



**F-35 JOINT STRIKE FIGHTER PROGRAM
LRIP I PERFORMANCE BASED AGREEMENT (PBA)
BETWEEN THE JOINT STRIKE FIGHTER PROGRAM OFFICE (JSFPO) AND THE
UNITED STATES AIR FORCE (USAF)**

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References:

- A. Memorandum on "Performance based Logistics: Purchasing Using Performance Based Criteria", signed by the Undersecretary of Defense for Acquisition, Technology, and Logistics (USD/AT&L), 16 August 2004.
- B. "Product Support: A Program Manager's Guide to Buying Performance", Guide from the Undersecretary of Defense for Acquisition, Technology, and Logistics (USD/AT&L), November 2001.
- C. "Designing and Assess Supportability in DOD Weapon Systems: A Guide to Increased Reliability and Reduced Logistics Footprint", prepared by the Office of Secretary of Defense, October 24, 2003.
- D. DoD Instruction 5000.2, "Operation of the Defense Acquisition System," May 12, 2003

1.0 PURPOSE

US Department of Defense (OSD) has identified the Joint Strike Fighter (JSF) Program as a Performance Based Logistics (PBL) Program. References A-D and other applicable directives and guidelines provide guidance for establishing a viable PBL Program. Integral to establishing a PBL program is the development of Performance Based Agreements (PBAs) that characterize the support relationships and performance metrics as agreed between the JSF Program Executive Officer (PEO) and the Warfighter (the Participant).

The purpose of this PBA is to establish and document a support relationship as well as metrics that reflect the Warfighter's needs in terms of performance-based sustainment at the platform (Air System) level for Low Rate Initial Production (LRIP) 1 while maintaining an appropriate emphasis on Full Rate Production (FRP) and post-Production sustainment phases. This performance includes contractor-government support requirements and identification of Warfighter resource requirements. Based on lessons learned and changing requirements, it is envisioned that a PBA will be developed and approved by the respective Participants and the JSF PEO prior to each LRIP, Production, and post-Production contract. The metrics in Section 4 of this PBA reflect those metrics that will be evaluated during LRIP I.

This PBA establishes the relationship between the JSF PEO and the USAF, the Participant for LRIP I. Specifically, it establishes Military Performance Objectives and the metrics that support these outcomes. These performance objectives are the centerpiece of the overall F-35 PBL support strategy and document required performance for all PBL contracts that support the F-35 CTOL aircraft. Once established, these performance objectives will be translated by the JSFPO, with participation from the USAF, into an LRIP I PBL contracts with both the Product Support Integrator (PSI) and the Propulsion System Contractor (PSC).

2.0 SCOPE

This PBA supports all contracts and memorandum of agreements that contribute to the readiness, availability, and reliability of the F-35 CTOL. It includes all post LRIP I delivery sustainment services such as aircraft maintenance, material support, obsolescence management, integrated logistics support, technical publications, aircraft introduction, systems engineering, site activation, support equipment, training, supply chain management, Autonomic Logistics Information System (ALIS), sustaining engineering, fleet management, Autonomic Logistics Operations (ALO), and software support. All operational maintenance and supply data collection will be accomplished. Additionally, data will be collected to assess cost per flying unit usage and logistics response time.

The metrics identified in this PBA are primarily focused on supporting requirements during LRIP I while maintaining appropriate emphasis on FRP and post-Production sustainment phases. During LRIP I and subsequent contracts, these metrics will be evaluated and modified, if necessary, to ensure they are measuring the desired outcomes.

3.0 WARFIGHTER PERFORMANCE OBJECTIVES

On 16 Aug 2004, the Undersecretary of Defense for Acquisition, Technology, and Logistics (USD/AT&L) signed a Memorandum on “Performance Based Logistics: Purchasing Using Performance Based Criteria” (ref. A). This Memorandum established five criteria for performance objectives. They are: (1) Operational Availability; (2) Operational Reliability; (3) Cost per Unit Usage; (4) Logistics Footprint, and (5) Logistics Response Time.

The Warfighter has an additional objective of having the capacity to increase operational tempo. Reference B directs that “Warfighter relationships” should be “based on performance outcomes” not on potential capability. Hence, it is acknowledged an Increased Operational Tempo metric is problematic for recording past/actual performance because it is a measure of “potential” that is difficult to define and quantify. However, increased operational tempo requirements may be substantial and the Warfighter must be assured that these requirements can be met in later phases.

Common performance objectives for all Participants have been established and have been tailored in this PBA for the LRIP 1 Participant (USAF) and the F-35 CTOL variant. The metrics that will be executed in LRIP 1 will also be evaluated to assist in establishing Participant performance objectives for FRP. The FRP performance objectives are anticipated to be as follows:

- a. **Readiness/Availability.** Provides insight into:
 - (1) Aircraft/systems readiness or availability to support mission requirements;
 - (2) The Warfighters’ competency and or currency to operate/support the required systems; and
 - (3) The ability to rapidly deploy.
- b. **Mission Effectiveness.** Provides insight into the reliability of the aircraft/systems during mission execution.
- c. **Required Sorties and Flying Hours Accomplished.** Provides insight into the Warfighter’s capability to meet scheduled sortie and flying hour requirements.
- d. **Logistics Footprint.** An indicator of whether the Logistics Footprint is growing or shrinking.
- e. **Military Level of Effort.** Provides insight into the Warfighter’s additional workload that is required to meet performance objectives while overcoming potential PBL shortfalls.

All of these objectives, in aggregate, provide detailed insight into the sustainment provided to the Warfighter.

4.0 WARFIGHTER PERFORMANCE METRICS

Refer to Appendix A for metric definitions, algorithms and Ground Rules & Assumptions (GR&A). The metrics that have been defined for FRP, which also include minimum Squadron requirements, are provided in Appendix B. They will be refined throughout successive LRIPs and are provided for reference purposes. The threshold and objective numbers and percentages are based on aggregating subordinate units' performance over the entire reporting period.

For LRIP I, the Participant and the JSFPO will use the threshold and objective values for each of the operational metrics as indicated in the tables below to accomplish the Warfighters' performance objectives.

Readiness/Availability:

Aircraft Availability (AA) % (aggregate)	
Normal	Non-Deployed
Threshold	50
Objective	75

Mission Capable (MC) % (aggregate)	
Normal	Non-Deployed
Threshold	60
Objective	80

Mission Effectiveness:

Mission Effectiveness (ME) (aggregate)	
Normal	Non-Deployed
Threshold	80
Objective	90

Required Sorties and Flying Hours Accomplished:

% Sorties Flown (PSF) (aggregate)	
Normal	Non-Deployed
Threshold	90
Objective	100

% Flying Hours Flown (PFHF) (aggregate)	
Normal	Non-Deployed
Threshold	90
Objective	100

Logistics Footprint:

Logistics Footprint Delta (LFD) % (aggregate)	
Normal	Non-Deployed
Threshold	0
Objective	-1

Military Level of Effort:

Cannibalizations per 1,000 flying hours (CANSPTFH) (aggregate)	
Normal	Non-Deployed
Threshold	10
Objective	5

Maintenance Manhours per Flying Hour (MMH/FH) (aggregate)	
Normal	Non-Deployed
Threshold	12
Objective	8

Maintenance Manhours per Flying Hour (MMH/FH) (individual Aircraft Sub-System)	
Normal	Non-Deployed
Threshold	12
Objective	8

5.0 WARFIGHTER-JSFPO RESOURCES

This section addresses the agreements between the Participant and the JSFPO to provide the requisite resource requirements that enable the JSFPO to support PBL requirements with the Product Support Integrator and Propulsion System Contractor(s). The Participant and the JSFPO shall identify and document the key resources to support funding, manpower, training, facilities, logistics, engineering and other sustainment support requirements. Specifically, the Participant and JSFPO will identify Points of Contacts (POCs) and their roles and responsibilities for coordinating resource requirements. Detailed roles and responsibilities are addressed in Section 6.0.

For LRIP I, the JSFPO plans to award a Cost Plus Award/ Incentive Fee PBL contract. Incentives and remedies will be included in the PBL contract for both the Participant and the Contractors to ensure Warfighter objectives are met. Additionally, the JSFPO and the Participant will agree on the Basis of Estimate (BOE) measure for the LRIP I PBL contract.

The JSFPO plans to establish Fixed Price PBL contracts with the PSI and PSCs for later LRIPs and beyond. It is anticipated that usage measures such as Dollars-per-Flying-Hour (\$/FH) or, in the case of propulsion, Time on Wing (TOW) or power by the count/usage, will be the BOE for billing the Participants.

6.0 ROLES AND RESPONSIBILITIES

Specific Government responsibilities that are required to execute an F-35 PBL arrangement are detailed in Appendix C. Additionally, roles and responsibilities of key Participant and JSFPO personnel are as follows:

The JSFPO and the Participant:

- a. The JSFPO and ACC will agree the performance objectives and metrics address the proper “system health” indicators. They are the operational outcomes that arise from both the Sustainment and Warfighter communities’ partnership. However, neither can be held solely accountable for these outcomes without a subordinate set of objectives attributable to one party or the other, which if achieved, will enable the overall objective to be met.
- b. The JSFPO and ACC will monitor, analyze, and refine PBA objectives and associated metrics and report results at major program phase/decision point to modify the metrics if necessary.

JSFPO:

- c. The JSFPO will develop and execute a Global Sustainment Strategy by implementing a PBL sustainment contract for the F-35 Air System that is operationally suitable and effective for all F-35 CTOL type, model and series.
- d. The JSFPO will inform other Services and Partners of the results of the implementation of this agreement during LRIP for maturation of the final metrics.

The Participant:

- e. ACC will specify to the JSFPO (for LRIP, prior to the RFP):
 - (1) A yearly flying hour profile, utilization rates, and mission type (training, OT, etc.), which will be updated as required during periodic reviews of the PBA with the JSFPO;
 - (2) A Mission Essential Subsystems List (MESL) for the missions types that will be accomplished during the period of performance for the PBA; and
 - (3) Basing locations.

- (4) When provided, data/information required from the Participant per Paragraph e. will be included as an Appendix to the PBA.
- f. The Participant shall notify the JSFPO of their requirement to increase operational tempo, which includes the percentage above the 'steady state' flying program and the associated ramp-up lead time.
- g. ACC will provide POCs to support the following activities:
 - (1) Participation in assessing specific PBL contract performance objectives for the purpose of optimizing provider award incentives;
 - (2) Coordination with the JSFPO to address and assess training metrics and other associated issues;
 - (3) Manpower requirements support for LRIP, the ALO or other required support;
 - (4) Coordination of funding requirements; and
 - (5) Coordination of logistics and engineering requirements.
- h. As part of this agreement, the Participant must also meet the following requirements:
 - (1) Return of retrograde items within agreed timeframes (agreed timeframes will be documented in an appendix to this PBA);
 - (2) Operate the aircraft/systems within prescribed envelope limits;
 - (3) Comply with prescribed maintenance requirements; and
 - (4) Manage personnel skills competencies and/or currency to ensure there are sufficient trained personnel to support JSF operations.

7.0 CONSTRAINTS AND BOUNDARY CONDITIONS

This section addresses the constraints and boundary conditions that characterize the relationship between the Participant and the JSFPO. The following Terms and Conditions support this relationship:

- a. The constraints and boundary conditions must be flexible to adjust to the Participant's Planning, Programming, and Budgeting decisions, programmatic issues, and other unpredictable changes that will require changes to the PBA.
- b. The constraints and boundary conditions are limited to operations within the normal operating cycle (training for deployment, pre-deployment, deployment, reconstitution, routine maintenance period, etc.).

- c. The constraints and boundary conditions do not apply to equipment/systems that do not meet requirements or objectives due to battle damage during wartime operations or acts of terrorism. Damages that results in multiple catastrophic casualties and system deterioration are outside of the scope of the sustainment support performance objectives.
- d. Automated reporting and data collection systems are a key enabler for the success of the JSF Program. In the event contractor controlled automated reporting and data collection systems fail, the contractor is responsible for establishing an alternate means for collecting, reporting and recovering the required data, with minimal impact to the Participant.
- e. The JSFPO is establishing a common set of metrics to provide insight to the health of the F-35 Autonomic Logistics system. The Participant, in consultation with the JSFPO, will select those metrics they want to use and a range of values to be achieved. During LRIP the metrics will be evaluated by the Warfighter and the JSFPO. These metrics can be refined, deleted or new ones added based on the mutual agreement between the Participant and the JSFPO. The JSFPO will also develop implementing instructions with the PSI prior to each LRIP, Production, and post-Production period of performance.
- f. This PBA addresses LRIP I sustainment requirements only (i.e. obsolescence management, tech refresh and R&M improvements); it does not include follow-on development. Follow-on development requirements will be addressed, if needed, by a separate PBA since they require separate management and financial regimes.
- g. Historical data will be pushed to the Air Force Knowledge Service.

8.0 PERIOD OF PERFORMANCE

The Period of Performance for this PBA commences with the first LRIP I aircraft delivery and ends with the delivery of the last LRIP I aircraft. The aircraft fielded during LRIP I will be rolled into the total fleet for the Participant and will be covered by the LRIP II PBA which takes effect on or about 1 February 2010.

This PBA reflects the dynamic relationship between the Participant and the JSFPO throughout the weapon system life cycle. Accordingly, this PBA will be reviewed and updated annually *or as deemed appropriate* by the signatories or their designees.

9.0 IMPLEMENTATION

Upon signature of the PBA, the JSFPO will incorporate these performance objectives into the overall F-35 Global Sustainment Strategy. The JSFPO and the Participant will meet semi-annually as a minimum following aircraft delivery to:

- a. Evaluate and assess performance against objectives;

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- b. Review effectiveness of the PBA; and
- c. Make recommendations to improve, revise, maintain or extend the PBA.

APPENDIXES

- A. PBA Metric Definitions, Algorithms and GR&A.
- B. Full Rate Production Metrics
- C. Government Responsibilities
- D. Acronyms List

APPENDIX A: PBA METRIC DEFINITIONS, ALGORITHMS AND GR&A

F-35 PBA metrics are designed to answer critical questions about what performance we are trying to measure for each of the Warfighter Performance Objectives. They are presented below within each Objective. The assessment of the sustainment performance by the provider, in terms of these metrics, is viewed as a “fleet-wide report card” (as opposed to individual aircraft or squadron level metrics) that is reported and reviewed monthly (or appropriate time period) on the performance during that quarter. *In the case of Lockheed Martin as the provider, it is assumed that the Sustainment Performance Management System (SPMS), of which ALIS is a part, will collect, calculate, and report these metrics on a 24/7 basis. (For LRIP I, may need to track outside ALIS as per Section 7d of this PBA)*

READINESS/AVAILABILITY

The Warfighters determined the following critical questions as they relate to Readiness and Availability.

1. What percent of aircraft were capable, during the reporting period, of accomplishing all of its missions?
2. What percent of aircraft are capable, during the reporting period, of accomplishing at least one of its missions?
3. What percent of assigned pilots and maintainers were considered trained and current during the reporting period?
4. For operational units, how many days during the reporting period were we “ready” to deploy? – people, planes, parts, equipment.

Readiness/Availability Metrics

Aircraft Availability (AA) Rate will be the metric utilized to ensure the fleet is capable of meeting its requirements. Aircraft availability is based upon the Air Vehicle being mission capable (for the tasked mission) and available for use (i.e. in a possessed status). A Mission Essential Subsystems Lists/Mission Essential Function Lists (MESL/MEFL) must be established for each mission so that ALIS can continuously determine the status of each air system.

$$\text{AA Rate} = \frac{\text{Total Hours AV in MC Status and Available}}{\text{Total Available Fleet Time (possessed + non possessed)}}$$

AA GR&A:

- a. SPMS, of which ALIS is a component, will be used to track, collect, categorize aircraft status (e.g., in an “up” status and therefore Mission Capable; or in a “down” condition and Not Mission Capable) on a 24/7 basis.
- b. Only Critical Failures (as defined in Appendix B in the JORD – MFHBCF) will be counted as “failure” events that put the aircraft in a “down” condition.
- c. Only the time spent repairing/restoring (plus delay times) these Critical Failures will be counted as downtime (MCMTCF) due to maintenance.
- d. Detailed LRIP I mission-types and associated MESLs will be defined by ACC in time to support the LRIP I RFP.
- e. Time awaiting parts for systems that are not on the MESL will not be included as “non-mission capable” downtime.
- f. In case of an “unspared” event, e.g. structural item failure (bulkhead), typically repair would be depot level and lead time for any replacement item needed could be months. The occurrence of this rare event might down an aircraft for all of the assessment PoP. Since the LRIP1/2 fleet is small, impact on assessment would be catastrophic. In 'real' world this aircraft would be transferred to depot ownership and down/possessed time would not accumulate to an operational unit. Therefore, in the event that this occurs, the AA metrics value will be “adjusted” at the agreement by ACC, JSFPO, and LM.

Full Mission Capable (FMC) Rate (N/A for LRIP I) is the percentage of possessed time that a system is capable of performing 100% of its designed missions. For the CTOL, FMC will be calculated based on a 24 hour operational day. Mission Essential Subsystems Lists/Mission Essential Function Lists (MESL/MEFL) must be established for each mission so that ALIS can continuously determine the status of each air system. (This definition is based on the context of the aircraft’s employment and not against a generic set of missions)

$$\text{FMC Rate} = \frac{\text{Total uptime capable of 100\% of designed missions}}{\text{Total Possessed Time}}$$

Mission Capable (MC) Rate is the percentage of possessed time that a system is capable of performing at least 1 of its designed missions. For the CTOL, MC will be calculated based on a 24 hour operational day. Mission Essential Subsystems Lists/Mission Essential Function Lists (MESL/MEFL) must be established for each mission so that ALIS can continuously determine the status of each air system. (This definition is based on the context of the aircraft’s employment and not against a generic set of missions)

$$\text{MC Rate} = \frac{\text{Total uptime capable at least 1 of designed missions}}{\text{Total Possessed Time}}$$

Both FMC and MC status of aircraft will be tracked and recorded *autonomically* by the ALIS system in the F-35. For LRIP I, this status may need to be captured and computed with some manual intervention.

MC/ FMC GR&A:

- g. SPMS, of which ALIS is a component, will be used to track, collect, categorize aircraft status (e.g., in an “up” status and therefore Mission Capable; or in a “down” condition and Not Mission Capable) on a 24/7 basis.
- h. Total Possessed Time is 24 hours per day, except when the aircraft is assigned to Depot.
- i. An aircraft is considered “down” when (this list is not exhaustive)
 - (1) Being turned between sorties. This includes post-flight inspections, servicing, and refueling.
 - (2) When being actively repaired for a Critical Failure (defined below)
 - (3) Awaiting a spare part for a MESL item that has failed
 - (4) Any delay times while a Critical Failure has downed an aircraft
- j. Only Critical Failures (as defined in Appendix B in the JORD – MFHBCF) will be counted as “failure” events that put the aircraft in a “down” condition.
- k. Only the time spent repairing/restoring (plus delay times) these Critical Failures will be counted as downtime (MCMTCF) due to maintenance.
- l. Times for LO restoration will be included in “down” time regardless of whether or not the aircraft is scheduled for an LO mission on its next sortie.
- m. Detailed LRIP I mission-types and associated MESLs will be defined by ACC in time to support the LRIP I RFP.
- n. Time awaiting parts that are not on the MESL will not be included as “non-mission capable” downtime.
- o. In case of an “unspared” event, e.g. structural item failure (bulkhead), typically repair would be depot level and lead time for any replacement item needed could be months. The occurrence of this rare event might down an aircraft for all of the assessment PoP. Since the LRIP1/2 fleet is small, impact on assessment would be catastrophic. In 'real' world this aircraft would be transferred to depot ownership and down/possessed time would not accumulate to an operational unit. Therefore, in the event that this occurs, the MC metrics value will be “adjusted” at the agreement by ACC, JSFPO, and LM.

Graduate Assessment Survey Scores (GASS) (N/A for LRIP I) is the percentage of assigned personnel with the required aggregate scores on the Graduate Assessment Surveys. To evaluate the effectiveness of Training, Graduate Assessment Surveys (GAS) are accomplished on all individuals within 6 months of completing ITC Training. In addition, feedback should be provided within the period of performance for the PBA to facilitate incorporating any “course correction” for the subsequent period. Individuals are rated by their supervisors on a scale of 1-5 for their ability to perform required tasks. Aggregate scores are then obtained for each individual. The Participant expects specified percentages of their personnel to achieve specified levels of aggregate scoring. Figure A1 below shows the distribution of these requirements. The chart shows that at least 80% of my personnel must have aggregate GAS scores between “4” and “5”; at least 85% must be greater than or equal to “3” (between “3” and “5”), etc.

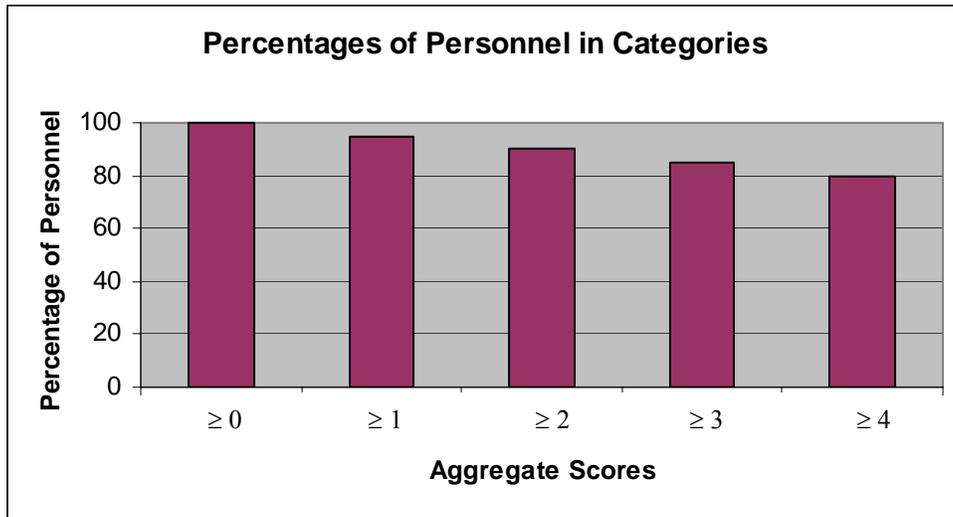


Figure A1: Training Effectiveness Requirements

GASS = $\frac{\text{number of personnel scoring higher than a specified aggregate score (0-to-5) on GAS}}{\text{Total number of personnel being scored}}$

A GASS percentage will be established for each category between 0 and 5 (between 4-5, greater than 3, etc.).

Days Ready to Deploy (DRD) (N/A for LRIP 1). For operational units, having available aircraft (FMC and MC) and adequate numbers of trained personnel is not enough to be ready to deploy and fight. Units must have sufficient spares and adequate levels of Support Equipment (SE) available. DRD is the percentage of days in the reporting period when the unit's spares and SE levels were at required levels (this will be defined prior to each LRIP to include lead time and specific requirements). Therefore, (excluding Squadron manpower) DRD combined with MC, and GASS give an accurate picture of being ready to deploy.

$$\text{DRD} = \frac{\text{Total number of days that operational units had required spares and full S.E. levels}}{\text{Total number of days in reporting period}}$$

MISSION EFFECTIVENESS

The Warfighters determined the following critical question as it relates to Mission Effectiveness:

What percent of attempted missions were effective?

“Effectiveness” means that 100% of all planned tasks in the missions were accomplished successfully. Ineffective missions are only when assigned tasks could not be accomplished due to loss of system function or capability. Missions where significant numbers (slightly less than 100%) of planned tasks are accomplished cannot be totally discounted. “Partial credit” must be given to missions where significant numbers of tasks are completed. Therefore, if more than 70%, but less than 100%, of the planned tasks are accomplished in a mission, that mission gets a “1/2” score.

Mission Effectiveness Metric

Mission Effectiveness (ME) is the weighted percentage of all attempted missions where all (100%) or significant numbers of the planned Primary Tasks (PTs) and Secondary Tasks (STs) were successfully completed.

$$\begin{aligned} \text{ME} = & [1.0 * (\# \text{ missions where all PT are accomplished}) \\ & + 0.7 * (\# \text{ missions where } \geq \frac{1}{2} \text{ of the PT are accomplished and some ST are accomplished}) \\ & + 0.5 * (\# \text{ missions where } \geq \frac{1}{2} \text{ of the PT are accomplished and zero ST are accomplished}) \\ & + 0.2 * (\# \text{ missions where } < \frac{1}{2} \text{ of the PT are accomplished and } \geq 70\% \text{ ST are accomplished}) \\ & + 0.0 * (\# \text{ missions where } < \frac{1}{2} \text{ of the PT are accomplished and } < 70\% \text{ ST are accomplished})] \\ & /(\text{total missions}) \end{aligned}$$

In other words:

- 100% credit goes to all the missions where all the PTs are accomplished,
- 70% credit goes to all the missions where at least ½ of the PTs and some STs get accomplished,
- 50% credit goes to all the missions where at least ½ of the PTs and no STs get accomplished,

- 20% credit goes to all the missions where less than ½ of the PTs and at least 70% of the STs get accomplished, and
- 0% credit goes to all missions where less than ½ of the PTs and less than 70% of the STs get accomplished.

ME GR&A:

- a. Only the planned tasks for each individual mission will be considered in determining success or failure.
- b. Primary Missions not completed due to causes outside “supportability” (e.g., weather abort, pilot decision to abort, tanker not showing up for “tanking” mission, etc.) will “drop down” to the Alternative Mission which will then be designated as the Primary Mission and will be used to calculate ME. When both Primary and Alternative Missions cannot be completed by causes “outside supportability”, they will be excluded from both the numerator and denominator of the equation.
- c. Tasks (individual tasks within missions) not completed due to causes outside “supportability” will not be counted as assigned tasks.
- d. The determination of number of tasks attempted and number of tasks completed will be accomplished at the pilot’s debriefing and entered into ALIS.

Required Sorties And Flying Hours Accomplished

The Warfighters determined the following critical question as it relates to Required Sorties and/or Flying Hours Accomplished:

What percent of required sorties and/or flying hours were accomplished?

In planning for deployments or during peacetime, the Warfighters’ program for specific numbers of sorties or flying hours months in advance. These planned sorties or flying hours are considered required sorties or flying hours. Exclusions (e.g., weather, aborts etc.) will also need to be defined.

Required Sorties Metric

Percent Sorties Flown (PSF) is the percent of all required sorties that were accomplished.

$$\text{PSF} = \frac{\text{Total } \underline{\text{number of sorties accomplished}}}{\text{Total number of required sorties}}$$

PSF GR&A:

- a. The total number of required sorties will be specified by ACC (or USAF representative) by unit and fleet-wide one month before the beginning of the reporting period.

- b. If the required number of sorties changes (increases or decreases) during the reporting period, the disposition of those changes in the metric calculation must be agreed to by the JSFPO, ACC, and LM.
- c. A sortie is considered accomplished if it successfully takes off and leaves the base. Whether the mission is successful, partially successful, or not successful is not captured in this metric; it is captured in PSM.

Required Flying Hours Metric

Percent Flying Hours Flown (PFHF) is the percent of all required flying hours that were accomplished.

$$\text{PFHF} = \frac{\text{Total number of flying hours accomplished}}{\text{Total number of required flying hours}^1}$$

PFHF GR&A:

- a. The total number of required flying hours (linked to the yearly Flight Hour Program) will be specified by ACC (or USAF representative) by unit and fleet-wide one month before the beginning of the reporting period.
- b. If the required number of flying hours changes (increases or decreases) during the reporting period, the disposition of those changes in the metric calculation must be agreed to by the JSFPO, ACC, and LM.
- c. Flying hours are defined as time between “wheels up” and “wheels down”. Ground operating time is not counted.

Logistics Footprint

The Warfighters determined the following critical question as it relates to Logistics Footprint:

What has been the change (increase or decrease) in the logistic footprint?

If engineering changes necessitate increases in numbers or sizes of S.E. or if the PBL solution requires increases in numbers of spares that have to be included in RSP kits, Log Footprint will increase. If technology or sustainment improvements facilitate decreases in sizes or number of equipment, the sustainment provider is incentivized to decrease the size of the Log Footprint.

Logistics Footprint Metric

Logistics Footprint Delta (LFD) is the percent change (+ or -) in the Logistics Footprint over the last reporting period. For LRIP I, this will correlate with the F-35 CTOL KPP, which is measured in C-17 equivalent loads. The logistics footprint baseline will be established for each LRIP period of performance.

¹ Refer to Section 6, Roles and Responsibilities, where the yearly flying profile will need to be specified.

$$\text{LFD} = \left(\frac{\text{Current Log Footprint (in number of C-17 loads)}}{\text{Log Footprint in the last period (in number of C-17 loads)}} - 1 \right)$$

For subsequent PBAs, this metric will be expanded to capture percentage changes in weight and volume and tailored accordingly for the Warfighter.

LFD GR&A:

- a. The baseline Log Footprint will be established one month before the beginning of LRIP.
- b. The “current” Log Footprint will be jointly determined by the JSFPO and JSF ALO (Sustainment Business Ops) organization.
- c. The definition of what is included/ excluded in the Logistic Footprint is defined in JCS Appendix A-4 GR&A.

Military Level of Effort

The Warfighters determined the following critical question as it relates to Military Level of Effort (MLE):

What additional Warfighter resources are required to overcome PBL shortcomings in order to maintain performance objectives?

This metric provides insight into the Warfighter’s workload; specifically to ensure the PBL solution doesn’t require increased workloads for operational units (e.g. use of workarounds due to technical publications deficiencies; lack of support or test equipment or cannibalization actions as a result of spare parts deficiencies) to alleviate supply problems to meet needed sorties).

Cannibalizations Metric

Cannibalizations per 1,000 flying hours (CANSPTFH) are the total number of times cannibalization actions had to be taken per 1,000 flying hours.

Cannibalizations per 1,000 flying hours (CANSPTFH) =

$$\frac{\text{Total number of cannibalization actions performed during the reporting period} \times (1,000)}{\text{Total number of flying hours}}$$

Cannibalizations GR&A:

- a. Cannibalizations will be a “last resort” solution.
- b. All cannibalization actions and justifications will be documented in ALIS/ SPMS.

Maintenance Manhours per Flying Hour (MMH/FH) Metric

Maintenance manhours per flying hours (MMH/FH) is the total number of maintenance manhours expended per flying hour. Total manhours includes scheduled maintenance, unscheduled maintenance, inspections, and servicing. This will be collected and reported in the aggregate and also by individual aircraft sub-systems and will be further defined for each LRIP period of performance.

$$\text{MMH/FH} = \frac{\text{Total number of maintenance manhours}}{\text{Total number of Flying hours}}$$

MMH/FH GR&A:

- a. All maintenance events will be included.
- b. Total manhours include scheduled maintenance, unscheduled maintenance, inspections, and servicing.
- c. The expenditure of manhours can be aggregated, but will be able to be decomposed and managed by the various category listed above.

APPENDIX B: FULL RATE PRODUCTION METRICS

To preclude having individual units not meeting their objectives, but the overall threshold being achieved, there are metric values included for which no individual unit should go below. Also, since the established metric values are for the entire time period, during any single month (or appropriate sub-period) during that each period, the Participant requires that the aggregate value shall not go below the established minimums.

Readiness/Availability

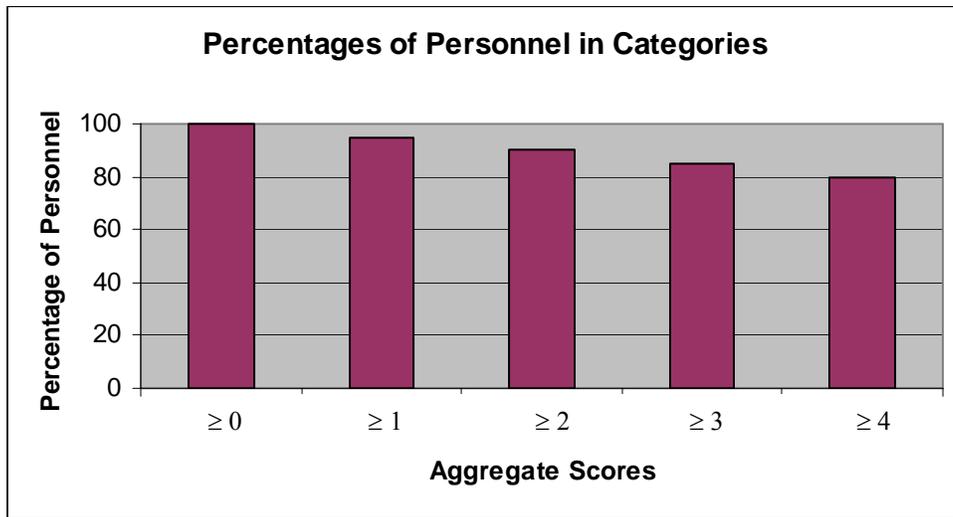
Aircraft Availability (AA) %			
Normal	Training	Non-Deployed	Deployed
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			
Increased Operational Tempo			
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			

Mission Capable (MC) %			
Normal	Training	Non-Deployed	Deployed
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			
Increased Operational Tempo			
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			

Full Mission Capable (MC) %			
Normal	Training	Non-Deployed	Deployed
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			
Increased Operational Tempo			
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			

Graduate Assessment Survey Scores (GASS)

These requirements apply to Training units, Deployed units, and non-Deployed units.



Days Ready to Deploy (DRD) %			
Normal	Training	Non-Deployed	Deployed
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			
Increased Operational Tempo			
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			

Mission Effectiveness:

Mission Effectiveness (ME)			
Normal	Training	Non-Deployed	Deployed
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			
Increased Operational Tempo			
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			

Required Sorties and Flying Hours Accomplished:

% Sorties Flown (PSF)			
Normal	Training	Non-Deployed	Deployed
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			
Increased Operational Tempo			
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			

% Flying Hours Flown (PFHF)			
Normal	Training	Non-Deployed	Deployed
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			
Increased Operational Tempo			
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			

Logistics Footprint:

Logistics Footprint Delta (LFD) %			
Normal	Training	Non-Deployed	Deployed
Threshold (Aggregate)			
Objective (Aggregate)			
Increased Operational Tempo			
Threshold (Aggregate)			
Objective (Aggregate)			

Military Level of Effort:

Cannibalizations per 1,000 flying hours (CANSPTFH) (aggregate)			
Normal	Training	Non-Deployed	Deployed
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			
Increased Operational Tempo			
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			

Maintenance Manhours per Flying Hour (MMH/FH) (aggregate)			
Normal	Training	Non-Deployed	Deployed
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			
Increased Operational Tempo			
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			

Maintenance Manhours per Flying Hour (MMH/FH) (Aircraft Sub System)			
Normal	Training	Non-Deployed	Deployed
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			
Increased Operational Tempo			
Threshold (Min Aggregate Value for any month)			
Objective (Min Aggregate Value for any month)			
Threshold (Min Squadron Value)			
Objective (Min Squadron Value)			
Threshold (Aggregate)			
Objective (Aggregate)			

APPENDIX C: GOVERNMENT RESPONSIBILITIES

1. Warfighter personnel: Pilots and Unit-level maintainers for operational and test Units
2. All Petroleum, Oils and Lubricants (POLs), munitions, explosives, pyrotechnics (except for ejection seat and spare ejection seat pyrotechnics), common Alternate Mission Equipment (AME), and expendable training stores
3. Provision and maintenance of Government Wide Area and Local Area Networks (WANs and LANs), including wireless access points and access to ALIS
4. Physical and Operational security
5. On-base Packaging, Handling, Storage, and Transportation (PHS&T).
6. Provide other common Unit-level SE not identified as Contractor responsibility
7. Provide preventive maintenance and limited maintenance of Unit-level SE
8. Manage and maintain Government-provided software and hardware
9. Government Integrated Product Team (IPT) personnel
10. Flight test assets and facilities
11. MoD/DoD Directives, Command and local Operations and Maintenance (O&M) procedures
12. Training facilities, flight and maintenance instructors
13. Data entry/integrity into the Autonomic Logistics Information System (ALIS) due to Unit-level maintenance and other activities that alter the configurations of fielded aircraft
14. Facilities and administrative support for JSFPO and designated Service representatives in support of ALO and PBL performance
15. Security at Government facilities

APPENDIX D: ACRONYMS LIST

\$/FH	Dollars-per-Flying-Hour
AA	Aircraft Availability
ACC	Air Combat Command
ALIS	Autonomic Logistics Information System
ALO	Autonomic Logistics Operations
BOE	Basis of Estimate
CPAF	Cost Plus Award Fee
CTOL	Conventional Take Off and Land
DRD	Days Ready to Deploy
FMC	Full Mission Capable
FRP	Full Rate Production
GR& A	Ground Rules and Assumptions
IOC	Initial Operational Capability
JSFPO	Joint Strike Fighter Program Office
LFD	Logistics Footprint Delta
LRIP	Low Rate Initial Production
MC	Mission Capable
MESL	Mission Essential Subsystems List
MLE	Military Level of Effort
OSD	Office of Secretary of Defense
PBA	Performance Based Agreement
PBL	Performance Based Logistics
PEO	Program Executive Officer
POC	Point of Contact
PSC	Propulsion System Contractor
PSF	Percent Sorties Flown (or Hours)
PSI	Product Support Integrator
PSM	Percentage of Successful Missions
PT	Primary Task
SE	Support Equipment
SPMS	Sustainment Performance Management System
ST	Secondary Task
TOW	Time on Wing
USAF	United States Air Force
USD/AT&L	Undersecretary of Defense for Acquisition, Technology, and Logistics