

SACRED PLACES

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Technical Briefs

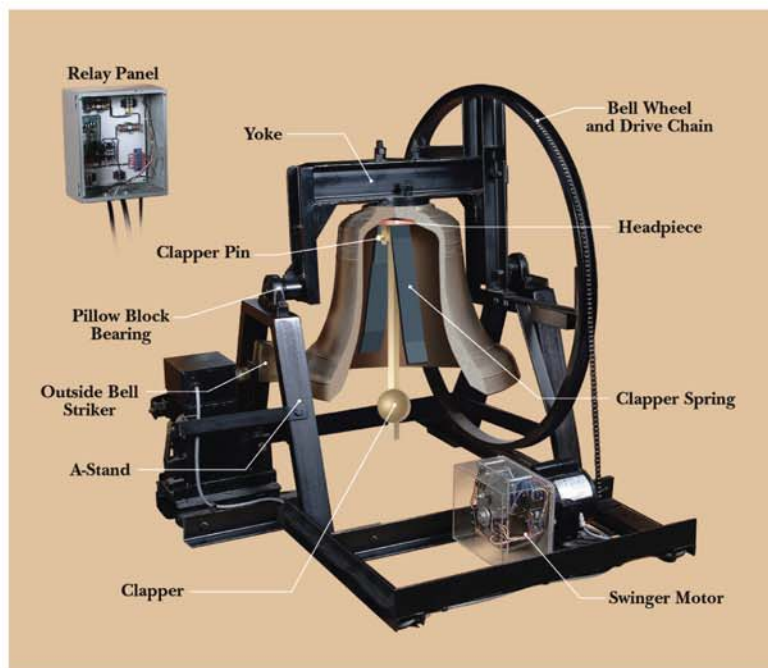
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BUILDING BRIEF

BELL MAINTENANCE: OUT OF SIGHT SHOULDN'T MEAN OUT OF MIND

Since the establishment of religious freedom in America, thousands of congregations have used bells to call congregants to worship, to mark the passing hours, or to call attention to celebrations. Even today the ringing of church bells is a familiar sound in many neighborhoods.

Most American bell foundries, where new bells are cast, were established in the early 1900s, and very few still exist as the demand for bells has greatly declined. The need for bell maintenance and repair, however, has significantly increased. Many bells are reaching a point in their life where maintenance, or in some cases major repairs, is essential for the bell to remain functional.



A diagram identifying the key parts of a bell and its stand. Courtesy of Verdin Bells.

Regular care will often keep a bell ringing for up to 70 years before any repairs are needed. Unfortunately, bells are located high in towers and are generally difficult to access; maintenance is often out of mind since the bell is out of sight. Many congregations do not realize their bell is in need of assistance until there is a crisis. Only when the bell ceases to function does a congregation think to check its condition and that of its components. Often times it is not the bell itself but the hardware associated with it that has deteriorated. A cracked yoke, rusted clapper pin, or rusted bolts that hold the bell to the yoke impair ringing and pose serious safety hazards. Rusty bolts are usually the greatest hazard because the untrained eye does not easily see this condition. Should this problem go unnoticed and unresolved the bell could swing off its yoke while ringing, causing structural damage to the bell tower and injury to anyone nearby.

Bells and bell towers in this unsafe state cost more and take longer to fix than a minor problem

WHAT TO LOOK FOR DURING ROUTINE BELL MAINTENANCE

- Both the bell tower and bell hardware should be checked for water damage and wood rot.
- Openings in steeples should be screened to prevent bats and pigeons from living inside the structure. These animals and their droppings are harmful to the bell, its hardware, and the health of the congregation.
- All nuts and bolts should be checked for tightness and rusting.
- The bell wheel and drive chain should be checked for smooth movement. Any ropes meant for ringing should be checked for rot and fraying.
- Bell clappers and the strike point of the bell should be checked annually for the bell's proper ring tone to stay constant.
- Bell bolts, which secure the bell to its frame, must be checked for rust as they may be dangerously corroded. These critical components are hidden from plain sight and require the services of a professional to properly assess their condition.

Though a properly trained staff member can certainly perform some of these steps, it is advised that congregations hire a professional bell repair company or engineering firm to conduct a structural stability analysis of the steeple and bell hardware. More information on bell maintenance and restoration can be found in the Information Center on Partners for Sacred Places' website.

detected at its initial stages. Performing routine maintenance checks every year prevents these safety hazards and keeps a congregation's bell ringing. According to Jim Verdin, president of the Verdin Company, which has been producing, servicing, and restoring bells, clocks, and carillons since 1842, congregations should have at least one maintenance staff member educated on bell construction and what to look for during annual inspections.

Even with routine maintenance, most bells across the country that are close to or over 100 years old need repairs. Depending upon the number of bells and the amount of damage found during an initial survey, Verdin estimates that bell repairs and restoration can take 60 to 120 days. This does not include any repairs that might have to be made to the bell tower, which may also be deteriorating or have been damaged by an unsecured bell. The restoration of a bell tower is a separate project that should be headed by an architecture and/or engineering firm familiar with the challenges posed by historic structures.

Congregations are faced with several choices when determining a restoration plan for their bells and

hardware. Many congregations prefer to restore their historic bells and supporting components while also installing a carillon, a musical instrument consisting of a set of fixed bells rung by hammers that are controlled from a small computer. Some bell towers may not be structurally sound enough to handle the swing of a bell. In cases like these the bell will be immobilized and a stationary bell ringer will be installed. Bell restoration companies like the Verdin Company give congregations the option to add bells to their existing stock or re-tune their bell during the restoration process. Once the repairs have been made the bell will typically last for another 50 to 100 years, depending on the continued maintenance plan of each congregation.

Though the ringing of bells might be taken for granted, the moment the bells become silent the community notices. Bell restoration can be a costly process but one that both a congregation and its surrounding neighborhood recognize is well worth the time and money. Verdin explains, "Unlike general maintenance, like putting in pavement for a parking lot or landscaping, for example, this is something everyone is excited about. People want to make something that will last for the next 100 years."