Oxford Diocesan Guild of Church Bellringers

Towers and Belfries Committee

Technical Note No. TBC02 Rev01

RISK ASSESSMENT IN THE TOWER

1. Introduction

The subject of Health and Safety (H&S) gets a bad press these days and is usually associated with reasons why you can't do something you've always done for years. But you can't argue with the fact that everyone wants to be healthy and safe from things that might affect their health. There is now much legislation governing H&S matters but most of this doesn't apply to the special circumstances of a church tower. However, that is no excuse for not considering whether any action could be taken to make your tower safer. In this litigious age, we need to be aware of potential reasons for someone to sue because of an accident in a tower which could have been foreseen if a risk assessment had been carried out.

Risk Assessment should not present anyone with difficulties because basic survival in this world involves facing physical risks and making decisions on whether these risks are acceptable. Shall I overtake this car? Shall I cross the road? Shall I perform a risky D-I-Y task? Is this ladder safe? This is risk assessment and it is largely a question of common sense. It involves looking for hazards and judging whether the risk such hazards present is acceptable.

This Note looks at some of the possible risks you could be faced with when ringing or working in a tower, poses some basic questions and suggests ways that a common sense approach could reduce them to more acceptable levels or eliminate them altogether. It has not been written with any legal advice and therefore does not claim to be legally correct in any statements made.

There are three, essential, principals of Risk Management:

a. **eliminate the risk** – do I need to do this task? Is there another way to achieve this objective that does not pose a risk?
b. **reduce the risk –** can I use a tower scaffold rather than a ladder? Am I using the right tools? Am I competent to do this task?
c. **mitigate the risk** – break the task down into small, manageable, sub-tasks, have plenty of help, use processes and procedures that have been well thought out to minimise the risks. Ensure that the people involved are competent.

What is competence? You are only competent to do a task if you have a thorough knowledge, understanding and practical experience of what is involved AND are **physically fit** enough to carry out the task safely. This second point is of particular importance as we get older and lose strength and flexibility. You should also take into account any pre-existing medical condition and the effect of any medication you take.

2. Categories of Tower Risk

Tower risks can be broadly categorised into three areas:-

- Access to the tower and the bells
- Ringing Chamber
- Bell Chamber .

2.1 Access

The most fundamental question to ask about access risk is "How secure is the tower door?" Is the tower key kept in a safe place or under a stone outside the door, or under the hassock in the nearest pew to the door, or on a shelf in the porch? Is there a risk that someone could guess where the key is, or could stumble upon it by accident? If such a person thereby gained access to the tower and injured themselves, there is a risk they would sue, despite the fact that they should not have been there.

Recommendation
Provide a warning notice:-

"DANGER Access for Authorised Persons Only.
If you require access contact *Name Phone No*"

attached to the door to ground floor ringing room or to a physical barrier, i.e. hook and chain, across the staircase to ringing room / bell chamber.

Access risks apply to upper floor ringing chambers as well as ground floor rings, which inevitably have some form of access to the bells, either by a spiral staircase or one or more ladders or staircases. Tower access is in most cases not designed for easy access and in itself presents a risk. Are your stairs worn or uneven or loose? Is there anything you can do to improve them? Should you think about having the concrete, stone or wooden steps repaired to eliminate the wear on treads? If you've got a rope fixed to aid climbing the stairs, is it secure? If access is by a staircase, are the treads safe and is the handrail secure?

Recommendation
If the steps are worn, loose or uneven height provide notices at top and bottom of staircase warning of the condition of the steps and advising people to take care.

Could access to the bells be improved? If it is by ladder, is the ladder secure at top and bottom and are the rungs free of damage which could affect their strength? Have you got handholds or ropes at strategic places to make climbing easier and are they secure? If you've got a hatch in the ringing chamber ceiling, is it easy to open without injuring fingers and limbs? When it is open, can you secure it from falling back into its recess and is there a notice telling how to do this? Does falling back through the hatch present a hazard and, if so, what steps have you taken to minimise the risk of this happening?

When using ladders please remember to maintain three points of contact with the ladder at all times, two hands and one foot or one hand and two feet when climbing and two feet and hip or chest when unlocking a padlock or opening a hatch. NEVER carry anything in your hands that could reduce your grip on the ladder, it is much safer to put tools, etc. in a bag and hoist them up the ladder from above.

2.2 The Ringing Chamber

Arguably the greatest risk in a ringing chamber is the loss of artificial lighting.
To reduce the risk of accidents caused by flailing ropes in the dark, ringing chambers should be equipped with:

- a normal lighting system with more than one light source eg. at least two light bulbs positioned at a distance from each other
- a light switch that is protected or positioned so that it cannot be operated accidentally, either from inside the ringing chamber or outside in the church

- a suitable form of emergency lighting which comes on when the mains fail

This topic is dealt with in some detail in another Towers and Belfries Technical Note, TBC0l - "Emergency Lighting for Ringing Chambers".

Clock hammer controls (usually wires or ropes) present two sorts of problem: failure to operate properly and interference by an unauthorised person. The risk here is damage to the bells and / or damage to the ringer. If the clock hammers are not pulled clear of the bells or are released during ringing then the impact of a rotating bell on a hammer could damage the hammer, or worse, smash the bell or wheel If the wheel is damage it could cause the rope to be snatched up without warning. Are your controls in good order and labelled clearly to ensure they are correctly operated? If non-ringers have access to the ringing chamber, for example if it doubles as a vestry, have you thought it might be advisable to padlock the control to prevent unauthorised operation? The same considerations apply to Ellacombe Hammers.

There are various risks associated with bell ropes. In general, ropes hanging free in an upstairs ringing chamber with the downstairs door locked and with the bells down are unlikely to present any risks, but if you leave the bells up, do you have a warning notice to this effect? Ropes in ringing chambers with access to non-ringers should obviously be stowed out of the way, ideally by means of a "spider" to lift them well clear of the floor area. Spiders present a risk in that they could fall and injure someone below, so is your spider rope in good condition and not frayed? Have you thought it might be advisable to locate the spider in such a position that if it were to fall, the risk of someone standing immediately below it is low, for example by locating it above a table? Have you got a limiter on the rope so that it prevents the spider from descending lower than two metres above the floor? Would it be advisable to be able to lock the spider control rope to prevent interference by an unauthorised person?

The majority of accidents in industry and the home are categorised as "slips, trips and falls". Are there any hazards in your ringing chamber which could cause accidents in these categories? What about rope mats on polished floors, clock hammer levers or insecure boxes to stand on?

It goes without saying that electrical safety in a church is vital and normally will be covered by quinquennial inspections. Is all the wiring in the ringing and bell chambers in good order or should anything be brought to the attention of the church authorities? Do you have readily accessible electrical fittings such as consumer units which should bear a "Danger 240 volts" sign?

Have you got a fire extinguisher in the ringing chamber and a First Aid kit?

If your tower has a clock, does it have a pendulum and weights in the ringing chamber and, if so, do they represent hazards which require protection in the form of restricted access to them?

This Towers and Belfries Note has naturally focused on the "mechanics" of towers, namely the equipment and it maintenance. However, it should not be forgotten that the most hazardous activity in a tower is the ringing itself and the potential for accidents in a small crowded tower is significant. The person organising the ringing should be on the look out for hazards such as watcher’s feet off the ground or loose clothing that could become entangled in a moving rope.

2.3 The Bell Chamber

As a general rule all of the bells must be down before anyone enters the bell chamber. Only under exceptional circumstances should anyone enter the bell chamber with the bells up.

Access to the bells sometimes means emerging under one of the bells. Is there a warning notice requiring the bells to be down before access can be gained? If there is a risk of hitting your head on a bell and, if so, is there a warning notice to this effect? Do you provide protective headgear for those requiring access to the bells in such circumstances?

If there is a possibility of a non-ringer entering the bell chamber when the bells are up then the entrance should be kept locked and a warning notice, as recommended above, displayed on the door/hatch.

The floor of the bell chamber may present a potential risk, if its condition is not regularly checked; what state is yours in? If you climb into and out of bell pits, do you have aids, such as a ladder, to help you? If you have a wooden frame wide enough to walk on, have you considered fitting nonslip material to it? Are there any low beams above the bells which could cause a head injury if protective headgear is not worn? Are warnings about such hazards given in the form of notices or hazard tapes? This last point is important when the public may be allowed to climb to the top of a tower, for example on open days.

Recommendation
Provide at least one light weight aluminium ladder that can be moved easily from bell pit to bell pit to aid access. The ladder should extend at least one metre above the top of the frame and should be capable of being secured to the top of the frame, by rope or other means, to prevent it slipping.

Recommendation
Whenever possible stand in the bell pit, not on top of the frame, when adjusting ropes or carrying out maintenance.

Reminder
You are only competent to do a task if you have a thorough knowledge, understanding and practical experience of what is involved AND are **physically fit** enough to carry out the task safely. This second point is of particular importance as we get older and lose strength and flexibility. You should also take into account any pre-existing medical condition and the effect of any medication you take.

All towers should have a set of dedicated tools available for maintenance work (this is covered in a Tower Maintenance Award inspection). Have you considered locating these tools in the bell chamber itself to avoid the problem of carrying them up an awkward access?

NEVER work alone.
There are many reasons for this, for example:-

- there is someone on hand to call for assistance if you do have an accident
- another person can hand you tools so that you do not have to carry them across the frame or into the bell pit, leaving both hands free when climbing around the bell chamber
- some tasks, e.g. adjusting clappers, are easier with two people

When working or moving about on top of the frame remember the rule of three points of contact at all times. Always look for something to hold on to in case you slip or trip, that way you avoid a fall.

3. Outcome of the Risk Assessment

It should be noted that the Health & Safety at Work etc. Act 1974 requires action to be taken to reduce risk to ***"as low as reasonably practicable"*** and whilst we may not be required to comply with the H&S Act for much of our activity in the tower we would be foolish not to adopt best practice and reduce the risk to ourselves and others.

If you do undertake a risk assessment, it should be recorded in writing, especially if you find a hazard which requires action to eliminate or reduce the risk from it. In the very unlikely event of evidence being required after an accident, written evidence is infinitely better than someone's memory! A simple way of recording an assessment is to have a check list with boxes to tick and an example of this is given in the Appendix 1.

An example of a more formal risk assessment is given in Appendix 2. The advantage of this format is the actions taken to eliminate or mitigate the risk are also recorded.

If the assessment reveals action which needs to be taken, this should either be brought to the attention of the responsible authority which in most cases would be the PCC, or you should log the task to be carried out in the belfry maintenance book which every well-run tower should have!

4. Accidents

Hopefully your tower will be accident free. However, it is prudent (and a requirement of the Tower Maintenance Award) that each tower should have a first aid kit readily available to treat minor injuries. At the other end of the scale, have you considered how you would get an incapacitated ringer down from your tower, or would you need to rely on the emergency services?

5. Conclusion

There are likely to be two different responses to the contents of this Technical Note. You will either say "Don't be ridiculous!" or "Gosh, I never thought of that!" It is to be hoped that the latter will be the more likely and that if nothing else, the questions posed will make you consider whether you could do anything to reduce risks in a tower.

6. Disclaimer

This Technical Note and its recommendations are given gratuitously and in good faith but expressly without liability on the part of the Oxford Diocesan Guild or any officer or member thereof: or any person who has been concerned in the preparation of the note.

The Towers and Belfries Committee exists to encourage the keeping of bell installations in the Oxford Diocese in good order and is pleased to be asked to assist with advice on maintenance or major work on an installation.

7. Contacting the Towers and Belfries Committee

More information can be obtained from the Committee Chairman email: tbchairman@odg.org.uk

Revision History

Original	March 2006	Author	PD
Rev01	October 2015	Author	LP

APPENDIX 1
SAMPLE CHECK LIST FOR A RISK ASSESSMENT

HAZARD	PASS	FAIL	N/A
Is the tower door secure?			
Are your stairs or staircase treads worn or uneven or loose?			
Is the rope which helps you climb the stairs secure?			
Could access to the bells be improved?			
Is the hatch in the ringing chamber ceiling easy to open safely?			
Can you secure the hatch from falling back into its recess?			
Have you taken steps to prevent people falling back through the hatch?			
Do you have emergency lighting in the ringing chamber?			
Are your clock hammer controls in good order and labelled clearly?			
Should you lock the hammer controls to prevent unauthorised operation?			
Do you have a spider and is the spider rope in good condition?			
If the spider did fall could it fall on someone?			
Are there ringing chamber hazards which could cause "slips, trips or falls"?			
Do you have electrical apparatus which should bear a danger sign?			
Is there a fire extinguisher and a First Aid kit in the ringing chamber?			
Is access to the clock pendulum and weights restricted?			
Do you have a warning notice if the bells have to be down to gain access?			
Do you provide protective headgear for working on the bells?			
Is the floor of the bell chamber safe?			
Are there low beams above the bells which need to be identified as hazards?			

This is by no means an exhaustive list but if you carry out a check and tick the boxes, you've done a basic risk assessment!

APPENDIX 2

SAMPLE FORMAT FOR A FORMAL RISK ASSESSMENT

Risk is defined as the product of **Likelihood** (frequency) of a hazard occurring and the **Severity** of the outcome.
Likelihood measured on a scale of 1 to 5 where 1 is unlikely to occur and 5 is very likely to occur.
Severity is measured on a scale of 1 to 5 where 1 is very minor cuts and bruises and 5 is probability of death.

Hazard and Consequence	**Likelihood**	**Severity**	**Risk**	**Mitigation**	**Likelihood**	**Severity**	**Risk**
Unauthorised access to the tower resulting in death from entanglement in rope or by being struck by swinging bell	5	5	25	Door locked securely with controlled access to keys	5	1	5
Uneven, worn or loose stair treads resulting serious injury from slips, trips and falls	5	4	20	Repair stair treads	5	1	5
Slips and trips on stairs resulting serious injury	3	4	12	Install handrail or rope to assist climb	1	4	4
Difficult access to bells resulting in serious injury/death for falling from ladder	3	5	15	Improve access by installing better ladder and/or removing obstacles	1	5	5
Hatch to bell chamber difficult to open resulting in serious injury/death from falling from ladder	3	5	15	Provide secure hand hold and/or counterweight system to assist opening of hatch	1	5	5
Hatch falling back onto person opening hatch resulting in serious injury/death from falling from ladder	3	5	15	Provide latch and/or counterweight system to hold hatch open	1	5	5
Persons falling through open hatch resulting in serious injury/death	5	5	25	Ensure that hatch is kept closed	1	5	5
Power failure extinguishing lights in ringing chamber resulting in injury/serious injury from flailing ropes	5	3	15	Install automatic emergency lighting	1	3	3

Power failure extinguishing lights in bell chamber resulting in injury/serious injury from slips, trips or falls	5	3	15	Install automatic emergency lighting	1	3	3
Extinguishing of lights in ringing chamber caused by accidental operation of light switch resulting in injury/serious injury from flailing ropes	5	3	15	Install protection to switch or move to position where persons cannot lean against the switch	1	3	3
Extinguishing of lights in ringing chamber caused by unauthorised operation of light switch outside the ringing chamber resulting in injury/serious injury from flailing ropes	5	3	15	Place switch in locked enclosure, provide warning notice, move switch into ringing chamber	1	3	3
Damaged or loose floor coverings causing injury/serious injury from slips, trips or falls	5	3	15	Repair, secure or remove floor coverings	1	3	3
Cluttered ringing chamber with loose objects on floor causing injury/serious injury from slips, trips or falls	5	3	15	Ensure floor area is kept clear of clutter and loose objects	1	3	3
Heavy spider that could fall and cause injury/serious injury	5	3	15	Locate spider such that it cannot strike a person, e.g. over a table	1	3	3
Heavy spider that could fall and cause injury/serious injury	5	3	15	Fit limiter to rope such that spider cannot descend below 2 metres above the floor	1	3	3
Heavy spider that could fall and cause injury/serious injury	5	3	15	Check hoist rope for damage frequently	1	3	3
Bell chamber floor damaged or loose causing injury/serious injury from slips, trips or falls	5	3	15	Repair floor	1	3	3
Falls from bell frame causing injury/serious injury	5	4	20	Provide lightweight ladder to assist access/egress	1	4	4
Striking head on beam, bell, obstruction in bell chamber resulting in injury/serious injury	3	4	12	Provide head protection	1	4	4

This assessment is based, largely, on the principal items of Appendix 1 above. It is by no means exhaustive and is given for guidance only.