MAR/C Scale and "Anything Fun-Scale" Contest   Sat. July 22, 2023

- **No Entry Fee**
- **Current AMA membership required**
- **AMA Sanctioned Event**

Categories	Max Static Points	Max Flying Points
Scale Contest	20	60, best of two flights
Anything Scale Fun Contest	10	60, best of two flights

Awards

Scale Contest
- First Place Trophy for Overall Total
- Maybe a perpetual trophy to reside at MAR/C showing 1st, 2nd, and 3rd

Anything Scale Fun Contest (Any scale plane, ARF, Foam, Kit, Scratch, as long as it looks like a model of a real plane)
- An ARF Airplane will be awarded for first place overall total score

Agenda

8:30-9:00	**Registration**
9:00	**Static judging begins**
9:15	**Round 1 Flying begins in order that static judging happens – (both flying categories intermingled)**
11:30	**Break for Lunch (club BBQ)**
12:00	**Group Photo, all pilots, all planes**
12:30	**Round 2 Flying begins – same order**
2:30	**Awards ceremony!**

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Static Judging Score Sheet

- ***Pilot gives this to Static Judges***
- ***Judges give to Score Keeper***

Contestant Name _____   AMA # _____

Aircraft Type _____

Check one category below, then score using that set of criteria

_____   *Scale*

        Photo of exact plane   _____   4 points if Yes

        Outline, Shape, Markings   _____   6 points max.

        Craftsmanship   _____   10 points max.

        Total   _____   **20 points max.**

_____   *Anything Fun Scale*

        Is it a real airplane type?   _____   6 points if Yes

        Craftsmanship of
        Enhancements & modifications   _____   1-4 points

        Total   _____   **10 points max.**

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Static Judging Criteria (Scale Appearance)

For both classes, the model will be judged in a circle with 10-foot radius. The judges will stand outside the circle.

Class	Static Judging
Scale	Model should be built from scratch, plans, or kit. It may be an ARF if it has been modified in shape and/or extensively refinished or re-covered and detailed. Contestant must supply a photo of a real airplane of the same TYPE as the plane being modeled. An image on a smart phone is adequate but more difficult for the judges to use. 4 points are awarded if the photo is the exact same plane (same registration numbers, markings, colors, etc.) being modeled. Then the model will be judged based on correct shape and markings (6 points possible) and craftsmanship (10 points possible). **Total of 20 points possible.**
Anything Fun Scale	Almost any ARF that advertises to be a model of a real airplane should qualify in this category, or the model may be built from scratch, plans, or kit. It may be made of any material, including foam, but must have a scale or near scale outline of a real airplane TYPE. The contestant must supply a photo of a real airplane of the same TYPE as the plane being modeled. An image on a smart phone is adequate but is more difficult for the judges to use, especially in sunlight. The photo need not be the exact same plane or version or have any markings or colors in common with the model. The model will receive 6 points if the judges agree it is a scale model of a real airplane type. 1 to 4 additional points may be awarded if the appearance of the model has been enhanced, e.g. paint, details, realistic pilot, working parts, etc. **10 total points possible.**

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Pilot – Keep this sheet with you for reference

Tell flight judges:
- *The two optional maneuvers you will do*
- *What order you will do all maneuvers*

Remember to call "Begin Maneuver" and "Maneuver Complete"

Contestant:_____   Aircraft Type_____

Required maneuvers (Max 10 points each)

	ROUND 1	ROUND 2
1) Takeoff & Climb	_____	_____
2) Traffic pattern & low fly by	_____	_____
3) Landing Pattern	_____	_____
4) Final approach and landing	_____	_____

Optional maneuvers (Max 10 points each)

Rounds

1	2		ROUND 1	ROUND 2
☐	☐	Split S	_____	_____
☐	☐	Loop or Vintage loop	_____	_____
☐	☐	Barrel Roll	_____	_____
☐	☐	Slow Roll	_____	_____
☐	☐	Immelmann turn	_____	_____
☐	☐	Bomb drop	_____	_____
☐	☐	Touch and Go	_____	_____
☐	☐	Horizontal figure eight	_____	_____
☐	☐	Chandelle	_____	_____
☐	☐	Fly by w/flaps-gear	_____	_____

Flying Total	_____	_____

(4 Required + 2 Optional)

Total score = best of the two flight scores plus static score

Judging is based on BOTH realism and precision

Flight Judge #1 Score Sheet

- Pilot gives to Flight Judge
- Flight Judge gives to Scorekeeper (or scoresheet runner)
- Scorekeeper logs scores in spreadsheet

Contestant Name _____

Aircraft Type _____

Judge on realism _and_ precision

Required maneuvers (Max 10 points each)

	Round 1 Scores	Round 2 Scores
1. Takeoff & Climb	_____	_____
2. Traffic pattern & low fly by	_____	_____
3. Landing Pattern	_____	_____
4. Final approach and landing	_____	_____

Two Optional maneuvers (Max 10 points each)

- **Check two boxes when pilot tells you which optional maneuvers they will do**

Rounds

1	2		Round 1 Scores	Round 2 Scores
☐	☐	Split S	_____	_____
☐	☐	Loop or Vintage loop	_____	_____
☐	☐	Barrel Roll	_____	_____
☐	☐	Slow Roll	_____	_____
☐	☐	Immelmann turn	_____	_____
☐	☐	Bomb drop	_____	_____
☐	☐	Touch and Go	_____	_____
☐	☐	Horizontal figure eight	_____	_____
☐	☐	Chandelle	_____	_____
☐	☐	Fly by w/flaps-gear	_____	_____

Flying Total   **_____**   **_____**

(4 Required + 2 Optional)

Flight Judge #2

- Pilot gives to Flight Judge #2

Reference Sheet Only – Put Agreed Scores on Judge #1 Sheet

Contestant Name _____

Aircraft Type _____

Judge on realism *and* precision

Required maneuvers (Max 10 points each)

	Round 1 Scores	Round 2 Scores
1. Takeoff & Climb	_____	_____
2. Traffic pattern & low fly by	_____	_____
3. Landing Pattern	_____	_____
4. Final approach and landing	_____	_____

Two Optional maneuvers (Max 10 points each)
- **Check two boxes when pilot tells you which optional maneuvers they will do**

Rounds

1	2		Round 1	Round 2
☐	☐	Split S	_____	_____
☐	☐	Loop or Vintage loop	_____	_____
☐	☐	Barrel Roll	_____	_____
☐	☐	Slow Roll	_____	_____
☐	☐	Immelmann turn	_____	_____
☐	☐	Bomb drop	_____	_____
☐	☐	Touch and Go	_____	_____
☐	☐	Horizontal figure eight	_____	_____
☐	☐	Chandelle	_____	_____
☐	☐	Fly by w/flaps-gear	_____	_____

Judging Criteria for Flying Maneuvers

Judging is subjective. The following pages are written so that contestants and judges have the same idea in mind about what makes a maneuver "good". This information can also be used for a Scale Clinic prior to the meet to familiarize pilots with how a scale meet is conducted.

A maximum of 10 points can be awarded for each maneuver. Points should be deducted from the maximum of 10 for deficiencies in either ***precision or realism***.

Maneuvers are executed one at a time when the airplane comes around to the near side of the pattern. They do not need to be strung together into a routine like in an aerobatic contest, except that the landing pattern and the final approach and landing are connected.

Callouts: The pilot or spotter should call "Begin Maneuver" and "Maneuver Complete", so the judges know when to begin and end scoring.

Realism:
- Maneuvers should have **roll and pitch rates** close to that seen for a real airplane of the type being modeled. For example, a Cub should not have high roll rates, but a jet fighter may.
- **Speed** – The most difficult part of scale flight is achieving a speed that is slow enough to look realistic for the type of airplane being modeled. Keeping your model light and practicing flight at slower speeds without endangering the airplane from stall are therefore important.
- **Smoothness** – The airplane should not exhibit jerky or unsteady flying.

Precision:
- **Constant headings, bank angles, and altitudes** should be appropriate to the maneuvers.
- **Placement of the airplane** at the beginning, during, and ending of the maneuver are also indications of precise flying.

Judging Criteria

The Four Required Maneuvers

A maximum of 10 points are awarded for each maneuver.

1. **Takeoff & Climb** – The takeoff should have a realistic takeoff roll length and a steady heading on the center line of the runway. Takeoff rotation should be smooth, not abrupt. Climb should be along the runway centerline with a steady heading and realistic climb angle. The maneuver ends when the plane makes its first turn to the crosswind leg, after a realistic straight upwind leg.

2. **Low fly by** – The airplane should descend as if on approach and then fly down between the center and far edge of the runway at a constant altitude and heading. Altitude should be between 10 and 20 feet. The maneuver beginning should be called by the pilot or spotter when the plane has descended to the constant altitude which should happen before the approach end of the runway. Maneuver complete should be called at the end of the runway. Speed should be a realistic pattern speed. This is not a high-speed fly-by. Gear and flaps may be used at the discretion of the pilot.

3. **Landing Pattern** -- After completion of all other maneuvers, the Landing Pattern maneuver begins when called on upwind leg in front of the judges. Scoring is based on steady headings, realistic roll rates, bank angles, speed, and constant altitude until the descent for landing is begun. The downwind leg should be parallel to the runway with a steady heading. The pattern may be rectangular or an oval with large 180 degree turns at each end. The maneuver ends when the airplane turns onto final approach.

4. **Final approach and landing** – The maneuver begins at the end of the Landing Pattern maneuver when the airplane has turned onto final approach. The plane should appear to be on an extended runway centerline for the entire maneuver. The approach should have a steady heading, speed, and descent rate all the way to beginning of flare for landing. Flare for landing should be smooth, not abrupt, and occur once. The airplane should not appear to be going up and down "hunting" for the ground. Touchdown should be smooth and on the centerline of the runway. No deductions for one bounce. A single point can be deducted for each bounce thereafter to a maximum of 3.

Judging Criteria
Optional Maneuvers (Contestant chooses two)

A maximum of 10 points are awarded for each maneuver. The contestant chooses two, and may make different choices for each round.

All maneuvers begin in the near side of the pattern directly in front of the judges unless otherwise specified. Except for the Figure 8 and Touch and Go, optional maneuvers should be aligned with the far edge of the runway so that they don't appear to be straight up over the judges.

1. **Split S** – The maneuver begins at altitude directly in front of the judges with a half roll, followed by throttle reduction and a smooth half loop downward that should end directly in front of the judges, followed by a short flight at steady heading and altitude at the same distance from the judges that the maneuver began. The half loop should be a semi-circle.

2. **Loop** or **Vintage Loop** –

    A **Loop** should be a circle in shape and is appropriate to an aerobatic plane capable of enough speed and thrust to begin from level flight without diving for speed beforehand. Throttle should be reduced at the top of the loop to manage speed on the downward side. The loop should appear to be a circle.

    A **Vintage Loop** is appropriate for low performance airplanes. The airplane should dive gently with full throttle to build speed before reaching the point in front of the judges where the Vintage Loop begins. The Vintage Loop is not circular and is more tall than wide because the speed of the plane bleeds off during the climb and then increases again during the descent. Throttle is reduced to idle at the top.

    Both kinds of Loop should start and be completed at the same point and altitude in front of the judges and maintain the same distance out from the judges during the whole maneuver. Wings should be level on entry and exit, and throughout the maneuver.

3. **Barrel Roll** – A barrel roll is appropriate for airplanes of any performance level. The airplane may dive gently for speed if needed before the nose is pulled up into a climb at which point the airplane rolls and appears to do a large corkscrew or spiral shape through the sky. In a real airplane, a barrel roll can be done with positive G for the whole maneuver. Throttle is reduced at the halfway point, which should occur in front of the judges, and then restored when the maneuver is complete.

4. **Slow Roll** – A slow roll is not necessarily slow but should not occur faster than a rate realistic for the plane being modeled. The roll should be done with a constant altitude and heading, and the plane should be inverted just as it passes in front of the judges.

5. **Immelmann turn** – This is one half loop upward followed by one half roll. Low performance airplanes may dive for speed before beginning the maneuver. The half loop should begin directly in front of the judges and should appear as a semi-circle. The half roll should not start until the half loop is complete, after which the plane should fly level and straight for a short time.

6. **Bomb drop** – The bomb drop should occur along runway centerline and the bomb should land directly in front of the judges for a perfect score. One point may be deducted for each 10 feet away from that point. Contestants will be razzed mercilessly, and zero points awarded if a bomb hits a judge. The choice of dive bombing or level bombing should be appropriate to the plane being modeled.

7. **Touch and Go** – Criteria for approach and landing maneuver apply.   This is not a "bounced" landing. There should be a ground roll of at least 10 feet before taking off again. Deduct 5 points if it is only a bounce. Path on the runway should be a straight line on center line of the runway.   After touchdown, criteria for takeoff and climb apply. The contestant pilot is advised not to rush the maneuver to avoid accidents. Smoothly land, then roll, and then execute a smoothtakeoff.

8. **Horizontal figure eight** – The figure eight begins before the airplane is in front of the judges, so that a 90 degree turn results in the airplane flying away from the judges and directly in front of them. The turn direction then changes and 360 degree circle is begun. At the end of the 360 the airplane should again be directly in front of the judges flying away from them.   At this point the plane reverses turn direction again and turns 270 degrees until it is on runway heading in the same direction as the starting heading. This is not an aerobatic maneuver. The path over the ground should appear to be two circles, the crossover points should be directly in front of the judges, altitude should be constant, and the maneuver should begin and end the same distance from the flight line.

9. **Chandelle** – A chandelle is a climbing 180 degree turn where the throttle stays in one position and the plane climbs and decelerates throughout the maneuver so that it is near stall at the end of the 180 degree turn. The plane should roll into the turn gradually and reach maximum bank angle at the 90 degree point and then gradually decrease bank angle until the wings are level at the 180-degree point.

10. **Low fly by with flaps and/or gear** – Criteria for the **Low Fly By** required maneuver apply, except that the airplane should be at approach and landing speed. Flaps and gear, if installed, should be lowered before the maneuver begins. Near the end of the runway, the flaps and gear should be retracted and a steady-heading climb on runway centerline should continue. Maneuver is complete when the plane begins its first turn which should be after flaps and gear are retracted.