

Air Force Life Cycle Management Center

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AF Logistics Health Assessment... Keeping the Pulse on Product Support

AFLCMC/LG



Briefing Purpose



This briefing will provide:

- **Overview of the Logistics Health Assessment (LHA) to include history and process**
- **How the Air Force analyzes and utilizes LHA information in various reviews and decisions**



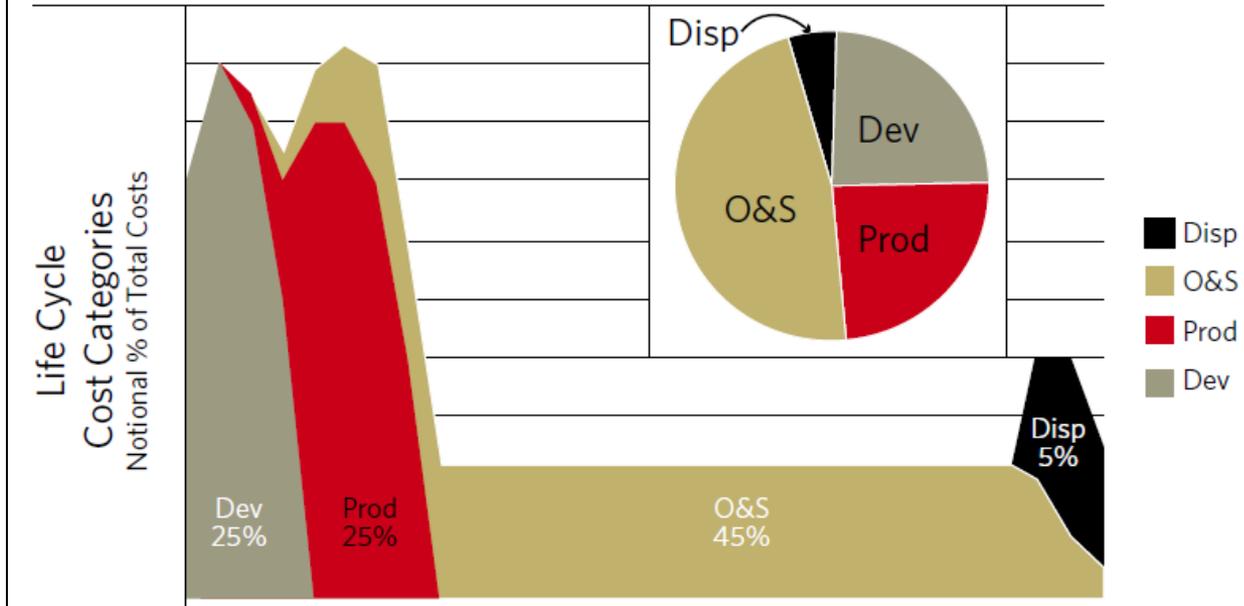
Why Measure PS Health?



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Figure 1. Weapon System Life Cycle Cost Categories and Phases



Better PS planning & strategy up front = Better execution & lower cost





Why this LHA thing?



- **Prior to LHA....no day-to-day standardized mechanism for assessing & measuring Product Support planning & execution**
 - **No standard based criteria...**
 - **No historical decision trail...**
 - **No documented issues...**
 - **Subjective...**



LHA Fills This Void !!

“A standard, tailorable, measurable & user friendly logistics health assessment tool for programs”



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Customers / Stakeholders



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Warfighter



Leadership



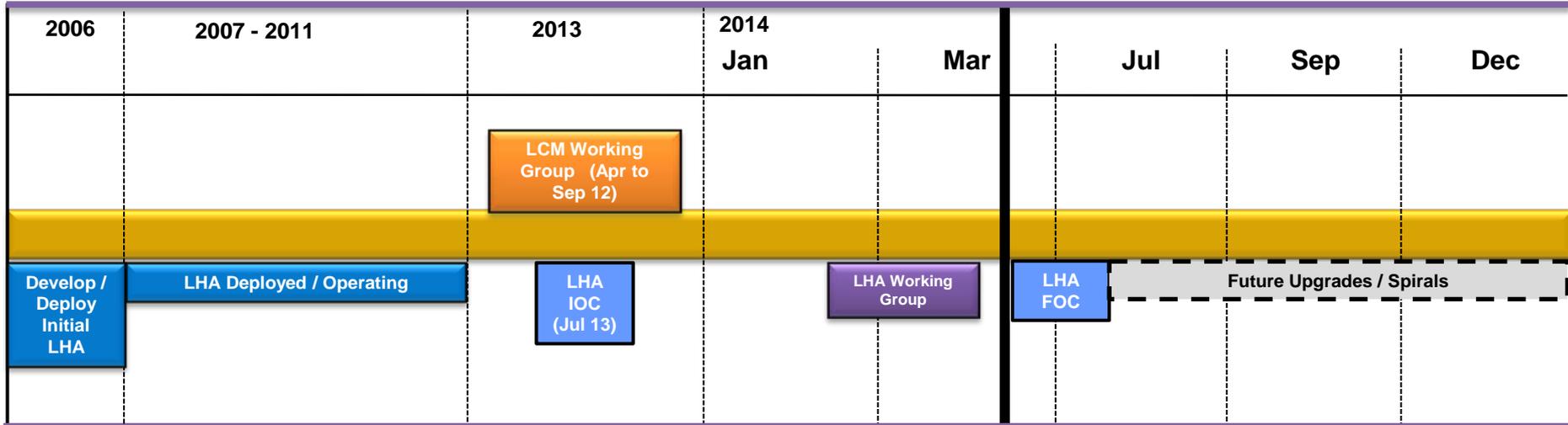


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LHA Timeline



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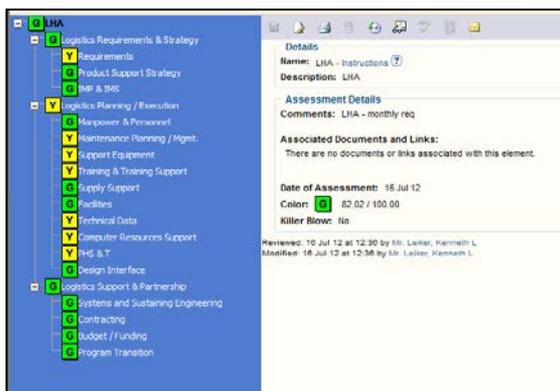


Reason for Change

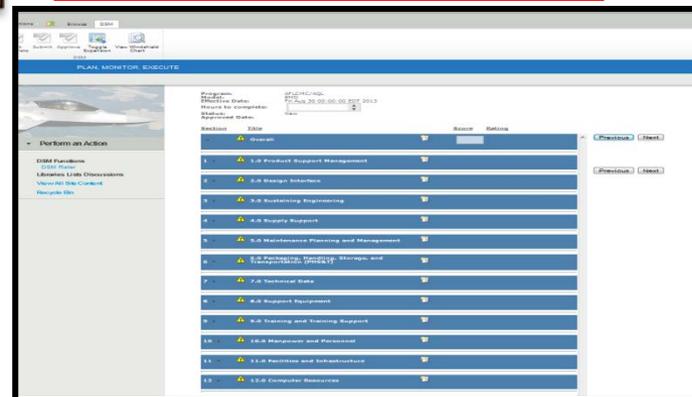
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LCM Working Group (Apr to Sep 12)

Legacy LHA Model



Enhanced LHA Model



- Reason for Change...
 - Very broad, subjective criteria
 - Program-by-program based....no enterprise view across multiple programs or systems
 - Primarily “acquisition” focused

- Changes...
 - Program phase-based criteria
 - Based on 12 Product Support Elements (PSEs)
 - System / PEO rollup of LHAs
 - Issues linked directly to LHA
 - Response requirement for “No” or “N/A” responses
 - “Lifecycle” focused



LHA Change Summary



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LHA Working Group

- | | |
|--|---|
| <ul style="list-style-type: none">➤ Criteria/Questions: 263 across model
➤ Response Options<ul style="list-style-type: none">➤ “Yes,” “No,” and “N/A”
➤ Priority Percentages<ul style="list-style-type: none">➤ Not constrained (e.g. 17 out of 20 criteria could be priority 1)
➤ Priority Weighting<ul style="list-style-type: none">➤ Minimal difference between Priority 1, 2 and 3 for score | <ul style="list-style-type: none">➤ Criteria/Questions Updated: 180 across model<ul style="list-style-type: none">➤ 78 SMEs revalidated criteria/questions
➤ Response Options<ul style="list-style-type: none">➤ Likert Scale (Complete, Low Risk, Medium Risk, High Risk, Not Started, N/A)
➤ Priority Percentages within a PSE defined by SMEs<ul style="list-style-type: none">➤ Priority 1 = 20%, Priority 2 = 30%, Priority 3 = 50% of Criteria
➤ Priority Weighting of criteria<ul style="list-style-type: none">➤ Priority 1 = 4, Priority 2 = 2, Priority 3 = 1 Point(s) |
|--|---|



Future LHA



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- ❑ **Future Models (i.e. Electronic Systems, ACAT 1/2/3, etc.)**
- ❑ **Platform Roll Ups:**
 - **Develop methodology for how many program LHAs roll up to an overall platform assessment**
 - **Create flexibility in tool to allow the individual PSM/OSF to weight programs under a platform (i.e. an F-16 sustainment LHA should be worth more than an ACAT 3 program?)**
 - **Move to Interview type process**
 - **Capability to perform Logistics Assessment (LA) within model**
 - **LHA prepopulate portion of LA in preparation for Independent Validation**
 - **Correlation of LHA with Inspector General (IG) Checklists within Management Internal Control Toolset (MICT) system**

Goal: Build efficiencies for programs



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LHA



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NEW ASSESSMENT

Select Phase

Program Picker: Choose program: LHA

Model Group: Choose: [dropdown]

Model: [dropdown]

Effective Date: [dropdown]

1.0 Product Support Management

Contractual Documents: Has the contractual documents (RFI, RFP, SOW, SOW, CLING, LORLA Sections LAM) been reviewed and include product support?

1.1 NA: Yes No

PSM Assignment: Is a PSM with the required experience, training, education, and certifications, assigned to the program?

1.2 NA: Yes No

PSM/LG Participations: Is the PSM/LG an equal participant in different forums to ensure product support is considered from Material Solution Analysis through Disposal?

1.3 NA: Yes No

PSM/LG Communications: Is the PSM/LG been in ongoing communications with the MAJCOM, user and other stakeholder organizations?

1.4 NA: Yes No

APDP: Does the PSM have adequate product support personnel assigned to the program that have the appropriate certification level (APDP) commensurate with their tasking?

1.5 NA: Yes No

Risk Management Plan: Have logistics concerns been included in the overall risk management plan and includes executable mitigation strategies?

1.6 NA: Yes No

Product Lifecycle Logistics Team: Has an integrated product life cycle logistics team been established (i.e. ILJMT, DNAWG, Test IPT, etc) and

Tailored Criteria Based on Phase

LHA Based on 12 PSE's

PLAN, MONITOR, EXECUTE

Program: AF/ICM/IDL

Master Plan: 7x 1000 00 00 00 00 00 2013

Status: New

Section	Title	Score	Rating
1	Overall		
1	1.0 Product Support Management		
2	2.0 Design Interface		
3	3.0 Sustaining Engineering		
4	4.0 Supply Support		
5	5.0 Maintenance Planning and Management		
6	6.0 Packaging, Handling, Storage, and Transportation (PHS&T)		
7	7.0 Technical Data		
8	8.0 Support Equipment		
9	9.0 Training and Training Support		
10	10.0 Manpower and Personnel		
11	11.0 Facilities and Infrastructure		
12	12.0 Computer Resources		

Logistics Health Assessment Summary

Program: F-45 CRS

ACAT: II

Program Phase: EMD

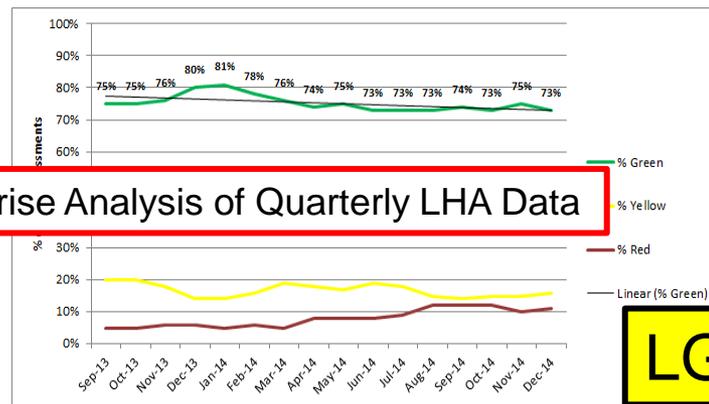
Date of Assessment: 10 Dec 12

Logistics Health Assessment: 78.36 / 100.00

PEO: John Smith
PM: Joe Arnold
PSM: Lisa Reynolds

- Product Support Management
- Design Interface
- Sustaining Engineering
- Supply Support
- Maintenance Planning & Mgt
- Packaging, Handling, Storage & Trans
- Technical Data
- Support Equipment
- Training & Training Support
- Manpower & Personnel
- Facilities & Infrastructure
- Computer Resources

LHA Export w/ Comments & Issues



LGIA

Based on AML... "PML" needed for complete PS health picture



LHA Access & Training



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Site Actions Browse DSM

Mark Complete Submit Approve View Windshield Chart

DSM

View Windshield chart

12 Product support elements (expand for questions)

Clicking the **view all** charm will display the complete list of navigation categories.

Clicking a charm will display the available navigation items within a category.

Recycle Bin

All Site Content

Collapse screen button

Model: THRR
 Effective Date: 02/28/2014
 Hours to complete: 1.0
 Status: New
 Approved Date:

Section	Title	Score	Rating
	Overall	84.05	
1	1.0 Product Support Management		
2	2.0 Design Interface		
3	3.0 Sustaining Engineering		
4	4.0 Supply Support		

Add Comment or Issue

- Supply Chain Strategy Documented in LCSP: Is the Supply Chain strategy documented in LCSP?
- Choose below.
- Complete
 - Low Risk (In Progress)
 - Medium Risk (In Progress)
 - High Risk (In Progress)
 - Not Started

New multi-choice rater criteria

Parent: Overall

Name: 4.0 Supply Support

Comment:

Issue: [Add Issue](#)

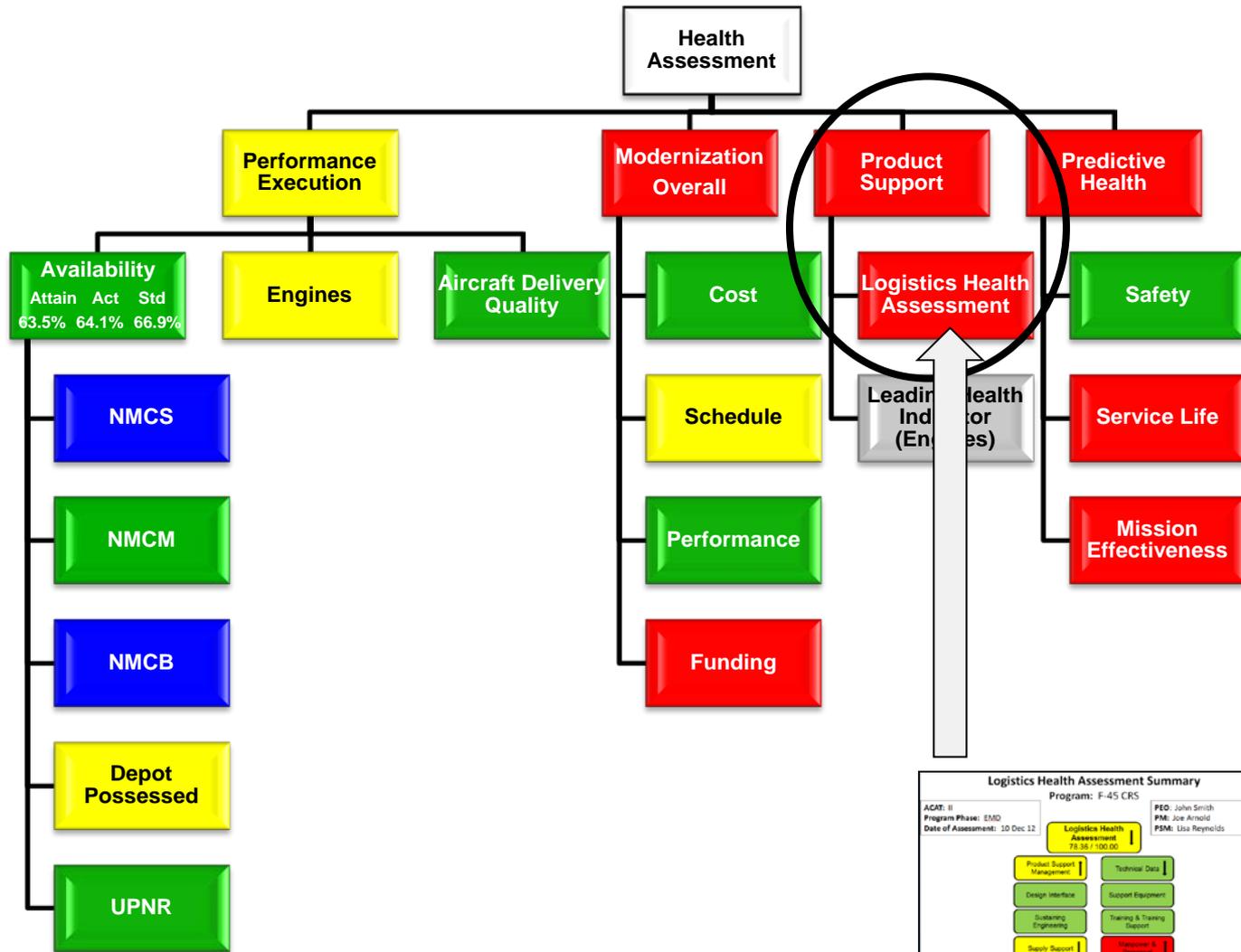


Weapon System Execution Review



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Logistics Health Assessment Summary	
Program: F-45 CRS	
ACAT: II	PEO: John Smith
Program Phase: ENID	PM: Joe Arnold
Date of Assessment: 10 Dec 12	PSM: Lisa Reynolds
Logistics Health Assessment 75.56 / 100.00	
Product Support Management	Technical Data
Design Interface	Support Equipment
Customer Engineering	Training & Training Support
Supply Support	Personnel
Maintenance Planning & Mgt	Facilities & Infrastructure
Planning, Handling, Storage & Trans.	Computer Resources



LHA / WSER

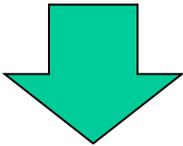


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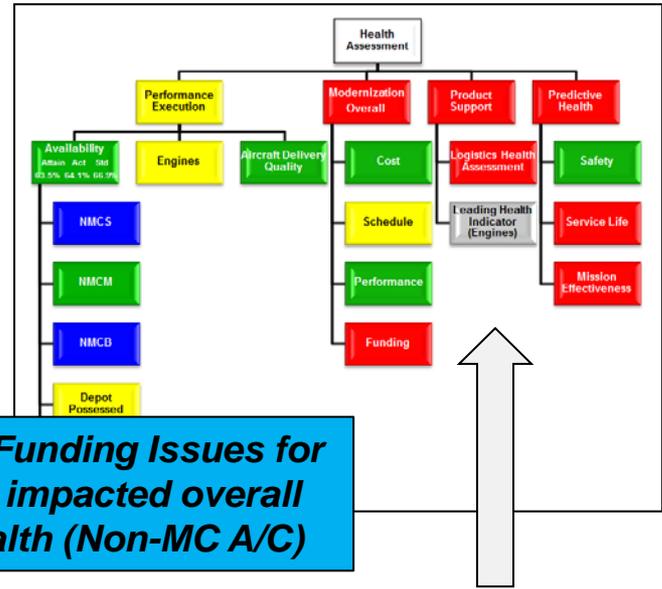
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F-45 Weapon System

Program X (ACAT II Program)
Comm Upgrade Required for SMART Weapons



Example



LHAs	FY Qtr										
------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

•Supply and Funding Issues

Task	FY Qtr										
Technical Data Verification		▲	▲								
Modification Testing			▲	▲							
System Install / Integration				▲	▲	▲	▲	▲	▲	▲	▲

•Non-MC

•Scheduled

•Slip

LHA is predictive Product Support Health tool



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LHA Integration



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Fly, Fight, and Win...in air, space and cyberspace

Strengthen the Nuclear Enterprise

Partner with Joint and Coalition Team

Develop and Care for Airmen & families

Modernize

Recapture Acquisition Excellence

Product Support Enterprise Vision Enterprise Logistics Strategy

SECAF WSS Tasks

Cost of Logistics

Cost Effective Readiness

Enterprise Product Support Health

Equip the Air Force for World-Dominant Airpower

Execute warfighter support mission

Compliance

Standardize/continually improve processes

Demonstrate Cost effectiveness

High Performing Workforce

Ready/responsive Agile Combat Support

Acquire & Support War-Winning Capabilities

Deliver Cost Effective Acquisition Solutions

Deliver Affordable and Effective Product Support

Launch High Confidence Sustainable Programs

Standardize & Continuously Improve Processes

Develop & Place Right Person at Right Time

Assure safe, secure, & quality work environment

Program Product Support Health

Enterprise Product Support Health

Completion Time

Logistics Health Assessment





The “CAR Program”





Scenario



- **CAR is currently not meeting its capability requirements**
- **Mod programs identified to improve the capability of the existing CAR System**
- **LHAs need to be accomplished for each mod program**





Scenario



Current Capability

Capability	Rqmt	Actual
Driving Range (per yr)	15,000 miles	12,500 miles
MPH	70	65
Gas Mileage	35/40 city/hwy	32/38 city/hwy
Heavy MX Schedule	5,000 miles	5,000 miles
O&S Cost (per year)	\$2,000	\$2,500

Future Capability

Capability	Rqmt	Actual
Driving Range (per yr)	15,000 miles	15,500 miles
MPH	75	78
Gas Mileage	40/45 city/hwy	40/45 city/hwy
Heavy MX Schedule	5,000 miles	8,000 miles
O&S Cost (per year)	\$1,000	\$800





Scenario



- **Four Mod Programs/Upgrades identified to achieve future capabilities required**

Name	Mod/Upgrade	ACAT	Cost	Phase	Benefit
Sirius XM	Upgrade Radio to Sirius XM	III	\$150	FRP	Allows driver to drive further through improved sound (music).
GPS	Install a GPS	III	\$250	EMD	New capability. Reduces number/weight of maps needed.
CBM+	Install Sensors for CBM+	N/A	\$20	O&S	Decreases O&S costs for heavy maintenance by 10%.
Hybrid Engine	Upgrade to Hybrid Engine	II	\$6500	TD	Decreases fuel consumption costs and improves MPH as well as gas mileage.





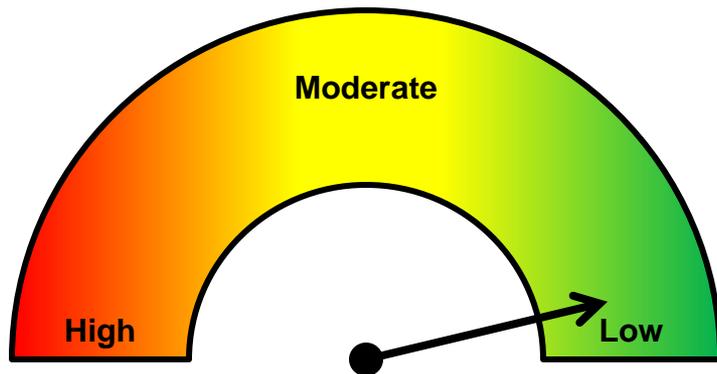
CAR Life Cycle Metrics



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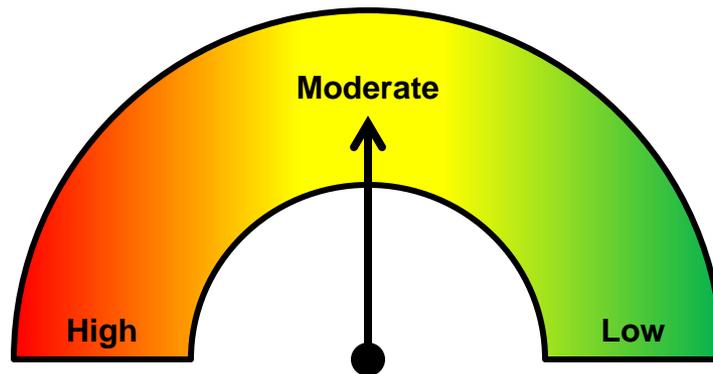
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Sirius XM



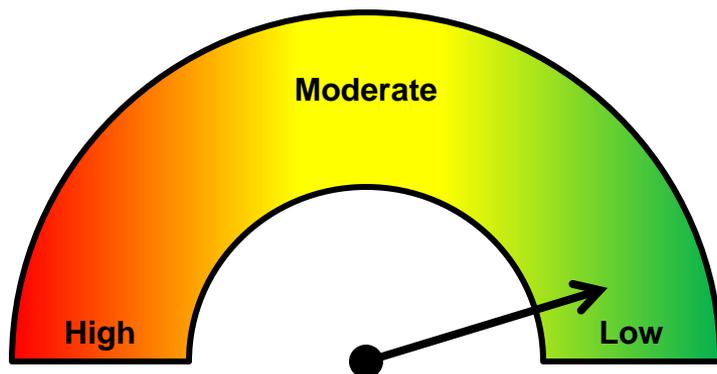
Metric(s): Driving Range

GPS



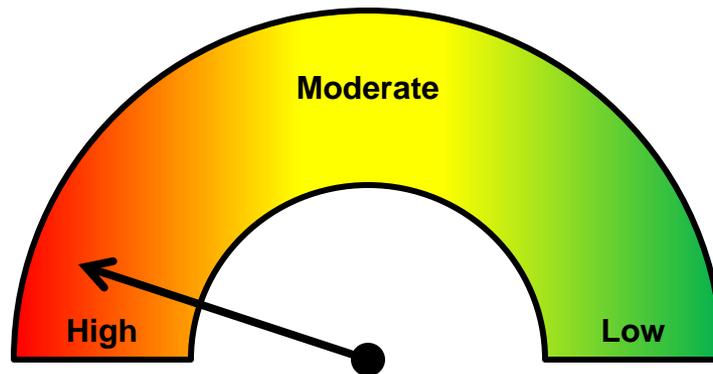
Metric(s): O&S Cost/MPH

CBM+



Metric(s): O&S Cost/Maintenance Interval

Hybrid Engine



Metric(s): O&S Cost/Heavy Maintenance Interval/Gas Mileage/MPH



Hybrid Engine



Leadership has determined that the Hybrid Engine is the most risk but would save the most money over the lifecycle

- **Project MPG increases 25%**
- **Design team structure**
- **Integration of the modification needs to be worked**
- **Schedule determined by new model release date**
- **Competitors also working Hybrid Engine Concept**



Hybrid Engine



Product support Element: Design Interface

Phase: Engineering & Manufacturing Development (EMD)

LHA Questions

Are Reliability, Availability, Maintainability, and Supportability (RAMS) requirements included in ICD, CDD, CPD and translated into contractual requirements?

- Complete
- Low Risk
- Med Risk
- High Risk
- Not Started
- Not Applicable



Discussion topics:

- Total car reliability (visits to a mechanic) decrease if possible
- Average cost per mechanic visit should decrease
- Ensure new engine does not require new infrastructure, data manuals, support equipment, and specialized training



Mitigation Plan-Required by LHA



Quarterly LHAs will allow tracking

- **Ensure RAMS requirements are identified in writing to the Hybrid Engine design team.**
- **Add to the schedule - quarterly review of the design teams progress by the Chief Engineer and have a logistician participate.**
- **Add to the test plan a RAMS testing requirement**
- **Add Logistician as a member of the design team**



Current Tracking of Life Cycle Cost

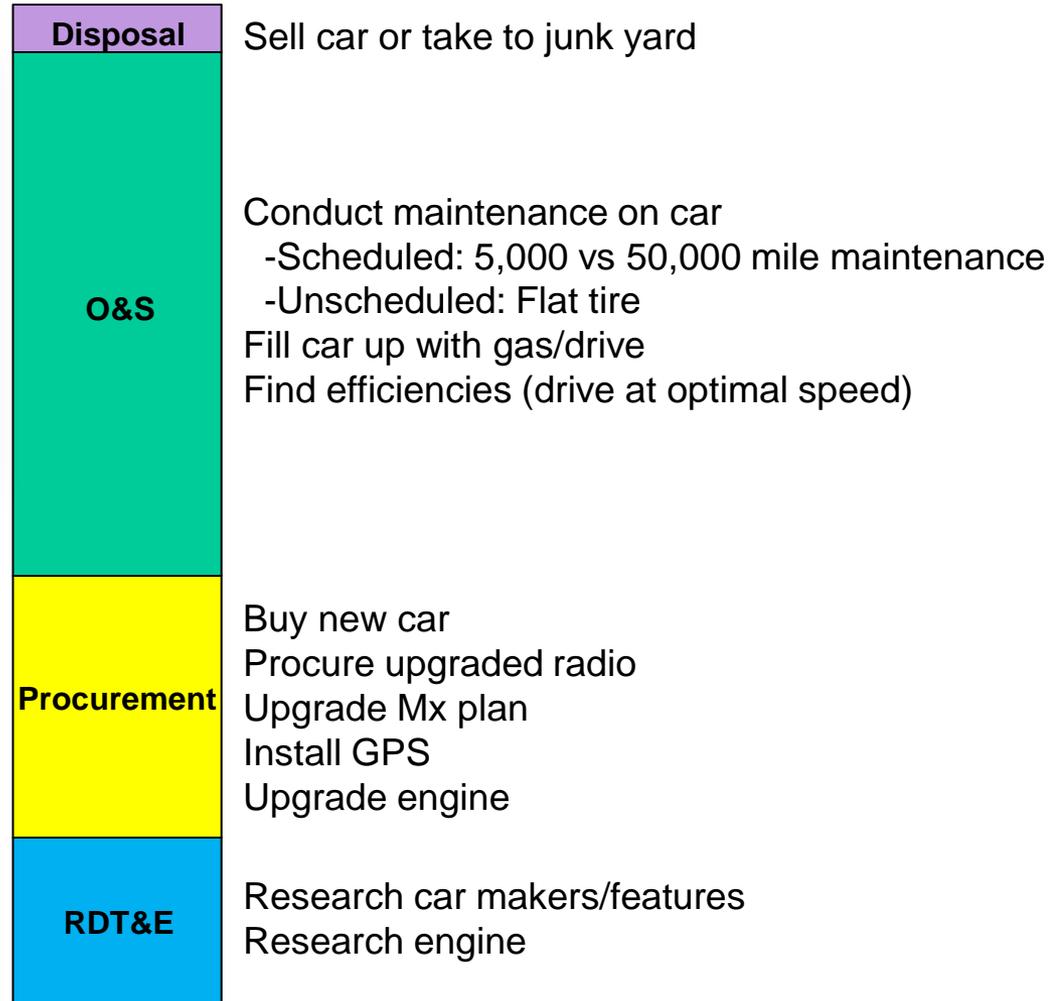
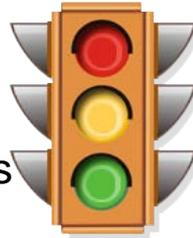


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LHA Assessments Track Health of individual Acquisition/Mod Programs



Excellent tool to measure product support health across platforms



Questions?

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Backup Charts

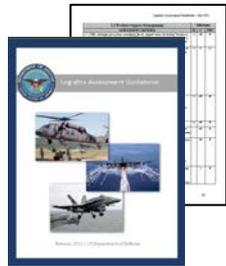


Side-By-Side Comparison

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Good chart

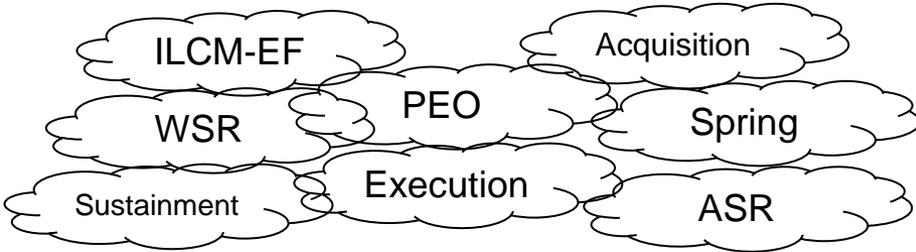
Current State



- Gaps**
- Pre MS-A criteria (LA / LHA)
 - O&S criteria (LHA)
 - MS / Phase tailored criteria

Program Assessments

Lack of objective & tailored criteria



No one enterprise review/report for Product Support

Planned Future State



- Additional Tailored / Objective PS Criteria
- Selectable MS / Phase Capability



True Lifecycle Assessment Tool

- Built on 12 PS Elements
- MS / Phase tailored criteria across lifecycle



Enterprise View



Senior Leadership