Sanderson Field RC Flyers

Field Safety and Procedure Rules

April 16, 2000

1: General

1. All aircraft, pilots, guest must comply with the AMA safety code, Field Safety and Procedure Rules and Emergency/Accident Response Plan (Appendix A, attached).

2. Members in good standing have authority to ground pilots, radios or aircraft who in their opinion violate safety of the field, property, members or guest. Review by the board at a regularly scheduled board meeting is necessary to reinstate flying privileges or as deemed necessary further suspend privileges.

3. All aircraft and radio gear are subject to inspection by members in good standing. Aircraft or radio gear in their opinion deemed unsafe will be grounded. Defects can either be corrected or the grounding can be appealed to the board at their regularly scheduled board meeting.

4. Each Club member in good standing may only bring one flying guest to the field at one time. Guests are restricted to a maximum of 3 daily flying visits a year regardless of club sponsor. Sponsor will take full responsibility for the actions of their flying and non-flying guest. Sponsors must accompany their guest at all times. Sponsor must meet guest at the field gate and escort them in and out.

5. Members and guests are to comply with request of Port employees at the field.

6. Current AMA membership and club membership is required. Flying guest of a member in good standing requires only a current AMA membership.

7. Proper FCC license is required if applicable.

8. As requested by any club member or Port employee, members and guest must submit current AMA or Membership card and FCC license for review as applicable.

9. Gate must be closed and locked at all times. (Please close and lock the gate even if the gate is open when you enter.)

10. Vehicles entering and leaving the field shall drive on the black top immediately next to the grass on the active pit side of the runway.

11. Refrain from driving on the grass unless necessary to turn in or out of parking space at pit area or as needed to leave pit area.

12. Members are all responsible for the cleanliness of the flying site. All debris generated from club use must be picked up as well as any other debris in the general area. (I.E.: pop cans, cigarettes butts, paper towels, plane crash debris ... etc.)

13. Pets must remain in vehicle or be controlled behind pit area by an adult on a short leash. Pet owners must clean up after their pets.

14. No alcoholic beverages or drugs allowed at the field.

15. Fliers and guest shall not be under the influence of alcohol or drugs when at the flying field.

16. New members joining in the last quarter of the year will have the next year applied, pending proof of AMA membership for both years.

II: Frequency Pin Board

1. All fliers must use board when it is out. Any flyer can initiate the use of the board.

2. When board is in use, no transmitter will be turned on without first being properly pinned via the frequency board.

3. Place current AMA or Membership card in slot and attach pin to transmitter. To be protected, both must be in place.

4. Possession of pin or use of radio frequency is limited to 15 minutes when other flyers share the same channel.

5. Return pin to board and remove AMA or Membership card when use of radio or flight is terminated.

6. Report missing pins and other frequency pin board issues to Field Marshal or Safety Officer.

III: Flying

1. Pilots must always have a spotter with you at the flying site. The spotter is a person that is able to get emergency care for you in case of an accident. This person must be able to drive you or call via a cell phone. The spotter is also there to watch for and warn pilot of full scale aircraft, parachutes, ... etc. inclusive of ground activity on or around the runway. The spotter must be in a position near the pilot and restrict their activity so as they can verbally warn the pilot, observe and listen 360 degrees at ground level and all air space proximate to the field at all times.

2. Flying is restricted to the following airspace: 400' vertical, 500' north and south from center field, 800' east or west from the flight line (see In, 6).

3. Pilots are to turn their aircraft away and descend below 100' when a full scale aircraft or parachute are proximate to the field. Descending parachutes over the field, full scale aircraft on approach or departure are of prime concern regardless of their estimated distance from us.

4. No flying within 300' horizontal distance of other non-club Port activities regardless if they occur within designated flying area.

5. Landing or Dead Stick aircraft have right-of-way over all other aircraft (pilots must 'announce' their intent/situation, I.E. "LANDING" or "DEAD STICK"). Aircraft taking off must yield to all other aircraft in flight, landing or taxing back to pits.

6. We have a straight flight line. All aircraft must be kept in front of the active flight line at all times. Flight line is defined as the active pilots line extending straight indefinitely in both directions. No flying permitted over pits, spectator area or parking area.

7. A fuel containment system must be in place to catch any excess fuel that can be discharged from fueling your aircraft. (This does not mean the exhaust blow out, but mitigation efforts in this area are encouraged)

8. All transmitters must have proper frequency numbers visibly attached to transmitter.

9. Pilots must stand in designated pilot area when flying.

10. No more than 4 aircraft in the sky at one time.

11. Stunt/aerobatic flying or low level passes (below 50') will be done beyond the paved, runway edge, opposite from the active flight line and pit area. Use good judgment to limit such activities to prevent endangerment and distraction to other aircraft.

12. Special considerations for jets and helicopters

Jets:
Jet pilots must comply with all AMA rules and only fly from the afternoon (west) side of the runway from 12:00 pm to dusk. This is to prevent a possible crash into the timber. Turbines must be started far enough from the grass to prevent fire danger. All turbine flying will be suspended during fire season bum bans. *Exceptions to these flying **times** can be made for special events and/or when the weather is overcast. But all pilots must be able and willing to fly on the afternoon side. With this said, flying on the afternoon side must be acceptable to all pilots present.*
Addendum as of 8/3/2004 - See new Turbine Safety Regulations dated 3/1/2004 (Attached)

Notice to all pilots of
turbine powered aircraft.

The safe operation of turbine powered model aircraft requires a higher level of experience in building, installation of equipment and flying than other types of R/C models.
This is because a turbine powered model is more likely to burn as a result of a high energy crash than a ducted fan or propeller powered model. The myriad of reasons that cause other types of R/C models to crash should be eliminated in a properly prepared turbine powered model. Please exercise the utmost responsibility in this regard.
Should you not have the necessary experience, consult with a qualified jet modeler to have your model checked before flight and get piloting assistance if required.
The most important emergency procedure to be prepared for is to shut down the engine at the first sign of a control problem. Brief your helper/caller to do this for you if you get too busy trying to fly the model. Shutting down the engine, even just a few seconds prior to impact greatly reduces the chances of ignition.
All turbine flyers should be aware of the local conditions in regards to their sensitivity to ignite. You should have water fire extinguishing equipment (see enclosure) on hand and be able to get it to a crash site quickly. You should also have the local fire department telephone number preset into a cell phone and call them immediately upon the first sign of smoke or fire.
It is a requirement of the Academy of Model Aeronautics that you have a current AMA license and Turbine Waiver.

Experience vs. Performance

For any set of rules to be effective however, a great deal of emphasis must be placed on good judgment and personal responsibility. It is therefore necessary that every jet pilot know the limitations of his aircraft and his own piloting skills and then operate on the safe side of those margins.
By now, most jet enthusiasts recognize that the biggest threat we pose to our sport and our neighbors, is a high energy crash and burn away from the immediate flying site. While model airplanes do occasionally go out of control and crash, the pilot has a great deal of control over a possible burn.

It should be instinctive to switch the engine off.

Experience has taught us that if the engine is switched off just seconds before impact, the probability of a fire is greatly reduced.
A properly trained and prepared pilot should be capable of activating the appropriate engine shutdown switch (or lever) at the very first sign of a control problem, without looking down at his transmitter. Some thought and practice (before flight) should make this action instinctive.
Once a control or airframe structural problem starts, it is unlikely that continued operation with the engine running can do little but aggravate the situation - so, shut it down to avoid the ultimate demise of your model, components and your neighbor's property.
This safety procedure should be a part of all instructor-to-student training in the operation of turbojet powered model aircraft.
The new regulations call for a failsafe shutdown after 2 seconds of failed radio signal. Be certain that your E.C.U. is so equipped and properly programmed, then test it on the ground with the engine running by simply turning the transmitter off.
The sport of building and flying turbojet powered model aircraft is very important to most of us, it is therefore paramount that we exercise due diligence and keep our operations safe.
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Safety Issues for Turbine Flyers

I must urge all who fly turbine models to consider the consequences of a serious accident or forest fire. As the size, weight, fuel-on-board and speed of the models increases, so does the potential to do harm. If we are to continue to enjoy this exciting era of jet modeling we must understand and accept the responsibility that goes with it.

We must reduce the possibility of crashes.

No one wants to destroy their model and careful planning and inspections can help reduce them.

1. Inspect airframe. Check control surface and radio installation. Including all nuts, bolts, clevises, etc
2. Plan your flight. “what you want to do and what you can do if there is a problem.”
3. Listen and work with your spotter.
4. At the first sign of problems, land your aircraft and investigate.

Control surface flutter and or failure.

The increase in size, weight and speed of the models dictates the use of correct hinging, (control surface attachment), stronger servos (and servo mounts), stronger connecting push rods, control horns, clevises, cables, etc.
If your model is built from a kit, hopefully the instructions are sufficient and the control surface rigging shown has been thoroughly tested. Even if the kit has a good performance record, the builder can still be delinquent in his experience and knowledge of proper gluing, soldering and wire bending techniques. If your experience is lacking, call for help from the manufacturer or other experienced jet modelers.
All control surfaces (including the flaps) must be rigged properly. Should an aerodynamic flutter occur and your model doesn't crash instantly, consider yourself very lucky and land immediately.

Good judgment

This is not easy to define but it is obvious when it's lacking. People are always asking "when is your new model xxx going to fly?" My answer - the day after I am sure that it is 100% ready.
We must take the time to check everything at least twice. Radio and airframe, should a control problem develop in flight it is paramount that the engine be shut down prior to impact. A few seconds of cooling will substantially reduce the possibility of a fire. Good judgment comes with experience, a commodity that money can't buy, so lets all error on the safe side and stay within the boundaries of our experience and equipment.

Fire suppression equipment and techniques

A few jet flyers have made it a practice to carry along a hand pump water fire extinguisher on all flying sessions. The presence of two of these devices at a recent jet fly-in prevented a crash incident from becoming a major forest fire; these devices are used by professional firemen on controlled burns. One must be in reasonably good physical condition to get the 5-gallon backpack to the crash site quickly. Apply the water stream to the downwind area of the burn first. Do not waste the water supply on the Kerosene spill area until the periphery of the burn is suppressed. The stronger the wind, the less time you have to get to and control the fire.
Use a cell phone to call the local fire department even if you think you have it under control. They can apply a lot more water to the area and be certain that it does not rekindle.
CO^2 Halon or chemical extinguishers are great to douse a fire in your model but are practically useless against a brush fire.

Safety Procedures for Turbine Ops at Shelton Field

1. Comply with all AMA Safety regulations for model aircraft powered by gas turbines. And standard club flight line procedures. AMA rules will be strictly adhered to concerning fueling, starting etc.

2. The first Jet pilot at the field is responsible for wheeling out the fire extinguisher; the last one will return it to the shed.

3. A buddy system is required for extinguishing all fires. Each jet pilot will have a portable extinguisher with them, and there will be one in a car ready too respond to the crash site. Due consideration should be given to calling 911.

4. A range check is mandatory before the first flight of the day.

5. A spotter must be trained on the 2 ways to shut down the turbine. All flyers will authorize their spotter to KILL the engine at the first sign of serious trouble.

6. A new turbine pilot must be spotted by an "experienced" Turbine pilot for their first 5 and up to 20 flights (this exceeds AMA requirement of 5).

7. Any guests operating turbines shall be accompanied by an "experienced" turbine club member until they are satisfied with the guest's ability.

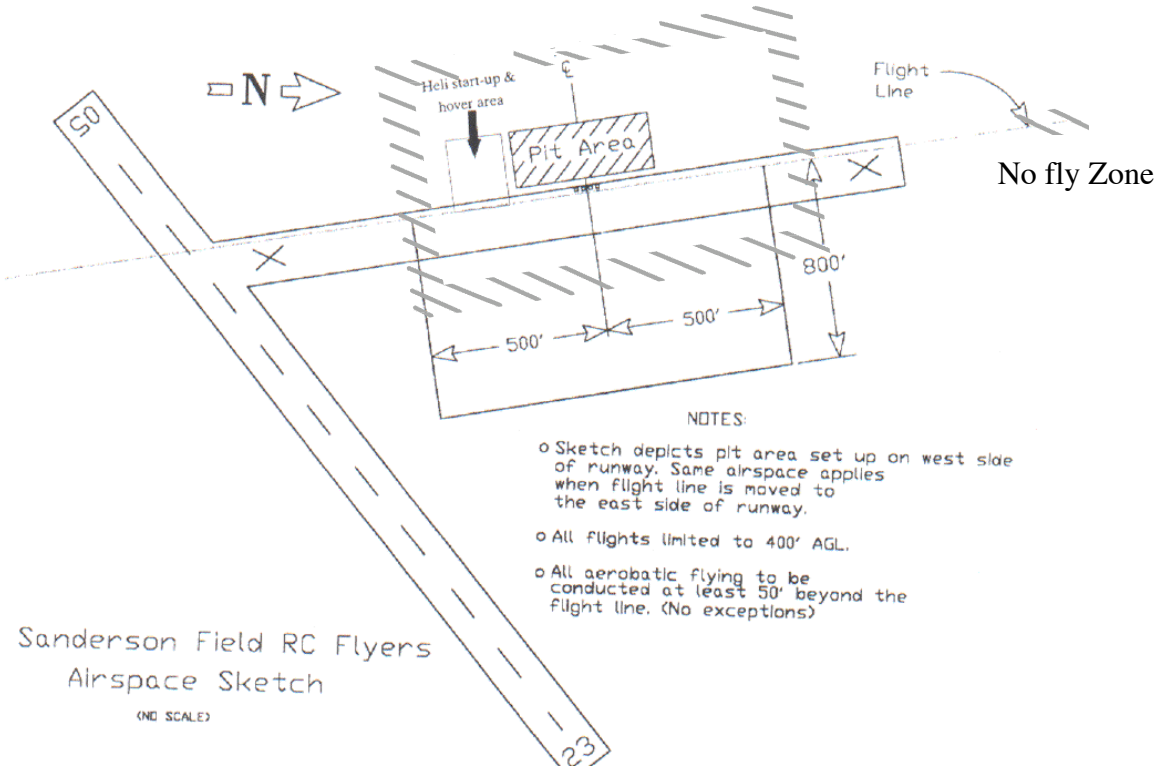
8. New airplanes must pass a rigorous safety inspection by an "experienced" turbine pilot before allowed to fly. A re-inspection after any repairs is required.

9. When the wind is from the north and full scale aircraft are doing touch and goes and flying directly over our area the jets must land until full scale aircraft is no longer occupying our air space.

10. SAFETY REGULATIONS FOR MODEL AIRCRAFT POWERED BY GAS TURBINES, effective March 1, 2004, '"BY January 1, 2005, ALL RADIOS MUST BE EQUIPPED WITH FAIL SAFE AND ECUs SHALL BE CONFIGURED TO SHUTDOWN THE ENGINE WITHIN 2 SECONDS OF FAIL SAFE ACTIVATION."
This will be tested each flying session at Sanderson field by using this simple test.
Start your turbine engine and at idle turn the transmitter off, As you turn off the transmitter merely count "one-two." If the engine does not shut off you will not be able to fly, you should contact the manufacturer.

For more information, log on to www.jetpilots.org

Helicopters:
Helicopters are to be started and hovered on the south end of the pits (the side closest to the active runway). You can hover from the flightline to the grass. But all forward flight must be done out over the normal flying area. (These Helicopter procedures are tentative and could be modified)



Appendix 'A'

Sanderson Field RC Flyers
Emergency/Accident Response Plan

During the period of April 15 to October 15 fire suppression equipment will be kept on site (time period is subject to update due to seasonal conditions). Fire suppression equipment shall be in good working order and fully charged. Equipment includes:

- 20 pound A, B & C rated fire extinguisher
- Shovel
- 3 Gallons of water with a pump delivery system
- Wheeled cart to hold and transport equipment

A minimum of two persons must be at the flying site when operating model aircraft. Both persons must be able to seek emergency care and fire units in case of an accident or fire and be able to suppress any fires with on site fire suppression equipment. Both persons must be able to drive to seek assistance or call via a cell phone.

In the event of a fire, one person must immediately seek out Fire and Rescue units while remaining personnel suppress the fire.

All fires and incidents requiring the summons of emergency care or fire units must be reported to the Port of Shelton. Note: Members are to contact Field Marshal, Safety Officer or Club Officers to report any incidents, these officers will then contact the Port accordingly.

During Club sponsored events, a cell phone must be available within the pit area at all times.

Last modified on 10/30/05

Late Additions

The Board of Directors made two additions to the Field and Safety Rules. These are a couple of issues we have been working on for a year. We felt it was important to do a revision so that all club members will be aware of them.

III: Flying

12. Special considerations for jets and helicopters

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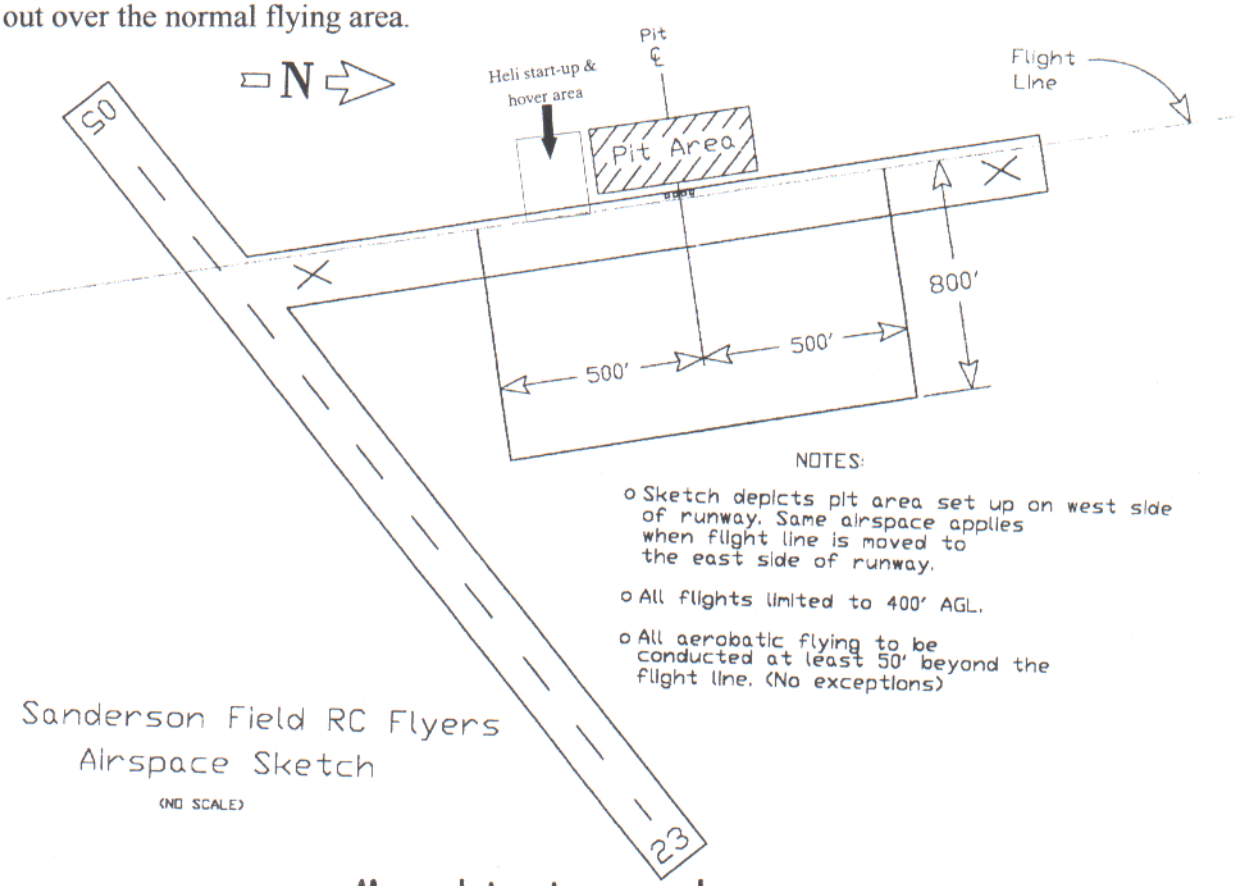

More dates to remember:

Thursday, April 24th: The State Patrol will be using the runway all day.

Friday, April 25th: The DOL will be using the first 1000 ft of the runway starting at the gate. They do not predict that they will be in the way of flying activities.

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Muncie, Indiana 47302
(765) 287-1256 – Business
(765) 289-4248 – Fax
(800) 435-9262 – Membership Services
http://www.modelaircraft.org

SAFETY REGULATIONS FOR FIXED/ROTARY WING MODEL AIRCRAFT GAS TURBINES

Approved by the AMA Executive Council (EC)
on April 27, 1996,
at the Board of Directors meeting
amended by EC on February 7, 2004 …(noted in bold)

It's the flyers responsibility to comply and the CD's responsibility to enforce these regulations!
All items apply to both configurations unless otherwise stated!

EFFECTIVE March 1, 2004

Airframe Requirements

1. The model may be equipped with production engine(s); kit built engine(s), built in compliance with *AMA Regulations for Assembly and Operations of a Kit Built Turbine Engine for RC and CL Models*; or non-production engine(s), built in compliance with *AMA Rules for Design, Construction, and Operation of Non-Production Gas Turbine Engines for RC and CL Models.*

2. AMA retains the right to exclude any engine, (individual or type), which is believed **to** exhibit a safety concern.

3. For Turbojets and Turbofans single engine static thrust* shall not exceed 45 pounds; multiple engine static thrust* shall not exceed 50 pounds combined.

4. For **RC** fixed wing aircraft: **The maximum velocity will be 200 mph.**

For rotary wing aircraft: The output power of the turbine shall be governed such that the rotor head speed does not exceed the manufacturer's recommended RPM for any rotor head component. In no case may the rotor head speed exceed 2000 RPM.

For control line aircraft the gross weight limit is 20 pounds. The maximum aircraft velocity allowed is 100 mph.

* Manufacturer's rating

5. Enclosed multiple engines must be segregated in separate pods or partitions where exhaust gasses cannot mix causing cross- ignition.

6. For **RC** fixed wing aircraft: **The model shall be able to come to a controlled stop on command with the engine at idle on a level hard surface.**

For rotary wing aircraft: The rotor head must be disengaged from the power source and remain stationary when the engine is at idle.

7. Fuels are limited to kerosene **and/or** propane unless approved in writing by AMA.

8. The fuel tanks shall be of rigid construction with consideration given to burst and puncture resistance. Plasma bag fuel tanks are not allowed. Consideration shall be given that non-metallic fuel lines may not be able to contact hot parts of the engine as installed. The fuel system shall have two fuel shut-off provisions, one of which is manual and the other one must be remotely operated. An ECU operated solenoid valve is compliant as a remote shut -off if it closes with loss of power.

9. The radio and/or ECU shall at a minimum be configured to bring the engine to idle, or preferable to shutdown, within 2 seconds of fail safe activation. By January 1, 2005, all radios must be equipped with fail safe and ECUs shall be configured to shutdown the engine within 2 seconds of fail safe activation.

10. Controllable rudders are required on all RC aircraft.

11. For control line models a restraining cable (minimum 0.035 stranded wire) shall be attached from the engine to the bellcrank mounting system.

12. Enclosed engine installation must be designed with attention to flow path ducting, integration of related equipment, and fire containment and suppression on start up.

13. Afterburners are prohibited. Other special controls such as water injection, thrust reversers, variable nozzles, etc. are acceptable only if engine manufacturer provided and supported by development testing and user training.

14. Any engine involved in a crash where high G loads were probable must be examined and certified as safe to operate by a manufacturer approved service center before operating and flying again.

15. De-tuned engine thrust settings will be accepted. The pilot must provide manufacturer documentation.

Flight Line Requirements

16. A "B/C"-rated or equivalent fire extinguisher shall be present for all engine starts. Water based fire fighting equipment shall be present on the field.

17. A phone shall be present at the site, along with the phone number of the closest fire department or 911, whichever has been determined to be most effective for emergency response.

18. For all organized events, dedicated to jet models, a safety barrier shall be in place.

19. The pilot will exercise caution during ground operation so that the exhaust gasses from the engine do not impinge on any flammable object. For organized events the use of blast deflectors in the start up area is recommended.

20. No turbine powered model will be flown after dark, or in poor visibility conditions.

21. Turbine powered aircraft will not be allowed in any speed **or racing** events.

22. Pilot Requirements for RC fixed wing aircraft

An experienced turbine pilot is defined as a pilot who has completed 20 or more turbine flights during the preceding 24 months and who has a current turbine waiver affidavit on file with the AMA. For confirmation purposes, the pilot is required to keep a written log of all flights.

All Pilots operating turbine powered model aircraft solo shall have a qualifying waiver affidavit on file with the AMA. Once the affidavit is received by AMA, a waiver will be issued and returned to the pilot.

An AMA member may be permitted to fly a turbine powered model on the slave transmitter of a buddy box as long as the master transmitter is operated by an experienced waiver affidavit holder.

All waiver affidavit applicants should have accomplished at least 50 flights on a high performance model capable of sustained speeds of 100 mph or higher.

The pilot will successfully perform a qualification flight consisting of all flight maneuvers from the *Turbine Applicant Flight Demonstration* under the supervision of two experienced turbine pilots, one of whom is a contest director. The qualification flight shall be completed by one of the following two methods:

1) The qualification flight will be performed with a model capable of sustained speeds of 100mph or higher;

or

2) The qualification flight will be performed with a turbine powered model. The applicant must first have flown the turbine powered model on a buddy box with an experienced turbine pilot in control of the master transmitter. The experienced turbine pilot will assist the applicant with as many flights as necessary until he is satisfied that the applicant is prepared for the qualification flight after which the experienced turbine pilot will declare the applicant qualified to perform the qualification flight flying solo without buddy box assistance.

Following the successful completion of the qualification test flight the pilot will then submit the *Turbine Qualification Flight Attestation* as proof of compliance with the above pilot requirements.

Each year with their AMA annual renewal by December 15, the pilots will submit the *Pilot Turbine Waiver Renewal Affidavit* which attests that they have completed 20 turbine powered flights in the past 24 months*. This form will also be attested by a second experienced turbine pilot attesting that the pilot is operating turbine powered models in a safe manner. Any pilot whose qualification lapses, may re-qualify by successfully demonstrating the flight maneuvers from the *Required Turbine Applicant Flight Demonstration*, with a turbine powered model before two experienced turbine pilots, one being a Contest Director. The pilot will then re -submit the *Turbine Qualification Flight Attestation* as proof of compliance

The first five solo flights shall be supervised by an experienced turbine pilot. The pilot must instruct the supervising individual on how to perform an emergency shutdown of the turbine in flight from the pilot's transmitter and the supervising individual must be empowered by the pilot to shut the turbine down in flight in the event of a loss of control emergency. The following guidelines will apply to the first five flights:

- **Airspeed should be controlled under 175 MPH.**
- **Flight operation should be limited to single engine turbine airplanes.**

23. Pilot Requirements for all other aircraft

The pilot must present to AMA the following qualifying credentials when applying for a **rotary wing or control line** turbine waiver:

A. For rotary wing aircraft: Self-signed declaration that he or she has completed a minimum of 50 flights on a high performance helicopter (0.60 cubic inch displacement or larger) capable 50 mph forward flight speeds and advanced aerobatics.

For control line aircraft: Self- signed declaration that he or she has completed a minimum of 50 flights on a control line aircraft.

* Pilot Turbine Waiver Renewal Affidavits are not due until the 2006 renewal season, which means renewal affidavits must be submitted by December 15, 2005 to avoid re-qualifying requirement. Once the renewal affidavit is received and the membership renewal processed a 2006 turbine waiver will be issued.

B. Self-signed declaration of knowledge concerning:

1. Effect of throttle Lag
   · Ground approach/Go around
   · Ground handling

2. Engine Characteristics
   · Throttle back after takeoff (almost no end to acceleration) not applicable for rotary wing aircraft
   · Fuel limits (any inverted flight restrictions)
   · Oil limits
   · High idle thrust

3. Control Setup
   · Radio setup
   · Emergency shutdown control(s)

4. Ground Handling
   · Proper model positioning
   · Proper safety procedures on return to pit area

C. Signed statement from 2 AMA CD's stating flight proficiency and adequate safety practiced by the candidate pilot with high-speed, high performance aircraft**,** in accordance with paragraph **23**A. One of the CD's has to be an accepted Contest Director from the AMA Accepted Turbine Flight Sign Off list.
*Note: The list of **designated** turbine experienced CD's is published on the AMA Website.*

24. The AMA, through the decision of its Special Services Director or its President, may remove a turbine waiver at any time. The waiver holder shall be notified of the removal in writing, including a short summary of the basis of the removal.

A waiver removal can be predicated on the oral or written complaint of any AMA member.

Where a Contest Director at a sanctioned event believes a turbine waiver holder is operating in a reckless or dangerous manner, the CD shall supply a written report to the AMA describing the infraction(s).

The turbine waiver holder who has had his waiver removed may appeal the removal within thirty (30) days of receipt of the removal. The appeal must be accompanied by all documentation which the appellant believes supports his/her position.

The AMA Safety Committee will consider the appeal, including the written documentation supplied by the appellant, and conduct any investigation or hold any hearing it deems appropriate, although it need not hold any formal hearing.

The majority decision of the AMA Safety Committee is final and binding.

If there is no appeal or the appeal is denied, there will be a one -year waiting period required before applying for recertification.

Any operation of a rotary wing aircraft powered by a turbine engine requires that the pilot of said craft has obtained an AMA waiver specifically for rotary wing aircraft regardless of turbine engine configuration.

NOTE

Since the majority of foreign contestants attending AMA sanction events would find it difficult to comply with the requirements of obtaining a special turbine waiver, the AMA Executive Council has approved the following provision effective January 1, 1997:

> "AMA will accept a letter from the National Aero Club stating that the pilot is qualified and experienced in operating a model powered by a turbine engine".

While foreign contestants don't have to obtain a special turbine waiver they are still required to comply with the *Safety Regulations for Model Aircraft Gas Turbines* except for items **22** & **23**.

Any AMA Member that resides in the United States and operates a Turbo Jet Engine is required to obtain a waiver.