

## UNCLASSIFIED

PE NUMBER: 0401132F  
PE TITLE: C-130J PROGRAM

Exhibit R-2, RDT&E Budget Item Justification								DATE February 2006		
BUDGET ACTIVITY 07 Operational System Development				PE NUMBER AND TITLE 0401132F C-130J PROGRAM						
Cost (\$ in Millions)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost		23.247	6.586	40.542	45.430	40.605	44.045	48.318	Continuing	TBD
5061	C-130J	23.247	6.586	40.542	45.430	40.605	44.045	48.318	Continuing	TBD

(U) **A. Mission Description and Budget Item Justification**

## A. Mission Description and Budget Item Justification

FY07 C-130J program RDT&E funding provides for:

- 1.) Participation in the International Co-operative Systems and Software Upgrade Requirements Management (COSSURM). COSSURM participants include the United Kingdom, Australia, Italy, Denmark, and the United States. COSSURM provides a mechanism to jointly identify, collect, define, analyze, and price requirements. By combining requirements and resources under COSSURM, each participating country will save in aircraft upgrade costs.
- 2.) Continuation of Block 6.0 Upgrades. Block 6.0 is the first phase of at least four block upgrades. AMC/CC has mandated capability releases on a two-year cycle. Block Upgrades include the development, integration, and testing of aircraft modifications necessary to correct deficiencies identified in qualification and operational testing, as well as required operational upgrades identified by AMC, which is the USAF lead operating command for the C-130J. Block 6.0 requirements includes:
  - a.) Terrain Awareness Warning System (TAWS)
  - b.) Common Communication, Navigation and Identification (CNI)
  - c.) Identify Friend or For (IFF) Enhanced Mode S
  - d.) Mission Computer Take-Off and Landing Data (MC TOLD)
  - e.) AAR-47 missile warning receiver sensor cant adjustment
  - f.) Obstacle Voice Warning Alert
  - g.) CNI Track Offset
- 3.) Start of Block 7.0 Upgrades. Block 7.0 is the second phase of at least four block upgrades. Upgrades include the development, integration, and testing of aircraft modifications necessary to correct deficiencies identified in qualification and operational testing, as well as enhancements identified by AMC, which is the USAF lead operating command for the C-130J. Block 7.0 will also be the first Block Upgrade initiative that is a true International partnership, as the development costs will be shared by each participating nation. Block 7.0 requirements include:
  - a.) TAWS Video
  - b.) Dual Multi-Mode Receivers (MMR) with TSO C-129A Civil Global Positioning System (GPS)
  - c.) CNI Special Processor upgrade

FY08 C-130J program RDT&E funding provides for:

- 1.) Continued participation in COSSURM.

## Exhibit R-2, RDT&amp;E Budget Item Justification

DATE

February 2006

## BUDGET ACTIVITY

**07 Operational System Development**

## PE NUMBER AND TITLE

**0401132F C-130J PROGRAM**

2.) Completion of Block 6.0 Upgrades and beginning of fleet modification.

3.) Continuation of Block 7.0 Upgrades.

FY05 funding was received to deliver the Stepped Frequency Microwave Radiometer (SFMR) for the WC-130J fleet in Oct 05. SFMR is a Congressionally-mandated requirement to assist the National Oceanographic and Atmospheric Administration (NOAA) in obtaining real-time surface wind measurements during tropical cyclone activity, which is useful in assessing the intensity and size of a tropical cyclone.

These RDT&E funds will enable development, integration, and testing of Department of Defense (DoD) mandated Communications, Navigation, and Surveillance / Air Traffic Management (CNS/ATM) requirements needed on the C-130J aircraft. The current C-130J Operational Requirements Document (ORD), validated 21 January 2005, identifies the CNS/ATM and Navigational Safety requirements for the C-130J. Supplemental guidance for the various CNS/ATM and Navigational Safety requirements is provided via numerous Federal Aviation Administration (FAA), International Civil Aviation Organization (ICAO) and DoD standards. Where possible, the C-130J CNS/ATM and Navigational Safety solution set will be common with other USAF/Air Mobility Command (AMC) weapon systems performing similar upgrades.

The C-130J is a medium-sized transport aircraft capable of performing a variety of combat delivery (tactical airlift) operations across a broad range of mission environments. The C-130J aircraft, with its extended (by 15 feet) fuselage, provides additional cargo carrying capacity for the USAF combat delivery mission compared with legacy C-130E/H and the C-130J (Short). Special mission variants of the C-130J conduct airborne psychological operations (EC-130J) and weather reconnaissance (WC-130J). These aircraft must be capable of worldwide operations.

This effort is assigned to Budget Activity 7, as it supports an operational system.

(U) **B. Program Change Summary (\$ in Millions)**

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Previous President's Budget	32.910	6.681	40.542
(U) Current PBR/President's Budget	23.247	6.586	40.542
(U) Total Adjustments	-9.663	-0.095	
(U) Congressional Program Reductions			
Congressional Rescissions	-0.330	-0.095	
Congressional Increases			
Reprogrammings	-9.333		
SBIR/STTR Transfer			
(U) <u>Significant Program Changes:</u>			

## UNCLASSIFIED

## Exhibit R-2a, RDT&amp;E Project Justification

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0401132F C-130J PROGRAM

PROJECT NUMBER AND TITLE

5061 C-130J

Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
5061 C-130J	23.247	6.586	40.542	45.430	40.605	44.045	48.318	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**

## A. Mission Description and Budget Item Justification

FY07 C-130J program RDT&amp;E funding provides for:

- 1.) Participation in the International Co-operative Systems and Software Upgrade Requirements Management (COSSURM). COSSURM participants include the United Kingdom, Australia, Italy, Denmark, and the United States. COSSURM provides a mechanism to jointly identify, collect, define, analyze, and price requirements. By combining requirements and resources under COSSURM, each participating country will save in aircraft upgrade costs.
- 2.) Continuation of Block 6.0 Upgrades. Block 6.0 is the first phase of at least four block upgrades. AMC/CC has mandated capability releases on a two-year cycle. Block Upgrades include the development, integration, and testing of aircraft modifications necessary to correct deficiencies identified in qualification and operational testing, as well as required operational upgrades identified by AMC, which is the USAF lead operating command for the C-130J. Block 6.0 requirements includes:
  - a.) Terrain Awareness Warning System (TAWS)
  - b.) Common Communication, Navigation and Identification (CNI)
  - c.) Identify Friend or For (IFF) Enhanced Mode S
  - d.) Mission Computer Take-Off and Landing Data (MC TOLD)
  - e.) AAR-47 missile warning receiver sensor cant adjustment
  - f.) Obstacle Voice Warning Alert
  - g.) CNI Track Offset
- 3.) Start of Block 7.0 Upgrades. Block 7.0 is the second phase of at least four block upgrades. Upgrades include the development, integration, and testing of aircraft modifications necessary to correct deficiencies identified in qualification and operational testing, as well as enhancements identified by AMC, which is the USAF lead operating command for the C-130J. Block 7.0 will also be the first Block Upgrade initiative that is a true International partnership, as the development costs will be shared by each participating nation. Block 7.0 requirements include:
  - a.) TAWS Video
  - b.) Dual Multi-Mode Receivers (MMR) with TSO C-129A Civil Global Positioning System (GPS)
  - c.) CNI Special Processor upgrade

FY08 C-130J program RDT&amp;E funding provides for:

- 1.) Continued participation in COSSURM.
- 2.) Completion of Block 6.0 Upgrades and beginning of fleet modification.

## UNCLASSIFIED

## Exhibit R-2a, RDT&amp;E Project Justification

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0401132F C-130J PROGRAM

PROJECT NUMBER AND TITLE

5061 C-130J

3.) Continuation of Block 7.0 Upgrades.

FY05 funding was received to deliver the Stepped Frequency Microwave Radiometer (SFMR) for the WC-130J fleet in Oct 05. SFMR is a Congressionally-mandated requirement to assist the National Oceanographic and Atmospheric Administration (NOAA) in obtaining real-time surface wind measurements during tropical cyclone activity, which is useful in assessing the intensity and size of a tropical cyclone.

These RDT&E funds will enable development, integration, and testing of Department of Defense (DoD) mandated Communications, Navigation, and Surveillance / Air Traffic Management (CNS/ATM) requirements needed on the C-130J aircraft. The current C-130J Operational Requirements Document (ORD), validated 21 January 2005, identifies the CNS/ATM and Navigational Safety requirements for the C-130J. Supplemental guidance for the various CNS/ATM and Navigational Safety requirements is provided via numerous Federal Aviation Administration (FAA), International Civil Aviation Organization (ICAO) and DoD standards. Where possible, the C-130J CNS/ATM and Navigational Safety solution set will be common with other USAF/Air Mobility Command (AMC) weapon systems performing similar upgrades.

The C-130J is a medium-sized transport aircraft capable of performing a variety of combat delivery (tactical airlift) operations across a broad range of mission environments. The C-130J aircraft, with its extended (by 15 feet) fuselage, provides additional cargo carrying capacity for the USAF combat delivery mission compared with legacy C-130E/H and the C-130J (Short). Special mission variants of the C-130J conduct airborne psychological operations (EC-130J) and weather reconnaissance (WC-130J). These aircraft must be capable of worldwide operations.

This effort is assigned to Budget Activity 7, as it supports an operational system.

(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) COSSURM payment	0.949	0.822	1.759
(U) Initiate non-recurring engineering design and software development for Block 6.0 GATM/nav safety requirements and aircraft deficiencies/product improvements.			
(U) Congressional Rescissions			
(U) Reprogrammings			
(U) SBIR/STTR Transfer			
(U) Continue Block 6.0 non-recurring engineering design and software development. Conduct laboratory testing of GATM/nav safety hardware and software modifications. Procure and install hardware on flight test aircraft and one C-130J weapon system trainer.	12.298	5.264	22.334
(U) Flight Test		0.500	1.000
(U) Initiate non-recurring engineering design and software development for Block 7.0 GATM/nav safety requirements and aircraft deficiencies/product improvements.			15.449
(U) Initiate Stepped Frequency Microwave Radiometer (SFMR) non-recurring engineering design and software development for the WC-130J program.	10.000		
(U) Total Cost	23.247	6.586	40.542

Project 5061

R-1 Shopping List - Item No. 218-4 of 218-8

Exhibit R-2a (PE 0401132F)

1992

UNCLASSIFIED

## Exhibit R-2a, RDT&amp;E Project Justification

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0401132F C-130J PROGRAM

PROJECT NUMBER AND TITLE

5061 C-130J

(U) **C. Other Program Funding Summary (\$ in Millions)**

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other APPN									
(U) PE 0401132F, C-130J Procurement (BP1100)									
(U) Mod MN-_1377 Blk 5.4	25.400	5.988						0.000	31.388
(U) Mod MN-_1701 Blk 6.0			36.551	21.600	2.875			0.000	61.026
(U) Mod MN-_6298 Blk 7.0				10.298	40.128	27.900	4.800	0.000	83.126
(U) Mod MN-_5222 Blk 8.0						22.100	53.200	46.000	121.300
(U) Mod MN-_8629 LAIRCM						38.682	8.315		TBD

(U) **D. Acquisition Strategy**

C-130J aircraft will be modified using a 'block upgrade' strategy. The full GATM/nav safety requirement will be met in four block upgrades: Block 6.0, which began with FY03 RDT&E funding and continues through FY07 RDT&E funding, Block 7.0, which will start in FY07, Block 8.0, which will start in FY09, and Block 9.0, which will start in FY11. The proportion of GATM/nav safety requirements allocated to Blocks 6.0 thru 9.0 was determined via a design trade study conducted by Lockheed Martin (the C-130J prime contractor) and verified by the C-130J system program office and AMC.

Lockheed Martin will be the prime contractor for these efforts, perform the non-recurring engineering and, following the successful conclusion of flight testing and certification of each block upgrade, will provide production retrofit kits on USAF C-130J aircraft. Installation will be performed by contractor, depot, and Air Force personnel.

## UNCLASSIFIED

## Exhibit R-3, RDT&amp;E Project Cost Analysis

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0401132F C-130J PROGRAM

PROJECT NUMBER AND TITLE

5061 C-130J

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &amp;</u> <u>Type</u>	<u>Performing</u> <u>Activity &amp;</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Award</u> <u>Date</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target Value</u> <u>of Contract</u>
(U) <u>Product Development</u> Aeronautical Systems Center (AFMC), WPAFB, OH	CPFF	Lockheed Martin Aeronautics, Marietta GA		22.298	Nov-04	5.264	Jan-06	37.783	Oct-06		65.345	
Subtotal Product Development			0.000	22.298		5.264		37.783		0.000	65.345	0.000
Remarks:												
(U) <u>Support</u> TBD											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Test &amp; Evaluation</u> Air Force Materiel Command (DT&E)				0.000		0.500	Jan-06	1.000	Oct-06		1.500	
Subtotal Test & Evaluation			0.000	0.000		0.500		1.000		0.000	1.500	0.000
Remarks:												
(U) <u>Management</u> COSSURM				0.949	Oct-04	0.822	Jan-06	1.759	Oct-06		3.530	
Subtotal Management			0.000	0.949		0.822		1.759		0.000	3.530	0.000
Remarks:												
(U) <u>Lockheed Martin Aeronautics, Marietta, GA</u>												
(U) Total Cost			0.000	23.247		6.586		40.542		0.000	70.375	0.000
Remarks:												

## Exhibit R-4, RDT&amp;E Schedule Profile

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

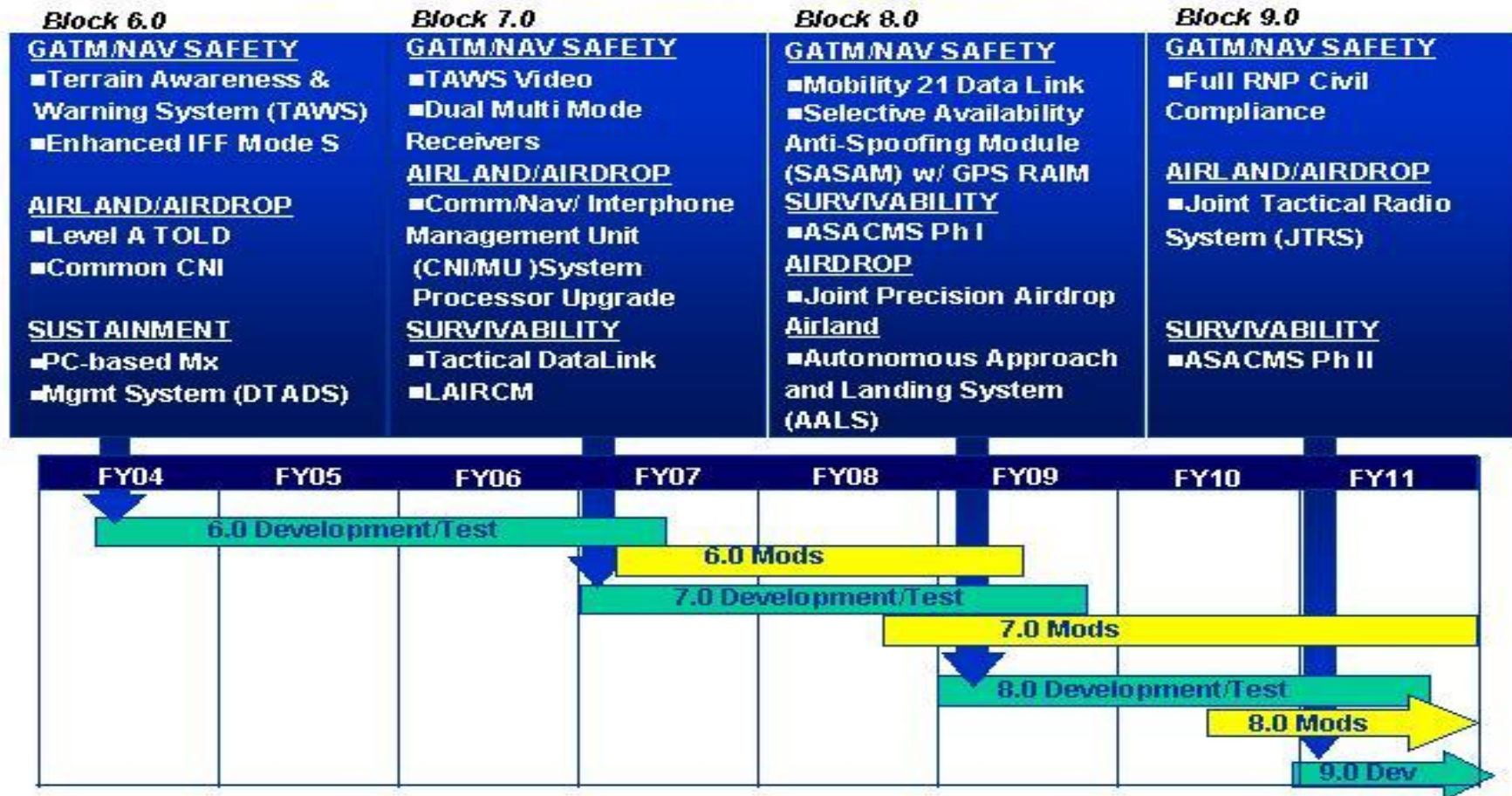
PE NUMBER AND TITLE

0401132F C-130J PROGRAM

PROJECT NUMBER AND TITLE

5061 C-130J

# C-130J Block Upgrade Plan



*Note: Block upgrades include variants, so mods will begin on C-130Js while EC-130J and WC-130J development is still underway*

## UNCLASSIFIED

## Exhibit R-4a, RDT&amp;E Schedule Detail

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0401132F C-130J PROGRAM

PROJECT NUMBER AND TITLE

5061 C-130J

(U) Schedule ProfileFY 2005FY 2006FY 2007

(U) Block 6.0 FY05 award

1Q

(U) Block 6.0 FY06 award

1Q

(U) Block 6.0 DT&amp;E payment to AFFTC

1Q

(U) Start of Block 6.0 DT&amp;E

4Q

(U) Block 6.0 FY07 award

1Q

(U) Block 7.0 FY07 contract award

1Q