

RADIO CONTROL LARGE MODEL AIRPLANE PROGRAM

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For a list of inspectors access our website at www.modelaircraft.org. Log-in to the website and move your mouse over the heading *Media & Resources* and then select *Members Only Documents* from the blue drop-down box. Select document 520-B to see the current listing, or contact

Academy of Model Aeronautics
Safety Department
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Muncie, IN 47302
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Approved by AMA Executive Council, **October 28, 2017**

SECTION 1

1. GENERAL INFORMATION

1) Large Model Airplanes (LMA) are classified as shown in Table 1.1:

Large Model Airplane Classification	Weight Criteria
Large Model Airplane 1 (LMA-1)	55 pounds (25 kilograms) to 77 lbs 2 ozs (35 kilograms), with fuel, ready to fly
Large Turbine Model Airplane 1 (LTMA-1)	
Large Model Airplane 2 (LMA-2)	77 lbs 3 ozs (35 kilograms) to 125 pounds (56.7 kilograms) with fuel, ready to fly
Large Turbine Model Airplane 2 (LTMA-2)	77 lbs 3 ozs (35 kilograms) to 100 lbs (45.4 kilograms) with fuel, ready to fly

Table 1.1

- 2) All pertinent regulations from government entities and the Academy of Model Aeronautics (AMA) shall be applicable.
- 3) Any LMA must be certified airworthy through the issuance of a Permit to Fly prior to flying.
- 4) All LTMA's are also subject to the rules and specifications outlined in the AMA's Turbine Regulations, unless specifically modified in the LTMA regulations.
- 5) General information for Inspectors and details on the inspection process may be found in Section 3, Inspectors.
- 6) Additional guidance and regulations pertaining to foreign participants may be found in Section 4, Foreign Participants.
- 7) A chart relating AMA LMA and LTMA regulations to the larger scope of national airspace, SUAS registration, foreign participant requirements and insurance coverage is available in the AMA Document section, document 540-F.

2. LMA AND LTMA MODEL SPEED AND PILOT REQUIREMENTS

- 1) Wing loading must not exceed 80 ounces per square foot of total wing area, except for turbine powered models, whose wing loading shall not exceed 100 ounces per square foot of total wing area.
- 2) There shall be no wing span limitation.
- 3) Engine limitations
 - a) There shall be no engine cubic inch displacement limitation for LMA-1 and LMA-2 class airplane.
 - b) The maximum installed static thrust for the LTMA-1 class is limited to the airplane's weight, ready to fly with fuel, plus 5 lbs, or 75 lbs, whichever is less.

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- c) The maximum installed static thrust for the LTMA-2 class is limited to the airplane's weight, ready to fly, plus 5 lbs., or 90 lbs., whichever is less.
- d) For LTMA airplane, the engine(s) thrust shall be verified by either the manufacturer's published thrust to RPM numbers or by actual measurements.
- 4) A dual battery system is required. Either one of the two battery packs shall have adequate capacity to safely fly the airplane at least three full flights from receiver turn-on to turn-off. For sailplanes/gliders, a dual battery system sufficient to power the model for a minimum of one (1) hour of operation is required.
- 5) For powered models, a fail-safe system must be used to retard the throttle in the event of control interruption. For sailplanes/gliders, a failsafe setting must be used that fully deploys the normal landing mode settings
- 6) An engine shut-off system, operable from the transmitter, in addition to normal throttle-kill ability is required.
- 7) All wiring harnesses must be made of suitably sized stranded wires (e.g. 22/24 AWG). The receiver will be located such that wiring runs are minimized. The connectors used in these components will be sized to accommodate the larger wire gauge, NOT spliced into smaller gauge standard wires, or connectors.
- 8) Dynamically balancing control surfaces and sealing hinge line gaps are highly recommended to prevent flutter. The absence of flutter must be demonstrated at the time of certification by flight through a representative sample of the normal maneuvers and speeds appropriate for the subject model airplane.
- 9) Self-launching sailplanes must conform to the powered LMA requirements, whether propeller or turbine powered, for the appropriate power type and weight classes.
- 10) Servo Torque Requirements (see Section 2, Supplemental Information, if applicable)
 - a) If the model airplane is built from a commercially available kit, all servos installed must meet or exceed the kit manufacturers' specified torque.
 - i) A commercially available kit is defined as:
 - (1) Any LMA built or assembled from a set of parts, instructions, specifications and plans that has been tested and subsequently made available to the public in kit form provided by a manufacturer.
 - (2) Any LMA built from unaltered commercially published plans, either by parts being cut by the modeler/builder, or from the purchase of a "parts kit" from a commercial "kit cutter".
 - (3) Proof of the manufacturer's servo recommendation is required for the Temporary Authorization to Fly. In lieu of that, servo torque calculations must be submitted.
 - b) If the airplane is not built from a commercially available kit then minimum servo torque required for the primary flight control surfaces that control pitch, roll, and yaw need to be computed per the formula found in Section 2, Supplemental Information. Exceeding this minimum is always recommended.
 - c) All model airplanes with a Permit to Fly issue date prior to April 25, 2009 are exempt from complying with these requirements and will be grandfathered under the program rule approved by the EC on December 18, 2008.

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- 11) The builder of the LTMA shall have completely constructed two or more turbine powered models having a dry weight of 25 pounds or greater. Completely constructed is defined as built from scratch or from a factory kit.
- 12) LTMA Speed Limitations
 - a) An LTMA-1 model is restricted to a maximum speed of 200 mph.
 - b) An LTMA-2 model is restricted to a maximum speed of 170 mph.
- 13) LTMA Pilot Qualifications
 - a) To qualify for an LTMA-1 class the pilot shall have completed a minimum of 50 turbine powered flights with a model having a dry weight of 25 pounds or greater.
 - b) To qualify for an LTMA-2 class the pilot shall have completed a minimum of 100 turbine powered flights with a model having a dry weight of 25 pounds or greater, and being capable of speeds greater than 140 mph.

3. LMA PERMIT REGULATIONS

- 1) Test flight permit requirements:
 - a) A *Temporary Authorization to Fly* is required for test flights. This authorization is only valid on the day of issue. (*Form LMA-1*)
 - b) The owner (LMA1 and LTMA1) or Inspector (LMA2 and LTMA2) shall examine the completed model airplane immediately prior to the test flights, and shall issue a *Temporary Authorization to Fly*, provided all of the requirements listed in Table 2 are met. If the owner of an LMA1 or LTMA1 is an inspector, they may sign off on their own airplane.
- 2) A list of current LMA Inspectors is available on the AMA Web site under the Member Only Documents section.
- 3) If for any reason the observers are not completely satisfied with the airworthiness of the model as demonstrated, further test flights must be arranged after rectification of the faults noted.
- 4) For all LMA categories, pilot will maintain at least 100 feet of separation between the airplane and spectators during permit test flights.
- 5) Upon satisfactory completion of the test flights all required documentation listed in Table 1.2 will be filled out and signed by the owner and LMAI. Copies of all documents must be submitted to AMA headquarters immediately, but no later than 30 days from the date of the demonstration flights. The originals must be retained by the owner and will serve as proof of inspection.

LMA/LTMA Permitting Requirements

	LMA-1 and LTMA-1	LMA-2 and LTMA-2
Builders Declaration	Completed by builder/owner	
Temporary Authorization	Completed by owner	Completed by LMA inspector
Permit to Fly	Completed by owner and observer	Completed by owner and LMA inspector
Inspection Checklist	Completed by owner or LMA inspector	Completed by LMA inspector
Turbine Addendum	Completed by owner	
Maneuvers	The owner will determine the flight envelope that will consist of at least one of the following items: i) Level maneuvers, flat turns, gentle climbs and dives ii) Looping maneuvers iii) Rolling maneuvers iv) Inverted v) Spins vi) Snap maneuvers vii) Unrestricted aerobatics	
Demonstration Flights	Two demonstration flights observed by the owner/pilot and either an AMA Contest Director (CD), Leader Member (LM) or LMA Inspector (LMAI) are required.	Two demonstration flights observed by an LMA Inspector
Permit Documents to be Submitted to AMA	Temporary Authorization to Fly (<i>Form LMA-1</i>) Fully Completed and Accurate Permit Form (<i>Form LMA-2</i>) Builder's Declaration (<i>Form LMA-3</i>) Turbine Addendum (if applicable) (<i>Form LMA-4</i>) Completed Pre-Flight Checklist (<i>Form LMA-5</i>) Photograph of Model (3 views with sufficient detail)	

Table 1.2

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6) Permit to Fly Operation

a) Pre-Flight Inspection:

The operator shall verify all items in the Inspection Checklist before the first flight on any day, and after the model has been disassembled and reassembled. Items marked “*” must also be verified again before EACH flight.

b) Possession of a valid *Permit to Fly* allows flights of the subject model by the owner, or by a competent pilot designated by the owner, both of whom must be current AMA members. Designated pilot(s) must comply with the minimum pilot standards of this program.

c) All required documentation must be received by AMA HQ within 30 days of the demonstration flights or the *Permit to Fly* becomes invalid. In case of extenuating circumstances, the Safety Committee may accept documentation received past the 30-day deadline. Delay explanations must be submitted in writing and acceptance will be granted on a case by case basis.

7) Permit to Fly Suspension

a) A *Permit to Fly* shall be considered suspended whenever the model for which it is issued:

i) suffers damage to its primary structure or any control surface

ii) suffers any control malfunction during flight, including flutter

iii) is structurally or aerodynamically modified

iv) is fitted with a different type or size of engine or engine mount

v) is fitted with different servos or batteries with lesser torque or capacity.

vi) is fitted with a different type of radio receiver

vii) is fitted with any device which alters the control system

viii) has any control surface re-covered or repainted so that its unbalanced weight is increased?

ix) has not been flown during a period of twelve months

x) is operated outside the flight envelope defined in its *Permit to Fly*

xi) undergoes a change of ownership

b) AMA headquarters must be notified immediately if a *Permit to Fly* is suspended.

c) The AMA, through action by the Executive Director or its President, may suspend a *Permit to Fly* at any time.

i) The owner shall be notified of the suspension in writing, including a summary for the basis of the suspension. Such a suspension can be predicated on a written complaint by two AMA members.

ii) The permit holder may appeal the suspension within thirty (30) days of receipt of the suspension notice. The appeal must be accompanied by all documentation which the appellant believes supports his/her position.

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- iii) 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.
 - iv) The majority decision of the AMA Safety Committee is final and binding.
- d) A suspended Permit to Fly may be revalidated:
- i) Providing repairs and/or modifications causing the suspension to have been examined and the model in its modified state is again test flown in accordance with the permitting process.
 - ii) If the *Permit to Fly* was suspended due to ownership change, a new *Permit to Fly* must to be issued with the information for the new owner.
 - iii) If the *Permit to Fly* was suspended by AMA, the course for revalidation will be addressed and established on a case by case basis.
- 8) Permit to Fly Cancellation
- a) A *Permit to Fly* shall be cancelled whenever the model is damaged beyond repair or if modified such that it is no longer accurately described in the *Permit to Fly*.
 - b) AMA headquarters must be notified immediately if a *Permit to Fly* is cancelled.
- 9) Appeals
- i) In the event of unresolved disputes, the applicant for a *Permit to Fly* may appeal to the AMA Safety Committee for a ruling and, if unresolved, the AMA Executive Council shall be the final arbiter in all disputes.
- 10) The *Permit to Fly* is valid for three years and must be renewed every three years. This will require the same pre-flight inspection, and two demonstration flights of 8 to 10 minutes duration.

Required LMA Forms and Photos

**These items are required to be completed and returned to
AMA HQ Safety Dept to register a new or modified
airplane.**

LMA-1: Temporary Authorization to Fly

LMA-2: Permit to Fly

LMA-3: Builder's Declaration

LMA-4: Turbine Class Permit to Fly Addendum*

LMA-5: Pre-Flight Inspection Checklist

Three (3) 3-view Photos of the aircraft (front, side and top)

***Only required if the airplane is Turbine powered.**

**For renewals of an already registered airplane, the following
documents must be completed and returned to AMA HQ
Safety Dept.**

LMA-2: Permit to Fly

LMA-5: Pre-Flight Inspection Checklist

DOCUMENT CHECKLIST FOR NEW AIRPLANE

Use this checklist to ensure that you are submitting all required documentation!

- ___ Form LMA-1 Temporary Authorization to Fly
- ___ Form LMA-2 **Fully Completed and Accurate** Permit Form
- ___ Form LMA-3 Builders Declaration
- ___ Form LMA-4 Turbine Addendum (if applicable)
- ___ Form LMA-5 Completed Pre-Flight Checklist
- ___ Three (3) 3-view photos of assembled model

Please verify the completeness of each document prior to submitting to ensure timely processing. **Any discrepancies will delay processing and approval of the waiver.** If the process is not completed within 30 days of the date on the Temporary Authorization to Fly, the entire process will have to start over from the beginning, including any inspections of the aircraft.

TEMPORARY AUTHORIZATION TO FLY FOR ALL LMA & LTMA

(FORM LMA-1)

I have inspected this model airplane in accordance with the current LMA pre-flight inspection outline. To the best of my knowledge and belief the model will be suitable for the intended demonstration flights as in accordance with the program requirements.

Model Description: i.e. yellow & black, ½ scale Cub

Name of owner

Signature of owner

Name of LMAI – required for LMA-2 & LTMA-2 (print)

Signature of LMAI – required for LMA-2 & LTMA-2

Day of issue

AMA Number

This *TEMPORARY AUTHORIZATION TO FLY* is only valid on the day of issue.

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PERMIT TO FLY FOR ALL LARGE MODEL AIRPLANE CLASSES (*FORM LMA-2*)

New Airplane or Renewal (circle one)

Owner's Name _____ AMA _____

Model Description:

Airplane Type _____

Wingspan _____ Weight (wet) _____ CD/LM/LMAI Initials _____

Engine manufacturer displacement or thrust _____ Turbine

Design by _____

Color Scheme _____

Construction: Kit Plans Custom Other (explain) _____

Transmitter _____

Servo Aileron _____

Receiver _____

Servo Elevator _____

Batteries _____

Servo Rudder _____

Power Distr. System _____

Servo Flaps _____

Flight Envelope:

Level maneuvers, flat turns, gentle climbs and dives Looping maneuvers

Rolling maneuvers Inverted flight Spins Snap maneuvers

Unrestricted aerobatics

The above described airplane has been inspected for airworthiness and has demonstrated its ability to perform within the designated flight envelope as indicated on this Permit.

Observer 1:

Owner or CD/LM/LMAI Name (print)

Owner or CD/LM/LMAI Signature

Day of Issue

AMA Number

Observer 2:

CD/LM/LMAI Name (print)

CD/LM/LMAI Signature

AMA Number

Permit to Fly will be invalid if all required documentation is not received at AMA HQ with 30 days of issuing.

Documentation should be mailed to 5161 E. Memorial Drive, Muncie, IN 47302 or emailed to safety@modelaircraft.org.

BUILDER'S DECLARATION

(Form LMA-3)

I certify that the materials, methods, and standards used in the construction of this model airplane are, to the best of my knowledge and belief, suitable for the intended purpose and are in accordance with the program requirements.

Model Description: i.e. yellow & black, ½ scale Cub

Name (print)

Signature

Date

AMA Number (if applicable)

In case of ownership change, this declaration should be kept with the model.

TURBINE CLASS PERMIT TO FLY ADDENDUM

(Form LMA-4)

Addendum is for a LTMA-1 LTMA-2

Owner's Name _____ AMA _____

Model Description: i.e. yellow & black, 1/2 scale Cub

Owner's Declaration

I affirm that I will verify that any individual operating this turbine-powered model has the necessary experience and skill level, and has a current turbine waiver/affidavit on file with the Academy of Model Aeronautics.

Owner's Signature

Date

CHECKLIST FOR PRE-FLIGHT INSPECTION

(FORM LMA-5)

New Airplane or ***Renewal*** (circle one)

The following is considered the criteria for certification of Large Model Airplane.
If appropriate, add items that may be specific to this model.

1. UN-ASSEMBLED INSPECTION

1.1 WING GROUP

- Fuselage attachment points
- Strut attachment points
- Rigging wire attachment points
- Servo mounting
- Pushrods/cables and actuating links
- Control horns
- Control surface hinges and area around hinges
- Undercarriage integrity and attachment points
- Structural integrity overall
- Covering integrity

1.2 FUSELAGE GROUP

- Wing attachment points
- Undercarriage integrity and attachment points
- Servo mounting
- Pushrods/cables and actuating links
- Control horns
- Control surface hinges and area around hinges
- Fin and rudder assembly
- Horizontal stabilizer assembly
- Bracing/strut attachment points
- Structural integrity overall
- Covering integrity

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1.3 ENGINE(S)

- * () Propeller secure and undamaged
- * () Spinner secure and clear of propeller blades
- * () Engine mounting and accessories secure
- * () Cowling attachment
- * () Magneto switch functioning and OFF
- * () External servicing points (fuel, plus, etc.)

1.4 RADIO EQUIPMENT

- () Receiver installation
- () Battery installation
- () Antenna installation
- () Switch installation
- () Wiring and plugs clean, undamaged and secure
- () **Failsafe programming**

2. ASSEMBLED INSPECTION

2.1 GENERAL

- () First ensure that all components fit together correctly, and that no undue strain is needed to achieve proper alignment.

2.2 RIGHT WING

- () No non-design twists or warps
- () Wing tips true
- () Wing leading edge
- () Struts and rigging secure
- () Attachment to fuselage
- () Undercarriage attachment
- () Alignment of control surfaces

2.3 FUSELAGE AND TAIL GROUP

- () Horizontal stabilizer attachment
- () Fin and rudder attachment
- () Struts and bracing secure
- () Alignment of tail group with respect to wing
- () Alignment of control surfaces
- () Tail wheel assembly
- () Canopy

2.4 LEFT WING

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- No non-design twists or warps
- Wing tips true
- Wing leading edge
- Struts and rigging secure
- Attachment to fuselage
- Undercarriage attachment
- Alignment of control surfaces

2.5 MISCELLANEOUS

- Center of gravity
- * Correct movement and centering of all control surfaces
- * Battery charge, fuel, air pressure all sufficient
- Radio range check
- * Insure all flying surfaces and fuselage demonstrate appropriate stiffness and integrity
- Weight validation**
- Servo torque requirements met**

2.6 CHECKS WITH ENGINE(S) RUNNING

- * Airplane secure before start (tied down preferred)
- * Engine performance and reliability
- * Propeller and spinner balance
- * Minimal airplane vibration
- * Radio reliability
- Radio range check
- Kill switches**

The above check list is to be completed by the owner of a LMA or an appointed inspector prior to test flights. All items are to be marked "N/A" if not applicable, checked if passed, or left blank pending re-inspection if failed.

The Check List is subsequently used by the operator of the airplane:

- (a) Once at the beginning of a flying session (all items)
- (b) Before every flight (items marked with an * only)

SECTION 2

A. SERVO TORQUE

1. If the airplane is not built from a commercially available kit then minimum servo torque required for the primary flight control surfaces that control pitch, roll, and yaw need to be computed per the following formula. Exceeding this minimum is always recommended.

a) The minimum torque requirement formula a conventional control surface is calculated as follows.

$$\text{Minimum torque} = A * \text{Chord} * \text{Span} * \text{Chord}/3 * \text{Servo Arm}/\text{Control Arm}$$

A = Airspeed Factor (see Table 2.1)

Chord = average control surface chord (root chord + tip chord) / 2

Span = control surface span

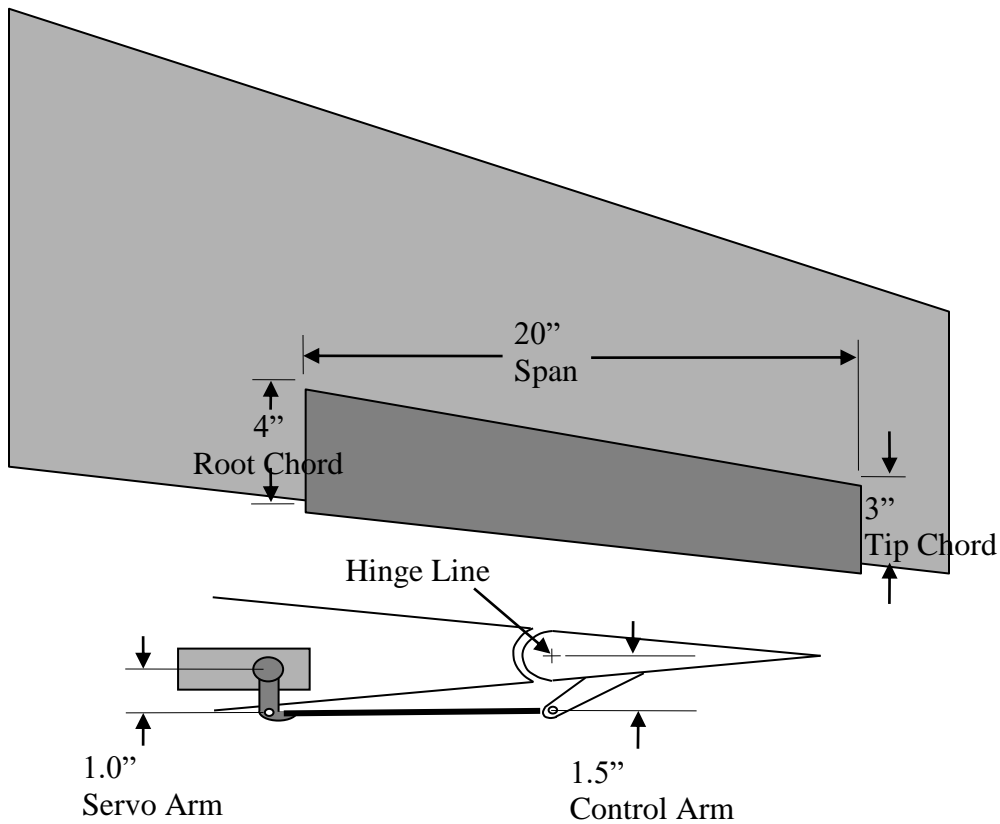
Servo Arm: the distance from the center of the servo arm to the control linkage attachment.

Control Arm: the distance from the hinge line to the control linkage attachment

<i>Airspeed factor for use in both conventional and full flying formulas</i>	
Propeller and soaring/gliding airplane whose flight regime will only include level flight, flat turns, gentle climbs and moderate dives	A = 1.25
Propeller and soaring/gliding airplane whose flight regime includes modest aerobatics, including loops, rolls, inverted flight and spins	A = 1.5
Propeller and soaring/gliding airplane whose flight regime includes unlimited aerobatics	A = 3.0
Turbine airplane whose flight regime will only include level flight, flat turns, gentle climbs and moderate dives and whose speed will not exceed 140 mph (Also applies to sailplane/glider models with turbine self-launch systems)	A = 1.75
Turbine airplane whose flight regime includes unlimited aerobatics (Also applies to sailplane/glider models with turbine self-launch systems)	A = 4.0
Full flying control surfaces on airplane whose speed is limited to 140 mph or less (Applies to all LMA)	A = 3.0
Full flying control surfaces on airplane whose speed exceeds 140 mph (Applies to all LMA)	A = 6.0

Table 2.1

- b) The following sketch uses an example to show how the measurements are made. Cut outs in control surfaces should be ignored, such as a clearance in an elevator to make room for rudder movement. The calculation should be made as if the clearance had not been made. All measurements are in inches, the minimum torque is in oz-in.



This example uses the airspeed factor for a propeller aircraft whose flight regime includes unlimited aerobatics: $A = 3.0$

$$\text{Chord} = (4+3)/2 = 3.5$$

$$\text{Minimum torque} = A * \text{Chord} * \text{Span} * \text{Chord}/3 * \text{Servo Arm}/\text{Control Arm}$$

$$\text{Minimum torque} = 3.0 * 3.5 * 20 * (3.5/3) * (1/1.5) = 163.33$$

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- c) The minimum torque requirements for a full flying control surface is calculated as follows.

$$\text{Minimum torque} = A * \text{Area} * \text{Servo Arm/Control Arm}$$

A = Airspeed factor (see Table 1)

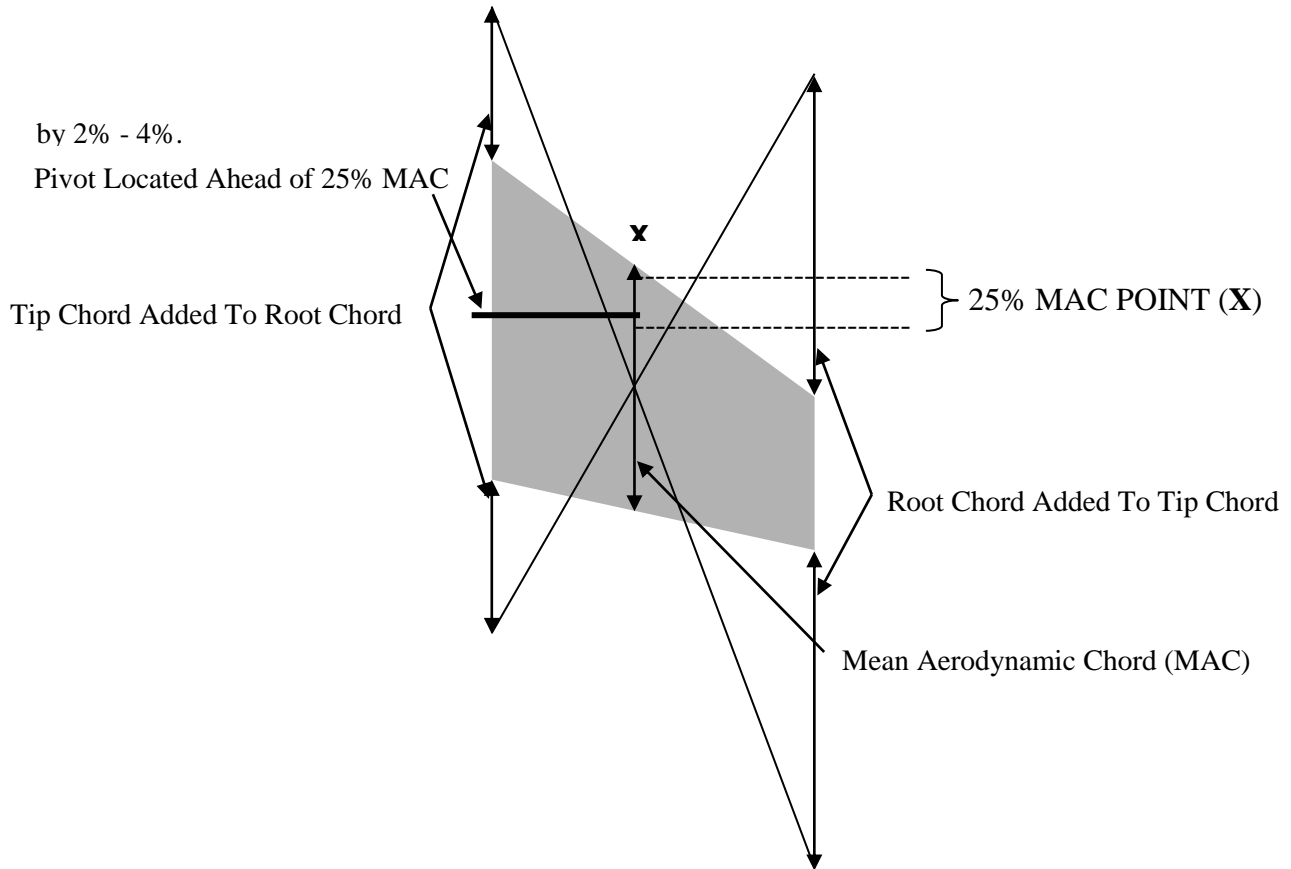
Area = planform area of the control surface

All measurements are in inches, area is in square inches

The minimum torque is in oz-in.

The pivot point for the control surface can be determined using the diagram below as long as the pivot point is ahead of the 25% Mean Aerodynamic Chord (MAC) point by 2%-4%.

Since the servo arm to control arm geometry is very important the builder should be certain that the proper control deflection can be achieved with the geometry described in the paperwork supplied to the examiner. If at all possible the servo travel should be set to the maximum value available, and the control arm and servo arm chosen to achieve the desired control surface deflection.



Section 3

INSPECTORS

A) INSPECTOR APPLICATION (Form LMA-8)

- 1) The Academy of Model Aeronautics (AMA) maintains a pool of potential inspectors for the Authorization Procedure for Large Model Airplane. This procedure is designed to provide insurance for individuals wishing to fly model airplane between 55 and 125 pounds in specific, controlled situations.
- 2) This pool of prospective inspectors may be found on the AMA website Members Only Section under Members & Club tab (www.modelaircraft.org).
- 3) Individuals desiring appointment to the inspector pool may do so by submitting a complete application with AMA Headquarters. Application involves completing the appropriate form LMA-8, as well as providing a resume detailing qualifications and a list of references. A majority approval vote of the Safety Committee members will result in the addition of the individual to the inspector pool. Additional names may be added to the pool by the Safety Committee or Executive Council if needed, to adequately maintain the program.
- 4) In accepting the nomination as an Inspector, a member accepts the responsibility implicit in the appointment and undertakes:
 - a) To be available with reasonable notice to attend and observe test flights when requested.
 - b) To carry out all duties in accordance with this program
 - c) To not charge for services (compensation for expenses and travel are permissible).
 - d) Inspector cannot be the builder, pilot, owner, or buyer/seller of the LMA-2 or LMTA-2 airplane being inspected.
 - e) Inspector must be a current AMA member when inspecting an airplane.
- 5) AMA's member insurance coverage applies to a certified Large Model Airplane Inspector for alleged negligence resulting in a bodily injury or property damage claim or suit arising out of the inspection of an airplane for the purpose of qualifying it for flight approval.

B) INSPECTOR QUALIFICATIONS

- 1) Applicants for the Large Model Airplane Inspector designation will complete and submit the LMAI application, form LMA-8. The application will be reviewed and acted upon by the AMA Safety Committee.
- 2) **The candidate must meet at least three of the following criteria in order to be considered for approval:**
 - a) A minimum of 10 years AMA membership
 - b) Must be one of the following: CD, Leader Member, Life Member, AMA Committee Member or EC/AVP past or present.
 - c) Must have owned/built and flown at least one LMA/LTMA-1 at a minimum.

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- d) At least one of the three references must be an LMA owner or inspector
 - e) Professional or educational experience with design of unmanned aircraft over 55 pounds.
- 3) Applicant must submit a written resume addressing all applicable information as requested in the resume section of the application.**
- 4) Inspectors are the AMA's representative at both the time of inspection and demonstration flights. That inspector must insure that all provisions of this document are satisfied. In the event that an inspector is suspected of an improper or superficial inspection, falsification of forms or other misconduct the Safety Committee may, at its sole discretion, suspend an inspector's designation until such time as the Committee completes an investigation. At that time, the LMAI Inspector designation will either be revoked or reinstated.

C) GUIDELINES FOR INSPECTION

- 1) Inspector should validate the following information:
 - a) Total weight, ready to fly, with fuel. The CD/LM/LMAI will either provide the scales, or take reasonable effort to check the accuracy of the scales used.
 - b) Weight and balance methods and data provided by builder.
 - c) Servo torque requirements provided by kit manufacturer or servo torque calculations per Section 4 of the LMA regulations.
 - d) AMA card.
 - e) Pilot qualifications for LTMA permit applications.
 - f) Builder's Declaration, form LMA-3.
 - g) Turbine class addendum if applicable, form LMA-4.
 - h) Compliance with Foreign Participant Requirements, if applicable.
 - i) Ground support or fire suppression equipment as necessary or required.
- 2) Conduct pre-flight inspection, completing form LMA-5.
- 3) Photograph Model (3-view with sufficient detail).
- 4) Complete a safety check of the site to insure compliance with Section 1.C.4) if applicable.
- 5) Issue Temporary Authorization to Fly, completing form LMA-1.
- 6) Pre-flight briefing
 - a) Inspector expectations.
 - b) Maneuvers to be performed.
 - c) Emergency procedures.

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7) Flight

- a) All flights will be done in accordance with the current Safety Code particularly that all pilots shall avoid flying directly over unprotected people, vessels, vehicles or structures and shall avoid endangerment of life and property of others. The model airplane must occupy airspace that will permit safe impact on loss of control. This infers function of the fail-safe system to a limited dispersion impact.
 - b) Flight maneuvers shall not exceed the design limits of the vehicle.
 - c) Flight velocity shall not exceed 120 mph in level flight for LMA-2.
 - d) The flight test program should include the following items during the initial two shake down flights, PRIOR to certification:
 - i. First flights shall be relatively short in duration and be devoted to checking out the "trim" of the airplane. This should include slow flight and stall characteristics to assist the pilot with first landings. Control limits, roll rates, climb rates and glide rates should also be included.
 - ii. Later flights during testing must be designed to demonstrate control and structural integrity. A little tighter than normal left and right hand turns (in case it may be needed), and a power dive, enough to add a little extra stress to check-out structural integrity. If the original airplane was capable of aerobatics (and they are to be part of the flight demo), then inverted flight, spins, etc. should be included.
 - iii. The final test flight conducted for the Inspector shall demonstrate the entire flight envelope as might be flown at sanctioned event demonstrations.
- 8) Post flight debriefing and airplane inspection is required.
 - 9) Review of completed paperwork with owner/pilot.
 - 10) Issue Permit to Fly, form LMA-2.
 - 11) Submit required paperwork immediately to AMA headquarters.

INSPECTOR APPLICATION (*Form LMA-8*)

Name _____ AMA # _____

Address _____

City _____ State _____ Zip _____

Phone (_____) _____ - days (_____) _____ - evenings

E-mail _____ Fax _____

Occupation _____

I pledge that if I am granted LMA Inspector status, I will:

- ◆ Maintain a high level of proficiency in the use of materials as well as building and flying techniques for large airplane models.
- ◆ Maintain strict safety standards and adherence to the AMA Safety Code, the AMA Large Model Airplane Program and its authorization documents.
- ◆ Submit all required documentation promptly.

Please check all that apply:

I've been an AMA member for at least 10 years.

I am a CD, leader member, life member, AMA committee member or present/past EC/AVP.

I own/built and have flown at least one LMA/LTMA-1 airplane (list each applicable model in resume.)

I have professional or educational experience with design of unmanned aircraft over 55 lbs (please provide more details in resume.)

At least one of my references is an LMA owner or inspector.

Signature _____ Date _____

REFERENCES

To be completed by three (3) individuals who are current AMA Adult Members

We, the undersigned, consider the applicant fully qualified to act on behalf of the AMA as a Large Model Airplane Inspector.

Name (please print) _____ AMA # _____

Address _____

City _____ State _____ Zip _____

Signature _____ Date _____

I own or have owned a LMA or LTMA I am a LMA Inspector

Name (please print) _____ AMA # _____

Address _____

City _____ State _____ Zip _____

Signature _____ Date _____

I own or have owned a LMA or LTMA I am a LMA Inspector

Name (please print) _____ AMA # _____

Address _____

City _____ State _____ Zip _____

Signature _____ Date _____

I own or have owned a LMA or LTMA I am a LMA Inspector

RESUME

In addition to meeting at least three of the Inspector Qualification criteria, please also provide a detailed resume.

The resume should describe your interest in this program, why you want to volunteer as a LMA Inspector, and how you would conduct an inspection.

In addition you must **also** include items such as:

- (a) years of modeling experience involving flying and building;
- (b) models built/ flown. Please be sure to highlight all LMA or LMTA aircraft built;
- (c) full scale experience including type of license held, if any, as well as any background in home building such as EAA activity;
- (d) number of years' experience as a Contest Director, if any, and major event(s) administered;
- (e) **professional experience in RC related business such as commercial drone, radio manufacturer/repair, aircraft design, or hobby show ownership/management;**
- (f) ability to travel; articles published; administrative positions held;
- (g) other items pertinent to being selected for position.

Please be as specific as possible. This information is crucial for the Safety Committee to evaluate your application.

SECTION 4

FOREIGN PARTICIPANTS – EVENT PERMIT TO FLY

Since the majority of foreign participants attending AMA sanctioned events would find it difficult to comply with the requirements of obtaining a Permit to Fly, the AMA Executive Council has approved the following provision, effective December 18, 2008:

1. Any foreign participant must be an Affiliate AMA member. This requirement also applies to current MAAC members who wish to apply for an event permit and their airplane is between 77 lbs 3 ozs and 125 lbs. This is due to discrepancies between the AMA and MAAC safety codes and liability policies.
2. Pilots/Owner must conduct an inspection according to the LMA inspection guidelines, and sign an attestation that the airplane has flown a minimum of three successful flights on previous occasions (*Form LMA-6*).
3. An AMA LMA Inspector will conduct an inspection per the LMA Program inspection guidelines for LMA-2 & LTMA-2.

The AMA LMA Inspector will issue an "Event Permit" based on the pilot's attestation and a successful inspection (*Form LMA-7*). The issued permit will allow the airplane to be immediately flown at any time during the sanctioned event and AMA's liability coverage would apply.

An "Event Permit" is required for each specific model airplane, and is only valid for the dates of the sanctioned event.

Large Model Airplane Program Forms

SANCTIONED EVENT PERMIT TO FLY FOR FOREIGN PARTICIPANTS (*FORM LMA-6*)

Owner's Name _____ AMA _____

Model Description:

Airplane Type _____

Wingspan _____ Weight (wet) _____ CD/LM/LMAI Initials _____

Engine manufacturer displacement or thrust _____ Turbine

Design by _____

Color Scheme _____

Construction: Kit Plans Custom Other (explain) _____

Transmitter _____

Servo Aileron _____

Receiver _____

Servo Elevator _____

Batteries _____

Servo Rudder _____

Power Distr. System _____

Servo Flaps _____

Flight Envelope:

Level maneuvers, flat turns, gentle climbs and dives Looping maneuvers

Rolling maneuvers Inverted flight Spins Snap maneuvers

Unrestricted aerobatics

The above described airplane has been inspected for airworthiness and has demonstrated its ability to perform within the designated flight envelope as indicated on this Permit. (In the case of Foreign Participants the Form LMA-7 will be attached to this form attesting to 3 successful previous flights)

Owner or CD/LM/LMAI Name (print)

Owner or CD/LM/LMAI Signature

Day of Issue

AMA Number

CD/LM/LMAI Name (print)

CD/LM/LMAI Signature

AMA Number

Permit to Fly is only valid for the dates of the sanctioned event.

**Documentation should be mailed to 5161 E. Memorial Drive, Muncie, IN 47302
or emailed to safety@modelaircraft.org.**

EVENT PERMIT TO FLY – FOREIGN PARTICIPANT ATTESTATION

(Form LMA-7)

Owner/Pilot Attestation:

I, _____, hereby attest that the model airplane,

_____ Model Description
has had a minimum of three (3) successful flights on previous occasions and that it complies with the current AMA LMA program guidelines.

Owner/Pilot Name (print)

Owner/Pilot Signature

Date

AMA Number

