**Mission**
Develops, acquires, tests, fields, sustains, and modernizes leading-edge propulsion systems through life cycle management for the U.S. warfighter and international partners

**Vision**
Be the Propulsion Center of Excellence for the U.S. Air Force and International Partners
Roles and Responsibilities

- Senior AF Official accountable for AF Propulsion Enterprise
- Deputy PEO for Propulsion
- Propulsion Capability Development Lead
- Life Cycle Management responsibility
- Single face and voice to propulsion stakeholders
- Represent AF to DoD, joint services, and industry
- Develop engine readiness requirements
- Reduce engine costs – improve engine reliability
- Ensure the highest levels of engine safety
- Develop/implement policy and guidance
- Develop and maintain propulsion workforce competencies
Air Force Propulsion Portfolio

AFLCMC… Providing the Warfighter’s Edge

- Engines
  - USAF: 14,448
  - FMS: 8,328
  - Total: 22,776

- Inventory Value
  - USAF: $42.7B
  - FMS: $19.0B
  - Total: $61.7B

- FY17 Execution
  - USAF: $1,981M
  - FMS: $510M
  - Total: $2.5B

- USAF
  - 39 TMS
  - 10 Commands
  - 131 Bases

- FMS
  - 44 Nations
  - 22 TMS

- FY16 REPAIR
  - Engine: 439
  - Major Assy: 2541

- FY17 REPAIR
  - Engine: 592
  - Major Assy: 4060

As of FY17/Q2
We Are Propulsion

Warfighter Expectations:
- Deliver readiness today and prepare for readiness of tomorrow
- Provide affordable propulsion capability
- Ensure engine safety
- Deliver effective and efficient propulsion power
Affordable Readiness Opportunity

- Complex repair and inspection requirements not achievable with current/legacy inspection methods
- Effective lifecycle management requires development of innovative inspection, cleaning, and repair methods for increased efficiency and capability

Modernization Required for Increasing Propulsion Workload
Bending the Cost Curve

DoD Turbine Engine Investments

DoD's Turbine Engine Investments

Sustainment 60%

Acquisition 28%

Development 10%

S&T 2%

Engine Sustainment

Material 85%

Labor, G&A 15%

Material is the largest sustainment cost driver

Does not include the cost of Fuel

Technology Can Bend the Cost Curve
Additive Manufacturing
Capability Deployment – Current Efforts

- Main focus fixturing and tooling
  - Using ABS for rapid prototyping prior to final tool making
  - Using ABS and ULTEM printers to produce tooling and non-flight-critical aircraft parts
- Maturation of Advanced Manufacturing for Low-Cost Sustainment (MAMLS)
  - Baseline use of AM by DoD, identify and capture best practices, develop technology, execute demonstrations, create implementation plans
  - Phase I (2016-2017): develop paint hard mask demonstration for TF33 accessory gearbox (AGB) and rear compressor case
  - Phase II (2017-2018): develop heat exchanger technology
- Rapid Engineered Additive Legacy (REAL) Tubes SBIR
  - 15 month project to design weld, trim, and check fixtures for low purchase quantity legacy tubes
Additive Manufacturing
Future Capabilities
AFLCMC… Providing the Warfighter’s Edge

- TF34 Pressure Regulator
  - AM Tiger Team organic project
  - Reengineer housing to alleviate supply shortage
- Fuel/Oil Coolers
  - Develop fuel/oil coolers starting with common F110-100/F118-101 cooler
  - Future projects for other engines
- Cast Accessory Housings
  - Reengineer cast accessory housings across multiple engines
Inspection Technology
Capability Deployment – Current Efforts

Requirements

- Airfoil inspection techniques
- Rotating fracture critical component inspections
- Dimensional restoration repairs
- Integrally bladed disks vibratory analysis
- Oil analysis techniques

Innovations

- Automated Integrated Inspection Station (AIIS)
  - Sonic InfraRed (SonicIR) crack detection
  - Optical/White light photogrammetry inspection
    - Advanced Topographical Optical Sensor (ATOS)™
    - Dimensional and visual defect inspection
- Automated Eddy Current Inspection System (AECIS)
  - Inspect rotating fracture critical components
  - Detection of potentially life-reducing material defects
    - Flaw size detection capability of .005” x .005”

Improve Process Thru-put, Reduce Cost
Inspection Technology
Future Capabilities
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• Novel methods to inspect components without removing coatings
• “Intelligent” inspection to characterize crack indications
• Technology assisted visual & dimensional inspection methods
• Full field digital inspections
• Inspection and repair of composite parts

<table>
<thead>
<tr>
<th>Projects</th>
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</thead>
<tbody>
<tr>
<td>Interface Inspection Method for Thermal Spray Coatings</td>
</tr>
<tr>
<td>Efficient 3-D Finite Element Process Modeling to Enable Linear Friction Welding of Aerospace Components</td>
</tr>
<tr>
<td>Efficient Evaluation of Fiber Coating Chemistry</td>
</tr>
<tr>
<td>Novel Passive Concepts for Combustion Instability Reduction</td>
</tr>
<tr>
<td>Real Time Thermal Imaging Capability for Propulsion Systems</td>
</tr>
<tr>
<td>Advanced Machining of Aerospace Materials</td>
</tr>
<tr>
<td>Mask-Free Thermal Spray Module</td>
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</tbody>
</table>
# T56 Series 3.0 & 3.5 Depot Maintenance Contract

**AFLCMC... Providing the Warfighter’s Edge**

<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
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</thead>
</table>
| **Objective**: Provide depot maintenance for T56 end items in support of C-130H  
**Scope**: T56 Series 3.0 USAF, USCG, and USN end items; T56 Series 3.5 USAF end items  
**Acquisition Strategy**: Competitive FAR 15 Single Award ID/IQ FFP Contract – LPTA Award  
**Timeframe**: FY18-26 (8 ½ years)  
**Dollar Value**: $904M  
**Challenging Requirements**:  
- Movement of GFE  
- Timely funding from other service rqmts | **Customers**: AMC, ANG, AFR, AFSOC, ACC, PACAF, AFMC, USCG, USN  
**Contract Type**: ID/IQ FFP  
**Program Type**: USAF, USCG, USN  
**Number of Users**: 3 |

<table>
<thead>
<tr>
<th>RFP and POCs</th>
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<tbody>
<tr>
<td><strong>RFP</strong>: Released 12 May 17; Proposals due 11 July 17</td>
<td></td>
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</tbody>
</table>
| **POC(s)**:  
- **Program Manager**: AFLCMC/LPSC, 405-734-5251  
- **Contracting Officer**: AFLCMC/LPK, 405-734-6995  
- **Technical Lead**: AFLCMC/LPSEC, 405-734-4680 |
T56-A-15 FMS Overhaul/Repair

**Objective:** Provide CLS to FMS

**Scope:** Provide contracting vehicle to overhaul/repair T56-A-15 engines for FMS Countries

**Acquisition Strategy:** TBD

**Timeframe:** TBD

**Dollar Value:** $40M - Competitive

**Identify Challenging Requirements:** USAF approved Source Approval Requests (SAR) from Rolls-Royce Authorized Maintenance Centers/Overhaul Facilities (AMC/AMOF)

**Customers:** FMS (T56 IEMP Partner Nations)

**Contract Type:** TBD

**Program Type:** Air Force

**Number of Users:** 30

**RFP:** TBD

**POC(s):**
- Program Manager: AFLCMC/LPSIB, LPSIC 405-734-3759; 405-736-7312
- Contracting Officer: AFLCMC/TBD
- Technical Lead: AFLCMC/LPSIC, 405-736-7485; 405-736-7434
# J85 Intermediate-Level Mx Contract

## Project

- **Objective:** Provide Intermediate-Level whole engine repair for the J85 Engine; supports T-38 and pilot training program
- **Scope:** Intermediate-level repair of J85-5 engines utilizing Reliability Centered Maintenance concept
- **Acquisition Strategy:** Competitive FAR 15 Single Award ID/IQ FFP Contract – LPTA
- **Timeframe:** FY19-FY25 (7 years)
- **Dollar Value:** ~$620M (labor + consumable materiel)
- **Challenging Requirements:**
  - Movement of GFE from current repair facility
  - Vendor qualification requirements
  - Viable plan to mitigate production gap coverage during transition

## Description

- **Customers:** ACC, AETC, AFGSC, Navy, NASA, Foreign Military
- **Contract Type:** ID/IQ FFP
- **Program Type:** USAF, USN, NASA, Foreign Military
- **Number of Users:** 4

## RFP and POCs

- **RFP:** 1 Oct 17
- **POC(s):**
  - **Program Manager:** AFLCMC/LPSCC, 405-734-3407
  - **Contracting Officer:** AFLCMC/LPK, 405-739-8572
  - **Technical Lead:** AFLCMC/LPE, 405-734-9199
## F108-100 Non-Standard Repair (NSR) Contract

### Project
- **Objective:** Provide non-standard (limited) whole engine repair for F108-100
- **Scope:** Long-term contract for inspection, disassembly, and limited repair up to full overhaul based upon engine work scope
- **Acquisition Strategy:** Competitive
- **Timeframe:** ~ FY19-FY24
- **Dollar Value:** ~ $30M/yr (~24 engines/yr)
- **Challenging Requirements:**
  - Multiple levels of repair require multiple pricing options
  - Overhauled engines must be delivered in CPUP configuration
  - Quick Engine Change (QEC) kit support

### RFP and POCs
- **RFP:** ~ Jan 18
- **POC(s):**
  - Program Manager: AFLCMC/LPSB, 405-734-4667
  - Contracting Officer: AFLCMC/LPK, 405-734-6724
  - Technical Lead: AFLCMC/LPSEB, 405-734-4666

### Description
- **Customers:** AMC, AFRC, ANG
- **Contract Type:** ID/IQ FFP
- **Program Type:** USAF
- **Number of Users:** 1
# B-52 Re-engine

## Project
- **Objective**: Re-engine B-52 Aircraft
- **Scope**: Identify COTS propulsion systems for B-52
- **Acquisition Strategy**: TBD
- **Timeframe**: 2019-2025
- **Dollar Value**: $3B
- **Identify Challenging Requirements**: Selecting appropriate propulsion system to minimize airframe modifications while achieving performance thresholds

## Description
- **Customers**: AFGSC, AFR
- **Contract Type**: TBD
- **Program Type**: Air Force
- **Number of Users**: 2

## RFP and POCs
- **RFP**: TBD
- **POC(s):**
  - Program Manager: AFLCMC/WWD 405-734-5892
  - Contracting Officer: AFLCMC/PZK 405-622-7263
  - Technical Lead: AFLCMC/LPSA, 405-734-4316
Small Engines

AFLCMC… Providing the Warfighter’s Edge

<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
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<tbody>
<tr>
<td>• <strong>Objective:</strong> Develop alternative small engines to address shortfalls in current industrial base &amp; integrate operational needs w/ development efforts</td>
<td></td>
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<tr>
<td>• <strong>Scope:</strong> Integrate LP, AFRL, DARPA, EBJ, and industry to develop small engine components, materials, and prototypes for 200lb and 650lb engines</td>
<td></td>
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<tr>
<td>• <strong>Acquisition Strategy:</strong> Competitive</td>
<td></td>
</tr>
<tr>
<td>• <strong>Timeframe:</strong> 2018-2025</td>
<td></td>
</tr>
<tr>
<td>• <strong>Dollar Value:</strong> $163M*</td>
<td></td>
</tr>
<tr>
<td>• <strong>Identify Challenging Requirements:</strong></td>
<td></td>
</tr>
<tr>
<td>• Diminishing industrial base</td>
<td></td>
</tr>
<tr>
<td>• Low knowledge base for small engine design</td>
<td></td>
</tr>
<tr>
<td>• Meet aggressive cost requirements</td>
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<tr>
<td>• Find trade between: attritable, durability, and service life</td>
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<td>• <strong>POC(s):</strong></td>
</tr>
<tr>
<td>• <strong>Program Manager:</strong> AFLCMC/LPA, 937-255-5624</td>
</tr>
<tr>
<td>• <strong>Contracting Officer:</strong> AFLCMC/LPK, 937-255-7696</td>
</tr>
<tr>
<td>• <strong>Technical Lead:</strong> AFLCMC/LPE, 937-255-7693</td>
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*Refers to LCMC small engine roadmap projected value
### Other Transaction Authority

**Propulsion Consortium Initiative**

<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
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<tbody>
<tr>
<td>• <strong>Objective:</strong> Stand up propulsion consortium to meet rapid prototype needs</td>
<td></td>
</tr>
<tr>
<td>• <strong>Scope:</strong> Consortium members will execute prototyping projects that address USAF propulsion requirements</td>
<td></td>
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<tr>
<td>• <strong>Acquisition Strategy:</strong> Competitive</td>
<td></td>
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<tr>
<td>• <strong>Timeframe:</strong> 2017-2022</td>
<td></td>
</tr>
<tr>
<td>• <strong>Dollar Value:</strong> $45M</td>
<td></td>
</tr>
<tr>
<td>• <strong>Identify Challenging Requirements:</strong></td>
<td></td>
</tr>
<tr>
<td>• Need programs/projects that can use the consortium to meet their needs</td>
<td></td>
</tr>
<tr>
<td>• Targeting Rapid Prototyping Tasks</td>
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<tr>
<td>• <strong>RFP:</strong> 14 April 17</td>
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<tr>
<td>• <strong>POC(s):</strong></td>
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<tr>
<td>• <strong>Program Manager:</strong> AFLCMC/LPA, 937-255-5624</td>
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<tr>
<td>• <strong>Contracting Officer:</strong> AFLCMC/LPK, 937-255-2134</td>
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<tr>
<td>• <strong>Technical Lead:</strong> AFLCMC/LPE, 937-255-7693</td>
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<tr>
<td>• <strong>Customers:</strong> LP</td>
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<tr>
<td>• <strong>Contract Type:</strong> Fixed</td>
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<tr>
<td>• <strong>Program Type:</strong> Air Force</td>
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<tr>
<td>• <strong>Number of Users:</strong> 6</td>
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Summary

- Air Force Propulsion is the Propulsion Center of Excellence for the USAF and international partners
- Executing programs while continuing to work challenges
- Future shaped by renewed emphasis on capability sustainment and acquisition opportunities
- Modernization is necessary to keep Air Force Propulsion ready, affordable, safe and effective