

## Lighting in and around church towers – a guide for bell-ringers

Is this the state of the art in your tower? Gas lighting is not state of the art!



### Introduction

Lighting in and around a church tower is often taken for granted until it is not lighting!

As a consequence of significant technical developments in lighting in the last few years, most people now benefit from good quality artificial light in their domestic, leisure and professional environments. Churches too, are exploiting new fixtures and fittings to reduce power consumption. While making the lighting more efficient and effective, they are usually enhancing the effects created.

Towers, however, are not always included in improvement schemes and, in a few cases, installations have not recognised the specific needs of ringers for ringing. Traditional tungsten

filament bulbs are being phased out so this note aims to offer some basic advice for steeple keepers and ringers. A few specific considerations and options will be presented as a guide. As is typical in ringing, every tower and part of a tower has to be considered on a case by case basis as the situations are so varied.

*Caution – It is essential that specialist advice and qualified contractors are used in any major work on electrical lighting. The church authorities and PCC should also be involved; a faculty may be required for more significant modifications to lighting as part of the electrical installations.*



*Not an acceptable arrangement!*

In this short note, suggestions are offered for lighting in (and around) the tower that are suitable for routine ringing. Additional comments are added as guidance for work such as maintenance in and around the tower.

## **The ringing room**

There are several factors that need to be considered in a ringing room. If the same space is not only used by ringers, then it may even be necessary to have separate switched systems for the different users.

The basic fittings – There is now a huge range of very stylish light fittings available and they are being developed rapidly. Modern fittings can be very compact and it should be possible to find a style that is suitable for most locations. For towers, it is likely that professional quality lighting is more appropriate than domestic. Professional quality should offer more rugged and durable installations that are still aesthetically attractive. Professional quality fittings are also designed specifically to offer good quality uniform light, with standard replaceable bulbs. Whatever is chosen should also consider the historic fabric in which it is being installed.

Light fixtures must not hinder rope movement either during normal ringing, on breaking or potentially when ropes lash about during teaching. Professional designs tend not to have protruding arms or other features that could be hazardous.

The traditional risk of lamps becoming hot and hence a fire risk, especially when left on for 3 or more hours, has diminished (but should not be ignored) with modern, higher efficiency lower power consumption lamps.

Intensity - Lighting intensity needs to be similar to daylight or that created in a normal domestic or office environment, and preferably uniform across the space. It is difficult to specify this as the apparent illumination will depend on several factors. The light intensity perceived by the human eye depends on wavelength of the source and the illumination will depend markedly on the size of the space, surface finish, colour and reflectivity of wall coverings, furniture, windows etc.

Position - More critical than lighting intensity, is the position and direction of the lights. Since all ringers will be looking across and around a ringing room during ringing, the fittings must all be well above normal sight lines and avoid dazzle and discomfort. (The sun causes similar

problems in some towers with windows; adjustable curtains or blinds are essential at some times of the day and year. In rare instances, even the external church floodlights have been known to aggravate the ringers!)

How bulbs are to be replaced must be considered when lights are installed. Scaffolding and ladders provided during installation will not always be available in a church for safe and swift bulb replacement.

Shading – The light must be diffuse; depending on the source, diffusers may be required. Many modern sources are much more intense and directional than traditional bulbs so care is required when installing new fittings at the same location as a previous lamp. The style of shade also requires careful selection. If dust, insects, spiders or other debris can easily collect in a shade or diffuser, this will soon reduce the light efficiency and potentially become a fire hazard. Ringers should not be expected to clean out lamp shades, at frequent intervals.



*The picture above shows a typical strip light with diffuser, now with some debris building up.*



This picture shows a recent installation in the body of a church - a dual fitting with uplighter and down-lighter and, adjacent to this, a spot light. This arrangement enables different lighting effects for different functions in the church. However, this would not be suitable in a ringing room. The challenge here is that scaffolding is required for every bulb change, and debris is already building up in some of the globes. No doubt, dust will also be settling on the uplighters and hence reducing efficiency.



In the picture above, the uplighter is giving a good light out of the way of ropes and ringers. Inevitable, it may still collect debris.

Flicker – A strongly visible flickering (ie a few per second) probably indicates a fault. A more rapid flicking (several tens per second) will be a consequence of the operation of the electrical system and may cause a stroboscopic effect associated with the movement of striped sallies. Some people are more sensitive to this than others so it is difficult to set a specification. Specialist advice may be required and specifications for contractors should mention the movement of striped sallies.

Switches – Their position and function need careful thought. One switch, for example at the bottom of the tower, may simply operate all the lights thus avoiding lights being left on inadvertently, as can arise with several switches. However, this simplicity can also mean that ringers could be plunged into darkness inadvertently.

Two way switches on the stairs (ie the same function achieved at both the top and bottom), plus a separate switch for the ringing room is probably the optimum for many situations (as conventional in a 2 storey house).

### **The bell chamber**

Often a very neglected “black hole”, bell chambers do need excellent lighting as they typically have little natural light even during daylight hours.

A simple room light is a basic requirement, but it will not be possible to position a single lamp to enable people undertaking maintenance activities to see their way over, under and around the bells and frame. Several lights should be installed - the light fixtures and fittings should be rugged, remembering that work in the bell chamber is likely to involve use of bulky tools and shifting of awkward, large and very heavy items. Water and insect / vermin protection should also be considered; mice have a propensity to chew cables!

Lighting circuits are not adequate for modern power tools deployed for maintenance work; separate power circuits are therefore essential for heavy duty power tools and lifting gear, and to provide supplementary lighting from additional movable lamp stands and hand-lamps repositioned when required.

People working in a bell chamber, may well now use supplementary battery operated lamps, as these provide good illumination where required, for extended periods of time and in compact format. Head torches are particularly useful.

### **Stairs**

Even if there are some windows on the staircase, good lighting is essential on staircases. Compact and flexible systems are now available, such as “LED light ropes”, (LED = Light Emitting Diode) that provide excellent lighting in comparison with traditional bulbs. As advised repeatedly, care should be taken to purchase and install good quality products. Fixing requires careful planning to provide the light, without risk of damage or breakage and without impeding people or equipment / tools and other things being carried up and down what is often a tight

space. In particular, many staircases are tight for space and installers should ensure that lamps are not positioned so that they could be knocked or even used as hand holds!

### **Intermediate rooms**

Lighting in such spaces will depend on usage. The major consideration for ringers is that the light fittings must not impede the rope travel either during normal ringing nor during any accidental atypical rope movement as could occur if a rope breaks.

### **External approaches, car parks etc**

Lighting for these areas should be included as an integral part of the installations in and around the church. Entrances to towers, however, may be very different from the main routes used by the majority of church users so may require separate lighting from the principal routes. They are often overlooked!

### **Emergency lighting**

Lighting failure – Failure may be due to accidental operation of a switch, power failure or lamp failure. These 3 causes need to be addressed separately. Lamp positions should take into account the risks of any one lamp failing; ie any space must not be totally dependent on a single bulb. Switch positions can minimise the power being turned off accidentally, but power failure requires a separate emergency power supply.

Emergency systems – This should be integrated with the church system in case of power cuts. Ideally, the lighting is integrated with the emergency exit signage. The light source is usually a low power consumption lamp run from rechargeable batteries. Integrated emergency lighting is normally installed with fire / heat proof cable. If not integrated with the church system, then a separate system may be purchased and installed relatively economically and safely. While most people using the church may expect to leave in the event of an extended power failure, ringers may (if safe otherwise to do so) wish to continue ringing for up to 45 minutes or even the greater part of 3 hours! Whatever approach is adopted, the system should be tested periodically.



A good quality, rechargeable torch is an asset in any tower, as long as it is kept fully charged and could be retrieved (even by visitors who may not know the tower) in total darkness.



In this tower (above), there are bulbs and uplighters, with emergency lighting (arrowed).

Note that there is a relevant British Standard - **Emergency lighting code of practice for the emergency escape lighting of premises** BS 5266-1 – the current version (issued May 2016) is available from the Health and Safety Executive website but costs £234 (June 2016).

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