CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

HANDLE VIA BYEMAN
CONTROL SYSTEM

5 SEP 1967

MEMORANDUM FOR: Director, National Reconnaissance Office

SUBJECT: Revised FY 1969 Budgets

1. Attached hereto are revisions to the Agency's FY 1969 budget submissions for the IDEALIST and General Research & Development (Aircraft) programs.

2. The revised IDEALIST FY-69 program totals $23.599 million as compared to the original estimate of $23.375 million, a net increase of $224K. The operational concept remains as stated in BYE-0045-67. The only significant differences from our original estimates occur in the Airborne Electronics and Camera areas of the New Equipment category. The changes are explained in the attached detailed review (Attachment A). The format has been changed in accordance with an informal request received from your office. Major categories are: New Equipment; Support; Maintenance Technicians; Construction, Operations and Maintenance.

a. Requirements for procurement of new equipment are listed on an individual item basis.

b. The Support category covers all contracts for spares, overhaul and engineering support, including airframe, cameras, airborne electronics, pilots, and life support. Each contract line item identifies funding required for the IDEALIST program, and that required for our share in items in which we have a common interest with the DRAGON LADY program. Where possible, we have identified costs applicable to U-2C and/or U-2R aircraft.

c. Maintenance Technicians comprise one category which covers all maintenance technicians from all contractors.

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d. Construction, Operations and Maintenance lists funding requirements by detachment, and Operations and Maintenance in a lump sum to cover all requirements.

3. The revised General Research & Development (Aircraft) FY-69 budget totals $14.615 million (Attachment B) as compared to the original estimate of $8.700 million, a net increase of $5.915 million. OSA's portion of the revised R&D program amounts to $7.965 million (Attachment B-1), and ORD's portion amounts to $6.650 million (Attachment B-2).

Lloyd N. Lauderbach
for Carl E. Duckett
Director
CIA Reconnaissance Programs

Attachments
a/s

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IDEALIST
(In Millions)

FY 1969 BUDGET SUMMARY

New Equipment	$ 7.716
Support	10.253
Maintenance Technicians	5.025
Construction, Operations and Maintenance	.605
TOTAL, IDEALIST, FY 1969	$23.599

NEW EQUIPMENT

Listed below are the items we feel must be funded during fiscal year 1969. A careful review of the status of the development of systems for which funding was requested in our previous submission indicates that Systems 13D, 21, and 23 will not complete flight testing until FY 1970. Hence, the request for funds for these systems is being deferred until 1970. Systems 6C and 9E should complete flight testing during FY 1969 and funding for these systems is requested herein.

The funding for the "H" Cameras is for the complete purchase although delivery of these three items would not be completed until FY 70. If partial funding were to be considered, then $1.234M would satisfy FY 69 requirements. Funding for three lightweight "B" Cameras is requested to offset anticipated attrition.

AIRBORNE ELECTRONICS

System 6C	$3.000
System 9E	1.200
System 13D	--
System 21	--
System 23	--
Timing System	.200
Total Airborne Electronics	4.400

CAMERAS

"H" Camera (3 ea)	2.716
"B" Camera (3 ea)	.600
Total Cameras	3.316

Total New Equipment	7.716

SUPPORT

The Support Category provides funding for Spares and Overhaul and Engineering Support. Wherever possible we have identified costs applicable to U-2C or U-2R Aircraft. We have also identified contracts in which we have a common interest with the DRAGON LADY Program.

SUMMARY

Airframe	$4.813
Cameras	1.558
Airborne Electronics	3.063
Pilots	.819
Total Support	$10.253

SUPPORT REQUIREMENTS BY CONTRACTOR

SUPPORT	U-2C	U-2R	TOTAL (Millions)
Airframe (Lockheed)			
Spares			
Common	$.100	$.565	$.665
IDEALIST	.310	.188	.498
Total			1.163
Overhaul and Engineering			
Common	.360	.350	.710
IDEALIST	1.285	1.615	2.900
Total			3.610
Jet Star (IDEALIST)			.040
Total Airframe			4.813
Cameras			
Hycon			
Spares			
Common			.098
IDEALIST			.050
Total			.148
Overhaul and Engineering			
Common			.212
IDEALIST			.138
Total			.350
Itek (IDEALIST only)			
Spares			.120
Overhaul and Engineering			.290
Total			.410
Perkin Elmer			
Spares			
Common	.040	.105	.145
IDEALIST	.025	--	.025
Total			.170

SUPPORT (Cont.)	U-2C	U-2R	TOTAL (Millions)
Cameras (Cont.)			
Perkin Elmer (Cont.)			
Overhaul and Engineering			
Common	.120	.160	.280
IDEALIST	.020	.080	.100
Total			.380
Texas Instruments (IDEALIST only)			
Spares			.050
Overhaul and Engineering			.050
Total			.100
Total Cameras			1.558
Airborne Electronics			
System VI (TRW)			
Spares			
Common			-0-
IDEALIST			.100
Total			.100
Overhaul and Engineering			
Common			.160
IDEALIST			.100
Total			.260
Systems IX, XII, (AEL)			
Spares			
Common	.056	.040	.096
IDEALIST	.020	.020	.040
Total			.136
Overhaul and Engineering			
Common			.060
IDEALIST			.250
Total			.310

SUPPORT (Cont.) Airborne Electronics (Cont.)	U-2C	U-2R	TOTAL (Millions)
System XIII (Sanders)			
Spares			
Common	.050	.037	.087
IDEALIST			-0-
Total			.087
Overhaul and Engineering			
Common	.075	.035	.110
IDEALIST			.050
Total			.160
Systems XVII, XXI, OS, BW, (HRB)			
Spares			
Common	.0375	.0375	.075
IDEALIST			-0-
Total			.075
Overhaul & Engineering			
Common	.075	.045	.120
IDEALIST	.050	.075	.125
Total			.245
System IX-D, TACAN (ITT)			
Spares			
Common		.225	.225
IDEALIST		-0-	-0-
Total			.225
Overhaul and Engineering			
Common		.275	.275
IDEALIST		.100	.100
Total			.375
System XX (Aero-Jet) (IDEALIST only)			
Spares		.050	.050
Overhaul & Engineering		.050	.050
Total			.100

SUPPORT (Cont.)	U-2C	U-2R	TOTAL (Millions)
Airborne Electronics (Cont.)			
Airborne Recorders (IDEALIST only) (Astro Science)			
Spares			.225
Overhaul and Engineering			.200
Total			.425
Time Code Gen (IDEALIST only) (Flow Inc.)			
Spares			.035
Overhaul & Engineering			.050
Total			.085
Airborne Communications (Collins)			
Spares			
Common		.075	.075
IDEALIST			-0-
Total			.075
Overhaul and Engineering			
Common		.050	.050
IDEALIST	.030	.025	.055
Total			.105
Sextants (Baird)			
Spares			
Common	.030		.030
IDEALIST	-0-		-0-
Total			.030
Overhaul and Engineering			
Common	.020		.020
IDEALIST			-0-
Total			.020
Minor tests, Improvements and Miscellaneous Projects			.250
Total Airborne Electronics			3.063

SUPPORT (Cont.)	U-2C	U-2R	TOTAL (Millions)
Pilots and Life Support			
Salaries and Medical (IDEALIST only			.280
Total			.280
Personal Equipment (Clark)			
Spares			
Common	.024	.065	.089
IDEALIST			-0-
Total			.089
Overhaul and Engineering			
Common	.024	.040	.064
IDEALIST	.010	.065	.075
Total			.139
Oxygen and Related Equipment (Firewel)			
Spares			
Common	.010	.075	.085
IDEALIST			-0-
Total			.085
Overhaul and Engineering			
Common	.010	.075	.085
IDEALIST	.010	.060	.070
Total			.155
Personal Chutes (IDEALIST only)			.015
Survival kits (IDEALIST only)			.036
Servicing and Packing (IDEALIST only)			.020
Total			.071
Total Pilots and Life Support			.819
TOTAL SUPPORT			10.253

MAINTENANCE TECHNICIANS

Funding request supports both Detachments "G" and "H". A breakout by U-2C and U-2R is not possible. Maintenance technicians have the capability to work on both systems. The Lockheed request is for total numbers of persons to support total numbers of aircraft rather than a breakout of C's and R's.

SYSTEM	"G"	"H"	MILLONS
Airframe (LAC)	54	30	3.110
Camera (HYCON)	10	6	.387
Camera (ITEK)	6	3	.315
Tracker (Perkin Elmer)	3	2	.165
IR Camera (Texas Instruments)	1½	-	.045
System VI (TRW)	1	1	.084
" IX & XII (AEL)	-	1	.042
" XIII (Sanders)	1	1	.084
" XX (Aero-Jet)	1	-	.035
" XVII, OS,BW (HRB)	2	1	.120
Airborne Commo (Collins)	3	1	.160
Recorders (Astro Science)	1	1	.075
EWS Test Facility (RCA)	8	-	.250
David Clark	1	1	.053
Firewel	2	2	.100
		TOTAL	5.025

CONSTRUCTION, O&M

Construction Det. "G"	$.150
Construction Det. "H"	.090
Construction Staging Base	.090
Operations & Maintenance	.275
Total	.605

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Attachment B
to BYE-0134-67

GENERAL R&D (AIRCRAFT) SUMMARY

	Original Budget	Revised Budget	Difference
OSA			
Original budget included under I. Aircraft Sensors, Items E ($150K), F, G, H, I, J, K, and II. Advanced Aircraft Systems	$ 3.050	$ 7.965	+ $ 4.915
ORD			
Original budget included under I. Aircraft Sensors, Items A, B, C, D, E ($600K), and L	5.650	6.650	+ 1.000
Totals	$ 8.700	$14.615	+ $ 5.915

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GENERAL RESEARCH AND DEVELOPMENT,
OSA
REVISED FY-69 BUDGET PROPOSAL

SUMMARY

VEHICLES AND VEHICLE SYSTEMS		
1. Induced Drag Elimination	$ 200,000	
2. Preliminary Design of New Vehicle	2,500,000	
3. General Aerodynamic Vehicle Systems and Subsystems Studies	200,000	
SUB TOTAL, AERODYNAMICS		$2,900,000
PROPULSION		
1. Cryogenic Fuel	$2,165,000	
2. High Altitude Performance	250,000	
3. General Studies, Propulsion	100,000	
SUB TOTAL, PROPULSION		$2,515,000
SENSOR SYSTEMS		
1. Haze Attenuation	$ 150,000	
2. Sensor Applications Study	150,000	
3. Sensor Modification Development	500,000	
4. High Quality Photo Transmission System	1,350,000	
5. Side-Looking Radar Developments	200,000	
6. Laser Scanning Camera	100,000	
7. Advanced Sensor Systems	100,000	
SUB TOTAL, SENSOR		$2,550,000
TOTAL R&D		7,965,000

OXCART/IDEALIST
~~TOP SECRET~~

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I. VEHICLES AND VEHICLE SYSTEMS

1. SUBJECT: Induced drag elimination on subsonic aircraft

   COST : $200,000

   SCOPE : Continuation of confirmation program conducted during FY-68. To include:

   a. Pressure measurements tests
   b. Flight tests on a small "Piper Cub" type aircraft
   c. Application study projecting the results obtained to a CIA high altitude mission.

2. SUBJECT: Preliminary Design of New Reconnaissance Vehicle

   COST : $2,500,000

   SCOPE : Initiation of preliminary design effort of a new vehicle which appeared to have outstanding potential on the basis of investigations conducted during FY-68.

3. SUBJECT: General Aerodynamic Vehicle Systems and Subsystems Studies

   COST : $200,000

   SCOPE : General studies, as applicable, of advanced aerodynamic vehicles, systems, and sub-systems improvements.

II. PROPULSION

1. SUBJECT: Application of Cryogenic Fuel Technology to Airbreathing Gas Turbine Propulsion Systems

   COST : $2,165,000

   SCOPE : Procurement of a JT12 engine and all fuel system components required to operate this engine on Methane fuel. The engine will be calibrated, and performance and operating characteristics will be determined.

2. SUBJECT: Improved High Altitude Engine Performance

   COST : $250,000

   SCOPE : Evaluation of ideal engine cycles for high altitude reconnaissance applications, new engine designs as well as modifications to currently available or projected engines which most nearly approach the ideal cycles will be evaluated. Engine performance information will be provided to an airframe contractor(s) who will be evaluating or designing new reconnaissance vehicles.

3. SUBJECT: General Propulsion Studies

   COST : $100,000

   SCOPE : General Studies, as applicable, of propulsion systems improvements applied to advanced and current vehicle systems.

. SENSOR SYSTEMS

1. SUBJECT: Haze Attenuation Study

   COST : $150,000

   SCOPE : Following the initial studies of FY-68, an experimental modification will be made and tested in existing airborne hardware. (Under conditions of heavy atmospheric haze, variations in exposure requirements from vertical to 75° off flight path often exceed the exposure latitude of the film being used. This study will explore the feasibility of applying a new filtering technique to the solution of this problem, allowing accurate exposures in the presence of varying conditions of solar azimuth, background scatter and camera pointing angles.)

2. SUBJECT: Sensor Applications Studies

   COST : $150,000

   SCOPE : Studies regarding modifications of existing sensor systems for performance improvement, usability improvement and adaptation to the U-2 and U-2R programs.

3. SUBJECT: Sensor Modification Development

   COST : $500,000

   SCOPE : The development of engineering models, and feasibility demonstrations of improved techniques in image collection to enhance operational capabilities. (Electrotape, micro channel, etc.)

4. SUBJECT: High Quality Photo Transmission

   COST : $1,350,000

   SCOPE : Fabrication and development of proto-type hardware for a high quality photo transmission system.

5. SUBJECT : SLR Developments

   COST : $200,000

   SCOPE : Continued development of improved usability of SLR sensors systems through improved resolution and pointing capability.

6. SUBJECT : Laser Scanning Camera

   COST : $100,000

   SCOPE : Developmental studies on Laser Scanning Cameras as applied to high altitude reconnaissance vehicles.

7. SUBJECT: Advanced Sensor Systems

COST : $100,000

SCOPE : Design studies and feasibility demonstrators on real-time air-to-ground data systems applied to various sensor systems (photo, SLR,IR, laser) for high altitude vehicles.

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Attachment B-2
to BYE-0134-67

GENERAL RESEARCH AND DEVELOPMENT
ORD
REVISED FY-69 BUDGET PROPOSAL

SUMMARY

I. Aircraft Sensors

A. High Resolution Infrared Reconnaissance Systems

The lack of significant funding toward the 1/50 mrad scanner in FY 68 will delete the requirement for aircraft installation and flight test funding in FY 69 (as previously recommended). However, this Office will continue to recommend that the 1/50 mrad scanner development be initiated, and toward that end the $2000K for the 1/50 mrad scanner development, from the FY 68 recommendations, are now transferred to the FY 69 recommendations. (It is assumed $100K for a design study will be approved during FY 68.) The remaining recommendations in the IR program -- continuing support for IR research, extended development of multiple detector techniques and real time viewers, and a moving-target indicator program - have not changed since last submitted and remain at $1,600K.

(Original Budget Estimate $2.600) Revised Estimate $ 3.600K

In all other ORD project areas, no additional changes are recommended. These are repeated here in brief:

B.	Multi-Spectral Photography	.400
C.	Low Light Level Reconnaissance Systems	.600
D.	Image Processing/Data Reduction	.450
E.	Materials Research (600K ORD; 150K OSA -- originally budgeted 750K)	.600
L.	Multisensor Systems	1.000
	Revised Total	$ 6.650K

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