



# SSRL Lift Plan Procedure

## Stanford Synchrotron Radiation Laboratory

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### 1 Introduction

#### 1.1 Purpose

This procedure describes the process of how to use the SSRL hoisting and rigging lift plan (HRLP) and conduct safe hoisting & rigging activities within the Stanford Synchrotron Radiation Laboratory (SSRL).

#### 1.2 Scope

The introduction of the SSRL hoisting and rigging lift plan document (SSRL-HRLP-000-R0). This Lift Plan can be used to perform all routine hoisting & rigging activities not covered by the already validated SSRL lifting procedure (SLP). SLP procedures will still be completed for non-routine and hoisting and rigging activities requiring special lift fixtures and processes.

#### 1.3 Recordkeeping

This procedure requires the preparation and approval of a Lift Plan for each lifting activity.

- ✚ Lift Plans have unique document numbers, which are assigned by the HRLP excel spread sheet located on the V:\SSRL\CAD\_Archive\SSRL Hoisting & Rigging.
- ✚ Copies of approved lift plans must remain on file with the area supervisor during the job in progress and later added to the engineering document archive in the V:\SSRL\CAD\_Archive\SSRL Hoisting & Rigging\doc\_Files HRLP\PDF folder.

#### 1.4 Applicability

This procedure applies to all routine hoisting & rigging activities performed by SSRL personnel.

#### 1.5 Related Documents

- ✚ SSRL Hoisting & Rigging Lift Plan template (SSRL-HRLP-000-R0)
- ✚ SSRL Hoisting & Rigging Lift Procedure template (SSRL-SLP-000-R0)
- ✚ ES&H Chapter 41 – Hoisting and Rigging describes the SLAC hoisting & rigging program and lists all of the controlling regulations for the program.
- ✚ ES&H Bulletin 59A – Changes to the Hoisting & Rigging Program
- ✚ ES&H Bulletin 71 – Hoisting and Rigging
- ✚ Bob's Overhead Crane & Rigging Handbook (training reference only)



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### 1.6 Precautions and Limitations

Ensure that below-the hook lifting devices; and cranes, hoists, and other lifting equipment are never loaded beyond their rated capacity.

### 1.7 Equipment Description

The types of lifting equipment covered by this procedure include:

- ✚ Overhead cranes: common names used to describe these include bridge, gantry, mobile gantry, monorail, jib, floor-operated, and wall mounted cranes.
- ✚ Shop cranes, engine hoists, and cherry pickers.
- ✚ Forklifts - when used with rigging gear.

## 2 Operator qualifications and requirements

### 2.1 Training

SSRL Personnel who operate cranes and hoists must be current in ES&H Course 280 Hoisting & Rigging training.

### 2.2 Job Hazard Analysis and Mitigation (JHAM)

Personnel who are involved in hoisting & rigging activities must have hazard analysis documentation (routine or non-routine JHAM) that addresses hoisting & rigging activities. Many elements of the JHAM process (hazard identification and mitigation) are included in this procedure, and do not need to be repeated in a JHAM.

## 3 Preparing a Lift Plan

This procedure requires that a Lift Plan be prepared and approved for all routine hoisting & rigging activities. A Lift Plan provides a formal mechanism to plan, document, and perform hoisting & rigging activities. Lift plans can be re-used for identical tasks. Lift plans must be prepared using the Hoisting and Rigging Lift Plan template (SSRL-HRLP-000-R0). The Lift plan template can be found on the V:\SSRL\CAD\_Archive\SSRL Hoisting & Rigging\doc\_Files HRLP folder.

### 3.1 General Information

The following general information should be included in the Lift Plan:

- ✚ Unique document number
- ✚ Author of lift plan
- ✚ A general description of the load and the lift activity.
- ✚ Indication of radioactivity or hazardous materials that could be released if the load were dropped.
- ✚ Indication if the load is irreplaceable or very costly to replace if damaged.



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### 3.2 Equipment Information

- ✚ Equipment ID (hoist #, forklift #, Building crane#) and custodian.
- ✚ Rated capacity and operator capacity if applicable different from rated capacity.

### 3.3 Personnel Protective Equipment (PPE)

The plan must identify the potential hazards to personnel, and the personnel protective equipment required to mitigate those hazards.

### 3.4 Hazards

Identify additional hazards associated with the lift and describe how they will be mitigated. Examples of hazards/mitigations to consider include:

- ✚ Obstacles in the operator or load path (walk load path and remove obstacles prior to lift).
- ✚ Foot traffic around load (barricade work zone).
- ✚ Special hazards or precautions of rigging equipment.

### 3.5 Rigging sketch

The rigging sketch is a critical element of the lift plan. It diagrams all of the rigging details for the activity. All rigging gear used in the lift must be sufficiently rated to withstand the forces that will be applied to it during the lift. The rigging sketch must contain enough information to demonstrate this. *Note: If the physical characteristics (size, weight, or configuration) of the item changes significantly during the manufacturing process, or if you will be handling the item in various positions, a rigging sketch may be required for each configuration.*

### 3.6 Approvals and Authorization

Lift plans must be "approved" for use as described below. Once a lift plan has been approved, specific personnel are "authorized" to use the plan.



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#### 3.6.1 Approval

The level of review and approval required for a Lift Plan depends on the load being lifted and the nature of the lift.

- ✚ All lift plans must be reviewed and approved by the supervisor(s) who will be authorizing personnel to use the Lift Plan.
- ✚ If the lift involves rolling or flipping of the load, the lift plan must also be reviewed and approved by the SSRL Hoisting and Rigging Panel member.
- ✚ If the lift involves a load that, if dropped, could release radioactivity or hazardous materials or a load that is irreplaceable or very costly to replace if damaged must be reviewed and approved by the SSRL Safety Officer or Department Head and a member of the SSRL Hoisting & Rigging Panel. The SSRL Safety Officer or Department Head can require additional approvals at their discretion.

#### 3.6.2 Authorization

Lift Plans must include documentation of personnel authorized to use the plan. Documentation will include the name, signature, and date of the employee and their supervisor. Supervisors must approve the plan before they authorize any personnel to use the plan.

#### 3.7 Deviations from the approved Lift Plan

Even the best planned activity may need adjustments. The impact of any change to the Lift Plan must be evaluated and noted on the plan.

- ✚ If the changes are minor the impact must be determined, documented on the lift plan, and initialed by all personnel involved. Example: changed from 4-foot slings to 5-foot slings need to determine new sling angles, reduction factors, and ratings).
- ✚ Major changes will likely require the completion of a new rigging sketch. Such changes must be reviewed by everyone who approved the initial Lift Plan.
- ✚ Supervisor will discuss the lift process with lift team members after task is complete and record any additional feedback and improvement if applicable.