



I.A.T.S.E. LOCAL 728

THE STUDIO ELECTRICAL LIGHTING TECHNICIAN JOB DESCRIPTION/BASIC PHYSICAL REQUIREMENTS

Studio Electrical Lighting Technicians (SELT) are responsible for the installation and removal of temporary electrical power systems, lighting control systems and lighting instruments necessary for the making of motion pictures and television production, including live performance productions, commercials and webisodic productions.

The two most basic functions that SELT's perform (which are interchangeable at any time) are rigging and lighting:

- 1) Rigging Crew members, who are responsible for the installation and removal (striking) of power grids and basic set lighting equipment.
- 2) Lighting Technicians, who work with the camera unit, setting up lights and additional power for the set and the actors in the scene and striking the equipment at the conclusion of filming.

In addition to rigging and lighting production sets, there are other distinct functions performed by SELT's such as lighting control programming and lighting fixture work, but at the core, the physical requirements of the SELT is as follows:

Set lighting equipment is loaded manually into large carts or containers and hand carried to its destination point. On locations based productions, those carts are loaded and unloaded into 48' trucks with additional power distribution equipment in the belly of the truck in "jockey boxes".

SELT's must frequently wear tool belts with a large variety of tools and a walkie-talkie.

These utility belts can weigh as much as 12-15 lbs.

Generally speaking, it is widely accepted amongst all film and television crafts that the work of a SELT requires the most physical strength and stamina due to the complexity and weight of the equipment.

Location work, rigging and set lighting;

Rigging Crew Member.

When working on a locations way from a studio sound stage, a "rigger" will unload large amounts of electrical power equipment including main trunk lines which consist of 100-foot coils of 4/0 cable weighing about 115 pounds per coil. Each piece is carried many times over to the filming site, uncoiled and laid out into electrical power runs of four to nine pieces of cable per 100' of the power run which is typical for a standard power run. These "standard" power runs are often multiplied many times over per each 100' section. The rigging crew will also install power distribution equipment which reduces the size of the power run until and its termination point, where common household outlet boxes can be tapped into.

A rigger will also carry various lighting instruments and "pre-light" the basic film set prior to the camera unit's arrival. The rigger will regularly work on a variety of uneven surfaces installing power cables and lights. When filming is completed, the rigging crew strikes the film set and loads all of the wrapped equipment on to trucks. A typical rigging day is 10-12 hours, often longer, with little or no opportunity to sit down except during coffee or meal breaks.

Lighting Crew Member

Lighting Technicians working on location must unload multiple carts of lighting equipment; assemble lights on stands ranging in weight from a few pounds to over 125lbs each in preparation for use on set. Lighting technicians must stand ready to quickly light scenes after rehearsals. They must be ready to work on aerial lift platforms (scissor lifts and condor cranes) at heights of up to 135' in shifts lasting up to six hours duration. All lighting technicians working on location must be prepared to work under any prevailing weather conditions and be appropriately dressed to do so, regardless of cold, heat, humidity or wet weather conditions. The typical day for a lighting crew is 12-14 hours duration.

Stage work:

When performing the duties of a set lighting technician on stage or on the studio lot, the responsibilities of the studio electrical lighting technician include: setting up and hanging, focusing lighting instruments, laying and connecting power cables, operating lighting instruments, programming lighting control consoles, operating spotlights, installing fixtures, maintaining equipment readiness and equipment inventory.

Lighting Technicians deliver such items to the stage area via heavy rolling carts. Lighting technicians will work frequently and consistently atop ladders ranging from 6' – 12' in height, on lighting scaffolding, or on permanent and semi-permanent ceiling grids above the stage.

Riggers will operate heavy duty motorized hoists to lift large quantities of power cables into the permanent grid of the sound stage 35'–80' above the floor, where "up high" riggers receive the equipment, lay it out and connect it and drop it back down piece by piece to where power is needed on stage.

Riggers frequently work in dirty and dusty conditions as we work alongside carpenters and painters. Noise levels are high on stages where sets are being built. Use of proper personal protection equipment in such circumstances is often necessary.

Lighting technicians will also work with power cables and power distribution underneath stage floors. At conclusion of a filming day, SELT's will strike the equipment and return it to "ready for work" status. At the end of a production, all the equipment on stage will be removed and wrapped for return to the rental house.

Training, skills, aptitudes required to perform the job:

Union membership and the roster status of a Journeyman Lighting Technician in theory implies qualifications. Lighting technicians must have physical energy and stamina for extended work shifts (up to 18 hours) necessary to meet production deadlines, and consistently perform heavy physical tasks. They must have full color vision and natural or corrected keen visual acuity.

Types of machines, tools and equipment used on the job:

A typical studio electrical lighting technician's tool belt includes any or all of the following tools and more, depending on the specific role he is assigned to; pliers, channel lock pliers, flashlights, crescent wrenches, diagonal cutters, wire strippers, knives, screw drivers, electrical continuity meters, tape rolls, clothes pins, paper clips, gel rolls for small lamps, a walkie-talkie radio, all of which individually weigh from a few ounces to several pounds.

Programmable lighting control consoles are used to program and control stage lighting and background video walls. Rolling equipment carts and large baskets are used to transport lighting instruments, lighting accessories, coils of cable and power distribution equipment.

Environmental working conditions:

The work environment is highly variable. At any time all lighting technicians are expected to work indoors or outdoors, in any kind of weather, under any kind of temperature conditions. Lighting technicians may work entire shows indoors or outdoors, on any type of terrain, or any combination thereof.

Physical demands:

Specific physical requirements will vary from assignment to assignment; however, all lighting technicians must be able to perform all delegated tasks, functioning with full range of physical movement at any given time and without forewarning:

- **Sitting, standing, walking:**

Demand for these postures/actions vary greatly and are not routinely predictable depending. Lighting technicians may have occasional opportunities to sit, but more frequently must stand or walk virtually the entire shift. When performing the occupation of lighting console programmer, spotlight operator or an aerial lift operator, a lighting technician may be seated or relatively motionless for prolonged periods throughout the majority of shift.

- **Bending at waist, stooping with back and knees, concurrently bending or squatting, or kneeling (with one or both knees on floor):**

Frequently and at times, virtually continually these motions are required in order to lay or strike power cables, power distribution and plugging in studio lighting instruments.

- **Crawling:**

Occasionally to frequently, for varying periods of time, while pulling cables, or installing lighting equipment beneath stage floors.

- **Pushing/Pulling:**

Frequently while standing upon a grid ceiling, lighting technicians pull upward to a maximum height of 80' feet above ground level, lighting devices (weighing 50–75 pounds) attached to the end of a cable or rope. When laying cable (and striking cable), pushing/pulling actions are employed, as well when manipulating heavy rolling equipment carts.

- **Climbing stairs and ladders:**

Frequently in order to access stage grids, temporary scaffolding, buildings or offices on the lot. Some sets and sound stages have “built in” stairs and these are used in lieu of ladders as reported below.

Ladders:

Three types of ladder are commonly, but not exclusively, utilized:

- 1) Portable A-frame ladders (4' to 18' tall)
- 2) Stationary ladders permanently secured to sound stage walls, extending upwards about 20–25 feet
- 3) Extension ladders Climbing frequency (again) varies as a function of assignment; however, technician may climb ladders 30 to 50 times or more during a shift.

Work on elevated work stations:

Intermittently and for varying periods of the time, a lighting technician may work atop grid ceiling above stage/set or atop scaffolding; elevations ranging from 15'–80' feet above the ground.

Reach with arms partially to fully extended at all elevations:

Reaching requirements are variable as a function of assignment and task at hand. Lighting technicians may reach at, above, below shoulder height, virtually 100% of work shift, while plugging in lighting cords/cables, manipulating and focusing lighting instruments.

Twisting neck and torso:

This action is frequently employed in combination with reaching, bending, pushing, pulling activities.

Hand/finger involvement: Fine finger dexterity; Employed when manipulating control buttons, switches and when wiring fixtures.

Firm/gross dominant hand grip; Employed in virtually all lifting and carrying Activities, during the connection or disconnection of heavy power cables and power distribution boxes and when manipulating hand tools.

Combined firm/gross bi-manual hand grip and squeezing:

Intermittently and as a function of assignment, occasionally to frequently, when using hand tools, and when pulling, connecting or disconnecting power cables and power distribution boxes.

Wrist/arm rotation:

Intermittently, occasionally to frequently, when pulling, connecting or disconnecting power cables and power distribution boxes and when using hand tools.

Activities requiring use of both hands/arms for safety, convenience and efficiency:

As a function of assignment and on varying frequency and for varying periods of time when lifting, carrying, manipulating coils of cable, heavier pieces of lighting apparatus, and when climbing ladders or scaffolding.

Lifting/Carrying:

Note: Employees are never required to lift any object they may feel uncomfortable handling alone. With heavier objects, co-workers may be called upon to render assistance with lifting/carrying tasks.

Maximum:

With the assistance of two additional persons, an 18,000 watt (HMI) light weighing about 150 pounds and inherently cumbersome and difficult to manipulate, is lifted and mounted on a rolling stand 5' tall when collapsed.

Frequently to Continually:

When working on location and sometimes throughout the entire shift, a lighting technician must lift and carry 100 foot lengths or coils of 4/0 cable weighing approximately 115 pounds each. The power cable may be carried over a distance up to 500 feet to a destination point, stretched out and connected to a power source or another length of cable. Each 100' power run of 4/0 cable requires a minimum of four pieces of cable or "legs" and more frequently 5 or 9 pieces of cable per 100".

On location, a roll of cable may be carried over the shoulder while employee traverses varying types of terrain (beaches, hillsides, rocky, muddy or icy terrain).

When working a stage productions, power cable is typically transported in a rolling cart to a destination point, unloaded, uncoiled, stretched out and connected. When done prudently, the cable piled into a cart can be stacked as high as five rolls high which equals a rolling weight of over 500 pounds.

Frequently to continually:

Various electrician hand tools weighing from a few ounces to about one pound are employed during the regular course of work.

Potential or perceived stress factors:

The rigorous physical demands of this work, prolonged work shifts, and the necessity to meet ever-present time constraints and production deadlines, could be perceived by some individuals as potentially emotionally stressful.