RIGGING GLOSSARY

Automatic Fire Safety Curtain
Out of sight? Always, we hope, but never out of mind. The straight lift automatic fire safety curtain system, first patented by J.R. Clancy in 1904, is designed to block the spread of an on-stage fire until the audience can be evacuated. And it should do it without human intervention or electricity. The best curtains are made from ZetexPlus®, a coated fabric that spreads the heat laterally and prevents "hot spots" from forming that could burn through and allow the fire to spread.

Fire Lines
The real role of the 1/8-inch wire rope line, or 3/8-inch manila rope fire line is to sense the presence of a fire and release the fire curtain if temperatures rise above a predetermined level.

Fusible Links
Fire lines are not solid pieces of wire or hemp rope. They are sections of line joined at half a dozen points along their length by flat pieces of steel that have been soldered together with a low melting-point (165°F, 74°C) metal mixture. If the temperature at any point along the perimeter of the proscenium exceeds this level, the fusible link gives way and releases the curtain.

Dashpot
A fire curtain in free fall can be dangerous, so the dashpot attached to the stage floor is a simple hydraulic braking mechanism that starts slowing the curtain before it reaches head height.

Pipe Batten
Hundreds of pounds of lighting fixtures, scenery, sound equipment - anything - may be hung from the pipe batten so it had better be robust and rigid. Usually made in 20-foot lengths, ours have 18-inch iron splices that slip into the pipe to stiffen and strengthen the joints.

Lift Lines
These are the wire rope lift lines that support the pipe batten. They are the tendons, the muscles that hold the rigging system together. Galvanized steel aircraft cable is preferred for its strength, flexibility and free-running nature.

Trim Chain
The trim chain attaches each lift line to the batten. With multiple lift lines attached to each pipe batten, it is inevitable that their lengths will have to be adjusted to keep the batten parallel to the stage. There are several trimming devices, but the most common is the trim chain.

Hand Line or Purchase Line
The flyman uses the hand line to raise and lower the batten. Traditionally made of ¾-inch manila rope, polyester hand lines now provide greater durability, dimensional stability and operator comfort.

Blocks
If the lift lines are a rigging system's tendons, then the loft, head, floor and idler blocks are its joints. Loft and head blocks can either be hung under structural members or mounted upright on a grid.

Floor Block or Tension Block
The hand line runs over the head block and under the floor block. The floor block is adjustable to keep the line taut.

Loft Block
Mounted overhead at grid level, the loft block is a simple pulley that runs the lift line 90° toward stage left or right. Sealed precision ball bearings allow the sheave to turn smoothly and quietly on the shaft. The groove in the sheaves should be machined or molded precisely so it supports the line through at least 150° of its circumference. This minimizes deformation and wear. Better sheaves have double depth grooves so the line feeds into the sheave securely when the head block is offset.

Head Block
Individual lift lines are collected by the head block and turned downward in their own groove toward the floor. There also is a separate center groove for the hand line. Head blocks are muscular because they carry the entire load attached to the batten. Tapered roller bearings are a must.

Loading Gallery
The gallery's function is simple - it provides a place to stand while adding weights to or subtracting them from the arbor. It must be ruggedly designed since it has to be capable of storing all the weights in all the arbors, often several tons.

Counterweight Arbor
Counterweight arbors hold the weights that run along the t-track. They should be built like a tank. Look for a heavy welded steel top and bottom. Threaded ¾-inch steel arbor rods are attached to the top and bottom plates with double sets of nuts. Spacers should keep the weights from resting on the bottom nuts to prevent stress and wear.

Locking Rails or Pin Rails
Rope locks are attached to the locking rail. Erasable plastic index cards that can be used to label the set's purpose are often attached to the locking rail, as well.

Rope Lock
Once a batten is positioned "on its mark," the rope lock holds the hand line in position. A handle-operated cam clamps the line between two metal "dogs," one of which is adjustable depending on the rope's diameter.

Outrigger Batten and Bracket
This batten runs over and parallel to the locking rail/ Fastened to the wall with a triangular bracket, the outrigger batten is a convenient rest for ladders, scenery, etc., so they won't foul the hand lines and counterweight arbors.

Index Light
In darkened wings these lights, attached to the outrigger batten, allow the flyman to see what he or she is doing. A reflector hides the light from the audience.

THE HISTORY OF RIGGING

Flying scenery has been a theatrical technique virtually since theatre presentation move indoors in the late Renaissance. Flying methods were usually very different from our present-day methods, because theatre buildings were not built with the tower structure that we have come to associate with a proscenium stagehouse. From about the middle of the 19th Century on, the primary means of flying was by use of ***hemp rope systems***; these systems relied upon the strength of the operator to move lines, curtains, and scenery. With the 19th Century came the development of better building technology and materials which were refined considerably during the 20th Century.

For most of the 20th Century, the predominant method of flying scenery has been the ***counterweight*** flying system. A counterweight system is a good bit more elaborate than is a hemp system and relies on the weights in the system to do the lifting work.

The latest development in flying systems for the stage began in the third quarter of the 20th Century when various educational organizations and manufacturers began experimenting with the possibility of motorizing linesets in ***synchronous winch systems***. With the ability to use a computerized control system, winched flying has probably become reasonably practical. Relatively few theatres, however, have installed synchronous winch systems. Most existing theatres have counterweight linesets installed, and keeping those systems in good maintenance is considerably less expensive than the cost of initial installation and maintenance of winched systems.

WHY DO WE NEED RIGGING?



