



***BRITISH MODEL
FLYING ASSOCIATION***

**The 2010 BMFA
Members' Handbook**

**Corrections and Additions
Addendum Booklet**

ISSUE ONE

December 2011

**The 2010 BMFA Member's Handbook
Corrections and Additions
(Issue 1) December 2011**

Page 15, Column 2, ANO Article 166 (Small unmanned surveillance aircraft)

Add new paragraph after Paragraph (5)

NOTE: The provision of data solely for the use of monitoring the model is not considered to be applicable to the meaning of 'surveillance or data acquisition'.

Modify the following paragraph

BMFA Notes.

This confirms the clarification which BMFA has received from the CAA that 'surveillance or data acquisition' equipment does NOT include such items as dataloggers, variometers etc.....

Page 16, Column 1

Delete Section (2) Models Over 20 kg and replace with

(2) Large Model Aircraft Regulations

(1) All large model aircraft having a mass of more than 20 kg (mass of model and equipment, but excluding fuel) require an exemption to fly. **A large model aircraft can only be operated under the terms of an Exemption issued by the CAA.**

(2) An **EXEMPTION** is used to allow an exception to the established law. Such an exception is usually only made subject to various additional conditions to ensure adequate safety.

(3) Anyone planning to build a very large model should first read Chapter 3 and contact one of the modelling associations or the CAA to see if the proposed model is likely to be acceptable.

(4) It is unlikely that an exemption will be issued without the condition that the model must be flown within the 'control' of a recognised model association and at a suitable site.

(5) The maximum mass for a model aircraft to be treated under the guidelines of CAP 658 is 150 kg. Above this mass full airworthiness regulations may apply. Builders contemplating the construction of a model having a mass of more than 150 kg should contact the CAA prior to commencing construction.

BMFA Notes on Models Over 20 kg

These are considered by the CAA to be aircraft,

not model aircraft and, as such, they are treated in a different manner to models under 20 kg.

They are subject to airframe inspection and clearly defined pilot and airworthiness testing before an exemption certificate can be issued to allow them to be flown regularly or in public.

The exemption certificate does exactly what it says, it exempts the model from most of the clauses of the ANO, but the model is then subject to whatever conditions the CAA might apply to the model and these are detailed on the certificate itself.

Most of the conditions are usually based on those for models between 7 and 20 kg, set out in Article 167 of the ANO above, but the CAA reserves the right to include other conditions if it thinks fit.

It should be noted that breaking any of the terms set out in the exemption certificate, for instance during a flight, will invalidate the certificate at that point in time and make the model and its pilot subject to the whole of the ANO. This could literally make that part of the flight illegal.

Gliders Between 20 kg and 80 kg

Pure gliders over 20 kg now need an Exemption from the CAA before they may be flown. Therefore, before a model glider between these masses is built the advice of either the Large Model Association (LMA) or the British Model Flying Association (BMFA) should be sought on construction, testing and operating techniques.

Upper Mass Limits

For powered models the upper mass limit is 150 kg and for gliders it is 80 kg. Beyond these masses you must contact the CAA for details of the regulations that must be followed and what permissions are needed.

Page 17, Column 1

Change Paragraph

Extracts from the latest version of CAP 658 (~~April 2007~~ **November 2011**) are included in this handbook where appropriate

Page 18, Column 2, MILITARY LOW FLYING

Modify existing Paragraph 4

Change the fax number to 0500 300120 and add e-mail cas-gmbaslfoslfbc@wittering.raf.mod.uk

Page 19, Column 1

Add to existing Paragraph (b)

..... Whenever working with such material, always:

Wear an appropriate mask.

Cut over clean white paper. When finished, fold the paper and dispose of carefully.

Vacuum the work surface and your hands regularly

When finished, always wash your hands initially in COLD water.

Page 24, Column 1

Add to existing Paragraph

(d) In these cases **good quality** dry cells give an acceptably long operational life and may be used safely.

Page 24, Column 1, Batteries

Section (e)

Add New Paragraphs

However, If you do decide to use a Lithium battery pack in your Tx, an Li-Fe would be more appropriate as the voltage parameters of a 3 cell Li-Fe are much closer to an 8 cell Ni-Cd or Ni-Mh transmitter pack than would be the case with a Li-Po (nominal 9.6 volts for Ni-Cd, 9.9 volts for Li-Fe and 11.1 Volts for Li-Po).

If you make the change to Lithium battery technology then note well that it is **extremely important** that, you **MUST NOT** use the charger supplied with the Tx. The charger used must be suitable for use with Lithium batteries and you will almost certainly have to remove the pack from the Tx to charge it, especially if you wish to use a balancer charger.

Page 25, Column 1, Low Self Discharge (LSD) Ni-Mh Batteries

Add New Paragraph

You should note, however, that generally these batteries have a fairly high impedance and may not be suitable for high current discharge applications such as flight batteries or high current demand airborne set-ups.

Page 26, Lithium-Polymer (Li-Po) Batteries Column 1, Paragraph 6

Modify Paragraph

..... After this the cell is inert and **should be wrapped in a plastic bag and** may be disposed of with your household refuse **or taken to your local recycling centre**. For more guidance on this subject you should search the internet for the latest information on cell disposal.

Page 29, Column 2, Failsafes

Add new section

Electric Model Failsafes

The setting of the failsafe to, as a minimum, reduce the engine(s) speed to idle, obviously applies to all electric models too. However, given the ability to re-start the motor(s) at will, it makes sense to have the failsafe cut the motor(s) completely. This will give you the desired 'minimum power' situation and will avoid you having to decide on what idle speed you might need to set.

Page 31, Column 1, Transmitter and Receiver Issues

Add new paragraphs (e) and (f)

(e) With certain types of transmitter, when setting up mixers and servo interconnections on a model it has been shown that, in some circumstances, the trim button will work in the opposite direction to that expected. Take a few seconds in the workshop to ensure that every control and trim works exactly as it should.

(f) Problems have been reported with the binding of 2.4 transmitters and receivers when the Tx is surrounded by metal, such as in an open car boot or an open transmitter case. Make sure that the Tx is in 'clear air', close to and in line of sight to the Rx when binding.

Page 31, Column 1, RADIO CONTROL AND YOUR CLUB

Add new paragraph

If your club feels that some monitoring information on 2.4 GHz is required, please note that a USB dongle is now available that will allow a laptop to act as quite a reasonable spectrum analyser which gives good results on the 2.4 GHz band. Contact the BMFA Leicester office for details of the supplier.

Page 32, Column 1, Frequency Control at Club Sites

Add new paragraph

(e) If you are setting out a pegboard after a flying session starts, take care to identify all the models present and the frequencies they are using. Check thoroughly as a mistake can lead to a shoot down and don't assume that a model in the air is on 2.4 GHz.

Page 37, Column 2

Add to existing Paragraph

Checks Before Each Flight

(2) Switch transmitter ON then receiver ON *(Unless your equipment manufacturer specifies otherwise).*

Page 38, Column 1

Checks Before Each Flight

Modify Section 7 as follows

(7) With i/c models:

(a) After starting the engine

With electric models:

(a) The first and most important principle of electric flight ground safety is to understand that the instant you start to plug in the flight battery, the model you are holding may transform itself from a dead airframe into one with its motor running at full revs and all controls moving. No matter how good your other safety checks, you must be prepared for this to happen every single time you start to connect the flight battery.

(b) Since plugging in the flight battery is nearly always a two-handed job you must give serious thought to how your model will be restrained BEFORE it does something you don't expect.

(c) When plugging in the flight battery, positive restraint, either by a helper holding the model or by some other method, and staying completely clear of the propeller must always be part of your regular routine.

(d) Electric motors have very different power and torque characteristics to normal IC model engines. You must take very great care when setting up their control systems and handling them as an accident, such as the propeller hitting your hand, which would stall a glow engine, might just make an electric motor turn even harder.

Page 38, Column 1

Add to existing Paragraph

Checks After Each Flight

Receiver OFF then transmitter OFF. *(Unless your equipment manufacturer specifies otherwise).*

Page 38, Column 2, Almost Ready To Fly Models

Add new paragraph

(h) Extra care should be taken with second hand airframes as you will usually have no idea of their history. Close scrutiny of the whole airframe and any necessary repairs and strengthening are essential before you fly the model.

Page 39, Column 1

Remove Paragraphs

It is VITAL that you never fly or run up your helicopter in or near the pits area or near spectators. ~~When starting the model in the pits, hold the rotor head firmly. When the engine is running carry the model a sensible distance from other people before running up or flying.~~

~~Electric Helicopters should be carried out~~

~~Do not release the rotor of the model until~~

~~Never hold the model~~

Page 39, Column 2, Helicopters,

Add New Section

Electric Model Setup

An electric model can start up with full power and torque immediately. Therefore when setting up an electric model it is imperative that the electric motor is disengaged from the transmission. This can be done by disconnecting the motor, disconnecting the pinion or disengaging the gears. This procedure should also be followed when any changes are made to the ESC.

Page 39, Column 2

Add Sections

For i/c powered helicopters:

When starting the model in the pits, hold the rotor head firmly. When the engine is running carry the

model a sensible distance from other people before running up or flying.

Do not release the rotor of the model until you are sure that it is safe to do so and NEVER FORGET the amount of energy there is in a spinning rotor.

Never hold the model overhead to run up the engine or run the engine with no rotor blades fitted.

For electric powered helicopters:

Electric helicopters should be carried out from the pits area with the flight battery disconnected and it should only be connected in a safe area. The model MUST be considered to be live as soon as this is done and great care is needed during this procedure.

Page 39, Column 2, Helicopters

CHECKS BEFORE DAILY FLYING SESSION

Add New Section (8)

(8) A range check involving a 360 rotation of the model to check for any receiver aerial shielding. This is especially important on 2.4Ghz systems where the aerials are easily shielded by carbon and metal.

Page 40, Column 1, CHECKS BEFORE EACH FLIGHT

Add New Section (8)

(8) Check that the gyro systems are responding in the correct direction (tail rotor and swashplate for flybarless models).

Page 40, Helicopter Rotor Blade Safety

Change Paragraph (3)

(3) Do not be tempted to undertake ~~major~~ **any** repairs to **damaged** rotor blades. ~~unless you know exactly what you are doing. Minor repairs to blade edges are permissible but you should always re-balance after completion.~~

Page 40, Column 2

Add new section

Metal Rotor Blades

The BMFA has negotiated a dispensation from the CAA concerning the use of metal rotor blades. These may now be used under certain restrictions on non-aerobatic models over 7 kg and strictly subject to a written permission from the CAA.

The CAA will only grant such dispensation for a model following an application from the BMFA. All applications will be subject to scrutiny of blade manufacturer, material specifications, method of manufacture etc and there will be ongoing monitoring by both the AHA and the BMFA.

If you are considering using such blades on a large non-aerobatic helicopter, you must contact the BMFA office for details of the current application procedure.

Page 42, Column 1, ELECTROFLIGHT, Paragraph (k)

Modify as follows

(k) You must pay particular attentiongo through. **(Note that some radio equipment manufacturers may require a 'throttle low - receiver on - transmitter on sequence')**.

Page 42, Column 1, Electroflight

Renumber Paragraph (l) to (m)

Add new paragraph (l)

(l) The setting of the failsafe to, as a minimum, reduce the engine(s) speed to idle, obviously applies to all electric models too. However, given the ability to re-start the motor(s) at will, it makes sense to have the failsafe cut the motor(s) completely. This will give you the desired 'minimum power' situation and will avoid you having to decide on what idle speed you might need to set.

Page 45, Column 2, Space Models

Delete entire section

Replace with

Space Models

CAP 658 Says

NOTE: Article 137 of the ANO 2009 (Endangering Safety of an Aircraft) applies to all rockets: the operator of a model rocket must ensure that it does not endanger a real aircraft.

General

Only fly on sites that are clear and open with adequate open space downwind of the launch point and in good visibility.

No person shall launch a rocket unless he has reasonably satisfied himself that:

(a) the flight can be safely made; and

(b) the airspace within which the flight will take place is, and will throughout the flight remain, clear of any obstructions including any aircraft in flight.

Models should be constructed of lightweight materials capable of meeting the minimal structural loads expected during flight. The use of metal components should be limited to the absolute minimum necessary to ensure the integrity of the rocket during flight and recovery.

Models should, for the most part, use commercially available factory-produced motors. Models powered by non-commercial motors must follow the United Kingdom Rocket Association (UKRA) approved safety code. Only motors that are compliant with all relevant UK legal requirements shall be used. For further information contact either the BMFA or the UKRA.

Models should be equipped with a suitable recovery system to ensure a safely retarded descent.

Motors should be ignited electrically in such a way that the operator is at least five metres from the launch point.

Rockets between 160 Newton-seconds ('G' Rating) and 10,240 Newton-seconds ('M' Rating)

In addition to the above, article 168 of the ANO 2009 (Rockets) applies to all rockets with motive power exceeding 160 Newton-seconds ('G' Rating) and the requirements of the article are summarised below:

No person shall launch a rocket with a motive power that exceeds 160 Newton- seconds ('G' rating) unless he has reasonably satisfied himself that:

- (a) the flight can be safely made; and
- (b) the airspace within which the flight will take place is, and will throughout the flight remain, clear of any obstructions including any aircraft in flight; and unless:
- (c) for a flight within controlled airspace, he has obtained the permission of the appropriate air traffic control unit for aircraft flying in that airspace;
- (d) for a flight within an aerodrome traffic zone he has obtained the permission of the air traffic control unit, the aerodrome flight information service unit at the aerodrome or the air/ground communications service unit as appropriate; and
- (e) for a flight for aerial work purposes the flight is carried out under and in accordance with a permission granted by the CAA.

Rockets over 10,240 Newton-seconds ('M' Rating)

Large rockets exceeding 10,240 Newton-seconds must not be launched unless in accordance with a permission granted by the CAA. Further details can be obtained from the Airspace Utilisation Section of the CAA (see Annex A for contact details).

BMFA Notes

In addition:

(a) Models must be launched from a stable platform equipped as a minimum with a launch rod for initial guidance and must not be launched at an angle of more than 30° from the vertical.

(b) A clearly audible countdown of at least 5 seconds must be given by the launch supervisor. In the event of a misfire, do not approach the model until it is certain that ignition will not occur.

(c) Where spectators are present, a Range Safety Officer should be appointed to take responsibility for all flying activity.

(d) For more information plus a detailed set of safety rules, contact the Association's Leicester Office.

Large Scale Rockets, 'H' To 'M' Motors

Details of the operating and safety procedures for large scale high powered rockets are naturally more extensive and involved than for the lower powered ones.

A comprehensive safety code has been written by UKRA to cover such operations and is published by the BMFA. It is required reading if you are interested in large scale rocketry.

Page 47, Column 1

Delete entire section

First Person View R/C Flying

Replace with:

First Person View Radio Control (R/C)

FPV RC is a legitimate activity but there are limitations that you must observe to be both legal and insured.

CAP 658 Says -

(1) What is First Person R/C?

First person R/C, also known as First Person View, is a system whereby a radio control model aircraft is piloted, not through direct line of sight, but by using a live video downlink from an on-board camera allowing the pilot to experience a 'cockpit view' and to control the aircraft from the visual perspective of that camera. The live video is normally displayed to the pilot through 'video

goggles' worn on the pilot's head or through a stand-alone monitor.

(2) Legal Position

The law requires that the person in charge of a model aircraft must maintain direct unaided visual contact with the aircraft sufficient to monitor its flight path so that collisions may be avoided. This is obviously not possible if the person in charge is wearing goggles. Therefore there needs to be a way to facilitate this and to address other safety concerns.

(3) Safety Concerns

Images captured by a camera and displayed on a flat screen afford the pilot little by way of depth perception and no peripheral vision. Moreover, the field of view available is often very limited and any field of view greater than approximately 60 degrees is likely to be distorted towards the edges. This can make it very difficult for the pilot to accurately judge speed and distance and to maintain sufficient awareness of the area surrounding the aircraft to effectively 'see and avoid' obstacles and other aircraft. The ability to control the aircraft and avoid collisions is also greatly affected by the quality of the video which can be very variable. Furthermore, in the event of a loss of data link, which can easily occur if the aircraft is flown beyond the range of the transmitter or indeed if the battery or another component of the systems fails, the pilot is likely to experience difficulty in locating the aircraft relative to his own position and visually acquiring it before loss of control occurs.

(4) Control Measures

One mechanism to address the safety concerns and to overcome the visual contact problem is already in place within radio control flying. This is the Buddy Box system which is regularly employed to train ab-initio pilots in R/C flying. The system electronically links two transmitters in a master and slave configuration, whereby a switch on the master provides the facility to instantly transfer control of the aircraft to either transmitter. In a First Person R/C scenario it enables the person in charge of the model to hold the master transmitter and maintain direct unaided visual contact with the model whilst another person flies the model by reference to the live video from the on-board camera. In the event of an emergency or problem the person in charge with the master transmitter must take control of the aircraft and take whatever action necessary to maintain safety.

(5) Only fly if:

- (a) the activity is solely for 'sport and recreation' purposes;
- (b) two pilots take part;

- (c) a Buddy Box system is employed;
- (d) the person in charge operates the master transmitter;
- (e) the person in charge does not wear the headset or view a screen;
- (f) the aircraft remains within the natural unaided visual range of the person in charge;
- (g) reliable operation of the Buddy Box is established;
- (h) a clear handover protocol is established; and
- (i) the person in charge is solely responsible for the safety of the flight.

These operating conditions very clearly place the legal responsibility for the safety of the flight on the person in charge who must maintain direct unaided visual contact with the model at all times.

BMFA Notes

Because the model is equipped with a video camera and video link to the ground which is sending recordable data, it will automatically be classed by the CAA as a small aircraft equipped for surveillance.

Consequently, all of ANO Article 167, (Small unmanned surveillance aircraft) will apply to any flights made. This can be read in full in the section 'Legal Controls over Model Flying'.

Again, these are strict legal requirements.

Page 49, Column 2, PLANNING AND CONDUCT OF MODEL FLYING DISPLAYS, Radio Controlled Flying

Delete 3rd Paragraph from the bottom

~~Strict control of transmitters~~

Replace with

Strict control of transmitters **MUST** be enforced.

For 35 MHz, a transmitter pound, together with a pegboard, is essential and the use of a frequency checker on all transmitters is highly desirable.

It is also strongly recommended that all 2.4 GHz transmitters are impounded and checked as switched off as there is evidence that, in certain circumstances, the 2.4 MHz band may become saturated and there is an increased safety factor in having all transmitters not in use impounded and in your control.

Page 51, Column 2, Contact Details

Change telephone number to 07808 900327

Page 53, Column 2, The Radio Control Achievement Schemes, General, Para (b)

Add to Para (b)

A candidate presenting himself for a 'B' test must already hold the 'A' certificate in the discipline being tested.

Page 53, Column 2, The Achievement Scheme Standards Leaflets

Add new sentence

Note that the Achievement Scheme Standards Booklets, will be re-issued annually on 1st January each year, regardless of whether there are any changes. This is to ensure that Candidates and Examiners are fully aware that they are working from the correct documentation.

Page 57, Column 1, Withdrawal of Certificates,

Paragraph 5 be replaced with

A BMFA Area or the Achievement Scheme Review Committee may also formally propose directly to Areas Council that a certificate or qualification be withdrawn.

Page 57, Column 1, 'A', 'B' and 'E' Certificate Re-Tests

Heading Paragraph, Replace With

Where a Club, an Area or the Achievement Scheme Review Committee (ASRC) has concerns about the standards of flying or behaviour of any individual but do not wish to take the matter to Areas Council, a re-test procedure is in place as follows:

Paragraph (2), Replace with the following:

(2) The local Area ASC will pass on any such requests from Clubs or Areas to the appropriate National Scheme Controller. Any requests from the ASRC will be passed directly to the appropriate National Scheme Controller.

Add New Paragraph (3)

(3) The National Scheme Controller will then arrange for a Chief Examiner (CE) from a different Area to conduct the re-test by arrangement with the candidate.

Re-Number the Following Paragraphs.

Page 57, Column 2,

Add New Section

The Achievement Scheme Grievance Procedure

In a situation where anyone involved with the BMFA Achievement Schemes has a problem which cannot be worked out at local level, there is a ratified Grievance Procedure set out by Areas Council that can be referred to.

If you need to access this service. Please contact the BMFA Office for a copy of the leaflet which outlines the procedure.

Page 57, Column 2, Heading,

BMFA and SAA

Change to

BMFA and the Scottish Aeromodellers Association (SAA)

Page 58, Column 1, After the Section 'The Test Questions'

Add new section

Buddy Box Leads

Buddy leads and other dual control training aids must not be used during any achievement scheme test.

Page 59, Column 1, The 'A' Certificate (Fixed Wing)

Add in immediately prior to the last paragraph

The minimum weight of the model used for taking the test will be 1kg (2.2 lbs).

Page 59, Column 2, The 'B' Certificate (Fixed Wing), Section (e)

Remove Paragraph

For aircraft (scale aircraft specifically) which for reasons of structural strength or control limitations cannot perform an outside loop, a Split S or Reversal (from level flight, half roll to inverted, hold, then pull through half loop to recover in level flight) may be accepted by the Examiner.

Page 59, Column 2, The 'B' Certificate (Fixed Wing), Section (i)

Remove Paragraph

(i) Gain height and perform a three turn spin.....
..... and the model must fall into the spin (no 'flick' spin entry).

Replace with

(i) Gain height and perform a three turn spin, the initial heading and the recovery heading must be into wind and the model must fall into the spin (no 'flick' spin entry).

Page 60, Column 1, The 'B' Certificate (Fixed Wing)

Add in immediately prior to the last paragraph

The minimum weight of the model used for taking the test will be 1kg (2.2 lbs).

Page 61, Column 1,

Add New Section

THE 'C' CERTIFICATE (SCALE)

The examination for a 'C (Scale)' Certificate may be taken on application to your Area Achievement Scheme Co-ordinator. The examination will be carried out by either one Area Chief Examiner and one Club Examiner, both of whom must be Fixed Wing qualified, or two Chief Examiners, one of whom must be Fixed Wing qualified. The lead Chief Examiner involved in a test will be appointed by the PAS Controller.

To apply to take the 'C (Scale)' Certificate, the candidate must already hold the 'B' Certificate (Fixed Wing). The manoeuvres required for the 'C (Scale)' Certificate are no more difficult than those of the 'B'. However, the candidate must demonstrate the ability to fly them smoothly and accurately and, in particular, in the manner of the prototype. The way in which each manoeuvre should be presented and associated errors which might lead to failure are outlined in detail in the appropriate Test Standards Booklet; reference to this booklet is very strongly recommended.

The applicant may use any type of model that is clearly recognizable as a bona fide model of a full size prototype but it must weigh a minimum of 3Kg and no more than 20 Kg. (i.e. 'Park Flyer' and large models subject to CAA exemption are not acceptable). The Examiners may disallow the use of any model that they consider does not meet this specification.

The applicant is not required to have built the model himself but he will be expected to demonstrate an interest in the subject and the fact that some research has been done. 'Competition standard' documentation is not required but the candidate may provide drawings and/or photographs of the full size to help explain the model he's using. As a minimum he must state the scale of the model and be prepared to discuss and, if requested by the Examiners, provide documented evidence of the performance characteristics of the full size including the maximum or cruising speed and whether or not the full size was considered 'non-aerobatic'.

He will also be expected to describe the origins of the camouflage or paint scheme and markings of his model. If a specific aircraft is modelled then there should be knowledge of that aircraft. If the scheme is more generic, as with some ARTFs, then an effort should be made to explain the origins of the scheme and, as an example, explain that a scheme is incorrect and why it is incorrect.

The Flying Test

(a) Carry out pre-flight checks as required by the BMFA safety Codes, including fail-safe operation if appropriate.

(b) Take-off, turn 90° away from the take-off path and then join the circuit in whichever direction is appropriate for the conditions.

(c) Fly a level figure 8

(d) Climb to height and fly a descending 360° circle at constant low throttle setting.

(e) Fly a further 6 manoeuvres appropriate to the prototype selected from the options below. **These should demonstrate the fullest possible capabilities of the aircraft subject type modelled.** Whilst any of the options may be chosen, models of prototypes deemed to be aerobatic will be expected to demonstrate some aerobatic capability. Candidates must be prepared, if required by the Examiners, to give evidence that the options selected are typical and within the normal capabilities of the aircraft subject type modelled.

The selected options must be given to the Examiners in writing before taking off. The Examiner will determine the order in which the manoeuvres are to be flown and inform the pilot which manoeuvre he wishes to see next.

A candidate may not select option C (Retract and extend flaps) if option B (Retract and extend landing gear) has been selected.

(See the 'Test Standards for Chief and Club Examiners and Guidance for Test Candidates for the C Certificate (Scale)' document for detailed

descriptions of how these manoeuvres are to be presented)

- A Chandelle
- B Extend and retract landing gear
- C Extend and retract flaps
- D Procedure turn
- E Stall turn
- F Immelman turn
- G One inside loop
- H Spilt S (Reversal)
- I Cuban eight (variation to be nominated e.g. reverse, half, half reverse)
- J Normal 3 turn spin
- K Roll (type of roll to be nominated e.g. slow, barrel, 4 point etc.)
- L Touch and go
- M Overshoot
- N Side slip to left or right
- O Option - The candidate may demonstrate a flight function of his own choice. He must supply evidence that this function was performed by the subject aircraft. He must indicate to the Examiners the nature of his demonstration before commencing the test.
- P Option - As O above but different flight function
- Q Flight in a triangular circuit (subject to site suitability)
- R Flight in a rectangular circuit (subject to site suitability)
- S Flight in a straight line at consistent height
- T Flight in a straight line with one engine throttled - (for multi-engines)
- U Lazy Eight
- V Wingover
- W Inverted Flight
- X Derry Turn
- (f) Approach and Landing
- (k) Complete post flight checks as required by the BMFA Safety Codes.
- (l) At least once during the test one of the Examiners will call an emergency and this may happen at ANY time during the assessment. The candidate will be expected to respond in a way appropriate to the emergency called. Note that this may involve an intermediate landing and take-off. If the emergency is called part way through a manoeuvre, the manoeuvre must be repeated after the emergency has been dealt with.
- (m) The schedule must be completed in one flight. Exceptionally, at a pre-determined point in the

flight, an intermediate landing may be permitted for the sole purpose of either re-fuelling or the fitting of a freshly charged flight battery. This landing may only be made with the prior consent of the Examiners.

(n) In addition to assessing the individual manoeuvres, the Examiners will also consider the overall realism throughout the fight including the speed, stability and smoothness of control between manoeuvres. To achieve a pass the candidate will be expected to make no more than 3 significant errors in any manoeuvre as described in the Test Standards

(o) Two examination attempts will be allowed in any one day.

(p) All manoeuvres must be carried out in front of the pilot.

(q) In addition to the above flying schedule, the applicant will be interviewed by the Examiners and must display a satisfactory depth of knowledge of model flying in general and, in particular, of safety matters based on the BMFA Safety Codes for General Flying and Model Flying Displays.

Page 61, Column 1, The 'A' Certificate (Helicopter)

Modify Paragraphs (b) and (c) as follows:

(b) Take off and hover tail in over the take off point, with the helicopter skids at eye level, for about twenty seconds **and then land**

(c) **Take off and hover for about five seconds, then** hover the helicopter slowly forwards for approximately five metres, stop, and hover for about five seconds.

Page 61, Column 2, The 'A' Certificate (Helicopter)

Remove

No artificial stabilisation of the helicopter is allowed other than a tail rotor gyro.

Replace with

Where a fly bar is fitted no other artificial stabilisation of the helicopter is allowed other than a tail rotor gyro.

If the helicopter has no fly bar fitted it is acceptable to use an electronic fly bar system, however the extra electronics must only be acting as a fly bar replacement system and must not take over control from the pilot or achieve automated flight.

Page 62, Column 1, The 'B' Certificate (Helicopter)

Remove

No artificial stabilisation of the helicopter is allowed other than a tail rotor gyro.

Replace with

Where a fly bar is fitted no other artificial stabilisation of the helicopter is allowed other than a tail rotor gyro.

If the helicopter has no fly bar fitted it is acceptable to use an electronic fly bar system, however the extra electronics must only be acting as a fly bar replacement system and must not take over control from the pilot or achieve automated flight.

Page 69, Column 1, BMFA Approved Instructors

Replace Paragraph 2 with:

He must be a current member of the BMFA and initially be put forward by a club to the local Area Achievement Scheme Co-ordinator (ASC) to be tested by an Area Chief Instructor. The ASC will then arrange for the test to take place.

Page 69, Column 2,

Delete Entire Section

Area Chief Instructors

~~The Scheme will be runthat require their services.~~

Replace With

Area Chief Instructors

The Scheme will be run at Area level by Chief Instructors (ACI).

These may be either Area Chief Examiners who have also agreed to be Area Chief Instructors OR persons nominated by Area Committees and ratified by Areas Council as Area Chief Instructors.

A sufficient number of Chief Instructors should be nominated by each Area to ensure good geographic coverage for their clubs.

Area Chief Instructor appointments are for a period of one year only. After this time the qualification may be renewed by the Scheme Controller at the request of the appropriate Area Committee

Area Chief Instructors must be senior members of the BMFA and will have been a Qualified Instructor for at least two years.

If an Area decides that a ratified Area Chief Instructor is needed they must first identify a suitable candidate.

Before the presentation of a potential candidate to an Area meeting for ratification, a consultation with the appropriate Scheme Controller is required by the Area Achievement Scheme Co-ordinator so that the candidate's experience within the Achievement Scheme can be properly appraised by the Area.

The vote to put the candidate forward is then taken at an Area meeting and, for the candidate to be successful, the voting MUST show at least two thirds of those present and eligible to vote to be in favour of the candidate. The Area should note that there is a requirement that the candidate provide a CV to go with the proposal.

The proposal form raised by the Area is then assed to the BMFA office, usually by an Area Achievement Scheme Co-ordinator.

Immediately on receipt, the BMFA Office will check the proposal form to see that the Area voting was correct, that the required CV is present, that the candidate has been an Instructor in the requested discipline for the required length of time and that the required consultation with the Scheme Controller has taken place.

If all is correct, the proposal will be added to the agenda of the next available Areas Council meeting and a copy will be sent to the appropriate National Controller.

The National Controller will pass to the BMFA Leicester Office for inclusion with the proposal any comments about the candidate's record of activity within the Scheme and any recommendations to Council on the suitability of the candidate that he feels are necessary. This must be done by the National Controller as soon as possible after receiving his copy of the proposal.

At the Areas Council the proposal is voted on and, if successful, the candidate becomes a Chief Instructor for his Area.

Page 69, Column 2,

Add New Section

Guidance for Area Chief Instructors

Guidance for Area Chief Instructors

A leaflet setting out Guidance for Area Chief Instructors is available on the website and free of charge from BMFA Leicester Office.

Page 78, Column 1, R/C Equipment Type Approval

Modify Paragraphs

Paragraph 1, Remove the last sentence

~~As the legislation is not retrospective, all 35 MHz equipment which has previously been tested against the old SMAE/MHTF Type Approval standards remains legal to use.~~

Paragraph 3

It is therefore essential that any ~~35 MHz~~ **radio control** equipment you ~~use~~ **buy and use** carries either an SMAE/MHTF Type Approval sticker or an official CE marking. Equipment bearing either of ~~these~~ **this** marking indicates

Paragraph 4

The ~~SMAE/MHTF sticker~~ or CE marking is your only assurance that the equipment you own, or are intending to purchase, complies with the standards laid down by the Government. If your **radio equipment carries no** ~~35 MHz equipment carries~~ ~~neither~~ markings, contact either the shop where it was purchased or the manufacturer or the importer for details on your particular equipment. When purchasing your next R/C equipment, make a special point of looking for the ~~SMAE/MHTF sticker~~ or CE marking; this is the only way you can be sure the equipment you are using is legal.

Page 78, Column 1, R/C Equipment Type Approval, Notes

Delete Paragraph (b) and re-number paragraph (c) to (b).

Add new Paragraph (c)

(c) The 1998 legislation noted above was not retrospective so all 35 MHz equipment which was previously tested against the old SMAE/MHTF Type Approval standards remains legal to use.

Page 82, Column 2, BMFA General Regulations

Remove Para 3 and replace with

For R/C models over 7 kg (without fuel), wilful failure to comply with 1.2.2.3 and 1.2.2.4 below will render illegal any flights under the terms of the Air Navigation Order 1976.

Page 85, Column 2

Add

1.2.8 Dissemination of Information to the Membership

Both the BMFA News and the BMFA Website are to be considered to be primary publication mechanisms of the Society.

NOTICE

This addendum sheet must be used in conjunction with the printed issue of the 2010 Members' Handbook.

This will enable anyone to quote accurate page and column numbers if necessary, based on the 2010 Handbook. These two documents together will be the official and current version of the BMFA Member's Handbook.

The file will be also be published on the BMFA website alongside the existing 2010 Handbook entry.

There will also be a 2012 'website only' version of the Handbook published which will incorporate all of the items in this booklet and which will give you an up-to-date version to read.

However, please note that this 2012 website version will **not** be the official Handbook and you will not be able to quote accurate page and column numbers from it.

It will be published simply for your information and if you have any queries you should refer back and quote the official document for any page and column numbers.

**Chris Bromley, FSMAE
BMFA Technical Secretary
December, 2011**