

Miniature Aircraft Society of Truro



OPERATIONS MANUAL

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GENERAL This Operations Manual serves as a reference for all rules and regulation, and guidelines, for members of MAST and their guests, as pertaining to George Lacey Field, or GLF, and is in addition to those rules and regulations as mandated by the MAAC Safety Code.

Safe operation is the responsibility of each and every participant.

MEMBERS To have full operating privilege at GLF, an individual:

- must be a current member of MAAC (or equivalent) and comply with the MAAC Safety Code
- must be a current member of MAST
- successfully completed the MAST Wings Program, or equivalent, and
- is responsible for the airworthiness of the model he/she flies

Operation is a privilege and not a right. Any member who consistently is unsafe or exhibits unacceptable conduct, may have his/her operating privileges and/or membership in MAST revoked.

GUESTS To have operation privileges, must be sponsored by a current member of MAST, and have current MAAC or equivalent. The MAST sponsor shall assist the guest in observing our rules and regulations.

STUDENT PILOT A member or guest who has yet to complete a wings program is deemed a Student, and **will not fly alone or unassisted** at GLF. A MAST student:

- must be a current member of MAAC and in the process of learning the relevant MAAC Safety Codes
- must be a current member of MAST
- is following the MAST Wings Program under the guidance of an instructor or proficient pilot
- is responsible for the airworthiness of the model he/she flies
- has agreed that MAST or the instructor are blameless in the loss or damage of his/her model

Other pilots should appreciate the difficulties that a student pilot is undergoing, and operate so as not to intimidate or confuse the student pilot.

SPECTATORS All spectators should be made welcome. They usually observe the signs leading to the pit area, and considering the possible dangers involved, and possible injury, MAST members present should guide spectators if they wish to enter the pit area.

Should a spectator wish to try a flight, it must be done using a buddy box, with an instructor or competent pilot in control, and normally only done once.

FLIGHT OPERATIONS

Preparedness Any required maintenance, transmitter programming, supplies, and such, should be dealt with before coming to the field. Refer to **Maintenance** on page 4.

Property GLF's layout is such that parking and spectators are behind all flight operations.

People Be aware of people in the area, such as farmers, gardeners, and hikers. Flight operations must never conflict or endanger people or property.

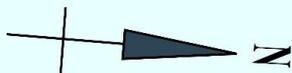
Planes Our airplanes are the focus of the hobby, and although miniature – are real airplanes, and are dangerous, if not properly maintained and flown in a safe manner.

GLF Flight Operation Rules In concert with or in addition to the MAAC Safety Code, the following rules and guidelines will apply.

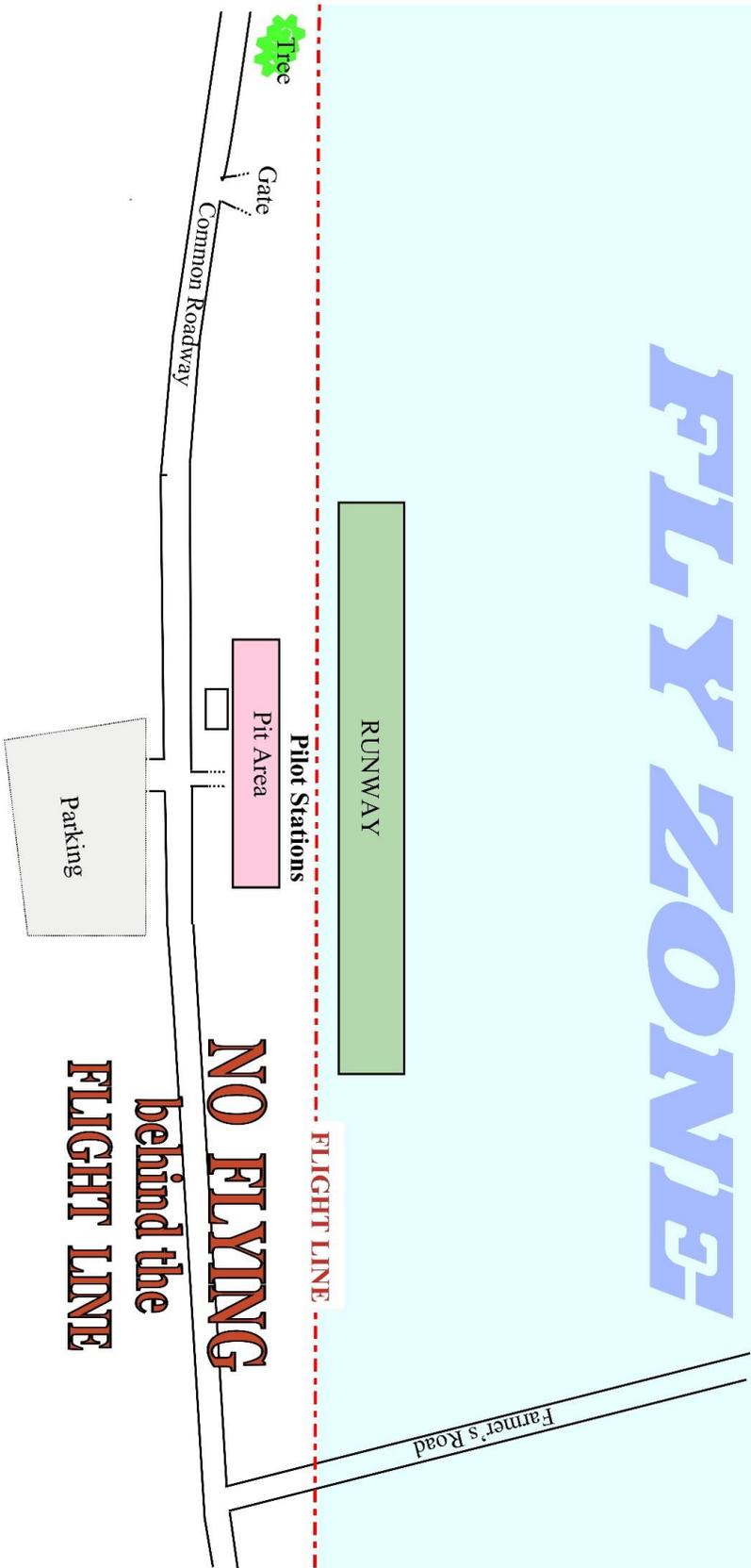
1. The **MAAC Safety Code** must be adhered to.
2. A **range test** will be carried out at the start of each session.
3. A **pre-flight check** will be carried out before taking off for each and every flight. Refer to page 4.
4. Only **three (3) aircraft** are allowed in the air at any given time. Pilots will stand in the designated pilot spots behind the forward barrier. This may be waived for a special event, if approved by an Executive and co-ordinated, with rules or understandings in place.
5. If taking off an aircraft or launching a towed glider while **standing on the runway**, once airborne, all participants will move behind the forward barrier, and stand in the designated pilot spots.
6. If there is a possible conflict, such as a mix of helicopter and fixed wing, or someone practicing IMAC or such, with normal flying, a **spotter** should be used.
7. If test flying a new aircraft, or confidence and/or experience is low, an **assistant** should be used.
8. Always yield to **full scale aircraft** by: reducing altitude, changing area, or landing.
9. If more than one aircraft flying, always **announce your intentions**, such as “*on the field*”, “*taking off from the left*”, “*landing from the right*”, “*low pass*”, “*dead stick*”, etc.
10. **Respect other pilots** by adhering to circuit.
11. **Transmitters** that are not 2.4 GHZ spread spectrum, will use the **frequency impound** and channel strip, and will be responsible to ensure that they or others not on 2.4 GHZ, will not conflict.
12. It is **strongly suggested** that if you fly alone – you should have a cell phone with you.

Unsafe or Unacceptable Conduct If a member observes unsafe operation, or unacceptable conduct, and an amicable approach has been tried, without change, the offender should be reported to a member of the Executive.

Miniature Aircraft Society of Truro
George Lacey Field
45°22'40.31"N 63°17'37.65"W
253 Marshland Drive



FLY ZONE



MAINTENANCE

Crashes are almost 100% pilot error and are a result of either losing control while flying, or lack of maintenance.

Airworthiness, or a properly maintained aircraft, is very important, not only for your investment but also the safety of yourself and others. Refer to the extensive Airworthiness Checklist on page 6.

Ensuring your aircraft is properly maintained begins before going to the field, while at the field, and returning home after a session.

New Aircraft Maintenance starts with a new aircraft in which everything is checked **before** the test flight, then, if required, corrections are made to both the aircraft and the transmitter after the test flight. The aircraft is test flown again to ensure that the adjustments are correct. This process is repeated until the aircraft is deemed airworthy, or taken home for extensive repairs or adjustments, and then test flown another day.

Before or After Most maintenance is done at home, where you have the space, materials, tools, and are not rushed.

During Some minor maintenance can be done at the field during a flight session.

Another aspect of maintenance is having all the necessary supplies, tools, and so forth, “topped up” before leaving home or after returning home.

PRE-FLIGHT CHECK

When arriving at the field, and before the first flight, a range test must be carried out with the motor or engine not running, and the aircraft restrained. **Never fly if the range test fails.** Then check that nothing is loose including all control surfaces.

Before taking off for each and every flight, always carry out a pre-flight check with the motor or engine running, and the aircraft restrained.

- No vibration or unusual noise
- Control surfaces move in the correct direction and correct amount of movement – always done while BEHIND the aircraft
- Act on premonition – if you think something is wrong then likely it is

Carry the airplane out to the edge of the runway. **Never taxi within the pit area.**

TAKE-OFF CHECKLIST

Never rush a take-off. Always carry out this checklist, and bear in mind that take-offs are optional while landings are mandatory.

- Determine wind direction – you will take off into the wind
- Is the runway clear?
- If anyone else flying, are they preparing to land?
- If clear, announce that you are taxiing either to the left or right
- Taxi out and point aircraft into the wind
- Always pause at this point
- Announce your take-off direction – left or right
- Throttle up and start the take-off roll, rotate, then climb out at a safe angle, then turn so as not to overfly the NO FLY zone.

LANDING CHECKLIST

With the exception of a “dead stick” situation – never rush a landing. Use the following checklist.

- Check the wind direction – and normally land into the wind
- Check whether anyone is on the field or have announced that they are landing
- Announce your landing direction – left or right
- Enter your intended landing pattern – if approach is not favorable then slowly throttle up, gain altitude, announce that you have aborted, and then repeat the landing checklist again
- Reduce throttle, flair, touch down
- If you have to retrieve your airplane out on the runway – check that all is clear and announce that you are “on the runway”
- Taxi back to the flight line and cut your engine
- Announce that the runway is clear

Dead Stick A dead stick situation has priority over all other flight operations.

- Announce “dead stick”
- **Never use up elevator**
- If on the final, then complete the landing
- If sufficient altitude and speed, then use some down elevator to lower the nose and maintain speed, and make a turn to land in the vicinity of the field
- If not sufficient altitude or speed, then use some down elevator to point the nose down, make only a minor turn if necessary, then flair if possible close to the ground and hope for the best

Touch and Go Use the Landing Checklist and announce “touch and go” and direction rather than “landing”.

AIRWORTHINESS CHECKLIST

Pilots are responsible for the airworthiness of the model aircraft they fly. This checklist should be used for all new, major repairs, or rebuilt models. Relevant sections may be used as a checklist when a model is suspect and/or undergone repairs.

General

- The center of gravity, or CG, with fuel tank empty, or battery in place but not connected for electric, should be in accordance with the manufacturer or designer. The CG will never exceed 35%, nor be "tail heavy". A CG that is slightly "nose heavy" is preferable for initial flight testing.
- Lateral balance the a/c so that one side is not obviously heavier than the other side

Fuselage

- No evidence of cracks or fracture
- Adequately covered
- Fuel proofed (n/a if electric or glider)
- Stabilizers, such as horizontal stab, vertical stab, canards, etc., are adequately fastened to the fuselage
- All control surface hardware, i.e., hinges, horns, clevis, etc., are serviceable with no excessive play or unwanted wear
- No visible warps or incorrect angles
- Wing dowel mating hole and threaded wing bolt blocks are serviceable, or if rubber band, the fuselage dowels are correctly fastened and serviceable

Wing(s)

- No indication of spar or rib fractures
- Adequately covered
- Ailerons (and flaps) correctly hinged
- Control linkage secure and no excessive "play" or unwanted "wear"
- Each aileron moves in the opposite direction
- If aileron differential is used, the up distance will be greater than the down distance
- Flaps, if installed, both move in the same direction and distance
- All control surface hardware, i.e., hinges, horns, clevis, etc., are serviceable
- Wing dowel(s) and wing mounting bolt hole(s) correct. or if rubber band mounted, there is no crushing of the wing surfaces

Landing Gear

- Landing gear adequately mounted
- Nose or tail gear, if controllable, turn in the correct direction
- If gear is retractable, there are no restrictions of movement
- Wheels are both serviceable, adequately fastened and move freely
- Main gear will preferably have "toe in" and never "toe out"

Engine

- Firewall adequate
- Engine mounting secure
- I Muffler secure
- Throttle arm movement is correct and ensures that the engine can be "killed" from the transmitter
- Fuel tank secure
- Fuel & pressure lines serviceable
- Fuel system is free of leaks

Electric Motor

- Motor mounting secure
- Adequate ventilation

Propeller

- Prop tips distinctively painted
- Prop balanced before installing
- Prop (and spinner) on tightly
- Prop free of nicks or cracks

R/C System

- Both the transmitter and receiver meet or exceed current standards
- The system operating frequency is on an approved channel if not spread spectrum 2.4 Ghz
- No known faults in any of the radio system components
- Both transmitter and receiver batteries have adequate current storage capacity, and if ESC with BEC, sufficient current capabilities for the entire system
- Transmitter is correctly set up and/or programmed
- Receiver battery correctly padded if not electric, and adequately held in place
- The OFF/ON switch is firmly mounted and accessible
- Receiver adequately padded against shock and vibration, and adequately held in place
- Receiver antenna avoids close proximity to servos, servo arms, and metal control rods
- Servos are firmly mounted
- Servo and battery leads are restrained so as not to interfere with servo control arms or control rods
- Servo arms do not conflict with any other movable or fixed objects
- Control rods or mechanisms do not interfere with each other
- If push rods are used, there is no undue flexing