

Joint Strike Fighter – Lightning II Monthly Assessment Report

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



June 2009

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Program Summary

Flight Test: As of this report, AA-1 local flights are planned to resume the week of 22 Jun 09. IPP/engine runs for BF-1 are scheduled for 29 Jun 09. BF-2 IPP/engine runs are intended for 26 Jun 09, followed by its second planned flight on 1 Jul 09. ITF currently projects engine runs on AF-1, BF-3 and BF-4 sometime in August.

| SDD/LRIP Production Status (As of 31 May 09) | |
|---|---|
| Forward Fuselage | 12 – Assembly 10 – Mate/Sub-Systems/Final |
| Center Fuselage | 15 – Assembly/On-Dock 10 – Mate/Sub-Systems/Final |
| Aft Fuselage | 9 – Assembly/On-Dock 9 – Mate/Sub-Systems/Final |
| Wing | 11 – Assembly 10 – Mate/Sub-Systems/Final |
| Fuselage Structure Mate (EMAS) | 5 – (BF-5, CF-3, CF-2, BH-1 & CJ-1) |
| Final Assembly/Sub-Systems/Systems Test/Labs | 8 – (CG-1, CF-1, AF-2, AF-3, BF-3, AG-1 AJ-1 & BG-1) |
| Field Ops/Ground Test/ITF | 5 – (AA-1, BF-1, BF-2, AF-1 & BF-4) |

The Program has surpassed one year since the revised Program Master Schedule (6.1), which established an Over Target Baseline for cost and schedule, was implemented. As of this report, the remaining ten SDD flight aircraft are an average of ~6 months behind schedule to their initial flights, while the remaining three SDD non-flight aircraft are an average of ~4 months behind schedule to their build completion dates. BF-4, BF-3, AF-1 and AF-3 have all missed their MS 6.1 first flights. CG-1 and AJ-1 have missed their build completion dates. An initial improvement in overall SDD planned versus actual activity completion performance was observed in May 2008 when MS 6.1 was implemented into the schedule, however; this performance has averaged an ~40% completion rate over the last six months. As of month end April 2009, the LRIP 1 aircraft are an average of ~2 months behind schedule to their DD-250 delivery dates, while the LRIP 2 aircraft are an average of ~1 month behind. Current schedule variance to baseline finish performance of key build activities for AF-6 and AF-7 indicates slight improvements in Forward Fuselage completion, but negative trends in Wing move-to-Mate and aircraft rollout completions.

Further behind schedule position is imminent. As of this report, an assessment of CR's, traveled/out-of-station work, and their impact schedule is on-going. LM Aero continues to work towards the establishment of program and company initiatives related to part shortages and out-of-station work.

Production inefficiencies continue to result in substantial out of station tasks being accomplishing at Mate, Final Assembly and Flight operations. Movement of manufacturing tasks to the Flight Operations environment significantly increases the potential for build nonconformance and cost escalation (as well as the control of additional personnel, tooling, parts movement/tracking, work-in-process, visibility into impending changes, etc). LM Aero has established focus teams in efforts to mitigate current issues as well future challenges.

DCMA review of F-35

requirements as it does not assure interchangeability of aircraft structures that are classified IA. The aforementioned document changes scope and intent of the underlying process and was not coordinated with or approved by DCMA Division Administrative Contracting Officer as required by LM-Aero Functional Directive (FD) 938.

As a result, [REDACTED]

Interchangeability/Replaceability (I/R): [REDACTED]

[REDACTED] (Center): The SDD Center Fuselage production phase for PMC has completed. AF-7 is complete and is awaiting a LM Tooling Accessory (TOAC) for shipment as of this report. The production line continues to remain compressed, but NGC has expended the effort to maintain production flow. Year to date, assembly operations have average a 31% overtime rate (down from 37% last month). Late parts have been extremely disruptive to assembly operations creating inefficiencies.

[REDACTED] Input: Center Fuselage deliveries continue to be impacted by delay in return of [REDACTED] TOACs by LM Aero. TOACs are required for final jig removal and shipment.

[REDACTED] (Aft/Empennage): Two complete Aft Fuselage assemblies were shipped in May (BH-1 & CJ-1). Based on MS6.1, sixteen HT and VT assemblies are scheduled for delivery in 2009 – [REDACTED] are now 6 sets behind the contractual delivery dates; 2 sets behind their VT recovery plan; and 3 sets behind their HT recovery plan. Recovery to contract schedule is still projected by April 2010. Aft Fuselage deliveries for SDD are now complete. Thirteen Aft Fuselage assemblies are scheduled for delivery in 2009 – [REDACTED] are now only 3 sets behind the contractual delivery dates; 2 sets behind their current recovery plan. [REDACTED] projects recovery to contract schedule by September 2009.

[REDACTED] are closely tracking their performance on [REDACTED] part fabrication due to impacts on the assembly line schedule. Eighty-five parts for the Aft Fuselage, Vertical and Horizontal Tails are being monitored for progress to their Recovery plan as well as MS6.1. The majority of parts are 3-6 months late to schedule, and current projections show recovery will not occur before November. Various issues are being addressed.

[REDACTED] Supply Chain Management: [REDACTED] will issue a Corrective Action Request (CAR) due to the lack of response from [REDACTED] personnel on supplier quality data. [REDACTED] has requested numerous updates and data for the SCM process and asked to be included on [REDACTED] monthly meetings since November 2008. To date, little or no response has been received. This does not allow [REDACTED] to meet letter of delegation requirements.

TFE: [REDACTED] There is still an issue regarding Certificates of Conformity (CoC) within the Receiving Process. [REDACTED] was granted a six month window to resolve the lack of CoC's accompanying items supplied from companies who do not hold an export license. This agreement lapsed in October 2008. [REDACTED] has provided the MOD and DCMA a copy of their proposed procedure. This procedure is currently under review by the MOD and comments will be provided at the next DQAFF Quality Meeting.

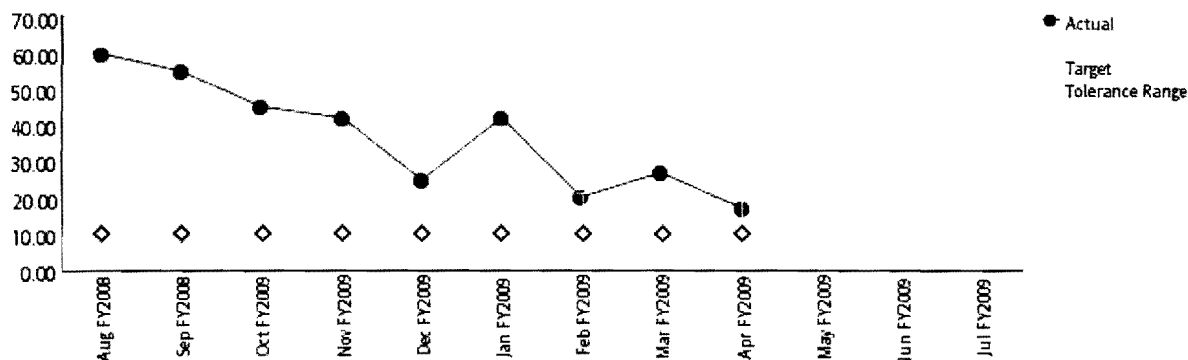
Report Scope

The Joint Strike Fighter – Lighting II Monthly Assessment Report (MAR) is focused on reporting the status of Customer Outcomes and associated Performance Indicators 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 Indicator | 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% | |

Maintain LRIP Aircraft Delivery Rate

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.



Metric Status: Yellow

Trend: Improving (Note: Trend degradation due to pending CR assessment and out-of-station tasks is imminent).

Summary of Metric Status: Metric is -17 Mdays for month end April.

Root Causes: AF-6 critical path driver is the 0.5-v05.100 FCR being received late from SDD. A F-7 driver is the [REDACTED] BF-5 Assembly Jig unloading late. LRIP 2 impacts to the metric average are: A F-9 Leading Edge Flap assembly (Palmdale), AF-11 [REDACTED] build-up, BF-6 [REDACTED] pre-assembly and BF-7 [REDACTED] build-up.

Aft Component Assembly – [REDACTED] proposed 75 Mdays Assembly Span Time (AST) for each Aft Assembly through LRIP 2. [REDACTED] is not meeting the 75 Mdays AST – instead averaging 124 actual Mdays AST per Aft. The late line completions are the result of jig availability, intensive gauging process, increased line yields required to makeup for late starts, late interdivisional (composites) parts delivery to the production line and engineering changes.

According to Recovery Schedule – SOP7 Issue 3, [REDACTED] will be Green to the purchase order delivery schedule, MS6.1 by 2AF:0012 (LRIP 2) on 14 Sep 09. This will be a very difficult to accomplish based on historical actuals. DCMA-NE projects AF-12 Aft delivery early 2010.

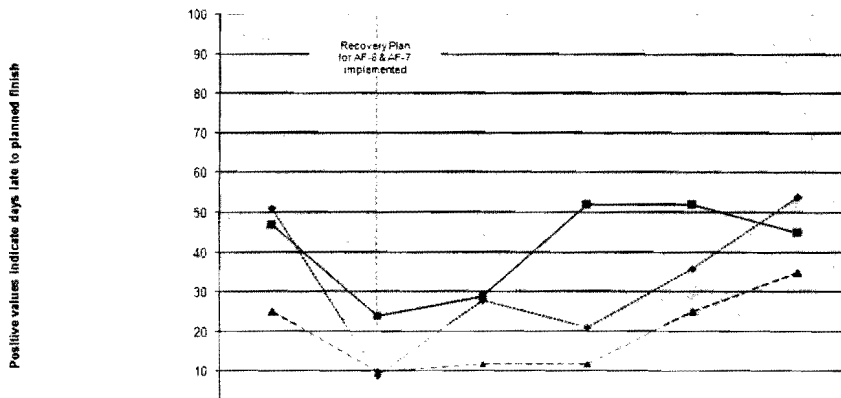
Empennage Component Assembly – [REDACTED] proposed 60 Mdays Assembly Span Time (AST) for each VT and HT assembly, starting with CF-2 to the remainder of SDD. LRIP 1 and 2 were proposed at 56 Mdays AST – instead averaging 94 Mdays AST per VT and 90 Mdays AST per HT. The late line completion challenges mirror those of the Aft. According to Recovery Schedule – SOP7 Issue 3, BAES will be Green to the purchase order delivery schedule by early LRIP 3 – there is no margin for error.

Contractor Actions: Mitigation activities such as the selective use of overtime, minimum spans on each SWBS, and out of station installations for late parts for the abovementioned drivers continues.

As of month end April 2009, the LRIP 1 aircraft are an average of ~2 months behind schedule to their DD-250 delivery dates, while the LRIP 2 aircraft are an average of ~1 month behind.

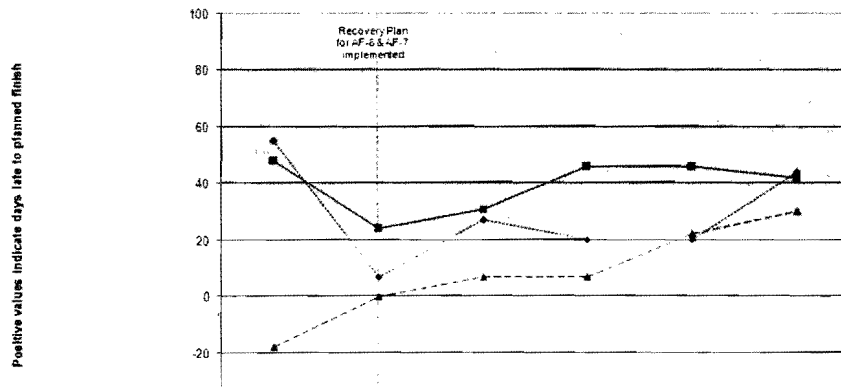
Current schedule variance to baseline finish performance of key build activities for AF-6 and AF-7 indicates slight improvements in Forward Fuselage completion, but negative trends in Wing move-to-Mate and aircraft rollout completions.

AF-6 Finish Variance Performance



April 2009 end-of-month data – colors based on higher level aircraft delivery metric

AF-7 Finish Variance Performance



DCMA Actions: DCMA F-35 Interdisciplinary Team members focused on Product Discipline (PD) as part of the Process Integrity (PI) Wing AS9100 audit during 12-13 May 2009. The purpose was to verify that F-35 Wing Assembly is performing Product Discipline requirements as the program concurrently transitions through SDD and LRIP.

Product Discipline [REDACTED] – The self-control required to perform assigned tasks as prescribed by the company directives, processes, and practices, thereby ensuring the production of quality products in a safe and well-managed workplace. Key elements such as Material Handling and Storage, FOD Prevention, Chemical Control and Housekeeping are to be monitored to ensure a healthy product discipline program. Product discipline also encompasses 6S sustainment.

6S Objective [REDACTED] – Visual Order ensuring that everything is in its place and there is a place for everything; that everything needed to perform a task is visible, labeled, and located within easy reach; that the workplace is organized, safe, makes work easier, and is more understandable.

DCMA has shared its observations with LM Aero PI – the final audit report is pending.

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

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 for AF-6 through AF-10 are annotated below. Fifteen (15) SCOPs have had planning formally released against aircraft AF-6, fourteen (14) against AF-7, thirteen (13) against AF-8, twelve (12) against AF-9 and nine (9) against AF-10. This is the first month that formal testing has been recorded on LRIP aircraft.

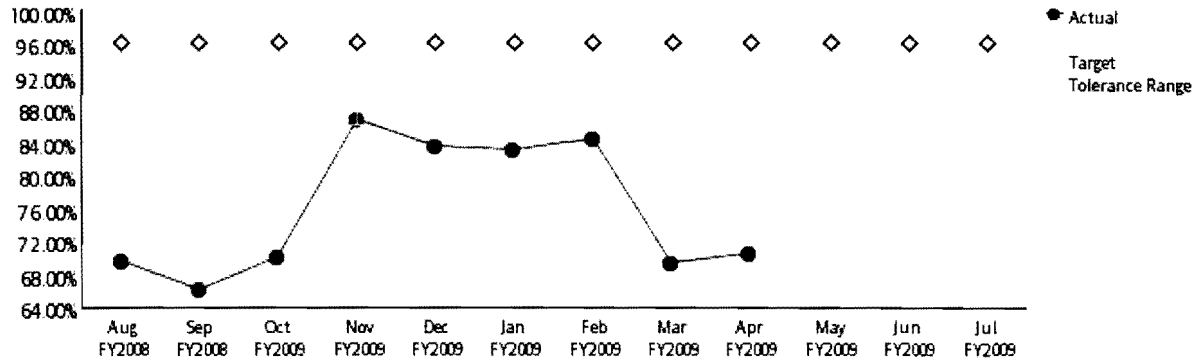
SCOP Completions per Aircraft (A/C)

| Aircraft Effectivity | Baseline Finish Date (SWBS 240) | Total SCOPs Planned | SCOP Completed | %Complete (Total A/C) | % Complete prior to Rollout |
|----------------------|---------------------------------|---------------------|----------------|-----------------------|-----------------------------|
| AF-6 | [REDACTED] | 92 | 2 | 2.15% | Est. Oct 09 |
| AF-7 | [REDACTED] | 92 | - | - | Est. Nov 09 |
| AF-8 | [REDACTED] | 92 | - | - | Est. Dec 09 |
| AF-9 | [REDACTED] | 92 | - | - | Est. Jan 10 |
| AF-10 | [REDACTED] | 92 | - | - | Est. Feb 10 |

Currently 100 SCOPs and 12 AEI’s (Aerospace Equipment Instructions) are formally released against the above aircraft.

Improve Supplier Delivery Rate

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%.

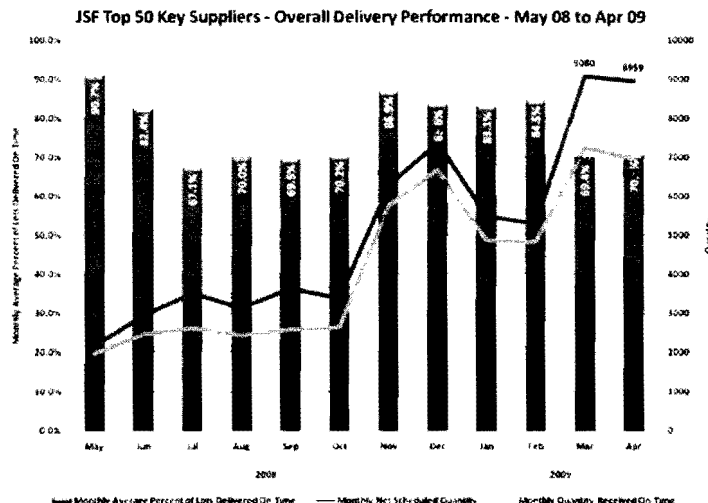


Metric Status: Red

Trend: Improving

Summary of Metric Status: The delivery rate improved 1.1% to a monthly average of 70.5% following a steep decline the previous month.

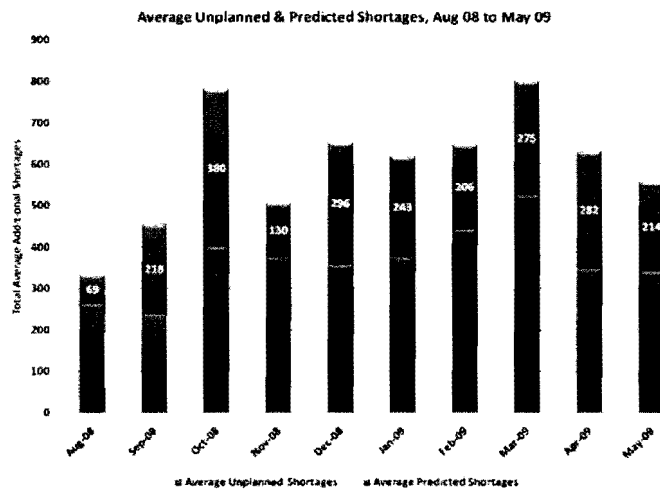
The chart below shows the overall delivery performance over the past 12 months for the top 50 DCMA JSF Key Suppliers. The blue vertical bars represent the monthly average percent of lots delivered on-time. The upper red line represents the monthly net scheduled quantity of parts which were to be delivered 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, and Bill of Material errors (30% of total shortages).

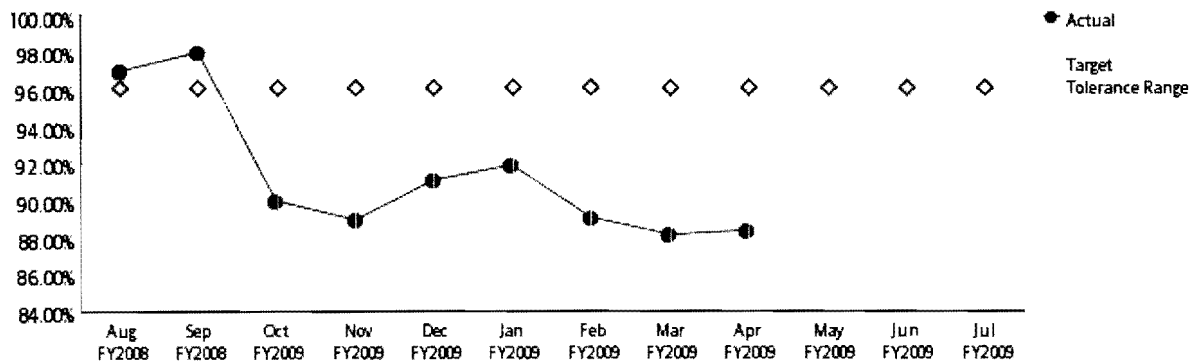
Contractor Actions: To correct the negative delivery performance, Lockheed Martin has now deployed a total of 41 Supply Chain Managers to focus suppliers with the intent of deploying 6 more in June. Additionally, they initiated a "Change War Room" to directly address the negative impact of engineering 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. DCMA Lockheed Martin Fort Worth is continuing their 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." As shown in the chart below there was improvement in both unplanned and predicted shortages, however the overall amount of a dditional shortages remains high and negatively impacts the overall supplier delivery rate.



Improve Supplier Quality Rate

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%.

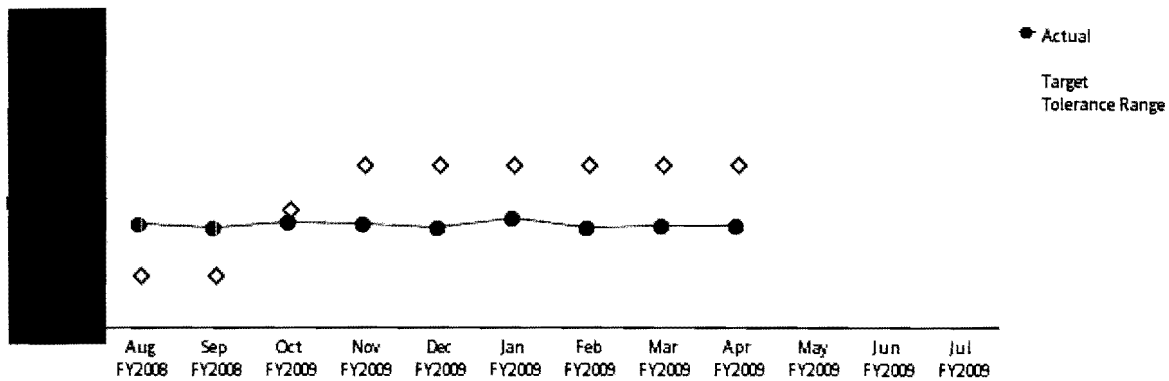


Metric Status: Yellow

Trend: Improving

Maintain Cost and Schedule

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%).



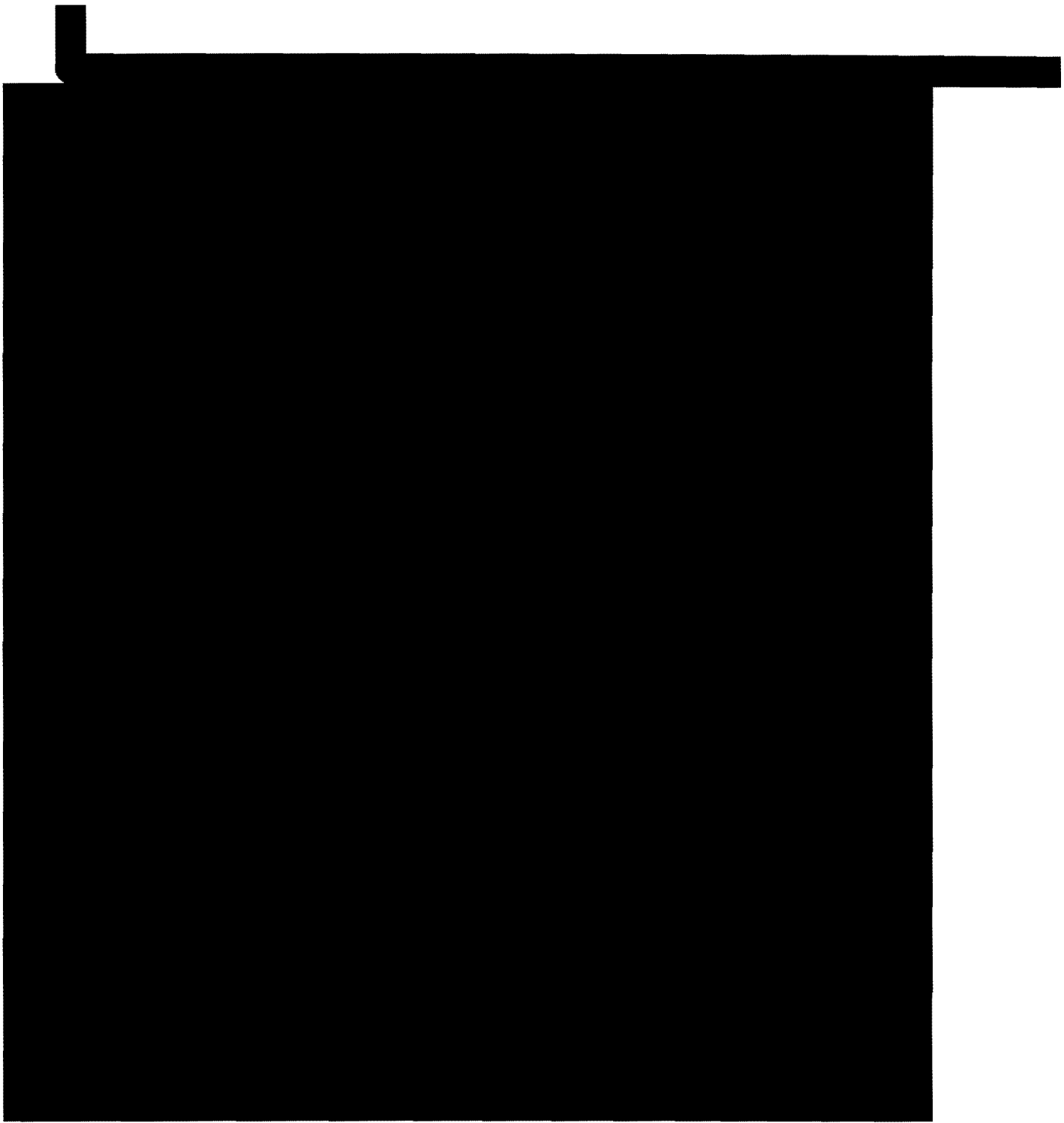
Metric Status: Green

Trend: Degrading

Summary of Metric Status: DCMA's IEAC is 5.3% over LM Aero's BAC

Lockheed Martin is now reporting to an Over Target Baseline of [redacted] reported in the April 2009 Cost Performance Report (CPR). DCMA IEAC is [redacted] for the SDD contract. This DCMA IEAC is based upon the April 2009 CPR report. LM Aero has expended an average of [redacted] per month over the last six months. Assuming a continuation 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 close to 4.6% of Estimate-to-Complete based on April 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, etc. the DCMA IEAC totals [redacted] v.s. the LM Aero BAC of [redacted] and is [redacted]. The graph below illustrates the DCMA's past projections of IEAC against LM's BAC and LRE.



The April 2009 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 | | | | |
| 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% |
| | | | | | | 7.7% | | 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 7.7 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 –

- SDD Baseline Execution Index (BEI): Cumulative tasks from October 2001 thru May 2009: Cum BEI = 140,600 Completed Tasks/143,992 Planned Tasks = 0.98
- SDD Monthly (May 2009) Tasks: 577 Completed Tasks vs. 1438 Baselined to Complete Tasks
- SPI (since replan) = BCWP/BCWS= 0.972
- SDD CPLI = (1346 + (12)/1346 = 0.99 (Time Now = 31 May 09)
- CPI (since replan) = BCWP/ACWP= 0.956
- CPI/TCPI = 0.956/1.035= .923
- Contracts Mods – (BAC now)/original BAC 10/01 = [REDACTED] / [REDACTED] = 1.40

The DCMA Risk Rating for EVMS at the total program level is rated Yellow using the agreed to parameter of VAC (-4.52%).

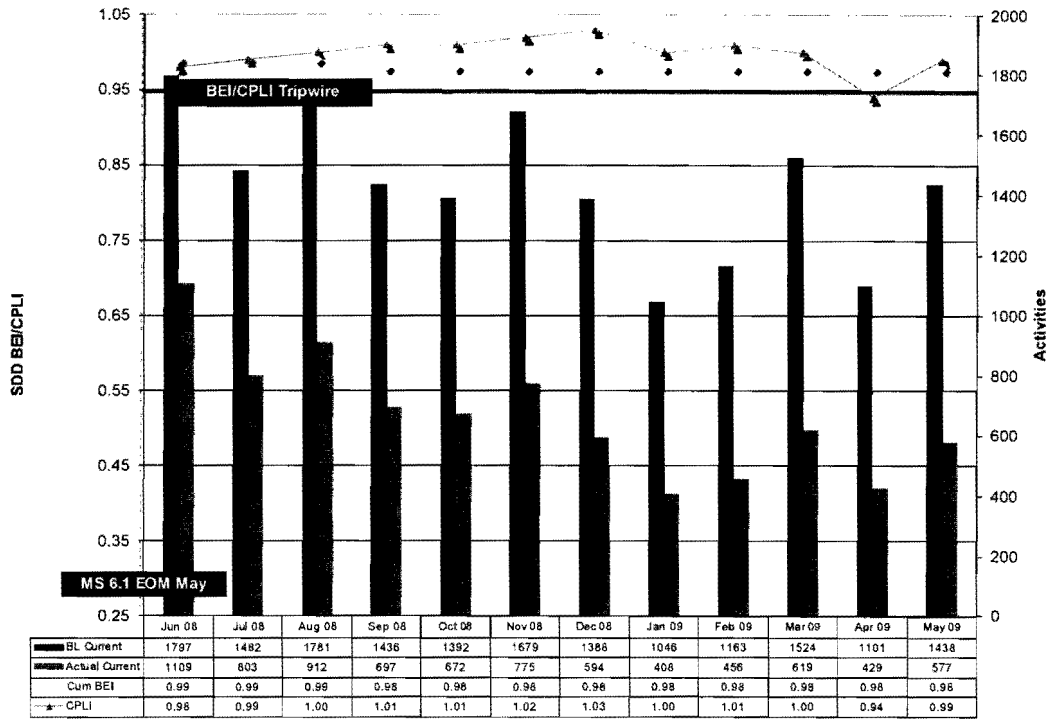
Similarly, the TCPI_{EAC} is different when using the DCMA IEAC versus the contractor's EAC:

$$\begin{aligned} \text{TCPI}_{\text{DCMA IEAC}} &= 0.893 \\ \text{TCPI}_{\text{LM EAC}} &= 1.035 \end{aligned}$$

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

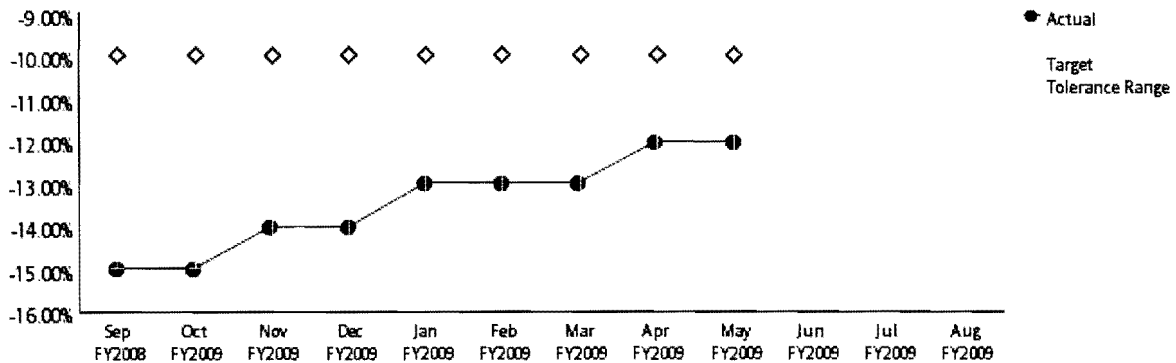
SDD Baseline Current vs. Actual Current Finishes/Month
Program Cum BEI / CPLI Trend



Cumulative SDD Program BEI and CPLI sub-metrics are rated Green. Cum BEI is at .98 and CPLI is at .99 for month end May 2009. MS-6.1 baseline replan dates were incorporated into the IMS month-end May 2008.

Reduce Schedule Variation

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.



Metric Status: Y yellow – Performance Indicator is rated Yellow this period with a current overall Wing average touch labor variance to schedule at -12%.

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 -12% variation average metric. The Wing has gradually reduced their out of station tasks traveled 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. DCMA does not include “ground” aircraft performance in its variance calculations.

Late component deliveries to Mate are significant drivers impacting Mate schedule variances. Part shortages continue to create significant negative schedule. Some data adapted from program Format 5 CPR report.

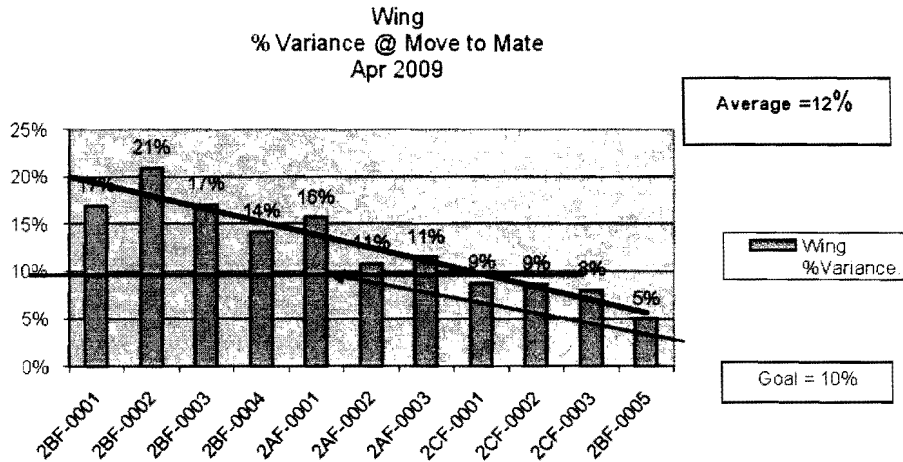


Chart 1

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. Mate thru Delivery build performances continue to be under pressure to meet schedule requirements. Mate’s cost and schedule variances continue to be impacted by critical part shortages, high change traffic, difficult/inefficient work (out-of-station/out-of-sequence, integration of flight test instrumentation) BOM (bill of material) accuracy, late and/or constant rework of planning and tooling issues/availability. Some data adapted from program Format 5 CPR (Apr 2009) 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.”

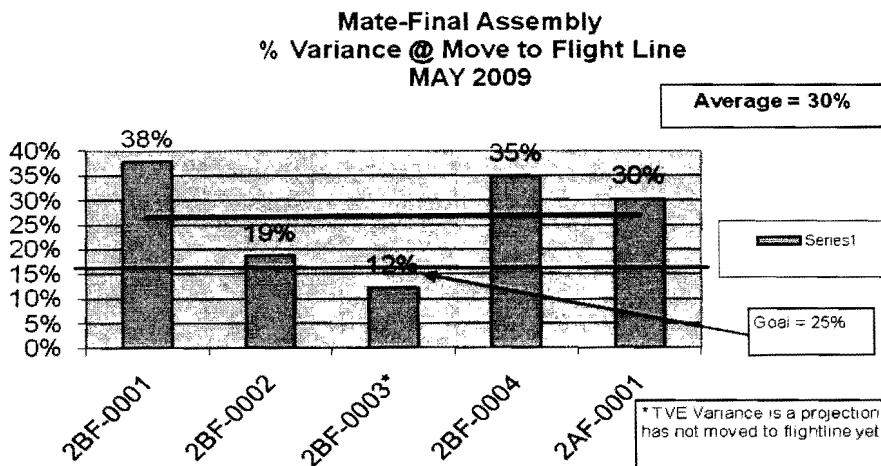


Chart 2

Root Causes: Late Wing component deliveries to Mate, final System Checkout and Flightline are the significant drivers impacting Mate schedule variances. Performance continues to be impacted by part shortages, high change traffic, difficult/inefficient work (out-of-station/out-of-sequence, part and tool locating via metrology, integration of flight test instrumentation) BOM (bill of material) accuracy and late and/or constant rework of planning.

Contractor Actions: The WAM (Wing at Mate) Team is working with the Mate team to mitigate the planned out of station work schedule impact to Mate through communication of the impacts to the daily assigned tasks and being able to capture these in crew boards for Wing sequence issues. Also working with Planning to release planning on time to support installation activities in order to reduce the out of station work from Forward and Wing to improve ability to support Mate activities.

DCMA Actions: Regular interface with LM 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 A/C, the number of SCOPs completed as of this reporting period (3 May 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)

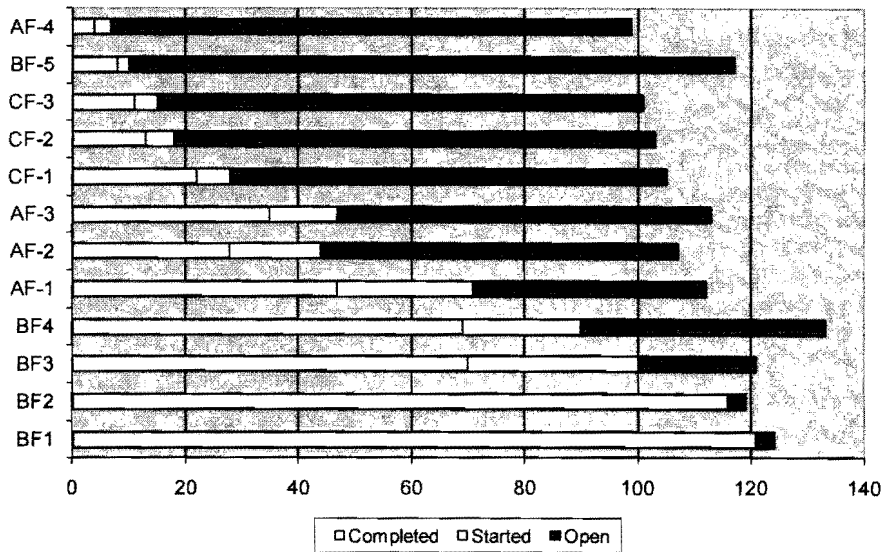
| Test Article | Total SCOPs Planned | SCOP Completed | %Complete (Total A/C) | % Complete prior to Rollout |
|--------------|---------------------|----------------|-----------------------|-----------------------------|
| BF-1 | 124 | 121 | 97.6% | 28.0% (18 Dec 07) |
| BF-2 | 119 ¹ | 116 | 97.48% | 51.6% (16 Aug 08) |
| BF-3 | 121 ¹ | 70 | 57.85% | |
| BF-4 | 133 ¹ | 69 | 51.88% | 30.8% (1/21/09) |
| AF-1 | 112 ¹ | 47 | 41.96% | 38.1% (2/5/08) |
| AF-2 | 107 ¹ | 28 | 26.17% | |
| AF-3 | 115 ¹ | 35 | 30.43% | |
| CF-1 | 105 | 22 | 20.95% | |
| CF-2 | 103 | 13 | 12.62% | 6/24/09 |
| CF-3 | 100 ¹ | 11 | 10.89% | 7/1/09 |
| BF-5 | 117 | 8 | 6.84% | 7/27/09 |
| AF-4 | 98 | 6 | 6.12% | 10/6/09 |

¹ Newly released SCOPs added to effectivity during this reporting period

² SCOPs removed from the effectivity during this reporting period

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.

SDD SCOP Completions - Aircraft



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.

[Redacted text]

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 Rollout | Avg Days Behind MS 6.1 (for Completed Tests) |
|--------------|-----------------------------|---------------------------------|-----------------------------|--|
| BF-1 | 15 | 100% (15) | 40% (6) | -170 |
| BF-2 | 18 | 100%(18) | 83.3% (15) | -216 |
| BF-3 | 18 | 66.7%(12) | - | -226* |
| BF-4 | 19 | 68.4%(13) | 42.1% (8) | -221* |
| AF-1 | 15 | 73.3%(11) | 68.8% (11) | -176* |
| AF-2 | 14 | 50.0%(7) | - | -161* |
| AF-3 | 16 | 68.8%(11) | - | -146* |
| CF-1 | 18 | 27.8%(5) | - | -118* |
| CF-2 | 17 | 17.7%(3) | - | -96* |
| CF-3 | 18 | 0%(0) | - | - |
| BF-5 | 17 | 0%(0) | - | - |
| AF-4 | 17 | 0%(0) | - | - |

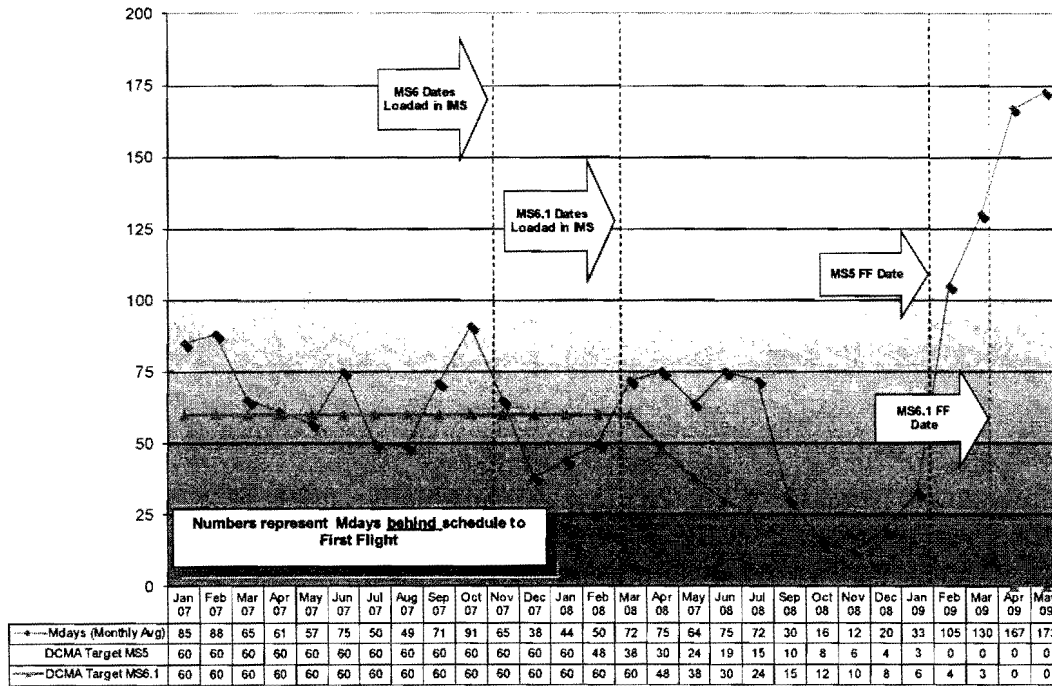
¹ New wing specific SCOPs added this reporting period

* 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).

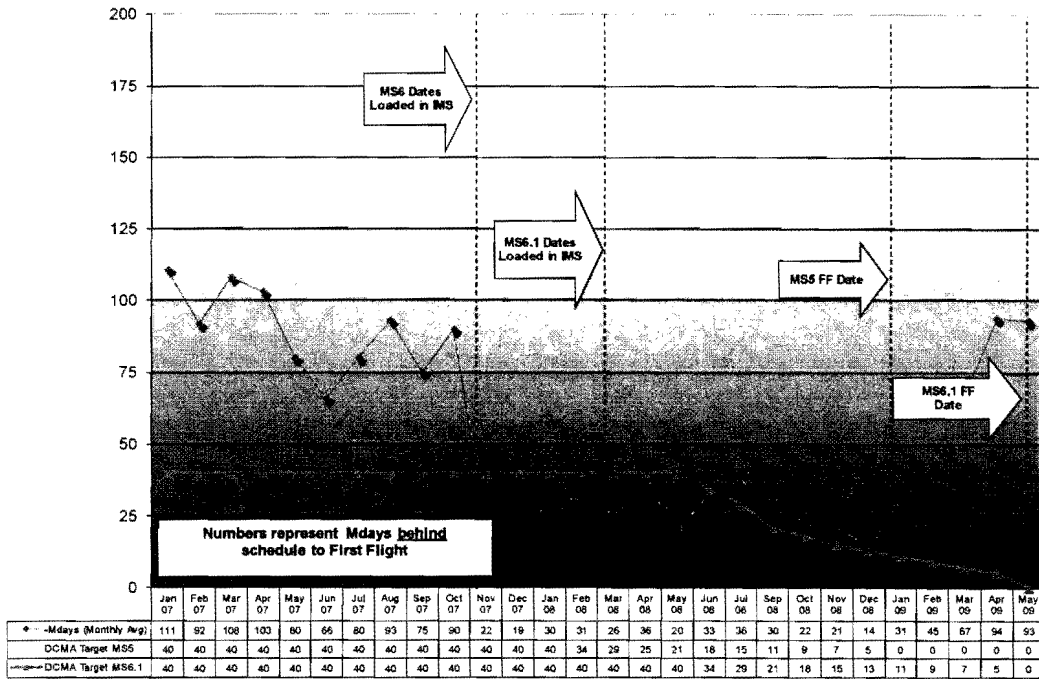
BF-4 First Flight (24 March 09 - MS6.1) Total Slack Trend

MS6 dates in IMS 4 Nov 07 / MS6.1 dates in IMS 9 Mar 08



BF-4 sub-metric is rated Red, with a May average of 173 Mdays late calculated to MS 6.1 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 October as of 7 June 09 – additional build period to complete the aircraft continues.

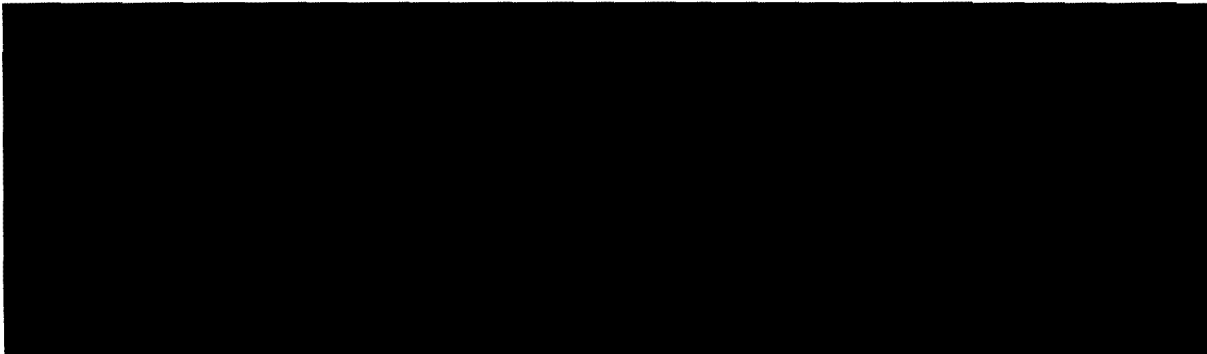
AF-1 First Flight (14 May 09 - MS6.1) Total Slack Trend
 MS6 dates in IMS 4 Nov 07 / MS6.1 dates in IMS 9 Mar 08

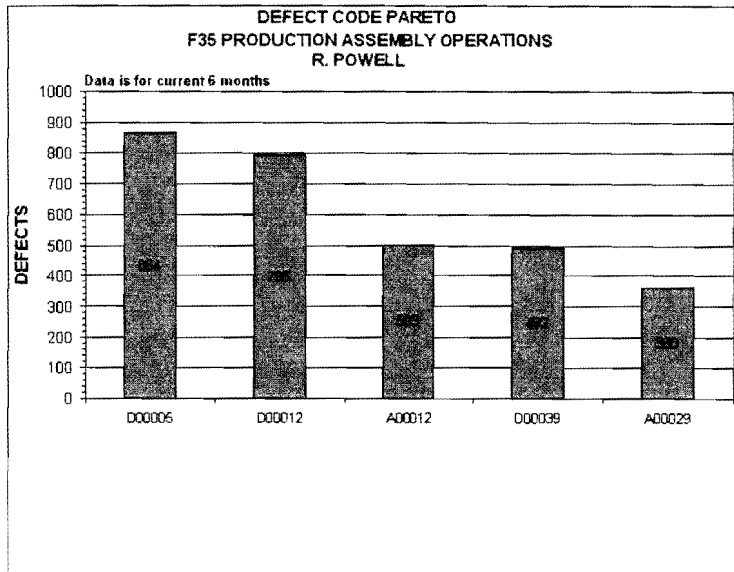


AF-1 sub-metric is rated Red, with a May average of 93 Mdays late to first flight date of 14 May 09. Baseline rollout date was 25 Nov 08 – aircraft rolled on 5 Feb 09. Projected first flight is mid-September as of 7 Jun 09.

Non-Conformance Reduction

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 [REDACTED]

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 contractor 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.

[REDACTED]
Trend: Improving

Summary of Metric Status: [REDACTED]

DCMA Actions: Actions: Performance Rating for this Outcome is Green, but DCMA has rated [REDACTED] Yellow this period due to their not meeting the contractual requirement to include DCMA in their MRB approval process. This will be monitored and maintain a Yellow rating until the issue is resolved.

PTMS

Metric is showing annual MRB reduction rate computed based on latest accumulated total (7 months of data). Baseline is FY 2008 normalized [REDACTED]. Target is based on 10% annual reduction prorated over a 12 month period, and the goal for April is 47.5%. March data is 74.5% and metric is Green.

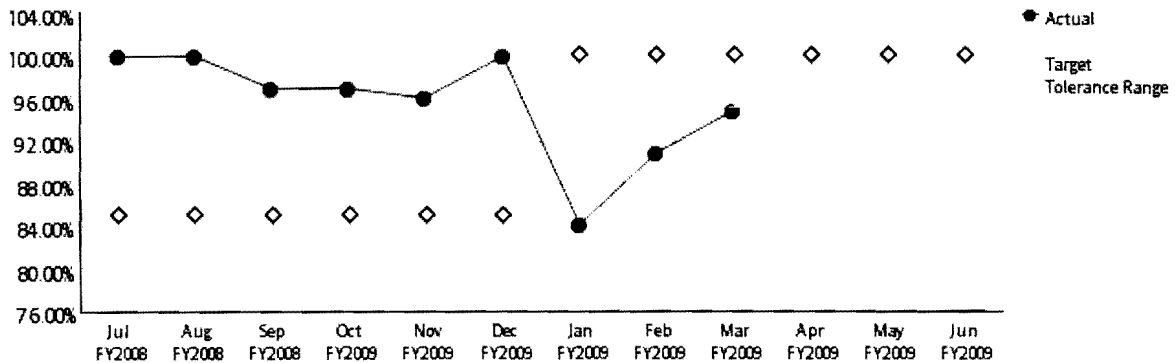
Root Cause: [REDACTED]

Contractor Actions: [REDACTED]

DCMA Actions: Continue interface with project engineer and Material Process specialist to ensure robust manufacturing process is in place. Trended high hitters (by P/N, defect & cause codes), identify causes of non-conformances: design, manufacturing, resource, handling etc, and request CA. Ensure CA will not impact logistics, interchangeability or other component installations

Safety of Flight (SoF)

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%.



Metric Status: Red

Trend: Improving

Improve Software Productivity

NSF198AJ07: [REDACTED]

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-April 2009 – The SPE Process Review Corrective Action Plan (CAP) remains under DCMA review due to the contractor's use of milestones as ECD's and their partial implementation of the plan.

DCMA [REDACTED] Prognostics and Health Management (PHM) Requirements [REDACTED] – Requirements] – DCMA conducted a successful CAM audit with significant issues and concerns, and just a few findings:

- Estimate at Completion: The EAC does not reflect the "most likely" EAC, and costs expected to be incurred in the next 6 months are classified as WATCH items on the pressures log. DCMA contends that if these figures are based on likelihood the EAC is understated.
- NG took an action item to reevaluate to ensure compliance with the EVMS ANSI/EIA-748 Standard for Guideline 27.

DCMA [REDACTED] Prognostics and Health Management (PHM) Software [REDACTED] – Software]

- Schedule Integration: The MS Integrated Master Schedule lacks alignment with Tech Plans. NG has plans in place which appear reasonable for resolving schedule disconnects.

- Current requirements are not scheduled to be completed until 8/21, but the SW is to be delivered 8/14. This puts the SW at risk, as most items will need to be designed and coded and tested in parallel.
- Block 0.5 FTU P1 - Delivered

DCMA [REDACTED] – External Communications Domain]

- Block 0.1 MIB Design certified by memo at 4/8-9 TIM and contractor completed successful release (F2.3) on schedule.

DCMA [REDACTED] – Mission Domain]

- Crash Survivable Memory Unit (CSMU) development has started and is scheduled for Block 1.0 FTUC release. This is a trusted computing based object.

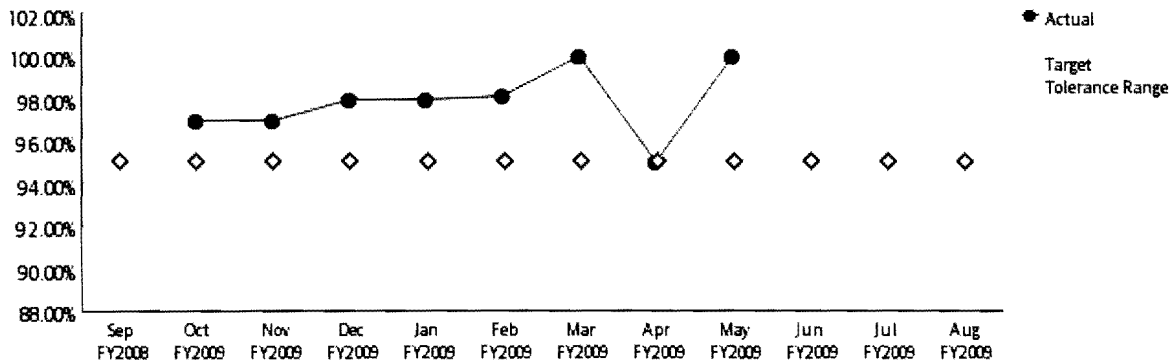
DCMA [REDACTED] – [REDACTED] – Integrated Core Processor (ICP)]

- [REDACTED]: A [REDACTED] risk is being generated to address the lack of problem resolution and module upgrade budget in the current planning.
- During May the Material Management and Subcontract Management process, guidelines 21, (2, and 16), will be reviewed on the JSF-ICP program. Because [REDACTED] of the material costs on JSF ICP are located at the [REDACTED] an e-mail request was sent to DCMA [REDACTED] personnel for assistance with surveillance on Guideline 21. During May, [REDACTED]

Estimate when PC will achieve goal: Current performance exceeds target and the trend continues to improve.

Improve Minor Variance

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 ≥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 50 minor variances reviewed during the month of May 2009 and all of these were classified correctly.

Root Causes: No root causes identified at this time.

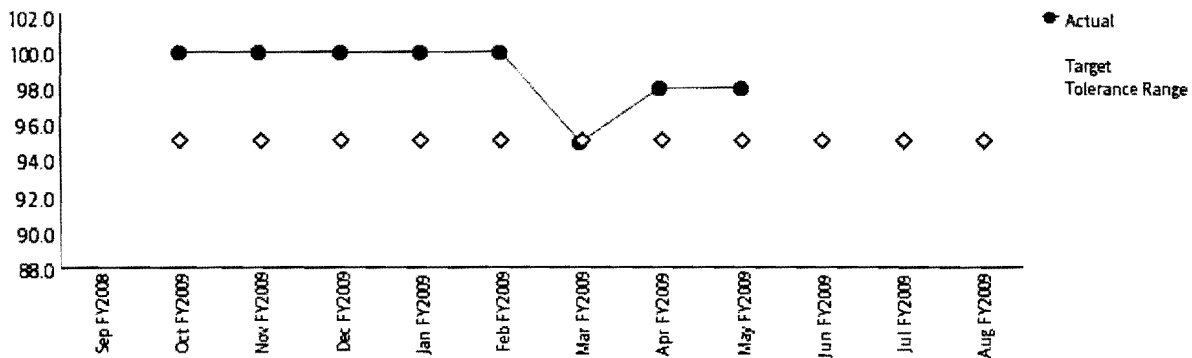
Contractor Actions: No contractor actions required at this time.

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

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: $< 90\%$.



Metric Status: Green

Trend: No Change

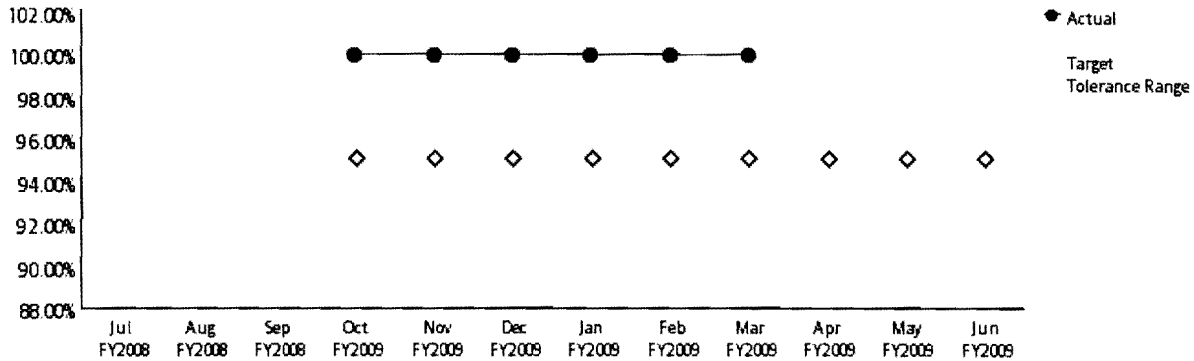
Contractor Actions: Meetings with DCMA personnel.

DCMA Actions: Review of contractor processes and reports. LMFV conducted an FCA/PCA audit of the Rudder Pedal Assembly (RPA) at [REDACTED] on May 5-8, 2009. A review of the F-35 Performance Based Spec (hardcopy) against the DOORS database was made prior to the audit. It was determined that the current PBS was the latest revision in DOORS and all requirements from hardcopy to DOORS matched. It was noted during the review that some of the verification methods were not in the PBS Section 4 Verification Cross Reference Matrix (VCRM) table and action was assigned to clean this up. 33 action items were documented with one being critical – sub-tier supplier drawings called out load bearing threads that did not meet the PBS thread requirement.

QAR CF60780 2W SH43525-00002 (Fracture Critical Material Traceable) listed a discrepancy of “this part has two different serial numbers stamped on part – both the 0005 and 0006 numbers”. LMFV was going to disposition “use as is”. This was challenged and LMFV responded that it should have been reworked to obliterate one of the serial numbers on each of the two discrepant parts so as to end up with one S/N0005 and one S/N0006.

Improve Minor Change

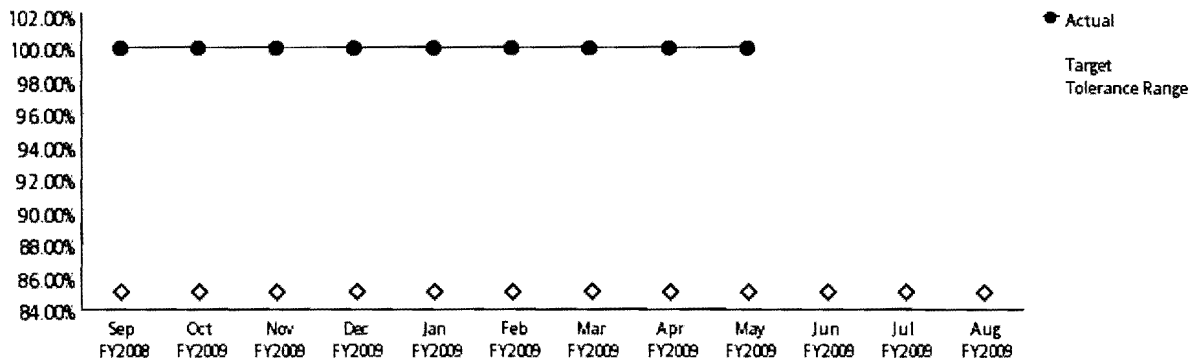
NSF198AJ18: Description: Ensure that 95% of minor changes are correctly classified. A Minor Change is defined as a change to an item which remains interchangeable with the same item in which the change has not been incorporated (form/fit /function interchangeable), has little or no impact to any downstream 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%.



Metric Status: Green

Maintain Assist Audit Request Timing

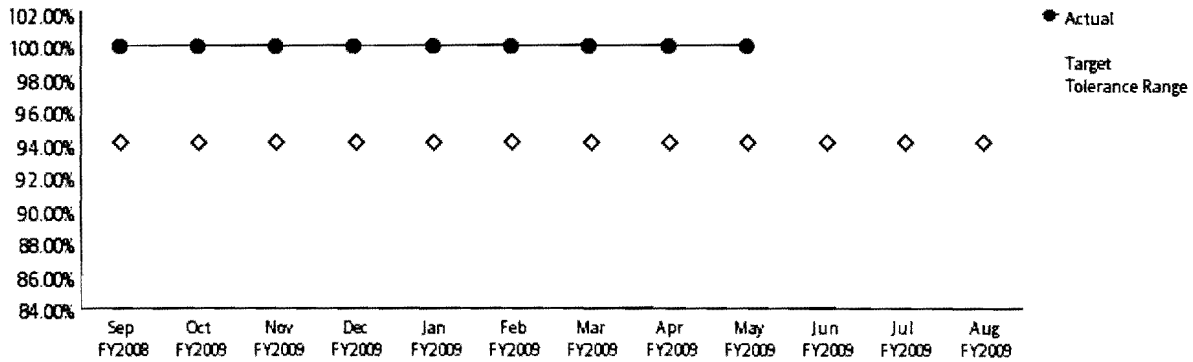
NSF198AJ13: Description: Process contractor/PCO requests for domestic/international Assist Audits within 2 business days 85% of the time. The percentage will be calculated by dividing the number of Assist Audits processed within 2 business days by the total number of Assist Audits requested. Source data 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%.



Metric Status: Green

Maintain FAR Requests for Contract Closeout

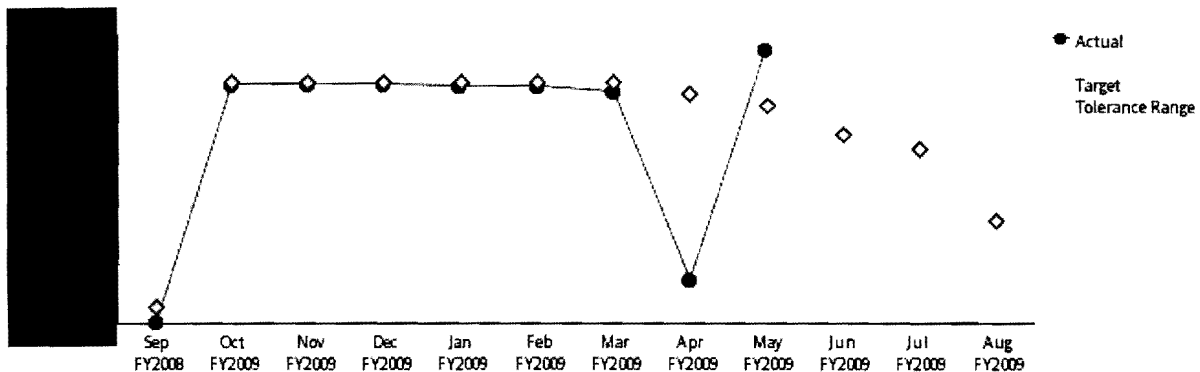
CDDAGYOC02: Description: Maintain 94% contract closeout actions within the Federal Acquisition Regulation (FAR) mandated timeframes. The percentage will be calculated by dividing the number of on time contracts closed by the total number of contracts closed. Source data will be obtained prior to the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



Metric Status: Green

Reduce Cancelling Funds

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.



Metric Status: The performance indicator is rated Red for this period with a Target of [REDACTED]

Trend: Degrading

Root Causes: Canceling funds increased [REDACTED] to LM Aero submission of BVN3130 – LM Aero records and MOCAS inconsistent.

Contractor Actions: BVN3130 interim voucher based on MOCAS data to align LM Aero records with MOCAS. Credit adjustments made against AC RNs BN, BP and BZ. LM Aero is in the process of finalizing reconciliation package – full reconciliation required between DFAS and LM Aero regarding unliquidated canceling funds.

DCMA Actions: Back-up documentation and MOCAS/SDW queries provided to LMA. Bi-weekly telecon with LM Aero and DFAS to ensure funds are either paid or deobligated prior to September 1, 2009.


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