SWINDON MODEL BOAT & ENGINEERING CLUB

RISK ASSESSMENT

The Swindon Model Boat & Engineering Club (SMB&EC) is a small club based in Swindon, Wiltshire. The majority of the members operate model boats that are either electrically powered, steam powered or wind powered. Some members also operate small radio controlled vehicles such as trucks, tanks and similar wheeled machines. Members are also engaged in building and operating a variety of engineering models such as petrol or gas powered internal combustion engines, stationary engines and model railway engines.

The club, based at the Coate Water Country Park in the Borough of Swindon, operates model boats on the lake and the vehicles on an area of grass by the side of the lake. The Club also attends a number of show venues around the country. the locations where the club operates are open to the public at large. In order to ensure that the safety related aspects of all our operations are managed in a manner to ensure the safety of not only the members of the club but also the safety of any member of the public, a Risk Assessment has been undertaken. The results of that Risk Assessment follow this introduction.

The potential risks are identified and following that list, each risk is reviewed and the appropriate mitigation measures to each of those risks are detailed.

The SMB&EC takes its responsibilities to the safety of its members and that of the wider public seriously and continues to review its activities in order to maintain its current clear record of safety.

The Risk Assessment shall be read and complied with by all members of the Club at all times. Each member is required to sign a record document to be held by the Club Secretary to signify that have have read the Risk Assessment and shall comply with it at all times.

This Risk Assessment has been produced to cover **all** the SMB&EC's activities and shall be reviewed on a continuous basis to ensure that it remains a current document. Separate versions are not produced for individual events.

R A Hobbs
SMB&EC Treasurer and Membership Secretary
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SUMMARY OF RISKS RELATING TO OPERATION OF MODEL BOATS:

1. Trip hazards at the waterside that could lead to falls on the walkways and/or falling into the lake.
2. Eye and facial injury due to contact with radio aerials and boat masts.
3. Finger injury due to moving mechanical parts in or around powered models.
4. a, Burns and/or scalding relating to operation of steam powered boats.
   b, Burns, scalding and/or impacts relating to mechanical failure of steam powered boats.
5. Injuries arising from an operator's loss of control of high powered models.
6. Unintended personal entry into the water.
7. Infections as a result of contact with any pathogens from either the water or the environs of the lake or operating sites that the club members might use.
8. The filling of liquified gas tanks for steam powered boats poses a risk of fire if gas were to escape during the filling process.
9. The club mobile water pool that is taken to shows is filled with water deep enough pose a risk of drowning to any person tripping and falling into it.
10. There are usually large waterfowl on the lake and land close to the lake which, if threatened by the close presence of models or their operators, could attack and lead to injury of those in the vicinity.

SUMMARY OF RISKS RELATING TO OPERATION OF MODEL ENGINES

11. Any engine being operated may have exposed moving parts that could cause injury.
12. Any internal combustion or external combustion engine may have exposed hot surfaces and exhaust that could cause burns if touched.
13. As with Risk 8 above, there is a risk that the fuel containers and their filling could lead to a risk of fire.

SUMMARY OF RISKS RELATING TO THE OPERATION OF MODEL VEHICLES

14. During their operation, the vehicles may form a trip hazard in the area in which they are being used or parked.
15. Various wooden or metal structures are used to form obstacle courses from which the

vehicles might fall and cause minor injury to those near the structure.

16. Some of the vehicles can travel relatively fast and could cause injury if they were to collide with either people or animals in the vicinity.
17. When placed on display tables there is a risk that the vehicle and its control transmitter may be left in a “powered up” state that could result in unexpected movement of the vehicle resulting in injury.
18. The vehicles are powered by lithium rechargeable batteries which could overheat and catch fire during recharging or if damaged during use.
19. The vehicles have been proven to appeal to children and others and the owners do on occasion allow others “to have a go”. There is a risk that those not familiar with the vehicles may lose control resulting in others being at risk of injury and/or other models/property being damaged.

SUMMARY OF RISKS RELATING TO GENERAL CLUB ACTIVITIES

20. The SMB&EC has a small goods trailer that is used to carry club equipment to local shows. There is a risk associated with the safe loading of the trailer.
21. There is risk to other road users if the trailer is not hitched to the towing vehicle correctly or towed in an inappropriate manner.
22. The SMB&EC mobile pool erection and dismantling procedures may result in injuries to fingers if caught in the folding metal work of the frame.
23. The various component parts of the mobile pool are heavy and lifting these parts could lead to injury.
24. The SMB&EC possesses and small rowing dinghy to act as a rescue craft for any model boats that require recovery from the lake. Incorrect use of this boat could result in falling into the lake with a risk of drowning.
25. The SMB&EC has, from time to time, junior members. There is a risk as in any location, that children could be targeted for abuse either from club members or passing members of the public.
26. Should an accident occur due to either the actions of a member or as a result of a model causing injury or loss or damage to a third party’s property, there is a risk that legal action to seek redress may be initiated.
27. The SMB&EC use a gazebo at various shows to provide shade. There are several risks associated with the gazebo, finger trapping during erection or dismantling and

a trip hazard from the guy ropes at each corner.

28. Many models use high power Lithium Polymer (LiPo) batteries and their derivatives. These batteries can pose a risk of fire if not operated within their design parameters.
29. Access to the waterside at Coate Water is via a series of steps each of which has a sloping surface. These steps pose a risk of falling due to their uneven size and surface. This is especially of concern for those with limited mobility and/or when carrying models and equipment to the waterside. There is also a sloping concrete slipway that is used to place boats in the water and also launch the rescue dinghy. The slipway is often slippery and there is a risk of falling either into the lake or onto the concrete slope causing a risk of injury due to the impact and/or in the extreme case drowning in the lake.
30. Operation of models using the older 27MHz and 40MHZ radio control systems may encounter controllability problems if there is another transmitter operating nearby with the same channel frequency selected. This could result in a model causing damage or injury.

ASSESSMENT OF EACH RISK AND ITS MITIGATION

RISKS RELATING TO OPERATION OF MODEL BOATS

1. It is normal practice for model boats to be brought to the waterside on stands or in cases together with their associated radio control equipment and support paraphernalia. Any such equipment together with the model itself which is placed on the lakeside walkway presents an obstruction to persons passing further along the walkway. All model operators shall ensure that they group their equipment in a tidy manner and, if possible, not on the walkway at all in order to reduce the trip hazard as far as possible.
2. Some models are fitted with masts, such as sailing yachts, and often other models have a variety of shorter masts and projections. Some of the older radio control equipment transmitters are fitted with quite long aerials. All of these features pose a risk to others if care is not taken by the operators or those bending over a model to look at it. Wherever possible the tops of masts and long aerials should have a soft ball-like end to reduce the risk of eye injury. Operators of radio equipment and models with masts must pay due regard to the safety of others in their vicinity and be ready to intervene if necessary should any person appear to be unaware of the risk posed.
3. Some of the model boats have quite powerful motors, exposed propellers of both water and air displacement types. Any operator must ensure that nobody is in danger before applying power to the model propulsion system and also during any stage of the model's operation. All air displacement propellers shall have guards fitted that preclude any close contact with the propellers. This is mandated by the MPBA.
4. a. All Steam powered models pose a risk to the operator and others in the vicinity of those models. All such models will have liquified petroleum gas, petrol, kerosine or coal fired steam boilers. By the very nature of such models, there are high temperatures involved together with high pressures. This leads to the risks of burns, scalding if any of the machinery is touched. All operators of such models must ensure that they take due care themselves to avoid such risks and that they take due notice of any third party person who is becoming too close to such operating models as to be at risk from them.

   b. Should a steam boiler suffer a mechanical failure for any reason or should a fuel vessel either leak of fail catastrophically, injury due to fire and/or being impacted by escaping steam, burning fuel or flying debris from the model may occur. The SMB&EC has a strict policy that all such model equipment cannot be operated unless the

equipment being used has a current, valid safety certificate. To reduce this risk to a minimal level, the SMB&EC has nominated pressure vessel testers whose duties are to test all such boilers and pressure vessels to a minimum of the appropriate Model Power Boat Association Test Regulations or greater. Model makers who are visiting the SMB&EC sites of operation shall be required to produce valid safety certificates for inspection prior to any operation of models powered by steam. As with the risks discussed in "4" above, all operators shall exercise due care in the operation of models of this nature. Any member of the club or visiting member who is considered to be operating steam powered models in a manner likely to risk others shall be required to stop operating the model with appropriate de-pressurisation of all boilers and pressure vessels with immediate effect.

5. Some of the model boats are able to travel at considerable speed. Loss of control of such boats could lead to damage to other lake users boats, injuries and harassment of wildfowl and to persons in the vicinity of the model. All such boats shall be used in a manner that shall ensure that loss of control of the model shall not cause a hazard as a result.
6. Use of the Coate Water Lake and similar locations for model boating inevitably poses a risk that the operators and spectators of the activity may either trip or fall for any reason and as a result enter the water either conscious or incapacitated to some extent. There is a clear risk that drowning could result from such a fall. The SMB&EC advises its members not to operate their models in isolation in order that any person who has entered the water may be assisted and emergency services summoned if necessary.
7. Any open water such as the Coate Water Lake may present a serious health hazard due to algal contamination and diseases such as Weil's disease. The Swindon Borough Council who administer the Coate Water Country park usually advise the SMB&EC if the algal problem is present and the club shall advise its members accordingly. All users of the lake must ensure that good hygiene practice is followed in respect of handling boats that have been operated on the lake in order to reduce their risk of illness from such biological hazards.
8. The filling of liquified gas tanks and liquid fuel tanks poses a risk of fire and or explosion if there is any leakage or spilling during the filling procedure. All such filling operations shall be conducted away from any potential source of ignition as possible. If any leakage or spill should occur the operator must inform those in the vicinity of the

spill and in the car of liquid spills must ensure that they mop up the spill together with ensuring that there is no contamination of the water of the lake.

9. The SMB&EC's mobile pool is usually filled to a depth of around 300mm when erected at venues open to the public. In order to reduce the risk to the public, especially young children, there shall be a rope barrier erected to control access to the pool. All members of the club at such venues must maintain clear observation of movements of the public around the pool in order to intervene if necessary should a member of the public be at risk.
10. At Coate Water and on many lakes visited by the club, there are wildfowl such as swans and geese which use the water and the land surrounding it. If such birds feel threatened by models passing close to them or travelling at speed, there is a risk that such birds will attack any person nearby especially when such birds are accompanied by their young. All users of the lake shall ensure that none of their actions causes and such distress to the wildfowl.

RISKS RELATING TO OPERATION OF MODEL ENGINES

11. Any operation of model engines as static engines on tables or other stands may have exposed moving parts that could cause injuries. It is not always practicable to shield such parts and thus it is essential that no such engines are allowed to operate without a qualified operator being present who shall remain in close proximity such as to be able to intervene if any person approaches the model too closely.
12. Any internal or external combustion engine may have hot exposed parts or exhaust gases that cause cause burns or scalds. As with the Risk 11 above, the same mitigation procedures shall apply.
13. As with Risk 8 above, there is a risk that the fuel containers and their filling could lead to a risk of fire or explosion. The same mitigation procedures shall apply.

RISKS RELATING TO THE OPERATION OF MODEL VEHICLES

14. The vehicles may form a trip hazard in the area where they are being operated. To avoid this risk the vehicles shall where practical be operated within the confines of a roped off area with only the operators being allowed access. In instances where the vehicles are operated outside such a controlled area the operators shall take care to avoid members of the public and animals and stop their vehicle immediately if it is likely that it will come into contact with any person or animal.

15. Any structure that is used to form an operating area for vehicles might fall and cause injury. To mitigate this risk, all such structures must either by design or by means of suitable fixings to the ground be stable and be able to withstand casual contact.
16. The risk to people and other property when the vehicles are being operated, especially at high speed, shall be mitigated by the operators always ensuring that they keep clear view at all times regarding their vehicle's position and that of any other person or. property and ensure that they maintain a safe distance from such people and property. A mesh "catch net" shall be used between suitably placed posts such that any vehicle that is moving out of the operating area in such a manner that it is posing a risk to others shall be stopped.
17. The risk of vehicle movement by inadvertent handling of the command transmitter or faults within the vehicle shall be mitigated by ensuring that the model and its transmitter shall be switched off at all times that the model is not being intentionally operated.
18. The risk of overheating and/or fire of any power source associated with the model vehicles shall be mitigated by only operating the power sources within their published operating specifications and using charging systems approved for that power source.
19. The risks associated with operation of any vehicle other than the owner or one who is already experienced in the control of such vehicles shall be mitigated by ensuring that an experienced operator is present at all times in such a manner as to be able to take immediate control of the vehicle in the event that a hazardous situation is arising.

RISKS RELATING TO GENERAL CLUB ACTIVITIES

20. The SMB&EC has a small goods trailer that is used to transport club equipment to local shows. There is a risk that if the trailer is not loaded in a safe manner or that the loads are not secured within the trailer correctly items may fall from the trailer whilst in transit and lead to an accident. The loading of the trailer shall be overseen by a competent member of the club and the person who is going to tow the trailer shall ensure that the trailer is safe to be used on the public highway or any land to which the public have access.
21. There is a risk to other road users and pedestrians if the trailer is not hitched to the towing vehicle correctly. There is also the risk that the trailer may suffer from a mechanical failure which could result in injuries to other persons or property. The

SMB&EC shall ensure that the trailer is inspected before each use and any faults are rectified before such use. Whilst the trailer is being towed, it is the responsibility of the driver of the towing vehicle to ensure that the trailer is used in accordance with the Law.

22. The SMB&EC mobile pool erection and dismantling procedures involve erecting a metal frame that supports the waterproof liner. The frame is comprised of a number of sections of aluminium ladder that are joined together. Since several persons are required in this erection activity there is a risk that fingers or hand could be trapped between sections of the frame. To reduce this risk those involved in the activity must work together with due regard for their fellow members and be aware of any person who is in a position whereby they may be about to encounter an injury and call out to others to pause their actions.
23. The component parts of the mobile pool are heavy and incorrect handling could lead to personal injury. Whenever the mobile pool parts are being moved those involved must ensure that they are lifting within their own capabilities and when appropriate the assistance of others must be sought.
24. The SMB&EC possesses a small dinghy to act as a rescue craft for any model boats that require recovery from the lake. Incorrect use of this boat could result in the users falling into the water with a risk of drowning. To mitigate the risk the dinghy must be operated by two persons, one to control the dinghy and the other to effect rescue of the model. Life jackets shall be worn at all times by those in the boat. The safety of the crew shall take absolute priority over the rescue of any models. The dinghy shall not be used for any other purpose whatever.
25. The SMB&EC has within its membership, from time to time, junior members. There is a risk as in any location, that children could be targeted for some form of abuse either from club members or passing members of the public. All club members shall be vigilant to the welfare of all those around them and especially children. If there is any concern about how a junior member is being treated then such concerns must be resolved as soon as possible and if necessary, assistance from others, including Social Services and the Police Force shall be sought.
26. Should an accident occur due to either the actions of a member or as a result of their model causing injury or loss or damage to a third party's property, there is a risk that legal action to seek redress may be initiated. The SMB&EC require all full members to have, as a minimum, third party insurance. Proof of such insurance is required to be demonstrated either by their membership of the Model Power Boat Association or a similar affiliation that provides such cover.

27. The SMB&EC use a gazebo at various shows to provide shade. There are several risks associated with the gazebo, finger trapping during erection or dismantling and a trip hazard from the guy ropes at each corner. When the gazebo is being either erected or dismantled there must be sufficient persons available with one person in charge with the responsibility to coordinate the process and stop the procedure if it appears that insufficient care is being taken. Guy ropes shall be marked with brightly coloured “flags” to draw attention to the guy rope.
28. Many models use high power Lithium Polymer (LiPro) batteries and their derivatives. These batteries can pose a risk of fire if not operated within their design parameters. All users of such batteries shall ensure that the correct procedures for the use of these cells are followed at all times. Any cells that show signs of distortion or heating beyond normal shall ensure that any cells so affected are placed away from any flammable products or surfaces until such time as they cool or can be taken away in a safe manner.
29. Access to the waterside at Coate Water is via a series of steps each of which has a sloping surface. These steps pose a risk of falling due to their uneven size and surface. Thee is also the slipway which at times can be hazardous due to plant growth on the surface of the concrete. This is especially of concern for those with limited mobility and/or when carrying models and equipment to the waterside. Swindon Borough Council is responsible for all matters relating to the Coate Water Country park. Any issues with access to the lake should be reported to the Council or their representatives as soon as possible. All users of the facility must take care to ensure that they are safe. If they are experiencing difficulty with the access they should seek assistance from other members who are present.
30. Frequency clashes during the use of 27MHz or 40MHz radio control systems may result in the loss of control of a model. Users of radio control in these two frequency bands must ensure that there are no other users of those bands nearby. If there are, then those users shall coordinate with each other which channel they are using thus ensuring safe concurrent operation of their models. There does exist the possibility that there is another user of similar equipment that is not evident to the local person. Use of these two frequency bands is always subject to this risk and models so equipped must be operated with this in mind. It is strongly recommended that, where possible, the transition to the 2.4GHz band radio control systems should be made.