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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force **Date:** May 2021

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0401221F / KC-46A Tanker Squadrons
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	76.023	73.458	0.000	73.458	-	-	-	-	-	-
651120: <i>Pegasus Capability Improvements</i>	0.000	0.000	18.060	19.653	0.000	19.653	-	-	-	-	-	-
655271: <i>KC-46 RDT&E</i>	0.000	0.000	57.963	53.805	0.000	53.805	-	-	-	-	-	-

Program MDAP/MAIS Code: 387

Note

In FY 2021, Program Element (PE) 0605221F KC-46, Project 655271 KC-46 RDT&E, and Project 651120 Pegasus Capability Improvements efforts were transferred to PE 401221F, Project 655271 KC-46 RDT&E, and Project 651120 Pegasus Capability Improvements in order to consolidate all KC-46 activity under a single PE. PE 0401221F also has historical Tanker Replacement costs from FY 2005-2008 reflected in prior years. PE 0605221F has costs from FY 2009 to FY 2020.

A. Mission Description and Budget Item Justification

Replacement of the legacy tanker fleet will take place in several stages. The initial tanker replacement increment of KC-46s will replace roughly a third of the current capability. Future programs will ultimately recapitalize the entire tanker fleet over a period of more than 30 years. The Air Force completed an Analysis of Alternatives (AoA) in Apr 2006 to determine the most appropriate strategy to recapitalize the aging fleet of aerial refueling aircraft. Based on this analysis, the Air Force concluded a strategy of full and open competition to select a commercial derivative replacement tanker aircraft would result in a best value tanker contract. To initiate the first phase of the tanker replacement, the KC-46 program released a final Request for Proposal (RFP) on 24 Feb 2010, and entered source selection on 9 Jul 2010. The KC-46 program held a Milestone B (MS B) Defense Acquisition Board (DAB) on 23 Feb 2011, received approval to enter Engineering and Manufacturing Development (EMD) from the Undersecretary of Defense (Acquisition, Technology and Logistics) (USD(AT&L)) on 24 Feb 2011, and awarded the KC-46 EMD contract to Boeing on 24 Feb 2011 to develop and procure 179 KC-46 aircraft. The program is procuring four RDT&E aircraft for integration and demonstration of capability which will ultimately be operationally fielded. During production, the program plans to procure 175 aircraft throughout 13 lots. The KC-46 program held a MS C DAB on 12 Aug 2016 and received approval to enter Low Rate Initial Production (LRIP). The program awarded LRIP Lots 1 and 2 on 18 Aug 2016, LRIP Lot 3 on 27 Jan 2017, LRIP Lot 4 on 10 Sep 2018, and LRIP Lot 5 on 27 Sep 2019. Awards for Lot 6 occurred on 12 Jan 2021 and Lot 7 awarded on 20 Jan 2021 totaling 94 aircraft to date. Lot 8 is planned for award in Jan 2022. The Air Force delivered the first KC-46 to McConnell Air Force Base on 25 Jan 2019. As of 31 Mar 2021, 44 aircraft have been delivered to the Air Force. KC-46 funding also supports Training Systems, Direct Mission Support, Program Management Administration (PMA) activities, government developmental and operational test support, mission planning capability development, various studies and analyses, KC-46 requirements definition and demonstrations in support of Air Force Advanced Battle Management (ABMS) initiative, engineering changes, and future tanker replacement planning activities.

The KC-46 will provide the capability to fuel joint and coalition receivers via a boom or drogue system on every mission and will also augment the airlift fleet with cargo, passenger, and aeromedical evacuation capabilities. The KC-46 will operate in day/night and adverse weather conditions to enable deployment, employment, sustainment, and redeployment of U.S. joint, allied, and coalition forces. The KC-46 will have communication, navigation, and surveillance equipment for worldwide

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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force	Date: May 2021
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Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0401221F / <i>KC-46A Tanker Squadrons</i>
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operations; the capability to perform missions in chemical and biological environments; the ability to operate in up to medium threat environments with self-defense/protection (both active and passive) capabilities; and the necessary battlespace awareness to mitigate survivability threats.

The Aircrew Training System (ATS) and the Maintenance Training System (MTS) are being developed and procured using KC-46 funding. The ATS contract was awarded on 1 May 2013 to FlightSafety Services Corporation. The ATS contract will provide Aircrew Training Devices (ATDs) to include but not limited to Weapon System Trainers (WSTs), Boom Operator Trainers (BOTs), Fuselage Trainers (FuTs), and Part-Task Trainers (PTTs) at each Main Operating Base (MOB) and the Formal Training Unit (FTU). The ATS contract will also support Distributed Mission Operations (DMO), provide aircrew instruction, develop courseware, provide logistics support, acquire a technical data package to support future competition efforts, and manage training device concurrency with the aircraft.

The MTS contract was awarded 6 Jul 2016 to The Boeing Company. The MTS acquisition focuses on designing, developing, testing, producing, and fielding an optimized training system for KC-46 maintainers by integrating various forms of training media and Maintenance Training Devices (MTDs) into a "blended" solution. This blended solution includes the appropriate mix of hardware and software, "high-fidelity" Augmented Hardware Training Devices (AHTDs), PTTs, Interactive Multimedia Instruction (IMI), and emerging technologies to meet validated Air Mobility Command (AMC) maintenance training requirements.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver KC-46 Tanker Squadron weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In FY20 \$0.000M was expended for civilian pay expenses in this program element, and in FY21 \$0.367M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

B. Program Change Summary (\$ in Millions)	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022 Base</u>	<u>FY 2022 OCO</u>	<u>FY 2022 Total</u>
Previous President's Budget	0.000	106.262	108.598	0.000	108.598
Current President's Budget	0.000	76.023	73.458	0.000	73.458
Total Adjustments	0.000	-30.239	-35.140	0.000	-35.140
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-30.239			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	-35.140	0.000	-35.140

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<u>Change Summary Explanation</u> FY 2021 funding reduced due to Congressional Directed Reduction of \$21.9 million for forward financing and \$8.2 million for unjustified program growth. FY 2022 funding request reduced by \$35.14 million due to availability of prior year execution balances.		

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force										Date: May 2021		
Appropriation/Budget Activity 3600 / 5					R-1 Program Element (Number/Name) PE 0401221F / KC-46A Tanker Squadrons				Project (Number/Name) 651120 / Pegasus Capability Improvements			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
651120: <i>Pegasus Capability Improvements</i>	0.000	0.000	18.060	19.653	0.000	19.653	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2021, PE 0605221F, KC-46, efforts were transferred to PE 0401221F, KC-46, in order to consolidate all KC-46 activity under a single PE. PE 0401221F also has historical Tanker Replacement costs from FY 2005-2008. PE 0605221F has costs from FY2009 to FY2020.

A. Mission Description and Budget Item Justification

The KC-46 will provide the capability to fuel joint and coalition receivers via a boom or drogue system on every mission and will also augment the airlift fleet with cargo, passenger, and aeromedical evacuation capabilities. The KC-46 will operate in day/night and adverse weather conditions to enable deployment, employment, sustainment, and redeployment of U.S. joint, allied, and coalition forces. The KC-46 will have communication, navigation, and surveillance equipment for worldwide operations; the capability to perform missions in chemical and biological environments; the ability to operate in up to medium threat environments with self-defense/protection (both active and passive) capabilities; and the necessary battlespace awareness to mitigate survivability threats.

The dynamics and mission urgency of the post-production (post-DD-250) environment require the program to maintain a flexible and responsive posture to support a broad range of mission support needs. The KC-46 will continue to identify, design, develop, integrate, verify, certify, produce, install, field, and sustain a comprehensive range of non-recurring and recurring post-production, air vehicle enhancements and field support needs. These needs may originate from programmed Mobility Air Force (MAF) requirements, Combatant Commander Joint or Urgent Operational Needs (JUON/UON), non-programmed Federal Aviation Administration (FAA) directives, requirements identified and supported by HHQ Enterprise Capability Collaboration Teams (i.e., High Value Airborne Asset [HVAA], Air Superiority 2030, and Multi-Domain Command and Control [MDC2]), or correction of field deficiencies.

The KC-46 will continue to develop, field, and sustain warfighter capabilities to meet evolving threats and mission support requirements through Block or discrete modification or modernization programs depending on mission urgency, available funding, and programmatic and technical risks. Post-production requirements can include, but will not be limited to: avionics and structural systems/ architecture and subsystem updates, general mission equipment updates and procurement, general sustainment support, studies and analyses, future Tanker requirements simulation and training, and correction of field deficiencies.

Project 651120 funding will also support Program Management Administration (PMA) activities, test support, mission planning capability development and various studies and analyses.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver KC-46 Tanker Squadron weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In FY20 \$0.000M was expended for civilian pay expenses in this program element, and in FY21 \$0.367M is forecasted for civilian pay expenses in this program element.

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0401221F / KC-46A Tanker Squadrons	Project (Number/Name) 651120 / Pegasus Capability Improvements

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
<p>Title: KC-46A Block 1 Pegasus Advanced Communications Suite (PACS)</p> <p>Description: The KC-46A Block 1 Pegasus Advanced Communications Suite (PACS) program will satisfy Department of Defense (DoD), National Security Agency (NSA), Department of Transportation (DoT), and USAF mandates by upgrading legacy Tactical Data Link 16, Beyond Line-of-Sight (BLOS) Ultra High Frequency (UHF) Line-of-Sight (LOS) capabilities with next-generation Link 16 terminals and UHF secure, global, BLOS and anti-jam LOS satellite voice communications capabilities for the KC-46 weapon system. PACS enables compatibility and interoperability with current and planned future joint and allied forces while simultaneously increasing the survivability of secure global voice and data communications capabilities between Mobility Air Force (MAF) C2 agencies and MAF aircraft operating worldwide in or near contested environments.</p> <p>FY 2021 Plans: Contract Award of Block 1 PACS EMD program.</p> <p>FY 2022 Plans: Block 1 PACS EMD program effort.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Funding increased due to full work year of effort.</p>	0.000	16.211	17.056
<p>Title: Support</p> <p>Description: Studies and analysis to support planning activities for future initiatives for upgrades, future tanker replacement planning, and miscellaneous Program Office support and planning. Also includes requirements such as travel and training.</p> <p>FY 2021 Plans: Program Office Support to include studies, analysis and planning.</p> <p>FY 2022 Plans: Program Office Support to include studies, analysis and planning. Begin work on future tanker Analysis of Alternatives.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Funding increase required to support increased planning and support of future tanker requirements.</p>	0.000	1.849	2.597
Accomplishments/Planned Programs Subtotals	0.000	18.060	19.653

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2022</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	
• APAF 05 41221F/ KC046A: KC-46A Tanker	-	4.085	1.984	-	1.984	-	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force	Date: May 2021
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Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0401221F / <i>KC-46A Tanker Squadrons</i>	Project (Number/Name) 651120 / <i>Pegasus Capability Improvements</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u> <u>Base</u>	<u>FY 2022</u> <u>OCO</u>	<u>FY 2022</u> <u>Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks

D. Acquisition Strategy

The KC-46 Post-Production Change Management (PPCM) construct is comprised of processes and tools, specifically tailored to a broad spectrum of post-production requirements to support the KC-46 enterprise (e.g. weapon system, sustainability, training devices). PPCM is designed to leverage competition when applicable and emphasize configuration management and discrete cost accounting methodologies. KC-46 PPCM oversight will promote competition throughout the life cycle of the KC-46A fleet. All KC-46 post-production requirements and associated acquisition strategies will be carefully managed, reviewed, and approved at the appropriate levels by the KC-46 Division and/or Tanker Directorate senior functional leaders. PPCM requirements will employ multiple contract-types, tailored to the requirement and documented in discrete Acquisition Strategy Panel briefings, to minimize cost, technical, and schedule execution risks and ensure on-time deliverables. In addition, all ACAT-level programs, deriving from the PPCM process, will follow Department of Defense (DoD) Directive 5000.01 and DoD Instruction 5000.02 guidelines and directives, as applicable, to ensure management controls--commensurate with the scope and cost of the supported requirement.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force **Date:** May 2021

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0401221F / KC-46A Tanker Squadrons	Project (Number/Name) 651120 / Pegasus Capability Improvements
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Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
KC-46A Capability Upgrades (to include modification and modernization)	SS/CPFF	The Boeing Company : Seattle, WA	0.000	-		16.682	Sep 2021	17.056	Dec 2021	-		17.056	-	-	-
Subtotal			0.000	-		16.682		17.056		-		17.056	-	-	N/A

Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Direct Mission Support	Various	KC-46 Program Office : Dayton, W-P AFB, OH	0.000	-		1.011	Oct 2020	2.597	Oct 2021	-		2.597	-	-	-
Direct Cite Authority for Civilian Pay	Various	KC-46 Program Office : Dayton, W-P AFB, OH	0.000	-		0.367	Oct 2020	0.000	Oct 2021	-		0.000	-	-	-
Subtotal			0.000	-		1.378		2.597		-		2.597	-	-	N/A

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		18.060		19.653	-	-	N/A

Remarks
 In FY21, all KC-46 funding was transferred to PE 0401221F in order to consolidate all KC-46 activity under a single PE. For all costs in FY19 and FY20, refer to PE 0605221F.

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0401221F / <i>KC-46A Tanker Squadrons</i>	Project (Number/Name) 651120 / <i>Pegasus Capability Improvements</i>

	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<i>Pegasus Capability Improvements</i>																												
KC-46A Block I PACS																												
Long Term Test Aircraft Maintenance Support																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0401221F / <i>KC-46A Tanker Squadrons</i>	Project (Number/Name) 651120 / <i>Pegasus Capability Improvements</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Pegasus Capability Improvements</i>				
KC-46A Block I PACS	4	2021	2	2026
Long Term Test Aircraft Maintenance Support	1	2023	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force **Date:** May 2021

Appropriation/Budget Activity 3600 / 5					R-1 Program Element (Number/Name) PE 0401221F / KC-46A Tanker Squadrons				Project (Number/Name) 655271 / KC-46 RDT&E			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
655271: KC-46 RDT&E	0.000	0.000	57.963	53.805	0.000	53.805	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

Note

In FY2021, PE 0605221F KC-46, Project 655271 KC-46 RDT&E, and Project 651120 Pegasus Capability Improvements efforts were transferred to PE 401221F, Project 655271 KC-46 RDT&E, and Project 651120 Pegasus Capability Improvements in order to consolidate all KC-46 activity under a single PE. PE 0401221F also has historical Tanker Replacement costs from FY 2005-2008 reflected in prior years. PE 0605221F has costs from FY2009 to FY2020.

A. Mission Description and Budget Item Justification

Replacement of the legacy tanker fleet will take place in several stages. The initial tanker replacement increment of KC-46s will replace roughly a third of the current capability. Future programs will ultimately recapitalize the entire tanker fleet over a period of more than 30 years. The Air Force completed an Analysis of Alternatives (AoA) in Apr 2006 to determine the most appropriate strategy to recapitalize the aging fleet of aerial refueling aircraft. Based on this analysis, the Air Force concluded a strategy of full and open competition to select a commercial derivative replacement tanker aircraft would result in a best value tanker contract. To initiate the first phase of the tanker replacement, the KC-46 program released a final Request for Proposal (RFP) on 24 Feb 2010, and entered source selection on 9 Jul 2010. The KC-46 program held a Milestone B (MS B) Defense Acquisition Board (DAB) on 23 Feb 2011, received approval to enter Engineering and Manufacturing Development (EMD) from the Undersecretary of Defense (Acquisition, Technology and Logistics) (USD(AT&L)) on 24 Feb 2011, and awarded the KC-46 EMD contract to Boeing on 24 Feb 2011 to develop and procure 179 KC-46 aircraft. The program is procuring four RDT&E aircraft for integration and demonstration of capability which will ultimately be operationally fielded. During production, the program plans to procure 175 aircraft throughout 13 lots. The KC-46 program held a MS C DAB on 12 Aug 2016 and received approval to enter Low Rate Initial Production (LRIP). The program awarded LRIP Lots 1 and 2 on 18 Aug 2016, LRIP Lot 3 on 27 Jan 2017, LRIP Lot 4 on 10 Sep 2018, and LRIP Lot 5 on 27 Sep 2019. Awards for Lot 6 occurred on 12 Jan 2021 and Lot 7 awarded on 20 Jan 2021 totaling 94 aircraft to date. Lot 8 is planned to award in Jan 2022. The Air Force delivered the first KC-46 to McConnell Air Force Base on 25 Jan 2019. As of 31 Mar 2021, 44 aircraft have been delivered to the Air Force. KC-46 funding also supports Training Systems, Direct Mission Support, Program Management Administration (PMA) activities, government developmental and operational test support, mission planning capability development, various studies and analyses, engineering changes, and future tanker replacement planning activities.

The KC-46 will provide the capability to fuel joint and coalition receivers via a boom or drogue system on every mission and will also augment the airlift fleet with cargo, passenger, and aeromedical evacuation capabilities. The KC-46 will operate in day/night and adverse weather conditions to enable deployment, employment, sustainment, and redeployment of U.S. joint, allied, and coalition forces. The KC-46 will have communication, navigation, and surveillance equipment for worldwide operations; the capability to perform missions in chemical and biological environments; the ability to operate in up to medium threat environments with self-defense/protection (both active and passive) capabilities; and the necessary battlespace awareness to mitigate survivability threats.

The Aircrew Training System (ATS) and the Maintenance Training System (MTS) are being developed and procured using KC-46 funding. The ATS contract was awarded on 1 May 2013 to Flight Safety Services Corporation. The ATS contract will provide Aircrew Training Devices (ATDs), to include but not limited to Weapon System Trainers (WSTs), Boom Operator Trainers (BOTs), Fuselage Trainers (FuTs), and Part-Task Trainers (PTTs) at each Main Operating Base (MOB) and the

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Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0401221F / <i>KC-46A Tanker Squadrons</i>	Project (Number/Name) 655271 / <i>KC-46 RDT&E</i>
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Formal Training Unit (FTU). The ATS contract will also support Distributed Mission Operations (DMO), provide aircrew instruction, develop courseware, provide logistics support, acquire a technical data package to support future competition efforts, and manage training device concurrency with the aircraft.

The MTS contract was awarded 6 Jul 2016 to The Boeing Company. The MTS acquisition focuses on designing, developing, testing, producing, and fielding an optimized training system for KC-46 maintainers by integrating various forms of training media and Maintenance Training Devices (MTDs) into a "blended" solution. This blended solution includes the appropriate mix of hardware and software, "high-fidelity" Augmented Hardware Training Devices (AHTDs), PTTs, Interactive Multimedia Instruction (IMI), and emerging technologies to meet validated Air Mobility Command (AMC) maintenance training requirements.

The FY 2022 funding request was reduced by \$25.534 million to account for the availability of prior year execution balances.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022
<p>Title: KC-46 Aircraft Product Development</p> <p>Description: EMD activities will be conducted to include the following types of activities: develop a commercial 767-2C aircraft upon which the KC-46 is based; develop the KC-46 military capability and integrate it into the aircraft; build four EMD aircraft; procure live fire assets; procure required Government Furnished Equipment (GFE); procure simulator and maintenance data; develop technical manuals and Type 1 training; and conduct development and operational testing.</p> <p>FY 2021 Plans: Continue product refinement, studies, ground, and flight testing in support of the KC-46 weapon system to include receiver certifications, simulator data collection, and completion of IOT&E events/reporting. Continue execution of boom telescope actuator redesign (BTAR) Engineering Change Proposal (ECP) and support other government costs associated with solution for Remote Vision System (RVS). Study, analyze, test and update documentation in order to certify and increase KC-46 capability for aerial refueling (AR) onload. Develop and release Request for Proposal for Take Off and Landing Data (TOLD) Capability Development contract action.</p> <p>FY 2022 Plans: Continue product refinement, studies, ground, and flight testing in support of the KC-46 weapon system to include receiver certifications, simulator data collection, and completion of IOT&E events/reporting. Continue execution of boom telescope actuator redesign (BTAR) Engineering Change Proposal (ECP) and support other government costs associated with solution for Remote Vision System (RVS). Study, analyze, test and update documentation in order to certify and increase KC-46 capability for aerial refueling (AR) onload. Award contract and begin work for Take Off and Landing Data (TOLD) to address deficiencies and improve capability.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Funding decreased due to ramp down of EMD activities and realignment of funds.</p>	0.000	31.637	12.240
<p>Title: KC-46 Trainer Product Development - Aircrew Training System (ATS)</p>	0.000	0.000	1.155

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Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0401221F / KC-46A Tanker Squadrons	Project (Number/Name) 655271 / KC-46 RDT&E		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
<p>Description: Trainer development activities will be conducted to include the following types of activities: development and procurements of ATDs, courseware, and associated support equipment.</p> <p>FY 2021 Plans: N/A</p> <p>FY 2022 Plans: ATS Night Vision Goggles (NVG) Training.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Funding increased due to additional ATS NVG training requirement as determined by Requirements & Planning Council (R&PC).</p>				
<p>Title: KC-46 Test & Evaluation</p> <p>Description: Test & Evaluation (T&E) activities will be conducted to include the following types of activities: Development Test & Evaluation, Operational Test & Evaluation, Tanker Qualification, Receiver Certifications, Live Fire Test & Evaluation (LFT&E), Federal Aviation Administration (FAA) support, and other test planning and organizational support.</p> <p>FY 2021 Plans: Continue using EMD, pre-delivery production, LRIP aircraft, and/or AMC-loaned aircraft to support AR tanker-receiver certification testing, Aerial Refueling Simulator Qualifications data collection, correction of deficiencies, and other T&E activities for the KC-46. Continue RVS Government Test/Wing Aerial Refueling Pod (WARP) testing.</p> <p>FY 2022 Plans: Continue using EMD, pre-delivery production, and/or LRIP aircraft to support AR tanker-receiver certification testing, Aerial Refueling Simulator Qualifications data collection, correction of deficiencies, and other T&E activities for the KC-46. Continue Government Test for RVS and BTAR.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Funding increased due to increased testing for correction of deficiencies for RVS and BTAR.</p>		0.000	23.254	34.410
<p>Title: KC-46 Support</p> <p>Description: Development, integration, and demonstration of the KC-46 mission planning capability. In addition, studies and analysis to support planning activities for future efficiency initiatives, business case analyses, future tanker replacement planning, and miscellaneous Program Office support and planning. Also includes requirements such as travel, office supplies, training courses, and service contracts.</p> <p>FY 2021 Plans:</p>		0.000	3.072	6.000

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0401221F / KC-46A Tanker Squadrons	Project (Number/Name) 655271 / KC-46 RDT&E

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
Continue Program Office Support and Planning.			
FY 2022 Plans: Continue Program Office Support and Planning and start Future Tanker Program Analysis of Alternatives effort.			
FY 2021 to FY 2022 Increase/Decrease Statement: Funding increased due to start of Tanker Replacement Program Analysis of Alternatives effort.			
Accomplishments/Planned Programs Subtotals	0.000	57.963	53.805

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u> <u>Base</u>	<u>FY 2022</u> <u>OCO</u>	<u>FY 2022</u> <u>Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 02 Line Item	-	2,665.299	2,380.315	-	2,380.315	-	-	-	-	-	-
KC046A: KC-46A Tanker											
• APAF 06 Line Item	-	194.189	222.023	-	222.023	-	-	-	-	-	-
000999: Initial Spares											

Remarks

D. Acquisition Strategy

The KC-46 Program acquisition strategy is to procure an existing commercial, Federal Aviation Administration (FAA) certified aircraft modified to meet USAF requirements. The KC-46 program released a final RFP on 24 Feb 2010, and entered source selection on 9 Jul 2010. The KC-46 program held a Milestone B (MS B) Defense Acquisition Board (DAB) on 23 Feb 2011, received approval to enter EMD from the Undersecretary of Defense (Acquisition, Technology and Logistics) (USD(AT&L)) on 24 Feb 2011, and awarded the KC-46 contract to Boeing on 24 Feb 2011 to develop and procure 179 KC-46 aircraft. The KC-46 contract procurement was conducted via a full and open competition per Federal Acquisition Regulation (FAR) Part 15, and resulted in a FY 2011 Engineering and Manufacturing Development (EMD) Fixed Price Incentive Firm (FPIF) contract. The EMD phase is developing, building, and testing four KC-46 aircraft, and will qualify the KC-46 as a tanker and certify pairings with receiver aircraft.

The MS B acquisition strategy planned for two LRIP lots followed by 11 Full-Rate Production (FRP) lots for a total aircraft procurement of 175 production aircraft. An update to the acquisition strategy occurred in support of MS C that increased LRIP from two to four lots, with the total aircraft buy remaining at 175 production aircraft. A Dec 2017 USD(AT&L) Acquisition Decision Memorandum expanded LRIP to include Lot 5. Another Program Deviation Report was submitted on June 8, 2020, to declare a breach to the Full Rate Production Decision. A new APB dated October 19, 2020 was approved, and a new ADM dated October 20, 2020 re-designated Lots 6 through 9 as LRIP with the total aircraft buy remaining at 175 Production aircraft (+4 EMD aircraft for a grand total of 179 aircraft).

LRIP now consists of two Firm Fixed Price (FFP) and seven FFP Not to Exceed (NTE) options (LRIP-1 Qty 7, LRIP-2 Qty 12, LRIP-3 Qty 15, LRIP-4 Qty 18, LRIP-5 Qty 15, LRIP-6 Qty 12, and LRIP-7 Qty 15). This will be followed by four (Lots 10-13) FFP production options [via NTE values + Economic Price Adjustment (EPA)]. LRIP

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<p>Lots 1 and 2 were awarded Aug 2016, LRIP Lot 3 was awarded Jan 2017, LRIP Lot 4 was awarded Sep 2018, LRIP Lot 5 was awarded Sep 2019, and LRIP Lots 6 and 7 were awarded Jan 2021. LRIP Lot 8 (Qty 12) is planned for award Jan 2022.</p> <p>The Aircrew Training System (ATS) acquisition strategy is to provide Aircrew Training Devices (ATDs), and associated support structure, to each Main Operating Base (MOB) and the Flying Training Unit (FTU). The ATS EMD FPIF contract with production options was conducted via a full and open competition per FAR Part 15, and awarded to FlightSafety Services Corporation in FY 2013. The ATS EMD phase will develop and procure ATDs; and will be supported with courseware, Training System Support Center, the technical data package, and support equipment to ensure system availability and concurrency with the aircraft. The first six ATS production options were exercised on 19 Aug 2015, 31 May 2017, 30 Apr 2018, 31 Mar 2019, 2 Sep 2020, and 4 Mar 2021. Lot 7 of 10 total lots is planned to be awarded in Jan 2022.</p> <p>The Maintenance Training System (MTS) acquisition strategy is to acquire Maintenance Training Devices (MTDs), and associated support structure, for two AMC active duty Regional Maintenance Training Facilities. The MTS EMD FFP contract with production options was conducted via a full and open competition per FAR Part 15, and awarded to The Boeing Company in FY 2016. The MTS EMD phase will develop and procure MTDs; and will be supported with courseware, Training System Support Center, the technical data package, and support equipment to ensure system availability and concurrency with the aircraft.</p> <p>The KC-46 Program is responsible for the development, testing, and production of a drogue-equipped, wing-mounted refueling system to meet Capability Production Document (CPD) thresholds and objectives for simultaneous refueling of two probe-equipped receivers. The system can be installed or removed from the KC-46 as mission needs dictate.</p> <p>The long-term support concept for the KC-46 is organic two-level maintenance (2LM): organization level (O-level) and depot level (D-level). For the purposes of this program, all maintenance other than O-level shall be referred to as D-level. The product support strategy will initially employ Interim Contractor Support (ICS) before transitioning to a 100% organically-managed maintenance and supply support capability. Performance Based Logistics (PBL) solutions will be evaluated during EMD as viable approaches to facilitate the transition.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force **Date:** May 2021

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0401221F / KC-46A Tanker Squadrons	Project (Number/Name) 655271 / KC-46 RDT&E
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Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
KC-46A aircraft non-recurring development, integration, and testing; 4 RDT&E tanker aircraft; and support	C/FPIF	The Boeing Company : Seattle, WA	0.000	-		31.637	May 2021	7.377	Apr 2022	-		7.377	-	-	-
KC-46A Take Off and Landing Data (TOLD) Development Capability	SS/TBD	The Boeing Company : Seattle, WA	0.000	-		-		4.863	Aug 2022	-		4.863	-	-	-
KC-46A Aircrew Training System	C/FPIF	Flight Safety Services Co : Centennial, CO	0.000	-		0.000	Apr 2021	1.155	Jun 2022	-		1.155	-	-	-
Subtotal			0.000	-		31.637		13.395		-		13.395	-	-	N/A

Remarks
The KC-46 EMD contract was awarded 24 Feb 2011. The total cost represents the current Program Office Estimate (POE) which accounts for the ceiling price of the contract plus the financial and schedule risk of potential design changes for the KC-46 aircraft.

FINANCIAL PERFORMANCE: The KC-46 is evaluated against traditional Research and Development (R&D) program expenditure benchmarks. Unlike many traditional R&D programs, the KC-46 EMD contract is a FPIF contract with progress payments. Twenty percent of incurred costs are withheld until the end of the contract, when they are liquidated. Mandatory funding obligations and progress payment withholds will cause the program to lag traditional expenditure benchmarks, painting an inaccurate portrait of overall program health.

Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
KC-46A studies and analysis associated with the development, integration, and demonstration of KC-46 capability & future planning	C/CPAF	Various : Various	0.000	-		3.072	Aug 2021	6.000	Jun 2022	-		6.000	-	-	-
Subtotal			0.000	-		3.072		6.000		-		6.000	-	-	N/A

Remarks
These contracts are on an as needed basis, with various contract types and performing activities.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force **Date:** May 2021

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0401221F / KC-46A Tanker Squadrons	Project (Number/Name) 655271 / KC-46 RDT&E
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Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
KC-46A testing and planning support of development & operational test, FAA & military certification, and aircraft qualification activities	Various	Various : Various	0.000	-		15.385	Mar 2021	23.309	Nov 2021	-		23.309	-	-	-
KC-46A Long Term Test Aircraft Maintenance Support	SS/CPAF	The Boeing Company : Edwards AFB, CA	0.000	-		7.869	Aug 2021	11.101	Mar 2022	-		11.101	-	-	-
Subtotal			0.000	-		23.254		34.410		-		34.410	-	-	N/A

Remarks
Integrated testing and planning activities are performed by government organizations, with some contractor technical subject matter experts and teaming with the prime contractor.

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	57.963	53.805	-	53.805	-	-	N/A

Remarks
In FY2021, PE 0605221F KC-46, Project 655271 KC-46 RDT&E, and Project 651120 Pegasus Capability Improvements efforts were transferred to PE 401221F, Project 655271 KC-46 RDT&E, and Project 651120 Pegasus Capability Improvements in order to consolidate all KC-46 activity under a single PE. PE 0401221F also has historical Tanker Replacement costs from FY 2005-2008 reflected in prior years. PE 0605221F has costs from FY2009 to FY2020.

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force **Date:** May 2021

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0401221F / <i>KC-46A Tanker Squadrons</i>	Project (Number/Name) 655271 / <i>KC-46 RDT&E</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
KC-46				
Initial Operational Test & Evaluation (WARPs)	1	2022	3	2022
Government Testing for Correction of Deficiencies	1	2021	4	2024
Boom Telescope Actuator Redesign ECP	1	2021	4	2023
Aircrew Training System Development & Updates	1	2021	4	2023
Take Off and Landing Data (TOLD)	4	2022	4	2025
Long Term Test Aircraft Maintenance Support (LTTAMS)	1	2021	4	2022

Note
Events prior to Q1 2021 are reflected in PE 0605221F. Funding moved to PE 0401221F in FY 2021.