TRAIN INSPECT MAINTAIN™

Rigging Inspection Guideline

GENERAL DESCRIPTION

Preventative maintenance and safety is an on going task, which involves full knowledge of the stage rigging equipment and its capabilities. Your knowledge should include the following:

A. Know the feel, sound and smell of your equipment so that you will know when something is not right.

B. Know the capacities and capabilities of the system and its components.

C. Practice proper operating procedures.

D. Know the people who operate your system and their abilities.

E. Schedule periodic, professional safety inspections.

F. Ask the following questions each time a set is operated.

1. Is the set balanced?
2. Is the rope lock properly adjusted?
3. Is there excessive friction in the system? Is it too hard to operate?
4. Are the spreader plates properly spaced among the counterweights and are the stop collars down on the top weight and locked?
5. Are there any obstructions or fouled lines?

INSPECTION

Time, temperature, humidity and both the frequency and severity of operation affect rigging items. A schedule should be established and followed for checking all items. The frequency with which inspections should be done depends upon the above parameters and will be unique to your program and location. Your inspection should at least include the items on the checklist, which is included at the end of this article.

When heavy or complicated equipment exists we suggest that, in addition to your own periodic inspection, you hire a qualified stage rigging firm to do a full evaluation of your facility on a regular basis. We further suggest that you maintain full records of all inspections and maintenance for government (OSHA) and insurance purposes. Maintenance records are also useful in making future checks and in evaluating the potential useful life of equipment.

INSPECTION CHECK LIST

Create an inspection checklist, which works for you and includes items that are unique to your facility and the uses to which it is put. The following list of potential items and questions is only intended as a guide to get you started in creating your own inspection list.

A. GENERAL

1. Fire Extinguishers?
2. Scenery
    a. Properly stored and braced?
    b. Flame retarded?
3. Curtains
    a. Flame retardant up to *date*
    b. Certificates on file?
    c. Holes, tears, burns?
4. Tracks
    a. Securely fastened?
    b. Ropes in good shape?
    c. Carriers obstructed?
    d. End stops and pulleys tight?

B. HEMP RIGGING

1. Ropes
    a. Abrasion?
    b. Kinking?
    c. Over stressed?
    d. Rot or dry rot?
    e. Connections?

    DO NOT KEEP BAD ROPE. SOMEONE MAY MISTAKENLY USE IT.

2. Head and Loft Blocks
    a. Mountings tight and undamaged?
    b. Bearings and shafts?
    c. Sheaves?

3. Pin rail and its mounting?

4. Belaying pins, sandbags, trim clamps?

C. COUNTERWEIGHT RIGGING

1. Lead Lines
    a. Abrasion, rust, broken strands, kinks?
    b. Terminations tight, properly applied, worn, cracked?
    c. Turnbuckles adjusted and safety wired?

2. Hand Lines (*See Hemp Rigging*)

3. Locking Rail
    a. Undamaged?
    b. Properly and securely mounted?
    c. Index cards in place and correct?

4. Rope Locks
    a. Properly adjusted?
    b. Condition?
    c. Wear on handles and dogs?
    d. Safety rings in place?
5. Head, Loft and Mule Blocks
    a. Mounting?
    b. Bearings and shafts?
    c. Sheaves?
6. Tension Sheave (See above)
7. Counterweight Arbor
    a. Top and bottom?
    b. Rods and nuts?
    c. Spreader plates and lock collars?

    LOCATE A SPREADER PLATE EVERY 3 FEET (1 m) AND KEEP STOP COLLARS DOWN AND LOCKED.

    d. Arbor guides?

D. T-GUIDES AND LATTICE TRACKS

1. Clean?
2. Straight? Joints match up?

E. FIRE CURTAIN SYSTEM

1. All of the above?
2. Smooth operation within prescribed time?
3. Condition of curtain and guides?
4. Fusible links?
5. Release mechanism(s)?
6. Obstructions to prevent free operation?
7. Dashpot? Proper time of operation?
8. Brail Winch? Handle stored?
9. Motorized head block? Clutch operation?

F. MOTORIZED RIGGING

1. Rigging Components (See above)
2. Controls? Emergency Stop?
3. Motor?
4. Gear Box?
5. Limit Switches?
6. Motor Starters?
7. Motor and/or Load Brake?
8. Drums, sprockets and chains?
9. Couplings?
10. Guards? Are they in Place?

SUGGESTED INSPECTION FREQUENCY			
EQUIPMENT TYPE	**CLASS OF DUTY**		
	HEAVY (Daily Use)	**MODERATE (Weekly Use)**	**LIGHT (Monthly Use)**
Rope & Cable Blocks	Annual	Annual	Bi-annual
Arbors and Shoes	Annual	Annual	Bi-annual
Cables and Fittings	Annual	Annual	Bi-annual
Hand Lines	Quarterly	Semi-annual	Semi-annual
Rope Locks	Quarterly	Semi-annual	Semi-annual
Gear Boxes	Annual	Annual	Annual
Pillow and Flange Bearings	Semi-annual	Semi-annual	Semi-annual
Limit Switches	Semi-annual	Annual	Annual
Starters	Semi-annual	Annual	Bi-annual
NOTES: Actual frequency of inspection and maintenance should be determined from experience based upon evaluation of the operating environment, loading conditions, and frequency of use.			

TABLE 1

G. HOUSEKEEPING AND MAINTENANCE

1. Check for any blocked exits or walkways.
2. Check for any fire or trip hazards.
3. Check for temporary power cords used inappropriately.
4. Check for dangerous storage practices.
5. Inspect electrical distribution for damaged or dangerous equipment.
6. Locate safety signs for all equipment, and ensure there is adequate light on stage, fly rail & grid.
7. Check for any damage to stage floor, walls, and equipment.
8. Check if locking rail is obstructed.
9. Ensure that operator had full visibility of moving objects.
10. Check that counterweight is stored safety, and is not higher than kick plate on rail.
11. Check for anything that could obstruct moving objects.
12. Check for evidence of temporary rigging such as floating pulleys.
13. Check that sets are clearly labeled with set number and contents.
14. Run and inspect all curtains & tracks.
15. Inspect any shells or other permanent items on battens.
16. Inspect cable management.