

Joint Strike Fighter – Lightning II Monthly Assessment Report

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



February 2009

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Program Summary

Flight Test (as of 17 Feb 09): AA-1 flight test is projected by LM Aero to commence no earlier than the last week in February 2009. BF-1 CTOL engine runs and BF-2 first flight are expected to occur within the last week of February. BF-4 rolled to the Fuel Barn on 21 Jan 09 (MS 6.1 baseline was 21 Oct 08). AF-1 rollout occurred on 5 Feb 09 (MS 6.1 baseline was 25 Nov 08).

Seat Sequencer Assembly LRU Update: [REDACTED] withdrew flight certification pending investigation of the failures by the ejection seat supplier [REDACTED] and the Sequencer Assembly supplier [REDACTED]. [REDACTED] has been able to replicate the failures during high shock tests and [REDACTED] has introduced a firmware fix to resolve the resulting system data bus faults. Preliminary testing at [REDACTED] has been successfully completed and steps are being taken to retrofit the modified Sequencer Assembly LRU into JSF aircraft upon final approval by the JSFPO. Root cause is still unknown, [REDACTED] investigation will continue. Firmware fix is currently not endorsed for Flight by JSFPO and demonstration of the fix through live fire tests at Holloman AFB (#6 on 18 Feb, #7 on 4 Mar and #8 on 18 Mar) required prior to implementation. In the interim, LM Aero has issued an Air Vehicle System Release Memo only for existing standard Sequencer Assembly LRU version 7.0 and Ejection Seat version -2.5 in order to continue BF-1 and BF-2 flight testing under restricted conditions. Note: [REDACTED] does not have a contractual schedule of requirements with [REDACTED] and is informally working to LM Aero delivery.

SDD/LRIP Production Status (As of 1 Feb 09)	
Forward Fuselage	10 – Assembly 10 – Mate/Sub-Systems/Final
Center Fuselage	12 – Assembly/On-Dock 10 – Mate/Sub-Systems/Final
Aft Fuselage	5 – Assembly/On-Dock 9 – Mate/Sub-Systems/Final
Wing	10 – Assembly 10 – Mate/Sub-Systems/Final
Fuselage Structure Mate (EMAS)	5 – (CF-2, CF-1, CG-1, CF-3 & AJ-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)

F-135 Engine: On 30 Jan 09, the F135 STOVL Powered Lift Statement of Qualification (SOQ) letter was by the JSFPO, certifying the F135 STOVL propulsion system for powered lift. FTE-6 has arrived at LM Aero for installation into BF-1 this month. LRIP 2 Auto-Log Basis of Estimates postponed until end of November. [REDACTED]

DCMA L MFW is in the process of reviewing the 2000-21 Single Process Initiative (SPI) for Interchangeability/Replacability in respect to SDD and LRIP. LM Aero's Basis of Proposal includes Single Process Initiatives for existing contracts (e.g. SPI 2000-21 authorization date was 11 Apr 01). This requirement does not appear to be incorporated into LM Aero's planning.

DCMA EV Center visit: The majority of the milestones have been completed except for the development of a compliant scheduling process and the ability to adequately support a data call from the DCMA EV Center for the next Compliance Review. Data traces were conducted on Integrated Network Scheduling System (INSS) in February during a DCMA EV Center visit and LM Aero could not demonstrate that all various parts that make up the INSS are interconnected.

Additionally during the DCMA EV center visit, four CAMs were interviewed and all had data integrity issues on their accounts. This supported the conclusion that LM Aero was not ready for another DCMA EV Center Compliance Review in the spring of 2009. LM Aero submitted a written request to move the compliance audit to July 2009, which allows them to clean up the data on programs and make the needed corrections to their scheduling processes. In response to LM Aero not meeting the two milestones, a [REDACTED] withhold was applied to the SDD contract.

LM Aero has officially notified the Government (16 Feb 09) that it expects to exceed 75 percent of the total amount allotted to the contract and current funding provided per Modification P00295 will allow performance through 8 Mar 09. The contractor has estimated an additional [REDACTED] is needed to fully fund the contract through 2013. Furthermore, an additional [REDACTED] is needed for the OTB/OTS through October 2014. This total is close to LM Aero's EAC of [REDACTED] billion.

LM Aero Production Operations: Cost and schedule performance trends have begun to show slight improvement from the downward trend it has been on since the incorporation of the program replan in July 2008. Recovery plans that have been implemented over the last several months in an attempt to get the program back on track to MS 6.1 have begun to have an impact. Favorable cost and schedule variance trends in the Forward, Wing, Aft/Empennage and Mate build operations have contributed to this overall slight improvement.

DCMA LM Fort Worth continues to observe the amount of out-of-station tasks traveling to Mate and the Flight Line. The Wing has gradually reduced their out-of-station tasks traveled to Mate but is expected to overlap beyond LRIP II. This reduction is beginning to have an affect on Mate, since Mate has recently sent (STOVL) BF-4 to the fuel barn with only slightly more out-of-station tasks (34% variance to its planned schedule) than BF-2 (29%).

[REDACTED] DCMA [REDACTED] predicts additional SDD cost growth of \$300 Million above [REDACTED] EAC reported in the Jan 09 SDD Cost Performance Report (CPR). [REDACTED] EAC still excludes all future Major "B" changes and other likely costs required to complete SDD. It is a given that the [REDACTED] EAC will continue to increase with 112 Major "B" changes and ~ 40 Baseline Change Requests (BLCRs) in process. Schedule performance remains under pressure and LM Aero approved a one-month extension for delivery for BF-5 and AF-4 to 9 March and 27 April, respectively. Workaround plans to mitigate part shortages are ongoing. Advanced Composite Center (ACC) manufacturing slipped slightly to recovery plan.

[REDACTED]: Delivery performance commitment continues to be rated Red because the contractor is not meeting the contractual schedule MS6.1. Inclusive of January month end planned shipments; Aft Fuselage is 44 calendar days behind schedule, HT is 50 days late, and VT is 46 days late. [REDACTED] has implemented a recovery plan identified as the SOP7 Issue 3 but still not meeting these plan start and ship dates, based on a comparison of the events planned and accomplished during this rating period.

Report Scope

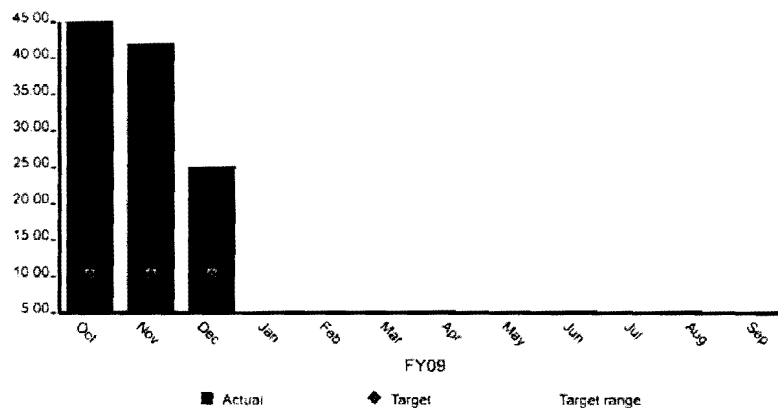
The Joint Strike Fighter – Lighting II Monthly Assessment Report (MAR) is focused on reporting the status of Customer Outcomes and associated Performance Commitments identified in the Memorandum of Agreement with the JSF Program Office. Interdisciplinary teaming between DCMA personnel is used to ensure 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	
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 passed on first attempt to the number of SOF inspections conducted	Green: >85% Yellow: 80%-84% Red: <79%	G
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 in flow 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: Red

Trend: Improving

Summary of Metric Status: Metric is -25 Mdays (~1.2 months) for month end December. This month's metric is an average of the following aircraft as reported per the CDRL: A F-6 (-10), AF-7 (0), AF-8 (-40), AF-9 (-42) and AF-10 (-32) = 24.8 M-days.

Root Causes: The behind schedule un load of BF-5 from the EMAS station is the AF-6 top driver (expected mitigation by January). Past due LRIP 1 items for month end December – mainly in Forward Fuselage and Wing Build – are driven mainly by late part deliveries. LM Aero projects these past due items will not have an impact on the Program due to recovery plan efforts.

Contractor Actions: A recovery plan to MS 6.1 has been developed and briefed to JPO/DCMA by LM Aero the week of 12 Jan 09. The recovery plan was incorporated into the LRIP 1 IMS files (LRIP 2 incorporation projected in January 2009) during the month of December – leading to a major improvement in the critical paths. A F-6 improved to 10 M-days late opposed to 55 M-days late, while AF-7 improved to 0 M-days late opposed to 55 M-days late at the end of November. LM Aero estimates that recovery to the following Mate events per MS 6.1 will occur as follows: Aft – AF-11 (Sep '09), Center – BF-6 (Nov '09), and Wing – AF-9 (Jul '09).

Key LM Aero initiatives such as crew size adjustments, overtime compression, as well as factory build teams working concurrently with flightline teams are a fundamental part of the recovery plan. The limitation of this plan appears to be reliance on parts availability and the ability for major components to load to the projected Mate plan based on EMAS availability. Past performance indicates that these plans have been exceedingly optimistic and challenging to execute.

In accordance with CDRL A005 (IMS), the January 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 continue to be a concern
- Late S/W delivery affecting the S/W build for trainers
- Delays in negotiation with some suppliers may drive Site Activation out

The January assessment also indicated a 50% probability of AF-6 being 19 M-Days late to contract DD-250 date (31 Jan 10), and AF-7 being 3 M-Days late (28 Feb 10).

DCMA Actions: DCMA [redacted] reports that [redacted] submitted a new recovery plan SOP 7. [redacted] is currently projecting return to MS6.1 "Green" of the Aft Fuselage by 2BF-9 (LRIP 2) in January 2010, the Horizontal Tail by the end of LRIP 2 and the Vertical Tail return in early LRIP 3. DCMA [redacted] [redacted] is continues to monitor [redacted] recovery to MS 6.1.

DCMA [redacted] reports that schedule risk is high due to compressed cycle times (~3 wks) and late parts history. [redacted] is currently working to SOP Rev. G (Rev. F reported last month). [redacted] production dates have moved to the right again slightly since last report, and still exceed MS 6.1 on-dock dates to LM Aero. [redacted] management anticipates a contract update to MS 6.1 for the incorporation of the P5 upgrade for LRIP 1 and 2. [redacted] anticipates parts availability for LRIP 3 will be worse than currently experiencing with SDD / LRIP 1. Schedule is being stressed due to LM Aero LRIP 3 budget release for long-lead parts procurement.

DCMA P/SI, PA Production and PA D&I Team members are developing 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 continues to work with LM Aero Q&MS and the new DCMA POC for Joint Process Reviews (JPR), in the coordination of JSF specific LM Aero/DCMA JPR's for 2009 as part of our strategy to influence LRIP aircraft deliveries.

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

This table includes the total SCOPs planned for LRIP 1 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 [redacted]. The current IMS baseline finish dates are 19 Jan 09 and 9 Feb 09 for AF-6 and AF-7, respectively. As of this reporting period, formal SCOP planning has been initiated against aircraft AF-7, but no testing has been started. No formal SCOP planning has been completed for AF-6.

SCOP Completions per Aircraft (A/C)

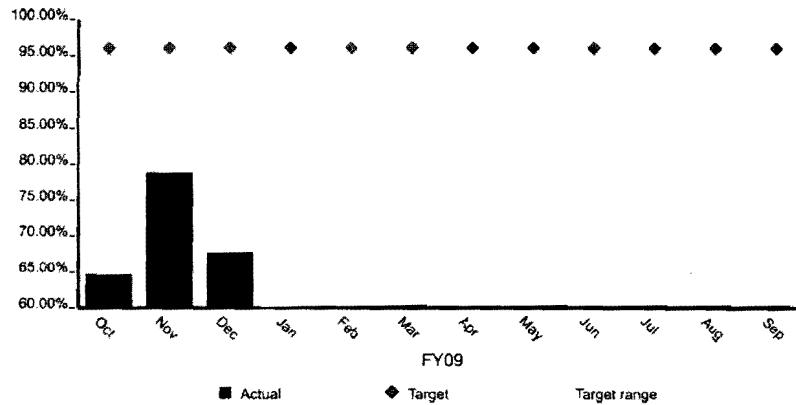
Aircraft Effectivity	Total SCOPs Planned	SCOP Completed	%Complete (Total A/C)	% Complete prior to Rollout
AF-6	85	-	-	Est. Oct 09
AF-7	85	-	-	Est. Nov 09

Currently 85 SCOPs and 8 AEI's (Aerospace Equipment Instructions) are formally released against AF-6 and AF-7. These numbers are certain to increase as the LRIP 1 builds mature over the next couple of months.

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

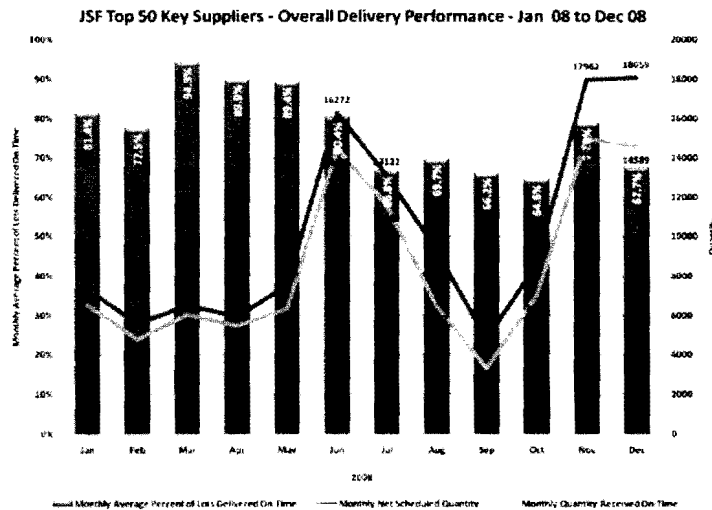


Metric Status: Red

Trend: Declining

Summary of Metric Status: The delivery rate declined 11.1% to a monthly average of 67.7% and showed significant decline after a one month improvement.

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 continue to be late requirements to suppliers, rapidly changing requirements due to engineering changes, schedule pressures, material availability and an immature supplier base.

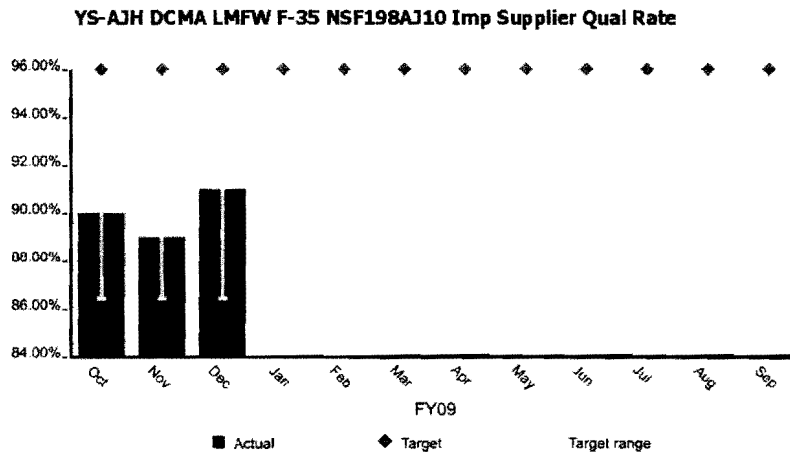
Contractor Actions: To correct the negative delivery performance, Lockheed Martin has deployed 20+ Supply Chain Managers to focus suppliers. Additionally, they began a Tier 2 initiative called "Deliver the Parts." In this program 25 suppliers have been identified for expanded oversight and assistance, with corporate resources solicited.

DCMA Actions: DCMA is initiating Letters of Delegation to monitor and report on JSF Key Suppliers with significant negative impact on the delivery rate. For example, [REDACTED] had a lot delivery rate of 17.1% for the month of December with 131 parts scheduled for delivery and 41 actually delivered.

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%.

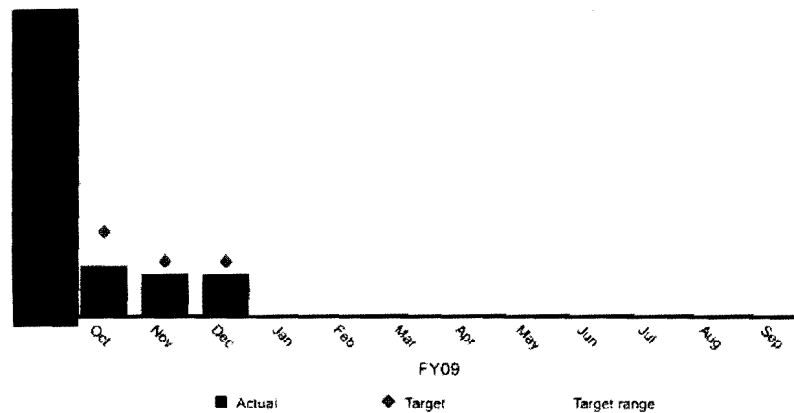


Metric Status: Yellow

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 EAC 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 SDD Cost Schedule



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

DCMA IEAC is [REDACTED] for the SDD contract. This DCMA IEAC is based upon the December 08 CPR report. LM Aero has expended an average of [REDACTED] per month over the last six months. 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] remaining).

Using December 08 CPR data, the above formulae 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, etc., the DCMA IEAC total is [REDACTED] verses the LM Aero BAC of [REDACTED].

The December 2008 SDD cost summary and program status is as follows:

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

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	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
ULO	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Performance Start/End	Oct 2001/Apr 2012	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	0.977	1.00	0.961	5.2%		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 5.2 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 January 2009: Cum BEI = 135,423 Completed Tasks/138,389 Planned Tasks = 0.98
- Monthly (January 2009) Tasks: 408 Completed Tasks vs. 1046 Baselined to Complete Tasks
- SPI (since replan) = BCWP/BCWS= 0.977
- CPLI = (1435 + (7))/1435 = 1.00 (Time Now = 25 Jan 09)
- CPI (since replan) = BCWP/ACWP= 0.961
- CPI/TCPI = 0.961/1.014= .948
- 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 Green using the agreed to parameter of VAC (-4.28%).

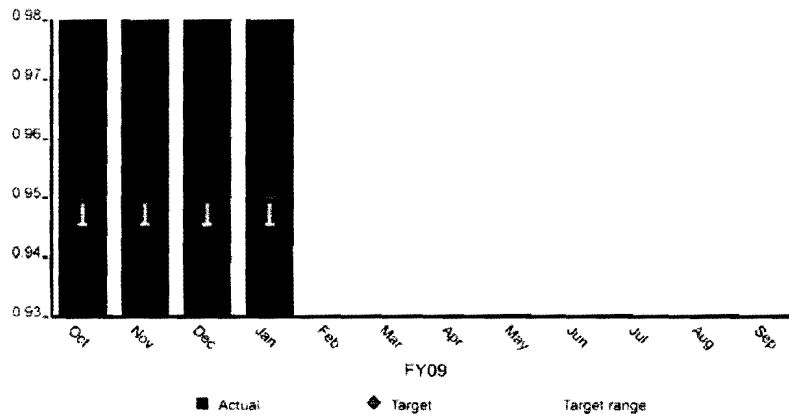
Similarly, the TCPI_{EAC} is different when using the DCMA IEAC versus the contractor's EAC:

$$\begin{aligned} \text{TCPI}_{\text{DCMA IEAC}} &= 0.898 \\ \text{TCPI}_{\text{LM EAC}} &= 1.014 \end{aligned}$$

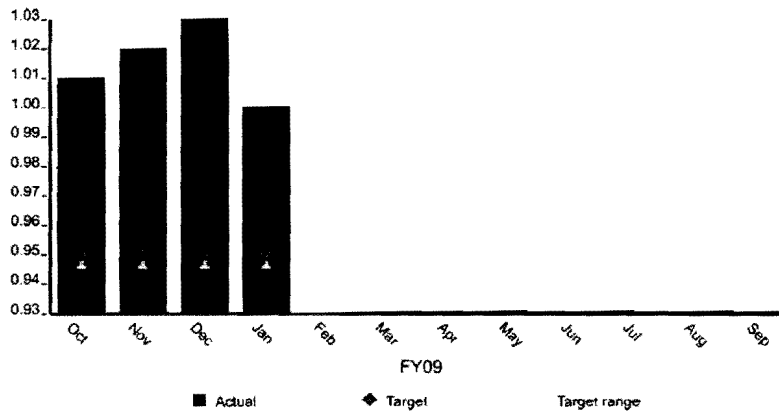
NSF198AJ08 Sub-Metrics: Description: The SDD Baseline Execution Index (BEI) metric is an Integrated Master Schedule (IMS) based metric that calculates the efficiency with which actual work has been accomplished when measured against the baseline. The BEI provides insight into the realism of program cost, 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 LMFW F-35 SDD IMS BEI

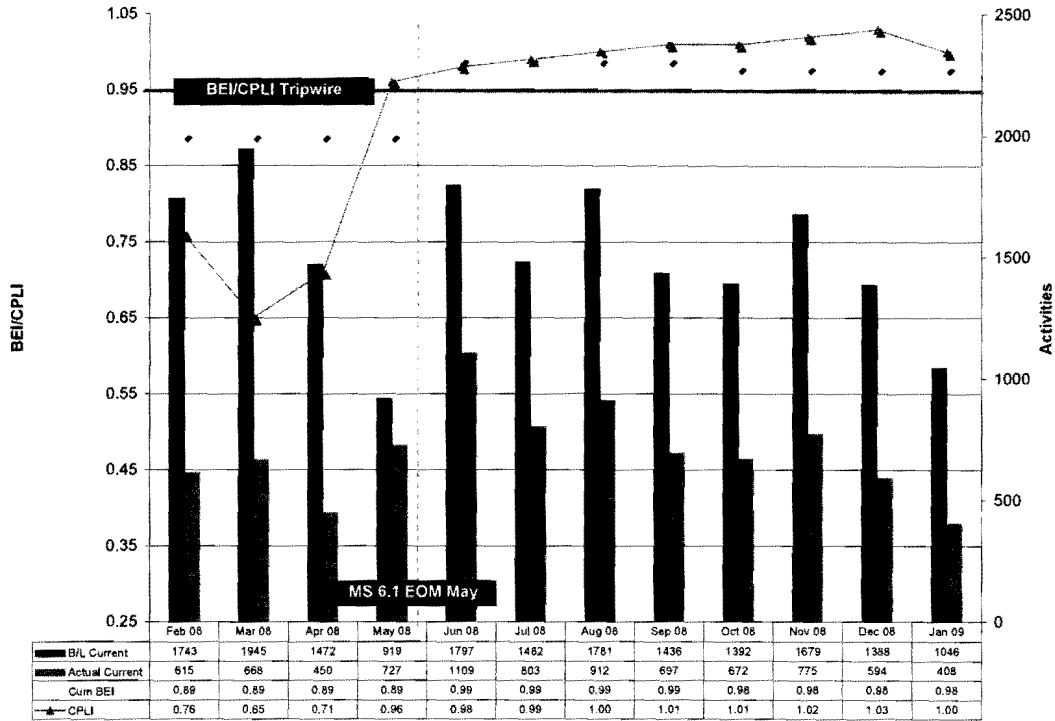


YS-AJH DCMA LMFW F-35 SDD IMS CPLI



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 January.

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

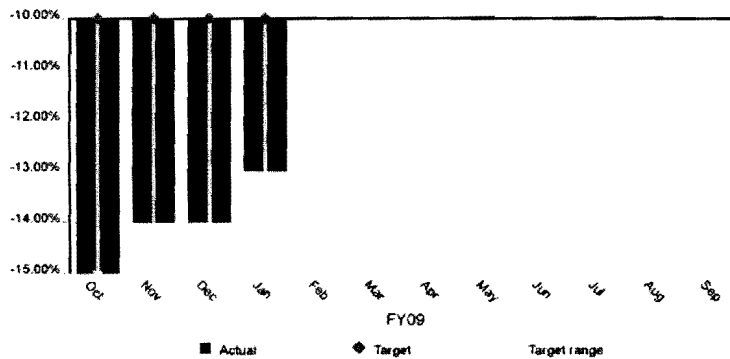


MS-6.1 baseline replan dates were incorporated into the IMS month-end May 2008. A decrease in overall program planned monthly performance to MS 6.1 baseline task completions continues over the past eight months.

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 is at -13%.

Trend: Improving – the variation average improved by 1% since the CF-2 Wing moved with only a 9% 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 noteworthy 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 CF-2 Wing moved to Mate since the last reporting period with only a 9% 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 Wing partially recovered some schedule performance this month due to receipt of several critical shortages in AF-1 thru 4, BF-4 and 5, BH-1 and CF-2. The CF-1 Wing is experiencing schedule delays due to critical shortages [redacted] which are preventing plumbing systems installation in its upper fuel tanks and lower bays at [redacted]. The CG-1 Wing has been impacted by critical path Mate operations which are preventing work on the upper surface of the Wing. These upper Wing operations are limited due to safety issues surrounding the component when de-mated and weight limitations when the components are not structurally joined. This situation has been extended longer than expected due to the late delivery of the Aft Fuselage. Some data adapted from program Format 5 CPR (Nov 08) report.

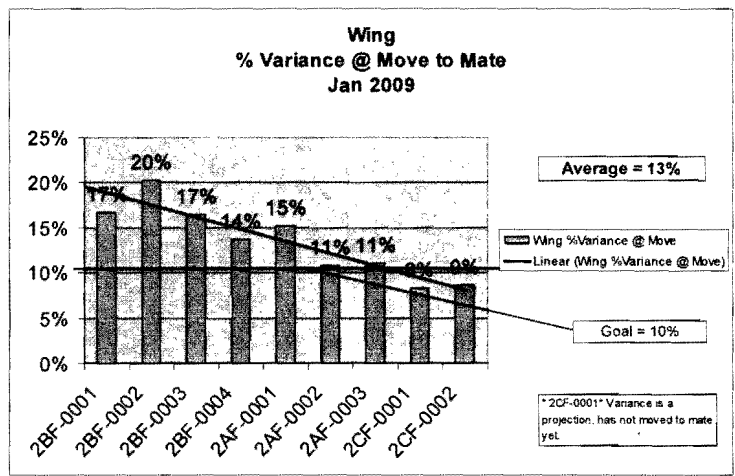


Chart 1

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. BF-3 left Mate and Final Assembly temporarily and returned from the Calibration Lab in mid January 2009 and now carries a 27% variance to its planned schedule. BF-4 rolled-out on 21 Jan 09. According to our estimates (data as of 25 Jan 09), BF-4 had 840 standard hours, 22,870 estimated actual hours of open work at the time it moved to the fuel barn/flight line. This equates to an estimated 34% variance to planned schedule. There was no change in our variation average (33%) since BF-4 performance fell in between BF-1 and BF-2. Note: BF-4 has over 350 more standard (labor) hours than prior BF (STOVL) aircraft and is considered the first Mission System aircraft. DCMA projected variance at move percentages for Aircraft (BF-3 and AF-1) are encouraging and should positively impact the overall average within the next month.

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 part 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 (WBS 3186), primary issues are centered on coordinating work with traveled work from the factory, BF-3’s projected late receipt/start at [redacted] which has moved to February 2009 and BF-2’s late receipt from System Checkout by two months.

LM Aero 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."

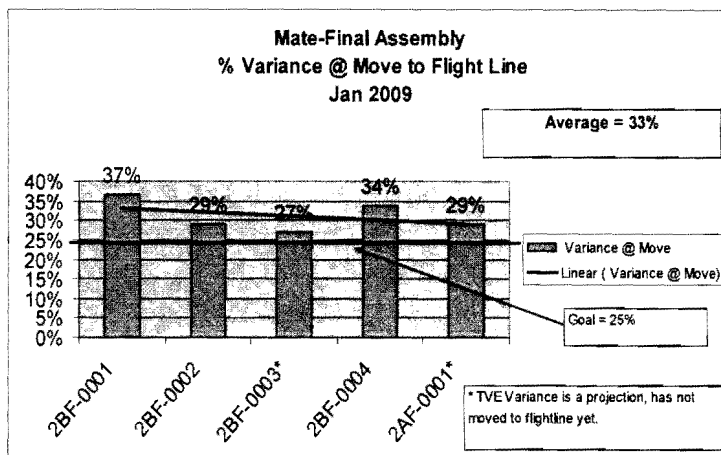


Chart 2

Root Causes: In general, performance continues to be hindered by: Critical part shortages, high change traffic, difficult/inefficient work (Out of Station/Out of Sequence/Work-Around Plans, metrology, etc.), integration of flight test instrumentation, etc.), late and/or constant rework of planning and tooling issues/availability. In order to have a positive impact on overall throughput ("roll-out"), LM Aero 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.

The Joint Process Review (JSF Wing Special Tooling) that was completed September 11-18, 2008 (in order to determine the suitability, adequacy and effectiveness of Lockheed Martin's JSF Wing special tooling storage and control processes/procedures) will undergo verification on the shop floor over the next several weeks. Once this is complete, the JPR team will close the review. Two new JSF process reviews are planned for 2009 and will be announced once schedules are solidified.

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 (2 Feb 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 flight line. This table is provided to better align the data to the new PCs as well as a major milestone (Rollout) for LMFW.

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	123	119	96.7%	27.0% (18 Dec 07)
BF-2	121 ¹	114	94.2%	52.1% (16 Aug 08)
BF-3	124 ¹	34	27.4%	
BF-4	138 ¹	41	29.7%	29.0%(1/21/09)
AF-1	116 ¹	43	37.1%	
AF-2	108	18	16.7%	
AF-3	114 ¹	21	18.4%	2/12/09
CF-1	99	7	7.1%	4/10/09
CF-2	92 ¹	5	5.5%	6/24/09

¹ New SCOPs added this reporting period

This table is provided to track Wing specific SCOP testing prior to move to Mate and percent of testing completed prior to factory rollout. Please note that BF-4 has left the factory floor and moved to the Fuel Barn during this reporting period.

SCOP Completions on Wing Assemblies

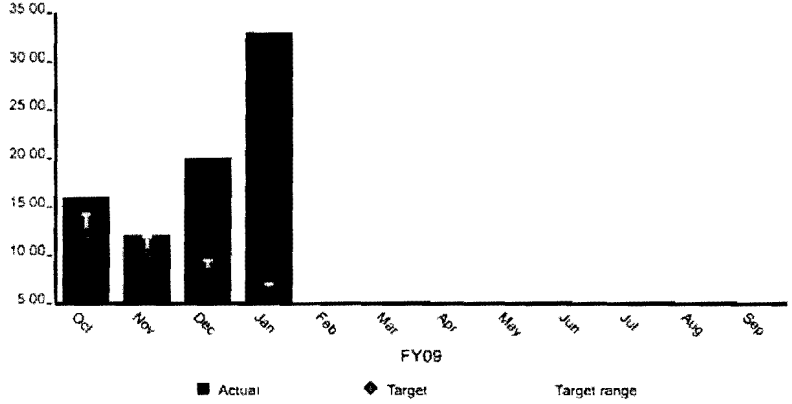
Test Article	Total SCOPs Planned to Date	%Complete (No. SCOPs Completed)	% Complete prior to Move to Mate (Assy Move Date)	% Complete prior to Rollout	Max Calendar Day Behind MS 6.1
BF-1	15	100% (15)	0%(5/30/07)	40% (6)	-168
BF-2	18	100%(18)	0%(9/11/07)	83.3% (15)	-216
BF-3	18	50.0%(9)	0%(12/16/07)	-	-191*
BF-4	19	47.3%(9)	0%(3/3/08)	31.6% (6)	-169*
AF-1	16 ¹	68.7%(11)	0%(3/27/08)	-	-176*
AF-2	14	28.5%(4)	0%(6/13/08)	-	-148*
AF-3	15	26.7%(4)	0%(8/1/08)	-	-89*
CF-1	13	0%(0)	0%(11/17/08)	-	-59*
CF-2	12	0%(0)	-	-	+48*

¹ New 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.

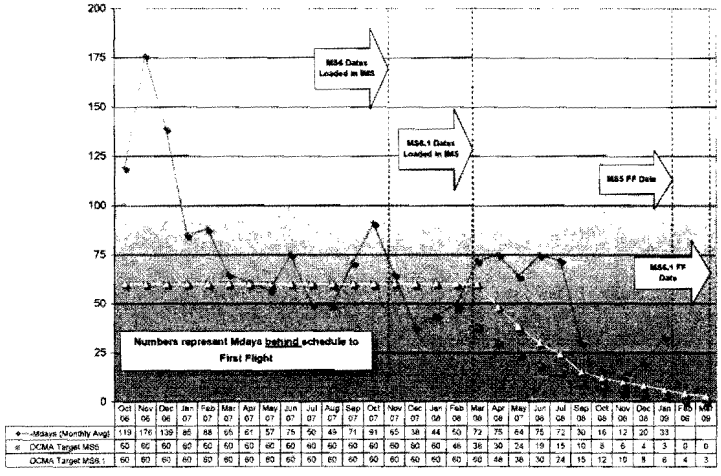
NSF198AJ05 Sub-Metric: Description: Reduce monthly average of negative float manufacturing days (Mdays) of key variant First Flight dates over baseline aircraft's (AA-1) delayed (~80Mdays) First Flight date. BF-4 (STOVL - Mission Systems Article) targets a 50% reduction in negative float over baseline, 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 LMFW F-35 BF-4 First Flight Date

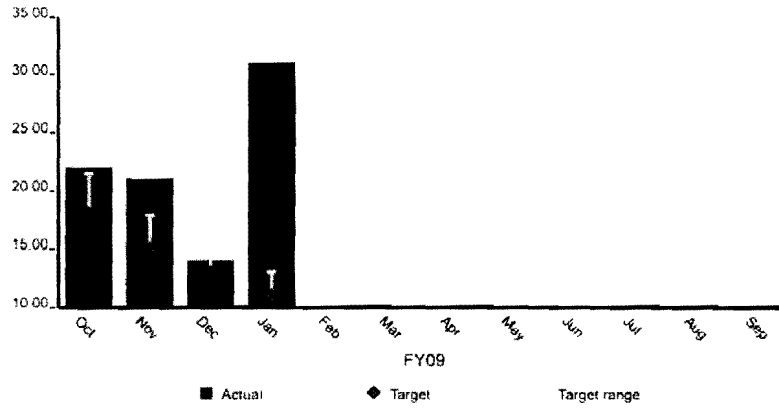


BF-4 sub-metric is rated Red, with a January average of 33 Mdays late to first flight date of 24 Mar 09. BF-4 baseline rollout was 21 Oct 08 – rollout occurred on 21 Jan 09. Projected first flight is now June as of 7 Feb 09. An additional build period is required to complete the aircraft.

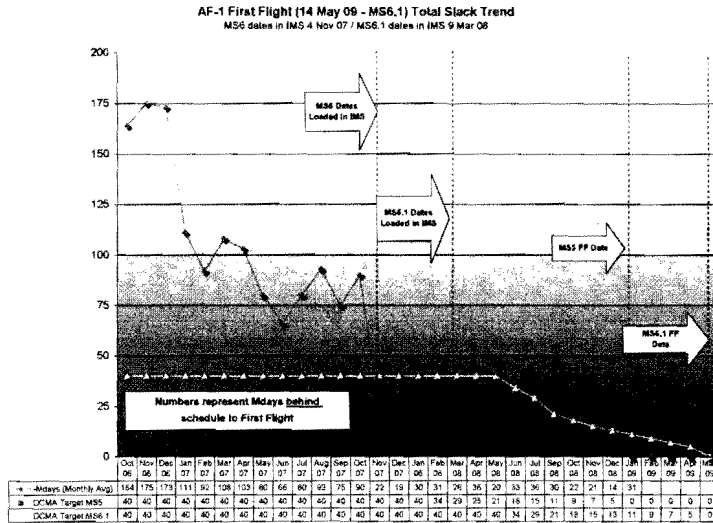
BF-4 First Flight (24 March 09 - MS6.1) Total Slack Trend
MS6 dates in IMS 4 Nov 07 / MS6.1 dates in IMS 9 Mar 08



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

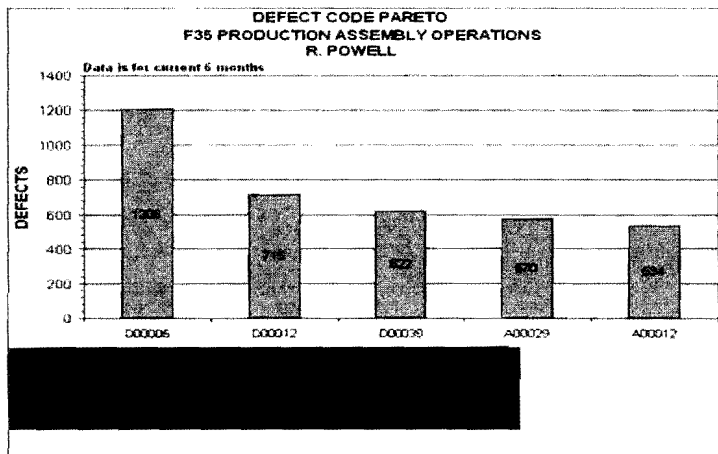
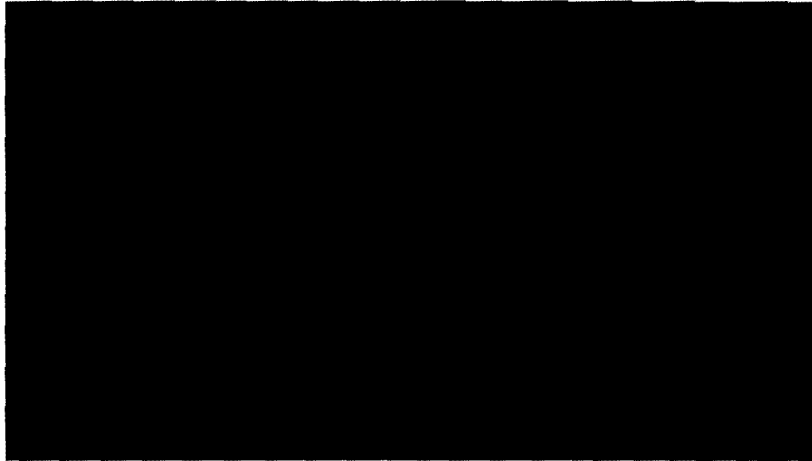


AF-1 sub-metric is rated Red, with a January average of 31 Mdays late to first flight date of 14 May 09. Baseline rollout date was 25 Nov 08 – aircraft rolled on 5 Feb 09.



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 18.333 MR defects per 1000 HRS for FY 09.

Summary of Metric Status: Metric illustrates improving trend that has been maintained for the last 12 months.

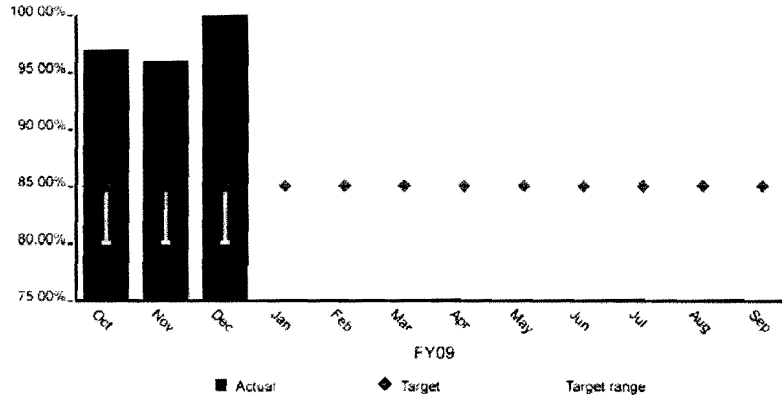
DCMA Actions: Reducing the goal to reflect an effort to further reduce the amount of MRB actions for this year.

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

Safety of Flight (SoF)

PC – NSF198AJ01: Description: Measures contractor performance in passing Safety of Flight inspections on the first attempt. It is a measure of quality where the target is 85%. Normally, SoF metrics measure the number of SoF escapes to the customer. The F-35 program is not yet delivering to the customer; therefore, we are measuring the contractor's learning curve in presenting to DCMA defect free products in SoF designated areas. Formal SoF implementation was June 2007 – a traditional SoF metric based on customer reported escapes will be adopted once delivery of aircraft begins. 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: >85%, Yellow: 80%-84%, Red: <79%.

YS-AJH DCMA LMFW F-35 NSF198AJ01 Main SoF Insp 1st time pass



Metric Status: Green

Trend: No Change

Summary of Metric Status: New metric in development – will be reported next month.

Improve Software Productivity

PC – NSF198AJ07:

[Redacted]

[Redacted]

Metric Status: Green

Trend: Improving

Summary of Metric Status: Current performance is exceeding our target of 83% - the value this month is 91.06% which is an improvement over last months value of 88.77%.

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).

- System Build Process
- Reducing the amount of effort spent working SPAR RWP's

DCMA Actions: DCMA-LMFV Report and Exec Summary-January 2008 – DCMA met with the contractor to discuss SPE Process Review findings and planned corrective actions. Robustness testing is included in DCMA's discussions with LM Aero as it applies to the SPE process and review of CSCI and unit test artifacts. Additionally there were some discussions about Robustness Testing described in the AS SDP and what organizations are involved to develop robustness test cases and results. DCMA is in process of developing an IWP process review checklist and also plans to discuss/coordinate with the contractors Quality and Mission Success team to incorporate contractor audit checklist.

DCMA [REDACTED] [REDACTED] – [WBS 1422 – External Communications Domain] – This month's report documents software development status (i.e. progress) made in several areas which include [REDACTED]. In reference to specific DCMA process related activities there were no significant updates to report. Issues/concerns that may be related to process execution mentioned in this month's report include requirements interface problems, uncoordinated interface changes, and requirements re-work.

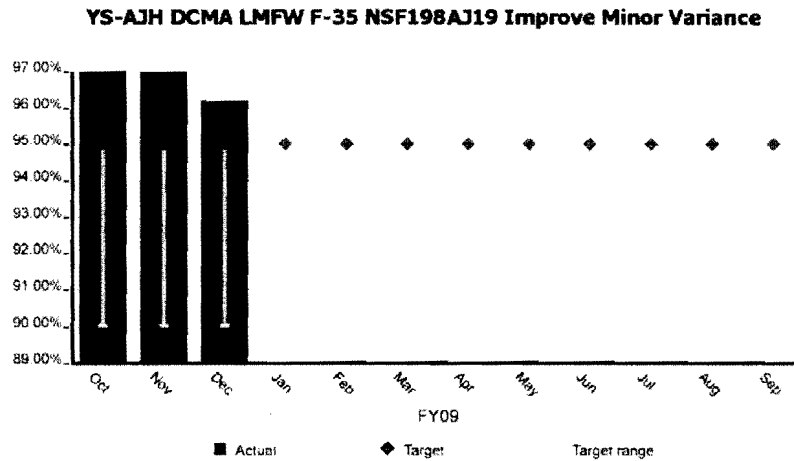
DCMA [REDACTED] [REDACTED] – [WBS 1424 – Mission Domain] – DCMA is currently trying to comprehensively characterize and validate the reasons for SLOC growth which involve [REDACTED]. At present DCMA is looking at a new metric (Defect Phase Containment) to support analysis of this matter. Issues/concerns that may be related to process execution mentioned in this month's report include rework time / SPAR's, JADE inefficiencies due to difficulty of running file models and missing messages in configuration files.

DCMA [REDACTED] [REDACTED] – [REDACTED] – Integrated Core Processor (ICP)] – DCMA is meeting regularly with the Problem Report monitor and Program Manager to discuss the status of these PR's and their plan to resolve them. They are aware that some of these have been open for awhile and are making them a top priority (See chart below). We also attend the weekly PR status meeting. I feel that as a result of the communication between DCMA and [REDACTED] has redirected more attention towards these High Problem Reports. It was verified that each PR has a person assigned to it; age and status of PR are being monitored closely and discussed at the weekly meeting.

Estimate when PC will achieve goal: Current performance exceeds target and the trend is improving.

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: Degrading

Summary of Metric Status: The contractor had a correct classification rate of 96.2% this month – goal is to maintain at or above 95%.

Root Causes: No root causes identified at this time

Contractor Actions: No contractor actions required at this time until root causes can be identified.

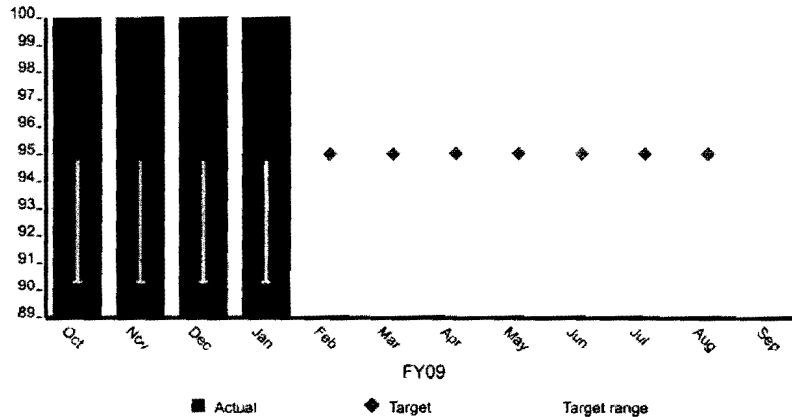
DCMA Actions: Continue to review Minor Variances for correct classification and to work with the contractor to determine root causes of incorrect classifications. Ensure the contractor takes the necessary corrective actions to preclude any incorrect classifications in the future.

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 LMFW F-35 NSF198AJ20 Improve FCA/PCA



Metric Status: Green

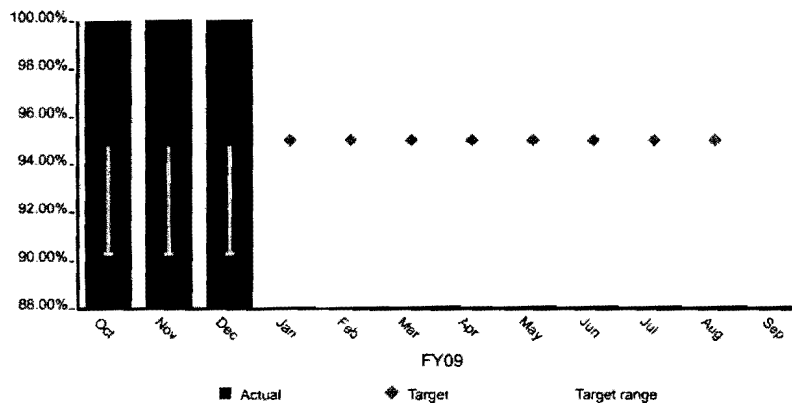
Contractor Actions: Meetings with DCMA personnel.

DCMA Actions: Review of contractor processes. Incorrect part numbers found on QARS - [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 on 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: $\geq 90\%$ to $\leq 95\%$, Red: $< 90\%$.

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

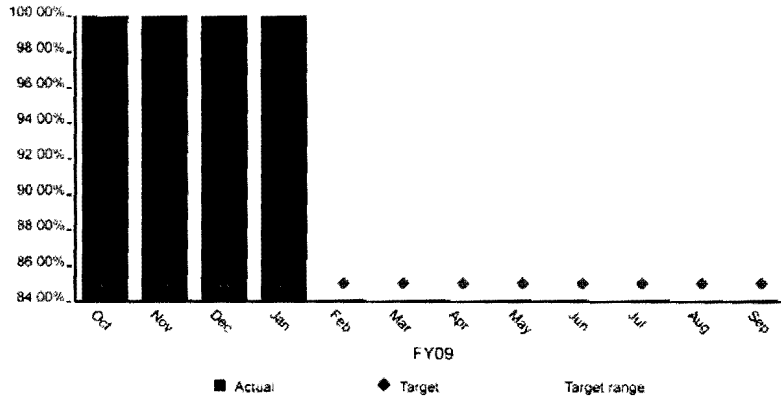


Metric Status: Green

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

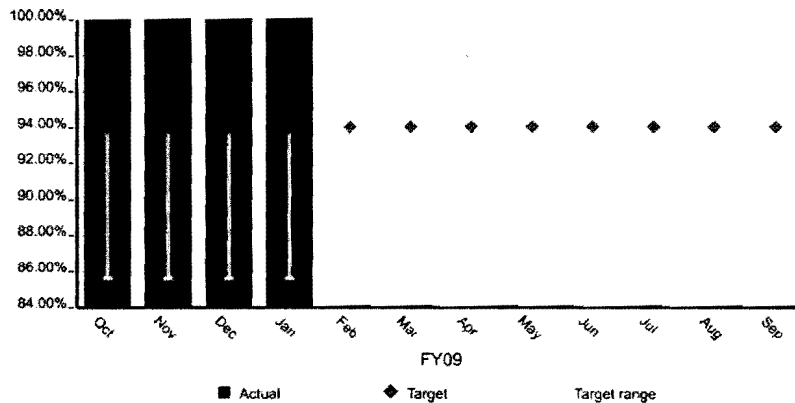


The performance commitment is rated Green for this period.

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%.

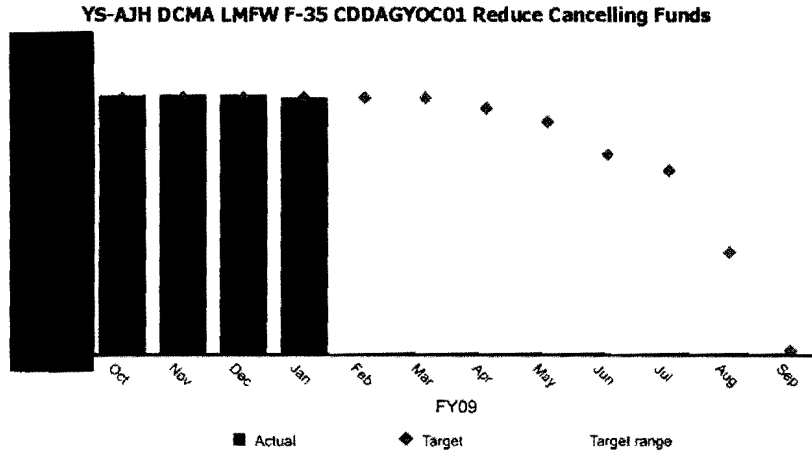
YS-AJH DCMA LMFW F-35 CDDAGYOC02 Main FAR Req for K Closeout



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