



## Church clocks

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## **1. INTRODUCTION**

Many of the churches in our Diocese have a **turret clock** and almost all of them are of historic interest. It is important that this heritage is preserved and the best way of doing this is to keep the clock clean, well maintained and running. With proper care and maintenance mechanical clocks will last almost indefinitely.

## **2. HISTORY**

Church clocks dating from before the early 1700s are quite rare and most of those that survive are non-working exhibits in churches and museums. Up to the end of the eighteenth century they were generally the result of the skill and ingenuity of an anonymous local clockmaker or blacksmith, although there were a few made by prominent domestic clockmakers and these are of special historic interest. Most, but not all of these, have been replaced, because although they gave good service over many years they tended to be unreliable and were not particularly good time keepers. These clocks were made before gearing and bearing design was fully understood. The next generation of church clocks up to about 1850, benefited from a better understanding of these technologies and many are still giving good service.

The majority of our church clocks were installed during the next eighty years or so, generally as replacements of earlier clocks. Typically, they have cast iron “flat bed” frames and were manufactured to a very high standard - a standard which would still be relevant today. Since the 1930s a number of clocks have been converted or replaced using a synchronous electric motor. These utilise mains frequency to provide very accurate time keeping. The most recent innovations are electric automatic winding and night silence devices.

Historic details of church clocks are often given in churchwardens’ accounts and other parish papers. General historical information on turret clocks may also be provided by the DAC Clocks Adviser.

## **3. BASIC CARE**

Accurate timekeeping, reliability, longevity and safety all depend on good basic care. The clock should be kept clean and where appropriate wound with care. Those who have contact with it should be able to identify potential problems, know what to do in the case of breakdowns and where to go for advice.

Regular maintenance is essential and a maintenance contract is a sound investment. However, it is important to know what to expect from such a contract and exactly who is responsible for what.

The mechanical safety of the clock and, in particular, the physical safety of the people who have contact with it, are of paramount importance.

#### **4. SAFETY**

Access to the clock mechanism should be kept locked at all times. An open clock cupboard is no different to unguarded machinery in a factory. All access ladders and platforms should be checked regularly.

The bell hammer must be lifted clear of the bell during bell ringing by means of a pull-off wire hanging in the ringing room. There should be an appropriate notice to this effect near the pull-off hook. Before entering a bell chamber it is important to check that all bells have been left in the safe 'down' position.

Weight lines should be checked for fraying, kinking or other damage, and weight pulleys checked for wear and damage. Turret clock weights are very heavy, often weighing several hundred kilograms. They must therefore be confined within a weight duct. It should not be possible to walk beneath suspended weights or to fall down the weight duct. Regular inspection and maintenance of ratchets and clicks is most important. Sand bags or similar should be placed at the bottom of the weight duct to absorb the impact should a weight fall due to breakage of a line or pulley, or failure of one of the barrel ratchets. The sudden release of energy as a result of such a failure can result in extensive damage to the clock mechanism. The "fly" is a wind vane, which controls the speed at which the clock strikes or chimes. If the clicks on the fly fail, the train will accelerate dramatically to the point where some components will be destroyed.

The pendulum suspension spring must also be inspected regularly for corrosion, signs of fatigue and buckling.

Dials also need regular inspection and this can be carried out using binoculars. It is important to check that the dial fixings remain sound and that the hands are not corroded to such an extent that they are in danger of falling off. Also check that the nut that secures the minute hand is still in place.

#### **5. MAINTENANCE**

It is sensible to entrust the proper inspection and maintenance of the clock to a turret clock specialist. Apart from attending to clock related safety, the maintenance visit should include inspection of all components for signs of wear, corrosion, lack of lubrication and build up of dust and grit, as well as any necessary adjustments. Proper maintenance will save on the cost of repairs and restoration in the future.

Only turret clock oil should be used for lubrication - car engine oil, '3 in 1', 'WD40' and grease have no place in the clock room. Once a year one spot of oil should be applied to the pivots only. The escapement should not be lubricated at all, particularly if the clock has a 'gravity' escapement. Bare iron and steel surfaces can be protected from corrosion by lightly wiping over with an oily rag.

## 6. CLEANLINESS

Dust and grit are the main enemies of the church clock. Mixed with oil they make a grinding paste, which will cause rapid wear to the contact surfaces of all moving parts. Most of the dust will be old bird droppings falling through the joints in the floor above the clock. Clocks are usually enclosed in a cupboard and this will keep out some of the dust and grit. It is wise to inspect the enclosure carefully for holes and cracks, particularly above the clock, and seal up any that are found. Check especially the condition of, and replace if necessary, the leather flaps which act as seals where weight lines, strike wires and take-offs to the dials pass through.

If any building work is to be carried out inside the tower, it is a good idea to stop the clock and sheet it down to protect it from dust and grit.

## 7. REPAIR AND RESTORATION

If the clock stops or breaks down a recognised turret clock specialist should be called in to effect repairs, unless there is an obvious and simple solution. Bodged repairs by well meaning amateurs must be avoided at all costs. If appropriate, the DAC Clocks Adviser will visit to assess the problem and advise on a course of action. Eventually, the clock may require a complete overhaul. Again this work is best entrusted to a recognised specialist who will provide a guarantee. It is wise to seek at least two quotations and a faculty will almost certainly be required.

## 8. WINDING

For centuries, church clocks have been wound by dedicated local enthusiasts. Often the job was passed down from one generation to another in the same family, and it was a matter of pride that the clock always told the "right" time. However, it is becoming increasingly difficult to find these willing volunteers and many clocks have been converted to automatic winding, and in some cases the clock has even been removed and replaced by an electric motor.

In the past the installation of automatic winders has sometimes resulted in irreparable damage. Current guidelines, however, ensure that this no longer happens. Modern automatic winders are very reliable and can be fitted to most clocks without cutting or drilling the frame or removal of any of the components except weights, lines and pulleys, and these must be retained with the clock.

However, the installation of automatic winding should not be considered without first making every effort to find a local person who is willing to continue winding the clock and if necessary take some advice from the DAC Clocks Adviser regarding looking after the clock. If this search is unsuccessful and automatic winding is considered, the DAC should be consulted for advice at an early stage.

**Such work will require a faculty** and it should be remembered that the clock will still need regular attention, not only to correct the time, but also to establish that all is well. Clocks with automatic winding should be visited at least once a month. The replacement of a clock by a modern electric motor is the last resort and only if the clock is completely worn out has been inspected by the DAC Clocks Adviser will a faculty be considered.

## **9. AUTOMATIC WINDING UNITS FOR CHURCH CLOCKS**

Electric automatic winders are usually fitted to a church clock because the parish is unable to find a reliable volunteer to hand wind it. In this situation the only other alternatives are to leave the clock idle, or to replace it with an electric clock.

There are three other good reasons for fitting modern automatic winding units (i.e. those that run the clock by driving an arbor above the winding barrel, have small weights which fall a maximum of 3 metres, and operate on low voltage) even where the parish has a clock winder. They are:

- Where the existing heavy weights are hanging above or near an area where people have access. For example, automatic winders have been fitted to Lutterworth church clock where the original weights of some 700 kg were hanging in a room directly above the font. The consequences of a weight line breaking do not bear thinking about. The clock now runs on a total of 20 kg.
- Where there is evident damage or excessive wear to the teeth on the great wheel or the second wheel. If one or more of the weakened teeth should break off the weight would fall rapidly, causing excessive damage to anything in its path. The shock reaction would also result in further damage to the clock. If an automatic winder is fitted these wheels become idlers, with only a very small driving force on their teeth. For example, the clock at Chelveston Church, Northamptonshire, is to have an automatic winder fitted to the striking train because the second wheel has seven replaced teeth. It is considered that they are not strong enough to withstand the forces set up by the original heavy weight. The going train is to remain hand wound.
- ‘Running through’ is a situation where the weight falls rapidly because a click or click spring has failed on the winding barrel or the fly. This often causes excessive damage to the clock, but it is not possible if an automatic winder is fitted. Many of our clocks are 100 or more years old and the chances of a ‘run through’ on hand wound clocks are increasing as components wear and springs get weaker.

Thus modern automatic winding units fitted in the approved manner ensure that clocks keep running in the traditional way, they ensure the safety of people around the clock, and the safety of the clock itself.

## **10. ADVICE AND INFORMATION**

The DAC Clocks Adviser is available to give advice on any aspect concerning church clocks. This includes repairs, overhauls, restoration, installation of automatic winding and night silencing equipment, and historical research. The Clocks Adviser can be contacted via the DAC Secretary. Contact details are also given in the current Diocesan Directory.

Names and contact details of recognised turret clock specialists can be obtained from the DAC Clocks Adviser, or the British Horological Institute, Upton Hall, Newark, Nottinghamshire.

The Turret Clock Group of the Antiquarian Horological Society can also advise on technical and historical matters. They can be contacted via The Antiquarian Horological Society, New House, High Street, Ticehurst, Wadhurst, East Sussex. TN5 7AL.

Publications which might be helpful include:

*Turret Clocks - Guidelines for their Maintenance and Repair and for the Installation of Automatic Winders.* 1996. Published by Church House Publishing for the Council for the Care of Churches, Fielden House, Little College Street, London. SW1P 3SH

*An Amateur's Guide to Automatic Winders* David Nettell. 1987. Published by Gardiner-Caldwell Communications Ltd., The Old Ribbon Mill, Pitt Street, Macclesfield, SK11 7PT (Useful for a description of the various types of automatic winders)

*The Horological Directory 2001* Edited by R.F.S. Snelling. Available from British Horological Institute, Upton Hall, Upton, Newark, Nottinghamshire NG23 5TE (Directory of horological specialists and suppliers - to be updated every two years)

*Turret Clock Services - A List of Specialist Repairers of Church and Public Clocks and their Services* Michael Applebee. 1996. Published by Michael Applebee, The Mill, Sutton-on-the-Hill, Derbyshire. DE6 5JA

*Turret Clocks in Leicestershire and Rutland* P. A. Hewitt. 1994. Published by Leicestershire Museums Arts & Records Service and available at museums and the Leicestershire Record Office. (This book includes brief historical details of almost every church clock in Leicestershire)

*The Turret Clock Keeper's Handbook – A Practical Guide to those who Look after a Turret Clock* Chris McKay. 1998. Published by Antiquarian Horological Society, New house, High Street, Ticehurst, East Sussex. TN5 7AL

# **Companies and Individuals that Undertake the Repair and Restoration of Turret Clocks**

## **About this List**

This is a list of companies and individuals known to undertake turret clock work. Inclusion on the list does not imply any recommendation. If a company or individual is not on the list then it just means that they have not come to my notice. Excluded are those who do one-off or occasional turret clock work.

I set up this list as a result of enquiries from churches and other bodies, it may copied, see the copyright notice at the bottom of the page.

Please let me know of errors and updates.

I am pleased to discuss turret clocks, but I cannot undertake any work on clocks.

Chris McKay  
Lavenham  
Hinton Martell  
Wimborne Minster  
Dorset BH21 7HG  
01258 840501  
chris.mckay@tesco.net

## **Companies Engaged Full-Time in Turret Clock Work**

These companies are able to take on any job in the country.

Cumbria Clock Company  
Castle Workshops  
Dacre  
Penrith  
Cumbria CA11 0HL  
017684 86933  
keith@clockmaker.co.uk  
<http://www.clockmaker.co.uk/>  
Contact Keith Scobie Youngs

Gillett & Johnston (Croydon) Ltd  
Unit 1  
The Fresian Building  
Brewerstreet Dairy Business Park

Brewer Street  
Bletchingley  
Surrey RH1 4QP  
info@gillettjohnston.co.uk  
01883 740000  
<http://www.gillettjohnston.co.uk/>  
Contact Steve Combes

Smith of Derby Ltd  
Note: The company includes...  
Joyce of Whitchurch  
Potts of Leeds  
Cope of Nottingham  
112, Alfreton Road,  
Derby. DE21 4AU  
01332 345 569  
sales@SmithofDerby.com  
<http://www.smithofderby.com/>  
Contact Sales

### **Individuals / Small Companies Engaged Full-Time in Turret Clock Work**

These people are able to take on most jobs

Geoffrey Armitage (Clock and Belfry Work Ltd)  
31-33 High Street  
Husbands Bosworth  
Lutterworth LE17 6LJ  
01858 880066  
armitclockbells@hotmail.com  
Contact Geoff Armitage

Raymond Clayton  
3 Green Lane;  
Riley Green;  
Hoghton;  
Preston PR5 0SN  
01254 201979  
donna-jones324@tiscali.co.uk  
Region: Lancashire, Yorkshire and part of Cheshire  
Contact Raymond Clayton

Haward Horological  
12 Mill Lane,  
Felixstowe IP11 7RN  
01473 758766  
07899 946699

[ian@hhlimited.fsnet.co.uk](mailto:ian@hhlimited.fsnet.co.uk)

Contact Ian Haward

Phil Irvine  
25, Carlisle Road  
Birkdale  
Southport PR8 4DJ  
07968 045472  
Contact Phil Irvine

Andrew Nichols  
8 Williamson Road  
Bristol  
Avon  
BS7 9BH  
0117 944 6276  
twrclocks@aol.com  
Contact Andrew Nichols

David Pawley  
8, Enborne Place  
NEWBURY  
RG14 6BB  
01635 33519  
info@towertime.co.uk  
Contact David Pawley

Peter D Watkinson  
No 7 Willoughby Place  
Millfield  
Chard  
Somerset TA20 2BB  
01460 67320  
peter@towerclock.plus.com  
Contact Peter D Watkinson

### **Individuals / Small Companies that Regularly Undertake Turret Clock Work**

These individuals / companies are horologists who are able to take on turret clock work. They may sub-contract work to other companies or persons.

Andrew Bates  
Unit 9F Elsecar Heritage Centre,  
Wath Road  
Barnsley  
Yorkshire S74 8HJ  
07751 488626

bygonetimes@hotmail.co.uk  
<http://www.yorkshire-clock-repairer.co.uk/home>  
Contact Andrew Bates

David Bearcroft  
42 Preston Drive  
Ipswich  
Suffolk IP1 6DS  
01473 740524  
Contact David Bearcroft

English Clockmakers  
Richard Blackwell  
The Stables  
Tissington Hall  
Ashbourne DE6 1RA  
07957 863 532

Richard continues to do turret clock work but in a run down to retirement, invoicing and some work work is being done by Cumbria Clock Company.

Contact Keith Scobie Youngs  
017684 86933  
keith@clockmaker.co.uk

e-mail [rb@englishclockmakers.co.uk](mailto:rb@englishclockmakers.co.uk)  
<http://www.englishclockmakers.co.uk/>  
Contact Richard Blackwall

Julian Cosby  
Spye Park Cottage  
West Woods  
Lockeridge  
Marlborough  
Wiltshire SN8 4EG  
01672 861609  
[cosby.antiqueclocksrestorer@live.co.uk](mailto:cosby.antiqueclocksrestorer@live.co.uk)  
Contact Julian Cosby

Hampshire Clockworks.  
(Formerly Chris Baldwin who is running down to retirement)  
High St,  
Twyford  
Hampshire SO21 1RF  
01962 808603  
[turretclocks@hampshireclockworks.co.uk](mailto:turretclocks@hampshireclockworks.co.uk)  
<http://hampshireclockworks.co.uk/>

Simon Gilchrist

Located in Stroud area, but will travel to most parts of the country.  
Specialises in electric clocks, Synchronome, Gent, ECS, synchronous etc.  
01453 883868  
07789815664  
crackstone@btinternet.com or service@crackstone.co.uk

James Jewellers  
23 Church St  
SAFFRON WALDEN,  
Essex CB10 1JW  
01799 523 316  
clocky@ntlworld.com  
<http://www.ajamesjewellers.co.uk/>  
Contact Graham Newman

Lancashire Clockmakers Ltd.  
3 Habergham St Padiham  
Burnley  
Lancashire  
BB12 8PU  
01280 772645  
07766 727 454  
mattheww784@lancashireclockmakers.co.uk  
[www.lancashireclockmakers.co.uk](http://www.lancashireclockmakers.co.uk)  
Contact Matthew Warburton

S Michlmayr & Co Ltd  
Tempus Works  
Ladysmith Road  
Norwich  
NR3 4TN  
01603 403687  
admin@michlmayr.com  
<http://www.michlmayr.com/>  
Contact Simon Michlmayr

Peter Meecham  
The Old Malt House  
Milton Under Wychwood  
Oxfordshire OX7 6JT  
peter.meecham@zen.co.uk  
01993 830215  
Contact Peter Meecham

Thomas Parry  
Aberystwyth

Wales  
07890 361 852

Public Clocks  
31 Business Village  
Wexham Road  
Slough  
Berkshire SL2 5HF  
01753 573332  
Contact Len Craft

Richards of Burton  
143 Parliament Street  
Newhall  
Swadlincote  
DE11 OSG  
01283 21915  
[www.clockmakers.archivist.info](http://www.clockmakers.archivist.info)

Richards of Burton, (Clockmaker's)  
Woodhouse Clock Works,  
Swadlincote Road,  
Woodville,  
Swadlincote,  
Derbyshire, DE11 8DA  
01283 219155  
[rob@clock-works.clara.co.uk](mailto:rob@clock-works.clara.co.uk)  
<http://www.clock-works.clara.net/>  
Contact Chris Lowe

Jim Thompson  
Based in Fleet, Hampshire. Will travel in a 30 mile radius.  
07891 976621.  
[jim\\_h\\_thompson@hotmail.com](mailto:jim_h_thompson@hotmail.com)

Thwaites & Reed  
PO Box 51,  
BRIGHTON,  
BN2 8YQ  
0845 2301740  
[http://www.thwaites-reed.co.uk/index\\_005.html](http://www.thwaites-reed.co.uk/index_005.html)  
Contact Melvyn Lee

Time Assured Ltd  
28 Paddock Close  
Mansfield  
Nottinghamshire, NG18 5AS

01623 627850  
07896 555 472  
info@timeassured.com  
www.timeassured.com  
Contact  
Region: Approx 50 mile radius from Mansfield

Time In Hand (Shipston) Ltd  
11, Church Street,  
Shipston-On-Stour,  
Warwickshire CV36 4AP  
01608 662578  
mail@timeinhand.co.uk  
<http://www.timeinhand.co.uk/about.html>  
Contact Ben Bennetts

Richard White  
63 Main Street  
Smeeton Westerby  
Leicestershire LE8 0QJ  
0116 2793300  
richardwhite@supanet.com  
<http://www.richardwhiteclocks.co.uk/index.html>  
Contact Richard White  
(Only supplies winders and regulators, does not undertake repair / restoration turret clock work.)