Next Generation Adaptive Optics System

Laser Launch Facility F/15 Module Infrastructure Installation

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REVISION HISTORY

Revision	Date	Author (s)	Reason for revision / remarks
1.0	March 06, 2009	JC, DM	Initial release

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1 INTRODUCTION

As part of the K2 Centrally Projected Launch System Project, support structures on the f/15 module will be modified or added. These structures will support the addition of components of the Laser Launch Facility for the NGAO Project. These components include the launch telescope, asterism generator, rotator, safety system, and diagnostic functions. This document provides a procedure for installation of the support structures and the newly modified counterweight system.

2 LTA BACK MOUNT FRAME AND COUNTERWEIGHT INSTALLATION ON THE KECK 1 F-15 TOP END MODULE

1. Rig the eyes at the top center of the F-15 Module to the jib crane. Release all hold down apparatus between the Module and the handler so the module can be lifted off its handler.
2. Carefully lift the F-15 module just high enough to check the existing balance of the module.
3. Record the balance by placing one end of a vertical against a flat vertical surface of the Module and measuring clearance at the other end and photograph the module. Can we record the weight as well or are you planning to just measure the difference of the counterweights?
4. Lower the module back onto it's handler and fasten the both ends of the F-15 Module down to the deck with comalongs so that it cannot topple over when the existing counterweights are removed. The tie-downs must be adjustable so that the balance can be checked before removing them.
5. Release the jib-crane.
6. Relocate the existing large F-15 E-box back closer toward the telescope just far enough to eliminate interference between the cable connectors and the Back Mount Frame when it is installed later. Verify with Electronics technician that they will be able to access the connectors in question.
7. Allow ETech to test f/15 mirror controls prior to installation on the telescope.
8. Seal off the interior of the F-15 Module with a membrane and taped edges to protect existing components from dust and chips during drilling operations.
9. Place a tarp under the work area to prevent chips from falling through the deck to the dome floor.
10. Remove the existing counterweight and it's support bracket from the F-15 Module and store on the dome floor.
11. Identify the top end of the Back Mount Frame (it is not symmetric top to bottom).
12. Align the Back Mount Frame to the recessed face of the F-15 Module per the drawings and securely clamp in place.
13. Field drill, tap and bolt the Frame mount plates to the Module.
14. Release the jib crane.
15. Insure the new Counterweight Mount is assembled with the thrust bearings and special washers installed on the clevis pin such that the floating clevis bracket rests on the bearings and the bearings rest on the fixed bracket.
16. Align the assembled Counterweight Mount (without the counterweights) to the recessed face of the F-15 Module and Back Mount Frame, per drawings, and clamp in place. Ensure the floating end of the CW Mount pivots fully without binding. If not, adjust the alignment until it does.
17. Field drill, tap and bolt the Counterweight Mount mounting plates to the Module.
18. Field drill and nut and bolt the Counterweight Mount mounting plates to the Back Frame (note that the holes that mount to the Back Frame will interfere with the wideflange web. Drill new holes on each side of the flange and nut bolt in place).
19. Release the jib crane.
20. Fasten the Pivot Brace Bar between the floating side of the Counterweight Mount and the recessed face of the F-15 Module per drawing.
21. Install the LTA Proxy Weight onto the Back Frame per drawing.
22. Release the jib crane.
23. Install the counterweights on to the CW Bracket and nut in place.
24. Rig the eyes at the top center of the F-15 Module to the jib crane. Slowly release tension on the comalongs to ensure the Module does not topple over.
25. Remove the comalongs.
26. Carefully lift the F-15 module just high enough to check the balance of the module.

27. Adjust the balance to recorded pre-installation check using the same level.
28. Photograph the module.
29. Lower the Module onto its handler and re-install all hold down apparatus between the Module and the handler.
30. Release the jib crane.
31. Verify interference with the dome if any.
32. Remove the F-25 Module from the top end socket and install the F-15 Module.
33. Rebalance the telescope by removing weights from the Cass ADC top end counterweight brackets at each side of the telescope tube. Remove the removed weights from the deck to stowage so that they are not mistakenly put back on during the next ADC re-confg.