

**Welcome to**

# ***THE CENTRAL COUNCIL OF CHURCH BELL RINGERS***

## **TOWERS AND BELFRIES COMMITTEE**

### **SEMINAR on TOWER INSPECTIONS**

#### **HOW TO CONDUCT THEM**

#### **AND**

#### **HOW TO WRITE THE REPORT**



# SEMINAR on TOWER INSPECTIONS

**A few basics**

**NEVER DO AN  
INSPECTION ALONE**

**Are you covered by insurance?**

**If it is intended to be fixed  
it must be fixed securely.**

**If it is intended to move  
it must move freely.**



**Just to be sure we are all talking  
about the same things!**





# Part 1

## The Tower



# The Tower

- **Are the ringing room and bell chamber doors lockable?**
- **Are the ringing room lights switched in the room? If not is a warning light fitted?**
- **Are the stairs safe and well lit – with hand-rope on the central newel?**
- **Is the tower adequately lit – including emergency lights?**
- **Is bird wire secure?**





## **The Tower - *Continued***

- **Can you feel movement in any tower cracks?**
- **Are there notices warning of persons in bell-chamber?**
- **Is water entering through roof or windows?**
- **Are any sound control shutters accurately fitted?**
- **Is there a fire extinguisher and fire exit plan?**
- **Are all floors clear and safe?**



# The Tower - *Continued*

**A birds nest like  
this does not occur  
overnight!**





## Part 2

# Wooden Frames and Foundation Beams



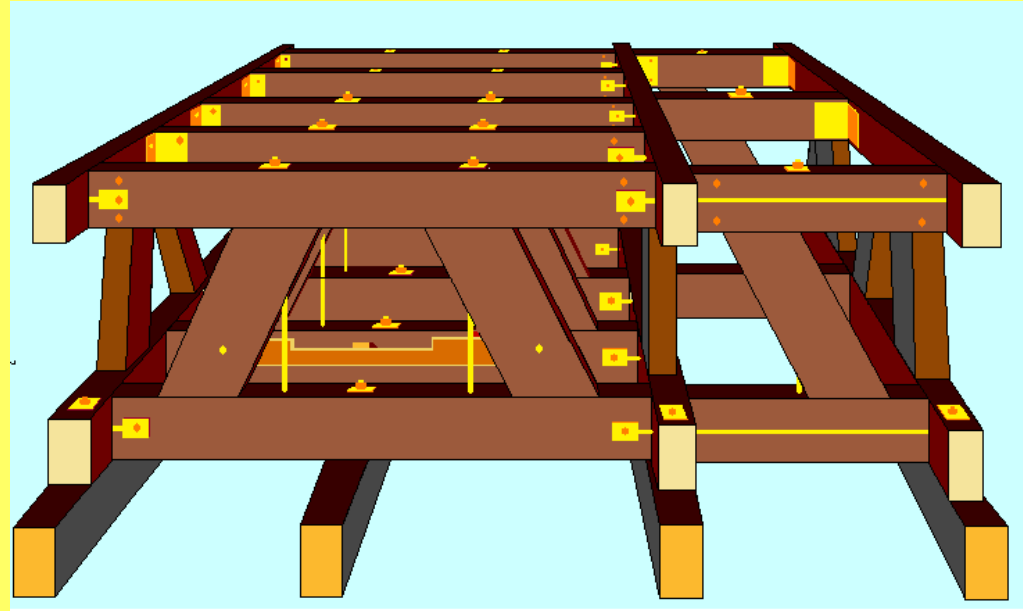


# Wooden Frames and Foundation Beams

- **Are there any signs of decay in the beams?**
- **Is the frame secured to the foundation beams?**
- **Have any wedges been placed between the frame and tower walls?**
- **Are there any signs of movement of the foundation beams or frame?**
- **Are all bolts checked for tightness?**
- **Is ironwork well painted and are nuts and bolts free from rust?**



# Wooden Frames and Foundation Beams



# Wooden Frames and Foundation Beams







## Part 3

# Metal Frames and Foundation Beams





# **Metal Frames and Foundation Beams**

- **Is all metalwork free from oil and debris?**
- **Is all metalwork free from rust and well painted?**
- **If there is rust are there serious signs of weakening corrosion?**
- **Are there signs of movement between the frame, foundation and tower wall?**
- **Are all the bolts tight?**
- **Is the frame bonded to the lightning conductor?**



# Metal Frames and Foundation Beams



# Part 4

## Bell Headstocks and Bearings



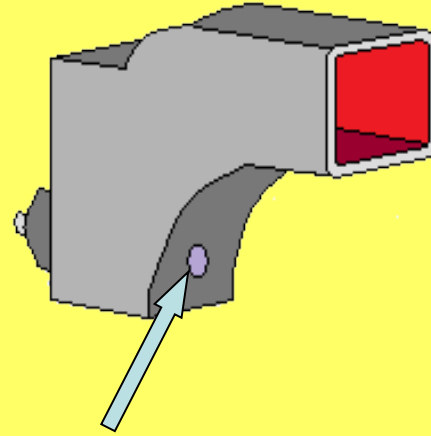
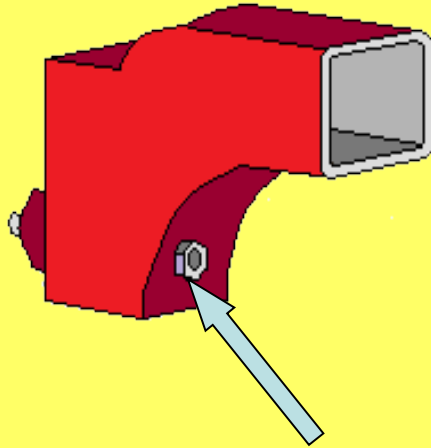
# Bell headstocks and bearings

- **Are all bearings secure on their frame heads?**
- **Are there signs of bearings leaking grease?**
- **When each bell is rung can you *(from a safe position)***
  - **hear any knocking or see any movement of a bearing?**
  - **hear any rumbling that can indicate a worn ball-race?**

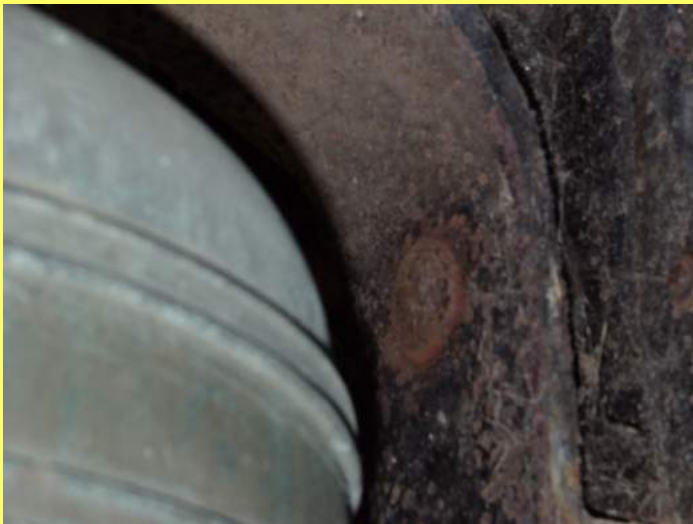




# Bell headstocks and bearings



**Traces of rust or oil here may indicate a loose or broken gudgeon.**



# **Bell headstocks and bearings - *Continued***

- **Is the metalwork generally well painted and free from rust?**
- **Are “twiddle pins” fitted?**
  - If not could they be fitted?
- **Do timber headstocks have:**
  - any shakes or splits that could affect their strength?
  - any beetle infestation?
- **If so does it affect the tightness of fixings?**
- **Are bells, wheels and all fittings tight on headstocks?**



# Part 5



# Bell, Clappers and Chiming Hammers

**Are clapper staples independent or “cast in”?**

**If cast in are there  
signs of cracking  
around them on the  
inside of bell?**

**Or around the  
canons?**





## **Bell, Clappers and Chiming Hammers - *Continued***

- **For a 1/4-turned bell with cast in staple is conversion fitting tight?**
- **If the staples are independent are they:**
  - **tight with lock-nut or split pin security?**
  - **central or are bells odd-struck?**
  - **if odd struck can tapered washers or other means of correction be fitted?**
- **Do clapper pivots have grease reservoirs?**
  - **is screw cap missing?**
- **Do older clapper assemblies have leather linings?**
- **Do they have “lignum vitae” bushes?**



# **Bell, Clappers and Chiming Hammers - *Continued***

- **Is the clapper suspension point worn – i.e. is the clapper roll more than say 50mm to 75mm?**
- **Have the clappers worn grooves in the sound-bow of the bell?**
  - is this less than 10% or more than 15% of the bell thickness?
- **Do the clappers swing at 90° to the line of the gudgeons?**



# **Bell, Clappers and Chiming Hammers - *Continued***

- **Are there flaking “flats” on the clapper ball?**
- **Have buffered clapper inserts become worn or missing?**
- **Are chiming hammers fitted and do they release correctly?**
- **Do clock hammers strike correctly and do they release clear of the sound-bow?**



# Part 6





# Wheels, Stays and Sliders

- **Are wheel stays or braces fitted?**
- **Are wheels warped?**
- **Are there rusting tongues or screws in the shrouds?**
- **Are the wheel soles smooth with no protruding screws or nails?**
- **Are the garter holes and bobbins smooth and not grooved?**



# Wheels, Stays and Sliders – *Continued*

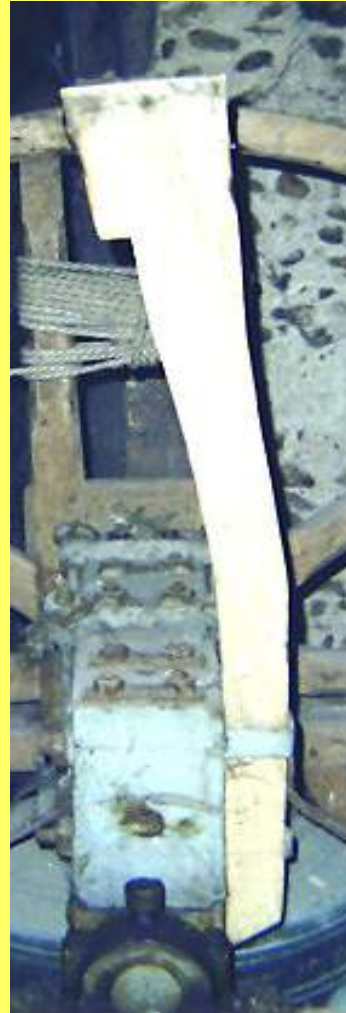
- **Are there any missing nuts on the “halving-bolts”? These coach bolts are very prone to loosing their nuts.**
- **Are stays the correct size and length?**
- **Is it worth adapting slider-bars to accept straight rather than curved stays?**



# Wheels, Stays and Sliders – *Continued*

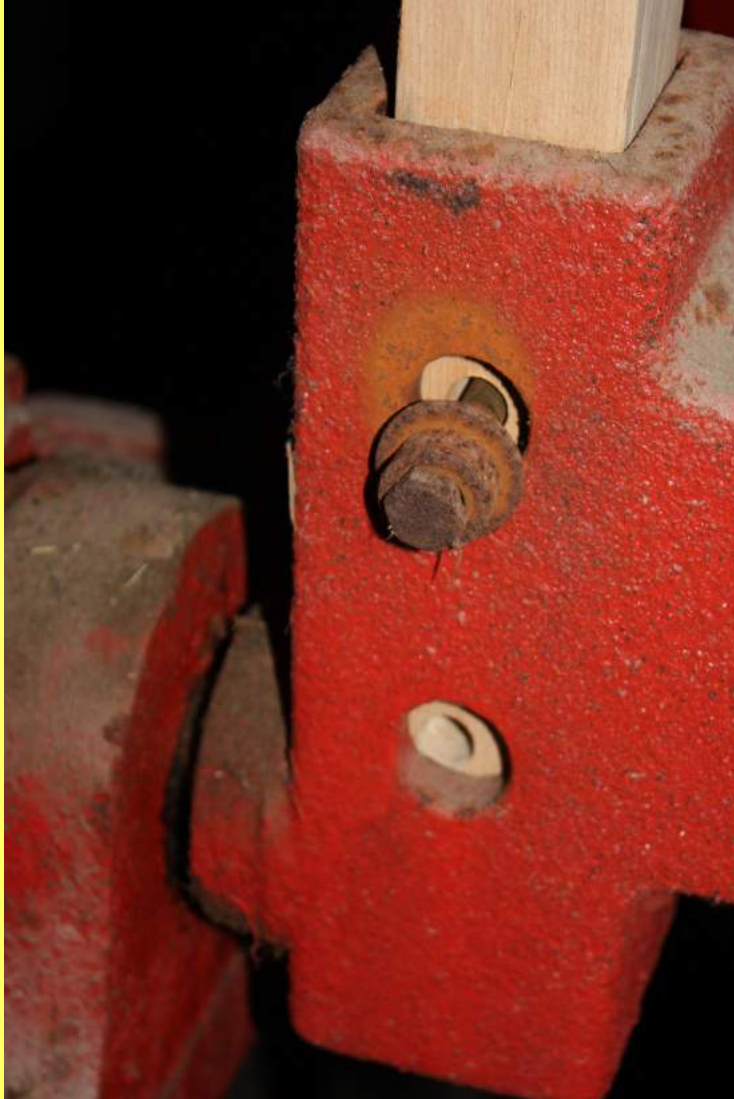


# Wheels, Stays and Sliders – *Continued*





# Wheels, Stays and Sliders – *Continued*



# Wheels, Stays and Sliders – *Continued*

- **Are sliders securely pivoted, running freely and not binding on slider bars?**
- **Are sliders grooved over the edges of slider bars?**
- **Are the slider bar's upper surfaces aligned with the slope of the slider?**
- **Are the slider stops located correctly for the “set” of each bell?**



# Part 7



# Pulleys, Rope Chutes Guides and Bosses

- **Are pulleys free-rotating?**
- **Are grease reservoirs fitted: do pulleys rattle?**
- **Are timber pulleys warped – or plastic ones grooved?**
- **Are all pulley sheaves correctly aligned below the wheel?**





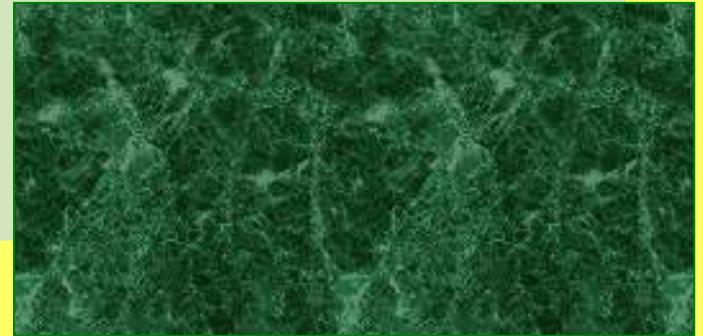
# **Pulleys, Rope Chutes Guides and Bosses**

## *– Continued*

- **Do rope chutes through floors transmit (or block) sound from the bells correctly?**
- **Are rope bosses or rope holes in floors**
  - **- correctly aligned below pulleys and wheels?**
  - **- are they grooved?**
  - **- are floor and ceiling bosses securely fitted?**
- **Are rope guides and any “slap-boards secure?**



# Part 8



# Rope, Rope Mats and Floor Coverings

- **Are ropes worn**
  - - at garter hole?
  - - above or below the sally?
- **Is any part of the rope bound with insulating tape?**
- **Are terylene top ends fitted?**
- **Are any carpets or rope mats woollen?**
- **If there are no mats is the floor smooth?**



# Rope, Rope Mats and Floor Coverings

## – *Continued*



**Possibly not the  
best way to  
join a rope!**

**That is all!**

