ADELAIDE GOLDEN ERA AIR RACES 2019 **Revised 19/01/2018**

The Adelaide Golden Era Air Races are flown every two years to celebrate the Golden Era of air racing. The 2019 races are being organized by Adelaide Golden Era Air Races, which is a Sub Committee of Constellation Model Aero Club.

Five classes will be flown,
Golden Era Inline, Golden Era Radial, Reno Warbirds, Texan AT 6 and 30cc Warbirds, Formula 1.

The rules for this competition have been formulated over some years and intended to capture the spirit of the exciting races of the 30's and 40's and early years of Formula 1.

Entrants
Previous entrants from the 2017 event and those who have expressed interest will automatically be sent an entry form when entries for the races commence. Each entrant is permitted to enter any or all of the five classes to be run.
All competitors must have MAAA Gold Wings endorsement and abide by the general rules, class rules, MAAA Code of Conduct and the field procedures of the Constellation Model Flying Club.

General Rules
The general rules should be read in conjunction with the Class rules and part 5.1.1 of the Australian Pylon rules which are applicable except that which is covered in the following document which takes precedent.

Noise Limits:
A limit of **98db** is applicable measured at Three (3) metres from the engine, over grass. The reading being the average of that taken at front and from each side, in line with the engine. The sound meter will be positioned one metre above the ground up wind from the model.
This limit will be strictly enforced and no correspondence regarding the limit will be entertained. The use of throttle end points and other transmitter settings to reduce noise is not acceptable and will be policed. The Contest Director may conduct random noise checks and direct any aircraft to be retested if it appears to exceed the limit as above.

Permit to Fly: No Model will be permitted to enter the race unless a Permit to Fly is valid for the model. The Permit must be dated at least 21 days before the first day of the races. Under no circumstance will a flight test for the issue of an original permit for an aircraft be carried out during the duration of the races.
Entrants will be required to make a declaration that the entrant has had at least 6 flights of the entered model before the event.

All entrants must produce the Permit to fly for inspection. Random safety inspections may be carried out if the safety officer so requires. An appropriate MOP inspector must check repaired damage.

Any aircraft that exhibits unpredictable handling characteristics in the air and on the ground, such as uncontrolled takeoff direction, violent pitching, skidding or unpredictable flight, will be cause for disqualification.

Radios
Transmitters: 36mhz transmitters must be MAAA checked and approved. (no time limit)
Batteries: All radio systems shall be powered by batteries of 1200 mah minimum capacity. (1800 mah recommended) Note: In systems that use two receivers, 2 x 700 mah is acceptable.

Servos and Linkages
Shall be of sufficient power for the size and weight of the aircraft.
Elevators Must use one servo a side, each with a minimum torque rating of 69 in-oz/ 4.5kg-cms.
Alternatively one servo driving both sides with a minimum rating of 105 in-oz/ 7kg-cm
Ailerons Each aileron must use a servo with a minimum rating of 69 in-oz /4.5kg.
Servos must be visible for inspection i.e. with the wing off, or through an access panel.
Clevises All flight control surfaces must have linkage and clevises of at least 4-40 size. Pull -Pull activation is recommended with 4-40 linkages. Clevises must have keepers, and control horns must be of sufficient size and strength to handle the large loads; and must have minimal play.

Communication during racing:
Contact by radio or other signals from an observer to the caller of a contestant, or contestant, during racing is specifically prohibited and will incur a disqualification of the contestant.

Processing
Processing of models will be available on the Sunday and Thursday prior to the races commencing.
Please Note Due to the number of aircraft in the event we need to commence flying as early as possible on Friday morning. To assist this, local SA entrants will **only** be processed on the Sunday and Thursday prior to the races.
Interstate visitors are encouraged to arrive as early as possible on the Friday morning to have their aircraft processed.

Reserve Model
1 reserve model may be used provided that it has been processed and test flown. Note reserve model does not have to be same as the original but must be processed in the same way as other models of that class.

Callers/Observer:
Every contestant must have an observer/caller during the flight. An extra helper is also permitted

Hard Hats
Must be worn while in the ready box or on the flight line, please bring your own and one for your caller.

Protests
A protest fee of $100 is payable, which will be returned if the protest is upheld.
A contestant can make no protest concerning noise. Noise control is solely in the hands of the Contest Director.
Any decision by Judges is final--This also means any disqualification by safety line judges.

Safety
This is ***PARAMOUNT!*** Any pilot who infringes the SAFETY LINE - a line 30 metres from the public, or nearby house and property will score ZERO for that flight on first offence, and will be disqualified and unable to fly on a further offence (two strikes and you're out!) Furthermore **ANY PILOT WHO FLIES OVER ANY PART OF THE PUBLIC ENCLOSURE WILL BE DISQUALIFIED IMMEDIATELY.** (Disqualification means no further flying for you!)
Any aircraft flown **repeatedly** below the height of the pylons during a race may incur an **altitude cut** and score ZERO for that flight.

Any pilot whose flying is undisciplined, and or appears not to have accurate control of his aircraft, whether it is lack of pilot skills or an unstable aircraft, so as in the Contest Director's /Safety Officer's opinion to be at risk to the public or other contestants will be grounded.
Most models should be processed before Friday morning, and contestants may be required to fly a proving flight, with the exception of local entrants who have had the opportunity to fly previously. There will be an open day at Constellation model airfield for contestants to demonstrate their model on the weekend before the races. Demonstration flights may also be flown on the Thursday before the races, for those contestants who are available.

Conduct of the Race
Heats will commence on Friday morning at 10am and will continue as long as there is enough daylight. We expect to run five to six heats per hour on present indications. There will be four models to a heat and 10 laps flown per heat. Entrants for a heat will be marshalled to the starting position, as soon as possible after the completion of the previous heat.

Ready Box
Ready boxes are provided for three groups of aircraft and competitors are asked to be prepared with aircraft and caller at least three heats before they are scheduled to race.

Scoring
The time registered in seconds for ten laps is subtracted from 300.The final score is a total of all the heats flown, less any heat dropped.
One pylon cut will incur a 10% penalty, two or more cuts will score zero for that heat.
A safety line cut will score zero for that heat and disqualification for a second offence.
Flying past the start line before the countdown clock reaches zero will result in an extra lap having to be flown.

Heats
The number of heats to be flown depends on the time available and the number of contestants but should be at least four. If more than 3 heats are flown the worst round will be discarded.

Race Procedures

NOTE: - THE STARTER MAY DIRECT SOME VARIATION OF THE FOLLOWING PROCEDURE IF REQUIRED.

At the call of the start, a two (2) minute time slot will commence and all competitors must start their engines and takeoff within this two-minute slot. Anyone who cannot start, or who takes off, has problems, and lands will NOT be able to restart and will forfeit the heat. A takeoff that is aborted before the model is airborne may be attempted again within the two minutes, provided that the takeoff path of any other contestants in the heat is not impeded or infringed.

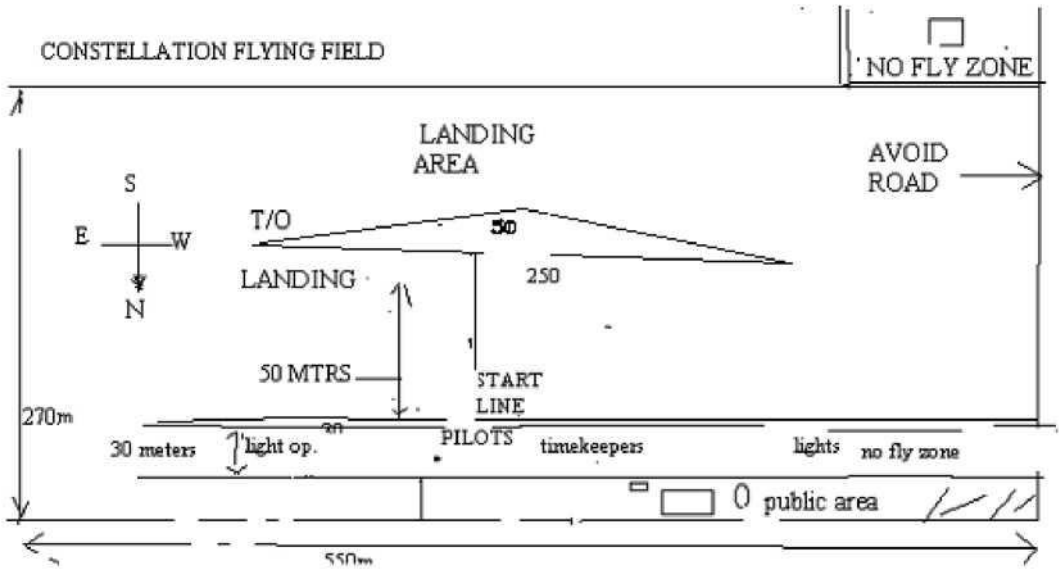
Takeoff
The starter will direct the takeoff direction, which will almost always be into the prevailing Westerly sea breeze.
As soon as all models are airborne, or at the expiry of the 2-minute start time, the starter will signal (whistle) the beginning of the one-minute rundown on the clock display. The race commences at the conclusion of the one-minute rundown.

Time periods
Will be denoted by an audible signal (whistle/horn).

One-minute countdown
Countdown to the start will commence on a visible large clock, and an audible signal will indicate the start of the race. Timing will start on the audible signal/completion of the countdown, and finish when the contestant crosses the line after ten laps.
After all aircraft have completed, landing will be into wind at the starter's direction.
The next heat contestants will be ready to move to the start boxes during the landing sequence.
Times for heats are expected to be about three to four minutes. If you finish early you are to climb clear of the race to the east of the field. Land as soon as all contestants in the heat have finished their ten laps.

Finals Draw
The final rounds of the heats will be flown on Sunday afternoon with models grouped together based on earlier results to help create a "Finals" type atmosphere.
Spare crystals should be available to avoid frequency clashes where 36mhz is used.

Racecourse Layout
Minor changes may be made on the day.



ANNEX A

GOLDEN ERA CLASS-- Inline and Radial
Entries are to be a scale representation of any full size aircraft that either attempted to qualify, qualified, or competed in either the Thompson Trophy Races in the USA, or the King's cup races in the United Kingdom, or other races of similar type during the 'Golden Era' No 'builder of the model rule' applies.
Inline refers to aircraft using an inline engine and radial to aircraft using a radial engine.

SIZE of MODEL

Model must conform to the basic scale outlines and meet a TOTAL MINIMUM SIZE OF:
MONOPLANES WINGSPAN PLUS FUSELAGE LENGTH TO TOTAL 156 " (3.96M)
BIPLANES- 117" (2.97M), wingspan is based on the larger (upper) wing.

SCALE DETAILS
Models are to conform to basic scale outlines, Scale detail eg rivets. Panel outlines, etc are not compulsory. Three or views other documentation is required to verify scale likeness for static judging.
A clear windscreen or canopy as applicable and a pilot bust installed in the cockpit are required. **Please note** dolls and cartoon characters are not acceptable.
An instrument panel with at least three scale size gauges is required.

COLOUR SCHEMES
Scale colour schemes are not required and a personalized scheme is encouraged to assist in identification of the model should more than one example of a prototype be entered.
If using an ARF aircraft every effort should be made to differentiate your model, as it is very difficult for lap and light operators to separate the same model with the same colour scheme.

AIRCRAFT WEIGHT

Minimum Weight: Minimum weight of 3lbs (1.37Kg) per Engine 10 cc is required.
For example, 100cc engine minimum wt.= 30lbs. (13.64Kg) (note max eng size 100cc)
Weight is measured dry.
An absolute minimum of 7.5 Kg (16.5lbs) applies.

Maximum Weight: Aircraft must have a valid permit to fly, which fixes the max wt. at 25Kg (55lbs)(dry)

AIRFOILS
Wing and tail group airfoils may be any suitable for model aircraft but must follow scale plan form.
Tail dimension may be increased to ensure good flying characteristics and control surface dimensions may be varied as long as the aircraft outline is not affected. Control surface dimensions may be varied as long as the aircraft outline is not affected. Flaps are not compulsory even if the original aircraft used them.

LANDING GEAR
MUST be scale i.e. if the original aircraft had retractable gear the model must do so. The use of wheel pants is optional. Landing gear must be robust enough to allow normal, and repeated taxi, takeoff, and landing operations.
A steerable tail wheel must be fitted. (May be used in place of a tailskid.)

FLYING WIRES &STRUTS
If these are used by the prototype they must be fitted, but need not be functional.
Wires must be .032" (0.8mm) diameter minimum, or structural metal, and cannot be made of nylon cord or other similar material.

ENGINES
A maximum size of 100 cc. is allowed. (6.0 Cu") Spark ignition engines must be fitted with an external kill switch and all engines must be able to be shut off from the TX. (Note min weight of the aircraft to be at least 3 lbs (1.37Kg) per 10 cc, absolute minimum 7.5 Kg.)
Any fuel may be used but pressurized injection systems may not be used.

EXHAUST SYSTEMS
No Tuned Pipes, all systems must be fully cowled only small amount of header pipe and vent pipe may be exposed.

ENGINE COWLING
Engines must be *FULLY cowled as per the prototype,** and only the spark plug, ignition wire, and carburetor **body (not isolator)** may protrude. Exhaust should exit as close as possible to the scale position.
Note that a small portion of the exhaust manifold may protrude, but the main body of the muffler must be cowled as per the prototype. External covered mufflers that are outside the scale plan form are not permitted*

RENO- WARBIRDS CLASS

Entries are to be a scale representation of **ANY** fighter aircraft that flew in combat during WWII, or in the Unlimited Class at the Reno National Championship Air Races. (Note- Non-war bird types -Lancair, Pond Racer, etc are not eligible.)

MODEL DETAILS
If ARF or Kit it must be designed for 50cc or above, proof of this in form of advertising, instructions or image of original box must be provided.
If scratch built the fuselage length must not be shorter than 5% of the scale dimensions when measured from rear of stabilizer to the front of cowl, compared to a 3 view that must be supplied by the competitor at registration, the dimension calculator supplied must be used to show that it complies, No fins or projections may be used to meet dimensions.
SIZE
Minimum Wingspan 84" (2.13m)
ENGINE Any **unmodified, stock** petrol motor or motors using the supplied carburettor to a maximum capacity of 63cc, multi engine aircraft to a combined total of 63cc. An external kill switch must be fitted and the engine/s must be able to be turned off from the TX. An earlier model G62 may be fitted with an ignition system instead of the magneto.

FUEL
Petrol/oil mixture **only**
COWL
For an inline engine type model (e.g. Mustang) the cylinder head may protrude from scale outline.
As much of the engine as practicable must be cowled.

MUFFLERS
No Tuned Pipes, all systems must be fully cowled only small amount of header pipe and vent pipe may be exposed.

SCALE DETAILS
Models are to be recognizable scale models, conforming to scale outlines, Scale detail e.g. rivets. Panel outlines, etc are not compulsory. Three views or other documentation may be required to verify scale likeness for static judging.
A clear windscreen or canopy as applicable, and a pilot bust installed in the cockpit are required; dolls and cartoon characters are not acceptable.
An instrument panel with at least three scale size gauges is required.
Flaps are not compulsory even if the original aircraft used them.
COLOUR SCHEMES
Scale colour schemes are not required and a personalized scheme is encouraged to assist in identification of the model should more than one example of a prototype be entered.
If using an ARF aircraft every effort should be made to differentiate your model, as it is very difficult for lap and light Operators to separate the same aircraft with the same colour scheme.
AIRCRAFT WEIGHT

Minimum Weight.	20 Lbs (9 Kg)
Maximum Weight	55 Lbs (25.0 Kg)

AIRFOILS
Wing and tail group airfoils may be any suitable for model aircraft.
All control surfaces should maintain the plan form of the original but may be modified in size to provide proper stability and control.
LANDING GEAR
MUST be scale i.e. if the original aircraft had retractable gear the model must do so.
Landing gear must be robust enough to allow normal, and repeated taxi, takeoff and landing operations.
A steerable tail wheel must be fitted. Tail wheels need not be retractable.

AT6 CLASS and 30cc Warbirds.
This will be a standard class based on the Midwest AT6 kit or 30cc warbird kit or ARF.AT6 aircraft is to be built from the Midwest kit, or may be constructed from plans to identical dimensions, or from an approved fiberglass or ARF kit, to identical dimensions. Aircraft will be measured during processing. Fixed or retractable landing gear may be used, with steerable tail wheel. Dummy engine allowed and encouraged, a scale size spinner must be fitted.Scale colour schemes are not required and a personalized scheme is encouraged to assist in identification of the model should more than one example of a prototype be entered.

If using an ARF aircraft every effort should be made to differentiate your model, as it is very difficult for lap and light operators to separate the same model with the same colour scheme. No "builder Of the Model" rule applies. A Pilot Bust is required.

MODEL DETAILS
SIZE

If AT6 it must be suitable for 120 size or above and in the case of any other warbird must be suitable for 30cc or above with min wingspan of 1800mm, proof of this in form of advertising, instructions or image of original box must be provided (no scratch built).

For AT6 Minimum wing thickness, measured at the junction of the centre section and outer wing (i.e. the start of the wing taper) 55mm.
The wing thickness must taper in a straight line to the tip Minimum wing thickness at Wing Tip (i.e. last rib) 25mm.
Minimum wing length from the centre section and outer 740 mm.

ENGINE

For AT6 120 Size engines of the following make only to be used
Webra Magnum Moki GMS Thunder Tiger. O.S 120 AX, O.S.120 AX Pylon Special Engines must be stock and unmodified. Maximum Carburettor throat size 9.50 mm and must be the carburettor as supplied with the engine from the manufacturer.
Super chargers, rootes type blowers, fuel pumps, air chambers and tuned pipes are NOT allowed.
The engine must be able to be turned off from the TX.

For any other warbird any unmodified 33cc max petrol motor.

FUEL For AT6 will be supplied, and refueling will be under strict control. Fuel will be methanol with 10% nitro and 18% synthetic/castor mix.

For any other warbird competitor may supply but must be Petrol which may be checked to ensure no methanol use.

MUFFLERS

Only simple expansion type mufflers can be used. The muffler must be under cowl.
Maximum noise level 98db measured as per General Rules. No Dubb Jett type is permitted.

PROPELLER

For AT6 a standard propeller - APC 15x10 will be supplied and pre-balanced. Contestants may use their own APC15x10 that must not be modified (except for balancing of 1 blade and crankshaft size)

For any other warbird any 18x10 commercial unmodified propeller (except for balancing of 1 blade and crankshaft size).

WEIGHT

Minimum aircraft weight for AT6 14 lbs. (6.36Kg.) (Dry)

WHEELS

For AT6 Must have a minimum diameter of 100mm and a minimum thickness of 20mm.

PERMIT TO FLY

Entrants are required to have a Permit to fly for their aircraft (even though the weight is less than 7Kg.)

FORMULA 1 CLASS

Entries are to be a scale representation of any full-size aircraft that attempted to qualify, qualified, or competed in either the Goodyear Trophy or Formula 1 type during the 'Golden Era' up to **1977**. No 'builder of the model rule' applies

SIZE of MODEL
Model must conform to the basic scale outlines of the prototype being modelled, gross distortions are not acceptable
FUSELAGE
The fuselage length including the spinner and rudder must be in proportion to the wing and within plus or minus 10% as measured on a published 3 view.
At processing a calculation must be shown confirming the scale used from the 3 view and fuselage length conforms as above.
MONOPLANES Minimum wingspan 80 inches (2.03m) and a maximum wingspan of 90 inches (2.28m)
BIPLANES Minimum wingspan of 70 inches (1.78m), wingspan is based on the larger (upper) wing.

AIRCRAFT WEIGHT No Minimum weight applies.

Maximum Weight with valid permit to fly 25Kg.

AIRFOILS

Wing and tail group airfoils may be any suitable for model aircraft, but must follow scale plan form.

Tail dimension may be increased to ensure good flying characteristics and control surface dimensions may be varied as long as the aircraft outline is not affected.

SCALE DETAILS
Models are to conform to basic scale outlines of the aircraft being modelled, Scale detail e.g. rivets. Panel outlines, etc are not compulsory.

Please Note; Three views or other documentation is required to verify scale likeness for static judging.
A clear windscreen or canopy as applicable, and a pilot bust installed in the cockpit are required; dolls and cartoon characters are not acceptable.
An instrument panel with at least three scale size gauges is required.
Flaps are not compulsory even if the original aircraft used them.

COLOUR SCHEMES
Scale colour schemes are not required and a personalized scheme is encouraged to assist in identification of the model should more than one example of a prototype be entered. Colour schemes may reflect the modern style used in today's F1. If using an ARF aircraft every effort should be made to differentiate your model, as it is very difficult for lap and light operators to separate the same model with same colour scheme.

LANDING GEAR
MUST be scale. Retracting undercarriage is not permitted and the use of wheel pants is mandatory.
Landing gear must be robust enough to allow normal, and repeated taxi. takeoff, and landing operations.
A steer able tail wheel must be fitted. (May be used in place of a tailskid.)

FLYING WIRES &STRUTS
If these are used on the prototype they must be fitted but need not be functional. Wires must be .032"
(0.8mm) Diameter minimum or structural metal, and cannot be made of nylon cord or other material.

ENGINES
A maximum size of 56cc. is allowed. Spark ignition engines must be fitted with an external kill switch and all engines must be able to be shut off from the TX.
Any fuel may be used but pressurized injection systems may not be used.

EXHAUST SYSTEMS
No Tuned Pipes, all systems must be fully cowled only small amount of header pipe and vent pipe may be exposed.

ENGINE COWLING

Engines may be cowled as appropriate in the side cheeks (which must be no less than 10% of the original dimensions when measured from far left of cowl to far right of cowl as shown in your 3 view, No fins or protrusions may be used to meet dimensions.)
Exhaust manifolds may protrude but the main body of the muffler may not be external to the scale plan form.