

ref	hazard	possible outcome	people affected	current control	additional controls to be implemented	responsibility
	Ringling					
R001	Moving ropes (under control)	potentially serious injuries varying from rope burns to being hauled up in the tower resulting in broken bones etc.	Non ringers, visitors, trainees, ringers whilst not ringing, ringers	Visitors and non ringers instructed not to touch ropes prior to entry. All persons not ringing instructed to keep feet firmly on the floor. Removal of loose clothing such as ties, scarves etc prior to ringing. Learners are closely supervised by competent instructor. Two people (trainer or second experienced ringer) must be present when ringing.	extend 2 people rule to ringing up/down (weddings and other occasions).	Tower captain (TC)
R002	Flailing ropes (including lost control and 'untidy' ringing)	see R001, possibly death through strangulation	Anyone in close proximity	Lost control: Bells are stood, and help to get bell under control provided. 'Untidy rining': training provided.		TC
R003	Rope breaking	See R002, R004	Anyone in close proximity	Ropes inspected monthly.		Steeple keeper (SK)
R004	Stay breaking	Rope burn, dislocated shoulder, or the ringer could be lifted off their feet as the bell 'goes over' and then dropped to the ground causing various injuries including major ones	Ringer	Ringers trained to avoid 'bouncing' bell. Stay checked monthly.		TC, SK
R005	Clapper breaking/falling out	serious injury, potentially death, when getting hit.		Clapper inspected quarterly. Two floors between bells and ringing chamber. See T014		SK
R006	Power cut while bells are rung.	Loss of control of the ropes resulting in all personnel in the area at hazard of becoming snagged by the ropes and suffer injuries (see R001)		Automatic emergency lighting in place enabling the bells to be safely stood or lowered.	Include check for correct functioning in monthly inspection.	SK
R007	Power leads, sensor cables.	Injury through trips.	Ringers, visitors	Permanently installed cables away from access areas.	Cover temporarily installed cables with mat.	SK
R008	Items on floor	Injury through trips.	Ringers, visitors	Coat hooks provided. Bags etc stored in non-access areas (internal window sill, on/below benches, with boxes)		
R009	Noise	damage to hearing	Ringers, visitors	Safe noise levels in ringing chamber as it is two floors below bell chamber. Access to bell chamber while bells are ringing only allowed when clappers are tied, or muffled and hearing protection is worn.		TC
R010	Visitor may not be ringer/may be beginner.	Increased likelihood of incident occurring.	Visitors	none	Establish skills of visitor, supervise appropriately where required.	TC
R011	Minor learners/ringers	Increased likelihood of incident occurring.	Ringers	At least 2 adults always present. Permission to ring form for all new minor students and parent contact details kept.		TC
R012	Clock or chime hammers obstructing bells	see R002	Ringers	Clock hammers disengaged prior to ringing. Sanctus bell rope lifted during ringing.	Improve signage	TC SK
R013	No traditional spider: Ropes hung loosely over a board. Ropes can slip off.	Rope can become accessible when it shouldn't be.		Door to ringing chamber is normally locked. Sign is put up warning people about bells being left up. Key holders are known people who are aware of risks.		TC Church warden (CW)/office
R014	Bell goes up 'wrong'.	Higher likelihood of injury when ringer struggles to stand bell. Serious injury possible when turning clapper on bell that is up.	ringers	If bell goes up 'wrong' it is rung down again. Clapper hinge is lubricated if not moving freely (quarterly check).		

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R015	Omission to unmuffle a bell after muffled practice.	Serious injury possible when turning muffer on bell that is up.	ringers	All bells rung down and muffer turned when bells have stopped moving.		
R016	Omission to ring up all bells needed for wedding or other occasion.	Serious injury possible when turning muffer on bell that is up in order to ring it up muffled.	ringers	Ensure that access restrictions are followed by everyone.		TC
R017	One ringer ringing two bells.	higher likelihood of injury when control over one or both bells is lost, esp. when tail end is looped over wrist.	ringers	Not permitted.		TC
R018	Rope too long.	Injury through being hit, possibly in the eye, by tail end.	ringers	Knot added below sally to shorten rope, or tailend shortened.		
R019	Rope too short.	Losing control of bell if tail end is lost - see R002, R004.	Ringers	Boxes of various sizes available, or tail end is lengthened. Ringing is stopped immediately when ringer struggles to control bell.	Ensure that rope is long enough for ringer to reach sally and bring bell up to balance on backstroke before ringing in band.	TC
R020	Use of box while ringing.	Injury when falling/slipping, or protruding foot/corner of box catching rope.	Ringers	Correct positioning of box ensured before ringing is started.		
R021	beginners/inexperienced ringers	higher likelihood of incidents occurring(see R002)	see R002	Acknowledged trainer supervising ringer whenever ringng.	Train more ringers in getting other ringer's rope and bell under control.	TC
R022	Visiting band - group of non-SLiT ringers	Higher likelihood if incident as people are unfamiliar with bells and localities.	Ringers	At least one SLiT person present during visit.		TC
	Access to ringing chamber					
A001	upper floor ringing chamber	injury through slips and falls when climbing stairs.	all personnel	domestic, carpeted stair case to roof level.		
A002	low beam near door to roof	injury when knocking head against it	all personnel	marked with 'mind your head' sign (bright orange)		
A003	door to roof warped, bolts difficult to apply/release	cuts/bruises when fingers get trapped	first/last person to pass through door.		Change type of bolts and/or adjust fitting for smooth operation.	PCC
A004	narrow wooden track between roofs between indoors stair case and ringing chamber. No handrail. Includes 2 steps	injury when slipping or falling	all personnel	Path clear of gully and covered with netting to provide grip when wet. Edges painted white annually to improve visibility. No ringing practice when roof is covered in snow or ice.		PCC (maintenance schedule). TC
A005	low door with deep frame, step down into ringing chamber	injury when knocking head against door frame.	all personnel	none	Warn visitors when going up to tower.	
A006	Access to ringing chamber when dark. No switch for external lighting in ringing chamber.	injury when slipping or falling due to poor visibility	all personnel	External lighting provided and left on when it is getting dark. Electric lighting for internal stair case with two way control. Emergency lighting and torch in ringing chamber in case of power failure.	Annual evacuation practice.	TC
	Access to bell chamber					
A007	steep wooden ladders to bell chamber and exit platform onto roof.	injury through slips and falls.	all personnel	People advised not to ascend when wearing inappropriate footwear. Access only allowed to authorized people (signage on lower ladder)		
A008	ladder to ringing chamber passes through two trap doors.	injury when trapdoors close inadvertently	all personnel	none	install means of locking doors open	CW
A009	Upper trapdoor only held by single hinge	injury through fall or trapped hand if used as support	all personnel	none	Fix hinge	CW
A010	Moving wheels, bells	potentially serious injury through trapping limbs or falling into moving object.	all personnel	Accessing frame only permitted to trained personnel (e.g. bell hangers; min 2 people present). See also T016.		

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A011	Noise	damage to hearing	all personnel	Access to bell chamber while bells are ringing only allowed when clappers are tied or hearing protection is worn. (see R009)		
A012	Moving ropes	see R001	all personnel	Access through clock chamber only when bells are down or stood. Access into clock chamber only when ropes are down.		
A013	Asbestos	breathing in of asbestos fibres could result in death	All personnel, but especially those involved in maintenance	n/a		
A014	Structural defects generally (including bell frame)	major injuries	Structural defects could affect anyone in the tower, but especially those carrying out maintenance in areas not normally accessed	Church inspection.		PCC
Fire safety						
F001	Fire in tower	Injury or death through burns and/or smoke inhalation	all personnel	Fire extinguisher available and checked as per schedule. Fire exit route as entry route, or onto roof. During activities in tower, at least one person present with mobile phone.	Smoke detector in ringing/bell/clock chamber. Change to powder extinguisher.	PCC
F002	fire in church	Injury or death through burns and/or smoke inhalation	all personnel	none	Install smoke detectors that can be heard in tower.	PCC
F003	Ground floor doors locked when unattended(main fire exit)	people trapped inside in case of fire or other emergency	all personnel	At least one key holder present and key is accessible to everyone.	install Yale lock to provide security whilst keeping door unlocked from inside. Otherwise ensure key is readily available.	PCC
F004	No indication on ground floor that someone is present in tower.	Need to evacuate may not be communicated to everybody	all personnel	Signage installed opposite vestry entrance.	-	
F005	Flammable material stored on main emergency exit route (landing near exit door to roof)	Exit route may become unusable.	all personnel	secondary exit route onto tower roof.	Remove combustible material along escape route.	PCC
F006	no signage indicating exit routes.	Delay in evacuation due to confusion	all personnel	Always one person present knowing layout of church.		
F007	use of electrical equipment, including portable heater.	fire caused by defect.	all personnel	Portable heater switches off automatically when tilting. Electrical equipment (inc. lighting) checked. Devices switched off when unattended for long period of time.		PCC
Tower tours						
T001	People coming and going passing on narrow path along church roof.	injury through fall	ringers, visitors		coordinate groups	
T002	access path to bell chamber and tower roof very narrow for people to pass each other	Bruising or more serious injuries when falling from height.	ringers, visitors	Coordinate ascends/descends		
T003	Someone pulling rope chiming a bell when people are in bell chamber.	injury through shock leading to fall or inability to descend. Hearing damage.	ringers, visitors	All people present instructed to stay clear of ropes.	put unused ropes on spider, muffle bells.	
T004	Bell 2 and possibly bell 1 close enough to access path to allow someone to handle clapper.	May chime bell (see T003). Injury through trapping finger between bell and clapper.	Visitors		muffle bells or tie clapper.	
T005	Steel of bell frame close to ladder.	Cuts or bruising on back when scraping against it.	ringers, visitors	Verbal warning that route is steep and narrow. Some padding.	additional warning signs.	SK
T006	low ceiling beams on upper platform in bell chamber	injury when knocking head against it	ringers, visitors	some marking with white paint.	additional warning signs, padding.	SK

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T007	Single hand rail on upper platform in bell chamber.	hazard of falling from height onto bells	ringers, visitors	Mesh covering gap between hand rail and floor.		
T008	Young children on tour.			Children under age of 16 must be accompanied by at least one guardian. They are warned against carrying lose objects in their pockets.	Introduce age restriction.	TC
T009	Visitors/non-ringers outnumbering ringers present. Large number of people in tower.	Increased likelihood of hazard event occurring due to insufficient level of supervision.		Supervisors present throughout tours in ringing chamber, on roof, in bell chamber and in clock chamber. Access to bell frame denied to visitors.		
T010	Poor lighting on steps between lower and upper ladders.	Bruising or other injuries when slipping or tripping.	visitors, supervisors		improve lighting, e.g. battery operated LED light.	SK
T011	people descending ladders in close succession.	bruising and possibly more serious injuries through slipping when stepping on someone's hand	visitors, supervisors	Supervisors coordinate tours.		TC
T012	fear of height	person may be trapped at the top of a ladder not being able to descend.	visitors	none	Advise people of what expects them. Ensured no-one feels pressured into going up. Ensure person can descend immediately (e.g. no-one below them on the ladder) if they change their mind.	TC
	Tower tours - demonstration of bell ringing					
T013	non-ringer pulls bell off that's in up-position	see R002	visitor	none	Remove rope to safe position (e.g. bell stood on backstroke and/or rope on spider). See also T014. Ensure visitors are at safe distance during demonstration.	TC
T014	noise (people upstairs during demo)	see T003.	visitor, supervisors.	none	Tie clapper on demonstration bells to ensure bell is swinging silently. Communicate with supervisor in bell chamber to ensure people are aware about when demo starts.	
T015	Clapper breaking/falling out (people in bell chamber).	Serious injury, possibly death, if person gets hit.	visitor, supervisors.	none	see T014. Only use bells 5, 6, 7 or 8 (swinging direction)	TC
T016	moving bell (people in bell chamber)	Serious injury, possibly death when falling into or being hit by swinging bell.	visitor, supervisors.	none	See T015	TC
T017	moving ropes (people in clock chamber)	injuries from rope burn, dislocated limbs, injuries from falls		none	No access permitted to clock chamber (other than ladder) while bells are being rung. Bells where ropes pass within reach of ladder not to be used.	TC
	Maintenance					
M001	Bell frame on two levels	injury when falling	people involved in tower/bell maintenance, bell muffling	Appropriate footware required.		
M002	lone working	Any accident involving anyone working on their own could result in any injuries becoming significantly worse through lack of immediate attention	people involved in tower/bell maintenance, bell muffling	checkin/checkout via text to key holder required.		

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M003	clock chime or sanctus bell chiming during maintenance/inspection activities	hearing loss through noise.	people involved in tower/bell maintenance, bell muffling	see R012	see R013	
M004	Bells being rung during maintenance/inspection activities.	Hearing loss through noise. Potentially serious injuries through moving bells/wheels.	people involved in tower/bell maintenance, bell muffling	Board indicating someone is in bell or clock chamber (worn)	Improve board	SK
M005	bells up.	serious injury when bell is dislodged.	people involved in tower/bell maintenance, bell muffling	warning signs in ringing chamber when bells are left up. Work on bell when it is up is only permitted to qualified people like bell hangers.		
M006	Raised floor in clock chamber where 8 out of 10 ropes pass.	injury through knocking head against ceiling, or back injury when working bent over.	people involved in tower/bell maintenance, bell muffling	no prolonged activities in section with raised floor.		
M007	open trapdoor in clock chamber. No handrail.	injury through fall when stepping over it to access ropes in front of clock.	people involved in tower/bell maintenance, bell muffling	People advised to close trap door prior to crossing over.	attach handrail to side of raised floor and handle to trapdoors	CW