

Oxford Diocesan Guild of Church Bellringers

Towers and Belfries Committee

Technical Note TBC03

CORRECTING ODD STRUCKNESS

1. Introduction

This Technical Note is concerned with the problem of bells where the interval between pulling the rope and the sound of the clapper is wrong, making it difficult to achieve accurate striking.

There are two main categories of odd-struckness:-

1. A bell may be “slower” or “quicker” than adjacent bells at both strokes. This is caused by the basic hanging of the bell and can only usually be cured by replacing the clapper with one of different dimensions and/or by rehanging the bell. In most cases, the services of a bellhanger will be required.
2. A bell may be “slow” or “quick” at just one stroke or the two strokes may be quite different. This is more common and much easier to cure. It usually happens when the clapper is slightly displaced in the headstock and is closer to one side of the bell than the other. This note deals with this category.

Your striking is liable to be poor unless you are experienced enough to be able to correct your pull on alternate strokes by listening carefully and overriding what your eyes are telling you. However, even if you can cope with the odd-struck bell yourself, ringers following you will have the same challenge in order to strike correctly! Needless to say, this has the greatest effect on learners and those who cannot hear their bell. If, for instance, their bell is “quick at hand”, they will permanently tend to “clip at hand” unless corrected by an expert.

The standard of ringing at a tower will be lower if the bells are odd-struck and this may impact on the general success of ringing at that tower. Bells are like musical instruments: if they are well adjusted, they are more satisfying to ring and better striking will be achieved.

2. Spotting the Problem

If you know that one or more of your bells is odd struck, then go straight to 3. If you are not sure, see if the same sort of striking errors occur if your ringers are on different bells. If they do, then the chances are that your bells need adjusting, so go to 3. Alternatively, invite an expert to ring with you to advise you of odd-struckness.

3. Measuring the Problem

This is where you will get differing advice:-

1. use an odd-struckness meter to measure the sound of the bells, or
2. measure the position of the clapper in each bell.

The second example is much simpler. Measure the distance from the clapper to the strike point on the bell on each side, supporting the weight of the rope while you do this so that it is not pulling on the wheel. The strike point is the middle of the shiny indentation where the clapper hits the bell and similarly for the clapper itself.

Ensure that the clapper is hanging freely. If it is very stiff, it could be unnaturally displaced and the reason for the problem. In such a case, lubrication or other attention may eliminate the odd-struckness.

4. Assessing the Results

A bell with a clapper more than about 4mm off centre will tend to be odd-struck; over 10mm and good ringing is likely to be a real challenge. If some bells are displaced towards the pulley side and others are displaced away from the pulley side, then the effect is doubled. It is possible for all bells to be equally displaced in the same direction in which case it may be hard to lead accurately and all the bells need correcting.

If a clapper is displaced towards the pulley, the bell will probably be “slow at back stroke” or “quick at hand stroke”. The reverse applies if the clapper is displaced the other way.

When you next practise, see if the results of your measurements reflect what you find when you ring.

5. Adjusting your bells

There are four things you can easily do yourself to correct anything you find:-

1. Take the clapper out, turn it through 180 degrees and replace it. With luck, this may centre the clapper and cure the problem. If not, then put the clapper back as it was.
2. Replace the clapper with a tapered washer on the shank. This may displace the crown staple and centre the clapper. With care finding the right washer and a little luck, it can cure the problem completely.
3. If your headstocks have “twiddle pins” (a little bolt sticking out horizontally on each side), then you really are in luck! Loosen the clapper slightly, retract the twiddle pin on one side, screw in the pin on the other and tighten up the clapper again to see if you have centred it.
4. A solution which can work with any bell is to add a small weight to the wheel on one side so as to tilt the bell until it is centred around the clapper. The weight could be a small bolt attached to the end of the spoke or a strip of lead wrapped around the end of the spoke. Any suitable object of the right weight can be used, provided it is safely attached to the spoke. For an average bell, a weight of only a few ounces can make the right adjustment.

Now ring your bells again and see if things have improved. It helps to get an expert ringer to assist you, but this is not essential. After all, it is your tower, and the most important thing is that local ringers find their bells to their liking.

6. What if the Problem Still Persists?

It is possible to centralise and cure all your odd struck bells, in which case ringing will be easier and more satisfying. However, there may still be a residual problem where a bell is either quick or slow on both strokes. This problem is not so easy to cure and is outside the scope of this note. It is usually caused by the clapper or crown staple being of the wrong dimensions or the fact that the bell is hung “too far out” or “too tucked up” on its headstock relative to the other bells. You are advised to consult a bellhanger for a solution to this problem.

7. 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.

8. Contacting the Towers and Belfries Committee

More information on any aspect of tower maintenance can be obtained from the Secretary: Mark Walker, 9 Pykes Close, ABINGDON, Oxon OX14 2QL. Tel: (01235) 536159, e-mail: mark@wagglewaggle.co.uk.

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