Templeton-Blackburn Alumni Memorial Auditorium

Double Purchase—Fly Rail System

Upright Head and Loft Blocks

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Overview

The fly rail system located at Templeton-Blackburn Alumni Memorial Auditorium contains 30 line-set systems, located above the performance space. The system incorporates 24 manual double purchase line-sets, and 6 motorized battens, three (3) of which are located in front of the proscenium arch or also called ante-proscenium (in front of the proscenium arch). The system also incorporates an emergency fire curtain involuntarily released in the event of a fire.

The purpose of this system is to safely maneuver soft goods, scenery, lighting equipment, etc. within the dimensions of our stage. Understanding the correct way of using this equipment is vital to a safe and successful execution of any live show, performance, or presentation. Misuse of this equipment can lead to severe injuries or, in very rare circumstances, fatalities.

NO ONE SHOULD OPERATE THE FLY RAIL SYSTEM AT TEMPLETON-BLACKBURN ALUMNI MEMORIAL AUDITORIUM WITHOUT PROPER TRAINING OR EDUCATION.
1. Loft Block
2. Head Block
3. Arbor
4. Rope Lock
5. Floor/Tension Block
6. Batten
7. Grid
Parts Of The System

Labeled on Diagram
1. **Loft Block** - Located between *head block* and *batten*. Carry part of the load, more than one on each line-set.
2. **Head Block** - Located between *loft black* and *arbor*, carries majority of the load and provides direct access to the hand-line.
3. **Arbor/Carriage** - Carries the load of the *stage weights*, must be kept at twice the weight of the load on each *batten*. Weights are added on the *load deck* of the system.
4. **Rope Lock** - Used to hold a stationary *batten* in place, it should not be used at anytime to support the weight of the *batten* or the *arbor*. **If a batten is not in use the rope lock on the Fly Deck must be in the upright and locked position.**
5. **Floor/Tension Block** - Located below the *arbor* and *rope locks* in an area called the “well” to keep tension on the hand lines. Adjustable in order to keep a constant tension on the hand-lines.
6. **Batten** - Schedule 40 pipe that is hung below the *loft blocks*. This is where most soft goods, pieces of scenery, and lights are hung. The weight on the *batten* must be half that of the weight located on the arbor or a 2:1 *arbor* to *batten* ratio.
7. **Grid** - Metal support system located at the top of the system where all *loft block’s* are hung.

Parts Not Labeled on Diagram
**Steel Pig / Stage Weight** - Lead and Iron blocks each weighing 40 lbs/ 18 kgs. Placed on the *arbor carriage*, at a 2:1 *arbor* to *batten* ratio, to balance out the weight that is on one (1) individual *batten*.

**Arbor Spacers** - Steel plates permanently located on the *arbors*. Placed in-between a series of 4 to 5 *stage weights* depending on the amount of weight on an *arbor*. Used to prevent bowing of the *arbor carriage*.

**Load Rail** - The higher of the two raised platforms located by the *hand-lines*. Generally used to load *stage weights*, occasionally *battens* can be flown from this deck.

**Fly Deck** - The lower of the two raised platforms located by the *hand-lines*. Generally all movement of the manual line-sets take place from this area. Upon special circumstances weight can be added or removed from this deck.

**Hand Line** - The rope in which a Fly-rail operator will pull on in order to raise or lower a *batten*. 
Terminology/Commands

“Loading Weight” - A phrase shouted EVERY TIME you transfer stage weight from arbor to arbor, arbor to load deck, or load deck to arbor to make sure all parties in the vicinity are aware of their surroundings.

“Throw a wrap/pipe in it” - A command to twist the front rope and middle rope around each other in order to pull them together using the friction the ropes cause to hold them in place. Often times a fly rail operator will throw a pipe in between the twists in order to hold them in place to safely add/remove weight on the arbor.

“Put your brake on” - A command to move your red handled rope lock to the upright and locked position.

“Lineset (#) Going Out” - Command from Fly deck to the stage deck announcing which batten number is leaving the stage deck

“Lineset (#) Coming In” - Command from the Fly deck to the stage deck announcing which batten number is coming to the stage deck

Flying - Moving an object

Arbor Heavy - This occurs when there is more than 2:1 arbor to batten ratio on a line set. To correct this problem ask for an extra hand on the fly deck in case of an emergency and remove weight from the arbor until the system is balanced.

Batten Heavy - This occurs when the weight ratio is less than a 2:1 arbor to batten ratio. In this instance the safest place for the batten is completely flown to the stage deck. To correct this problem ask for an extra hand on the fly deck in case of an emergency and add weight to the arbor until the system is balanced.

Run-a-way - This occurs in the event of a catastrophic system failure resulting in negligence. In the event of a runaway move as quickly as you can out of the way of the batten, primarily downstage if on the stage deck, or as far away as you can if on the fly deck or load rail, informing other parties on stage of the imminent danger. IN THE EVENT OF A RUN-A-WAY DO NOT ATTEMPT TO STOP IT IF IT IS ALREADY OUT OF YOUR CONTROL.

Safe Working Load (SWL) - The amount of weight that is safe specified on each individual line-set, shackle, rope, etc.

Son-of-a-bitch Blew Up – The appropriate term to use in the event of a catastrophic system failure.
# Line Set Properties

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<th>Line Set Number</th>
<th>Manual</th>
<th>Motorized</th>
<th>Maximum Load (lbs/kg)</th>
<th>Batten Length</th>
<th>High Trim</th>
<th>Notes</th>
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Fly-Rail Operation

**Flying a Batten** - Moving a batten vertically or the primary use of a fly-rail system.

Safely executing the move of a *batten* is vital to the success of any live event. By following this checklist you can better ensure that each “move” will occur flawlessly.

**During a non-show call - Flying a Batten Out**

1. Ensure that all parties on stage are aware of an overhead moving object
2. Ensure that all weight is at a 2:1 *arbor* to *batten* ratio
3. Take hold of the hand line in which you are attempting to move, *if access to the middle rope is available then “put a wrap in it”*
4. Announce to all parties on stage which manual line-set you are attempting to move. For example “Line-set 3 going out!”
5. Lower the red *rope lock* to the horizontal position, always looking at the object in which you are moving or “flying”
6. Pull on the middle rope down allowing the rope closest to move upward and the arbor to come down to your position; doing so will allow the *batten* to move upwards
7. When the batten reaches its desired location, stop, return the *rope lock* to the vertical and locked position, and ensure that the *batten* will not move.

**During a non-show call - Flying a Batten In**

1. Ensure that all parties on stage are aware of an overhead moving object
2. Ensure that all weight is at a 2:1 *arbor* to *batten* ratio
3. Take hold of the *hand line* in which you are attempting to *fly*, *if access to the middle rope is available then “put a wrap in it”*
4. Announce to all parties on stage which manual line-set you are attempting to move. For example “Line-set 3 coming in!”
5. Lower the red *rope lock* to the horizontal position, always looking at the object in which you are moving or “flying”
Fly-Rail Operation Cont.

6. Pull on the rope closest to you down allowing the middle rope to move up, ward and the arbor to move away from your position; doing so will allow the batten to lower to the stage.
7. When the batten reaches its desired location, stop, return the rope lock to the vertical and locked position, and ensure that the batten will not move.

During a show call - Pre-show checklist
1. Ensure you are aware of your cue checking with the stage manager or supervisor
2. Ensure that all weight is at a 2:1 arbor to batten ratio
3. Ensure that you have your line-sets properly marked with spike tape for your in and out trim heights and speed in which the line-sets need to be moved
4. Ensure that all items to be flown are properly attached and safely secured
5. Ensure that all rope locks on the load deck are down and unlocked in the horizontal position (not doing this will make it impossible to move a line-set)
6. Ensure you have an adequate amount of lighting on the fly deck to safely maneuver your move.
7. Ensure nothing on the sides of the stage or anything on another line-set will interfere with the move.

During a show call - Flying a Batten
1. Ensure you have completed all of your pre-show checklist
2. Wait for a stand-by call from the stage manager or supervisor via headset or radio
3. When a stand-by call is given locate the line-set in which you are moving
4. Firmly grab the desired rope and release the red handled rope lock to the horizontal position
5. Listen intently for the “go” cue from the stage manager or supervisor
Fly-Rail Operation Cont.

6. Upon the “go” cue move the *batten* into its pre-marked position at the speed previously agreed upon with the stage manager or supervisor.
7. When the *batten* reaches its desired location, stop, return the *rope lock* to the vertical and locked position, and ensure that the *batten* will not move.
8. Remain on the *fly deck* awaiting further instructions and cues from the stage manager or supervisor.

Post-Show Checklist
1. Allow theatre to clear of patrons
2. When cleared fly all soft goods to head height following the same guidelines as you would during a non-show call
3. If soft goods need to be removed remain on the *fly deck* to receive instructions from the stage manager or supervisor
4. After all moves are completed and the stage is clear ensure that the Main Curtain and Mid-stage Traveler are both closed and then fly out to grid
5. Ensure that all rope locks are in the upright and locked position
6. Turn off all fans and lights on the *fly deck* and *load deck* before you come down to the stage deck
Fly-Rail Operation - Moving Weight

Overview
Loading stage weight is one of the most important and, if done improperly, dangerous aspects of the fly-rail system. Loading weight onto the arbors is not a job for everyone. **DO NOT LOAD WEIGHT IF YOU HAVE A FEAR OF HEIGHTS OR DO NOT THINK YOU HAVE THE PHYSICAL CAPABILITIES TO MOVE 40 LBS/ 18 KGS STAGE WEIGHTS 60FT OVERHEAD.** Loading and keeping the arbors and battens at a 2:1 arbor to batten ratio is vital in any safe overhead movement.

**DO NOT MOVE STAGE WEIGHTS UNLESS YOU HAVE BEEN PROPERLY TRAINED!!!**

Prior To Loading or Removing Stage Weights from an Arbor
1. Climb to the load deck
2. Ensure that you have a partner with you up on the load deck in the unlikely event of an emergency
3. Ensure that you can easily and safely communicate with all parties on the fly deck
4. When all parties are situated on the load deck close the hatch behind you to make sure that there are no accidents
5. **DO NOT** move any stage bricks without prior instruction from the members on the fly deck
6. When the arbor which you are transferring stage weights from is in reach and at it’s final location move your rope lock into the upright and locked position
7. Double check with the fly deck the correct number of stage weights that need to be added or removed.
8. Ensure that the operator on the fly deck has locked off the line-set using their rope lock and appropriately “put a pipe” in it to ensure that it wont move.
9. Wait for the all clear sign that it is safe to move stage weight from the fly deck
10. Before finally moving weight announce to all parties present on stage you are loading weight but shouting “LOADING WEIGHT!!”
Fly-Rail Operation - Moving weight

DO NOT MOVE STAGE WEIGHTS UNLESS YOU HAVE BEEN PROPERLY TRAINED!!

Adding Stage Weight to an Arbor
1. Ensure you have run through the check list of things to do prior to moving weight
2. Approach the arbor you are intending to add weight to. If you are adding weight to a previously empty pipe there should be a total of 5 1/2 stage weights on it with the top weight painted red. As the picture to the right displays (figure a), this is called an empty arbor and you SHOULD NEVER REMOVE ANY BRICKS BELOW THIS POINT.
3. Loosen the screws that are above the spreader plates so that you can easily lift up the spreader plates. Leave one plate situated above the Red weight as a spacer.
4. Locate a clamp, and clip it to the arbor carriage see Figure b. by doing this it makes transferring weight much easier
5. When the clamp is in place position yourself in a comfortable and safe position above the arbor
6. Have you partner hand you stage weights, using two hands, place them on the arbor, making sure to alternate between the flat end and pointed end of the stage weight doing this allows for easier removal of a stage weight.
7. If the amount of weight added is more than five bricks ensure you add a spacer plate every five weights to ensure the arbor carriage does not bow out and bend.
8. When have reached the desired weight remove the clamp allowing the remaining spacer places to slide down back into position. The arbor should have alternating flat corners to pointed corners. Figure c. is how a correctly loaded arbor should look.
9. Notify the fly deck that you are finished adding weight and under their direction lower the rope lock back to the horizontal-unlocked position.
Fly-Rail Operation - Moving weight

**DO NOT MOVE STAGE WEIGHTS UNLESS YOU HAVE BEEN PROPERLY TRAINED!!**

**Removing Stage Weight from an Arbor**

1. Ensure you have run through the check list of things to do prior to moving weight.
2. Approach the *arbor* you are intending to remove weight from. When removing weight you must never remove the red *stage weight*. If asked to “strip and arbor” stop at the red brick. (Figure a pg 12) This is called an empty arbor and you **SHOULD NEVER REMOVE ANY BRICKS BELOW THIS POINT**.
3. Loosen the screws that are above the spreader plates so that you can easily lift up the spreader plates.
4. Locate a clamp and clip it to the *arbor carriage* (figure b. pg 12). Unlike when loading weight you may encounter spreader plates in between the weights you are removing, when this happens remove the clip and place the new plate above it.
5. When the clamp is in place position yourself in a comfortable and safe position above the arbor.
6. Carefully remove the *stage weights* using two hands, and handing them to your partner.
7. Carefully place the *stage weight* you have removed onto the *load deck* making sure that you do not stack bricks above the kick wall. (Figure d)
8. When you have reached the desired weight remove the clamp allowing the remaining spacers to slide back down into position.
9. Notify the *fly deck* that you are finished removing weight and under their direction lower the *rope lock* back to the horizontal-unlocked position.

Figure d: safely stacked
Fly-Rail Operation - Motorized line-sets

DO NOT USE THE MOTORIZED LINE-SETS UNLESS YOU HAVE BEEN PROPERLY TRAINED!

Moving a Motorized line-set
1. Locate the electricians keys as they will be important for turning on the power to the line-sets. They may already be in the controller so make sure you check there first.
2. Once the keys are found locate the line-set controller which is located in the stage left audio closest. (figure e)
3. Put the correct fitting key into the key hole and turn to the “on” position.
4. To your left there are six (6) labeled knobs, each of these delivers power to one of the six (6) motorized line-sets.
5. Select which line-set you want to move, and turn the knob to the right, or on, position. Only move one motorized line-set at a time, ensure you make sure no other line-sets are accidentally on.
6. Make sure that the red emergency stop on the controller is pulled out towards you. (figure f)
7. Find the yellow “pickle” that is connected to the controller, this is how you move the line-sets up or down. (figure g)
8. Pull out the emergency stop on the “pickle” and push in on the blue button marked “A-P UP” to raise the AP, or push in on the green button marked “A-P DOWN” to lower the AP. To move the 1st, 2nd, or 3rd electric push in on the blue button marked “ST UP” to raise the line-set and the yellow button marked “ST PLAY” to lower the line-set.
9. When you have reached the desired position push back in the emergency stop, coil the “pickle” cable up and place back in the audio cabinet.
10. Make sure you return the knob of the selected line-set to the off position.
11. Turn the keys in the controller to the left back into the “off” position.
Notes