

Joint Strike Fighter – Lightning II Monthly Assessment Report

Prepared for the Joint Strike Fighter Program Office
Prepared by DCMA Lockheed Martin Fort Worth



April 2009

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Program Summary

Flight Test: BF-2 first flight occurred on 25 Feb 09 (MS 6.1 baseline was 13 Jan 09) – with a flight time of ~0.8 hours. BF-2 entered a mod-period following its successful first flight. AA-1 planned deployment to Eglin (21 Apr 09 – 24 Apr 09). BF-1 engine runs at the hover pit began on 19 Mar 09 and continue.

SDD/LRIP Production Status (As of 5 Apr 09)	
Forward Fuselage	12 – Assembly 8 – Mate/Sub-Systems/Final
Center Fuselage	15 – Assembly/On-Dock 8 – Mate/Sub-Systems/Final
Aft Fuselage	6 – Assembly/On-Dock 9 – Mate/Sub-Systems/Final
Wing	11 – Assembly 9 – Mate/Sub-Systems/Final
Fuselage Structure Mate (EMAS)	5 – (BF-5, CF-3, CG-1, CF-2 & CF-1)
Final Assembly/Sub-Systems/Systems Test/Labs	7 – (AF-2, AF-3, AF-1, BF-3, BF-4, AG-1 & BG-1)
Field Ops/ITF	3 – (AA-1, BF-1, & BF-2)

[REDACTED]

[REDACTED]: BF-5 shipped on 9 Mar 09, and CJ-1 on 25 Mar 09. The production line is compressed, but [REDACTED] has expanded efforts to maintain production flow. Since Jan 09, assembly operations have averaged a 35% overtime rate. Late parts have been extremely disruptive to assembly operations creating inefficiencies. [REDACTED] is implementing significant work around planning (to include using mock-up parts), significant reductions to assembly span times (adding personnel and overtime) and out of station work.

SDD Schedule: [REDACTED] continues to perform and meet their delivery commitments. AF-4 is the last SDD Center Fuselage and is projected to be delivered on 27 Apr 09 (~200 hrs projected travelled work). Advanced Composite Center (ACC) manufacturing remains slightly behind recovery plan – ACC recovery plan is under evaluation due to [REDACTED] issues and WBD door clash trim.

[REDACTED] A PRR of [REDACTED] is planned for May 09. DCMA [REDACTED] reports the JPO recently made inquiries concerning Berry Amendment issues with [REDACTED]. Additionally, no further reportable sequencer ejection seat failures on the [REDACTED] seat – although root cause analysis of the original failures continues, with current focus on power quality and voltage regulation.

██████████ (Aft/Empennage): Following the decision for the USAF to become the Service Acquisition Executive (SAE) for JSF, the Principal Deputy Assistant Secretary of the Air Force for Acquisition and Management requested JSF information for a Blue Ribbon review. DCMA ██████████ provided JSF EV and program status information.

██████████ intends to implement changes to the CY2009 indirect rates in EAC8 that are specific to the F-35 program. ██████████ indicated this change will produce ██████████ net benefit to the JSF program. In addition, ██████████ procurement will transfer from indirect to direct charges and offset the net benefit by ██████████.

██████████ AFT Fuselage and Empennage Components have failed to meet delivery targets. Major assembly deliveries are 4-6 weeks behind the recovery plan and 3-4 months behind the contract MS6.1 schedule.

The following major assemblies were shipped during the current reporting period: B F-5 Aft Fuselage shipped 20 Mar 09, CF-2 Left Vertical Tail shipped 30 Mar 09 and CF-2 Left Horizontal Tail shipped 31 Mar 09.

Significant delays continue in the carbon fiber composite area. ██████████ does not have a dedicated JSF composite fabrication facility, combined with a shortage of personnel working in this area to continue with demand and Line of Balance schedules to meet the LM Aero critical path. ██████████ estimates a two month recovery plan for major parts and a three month recovery plan for already planned omission parts.

Although ██████████ has not provided subcontract management data on Production Status or the Quality of the products received from their suppliers to date, DCMA ██████████ was recently invited to a weekly ██████████ material management meeting and plans to meet with ██████████ supply chain management on 6 Apr 09, to discuss vendor performance and scorecard ratings. Also, ██████████ failed to provide the Certificates of Conformance within the receiving process by the extended suspense date of 2 Mar 09.

EVMS: ██████████ and DCMA ██████████ jointly conduct surveillance on the Earned Value Management System. DCAA is currently conducting an audit on ██████████ for CY2008-2010. A discrepancy was identified pertaining to Cumulative Reconciliation (EVMS Guideline 16 and 22). DCMA LMFV notes that there is still a concern as to how EAC updates from ██████████ flow into the SDD EAC at LM Aero. This is part of the Compliance Review Corrective Action Plan that is on-going and will be reviewed.

Report Scope

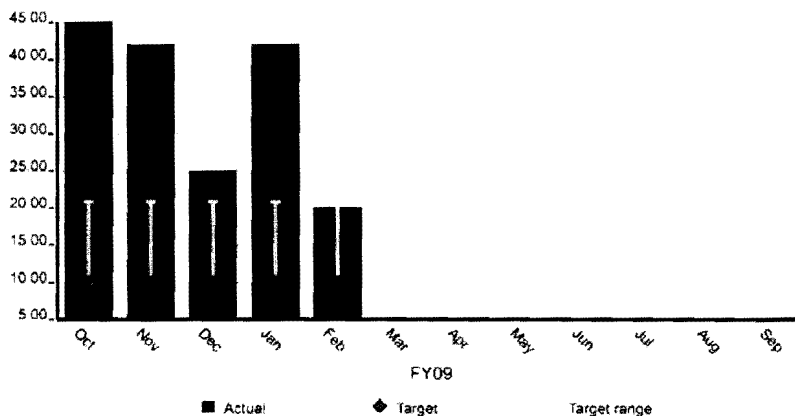
The Joint Strike Fighter – Lighting II Monthly Assessment Report (MAR) is focused on reporting the status of Customer Outcomes and associated Performance Commitments identified in the Memorandum of Agreement with the JSF Program Office. Interdisciplinary teaming between DCMA personnel is used to ensure customer outcomes are ascertained; risks to outcomes are identified and assessed.

Title	Performance Commitment	Metric Rating Criteria	Rating
Maintain LRIP Aircraft Delivery Rate	Maintain LRIP aircraft delivery to within 10 M-days of contract delivery date	Green: ≤10 M-day variance to delivery date Yellow: 11 – 21 M-day variance Red: >21 M-day variance to contract delivery date	Y
Improve Supplier Delivery Rate	JSF Key Suppliers have an average delivery rating of greater than or equal to 96%	Green: 100.0 to 96.0% Yellow: 95.9 to 87.0% Red: ≤86.9%	
Improve Supplier Quality Rate	Each delegated supplier has quality ratings >96%	Green: ≥ 96% Yellow: 87%-95% Red: <87%	Y
Maintain Cost and Schedule	Resource requirements are aligned in support of funding and budget allocations. IEAC data and projections match actual performance within + / - 10% of contractors budget at completion	Green: 1.0 to 0.95 variance (5%) Yellow: 0.95 to 0.90 variance (5% to 10%) Red: 0.90 or greater variance (>10%)	G
Reduce Schedule Variation	Reduce the average Wing touch labor variance "at move to mate" to within 10% by SDD completion	Green: < -10% Yellow: -10% to -15% Red: > -15%	Y
Non-Conformance Reduction	10% reduction in MRB discrepancies per year	Green: < the goal of 21 Yellow: within 10% of the goal Red: >10% above the goal of 21	G
Safety of Flight (SoF)	Number of SOF inspections accepted on first attempt to the number of SOF inspections conducted	Green: 100% Yellow: 95%-99.9% Red: <94.9%	
Improve Software Productivity	Defect phase containment (DPC) will be improved at least 10% over the Block 0.5 value (73.2% DPC) when progress is 98% complete for Block 1.0	Green = Block 1.0 DPC ≥83% Yellow = Block 1.0 DPC at least 73% but less than 83% Red = Block 1.0 DPC <73%	G
Improve Minor Variance	Maintain at least a 95% correct classification rate of variances	Green: % of properly classified minor variances is ≥95% Yellow: 90% up to but not including 95% Red: <90%	G
Improve FCA/PCA	Ensure that at least 95% of systems reviewed in interim FCA/PCAs meet the design requirements	Green: % of parts meeting design requirements is ≥ 95% Yellow: 90-94% Red: <90%	G
Improve Minor Change	Ensure that 95% of minor changes are correctly classified	Green: >95% Yellow: ≥90% to ≤95% Red: <90%	G
Maintain Assist Audit Request Timing	Process contractor/PCO requests for domestic/international Assist Audits within 2 business days 85% of the time	Green: >84% Yellow: 75%-84% Red: <75%	G
Maintain FAR Requests for Contract Closeout	Maintain 94% contract closeout actions within the Federal Acquisition Regulation (FAR) mandated timeframes	Green: >93% Yellow: 85%-93% Red: <85%	G
Reduce Cancelling Funds	90% of canceling funds will be billed and/or de-obligated before the end of the fiscal year	Green: >89% Yellow: 80%-89% Red: <80%	G

Maintain LRIP Aircraft Delivery Rate

PC – NSF198AJ17: Description: Maintain LRIP aircraft delivery to within 10 M-days of contract delivery date. The Maintain LRIP Delivery Rate is an Integrated Master Schedule (IMS) based metric of the monthly average (+/-) float manufacturing days (M-days) of all reported LRIP aircraft to their contract delivery schedule (DD-250). Goal is to maintain delivery of LRIP aircraft to within 10 M-days of contract delivery date. **Note: Float M-days are entered as positive values, but represent behind schedule status.** Monthly IMS LRIP CDRL data is directly used as data source. Data shall be updated NLT the 20th of each month. Total Float of all reported aircraft that have passed their baseline start date will be averaged monthly for metric. Green: ≤10 M-day variance to delivery date, Yellow: 11 – 21 M-day variance, Red: >21 M-day variance to contract delivery date.

YS-AJH DCMA LMFW F-35 NSF198AJ17 Maintain LRIP Acft Delivery



Metric Status: Yellow

Trend: Improving

Summary of Metric Status: Metric is -20 Mdays for month end February.

Root Causes: AF-6 and AF-7 critical path drivers are the assembly of the Leading Edge Flaps starting late (Palmdale activities). LRIP 1 DD-250 critical paths did improve slightly from last month. Forward and Wing Build areas continue to have past due items, however; due to the incorporation of the recovery plan, LM Aero reports that these tasks do not have an impact on the overall schedule. Two past due items pertaining to late Software delivery from SDD do not support the plan.

Potential future drivers: [REDACTED] is not meeting their recovery schedule. Aft Fuselage is planned for 75 M-day assembly span time (AST) throughout LRIP Lot 2. [REDACTED] has failed to meet that target, averaging ~111 Mdays AST per Aft. Increased AST has been attributed to late line starts and late completions. Late line starts are the result of late part supply to Station 0, jig availability, skilled labor intensive gauging process and line yields required to makeup for lost time. Late line completions are the result of late composite parts delivery to the production line, skilled labor intensive gauging processes and surface model engineering changes. Empennage Components are planned for a 60 Mdays span time per VT/HT for the remainder of SDD, and 56 Mdays span time per VT/HT for LRIP Lots 1 and 2. [REDACTED] has averaged ~109 Mdays AST per VT and ~120 Mdays AST per HT.

Contractor Actions: LMFW – The Production Operations Recovery Plan implemented into the LRIP 2 files through AF-13. Prod Ops is working on the recovery plan for the remaining LRIP 2 aircraft as of this report.

Aft Fuselage and Empennage issues – [REDACTED] plans to take the following actions:

- Obtain more jigs for the Aft line starting with AF10 – line capacity should start by April 2009
- Clear up engineering issues as fast as possible
- Increase shift work on stations with more labor intensive processes starting with AF10

- Start daily performance reviews
- Obtaining outside sources to relieve the composites backlog – recovery expected May 2009
- ██████ revamping the supply chain to improve the kit supply process
- Incorporate hospital stations on the empennage production line
- Increase shift work for the next two HT/VT assemblies (CF-2/CF-3)
- Adding more stands to the production line to increase yield

The February 2009 Schedule Risk Assessment for LRIP 1 indicates the following:

Major Risk Areas –

- Timely availability of tooling (SDD units completing on time)
- Late part deliveries to various SWBS's
- Late software delivery affecting the software build for trainers
- Delays in negotiation may drive Site Activation out
- Major drivers for AF-6 and AF-7 are the Leading Edge Flaps – mitigation underway

The February assessment also indicated a 50% probability of AF-6 being 27 M-Days late to contract DD-250 date (31 Jan 2010), and AF-7 being 17 M-Days late (28 Feb 2010).

Mitigation efforts including selective use of overtime, minimum spans on each SWBS, and out-of-station installations for late parts.

DCMA Actions: DCMA LMFW P/SI, PA Production and PA D&I Team members continue to mature performance commitment sub-metrics to assess key build event progress on LRIP aircraft. These metrics will utilize data from the IMS and various shop floor systems.

DCMA LMFW and LM Aero have agreed to Joint Process Reviews (JPR) for 2009, as part of our strategy to influence LRIP aircraft deliveries. DCMA's purpose during these reviews is to assess the contractor's processes for suitability, adequacy, adherence, and effectiveness, as well as assessing the contractor's corrective action performance.

DCMA LMFW will focus on Product Discipline issues during PIA audits of the JSF build areas throughout 2009. The first area audited began with the Forward Fuselage. The Wing area is planned for May, with the EMAS/Moving Line areas are planned for the 3rd quarter. A Production Control JPR is scheduled for August 2009.

Estimate when PC will achieve goal: TBD – Part deliveries to various SWBSs continue to impact build activities.

The table below includes the total SCOPs planned for LRIP aircraft, the number of SCOPs completed as of the reporting period, the percentage of SCOPs completed relating to the total planned for the specific test article and the percentage of testing completed prior to test article rollout from the factory to the flight line (Rollout).

SCOP testing starts at the trailing end of SWBS 240. The current IMS baseline finish dates are 19 Jan 09 and 9 Feb 09 for AF-6 and AF-7 respectively. 13 SCOPs have had planning released against aircraft AF-6, 12 against AF-7 and AF-8. No formal testing has been started on any aircraft as of the report.

SCOP Completions per Aircraft (A/C)

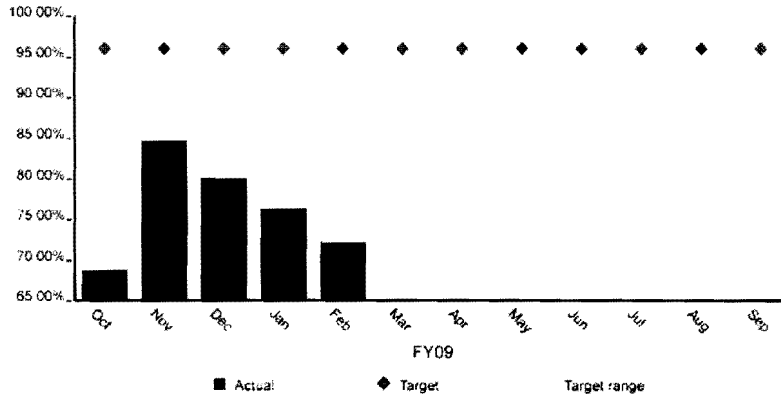
Aircraft Effectivity	Total SCOPs Planned	SCOP Completed	%Complete (Total A/C)	% Complete prior to Rollout
AF-6	91	-	-	Est. Oct 09
AF-7	91	-	-	Est. Nov 09
AF-8	91	-	-	Est. Dec 09

Currently 98 SCOPs and 10 AEI's (Aerospace Equipment Instructions) are formally released against AF-6, AF-7 and AF-8 aircraft.

Improve Supplier Delivery Rate

PC – NSF198AJ21: Description: JSF Key Suppliers have an average delivery rating of greater than or equal to 96 percent. JSF Key Suppliers are determined by analyzing category 3 and 4 shortages to jig load. JSF Key Suppliers may be adjusted on a quarterly basis as new issues emerge. This metric is a monthly average percent of lots delivered on-time for JSF Key Suppliers. The goal is to achieve an average of 96 percent or greater on-time lot delivery rate. Supplier delivery data is obtained from LM Aero's Supplier Quality Management and Procurement Quality Network databases. These databases are updated on approximately the 15th of each month. The monthly data from each database is reflective of the previous month's performance. This metric will be updated within one week of the LM database updates. Green: 100.0 to 96.0%, Yellow: 95.9 to 87.0%, Red: ≤86.9%.

YS-AJH DCMA LMFW F-35 NSF198AJ21 Imp Supplier Delivery Rate

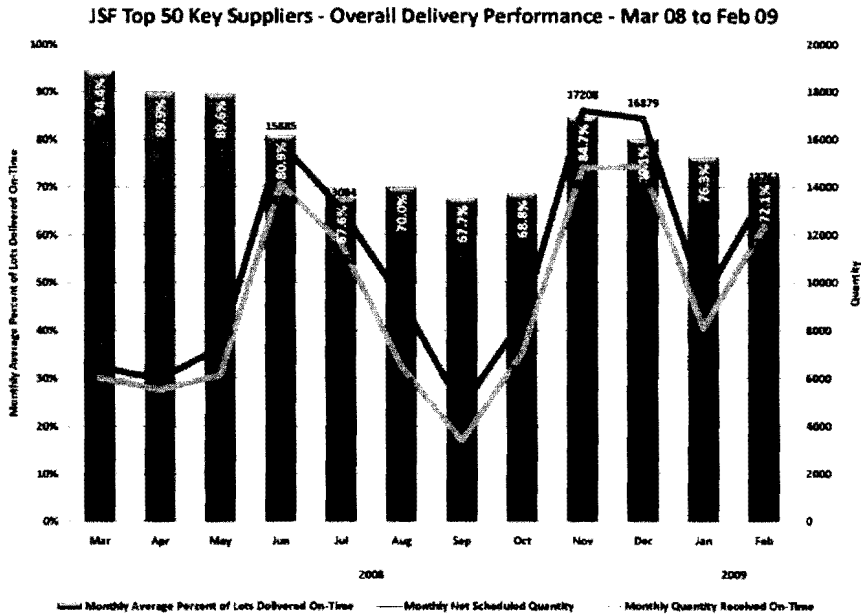


Metric Status: Red

Trend: Degrading

Summary of Metric Status: The delivery rate declined 4.2% to a monthly average of 72.1% and showed a continuing negative trend line.

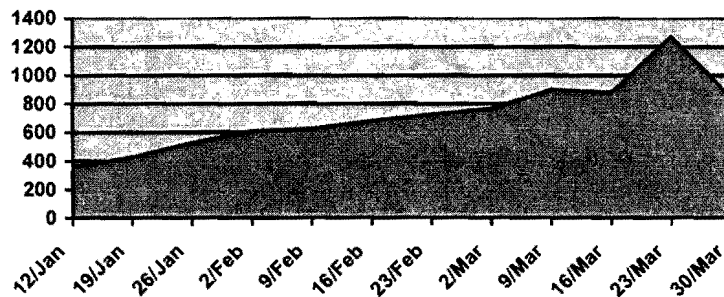
The chart below shows the overall delivery performance over the past 12 months for the top 50 DCMA JSF Key Suppliers. The blue vertical bars represent the monthly average percent of lots delivered on-time. The upper red line represents the monthly net scheduled quantity of parts which were to be delivered by these 50 suppliers, and the lower green line represents the monthly quantity of parts received on-time from these 50 suppliers.



Root Causes: The root causes of the poor delivery performance continues to be late requirements to suppliers, changing requirements due to engineering changes, schedule pressures, and Bill of Material errors (21% of total shortages).

Contractor Actions: To correct the negative delivery performance, Lockheed Martin has now deployed 34 Supply Chain Managers to focus suppliers with the intent of deploying more. Additionally, they initiated a "Change War Room" to directly address the negative impact of engineering changes on suppliers.

DCMA Actions: DCMA has initiated approximately 25 Letters of Delegation to monitor and report on JSF Key Suppliers with significant negative impact on the delivery rate. In the last two months, DCMA Lockheed Martin Fort Worth has held several teleconferences to address the late delivery of common components to the CNI system supplier (redacted). While some positive results have occurred, the overall procedures used by Lockheed Martin to provide common components to their second tier suppliers are inefficient and will not be sustainable in later LRIP contracts. DCMA Lockheed Martin Fort Worth has also conducted an analysis of "unplanned shortages." These are shortages that result from design issues, supplier quality assurance reports, and parts that are either scrapped during installation or "lost in shop." The chart below shows the overall negative trend in unplanned shortages for 2009. Present supplier delivery data / trends indicate LM Aero will not be able to achieve or sustain rate production of F-35 aircraft assembly, manufacture sequence, or DD-250 delivery dates.

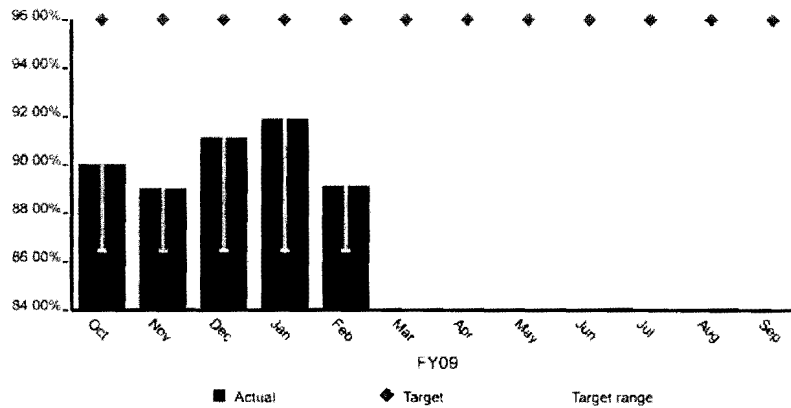


Estimate when PC will achieve goal: LRIP 3 to LRIP 4 (2011 to 2013).

Improve Supplier Quality Rate

PC – NSF198AJ10: Description: Each delegated supplier has quality ratings greater than 96 percent. The total LM Quality rating for key suppliers (areas of consideration are: cost, issues, technical, criticality). The top suppliers are summed and divided by quantity which gives an average QA rating per month. The goal is to achieve an average of greater than 96%. Supplier quality data is obtained from LM Aero's Procurement Quality Assurance database and metric updated no later than the 20th of each month. Green: ≥96%, Yellow: 87 to 95%, Red: <87%.

YS-AJH DCMA LMFW F-35 NSF198AJ10 Imp Supplier Qual Rate



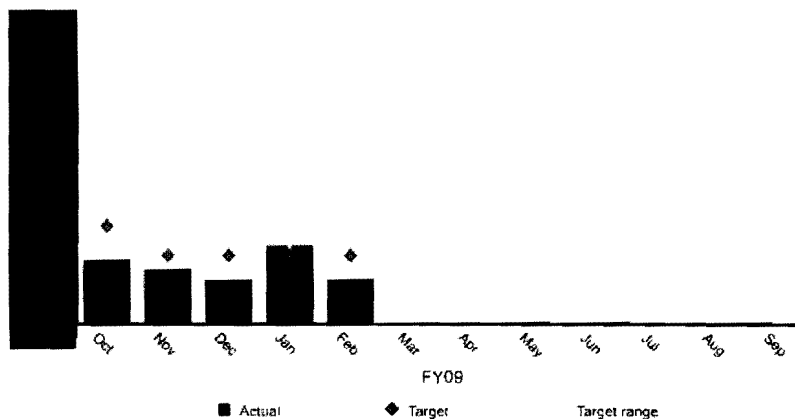
Metric Status: Yellow

Trend: Degrading

Maintain Cost and Schedule

PC – NSF198AJ08: Description: Resource requirements are aligned in support of funding and budget allocations. IEAC data and projections match actual performance within +/- 10% of contractors budget at completion. DCMA Independent IEAC is measured against the prime contractor's BAC. DCMA includes risk, pressures, cost and schedule variances as compared to LM Aero BAC. The source of EV data comes from the monthly JSF SDD Cost Performance Report which lags by 1 month. Metric is updated in Metrics Manager as soon as data is received from contractor (approximately 45-60 days after end-of-month). This is represented as the contractor's BAC as the Numerator divided by DCMA's IEAC as the Denominator - with a 10 percent tolerance band. Green: 1.0 to 0.95 variance (5%), Yellow: 0.95 to 0.90 variance (5% to 10%), Red: 0.90 or greater variance (>10%).

YS-AJH DCMA LMFW F-35 NSF198AJ08 Maint Cost Schedule



Metric Status: Green

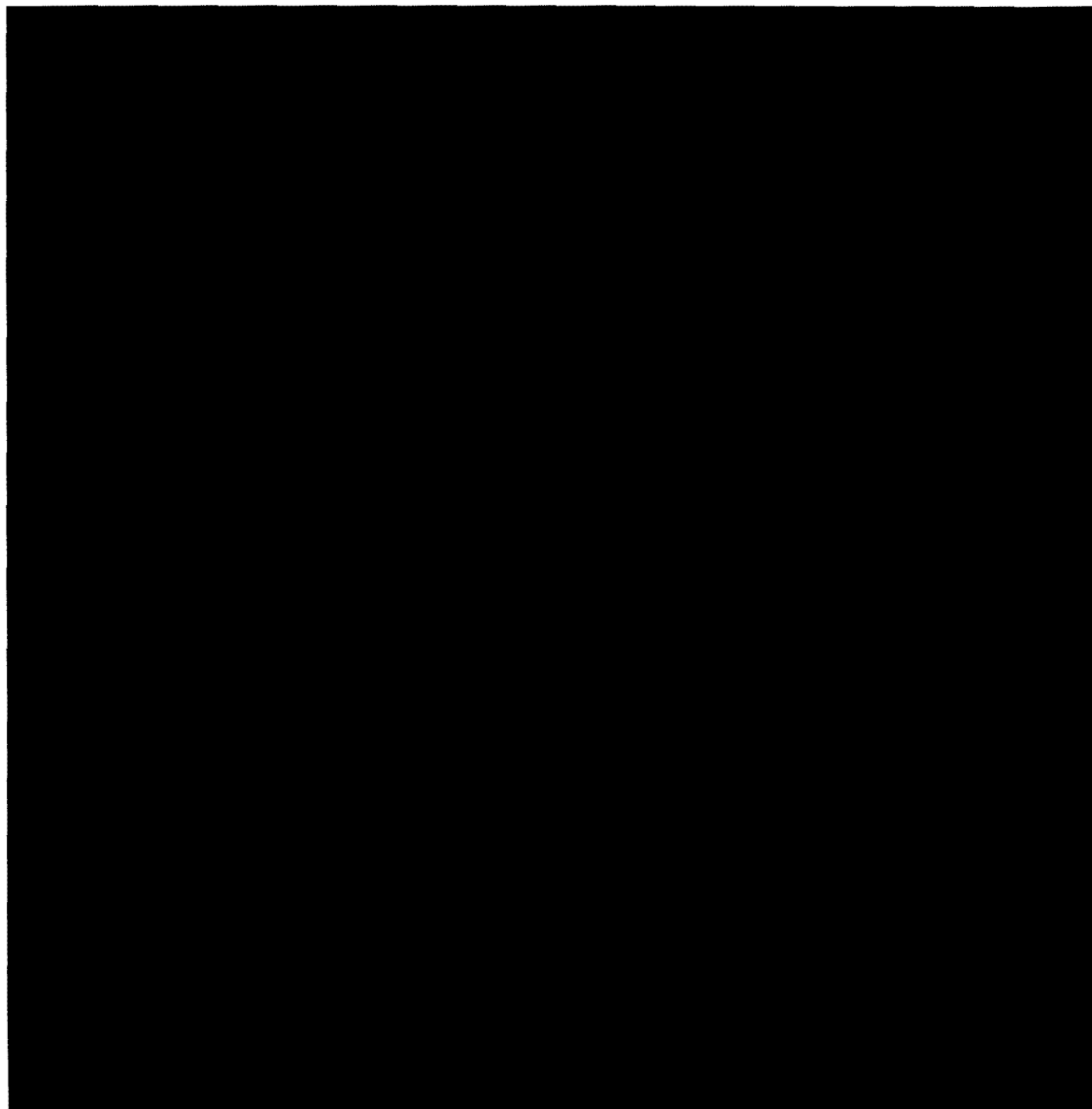
Trend: Improving

Summary of Metric Status: DCMA's IEAC is <5% over LM Aero's BAC

Lockheed Martin is now reporting to an Over Target Baseline of [REDACTED] reported in the February Cost Performance Report (CPR).

DCMA IEAC is [REDACTED] for the SDD contract. This DCMA IEAC is based upon the February 2009 CPR report. LM Aero has expended an average of [REDACTED] per month over the last six months (Sep 2008 thru Feb 2009). Assuming a continuance of this expenditure rate, DCMA projects the existing SDD budget with OTB will be depleted in FY2011, (BAC of [REDACTED] - ACWP of [REDACTED] = [REDACTED] remaining).

The LM EAC MR is below 6.0% of Estimate-to-Complete based on February 09 CPR. Using the Standard formula based on cumulative SPI and CPI yields an SDD increase of [REDACTED] over current LM Aero BAC. With the addition of risk factors such as, Supplier Costs, Late to Need parts, Schedule Impacts, Production Delays, Change Requirements, Flight Test, DCROM data, et c. the DCMA IEAC totals [REDACTED] Billion v.s. the LM Aero BAC of [REDACTED]. The graph below illustrates the DCMA's past projections of IEAC against LM's BAC and LRE.



The February 2009 SDD cost summary and program status is as follows:

	BAC	LM EAC CPR	DCMA IEAC
Performance Measurement Baseline (PMB)			
Management Reserve (MR)			
Total:			

Budget Baseline and EAC Summaries

Contract Data	KT 1	KT 2	KT 3	KT 4
Contract #	N00019-02-C-3002	N00019-06-C-0291	N00019-07-C-0097	N00019-08-C-0028
Name	JSF SDD	LRIP 1	LRIP 2	LRIP 3
Contract Type	Cost Plus Award Fee	Cost Plus Award Fee	Cost Plus Award Fee	Cost Plus Award Fee
Obligated Amount				
ULO				
Performance Start/End	Oct 2001/Oct 2014	May 2007/Feb2010	Apr 2010/Feb 2011	Mar 2011/Dec 2011

Primary Trip Wires				Secondary Trip Wires				
System Indicator	Baseline Indicator	Cum BEI	SPI	Cum CPLI	CPI	CPI/TCPI 10%	Contract Mods 10%	Baseline Revs 5%
		0.98	0.973	1.00	0.959	6.3%		N/A

Primary Trip Wires –

- (a) System Indicator: Please see EV section of report.
- (b) Baseline Indicators: A baseline assessment shows the contractors BAC and EAC to be optimistic. To complete the contract within the CBB, the contractor needs to be about 6.3 percent more efficient. The BAC has increased by 40% since the start up in Oct of 2001. The cost growth is likely to increase due to inherent engineering risks in the first versions of STOVL and CV aircraft. The contractors DCROM database for the corresponding month shows a net cost growth of threats and pressures exceeding [REDACTED]

Secondary Trip Wires –

- Baseline Execution Index (BEI): Cumulative tasks from October 2001 thru March 2009: Cum BEI = 138,340 Completed Tasks/141,444 Planned Tasks = 0.98
- Monthly (March 2009) Tasks: 619 Completed Tasks vs. 1524 Baselined to Complete Tasks
- SPI (since replan) = BCWP/BCWS= 0.973
- CPLI = (1390 + (2)/1390 = 1.00 (Time Now = 29 Mar 09)
- CPI (since replan) = BCWP/ACWP= 0.959
- CPI/TCPI = 0.959/1.024=.937
- Contracts Mods – (BAC now)/original BAC 10/01= [REDACTED] / [REDACTED] = 1.401

The DCMA Risk Rating for EVMS at the total program level is rated Yellow using the agreed to parameter of VAC (-4.30%).

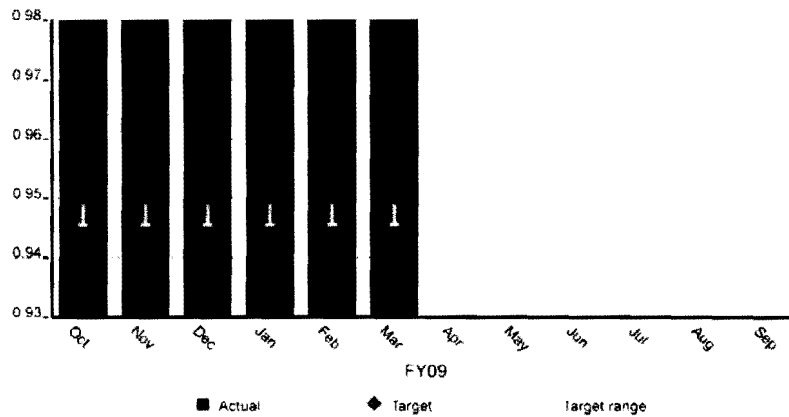
Similarly, the TCPI_{EAC} is different when using the DCMA IEAC versus the contractor's EAC:

$$\begin{aligned} \text{TCPI}_{\text{DCMA IEAC}} &= 0.900 \\ \text{TCPI}_{\text{LM EAC}} &= 1.024 \end{aligned}$$

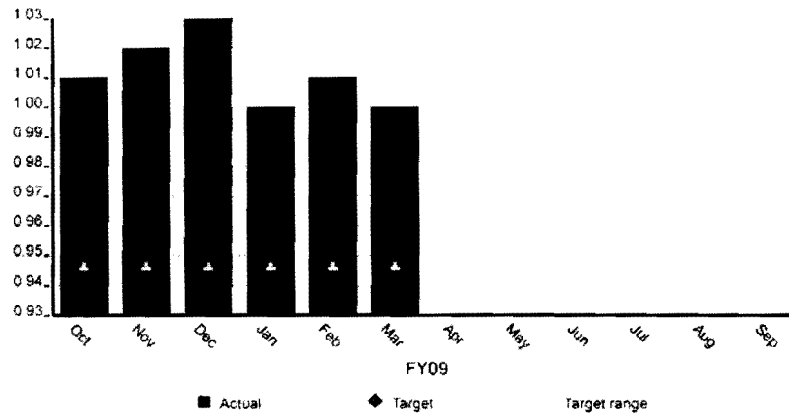
NSF198AJ08 Sub-Metrics: Description: The SDD Baseline Execution Index (BEI) metric is an Integrated Master Schedule (IMS) based metric that calculates the efficiency with which actual work has been accomplished when measured against the baseline. The BEI provides insight into the realism of program cost, resource, and schedule estimates. For BEI, an index of <.95 is used as a warning indication of schedule execution under performance. Goal is to achieve BEI values ≥.95. Cumulative BEI equals actual tasks/activities completed divided by the baseline total tasks/activities.

The SDD Critical Path Length Index (CPLI) indicates whether or not the program schedule can be completed on time. This is an Integrated Master Schedule (IMS) based metric that utilizes the critical path methodology definition being: the longest, continuous sequence of tasks through the network schedule with the least amount of float, from contract start to contract completion. After contract start, the critical path is always measured from "time now" until contract completion. For CPLI, an index of <.95 is used as a warning indication that the program will not complete on time. Goal is to maintain CPLI values ≥.95. Critical Path Length Index (CPLI) equals the Critical Path Length (CPL) plus or minus the Total Float (TF) divided by the Critical Path Length (CPL). The target efficiency ratio for both metrics is 1.00. An index greater than 1.00 is favorable, and an index less than 1.00 is unfavorable. ≥.95 = Green .90 to <.95 = Yellow <.90 = Red

YS-AJH DCMA LMFV F-35 SDD IMS BEI



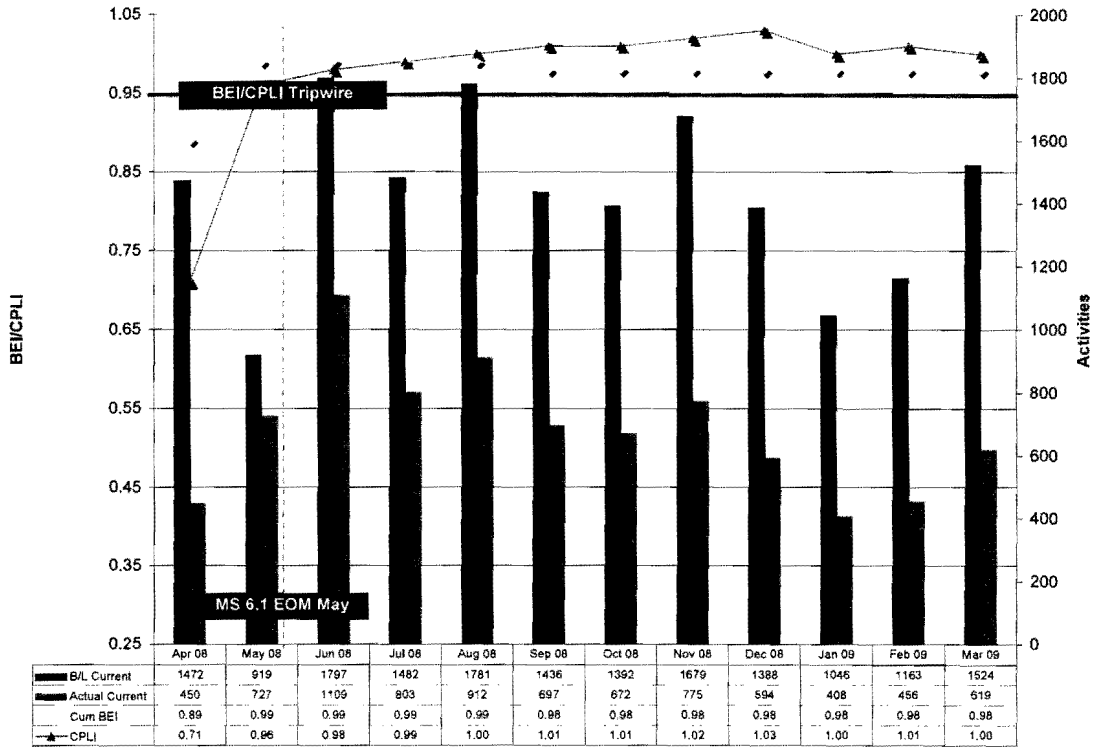
YS-AJH DCMA LMFV F-35 SDD IMS CPLI



Cumulative SDD Program BEI and CPLI sub-metrics are rated Green for this period, with the Cum BEI at .98, and CPLI at 1.00 for month end March.

The light gray bar below shows a continuing recurrence (similar negative trend line) for the monthly actuals – current completions, also indicated in the cumulative (blue CPLI) line.

**Baseline Current vs. Actual Current Finishes/Month
Program Cum BEI / CPLI Trend**

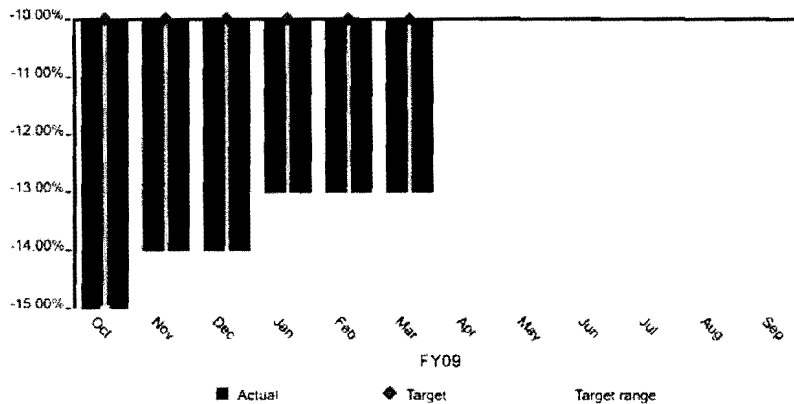


MS-6.1 baseline replan dates were incorporated into the IMS month-end May 2008.

Reduce Schedule Variation

PC – NSF198AJ05: Description: Reduce the average Wing touch labor variance "at move to Mate" to within 10% by SDD completion. In addition to monthly performance indicators, linear trend lines are used to project out subsequent Wing builds that have not moved to mate yet – projection is used to access current and predict future Wing variance performance. Metric will be updated NLT the 20th of the following month. Green: <-10% variance, Yellow: -10% and -15% variance, Red: >-15% variance.

YS-AJH DCMA LMFW F-35 NSF198AJ05 Reduce Schedule Variation



Metric Status: Yellow – Performance Commitment is rated Yellow this period with a current overall Wing average touch labor variance to schedule at -13%.

Trend: The variation average did not change, but the BF-5 Wing moved with only a 5% variance to its schedule.

Summary of Metric Status: Chart 1 (below) is a breakout of the Wings which build up the -13% variation average metric. The Wing has gradually reduced their out of station tasks travelled to Mate. This is very important since history has shown that Mate and Final Assembly performance has been significantly affected by the condition (maturity) and timing of the Wing delivery. The BF-5 Wing moved to Mate since the last reporting period with only a 5% variance to its schedule. This has contributed to the overall average schedule variance reduction. DCMA does not include "ground" aircraft performance in its variance calculations.

The CF-1, CF-2, CF-3, and CG-1 Wings are in structural mate undergoing permanent fastener installation and joint drill of mate critical parts, with CF-1 scheduled to move on 13 April 09. The remaining SDD Wings are in various stages of wing build. BH-1 has completed auto drill operations and main landing gear boring operations – scheduled to move to Mate in mid-April 2009.

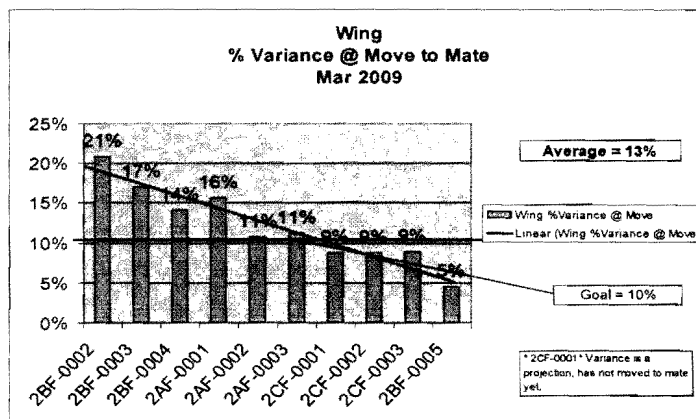


Chart 1

Chart 2 (sub-metric) below is a breakout of some of the aircraft that have either gone through or are in Mate and Final Assembly along with their associated % variance to schedule. Mate thru Delivery build performances continue to be under pressure to meet schedule requirements. Mate's cost and schedule variances continue to be driven by parts shortages, late planning and late Wing component delivery to Mate. WAM (Wing at Mate) Team continues to work to mitigate planned out of station work. For Flight Line Operations (), primary issues are centered on coordinating work with traveled work from the factory, BF-3's projected late receipt/start at () which has moved to February 2009 and BF-2's late receipt from System Checkout by 2 months. LM has recently stood up a Focused Flight Line Support Team to better support the Flight Line operations. Some data adapted from program Format 5 CPR (Nov 08) report.

Both our charts use SPI data for variance projections on Wings/aircraft that haven't moved to mate/flight line yet. Per Lockheed Martin, "The data used in the charts is from shop floor systems and is not auditable data or official EV data. It is for status purposes only."

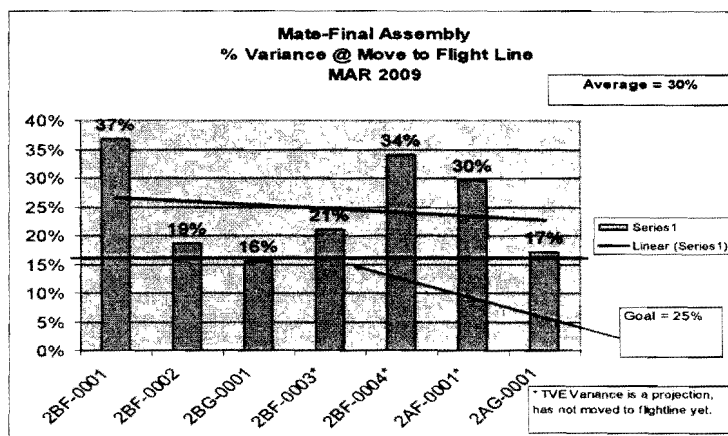


Chart 2

Root Causes: In general, inefficiencies of out of station work are driven by late parts and planning throughout the build cycle. This has created significant workarounds and rework requirements downstream. DCMA continues to be concerned with the amount of “out-of-station” tasks traveling to Mate and the Flight Line (at “roll out”). In order to have a positive impact on overall throughput (“roll out”), LM must find a way to simultaneously continue to reduce “out-of-station” tasks and improve their ability to start and finish on plan.

Contractor Actions: LM Aero continues to put emphasis on Value Stream recovery initiatives such as: a Shortage Resolution Process with consulting company (██████████) Tiger Teams for on-sight subcontract management support at critical suppliers, advanced workable set up teams to review job packages prior to major assembly start, continued tool design/rework to mature tooling, WAM (Wing at Mate) Teams to mitigate planned out of station work impacting Mate (showing progress), process improvement initiatives (such as Bracket locating/bulkhead marking and portable/perishable tools), increased manpower and outsourcing to reduce planning backlog, as well as span time, crew size and schedule compressions in the factory and Flight Line areas including the new Focused Flight Line Support Team.

DCMA Actions: Regular interface with LM Aero project teams to assess progress on recovery initiatives, look for process review or corrective action opportunities, monitor impacts on Mate, update metrics and report progress in monthly report to customers.

Estimate when PC will achieve goal: Every first new Variant disrupts the overall PC performance with each subsequent A/C showing improvement. Goal may not be reached until after SDD completion (2014) when Wing and Mate overlap is eliminated.

The following table depicts the SCOP completions per test article/aircraft. The table includes the total SCOPs planned per aircraft, the number of SCOPs completed as of this reporting period (8 Apr 09), the percentage of SCOPs completed relating to the total planned for the specific test article and the percentage of testing completed prior to test article rollout from the factory to the Fuel Barn.

SCOP Completions per Test Article / Aircraft (A/C)

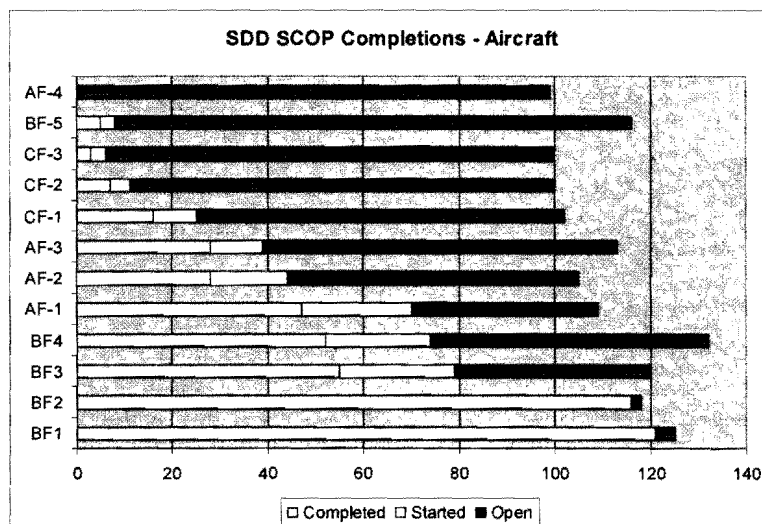
Test Article	Total SCOPs Planned	SCOP Completed	%Complete (Total A/C)	% Complete prior to Rollout
BF-1	125	121	89.6%	28.0% (18 Dec 07)
BF-2	118 ²	116	98.31%	51.6% (16 Aug 08)
BF-3	120 ²	45	37.5%	
BF-4	132 ²	52	39.4%	30.8% (1/21/09)
AF-1	109 ²	47	43.2%	38.1% (2/5/08)
AF-2	105 ²	28	26.7%	
AF-3	113 ^{1,2}	28	24.8%	
CF-1	102 ¹	16	15.7%	4/10/09
CF-2	100 ¹	7	7.0%	6/24/09
CF-3	100 ¹	3	3.0%	7/1/09

¹ Newly released SCOPs added to effectivity during this reporting period

² SCOPs removed from the effectivity during this reporting period

Note that AF-2 has left the factory floor and moved to the Calibration Lab on 18 Mar 09. It is due to be returned to the factory early May 09 with subsequent Rollout to the Fuel Barn on 23 Jul 09.

This chart depicts the current SCOP completion status for all flight test articles in SDD. List is organized by current firing order as depicted in Master Schedule 6.1.



The following are for SCOP's which have not been formally completed on flight certified test articles. Each SCOP was reviewed and contains the particular test article's effectivity. Obtaining status of these tests is currently in work.

[REDACTED]

[REDACTED]

This table is provided to track Wing specific SCOP testing prior to move to mate and percentage of testing completed prior to test article moving from the Factory Floor to the Fuel Barn.

SCOP Completions on Wing Assemblies

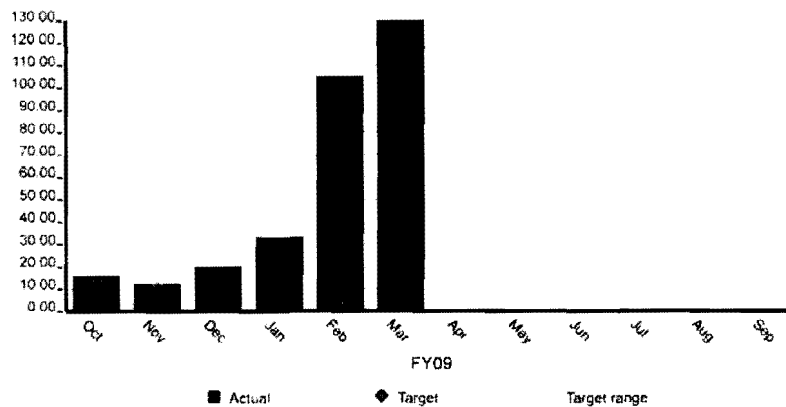
Test Article	Total SCOPs Planned to Date	%Complete (No. SCOPs Completed)	% Complete prior to Move to Mate (Assy Move Date)	% Complete Prior to Rollout	Avg Days Behind MS 6.1 (for Completed Tests)
BF-1	15	100% (15)	0%(5/30/07)	40% (6)	-170
BF-2	18	100%(18)	0%(9/11/07)	83.3% (15)	-216
BF-3	18	66.7%(12)	0%(12/16/07)	-	-197*
BF-4	19	52.6%(10)	0%(3/3/08)	42.1% (8)	-180*
AF-1	15	73.3%(11)	0%(3/27/08)	68.8% (11)	-176*
AF-2	14	50.0%(7)	0%(6/13/08)	-	-161*
AF-3	16	56.3%(9)	0%(8/1/08)	-	-129*
CF-1	17 ¹	23.5%(4)	0%(11/17/08)	-	-105*
CF-2	16 ¹	0%(0)	-	-	-
CF-3	15	0%(0)	-	-	-

¹ New wing specific SCOPs added this reporting period

* Wing testing is still in-work. Travel work from [REDACTED] will be in effect until LRIP 2? Value is not final until all testing is completed.

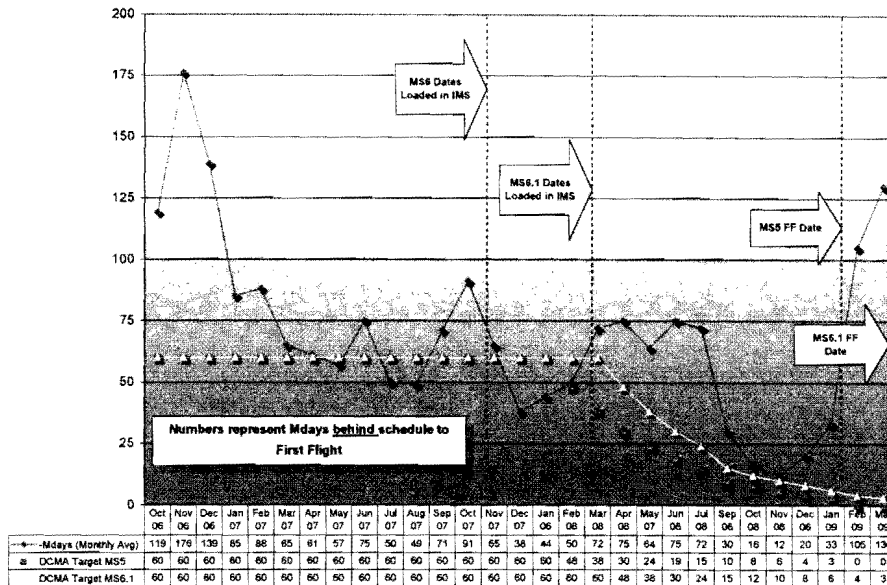
NSF198AJ05 Sub-Metric: Description: Reduce monthly average of negative float manufacturing days (Mdays) of key variant First Flight dates over baseline aircraft's (AA-1) delayed (~80Mdays) First Flight date. BF-4 (STOVL - Mission Systems Article) targets a 50% reduction in negative float over baseline, incorporating a 20% reduction each month in negative float Mdays, AF-1 (CTOL - Optimized vs. AA-1) targets a 50% reduction in negative float over baseline, incorporating a 15% reduction each month in negative float Mdays, 12 months out from Master Schedule First Flight date. (Note: Mdays are displayed as positive values, but represent behind schedule status).

YS-AJH DCMA LMFV F-35 BF-4 First Flight Date

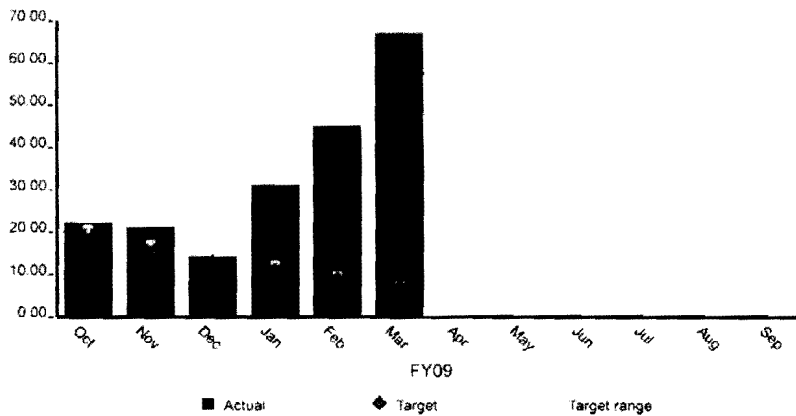


BF-4 sub-metric is rated Red, with a March average of 130 Mdays late to first flight date of 24 Mar 09. BF-4 baseline rollout was 21 Oct 08 – rollout occurred on 21 Jan 09. Projected first flight is August – additional build period to complete the aircraft continues.

BF-4 First Flight (24 March 09 - MS6.1) Total Slack Trend
 MS6 dates in IMS 4 Nov 07 / MS6.1 dates in IMS 9 Mar 08

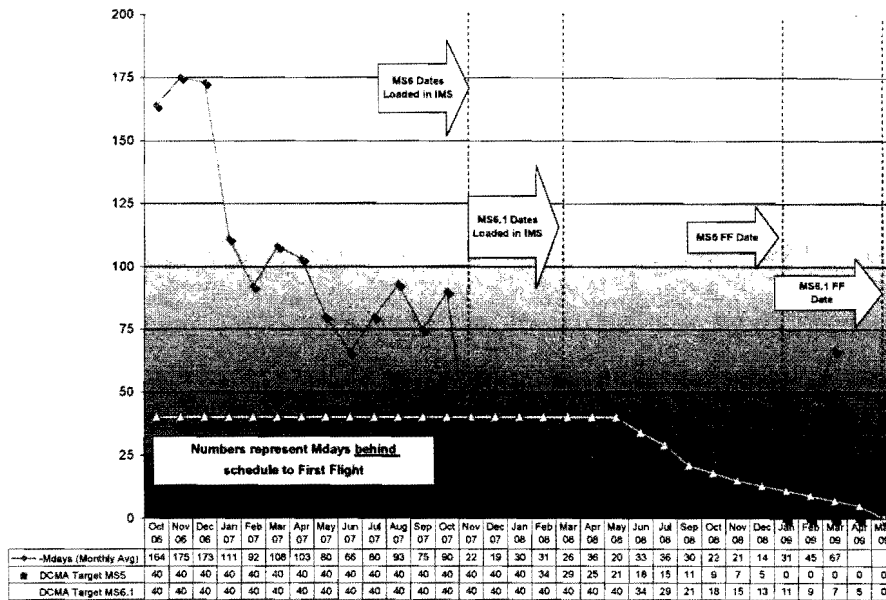


YS-AJH DCMA LMFW F-35 AF-1 First Flight Date



AF-1 sub-metric is rated Red, with a March average of 67 Mdays late to first flight date of 14 May 09. Baseline rollout date was 25 Nov 08 – aircraft rolled on 5 Feb 09. May 2009 first flight date is not possible – projected first flight is September.

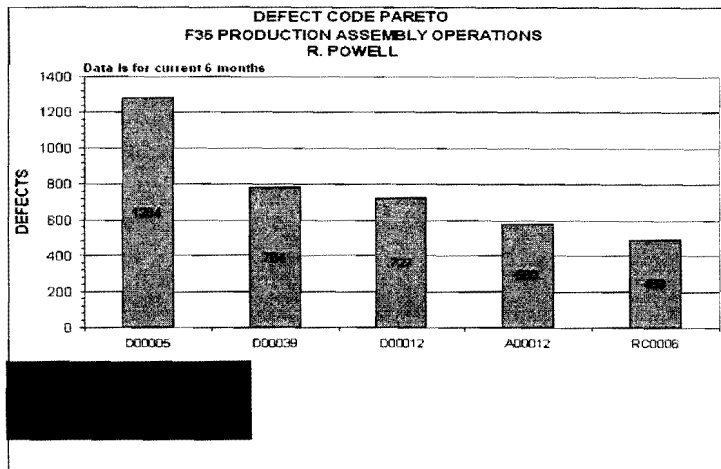
AF-1 First Flight (14 May 09 - MS6.1) Total Slack Trend
 MS6 dates in IMS 4 Nov 07 / MS6.1 dates in IMS 9 Mar 08



Non-Conformance Reduction

PC – NSF198AJ06: Description: 10% reduction in MRB discrepancies per year. Metric shows the average number of MR defects per 1000 actual manufacturing hours. The goal is to reduce MR defects per 1000 actual manufacturing hours by 10% per year. Metric is based on contractor provided data that is collected updated in metrics manager NLT the 20th of each month and averaged against all prior months to illustrate normalized trend. Green: <goal of 21, Yellow: within 10% of the goal, Red: >10% above the goal of 21.





Metric Status: Green

Trend: Improving with approximately 12.7 MR defects per 1000 HRS for FY 09.

Summary of Metric Status: Metric illustrates improving trend – maintained for the last 12 months.

Contractor Actions: LM Aero has reduced their goal for MR actions for 2009, meeting the goal so far this year.

DCMA Actions: Reducing the goal to reflect an effort to further reduce the amount of MRB actions for this year. DCMA is evaluating the new LM Aero goal to see if a more than 10% reduction in MRB actions is warranted.

Estimate when PC will achieve goal: PC has achieved goal as set last year.

Related MR Issue: DCMA has determined that during the period of 24 Jan 09 – 26 Feb 09,

Contractor Actions: DCMA presented this data to the Corrective Action (CA) Group.

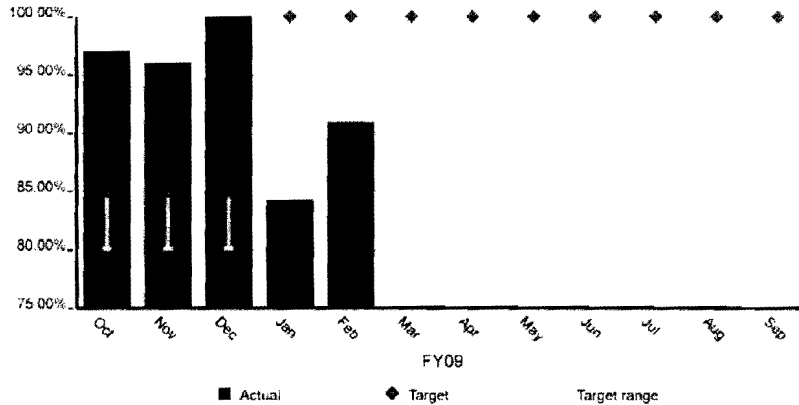
In addition, during CA's review it was also discovered that LM Aero Quality has been using several different defect documents to record this issue, i.e. Inspection Clean-Up Sheet (ICUS), General Purpose Record (GPR) and Quality Assurance Reports (QAR). The only document that is traceable to the defect is a QAR. The CA Group team lead issued a notification to all LM Aero Quality personnel that this type defect shall be documented on a QAR only.

DCMA Actions: Review QAR database – perform process reviews and audits.

Safety of Flight (SoF)

PC – NSF198AJ01: Description: Measures contractor capability to present a successful Safety of Flight inspection on first attempt. It is a measure of quality where the target is 100%. Normally, SOF metrics measure the number of SOF escapes to the customer. We are measuring the contractor's ability to present DCMA SOF inspections capable of passing an inspection or test the first attempt. This allows us to prepare the contractor for SOF expectations once production begins. We will adopt a traditional SOF metric based on customer reported escapes once delivery of aircraft begins. This metric has been re-adjusted as of January 2009 to reflect a more accurate account of what is being presented to DCMA. The contractor's processes are not mature enough (currently SDD) to present to DCMA for passable SOF inspections on the first attempt. Data is updated in Metrics Manager NLT the 20th of the following month. Performance data obtained from local DCMA quality data base as a result of DCMA inspections. Green: 100%, Yellow: 95%-99.9%, Red: <94.9%.

YS-AJH DCMA LMFW F-35 NSF198AJ01 Imp SOF Success 1st Audit



Metric Status: Red

Trend: Improving – Metric has been adjusted as of January 2009 to reflect a more accurate account of what is being presented to DCMA – measuring contractor capability to present a successful Safety of Flight inspection on first attempt to DCMA.

Improve Software Productivity

PC – NSF198AJ07: [Redacted]

[Redacted]

Metric Status: Green

Trend: No Change

Summary of Metric Status: Current performance is exceeding our target of 83%. The value this month is 90.54 which is a small negative change over last month's value of 91.1%.

Root Causes: DCMA LMFV performed a risk assessment for this revised PC. Process areas of focus include Software Product Evaluation (SPE) and Interface Work Package (IWP) processes. Another focus area is improved communication through consistent use of developmental software configuration management practices.

Contractor Actions: The contractor's process includes process improvement activities (Kaizens, Tiger Team Efforts, Value Stream Mapping, Lean Events, etc).

DCMA Actions: DCMA-LMFV Report and Exec Summary-March 2009 – DCMA is awaiting a SPE Process Review corrective action plan with a due of date of 2 April 09. The CAP is undergoing contractor team coordination and will be received mid-week next week. DCMA has begun of a review of the contractor's process documentation and metrics on test preparation and execution; this will include a focus on robustness testing.

DCMA [REDACTED] [REDACTED] [WBS 1424 – Mission Domain] – Tech Pressures associated with what was once thought to be a requirement to PAO Burst Pressure has gone away. The merge between Block 0.5 and 1.0 will result in many different simultaneous builds which is likely to impact MS Domain work-load. Otherwise there were no other significant updates to report.

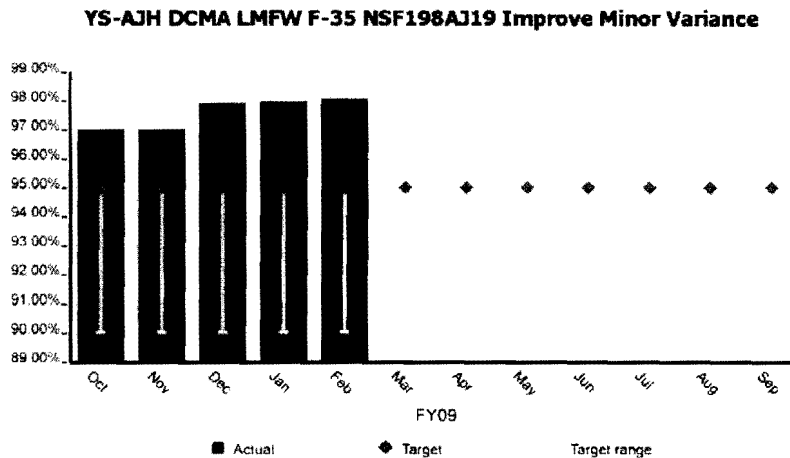
NGC Input: The PAO Burst Pressure issue was against [REDACTED] – the merge between Block 0.5 and 1.0 reduces the number of formal deliveries and is expected to ease workload and schedule pressure.

DCMA [REDACTED] – [REDACTED] – Integrated Core Processor (ICP) – DCMA will continue monitoring [REDACTED] supplier and various board HW/SW issues and track EV corrective actions and mitigation plans at suppliers. DCMA will monitor the requirement change process and if not formally approved, will ensure that the variances document the non-compliances.

Estimate when PC will achieve goal: Current performance exceeds target.

Improve Minor Variance

PC – NSF198AJ19: Description: Maintain at least a 95% correct classification rate of variances. Cumulative number of minor variances classified correctly divided by the cumulative number of minor variances reviewed. Metric should be updated at the end of each month but no later than the twentieth of the following month. Green: % of properly classified minor variances is $\geq 95\%$, Yellow: 90% up to but not including 95%, Red: $< 90\%$.



Metric Status: Green

Trend: Improving

Summary of Metric Status: The contractor had a correct classification rate of 100% this month and the goal is to maintain at or above 95%, therefore, the goal has been met. There were 52 minor variances reviewed during the month of March 2009 and 52 of these were classified correctly. Last month the rate was 98.1%.

Root Causes: No root causes identified at this time.

Contractor Actions: No contractor actions required at this time.

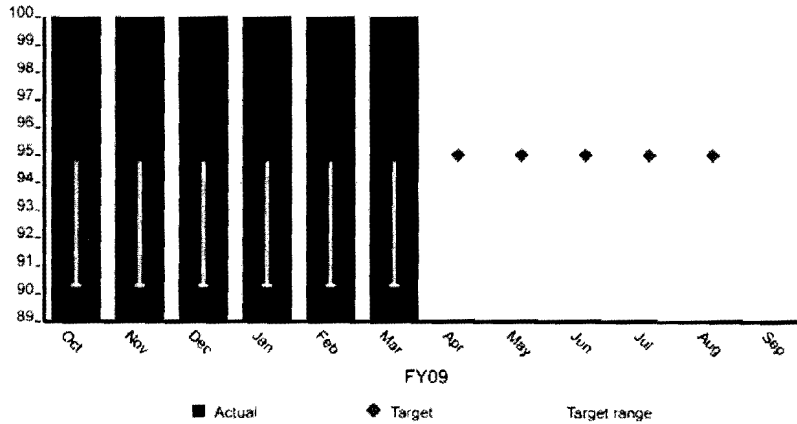
DCMA Actions: None at this time other than to continue to review Minor Variances for correct classifications. Ensure the contractor takes the necessary corrective actions to preclude any incorrect classifications in the future.

Estimate when PC will achieve goal: The PC has currently achieved its goal by being at or above a correct classification rate of 95%.

Improve FCA/PCA

PC – NSF198AJ20: Description: Ensure that at least 95% of systems reviewed in interim FCA/PCAs meet the design requirements. Technical Description: Verification of the F-35's physical configuration to the design requirements by performing PCAs (physical configuration audits). Percentage of part and assembly numbers reviewed in interim audits in accordance with engineering drawings divided by total population of parts and assemblies assessed. The data used to assess this comes from interim audits from suppliers. Green: % of parts meeting design requirements is $\geq 95\%$, Yellow: 90-94%, Red: $< 90\%$.

YS-AJH DCMA LMFV F-35 NSF198AJ20 Improve FCA/PCA



Metric Status: Green

Trend: Degrading

Contractor Actions: Meetings with DCMA personnel.

DCMA Actions: DCMA reviews have revealed several discrepancies that conflict with

[REDACTED]

Items that were identified as incorrect on QAR CF60288 Part number [REDACTED]

- The following part numbers identified as FC MT do not have the correct serial number on the QAR

[REDACTED]

[REDACTED]

[REDACTED]

4. CG-1 – [REDACTED]

Verify recorded data matches physical part(s).

[REDACTED]

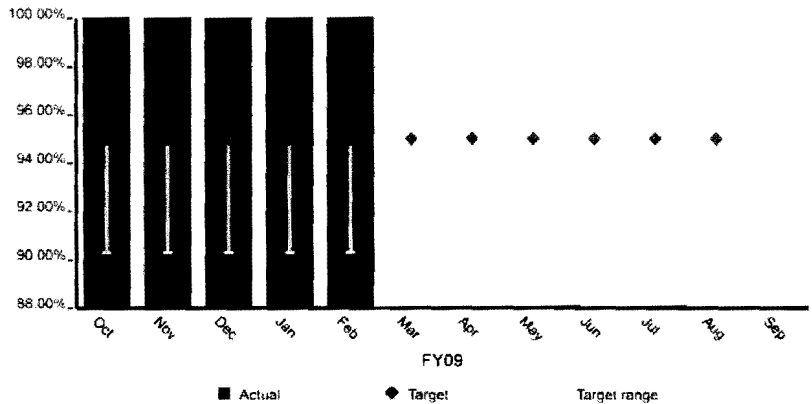
5. QAR CF20193 CG-1 was for this same part number [REDACTED] – it is unknown where this data came from.

6. The LM Aero tracking sheet for CG-1 indicates [REDACTED]

Improve Minor Change

PC – NSF198AJ18: Description: Ensure that 95% of minor changes are correctly classified. A Minor Change is defined as a change to an item which remains interchangeable with the same item in which the change has not been incorporated (form/fit/function interchangeable), has little or no impact to any downstream functions and has no effect on any criteria governing Major A and/or Major B type changes. Criteria for classification of changes are presented in PD-44. Data Source(s): PDM, JDL and weekly CIB meetings participation. Metric is calculated by the number of minor changes correctly classified + by the total number of minor changes reviewed during the month. Data is updated in Metrics Manager NLT the 20th of the following month. Green: >95%, Yellow: ≥90% to ≤95%, Red: <90%.

YS-AJH DCMA LMFW F-35 NSF198AJ18 Improve Minor Change

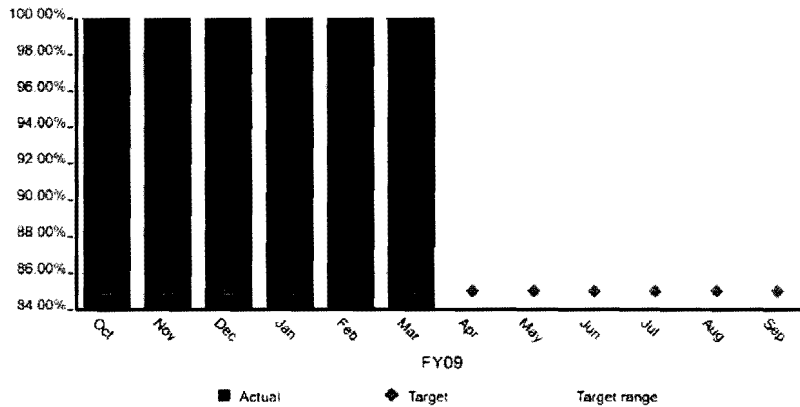


Metric Status: Green

Maintain Assist Audit Request Timing

PC – NSF198AJ13: Description: Process contractor/PCO requests for domestic/international Assist Audits within 2 business days 85% of the time. The percentage will be calculated by dividing the number of Assist Audits processed within 2 business days by the total number of Assist Audits requested. Source data will be obtained prior to the 15th of the following month and updated in Metrics Manager NLT the 20th of the following month. Green: >84%, Yellow: 75-84%, Red: <75%.

YS-AJH DCMA LMFW F-35 NSF198AJ13 Maint Asst Audit Req Timing

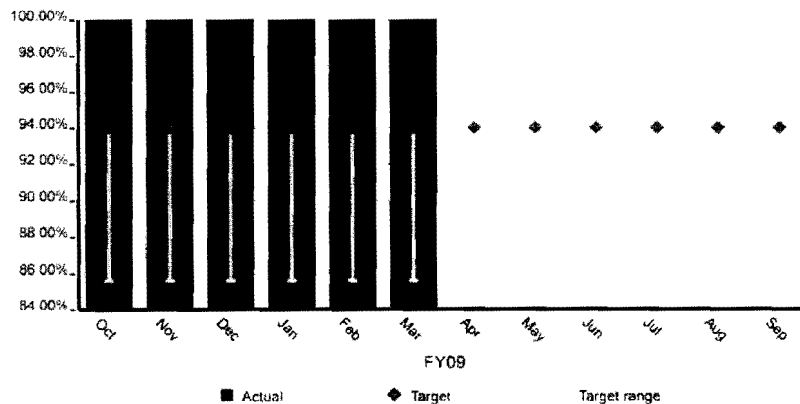


The performance commitment is rated Green for this period.

Maintain FAR Requests for Contract Closeout

PC – CDDAGYOC02: Description: Maintain 94% contract closeout actions within the Federal Acquisition Regulation (FAR) mandated timeframes. The percentage will be calculated by dividing the number of on time contracts closed by the total number of contracts closed. Source data will be obtained prior to the 15th of the following month, and updated in Metrics Manager NLT 20th of the following month. Green: >93%, Yellow: 85-93%, Red: <85%.

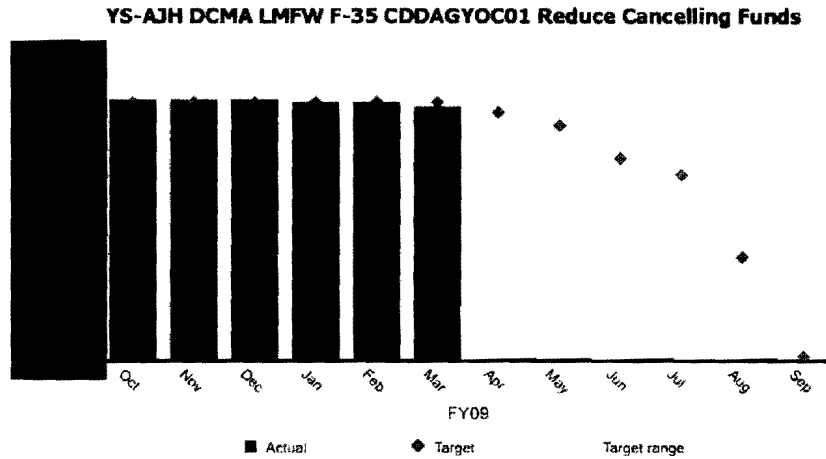
YS-AJH DCMA LMFW F-35 CDDAGYOC02 Main FAR Req for K Closeout



The performance commitment is rated Green for this period.

Reduce Cancelling Funds

PC – CDDAGYOC01: Description: 90% of canceling funds will be billed and/or de-obligated before the end of the fiscal year. Attainment of the goal will be calculated by dividing the total dollar amount of canceling funds billed and/or de-obligated by the total amount of canceling funds identified. Source data will be obtained prior to the 15th of the following month, and updated in Metrics Manager NLT the 20th of the following month. Green: >89%, Yellow: 80-89%, Red: <80% of the funds identified to cancel at year end.



The performance commitment is rated Green for this period.

Earned Value

The complete EV report is attached:



Appendix A – EV Assessment Criteria

Rating Criteria is based on the DCMA VAC% and when possible should include MR in the DCMA IEAC

- Green - VAC%>-5%
- Yellow - -10%<VAC%<-5%
- VAC%<-10%
- N/R - Not Rated or Not Reported