

TOOL TIME

By Erin Viker, STAGE DIRECTIONS, February 2004

Small professional theater companies and up-and-coming civic theaters eventually reach the point where a few painted flats onstage no longer adequately serve the theatre's artistic vision. Improved production values always enhance the audience experience, but a scenic design will only be as good as the tools available to make it come to life. A modest investment in a theatre scene shop can increase quality, encourage safe practices and allow shop volunteers and technical staff to participate more fully as artistic professionals in the creative process. Although we may always look back fondly on the days when scenery was built piecemeal by an eager volunteer core with tools from home, theater organizations will appreciate the benefits of taking that first big step toward professional scene-shop operations. The suggestions outlined here are based on a shop staff of one to six people working together, and do not include scenic painted needs.

Choosing between essential equipment and less necessary "toys for technicians" can be difficult, and budget issues usually complicate the scene-shop planning process. The versatility and smooth operation of some higher-priced items are well worth additional investment, while other equipment might wait until a later shop upgrade is more practical. Although expenses will vary from place to place, discount tool distributors online (www.tonsofertools.com, www.maxtools.com, and www.amazon.com) offer competitive prices with free shipping for large orders, and contractor discounts are often available for nonprofit organizations at building supply dealers.

BASIC TOOLS

Simple hand tools are the foundation of any well-planned scene shop. Scenery construction may not require the superior equipment used by today's high-tech automotive mechanics, but a good theater technician wants to avoid poorly manufactured tools. Middle-of-the-road choices are adequate for stagecraft and are less costly to replace when tools are lost between shop use, scenery load-in activities and onstage repairs. However, avoid cut-rate merchandise when choosing layout tools, such as levels, squares and measurement devices.

If money is especially tight, choose specific tools in frequent use over the attractively priced packages featuring equipment the shop will never need. For example, a budget-conscious shop manager may notice how scenery construction rarely calls for the extensive selection of wrenches available in some prepackaged kits, but very frequently requires 7/16", 9/16" and 1/2" sizes. A budget of \$500-700 should give you a good start on scene shop hand tools.

HANDHELD POWER TOOLS

A financially comfortable theatre company can easily stock many helpful timesaving devices from the countless small power tools on the market, but more conservative budgets require careful choices. Several reasonably priced items are virtually indispensable for quality stagecraft. Cordless drills are an absolute must for fastener installation and efficient drilling, and a 14-volt size offers adequate strength in a good size for easy handling while climbing ladders and crawling under odd-sized platforms. A cordless drill with a charger and dual batteries allows almost continuous use when batteries are repeatedly swapped during long load-in or construction days. A corded 3/8" hammer drill with a side handle is less convenient but helpful for steel drilling and heavy-duty applications.

A shop can sometimes get by with only two electric handsaws: a good 7-1/4" circular saw for straight cuts and a construction –grade scrolling saw or jigsaw for curved cuts and detail work. The tools necessary for finishing work before painting include an oscillating palm sander and a 3" belt sander. A small router is ideal for making sheet goods flush to their frames and splinter-free. A router can also cut floor grooves for tracking scenery and, when mounted to a simple shop-built router table, opens up possibilities for creating custom molding and other

decorative items. The collection of handheld power tools described here will cost between \$800 and \$900.

STATIONARY POWER TOOLS

A few stationary power tools will bring new levels of efficiency and accuracy to the shop. Stationary tools are the most expensive individual items of a shop upgrade, but this is one area where extra expense will be rewarded many times over by product quality and performance.

Home-size or hobbyist table saws should be avoided for scene shop use. Select a durable contractor-grade model with a 10-inch blade and five-horsepower motor, and if possible, choose a left-tilt blade to prevent material tearing out or binding during cutting. A professional five-horsepower table saw and accessories may cost between \$2000 and \$2500. Although three-horsepower table saws are less expensive by about \$500, five-horsepower models are much safer and more efficient for cutting lengths of 2X4 and other thick lumber.

Precise cross-cutting of board lumber and narrow pieces of sheet lumber requires more than a steady hand on a circular saw. Although radial arm saws are often used for cross-cutting lumber, many scenery technicians prefer the more versatile and considerably more precise sliding compound mitre saw. Radial arm saws require careful alignment to avoid the potential dangers of the blade binding in lumber, a far less likely problem for mitre saws. Many sliding compound mitre saws cut lumber up to 12" wide, with the added benefits of horizontal and vertical angle cuts made simultaneously if necessary. A good model might cost between \$350 and \$400, while a radial arm saw may cost two or three times as much.

Consider purchasing a drill press if the budget only allows a few stationary power tools. A floor-standing model with accessories should cost less than \$500 and allows rapid, accurate drilling of wood and metal.

VALUABLE LUXURIES

Other stationary power tools include a bench-mounted belt sander (a 1" belt sander is surprisingly versatile and relatively inexpensive), a band saw for delicate curves and a stationary grinder with a wire wheel. When financial resources allow, consider a commercial-grade air compressor and several pneumatic tools. A narrow-crown stapler and a framing nail gun can increase the speed and efficiency of platform and flat construction by 50%, and pneumatic brad nailer can help with everything from light-weight props construction to parquet-style flooring. All three tools, air hoses with connectors, and a 10-gallon air compressor will cost about \$800. If custom furniture construction is anticipated, a shop will need to invest in more expensive equipment such as a lathe, a joiner, a planer and several quality finishing tools.

Although lumber and fabric continue to be the mainstays of scenery for small theatre companies, steel has become an increasingly popular scenery construction material in the past few decades. A start-up welding equipment package includes a MIG welder (a flux core setup is usually less expensive to operate than a gas-shielded welder), a stationary abrasive saw, a handheld grinder, a welding helmet, gloves and a protective welding jacket. Although the total cost may equal up to \$120, the strength, lightweight feel, flexibility and cost-effectiveness of steel construction may justify this expense if the technical staff or volunteer pool has welding experience.

When planning a scene-shop upgrade, arrange a lockable storage cabinet or closet to protect your investments, as tools have an unsettling habit wandering away if not secured at the end of every work call. Make sure your annual budget includes funds for hardware, replacement parts and consumable materials, such as sanding belts, wood glue and power-screwdriver bits. Operating a professional scene shop will result in some ongoing expense, but when the audience and the theatre company experience high quality in scenery and operations, the old adage "you get what you pay for" becomes delightfully relevant.

THEATRE SCENE SHOP ESSENTIALS

Hand tools –

- Four 26' tape measures
- 100' tape measure
- Carpenter square
- Combination square with 45 and 90 degrees
- Snap chalkline
- 4' level
- Small torpedo level
- Claw hammers
- Phillips and flat screwdriver sets
- Hex key (Allen wrench) set
- Nut driver set
- Socket wrench set with extra socket wrench ratchet handles
- Extra 7/16", 1/2" and 9/16" sockets (regular and deep sizes)
- Two adjustable wrenches
- Channel lock wrench
- Combination wrench set
- Large and small pliers, including needle nose pliers
- Diagonal cutter
- Locking gripping pliers of various sizes
- Wood and metal file sets
- Wood chisel, cold chisel, and punch sets
- Mat knives
- Drill index with drill bits
- Paddle drill bit set
- Industrial staple gun
- Flashlights
- Hand saw
- Hacksaw
- Bar clamps, 5' and 9' sizes
- Eight large and eight small C-clamps

Stationary Power Tools

- 5-horsepower table saw
- Sliding compound mitre saw
- Drill press

Handheld Power Tools

- Two 14-volt cordless drills with dual batteries and chargers
- Heavy duty corded hammer drill with side handle
- Circular saw
- Scrolling jigsaw
- Router
- Oscillating palm sander
- 3" belt sander

Miscellaneous Necessities

- Industrial first aid kit
- Face shields or safety goggles
- Adjustable height roller stands
- 6' folding ladder
- 12' folding ladder
- Push broom and whisk brooms
- Small bench broom
- Dustpans
- Rolling mop bucket and mop