Risk Assessments

A risk assessment summary and template suitable for use by model flying clubs affiliated to the British Model Flying Association.

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FACT

It is not unreasonable for a landowner to delegate the task of risk assessment to those organised club's who use this land for sporting activities.

Indeed, it may be a condition of use, which the club committee will agree to a regular health & safety review and audit. This is especially true where the landowner is a local authority and where the site has shared usage or public access.

1. Health & Safety Legislation.

The Health and Safety at work Act (1974) changed attitudes and approaches to safety in general throughout industry. It changed the emphasis from civil litigation to criminal prosecution in cases of negligence and widened the concept of such negligence.

New definitions came into being such as “Safety Policy”. “Safety Officer”, “Safety Representative” and “Safety Committee”, all of which became important in safety management.

Codes of practice had to be written and this made everyone look at practices with a critical eye.

The recent new *European Directives* have imposed even greater control and a requirement for safety management.

2. Management of Health and Safety.

These regulations overlap with existing regulations and require that organisations make a “suitable and sufficient assessment of the risks to health and safety of employees while at work and also to persons not in their employment arising out of or in connection with their particular activities”.

Thus “risk assessment” was created as a means of evaluation. How does it work?

The first step is to identify the hazards. **If a hazard does not exist then clearly there is no risk.** Risk reflects both the likelihood that harm will occur and its severity.

The risk assessment should be: -

a) Suitable and sufficient – not perfect – and identify all the significant risks arising from an activity.

b) Reviewed and revised if there is a significant change in the matters to which it relates.

It is always better to avoid a risk altogether by adopting a safer practice.

Documentation is very important, an up-to-date statement of hazard and risk must be kept and be accompanied by the assessment of existing control measures and the population which may be affected. Indeed, the regulations specify that an employer must evaluate -

c) “The risks to the health and safety of persons not in his employment arising out of, or in connection with, the conduct by him or his undertaking.”

The term’s ***hazard*** and ***risk*** are used frequently throughout the regulations**.** These are defined below to ensure clarity: -

Hazard means the potential to cause harm.

Risk means the likelihood or probability of that harm actually occurring and the severity of its consequence

A third term "***exposure potential"*** is also often used This represents a *measure* of the degree of exposure to the hazard and can help in deciding the level of risk.

The Health and Safety Executive (HSE) has set a system of criteria for dealing with uncontrolled risks which should be used when assessing a course of action. The criteria can be applied to all situations that have been risk assessed.

1. Elimination.

2. Substitution.

3. Enclosure.

4. Guarding / segregation of people.

5. Safe systems of operation that reduce the risk to an acceptable level.

6. Written procedures that are known and understood by all affected.

7. Adequate supervision.

8. Identification of training needs.

9. Information and instruction including necessary signs etc.

10. Personal protective equipment.

In many cases a suitable combination of these control measures may be necessary. Individual levels of competence will also need to be considered.

All authorised persons will have access to any such records.

Any safety precautions, or warning notes, will be included in the standard operating procedure for the club. (Rule book)

It is important that all club members have read, understood and agree to abide by these operating procedures before commencing to fly.

Risk assessments will take into account many hazards and the potential for any such accident to cause injury. Any such assessment will take account of the following: -

1. Identification of ALL the risks.

2. Evaluation of those risks.

3. Implementation of measures to control the risks.

A simple q qualitative and semi-quantitative method is often used makes use of the equation shown below. Multiplication of HAZARD x LIKELIHOOD generates a "RISK FACTOR"

	SEVERITY OF		**LIKELIHOOD OF**
RISK =		**X**	
	HAZARD		**OCCURRENCE**

LIST OF HAZARDS, WHICH NEED TO BE CONSIDERED WHEN CARRYING OUT RISK ASSESSMENTS.

The list below is not comprehensive but is given to illustrate the extensive nature of hazards, which may need to be taken into account**.**

asphyxiation
manual handling
use of mechanical equipment
fire
electrical supply
excavation
explosions - chemical
mechanical lifting operations
contact with hot / cold surfaces
pressure systems - gasses
non ionising radiation's
chemicals including fumes
maintenance of equipment
dusts of all types
adverse weather conditions
hand operated machinery and power tools
fall of person from height
fall of objects from height
operation of vehicles
static electricity
drowning
stored energy
noise
biological agents
ionising radiations
vibrations
confined spaces
cleaning
lighting
stacking

etc..

3. Evaluation of risk.

The evaluation of risk is the process known as "Risk Assessment."
A "competent person" should perform this assessment. For our purposes this could be: -

An experienced model flyer who can demonstrate a thorough knowledge of the subject by experience and BMFA achievement e.g. Examiner or Instructor status.

Where clubs, perhaps newly formed, have no access to such a person, in this case it should be the most experienced club member(s) in conjunction with external assistance if required.

Risk assessment for model-flying clubs must take into account all relevant information including:

a) All current legislation (best practice adopted & no contravention)

Civil Aviation Authority regulations	e.g. -	Weight restrictions, failsafe functions, flight paths.
BMFA codes of practice	e.g. –	Flying site layout, safety officers, insurance etc.
Local bye- laws and restrictions	e.g. –	Shared use of site, insurance limits of indemnity
Codes of practice for DOE noise emission		Self-explanatory
The land owners terms of contract.	e.g. –	conflict with safety requirements.

b) Identification of all known hazards

4. Hazards specific to model clubs

Geography of the site	e.g. –	Position of pits area relative to spectators, runways etc. Position of car parking Position of main and secondary runways Position of transmitter & frequency controls. Position of "Pilot's box" Position of sensitive or high -risk areas Position of roads Position of railways Position of public rights of way Position of obstructions to sight / safe flying patterns
Defined flying zones	e.g. -	Over-flying any of the above Over-flying public / organised games Over-flying dwellings Exceeding C.A.A. guidelines – altitude etc.
Warning signs on display?	e.g.-	Warning public of model aircraft operation Hours of operation Safe viewing areas Prohibition of mobile telecommunications equipment

Club safety management	e.g.-	Safety officers and safety committee in post Provision of First aid kit on-site Facilities to summon help in event of emergency Named persons (if any) who may administer first aid?
Are local club rules in place to clearly establish a code of conduct compliant with BMFA and CAA guidance ?	e.g. -	Prevent dangerous or inconsiderate flying. Specify transmitter & frequency control procedures. Specify site layout relative to its geography. Specify proficiency required to fly solo. Specify proficiency required to teach novice pilots. Specify proficiency to establish new model's integrity Specify proficiency to test fly a new model. Insist on the use of correct propeller spinners Insist on some form of model restraint in pits Insist on correct grouping of pilots during flying Establish communication system to notify intent to take off, land or declare an emergency. Insist on use of collapsed aerials except when flying Establish a secure transmitter pound when not in use Restrict model size / engine capacity for novice pilots. Control the operation of "large" models. Confirm fitting & operation of failsafe systems (CAA) Control the discipline of all members.
Are items of basic safety equipment available to the club members?	e.g. -	Scanning Radio Frequency receivers. Crystal frequency checkers for transmitters. Loudhailer or public address warning system. High visibility tape to restrict public access. Transmitter peg board system Windsock, wind velocity meter etc.
Systems in place to cascade safety information to members	e.g. -	Newsletters Teaching sessions Electronic Email Promotion of BMFA achievement schemes

This list is neither exhaustive nor prescriptive in nature; however, it is a good starting point and emphasises the scope of any risk assessment process for a model-flying club. Many of these examples will already be covered – but are they documented? Can it be made safer? Should advice be sought from an external source e.g. BMFA, CAA, HSE, the author.

As a responsible club it may well be the case that a safer system of operation could be devised on your site. The headings should promote discussion within your club. This may lead to a significant reduction of risk through adoption of best practice.

Now complete the form below and see if it is possible to reduce any of the "risk factors" by introducing or changing existing control measures.

British Model Flying Association

5. Risk Assessment Template for use by Model Flying Clubs.

SECTION 1. **CLUB DETAILS**

Name of model club _____

Location of flying site _____

Site owners name _____

BMFA club number _____ Date of assessment _____

Assessor's name 1 _____

Position in club _____ Signature _____

Assessor's name 2 _____

Position in club _____ Signature _____

Risk assessment checked and authorised by club committee on ____ / ____ / _____

REVIEW OF ASSESSMENT DUE ON ____ / ____ / _____

Unless circumstances relating to operation change a period not exceeding 12 months is suggested.

SECTION 2. **SUBJECT ASSESSED**

The operation of radio controlled model aircraft at the site specified above.

SECTION 3. **PERSONS AT RISK** (tick)

Model club members ☐ Members of the public ☐ Other ☐

Specify here a response to "Other" _____

RISK ASSESSMENT SELECTION LIST **for use in section 4**

Potential severity (A)	score	Frequency (B)	score	Risk rating A x B
Trivial	**= 1**	**Highly unlikely occurrence**	**= 1**	**0 – 5 low**
Minor injury	**= 2**	**Possible occurrence**	**= 2**	
Serious injury	**= 3**	**Quite possible occurrence**	**= 3**	**6 – 15 medium**
Fatality	**= 4**	**Likely occurrence**	**= 4**	
Major-multiple deaths	**= 5**	**High occurrence**	**= 5**	**16 – 25 high**

Now proceed to section 4 and list the HAZARDS you have determined.
Place the score for the SEVERITY and FREQUENCY in the boxes. Calculate the " RISK FACTOR" by multiplication of the 2 scores. Add your own supporting comments as required – particularly where a control measure has been introduced and the risk factor has been reduced.

SECTION 4.	RISK ASSESSMENT BEFORE & AFTER CONTROL MEASURES

IDENTITY OF HAZARD	SEVERITY	FREQUENCY	RISK VALUE
1	1		
COMMENTS – CONTROL MEASURES	**RESIDUAL**	**RESIDUAL**	**RESIDUAL**
2	2		
COMMENTS – CONTROL MEASURES	**RESIDUAL**	**RESIDUAL**	**RESIDUAL**
3	3		
COMMENTS – CONTROL MEASURES	**RESIDUAL**	**RESIDUAL**	**RESIDUAL**
4	4		
COMMENTS – CONTROL MEASURES	**RESIDUAL**	**RESIDUAL**	**RESIDUAL**
5	5		
COMMENTS – CONTROL MEASURES	**RESIDUAL**	**RESIDUAL**	**RESIDUAL**
6	6		
COMMENTS – CONTROL MEASURES	**RESIDUAL**	**RESIDUAL**	**RESIDUAL**
7	7		
COMMENTS – CONTROL MEASURES	**RESIDUAL**	**RESIDUAL**	**RESIDUAL**

6. Risk factor scores and remedial actions

Score (A x B) =	**0 – 5**	**NO ACTION REQIURED**
Score (A x B) =	**6 – 15**	**MODERATE RISK – PLANNEDACTION REQUIRED within a reasonable time scale, say 28 days**
Score (A x B) =	**16 – 25**	**HIGH RISK – IMMEDIATE ACTION REQIURED This must be dealt with urgently – flying should cease until problem(s) rectified.**

6. Obtaining help with assessments

You may obtain help and support from the following sources: -

1. The BMFA head office in Leicester — Tel 01162 440028, Email admin@bmfa.org.

2. The author - Kevin A Watson — Tel. 01254 887684, Email bdmacsec@supanet.com

Author's note

Owing to the time consuming nature of these assessments it may be necessary to levy a small fee (just to cover time and costs) should lengthy dialogue be required regarding an individual club's risk assessment.

This could involve, for example, transfer of data to myself in the form of maps, site diagram, video of club site (10 minutes maximum) in action, showing all key features on the site layout and a current copy of the club rules.

Initial advice will be freely available should club representatives wish to contact me directly.

I hope that this meets with your approval and welcome constructive criticism from any source.

The CAA and BMFA have endorsed this proactive document

C:\My Documents\BMFA documents\Risk.doc