvre too far away, too close, or too high.

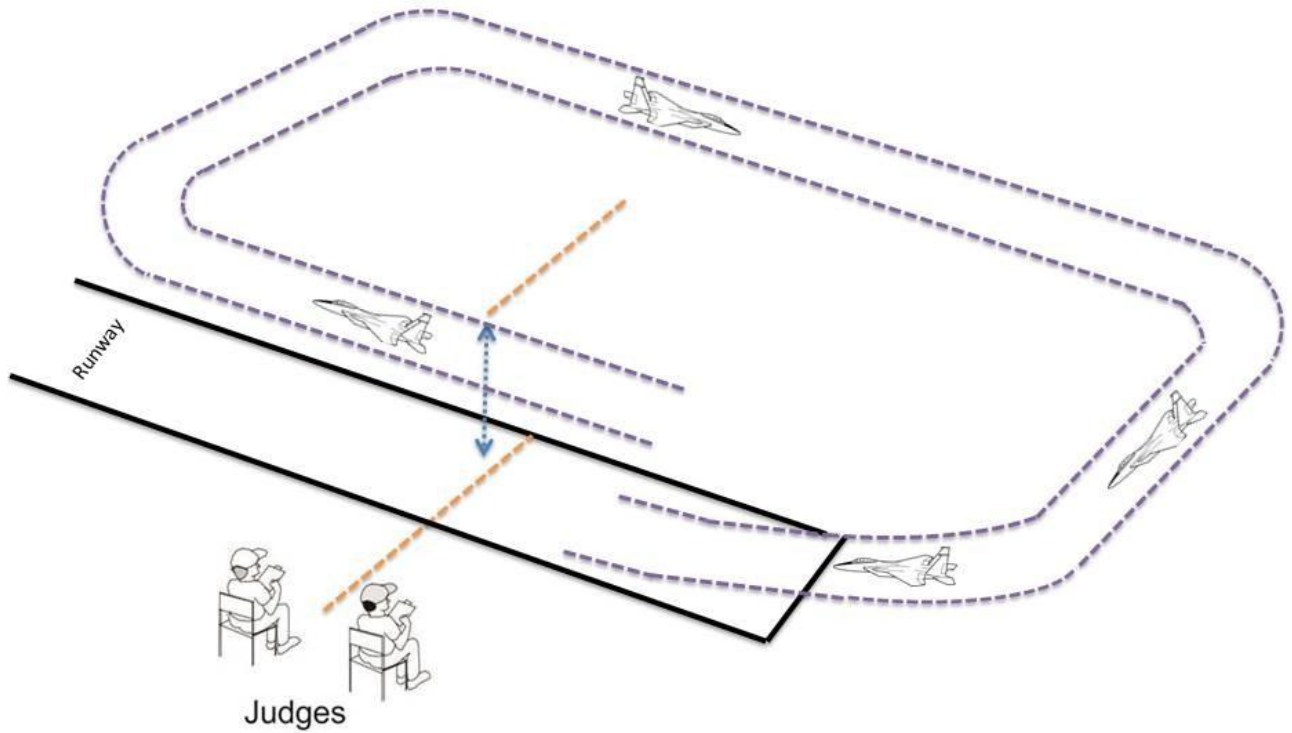


SEE BELOW – CIRCUIT AND LANDING APPROACH

### Basic Sport Jet / Scale / Turbine Jet Proficiency Schedule

**9. Circuit and landing approach** – The model shall commence upwind and execute a circuit and landing approach. Landing approach complete when model is 3 meters above the ground on final approach before the runway threshold.

**Downgrades:** •Manoeuvre does not commence parallel to the runway (on the upwind leg), •Circuit is not centred on the judges line, •Downwind track not parallel to runway axis, •Height changed before appropriate descent point, •Descent not smooth and continuous.

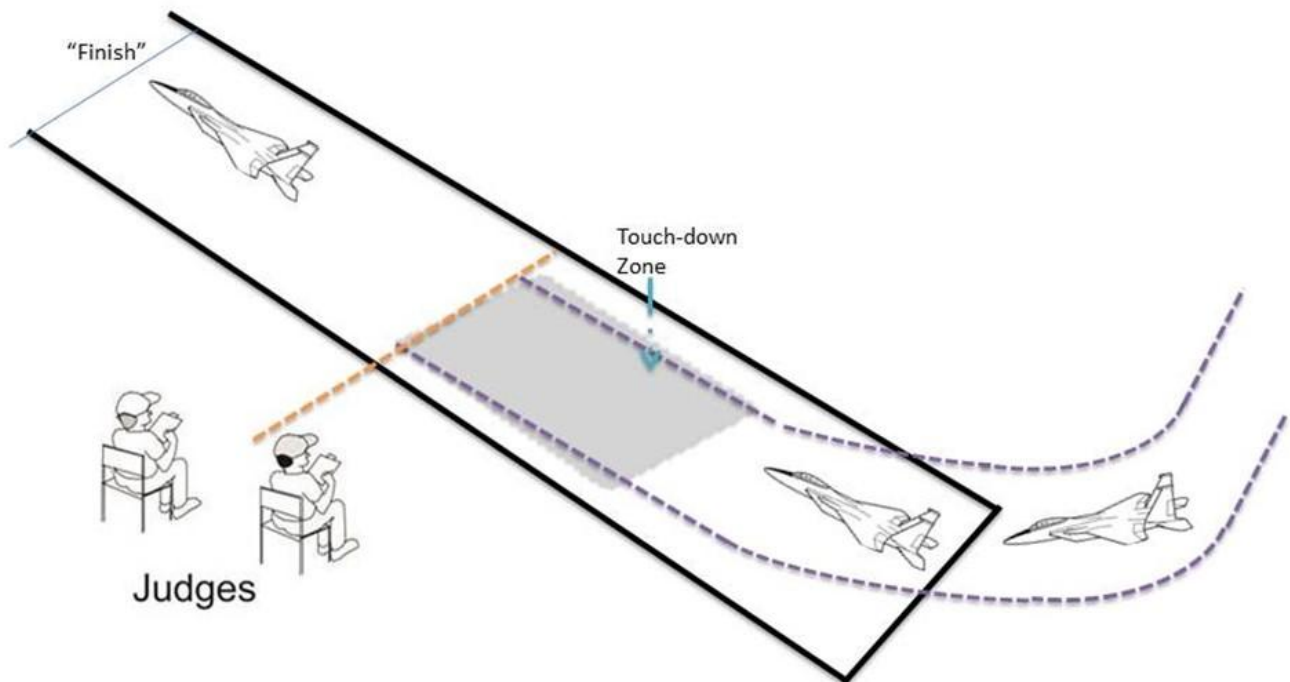


SEE BELOW - LANDING

### Basic Sport Jet / Scale / Turbine Jet Proficiency Schedule

**10. Landing** – The Landing will be judged from a height below 3 meters and once the plane crosses the threshold of the runway. The plane must land on the runway before the judges' centreline. When the model has come to a stop, the manoeuvre is complete (and flying time stops).

*Downgrades:* •Landing descends from below 3 meters not smooth and continuous, •Model bounces on touch down, •Model touches wing tip on the ground during landing, •Landing gear collapses after touch down, •Landing run to full stop not straight, •All landings ending with the model on its back will be regarded as a crash landing and scored zero.



## 5. Notes

- a) Please refer to the SAMJA F3S Sporting Code for clarity on competition rules and scoring.
- b) Pilots are allowed six (6) minutes of starting time and eight (8) minutes of flying time.
- c) All manoeuvres are centre manoeuvres and must be flown parallel to the runway, or flight line if the latter is not parallel to the runway.
- d) Manoeuvres to be flown at between 170 to 200 meters from the runway or flight line.
- e) Pilots may use any turn around manoeuvre deemed appropriate to remain on the flight line distance.
- f) Manoeuvres may be flown into wind with a free downwind pass allowed between manoeuvres.
- g) Manoeuvres may also be flown consecutively (up-wind, down-wind, up-wind).
- h) All manoeuvres must be announced by calling "now" and on completion "complete".
- i) Judging of manoeuvres will commence by the judges when announced and judges will stop the scoring of the manoeuvre once announced as complete.
- j) No manoeuvre will be scored if not announced.