Goddard Space Flight Center Mobile Crane Lift Plan Worksheet

- This work sheet will satisfy the lift planning requirements of the "LIFTING DEVICE & EQUIPMENT (LDE) PERMIT APPLICATION".
- At the discretion of the LDEM, any significant changes to the crane's configuration, lift location or rigging plan-during the job, may require approval by the LDEM.
- Lift plan approval will be contingent upon meeting OSHA (state and federal), ASME and NASA GSFC applicable requirements.

1. LDE Owner/Contractor POC Information:	2. Date of Application:
3. Project Name/Job Location/Bldg #:	4. Start Date/Finish Date:

5. Mobile Crane Description: (*Type/Mfg./Model#/Capacity)*

6. Job/Lift Description: (*Describe the job/ lift and any unusual conditions expected)*

7. Load Stability: (*Attach statement, diagram and/or calculation)*

a) Is the load center of gravity (CG) located below the lift points and directly under the hook? ☐ Yes ☐ No

b) If no to either, is the load stable based on the rigging configuration? ☐ Yes ☐ No (*show in rigging assembly diagram)*

8. Source of Load Weight and CG Information: (*Attach drawing, calculations, cut sheets, etc)*

Load Information

** Provide data for both the heaviest lift (Max Wt) and any Load-Radius combination that is greater than 74% of the crane's rated capacity.*

	*Max Wt.	*Load-radius comb. > 74%	
9. Load Weight*: *(empty weight if container/tank)*			lbs
10. Load Gross Weight*: *(container/tank with its contents/fluids)*			lbs
11. Weight of Main Block: *(if applicable)*			lbs
12. Weight. of Auxiliary Block: *(if applicable)*			lbs
13. Weight of Rigging Assembly: (*see block 41)*			lbs
14. Weight of Jib/Swing-Around/Fly: *(if applicable)*			lbs
15. Weight of Hoist Rope: *(if applicable)*			lbs
16. Weight of Aux. Boom Head: *(if applicable)*			lbs
17. Additional Weight Considerations:			lbs
18. Total Weight of Load Lifted: *(add blocks 9 or 10 thru 17)*			lbs

Crane Configuration/Capacity

19. Boom Configuration:
- ☐ Main boom
- ☐ Jib/Swing-Around/Fly erected
- ☐ Other:

	*Max Wt.	*Load-Radius comb. > 74%.	
20. Total Boom Length: *(required for this lift)*			ft
21. Counterweight Configuration/Weight: *(required for this lift)*			lbs
22. Load Radius at Pick-up*: Boom Angle:_____ (deg)			ft
23. Load Radius/ at Set-down*: Boom Angle:_____ (deg)			ft
24. Crane's Rated Capacity for this lift:			**lbs**
25. *Percentage of Crane's Rated Capacity for the max lift: (Block 18 ÷ Block 24) x 100 =			**%**
26. *Percentage of Crane's Rated Capacity for any load-radius > 74%: (Block 18 ÷ Block 24) x 100 =			**%**

Additional Comments:

Goddard Space Flight Center Mobile Crane Lift Plan Worksheet (cont.)

Crane Setup/Site Considerations

27. Ground Conditions:
☐ Soil ☐ Concrete Slab ☐ Asphalt Pavement
☐ Other:

28. Allowable ground bearing pressure: *(from a qualified source)*		**psf**

29. Source of allowable ground bearing information:
☐ FMD Civil Engineer:
☐ Other:

30. Maximum Outrigger Reaction: *(for this lift or job)*		lbs

31. Source of maximum outrigger reaction information:
☐ Crane Manufacturer: *(attach data sheets)*
☐ Other:

32. Outrigger Cribbing:
Type of Material:
Size/Area:

33. Actual maximum ground bearing pressure:		**psf**

34. Underground Utilities/Structures identified:
☐ GIS site map
☐ Utility marking service

35. Source of underground utilities/structures information and contact information:
☐ FMD Civil Engineering:
☐ Other:

36. Overhead Power lines/Obstructions:
☐ Power lines proximity: _____ (ft).
☐ Meets *OSHA 1926.1400* offset requirements
☐ Other obstructions proximity: _____ (ft).
☐ Include a detailed description/sketch

Rigging Assembly/Components Information

37. Slings *(ASME B30.9)*: *(mfg, type, size, length, capacity, weight)*

38. Shackles *(ASME B30.26)*: *(mfg, size, capacity, weight)*

39. Spreader Bars/Lift Beams *(ASME B30.20)*: *(mfg, length, capacity, weight, certs.)*

40. List other Rigging Items (applicable ASME): *(mfg, type, size, length, capacity, weight, certs.)*

41. Total Weight of Rigging Assembly:		lbs

42. Rigging Gear Requirements: (check to acknowledge)
☐ Meets applicable *ASME B30.9, B30.20 and B30.26* standards

43. Type of rigging connection to the load:
☐ Choke ☐ Basket ☐ Vertical ☐ Multi legs/bridle: number of legs_____
☐ Pad-eye: Capacity (ea):_____ lbs

44. For multi leg/bridles: ☐ Horizontal sling angle: ☐ Vertical sling angle:		deg
45. Sling leg length for multi leg/bridles:		ft
46. Maximum force in a sling leg of multi leg bridles: *(based on sling angle factors)*		**lbs**
47. Maximum capacity of the entire rigging assembly:		**lbs**

ADDITIONAL DOCUMENTATION REQUIREMENTS *(attach separately)*

☐ Crane setup/load placement diagrams
☐ Rigging assembly diagrams *(identify each component in the assembly, etc.)*
☐ Rigging gear certifications/mfg cut sheets *(highlight applicable sections)*
☐ Crane load chart *(highlight applicable sections)*
☐ GIS map/sketch of underground utilities location and source of information
☐ Other documents: *(list)*

Instructions for filling out this form:

1. Crane owner or custodian contact information. If leased, provide a copy of rental/lease contract document.
2. Date of this application.
3. Project name and location.
4. Start date and duration that the mobile crane is expected to be on-site.
5. Mobile crane type, manufacturer, model and capacity. Also describe any special configurations and attachments.
6. Brief description what's being lifted, the lift evolution and any unusual conditions expected.
7. Load stability information. Attach statement, diagram and/or calculation if load center of gravity (CG) is located above the lift points.
8. Source of the load weight and CG information such as from equipment OEM drawings or cut sheets; if estimated- by whom and show method, calculations, etc.
9. Weight of the load being lifted by the crane. Record the empty weight here if it's a container or tank.
10. Record gross weight of container or tank including its contents.
11. Record the weight of the load block if reeved on the crane and if required by the crane manufacturer as a deduction for determining load chart capacity.
12. Record the weight of the auxiliary block or headache ball if reeved on the crane and if required by the crane manufacturer as a deduction for determining load chart capacity.
13. Weight of the rigging assembly from block 41.
14. Weight of the Jib/Swing-Around/Fly sections if required by the crane manufacturer as a deduction for determining load chart capacity.
15. Weight of the hoist rope if required by the crane manufacturer as a deduction for determining load chart capacity.
16. Weight of the Auxiliary Boom Head or Rooster-Head if required by the crane manufacturer as a deduction for determining load chart capacity.
17. Additional weight considerations or deductions for determining load chart capacity.
18. Total weight of the load being lifted *(Sum of blocks 9 or 10 thru 17).*
19. Required boom configuration for this lift (i.e. main boom, main boom + jib, etc).
20. Total boom length *(Main Boom + Jib/Swing-Around/Fly sections)*.
21. Counterweight configuration used for determining load chart capacity.
22. Load radius/boom angle at pick-up for determining load chart capacity.
23. Load radius/boom angle at set-down for determining load chart capacity.
24. Cranes rated capacity at maximum radius-weight combination; and load-radius combination greater than 74% of the chart capacity.
25. Calculate the percentage of the crane's rated capacity that will be used for the heaviest lift.
26. Calculate the percentage of the crane's rated capacity that will be used for any lift where the load-radius combination is greater than 74% of the chart capacity.
27. Indicate ground conditions and any unusual ground condition situations (i.e. underground structures, utilities, etc).
28. Allowable ground bearing pressure (typically needs to be 2500 psf or less).
29. Source of allowable ground bearing pressure (i.e. FMD civil engineers, estimated by qualified person, etc).
30. Maximum crane outrigger reaction for this lift.
31. Source of maximum outrigger reaction (i.e. crane mfg data sheets, provide method or calculation if estimated by qualified person, etc).
32. Provide size (length, width and thickness) and material type.
33. Actual maximum ground bearing pressure exerted by the crane set up on cribbing (typically needs to be 2500 psf or less).
34. Underground utilities and structures must be identified by a GIS map from FMD civil engineering department or marked-off by an underground utility locating service. *No set-up within 18 inches of the edge of the underground facility/utility line without written permission from FMD*.
35. Provide source of information identifying location of underground utilities and structures *(contact FMD and/or "Miss Utility-MD" 1-800-257-7777)*.
36. Nearby overhead high voltage power lines shall be identified and required set-off distances per OSHA 1926.1400 shall be adhered to.
37. List mfg, types, sizes, lengths, capacities, and self weight of individual slings used in the rigging assembly.
38. List mfg, sizes, capacities, and self weight of individual shackles used in the rigging assembly.
39. List mfg, types, lengths, capacities, and self weight spreader bars and lifting beams used in the rigging assembly. Certification sticker or document required.
40. List mfg, types, sizes, lengths, capacities, and self weight of other rigging hardware items used in the rigging assembly.
41. Record the total weight of rigging assembly here and in block 13.
42. All rigging gear must meet the applicable ASME requirements *(check to acknowledge).*
43. Identify what method the rigging gear will be attached to the load.
44. Record the horizontal or vertical sling angle of a multi-leg/bridle rigging assembly-for determining the maximum tension force in a sling leg.
45. Record the shortest sling length of a multi-leg/bridle rigging assembly-for determining the maximum tension force in a sling leg.
46. Compute and record the maximum tension force in a sling leg.
47. Record the maximum capacity of the rigging assembly-which would be rigging component in the assembly with the smallest rated capacity.