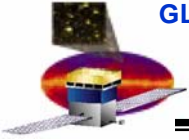
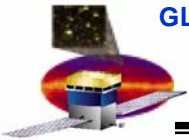


Mechanical Systems Mechanical / Thermal Hardware May 2005 Status

Marc Campell, Subsystem Manager



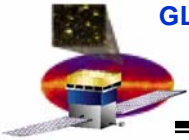
SLAC Status



Accomplishments

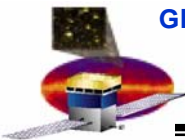
- **Accomplishments during June.**
 - **Grid #2 machining inspected. Looks good.**
 - **Helicoil & inspect installation complete.**
 - **Grid Static Load Test awarded to National Test Systems (NTS) in Santa Clarita, CA**





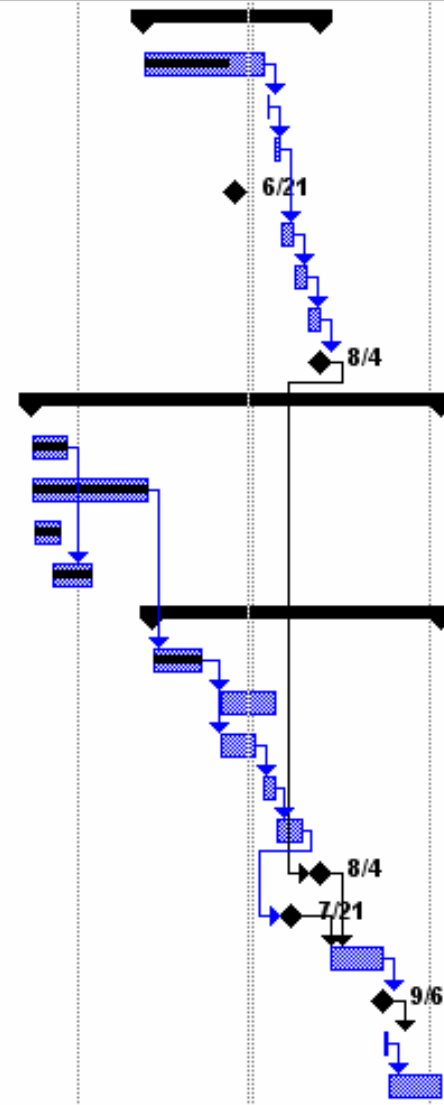
Grid Qual Static Load Test

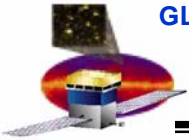
- **Hardware**
 - **Grid 2 (modified) complete**
 - **Installation of test CAL plates and final buy-off by SLAC next week.**
 - **Deliver to SLAC ECD 7/8/05**
- **Test**
 - **NTS selected as vendor**
 - **Site survey and kick-off meeting held 6/29**
 - **Additional test cases for stiffness determination with no flexures and then no CAL plates were added.**
 - **Expect ~20% cost increase from \$55K to ~\$66K.**



Grid Qual Static Load Test Schedule

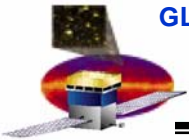
Task Name	Duration	Start	Finish	Predecessor	1st Quarter			2nd Quarter			3rd Quarter			4th Q
					Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Hardware (SLAC)	65 days	Wed 5/4/05	Thu 8/4/05											
Final Machine Flight Grid (4X4 Grid) #2	44 days	Wed 5/4/05	Wed 7/6/05											
Ship to SLAC	1 day	Fri 7/8/05	Fri 7/8/05	2										
Inspect, prep Flight Grid, EMI skirt, detail:	4 days	Mon 7/11/05	Thu 7/14/05	3										
Grid Box Assembly MRR #2	0 days	Tue 6/21/05	Tue 6/21/05											
Grid #2 Assembly Operations	5 days	Fri 7/15/05	Thu 7/21/05	4										
Grid Box Base Assy #2 Operations	5 days	Fri 7/22/05	Thu 7/28/05	6										
Grid Box assembly #2 operations TBD	5 days	Fri 7/29/05	Thu 8/4/05	7										
Grid Box Assembly #2 Complete	0 days	Thu 8/4/05	Thu 8/4/05	8										
Engineering/Procurement (SLAC)	152 days	Mon 3/7/05	Thu 10/6/05											
Write static load plans	15 days	Mon 3/7/05	Fri 3/25/05											
SOW / RFQ / PO	45 days	Mon 3/7/05	Fri 5/6/05											
Complete load case analysis	10 days	Tue 3/8/05	Mon 3/21/05											
Detail MGSE designs	15 days	Thu 3/17/05	Wed 4/6/05	11FS										
Test (Supplier)	107 days	Mon 5/9/05	Thu 10/6/05											
Contract Award	19 days	Mon 5/9/05	Fri 6/3/05	12										
Fixture design & Fab (TBR)	20 days	Mon 6/13/05	Mon 7/11/05	16										
Procedure draft	15 days	Mon 6/13/05	Fri 7/1/05	16										
SLAC review/approval	5 days	Tue 7/5/05	Mon 7/11/05	18										
Procedure released	10 days	Tue 7/12/05	Mon 7/25/05	19										
Receive test article from SLAC	0 days	Thu 8/4/05	Thu 8/4/05	9										
SLT test readiness review	0 days	Thu 7/21/05	Thu 7/21/05	20FS										
SLT Operations (prep & test)	20 days	Wed 8/10/05	Tue 9/6/05	21FS										
Static Load Test Complete	0 days	Tue 9/6/05	Tue 9/6/05	23										
SLAC OK to tear down	2 days	Wed 9/7/05	Thu 9/8/05	24										
Write SLT test report	20 days	Fri 9/9/05	Thu 10/6/05	25										





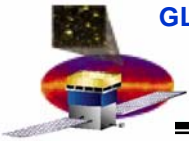
Drawing Release Plan

- **66 of 73 (90%) drawings released**
 - **3 MLI drawings (in work)**
 - **4 unreleased parts not needed until Radiator fit check**
- **Known drawing revisions**
 - Radiator IDD drawing revision to add MLI Velcro interfaces and connector keying orientation is in the release cycle**



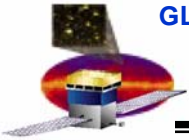
Concerns

- **Lockheed Martin - X-LAT plate & Radiator delivery schedule**
 - **See LM presentation**
- **Completion of Grid Thermal Control System hardware installation delay until June 05.**
 - **Will try to perform on a non-interference basis, but may impact LAT schedule.**



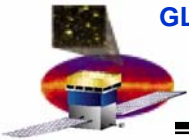
Open Flight Design Issues

- **TCS validation vs. LM modified Radiator Thermal Vacuum & Balance plans**
 - **Test plan reviewed, need final approval from GSFC**
 - **Bi-weekly Test planning meetings continuing**
- **LM Radiator MLI design for atomic oxygen (CLOSED)**
 - **Material selected for outer layer**



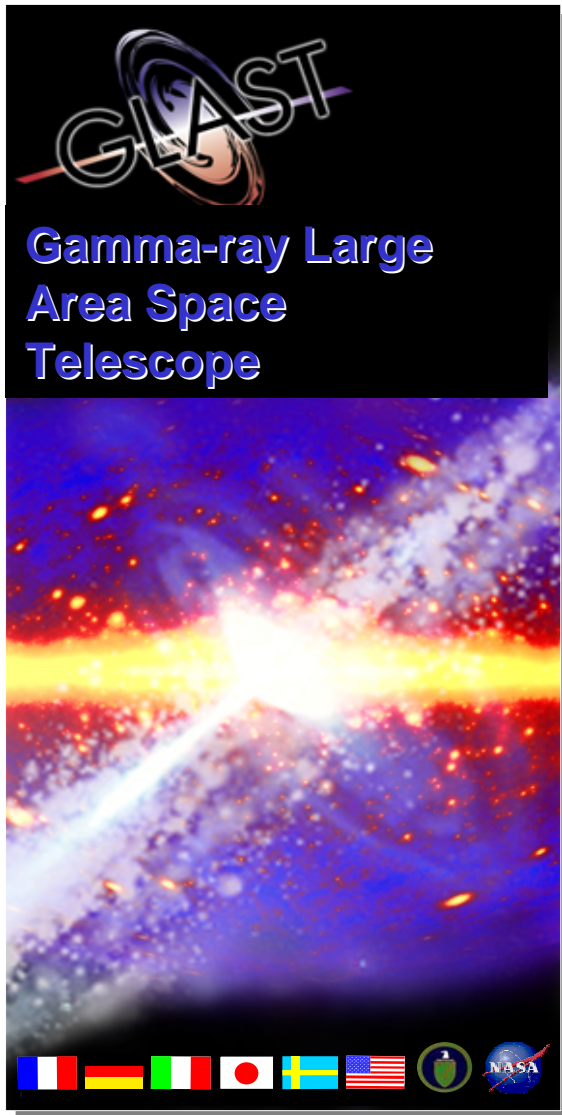
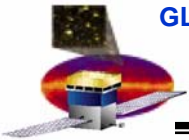
Open Flight Design Issues (cont)

- Radiator integration sequence
 - Coupon testing of repeated make & break of joint in process is ready to go. Waiting for slot in T/Vac chamber used by TEM's
 - Disassembly facilitated by use of mold release agent
- Radiator vibration requirements (CLOSED)
 - Current plan is pre & post low level sine sweep, sine vibe and Acoustic testing
 - GSFC & LM agreed to requirements for qualification of interface
 - X & Z axes in Sine Vibration and Y axis in Acoustic.

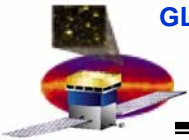


MECH Qualification Program

Grid-Top Flange Heat Pipe bond process qual	Complete. Report released	Mar 05
Grid Box Assy Static Load test	Planning in work. Perform on Grid #2	Jul 05
X-LAT Plate Thermal Vac test	Complete less MRB on final results	Jun 05
Radiator Variable Conductance Heat Pipe new extrusion	Passed burst test, heat capacity test after charging	Comp
Radiator Acoustic	at LMMS	July 05
Radiator Thermal Vacuum	at LMMS	July 05
TCS-Radiator Thermal Balance	at LMMS	July 05



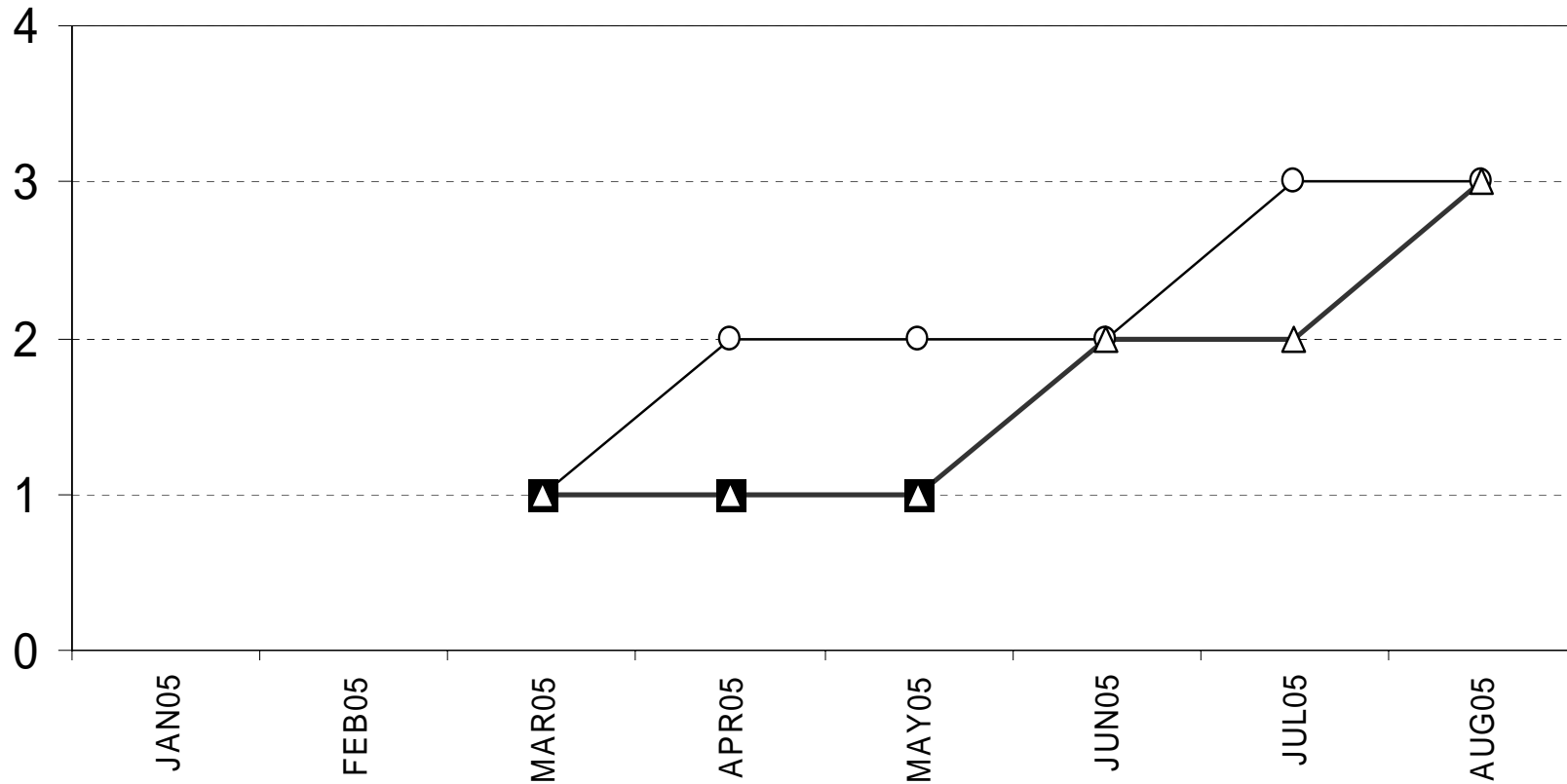
**Cost/Schedule Reports for
4.1.8 Mechanical Systems
Presentation
May 2005 Month End**

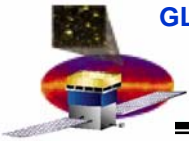


Level 3 Milestone Count

4.1.8 Mechanical Systems

○ Plan ■ Actual △ Forecast

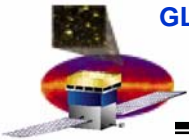




Milestone Variance Explanation

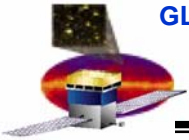
X-LAT Delivery to I&T (-29 days)

- Schedule Impact to LAT
 - None
- Cost Impact
 - None
- Corrective Action
 - None



Cost Report

Reporting Category	Cost Incurred				Estimated Cost			Estimated Final Cost		Unfilled Orders Outstanding
	During Month		Cum. to Date		Detail		Balance of Contract	Contractor Estimate	Contract Value	
	Actual	Planned	Actual	Planned	JUN05	JUL05				
4.1.8 MECHANICAL SYSTEMS										
4.1.8.1 MANAGEMENT	158	73	3,663	3,554	77	79	53	3,871	3,871	138
4.1.8.2 RELIABILITY & QUALITY ASSURANCE	0	0	393	393	0	0	0	393	393	0
4.1.8.3 MECHANICAL SYSTEM DEVELOPMENT	0	0	1,088	1,088	0	0	0	1,088	1,088	0
4.1.8.4 THERMAL SYSTEMS DEVELOPMENT (LM)	0	0	1,043	1,043	0	0	0	1,043	1,043	0
4.1.8.5 THERMAL CONTROL SYSTEM (SLAC)	49	-91	570	631	15	95	249	929	929	112
4.1.8.6 RADIATORS, HEAT PIPES, THERM TEST, X-LAT (L	384	404	7,322	7,341	232	165	133	7,851	7,851	0
4.1.8.7 GRID	0	0	656	640	0	0	-16	640	640	0
4.1.8.8 FABRICATION, ASSEMBLY, AND TEST	1	-327	509	512	146	51	241	947	947	132
4.1.8.9 LAT I&T SUPPORT	0	17	0	52	16	22	66	104	104	
CAPW[3]Totals:	592	75	15,243	15,253	485	412	726	16,866	16,866	383

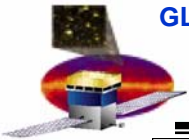


Cost Variance Explanation

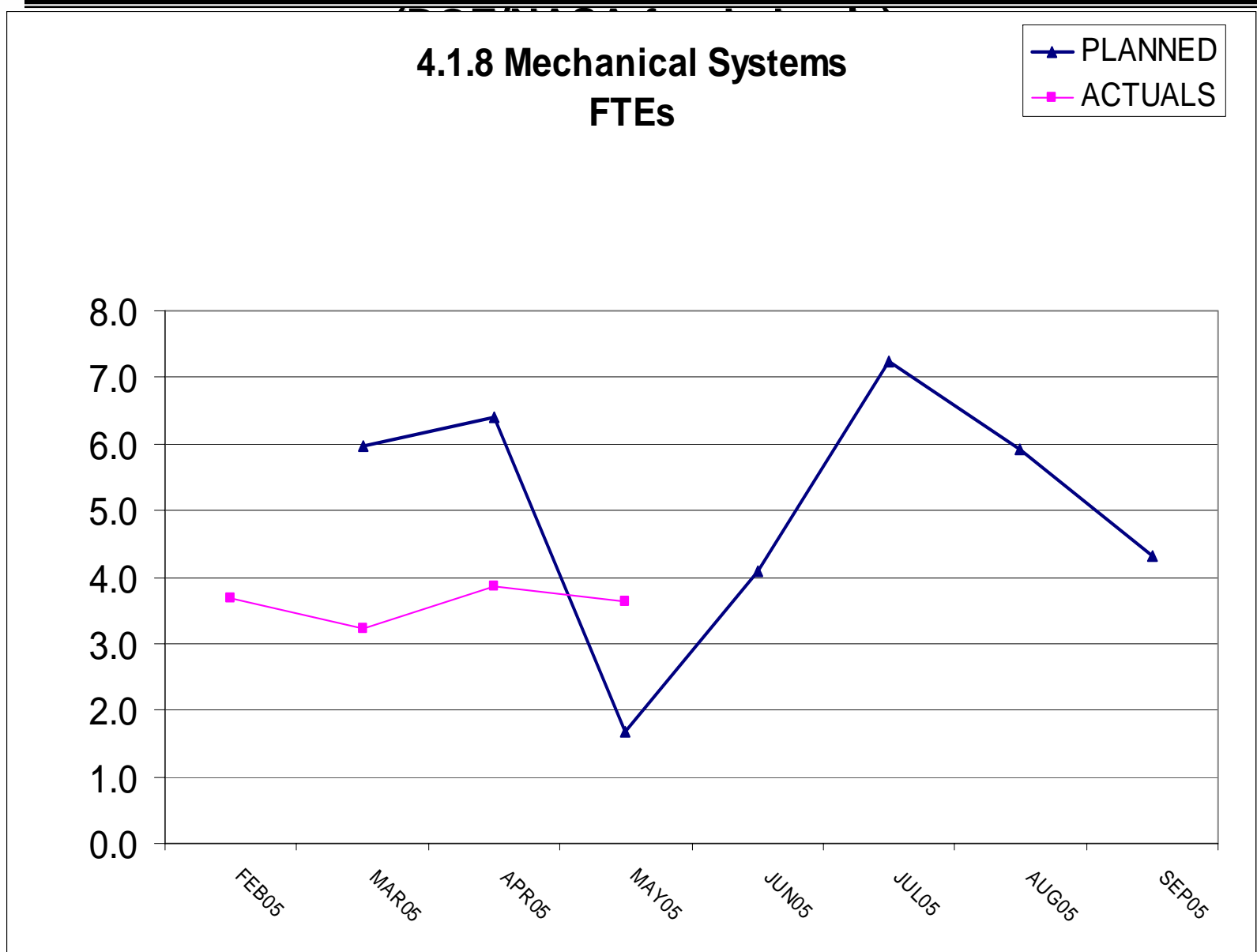
- Why overrun/underrun?
- What will be done to correct?

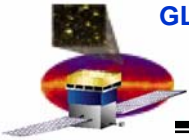
A change request was implemented to move out Grid 2 and the Thermal Control System hardware (Heater Control Box)

As a result, there are no variances.



FTE Report





FTE Variance Explanation

- **Why overrun/underrun?**
 - *A change request was implemented to move out Grid 2 and the Thermal Control hardware.*
- **What is the impact?**
 - *None*
- **What will be done to correct?**
 - *None needed.*