

TEXAS CITY RC CLUB, INC.



STUDENT HANDBOOK PACKAGE

Special Note: Students must bring this handbook to the field each time they expect to fly. This is especially important when an instructor not familiar with the students progress to-date will supervise the flight.

Revised: 30 March 2006
Version: 51

TEXAS CITY RC CLUB

Welcome to the Texas City RC Club (TCRCC). TCRCC is a club dedicated to its members to provide a safe place to fly radio control airplanes and helicopters. This club is run by the members for the members on a volunteer basis. Roberts's rules of order are used as a guide to organize the monthly meeting.

TCRCC is insured and chartered by the Academy of Model Aeronautics (AMA). Members of TCRCC are required to have an individual AMA membership. AMA provides insurance, coordinates events, furnishes a very good monthly magazine and works with Congress and the FCC to protect our rights to fly radio controlled model aircraft.

TCRCC annual dues are currently (2005) set at \$60.00.

In this packet you will find information on getting started, what type of airplane to purchase, a list of instructors and the training program.

Meetings: The last Thursday of each month

Place: Nessler Center Texas City

Time: 7:30pm

Website: www.tcrcc.org

****(Check the club calendar or latest newsletter on our website for changes to the location and/or time of the club meetings)****

Acknowledgements: We would like to thank the **BAY PORT AERO CLUB** for developing the original version of this manual.

Texas City RC Club Flight Training Program AMA Charter 1075 IMAA Charter 260

Texas City RC Club (TCRCC) is an officially chartered club of the Academy of Model Aeronautics (AMA) and has a Chapter Membership in the International Model Aircraft Association and flies under the rules of both organizations. The goal of the TCRCC is to teach the new R/C flyer to fly safely with a minimum of risk to his airplane. In order to meet this end a comprehensive flight-training program has been developed. While in the program, a student will be taught not only the basics of safe, controlled, flying but related subjects including battery maintenance, safe construction practices, basic engine tuning and care, frequency control and flight line courtesy skills.

All instruction is supplied by TCRCC certified instructors or any current club member willing to accept the responsibility of safe operation of the students airplane. The instructors have passed review, by the club for many skills beyond the ability to fly a model airplane. The certified instructor is a competent builder as well as a safe and proficient RC pilot.

Each student's airplane will be inspected to insure that it is airworthy. The instructor earned his position by being a reliable Individual who has made a commitment to share his time with others that they might share his enjoyment of model airplanes. Engine tuning and care will be reviewed along with airframe care. The student will learn an overview of the ownership of model airplanes beyond the skills needed to fly.

A list of current TCRCC instructors is published monthly in the club newsletter. A student **MUST** be a member of the Academy of Model Aeronautics before receiving instruction at the TCRCC field. All flyers must join the club after **three** flying visits to the field in order to continue to have flying privileges at TCRCC. TCRCC members must be certified RC pilots in order to fly without an instructor present. All existing TCRCC members not actively being instructed as of 1 January 2005 will be considered field solo/certified at TCRCC.

This guide is intended to accomplish several goals. One is to ease the transition from one instructor to another in the event of a change. (Though it is not unusual to change instructors, using more than one person is not recommended.) Another goal is to insure the safety of every person present at the field. In order to achieve those goals, compliance with the program and its few restrictions must be observed. As each section of the flight-training program has been successfully completed, the instructor will sign off that section.

Please keep in mind that TCRCC abides by AMA Safety Rules, as well as those adopted by the membership. These guidelines are posted at the field and are enforced by each member of the club. These regulations are in place to insure the safety of each pilot and spectator at the field. They will be reviewed with you by your instructor throughout your training and when you are signed off as a "new RC pilot".

Remember everyone in the club wants to see new RC pilots succeed and will work with you toward that goal. Your instructor will do everything possible to keep you and those around you safe.

Selecting Your First Airplane

Many good trainer type aircraft are available in both kit and almost ready to fly (ARF) forms. All of them share some common characteristics. They will be high winged sport planes designed to fly on three or four channel radios. Most have flat-bottom wings; a few have semi-symmetrical airfoils. While either is acceptable, each has characteristics that make it desirable as a trainer. The high lift flat-bottomed wing is very common. It allows very slow flight and is forgiving to fly. This means the plane is not trying to 'bite' you with each tiny mistake. With adequate power, it is capable of fairly high speeds at full throttle. Gusty wind tends to bounce airplanes around a little when so equipped.

The semi-symmetrical airfoil generally has a slightly higher minimum flight speed, although most flyers will not notice this after a few lessons. The semi symmetrical wing is less bothered by gusty winds and typically has a higher maximum speed, all other things being equal. Semi-symmetrical winged planes are usually more acrobatic than those with flat-bottomed airfoils.

Popular, easily built and well-proven trainer kits include (in no particular order) the following airplanes with flat-bottomed wings. Three channel planes fly on rudder, elevator and throttle; the fourth channel is ailerons. Note that this list excludes very small and very large planes and scale type planes, since they usually are poor selections as trainers. These are some of the more commonly found airplanes, but by no means is this a complete list.

KIT'S

Carl Goldberg Models: Eaglet 50, Eagle II
Great Planes: PT 20 & 40
Hobby lobby: Any of the Telemaster series
SIG Manufacturing: Kadet, Kadet Junior, Kadet(3channel),Kadet MK II,
Kadet LT-40 (4 ch)Seniorita, Kadet Senior

ARF's

Hobbico: Avistar 40, Hobbistar 60 (one of the best starters available)
Royal: Royal 40T
Thunder Tiger: Tiger Trainer

Good used trainers are often available through club members or hobby shops. These are often a way to get in the air quickly, and possibly at a cost savings. Take an experienced flyer with you when purchasing used gear. It is sold without warranty and it is the buyer's responsibility to assure that the plane, radio or engine is in serviceable condition and, in the case of radios, currently legal and acceptable at your field. If you are building your own airplane from a kit or as an ARF, be sure to read the section on inspection under the "First Trip to the Flying Field" heading. This section is also useful as a guide to buying used airplanes.

Radios

The radio is the most expensive and important element of the trainer. It represents the life and well being of the model. In 1991, the FCC passed new regulations governing the radios we use. Many clubs have additional regulations in the interest of safe flying. For universal acceptability, use only radios that meet all 1991 standards. For transmitters, this means that the transmitter is certified "narrow band". Transmitters built before the middle of 1995 will have a "Gold Sticker" that designates this certification. The receiver should also be a narrow band device. Futaba and Airtronics FM and PCM receivers will have the words 'Dual Conversion' on them. JR radios have an ABC&W' designation. Again if you are buying used equipment, solicit the help of an experienced flyer- one who flew during the change- before laying out your cash. Remember that batteries can be very expensive. If the rechargeable batteries in a used radio are bad, it can

cost as much as \$60- \$70 to replace both the transmitter and receiver packs. Find out if any channels in your area are unusable before buying, too. Some areas have high power radio/TV/cell phone transmitters situated-between some of our frequencies and their signals can bleed into our airplane receivers. This almost always results in a bad, uncontrolled crash.

The standard battery packs and servos that manufacturers supply with new systems are adequate for trainers including .60 sized ones. Large, high torque ball bearing, mini, micro and other specialty servos are not needed for trainers, nor are high capacity battery packs.

The transmitter must be on a 72 MHz frequency and have a red flag on its antenna proclaiming that it is a 72 MHz radio suitable for aircraft use only. It must also have on it a readily visible tag identifying the channel on which it operates. These are AMA requirements. Radios on 50 and 53 MHz bands are also legal for R/C use. The user must hold a valid FCC Ham license in order to use radios on 50 or 53 MHz, and have it in his possession while using the radio. Failure to comply is a violation of Federal law and AMA regulations and will invalidate AMA insurance.

Buddy box training methods are required for instruction at TCRCC. This system permits the student and instructor to each hold a transmitter, avoiding passing the transmitter back and forth. This also allows the instructor to take over and save a plane from a bad situation in far less time than if the student had to first decide to hand the transmitter over, giving the instructor far too little time and altitude to save the airplane. Airtronics, JR and Futaba offer transmitters with the buddy box connector. Many instructors have buddy boxes. Check to see which one has the type that is compatible with your equipment when choosing an instructor.

Your choice of engine can dramatically affect your learning experience. Check with someone at the flying field that has experience with the type that you are considering. The experienced flyers will be able to best help you as they will be familiar with many of the brands of engines from which to choose. Most trainers require a .40 or .60 size two stroke glow engine.

Airplanes smaller than mentioned above are generally too small to fly in much of a breeze and are hard to see at a distance. Larger models tend to be a great deal more expensive; so most beginners stay within this range. If the student is interested in gliders, helicopters, or electric flight, an instructor with the appropriate experience should be consulted, even if another instructor will be doing the actual flight training.

First Trip to the Flying Field

Now it's time to get to the real business at hand- flying. Once the student has a completed aircraft, the instructor will carefully inspect it before the first flight. Other subjects will also be reviewed before and after the first flight session. These subjects are flight patterns, transmitter impound, frequency control, engine starting and tuning and what to expect on the first flight. A post flight review of procedures and finally a review of battery maintenance.

The inspection will be a thorough one. The instructor will check the following check list items before the initial flight, even if the airplane has been flown elsewhere in the past. The sole purpose of these inspections are to increase the student's chances of success without airplane trouble. Review the "First Flight Pre-Flight Checklist" for added assistance in assuring a successful first flight. Remember, if you work on your airplane between flight sessions it should be inspected by the instructor to assure that everything is in order before the next flight.

Also remember that the key to successful flying is good preparation. Making sure that everything is ok on the ground will assure that there are no surprises in the air.

First Flight Pre-flight Inspection

1. Overall appearance should suggest that the model is sound and flight-worthy. Covering should be secure and without holes, tears and other structural flaws. Is it excessively heavy or, suspiciously light?
2. Check all hinges by pulling firmly on all control surfaces. If one tears out here, rest assured that a crash was averted. Are the hinge gaps tight?
3. Is plane properly balanced according to the plans? Do not go by spar locations it is not necessarily the balance point.
4. Are the engine, prop, spinner, muffler and wing securely mounted? Does the thrust angle of the engine appear correct? (No major misalignment) Has the prop been smoothed and balanced?
5. Is the fuel system sound and hooked up correctly? Is the tank well padded?
6. Is the radio installed correctly? The power switch must be on the opposite side of the plane from the exhaust. Batteries and receivers must be secured such that they cannot move in flight and must be wrapped in foam for vibration isolation. Natural foam rubber is the best material for this application. Plastic foam does not protect your equipment as well. Batteries and receivers may be wrapped in plastic bags to protect them from fuel. The antenna must not be cut for any reason. It should be fully extended aft either inside or outside the airplane and secured. Finally, a range check must be done.
7. Servos and their mounting rails must be secure. Servos must be mounted in rubber grommets with proper hardware. Check that the servo arm screw is in place and snug. Check pushrod-to-servo arm attachments. The Texas City RC Club recommends that EZ type connectors with plastic retainers be used only for throttles and other non-critical applications. Z-bends or metal or plastic clevises with a piece of fuel tubing over them are safe and secure attachment methods. The new clip type clevises assure the connection between the servo and the control surface. Check with your instructor on how to use them. If tube within a tube pushrods are used, are they well secured at both ends, and free of binding? Listen to the servos to determine if they are working smoothly. Measure control surface throws and compare to the plan specifications if they are available. Wiggle each control surface while the radio is on to assure that no excessive play exists.
8. Is the landing gear securely mounted and not bent or not correctly aligned? Do the wheels roll easily? Does the plane roll in a straight line? Is the steering free and positive?
9. **Are the batteries fully charged?**
10. If sparkplug ignition is installed, is a kill switch installed and functional?
11. Is the wing free of warps? Is the center section properly reinforced?
12. Are the fuselage and its attachments straight? Is the engine area fuel-proofed?
13. The prop spinner must not touch the prop blades. Damaged props must be discarded. Repaired Props are not safe at the high speeds of model engines. DynaThrust propellers are not permitted at the Texas City RC Club flying field. These are props for very large engines.

14. Engine and muffler screws and glow plug tight.

15. The pilot's AMA number or name and address MUST be on or in the airplane, per the AMA Safety code. Insurance claims may be denied if this rule is not followed.

Note: This process may take more than one trip to the field. It is critical that all discrepancies are corrected prior to the first flight.

Aircraft inspection performed by: _____

Date: _____

Manufacturer and model name: _____

Changes/repairs required? NO _____ YES _____

If "Yes" Please note the items needing change/repair below:

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

Once Changes/Repairs are completed:
Sign off that Aircraft is ready for flight.

Instructor Date: _____

First Flight Procedures

Before flight training can begin the instructor and the student will review flight procedures for the field. The AMA Safety Code must be reviewed and compliance assured. The transmitter impound will be shown and procedure explained. The transmitter will be impounded. The flight stations and methods will be explained. Field safety rules are reviewed. Airplane restraints are demonstrated. Flight patterns and procedures are explained. Landing approaches are explained, including the downwind, base and final legs of the pattern. The events that occur during a landing are explained. Emergency procedures, including in-flight airplane trouble and loss of power (dead stick), as well as right of way are explained. The instructor will show how to declare take-off, landing and person on the runway, when at the flight station. It is important to assure that everyone hears you when you call your intentions.

A person on the runway has the right of way, but should not go onto the runway without declaring his or her intentions and clearing his need to be on the runway with all of the RC pilots currently flying. He should clear his airplane from the runway as promptly as possible and declare that he is clear of the runway. Landing priority is given to dead stick aircraft first. RC Pilots should also give immediate runway access to any aircraft that is having in-flight trouble.

When the student is ready for the start of the first flight, advise other RC pilots that a "maiden flight test" is occurring. It is recommended that all other flight operations be discontinued prior to the taking of a maiden flight of an aircraft. AMA rules prohibit maiden flights in the presence of spectators (unless you are assisted with an experienced pilot), so this flight should be done on a day when the field is not very busy. The frequency pin is taken from the pin board and replaced with the club member's AMA card. The pin is attached to the transmitter. Once the pin is acquired and prior to the first flight, testing should include a radio range test with the engine running.

The airplane, field box and transmitters (master and buddy box) are taken to an available flight station, remembering that only four aircraft may be in the air at one time. Both transmitters need to be checked and the control, trim and travel direction of all servos verified that they match. The wind direction is observed and the flight pattern for the day is explained, giving the student the proper takeoff direction information for future reference. The details of the first flight experience should be explained, including the instructor's need to give and take control of the aircraft. The intent of keeping people safe first, then the safety of the other aircraft and finally the keeping of the student's aircraft in one piece needs to be discussed. An instructor will always do everything in his or her power to save the student's plane, as long as it doesn't endanger someone.

The instructor assists the student as necessary in fueling, restraining the aircraft, starting and tuning the engine. Each item is explained as to the reasoning and methods used. This builds understanding of the process for the future knowledge of the student. The controls are given a final check for movement and direction. When the engine has warmed up, the intent to takeoff is declared to the other RC pilots. Once the airfield is cleared, the airplane should be taxi tested before attempting its first flight. Once all on ground testing is completed, the plane is taxied to its take off position and taken off by the instructor.

The instructor will bring the aircraft to a good attitude for flight-testing and to determine that all is in good order. The control trims will be adjusted as needed to assure level flight (needs to be on both transmitters). After the aircraft has been stall tested and the instructor is familiar with its characteristics, the instructor may need to land the model to allow for adjustments. If this is not required, the student may fly at this point, keeping in mind the amount of fuel remaining due to the taxi and flight-testing. Note: A flight timer is recommended to help in keeping track of the fuel used.

The student should be instructed in the methods of attaining level flight and normal flat turns. The instructor should be aware that the first flight for a student may cause them to be anxious, so he or she should be prepared to take control of the aircraft when needed to allow them to regain composure. The student's stress level may determine the length of the first flight. The instructor may need to assume control of the aircraft often during the initial flight to allow the student the chance to compose him or her self. During flight training, the instructor should let the student know when they take control of the aircraft. This will assure that the student understands what inputs they are giving versus what the instructor is giving.

At the end of the first flight session, the student should be supervised for impound procedures, de-fueling and aircraft cleanup. The plane should be inspected after the wing is removed, looking for any parts that may have loosened or failed. Any needed changes or adjustments should be discussed. Additional flights may be taken, depending on the readiness of the student and the aircraft.

At the end of the flight day, the status of the student's progress should be discussed. Each aspect of things that went well and things that need to be improved on should be noted. The student should be told how to recharge the batteries of the radio system and what to look for on the aircraft overall in preparation for the next flying session.

It should be noted that battery maintenance is essential to continued success in RC flying. Batteries should not be allowed to remain un-charged for long periods of time. Their capacity may be reduced, and the results of failed batteries can be the loss of control of an aircraft, which would result in a crash of the aircraft.

Note:

Once all areas of the first flight have been reviewed with the student and the Daily Flight Checklist and the Pre-Flight Checklist have been discussed the student is ready to begin normal flight instruction.

The attached sheet should be signed as each task is accomplished. The student should keep this as they progress in the training program. Once all have been completed, the student will be moved into the basic and advanced flight program.



First Flight Sign-Off Sheet

1. Safety and AMA membership.

_____ has successfully completed a review of the rules of the AMA and TCRC. All safety requirements are understood. Student has received their AMA card. Student has their AMA card and student handbook with them.

2. Ground School

_____ has successfully completed the verbal portion of the student pilot training program and is ready to begin first flight session.

Instructor _____ Date _____

3. Aircraft First Flight

Training Aircraft: _____ has successfully completed the first flight session and is ready for normal flight training sessions.

Instructor _____ Date _____

4. Student First Flight

_____ has successfully completed the first flight training session and is ready to begin basic flight training.

Instructor _____ Date _____

Notes: _____



Flight Maneuvers

After completion of the first flight session the student may begin his maneuvering lessons as soon as he is ready. Each maneuver shall be considered learned when the student can accomplish the maneuver reliably, without losing control of the model or becoming disoriented. Good control is the goal at this point, not perfect maneuvering. The basic maneuvers:

Section 1: Basic Training

1. Takeoff

2. Level flight.
3. Landing Pattern
4. Landing

Approved to continue into advanced basic training:

Basic Flight Training Complete

Student: _____

Instructor _____ Date _____

Section 2: Advanced Basic Training (optional, NOT required for flight certification)

1. Loop and Roll
2. Immelman (half loop up and rollout)
3. Split Ess (half loop down from inverted, and rollout)
4. Spin and recover
5. Chandelle (altitude gaining maneuver- climb while turning)
6. Recovery from unusual attitudes

Advanced Flight Training Complete

_____ has completed the Advanced Basic flight-training program and is approved to take the Final Exam and Solo Flight.

Instructor _____ Date _____



Final Exam and Solo Flight

At this point the student has completed all required instruction and may make his solo flight when he is ready. Any Instructor may administer the solo flight exam.

The test has two parts. The first is an informal discussion where he explains the AMA Safety Code, club safety rules and procedure rules to the instructor. The second part of the exam is the flight test. A buddy box may not be used during this test. If the student requires assistance he is not passed but may retest again when he is ready, but may not retest sooner than the following day. The flight test includes all associated ground procedures, taxi out, takeoff, level flight, right and left pattern flight, landing pattern, a controlled on runway landing and taxi back to the flight station area. Upon satisfactory completion of these tests, the student is a certified RC pilot and may fly without an instructor. The club will issue Solo Certificate to each new certified RC pilot.

New RC Pilot: _____ (name)

Approved as a certified RC pilot. Date _____

Instructor (Sign)

I understand the rights and responsibilities of being a pilot in the Texas City RC Club and agree to abide by the AMA and Club Rules.

New RC Pilot (Sign)

Daily Flight Checklist

(Recommended for each plane at the start of each flying day)

Radio-off Inspections:

General

Verify that all critical components are in good working order

- _____ Determine if there has been any significant work done on aircraft since the last flight day. If so go to the Pre-1st Flight Checklist
- _____ Verify switches (ignition, on-board glow, etc.) are securely mounted and correctly connected

Airframe

Prior to wing mounting, verify that all components are correctly installed.

- _____ Servos Screws (mounting and control arm)
- _____ Receiver, antenna and battery
- _____ Power Switch and wiring harness
- _____ Throttle cable/rod
- _____ Fuel tank (if visible)
- _____ Wing mounting apparatus
- _____ Control push rods and clevises (keepers in place)

After assembly of aircraft, verify all controls surfaces.

- _____ All wing mounting hardware is securely tightened or installed
- _____ Hinges are secure (pins installed for pinned units)
- _____ Control horns are secure
- _____ Surfaces are free moving (only pressure is against the servo)
- _____ Landing gear has no loose components
- _____ All flying wires or struts are secure
- _____ All accessories are secure (hatches, cockpit covers, cowlings, etc.)

Engine

Verify that the engine assembly is in good working order

- _____ Engine mounting is tight
- _____ Muffler is secure
- _____ Glow Plug is secure
- _____ Propeller nut has been tightened recently
- _____ Propeller has no damage
- _____ Rotating clearances are adequate

Radio-on Inspections:

Verify radio controls are functioning correctly (*Frequency pin is required for this one*)

- _____ Assure, that on model selectable transmitters, that correct model is selected
- _____ Verify Ailerons, Elevator(s), Rudder, Flaps, Throttle movement is in correct direction
- _____ There are no glitches on any of the controls, otherwise verify radio with range check and eliminate cause of control glitches before flying

Go To Pre-Flight checks>

Pre-Flight Checklist

(Recommended prior to each flight)

Pre-Flight checks

Before going to the Flight-Line

Prior to each flight verify that the following tasks are successfully completed:

- _____ Aircraft: has been fueled
- _____ Fuel lines are in correct locations (tank pressure, carburetor, etc.)
- _____ Receiver battery voltage has been verified
- _____ Transmitter has been correctly checked out of the impound, with frequency pin

At the Flight-Line

Prior to starting the aircraft:

- _____ Before the transmitter is initially turned on, make sure that you have the correct pin first and that the pin matches that frequency of the transmitter in your hand. When the transmitter is first turned on, see if anyone on the flight line starts having any trouble. It is possible that someone may have forgotten to pull the pin, this will almost certainly crash their aircraft! If you hear someone note (yell) that they are having a control problem, immediately turn off your radio and investigate before proceeding.
- _____ Transmitter battery voltage has been verified
- _____ Model selectable transmitters have correct model selected
- _____ All control surfaces are correct movement (one more time, to be sure)
- _____ Verify that control surface trims are correct
- _____ There are no glitches on the controls

When starting the aircraft:

- _____ Verify that the aircraft: is secured by tie-down or qualified assistant
- _____ Throttle is set below mid-point
- _____ All persons and equipment are clear of the "propeller rotation area"

From this point individual aircraft have unique requirements but the key point is that we each want to **maximize SAFETY by minimizing risks.**

Always remember to know the flight pattern prior to taking-off.

Remember to call your intentions when taking-off, landing, entering and exiting the runway.

Never work on an aircraft: while it is sitting on the runway, it is an invitation to disaster. Bring it to the flight line (or the pits if the adjustment can't be done in a couple of minutes).

TCRCC Field rules

All spectators, members or parents will be held accountable and responsible for any damage that they, their children or their pets may do.

01. ALL AMA safety rules will be adhered to.
02. Drinking of alcoholic beverages is strictly prohibited.
03. A maximum of one airplane flown from each flight station.
04. Flying is prohibited during mowing of the runway.
05. Transmitters must be impounded when not in use for flight operations or aircraft setup/maintenance.
06. When a RC pilot and an aircraft are ready for a flight, the RC pilot's AMA card must be placed in the pin rack and frequency pin removed. It should be attached to the corresponding frequency transmitter, before going to the flight station.
07. Student RC pilots must be signed off by a certified TCRCC Instructor before solo flight.
08. All spectators must stay behind the flight line fence, unless specifically requested to assist a pilot at the flight station. At no time should there be more than three persons at a flight station.
09. A "No-Fly-Zone" shall be observed at ALL times over the pit area, spectator bleachers, pilot boxes and Humble Camp Road.

Willful disregard of flying rules is considered cause for cancellation of membership.

FIELD GUIDELINES

01. No profanity, disorderly conduct or littering.
02. All fuel-burning engines must have mufflers.
03. Visiting pilots are allowed a maximum of three flight days. They must either apply for club membership or discontinue flying at the field upon the conclusion of the third day.
04. Use of a restraining device is strongly recommended prior to starting an aircraft's engine, if the pilot is alone at the flight station.
05. All RC pilots must announce their intentions during flight operations: "on the runway"; "clear of the runway"; "taking off"; "landing" and "dead stick landing" announcements are required. Other specific maneuvers over the runway should be announced when appropriate.

06. All test flights of a new airplane should be done with the assistance of a spotter to aid in making trim adjustments.

07. No taxiing into pit area.

08. Flight times should be limited to 15 minutes each.

09. Start engines with aircraft facing the runway (with the exception of Jet engines; they should be started parallel to the runway in order to shield the spectators from engine thrust)

10. Pilots must stand in one of the pilot's boxes during flight, if the pilot stands behind the aircraft for takeoff, he/she should go to the pilots box immediately after takeoff.