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GEORGE C. MARSHALL SPACE FLIGHT CENTER
HUNTSVILLE, ALABAMA

Memorandum

TO Distribution

DATE June 8, 1965

FROM Director, Executive Staff, E-DIR

SUBJECT Collection, Preparation and Submission of POP 65-3

1. The next Program Operating Plan (POP 65-3) submission to Headquarters is scheduled for August 1965. This submission will include

a. Time phasing of the FY-66 program

b. The final FY-67 budget submission

c. Runout requirements through project completion for R&D projects.

2. Provided as enclosures to this letter are

Enclosure 1 - POP 65-3 Collection, Preparation and Submission Schedule
Enclosure 2 - General Guidelines
Enclosure 3 - R&D Guidelines and Instructions
Enclosure 4 - AO Guidelines and Instructions
Enclosure 5 - Special Summarization Instructions
Enclosure 6 - Manpower Guidelines and Instructions

3. This memo constitutes a request for all MSFC elements to prepare and submit information as scheduled in Enclosure 1. This schedule lists only key interface dates from one organization to another. It will be the responsibility of I-RM and R-RM to implement internal schedules compatible with Enclosure 1.

4. The remaining enclosures containing instructions for preparing input data have been developed jointly by Staff Offices, IO and R&DO to insure that consistent planning information is obtained from all Center elements.

5. The mechanized budget collection system (PEP) will be utilized for the R&DO inputs to the R&D POP's. In accordance with E-DIR memo to R-DIR dated March 2, 1965, instructions for implementation of the procedure will be provided by R-RM.

MSFC - Form 488 (August 1960)

POP 65-3
COLLECTION, PREPARATION, AND SUBMISSION CYCLE

MECHANIZED R&D POP FOR MSF

R-RM provides R&DO approved major and minor contractor analysis sheets and 3 copies of PEP to I-RM	July 14
I-RM receives input from Project Offices for current programs, Saturn IB/Centaur & Cislunar Pegasus	July 23
R-RM provides R&DO approved input to I-RM for Supporting Development, AES, Advanced Studies and In-Flight Experiments	July 26
I-RM provides 10 copies of the MSFC POP 65-3 for MSF R&D to E-R in preparation for the Directors Review	July 30
Directors Review	August 3
I-RM implements appropriate changes and prepares input to Mechanized MSF POP 65-3	August 4

(Submission to Headquarters due August 9 will be on computer tape combined with other MSF Center and Headquarters inputs into MSF POP 65-3.)

OTHER POP'S

R-RM provides R&DO approved inputs for AR&T, SS&A and OTDA to FMO for printing	July 19
MS-T provides approved input for OTU to FMO for printing	July 19
R-RM, I-RM, Staff Offices provide AO inputs to FMO	July 19
R-RM, I-RM, Staff Offices provide Manpower inputs to E-R	July 19
R-RM provides MSF In-Flight Experiments Addendum to FMO for printing	July 26
F&D provides approved copy of C of F POP to FMO for printing	July 26
FMO provides 10 copies of all other POP's to E-R in preparation for the Directors Review	July 29
Directors Review	August 3
Cognizant offices make appropriate changes	August 4
FMO prints final copies and submits to Headquarters	August 6

Encl. 1

POP 65-3
PROGRAM ASSUMPTIONS & GUIDELINES

GENERAL

1. All budget guidelines, budget submissions, Program Operating Plans and other documents containing FY-67 and subsequent year data must be marked "For Internal NASA Use Only" and handled as such.

2. The MSFC Coding Structure (Administrative Regulations and Procedures 7-3) should be followed in coding all FY-65 and subsequent budget items. Change 4, dated January 26, 1965, and any subsequent interim instructions should be used for current FY-65 Coding Structure.

3. Obligations and costs must be based on realistic requirements which are essential to mission accomplishment. They must be phased to reflect actual requirements and should not be projected on an optimistic basis. Allow sufficient time for procurement action between initiation and obligation dates. The office of primary responsibility will explain system level variances in each succeeding submission. Higher Headquarters intent is to recall those funds not obligated in accordance with plans for the purpose of funding problem areas, new requirements, etc.

4. MSFC organizational units who have requirements which are funded by more than one appropriation such as Computation Laboratory for computer rentals and Management Services for communications shall prepare and submit a complete package for review and evaluation. Both AO and R&D funded requirements should be identified. Specific instructions and format are contained in enclosure 5.

5. R&D contracts and propellants funding policy will be based on MSFC Administrative Regulations and Procedures 7-14. Cost type contracts with an inception through runout value of less than $500,000 and fixed price contracts should normally be funded in full during the year of inception. However, specific exceptions may be approved on an individual basis.

6. Contractual services or services of other government agencies for quality assurance and inspection services must be budgeted for and funded by the projects requiring the service. Only those MSFC elements responsible for obligating funds for such services will list their requirements.

7. MSFC in-house contractual support requirements will be budgeted and funded through the project requiring the effort. Each MSFC element will list their requirements for such services under the vehicle support account of the appropriate project.

8. Michoud, Mississippi Test and Slidell Operations of Installation requirements will be budgeted by the related R&D project. However, personnel costs and travel for these installations will be included in the Administrative Operations budget.

9. Items associated directly with R&D programs, such as contract administration and auditing services will be budgeted, funded by, and charged to related R&D projects when such services are readily identifiable with the projects. In case such identification cannot be made without undue effort, these items will be budgeted, funded by, and charged to Administrative Operations.

10. Assume that MSFC will continue to furnish leased communication lines to contractors on the same basis as FY-64.

11. General use technical equipment, other than office equipment, associated with R&D programs will be funded by the R&D programs on a first benefiting program basis.

MSFC FUNDING LEVELS

PROGRAM	FY-65	FY-66 Guidelines (Dollars in Thousands)	FY-67
R&D	1,468,175	1,673,987	
MSF	1,435,881	1,632,022	1,759,500
Saturn I	35,735	500	0
Saturn IB	255,465	263,187	198,100
Saturn IB/Centaur	(2,200)	(7,800)	51,000
Saturn V	952,906	1,192,435	1,154,700
Launch Vehicle Engine Dev.	166,300	150,700	137,500
Supporting Dev. & Adv. Studies	21,675	13,300	50,000
Apollo Extension Systems	3,800	11,900	168,200
AR&T	28,945	18,530	24,055
SS&A	1,313	21,395	30,520
OTDA	2,000	1,500	1,500
OTU	36	540	550
AO	139,535	137,387	
Personnel Costs	84,836	86,243	
Travel	3,934	3,956	
Operation of Installation	50,765	47,188	
C of F	97,953	13,330	
Huntsville	14,965	4,776	
Michoud	6,349	300	
MTF	54,090	2,121	
Various	22,549	6,133	
MSFC TOTAL	1,705,663	1,824,704	

NOTES:

1. MSF R&D figures are consistent with MSF POP 65-2. C of F and AO are consistent with MSFC POP 65-2. Other Program Offices R&D reflect changes since MSFC POP 65-2.

2. Saturn IB/Centaur figures for FY-65 and FY-66 are included in the Saturn IB Project.

3. AES Program requirements have previously been shown under 908 and 981 for FY-65 and under 905 for FY-66 and subsequent. MSF has now established AES as a separate program. An appropriate coding structure for FY-65 and subsequent years will be provided. For POP 65-2 MSF has shown all AES Program requirements under an uncoded AES line.

4. The 100 lb. thrust engine was funded under Apollo Supporting Development in FY-65 and will be funded under Engine Development in FY-66 and subsequent years.

5. The funding levels shown above do not include Cislunar Pegasus or MSF In-Flight Experiments. Requirements for both should be shown in POP 65-3.

POP 65-3
RESEARCH AND DEVELOPMENT

SATURN AND ENGINES PROGRAMS GENERAL GUIDELINES

1. Data developed for POP 65-3 for the Saturn Vehicles and Engine Development should be based upon the Official NASA Launch Schedule (MSFC Schedule K).

2. Additional system engineering and integration responsibility will be placed on Chrysler and Boeing as part of the prime systems contractor mission as a means of alleviating the MSFC manpower shortage. This will be accomplished to the maximum extent possible without jeopardizing the projects.

3. Propellants will be included as an identified item under all systems.

4. MSC will be responsible for providing all Apollo configuration hardware for use during the Saturn vehicle development.

5. Stage-associated engine test projects conducted by MSFC will be funded by the appropriate stage.

6. Technical laboratories responsible for developing, fabricating, and procuring GSE for the Saturn vehicle systems (as opposed to stage prime contractor furnished) will include the cost of these items in their budget with appropriate distinguishing identity. The budget submission will enumerate the items to be procured, the quantities, and their intended destination (Breadboard, IU Checkout Station, Test Stand, Checkout Equipment, LC-34 and 39, etc.)

7. Transportation costs of stages, deliverable engines, and support hardware are budgeted for under the vehicle support account. The project office will coordinate the known transportation requirements with IO Project Logistics Office for special transportation (e.g., Pregnant Guppy) and Technical Services Office for regular commercial transportation. These offices will prepare estimates to support transportation requirements.

8. The list of major contracts to be reported in POP 65-3 is currently being revised. The only R&DO contracts in this category are Arrowhead, NAS8-5097 and all of the Single Support Contractors. The list of IO contracts will be available later in the month.

9. Costs applicable to the Liquid Hydrogen experiment on SA-203 should be charged as separate identifiable requirements under the Saturn V Program.

10. Launch Support for the Saturn Projects at KSC will be furnished in accordance with the MSFC-KSC agreement.

POP 65-3
RESEARCH AND DEVELOPMENT

SATURN I GUIDELINES

FY-66 R&DO FUNDING LEVEL:	$ .088 Million
FY-67 R&DO FUNDING LEVEL:	0

SATURN IB GUIDELINES

FY-66 R&DO FUNDING LEVEL:	$35.400 Million
FY-67 R&DO FUNDING LEVEL:	20.000 Million

1. The Saturn IB Project consists of twelve (12) flight vehicles.

2. SA-201 and subsequent vehicles will follow the "all-up" philosophy, but may not be rated at full performance and/or operational specifications.

3. The first manned Saturn IB could be SA-204 providing prior IB launches insure the success required for manning.

4. Costs should be projected for the twelve (12) vehicle program only. <u>No follow-on program will be assumed for this Saturn IB budget submission.</u>

5. The basic S-IVB Stage and the Instrument Unit will be the same as used on the Saturn V except where performance, Saturn IB systems considerations or schedule indicates otherwise. Basic S-IVB Stage, GSE and Instrument Unit development costs are charged to the Saturn V program. However, costs associated with adapting to the Saturn IB vehicle (e.g., R&D effort and peculiar hardware) will be funded by Saturn IB.

6. S-IB and S-IVB stages are planned for water transportation. The Instrument Unit will be transported by air.

7. The R&DO funding levels above are for the Saturn IB only. All IB/Centaur requirements should be listed against the IB/Centaur project.

SATURN IB/CENTAUR GUIDELINES

FY-65 R&DO FUNDING LEVEL:	$ .960 Million
FY-66 R&DO FUNDING LEVEL (1st Qtr):	2.9 Million
FY-66 R&DO UNFUNDED LEVEL (2nd - 4th Qtr):	20.0 Million
FY-67 R&DO UNFUNDED LEVEL:	11.0 Million

1. The Saturn IB/Centaur Program consists of eight flight vehicles. Two launch vehicles will be used for vehicle development flights utilizing Saturn IB launch vehicles SA-208 and SA-210. Two launches will be Voyager R&D test flights during the 1969 Mars Opportunity. Two operational Voyager missions will be conducted during the 1971 Opportunity and two during the 1973 Opportunity.

2. Total Program funding guidelines are $2.2M for FY-65 and $7.8M for FY-66. Program requirements beyond this $10.0M will be submitted as unfunded requirements. Effort authorized to date is that required for design only. No flight or operational GSE hardware procurement is authorized.

SATURN IB/CENTAUR GUIDELINES (CONTINUED)

3. The Saturn IB/Centaur Program requirements will be included as Saturn IB system account 932-80. R&D laboratories mission support contractor requirements on Saturn IB/Centaur should be separately identified.

4. It is assumed that the decision to procure operational GSE will be made by October 1, 1965 and flight hardware commitment will be made by November 1, 1965.

CISLUNAR PEGASUS GUIDELINES

Cislunar Pegasus is an unfunded program and has not received official approval. Previous submittals for the Plan B (maximum contractor effort in design, manufacturing, checkout, and launch) should be included in this POP as separate from Saturn IB/Centaur effort.

SATURN V GUIDELINES

FY-65 R&DO FUNDING LEVEL:

The June 10, 1965, PAP will be utilized to establish the FY-65 R&DO funding level.

FY-66 R&DO FUNDING LEVEL:

The present negotiations between IO and R&DO on the FY-66 budget will establish the FY-66 funding level. R&DO Resources Office will issue guidelines reflecting the negotiated R&DO funding level for FY-66.

FY-67 FUNDING LEVEL:

The FY-67 funding level will be based on PEP 65-2 stated requirements. All changes in funding requirements from PEP 65-2 should be separately identified and fully justified.

1. The Saturn Launch Vehicle Program will consist of fifteen (15) vehicles (SA-501 through 515).

2. Costs should be projected for the fifteen Vehicle Program only. <u>No follow-on program will be assumed for this Saturn V budget submission.</u>

3. The first four vehicles (SA-501 through SA-504) of this program will be of a research and development configuration. Vehicle SA-504 and subsequent will be of an operational configuration.

4. <u>No</u> changes or deletions will be incorporated in vehicle SA-504 and subsequent except for removal of R&D instrumentation on vehicle SA-506 and subsequent. All changes will be incorporated by vehicle SA-504 and will be in consonance with the established maximum cost per pound criteria of $5,000.00 per pound. Express approval of the Saturn V Program Manager is required to incorporate a change that violates this criteria.

5. Each R&DO requirement should be fully justified and indicate vehicle effectivity and leadtime.

SATURN V GUIDELINES (CONTINUED)

6. Common stage hardware development and studies which are not in direct support of any system account, such EBW, etc., should be funded under the Vehicle Support Account.

7. Tooling and STE and Direct Materials required in direct support of a System Account (S-IC, S-II, etc.) will be funded by that account. However, common tooling and STE which is not in direct support of any System Account will be funded by the Vehicle Support Account.

8. S-IC Project

   a. The S-IC Facilities Checkout Stage, Dynamic Test Stage, and all S-IC Flight Stages (except S-IC-1 and S-IC-2) will be assembled at Michoud by Boeing.

   b. Hardware definitions for S-IC Ground Test Stages will be based on stage descriptions as revised November 27, 1964 (with the exception of the S-IC-D description which was revised February 25, 1964 and S-IC-F description issued in September 1964).

9. S-II Project

   R&DO support to the S-II Stage Project will be based on the current Program Plan (Ref: S&ID Document 61-363, dated April 15, 1964, "Program Plan for S-II Stage" and GFP/GFAE requirements for S-II Stage S&ID Document 61-368 dated November 1, 1964).

10. S-IVB Project

    a. The entire development cost for the S-IVB stage will be funded by Saturn V. Costs associated with adapting the S-IVB to the Saturn IB System (e.g., R&D effort and peculiar hardware) will be funded by Saturn IB.

    b. The MSFC J-2 Engine Test Program is to be considered as back-up to DAC S-IVB Battleship Test Operations at SACTO.

11. Instrument Unit

    a. Instrument Unit Test Program outlined in IBM Manual 65-208-0012H (dated April 30, 1965, subject: "General Test of Instrument Unit") will be the basis for hardware definitions for this submission.

    b. All Saturn IB/V Instrument Unit R&D will be funded by Saturn V. Active flight equipment for Saturn IB will be funded by Saturn IB, including any special Saturn IB mission adaption required. Saturn V hardware, flying in a passenger capacity on board Saturn IB flights, will be funded by Saturn V until such time as it becomes an active part of the Saturn IB Instrument Unit Systems. Instrument Unit Ground Checkout Equipment will be funded by the Instrument Unit System Account.

SATURN V GUIDELINES (CONTINUED)

c. Common stage hardware development should be funded by the Instrument Unit where it is an integral part of the Instrument Unit Systems (e.g., switch selector, control rate gyros, etc.). Any special adaption required of this equipment to insure compatibility with a particular stage should be funded by the stage.

d. IBM and Bendix contracts for Saturn IB and V data adapter platform and computer will be budgeted by the appropriate IO Project Office.

e. The appropriate IO Project Office will budget for IBM contract. R&DO will budget for and list by contract GFE items that are required under this contract (except those items procured from IBM and Bendix).

12. Vehicle GSE

ESE for GSE procured under GE contract will be funded by IO. IO will also budget for procurement of checkout computers (RCA 110's) and associated equipment procured from RCA. Direct Support from RCA and GE will be shown by Labs as non-add items.

13. MTO

Plant support and test support to the S-IC and S-II operations at MTO will be charged to the Saturn V Vehicle Support Account. MTO will budget for all propellants for all stage testing to be conducted at MTO.

LAUNCH VEHICLE ENGINE PROGRAM

FY-65 R&DO Funding Level:	Total	$ .888 Million
	Supporting Research	.301
	Direct Support Services	.587
FY-66 R&DO Funding Level:	Total	$ 0.942 Million
	Supporting Research	.350
	Direct Support Services	.592

1. Engine development (H-1, RL-10, F-1, J-2, and C-1 Engines) will continue as prime contractor (out-of-house) effort budgeted by the Engine Program Office.

2. Any MSFC (in-house) verification of the engine prime contractor developed items, back-up development effort, analysis and study, and associated activity, will be identified by the laboratory having the requirement, identifying by engine project and specific task, and budgeting it separately from engine work which is in support of stage or vehicle programs.

3. Overall budgetary requirements for production (deliverable) engines, support hardware, GSE and prime contractor supporting services will be determined by the Engine Program Office. Requirements for such items are based on vehicle launch schedules, stage contractor and MSFC ground test programs, and coordination with applicable MSFC laboratories and vehicle stage managers. Based on planned use, the Engine Program

ENGINES (CONTINUED)

Office provides a budget estimate (POP input) to each applicable vehicle Program Manager which will support the total production program. These items are provided as GFP to stage contractors and MSFC in-house users. MSFC laboratories requiring ground test engines and support hardware, even though previously coordinated with the Engine Program Office, should state such requirements under the engine account of the applicable vehicle in terms of numbers of engines and major components with required delivery dates. Determination of fund requirements to support such deliveries will be determined by the Engine Program Office.

4. Engine Program Office will budget for propellants to be used as GFP by the engine prime contractors for development and acceptance testing. Propellants required for such work, as indicated by paragraph 2 above, should be included in the laboratory estimate. Propellants required for engine test in support of vehicle/stage programs should be budgeted under the applicable vehicle/stage.

RESEARCH AND TECHNOLOGY PROGRAMS GUIDELINES

1. The funding guidelines for FY-1965 and FY-1966 are shown on page 7. Requirements for FY-1967 should be a refinement of previous submissions. The amounts will be used by Headquarters to establish final FY-1967 budget requirements.

2. Any requirements in excess of the FY-1966 guideline amounts should be consistent with overceiling task submissions which have been transmitted or are being prepared for transmittal to the Headquarters Program Offices.

3. The 100 lb. thrust engine (C-1) was funded from the Apollo Supporting Development Program in FY-1965 ($2.0 million) and should be shown under that line item. It should be shown in the Apollo Launch Vehicle Development Project for FY-1966 and subsequent years.

4. Estimates for AR&T should be shown at subprogram level through FY-1966 and at program level for subsequent years in POP 65-3. Estimates for MSF, SS&A, OTDA and OTU should be submitted at the program level.

5. The formats for POP 65-3 for AR&T, SS&A, OTDA and OTU will be the same as submitted in POP 65-2.

6. The Research and Technology Program Managers are shown on page 8. Their inputs should be submitted through Dr. Stuhlinger who has responsibility for coordinating this area.

PEGASUS

1. Flight hardware will be checked out and assembled into Saturn SA-10 at AMR by Fairchild personnel.

2. Data to be obtained by the mini-track stations will be reduced by R-COMP and Research Projects, MSFC.

3. The funding guidance for FY-1965 and FY-1966 is $13.690 million and $1.5 million respectively which will be provided totally by AR&T.

POP 65-3
RESEARCH AND TECHNOLOGY PROGRAMS
GUIDELINES

MSF IN-FLIGHT EXPERIMENTS
(APOLLO AND GEMINI)

1. The Experiments Coordination Office, R-SA (Dr. J. P. Kuettner) has been assigned the responsibility for coordination of in-flight experiments for MSFC. Requirements for any approved, planned, or projected experiments, to include a listing of the experiments, should be provided. Each experiment will be subdivided to indicate requirements for (1) development, (2) flight hardware procurement, and (3) integration and installation. It is planned to submit these requirements in detail in an addendum to the POP and also within the total MSFC requirements in the basic POP as it was submitted in POP 65-2.

2. The Experiments Coordination Office, R-SA, will coordinate these requirements with the AES Program Office to avoid duplication in our budget submission.

RESEARCH AND TECHNOLOGY FUNDING
GUIDELINES

		(Dollars In Thousands)	
		FY-65	FY-66
	MSF	25,475	25,200
904	Apollo Sup. Dev.	15,000	6,500
908	Adv. Manned Missions Sup. Dev.	2,500	1,500
981	Adv. Studies	4,175	5,300
xx	Apollo Extension Systems (AES)	3,800	11,900
	AR&T	28,945	18,530
120	Nuclear Electric Systems, SRT	290	400
121	Nuclear Rocket Systems, SRT	840	900
122	Nuclear Rocket Propulsion, SRT	485	400
123	Space Power, SRT	2,000	1,000
124	Space Vehicle Systems, SRT	2,754	2,990
125	Electronics Systems, SRT	3,485	4,525
127	Human Factors Systems, SRT	355	300
128	Chemical Propulsion, SRT	3,338	3,800
731	Chemical Rocket Exp Engineering	592	1,300
129	Research Program, SRT	916	915
725	Pegasus	13,690	1,500
785	Electronics Systems - Adv. Stu.	200	500
	OTDA	2,000	1,500
150	Tracking and Data Acq., SRT	2,000	1,500
	OTU	36	540
141	Identification and Dissemination	36	540
	SS&A	1,313	21,395
160	Meteorological Systems, SRT	120	120
180	Launch Vehicle Development, SRT	153	140
185	Lunar & Planetary Exploration, SRT Science	35	50
818	Voyager	0	225
186	Lunar & Planetary Exploration, SRT-ATD	400	435
187	Lunar & Planetary Exploration, SRT Studies	0	0
188	Geophysics & Astronomy, SRT	20	25
190	Manned Space Sciences, SRT	0	0
891	Centaur Development (RL-10 Engine)	0	13,000
866	Manned Satellite Science	100	0
867	Manned Lunar Science	485	7,400

POP 65-3
RESEARCH AND TECHNOLOGY
MSFC PROGRAM MANAGERS

CODE	PROGRAM	PROGRAM MANAGER
	MSF	
904	Apollo Supporting Development	Dr. Stuhlinger
908	Advanced Manned Missions Supporting Development	Dr. Stuhlinger
981	Advanced Studies	Dr. Koelle
xx	Apollo Extension System (AES)	Mr. de Fries F. WILLIAMS
	AR&T	
120	Nuclear Electric Systems, SRT	Dr. Stuhlinger
121	Nuclear Rocket Systems, SRT	Mr. Cline
122	Nuclear Rocket Propulsion, SRT	Mr. Cline
123	Space Power, SRT	Dr. Stuhlinger
124	Space Vehicle Systems, SRT	Dr. Stuhlinger
125	Electronics Systems, SRT	Dr. Stuhlinger
127	Human Factors Systems, SRT	Dr. Koelle
128	Chemical Propulsion, SRT	Mr. Paul
129	Research Program, SRT	Dr. Stuhlinger
725	Pegasus	Dr. Johnson
731	Chemical Rocket Exp Engineering	Mr. Cline
785	Electronic Systems - Advanced Studies	Dr. Stuhlinger
	SS&A	
160	Meteorological Systems, SRT	Dr. Stuhlinger
180	Launch Vehicle Development, SRT	Dr. Stuhlinger
185	Lunar & Planetary Exploration, SRT - Science	Dr. Stuhlinger
186	Lunar & Planetary Exploration, SRT - Advanced Technical Development	Dr. Stuhlinger
188	Geophysics & Astronomy, SRT	Dr. Stuhlinger
818	Voyager	Dr. Stuhlinger
190	Manned Space Sciences, SRT	Dr. Stuhlinger
891	Centaur Development (RL-10 Engine)	Mr. Belew
866	Manned Satellite Science	Dr. Stuhlinger
867	Manned Lunar Science	Dr. Stuhlinger
	OTDA	
150	Tracking & Data Acquisition, SRT	Mr. Hoberg
	OTU	
141	Identification & Dissemination	Mr. Wiggins

ADMINISTRATIVE OPERATIONS
GUIDELINES & INSTRUCTIONS

GUIDELINES

1. It is important to note that data submitted in POP 65-3 should represent the Center's firm and valid position. Headquarters relies heavily on this first POP of the fiscal year to establish a total NASA position and to provide a base against which to evaluate changes during the year. Therefore, poor forecasting in the submission makes it difficult to explain variances in the future. Likewise, the FY 1967 data submitted in this POP will be used as the basis for the Center's FY 1967 budget estimate. Again, the need for showing realistic requirements supported by detailed justification cannot be over emphasized. The FY 1966 phased obligations will be the basis for an approved Headquarters Financial Operating Plan and the FY 1967 data will serve as input for NASA's FY 1967 Congressional submission.

2. Fund requirements for existing single mission support contractors for Management Services Office, Technical Services Office and Facilities and Design Office should be projected through FY 1967.

3. The Civil Service personnel ceiling will remain at 7658 for the entire period under consideration.

4. The rent for both the Clinton Street Building and Orlando, Florida office building will be paid for by GSA. The MSFC projection should be based on anticipated reimbursements to GSA but are non-additive to MSFC estimates. Estimates will be included, however, so we can reach agreement with Headquarters personnel on the proposed appropriation transfer to GSA.

5. The estimates for services provided by the Army Missile Command will be based on current price levels.

6. The estimate for the cost of operating the Quality Training School will be included in the Administrative Operations budget.

7. The submission will reflect actual through 1965, monthly projections for the first half of FY 1966, third and fourth quarters of FY 1966, and an annual requirement for FY 1967.

INSTRUCTIONS

1. General

All MSFC organizational units having AO fund requirements will develop and submit requirements for FY 1965, FY 1966, and FY 1967 except for Personal Services fund requirements. FMO will compute Personal Services fund requirements from approved personnel levels and projected hourly overtime levels. It will be noted that hourly overtime levels should be projected by each organizational unit on the schedule provided.

Estimates will be developed and submitted at the cost element level except for limitation travel which will be estimated at object class level by all organizational units. This does not apply to those having special requirements.

All increases or decreases between monthly and annual forcasts in the AO area should be fully explained. Such increases or decreases should be related to changes in manpower levels, concepts, policies and procedures, scopes, and other related factors. This is especially important for increases since it is assumed that MSFC has reached a leveling off point.

2. Preparation of Schedules

All estimates are obligational data. However, as previously stated, costs and obligations for AO activities are one and the same for the fiscal year.

All cost elements including contracts over $25,000 should be supported by contract listings and balancing other as follows:

EXAMPLE A

Service Contracts	$2,600,000
Contracts ($25,000 and over)	1,800,000
Rocket City Air Activities	600,000
MSI	200,000
Wyle Company	1,000,000
Other (Contracts less than $25,000)	800,000

EXAMPLE B

2310 Rental of Land or Structures	$ 800,000
HIC Building	600,000
Clinton Building	150,000
Other	50,000

3. Special Requirements

Overtime levels on an hourly basis must be shown for each period requested on the schedule. This is especially important in view of the recent changes in the MSFC overtime policies. FMO will price out such hourly estimates.

Each unit having overseas travel requirements should indicate such levels below travel estimates in brackets as follows:

Travel	$1,600,000
Overseas Travel	(18,000)*

*The parentheses indicate that it is included in Travel total.

ADMINISTRATIVE OPERATIONS

Stub Entries for Columns 1 & 2 of the AO Formats

Code - Object Class/Cost Element	Estimating Cog. Act.
21 - Travel and Transportation of Persons	All
2110 - Travel of Consultants and Lecturers	11
2130 - Initial Duty Stations, Temporary Assignments and Transfers, and Emergency Relocations Sites	11
Show 2140 - Overseas Travel in ( )	
2150 - Contract, Charter and Lease of Passenger Aircraft	13
2160 - Local Transportation and Toll Charges	15
2170 - (Commercial) Contract, Lease, and Rental of Passenger Motor Vehicles	13
2171 - (Government) Contract, Lease, and Rental of Passenger Motor Vehicles	13
22 - Transportation of Things	
2210 - Freight; Rail, Truck, and Water Movements	13
2220 - Local Movements; Drayage; Parcel Post	13
2230 - Air Freight and Air Express by Commercial Common Carrier	13
2240 - Household Goods and Personal Effects	11
2250 - Movement by Contract, Charter, or Leased Aircraft	13
2260 - Movements via Military Cargo Aircraft; Mats, Air Force and Navy	13
2270 - Rental and Lease of Trucks and Other Transportation	13
2290 - Other	13
23 - Rents, Communications and Utilities	
2310 - Rentals of Land or Structures	12
2320 - Rental of Electronic Data Processing Equipment	70
2330 - Rental of Electronic Data Processing Equipment	70
2340 - Rental of All Other Equipment	14
2350 - Leased Lines	14
2360 - (Commercial) Long Distance Tolls 2361 - (Government)	14
2370 - Local Telephone and Exchange Services	14
2380 - All Other Communications	14
2390 - Electricity	12
2810 - Water	12
2820 - Gas and Other Utilities	12
24 - Printing and Reproduction	
2410 - (Government) Printing and Reproduction	14
2420 - (Commercial) Printing and Reproduction	14
25 - Other Services	
2510 - (Commercial) Research and Development	All
2511 - (Government) Research and Development	All
2520 - (Commercial) Engineering Services	All
2521 - (Government) Engineering Services	All
2530 - (Commercial) EDP and EAM Equipment Operation	70
2531 - (Government) EDP and EAM Equipment Operation	70
2540 - (Commercial) EDP and EAM Programming and System Design	70
2541 - (Government) EDP and EAM Programming and System Design	70
2550 - (Commercial) Consulting Services and Management Surveys	11
2551 - (Government) Consulting Services and Management Surveys	11
2560 - (Commercial) Technical Documentation Services	14
2561 - (Government) Technical Documentation Services	14
2570 - (Commercial) Chart and Related Art Work	14
2571 - (Government) Chart and Related Art Work	14
2580 - (Commercial) Other Service Contracts (not covered by 2510-2571, 2710-2991)	All

Code - Object Class/Cost Element	Estimating Cog. Act.
2581 - (Government) Other Service Contracts (not covered by 2510-2571, 2710-2991)	All
2710 - (Commercial) M&R of Buildings and Grounds	13
2711 - (Government) M&R of Buildings and Grounds	13
2720 - (Commercial) M&R of EDP and EAM Equipment	13
2721 - (Government) M&R of EDP and EAM Equipment	13
2730 - (Commercial) M&R of Instruments and Research Equipment	13
2731 - (Government) M&R of Instruments and Research Equipment	13
2740 - (Commercial) M&R of Office and Shop Equipment	13-14
2741 - (Government) M&R of Office and Shop Equipment	13-14
2750 - (Commercial) M&R and Storage of Vehicles	13
2751 - (Government) M&R and Storage of Vehicles	13
2760 - (Commercial) Service Contracts for Aircraft Servicing	13
2761 - (Government) Service Contracts for Aircraft Servicing	13
2770 - (Commercial) Other M&R (not covered by 2710-2761)	13-14
2771 - (Government) Other M&R (not covered by 2710 -2761)	13-14
2830 - (Commercial) Contract Administration Services	16-91
2831 - (Government) Contract Administration Services	16-91
2840 - (Commercial) Tuition, Graduate Study and Off-the-job Training	11
2841 - (Government) Tuition, Graduate Study and Off-the-job Training	11
2850 - (Commercial) Service Contracts for Exhibit Preparation, etc.	15
2851 - (Government) Service Contracts for Exhibit Preparation, etc.	15
2860 - (Commercial) Service Contracts for Motion Picture Services	13
2861 - (Government) Service Contracts for Motion Picture Services	13
2870 - (Commercial) Service Contracts for Stenographic Services, Advertising, etc.	11-15
2871 - (Government) Service Contracts for Stenographic Services, Advertising, etc.	11-15
2880 - (Commercial) Representation Allowances	15
2881 - (Government) Representation Allowances	15
2890 - (Commercial) Miscellaneous Services (not covered by 2510-2581, 2710-2881, 2910-2961)	13-14-15
2891 - (Government) Miscellaneous Services (not covered by 2510-2581, 2710-2881, 2910-2961)	13-14-15
2910 - (Commercial) Custodial Services, Security Guard	14
2911 - (Government) Custodial Services, Security Guard	14
2920 - (Commercial) Custodial Services, Janitorial	14
2921 - (Government) Custodial Services, Janitorial	14
2930 - (Commercial) Custodial Services, Cleaning, Exterminating, Refuse Handling	13-14
2931 - (Government) Custodial Services, Cleaning, Exterminating, Refuse Handling	13-14
2940 - (Commercial) Custodial Services, Laundry	14
2941 - (Government) Custodial Services, Laundry	14
2950 - (Commercial) Custodial Services, Fire Protection	14
2951 - (Government) Custodial Services, Fire Protection	14
2960 - (Commercial) Other Custodial Services (not covered by 2910-2951)	13-14
2961 - (Government) Other Custodial Services (not covered by 2910-2951)	13-14
26 - Supplies and Materials (by cost element)	13
31 - Equipment (by cost element)	
3116, 3151-3162 - Excluding code 3157 (furniture over $50.00)	All
3157 - Furniture for all MSFC Elements (Category 670)	13
32 - Land and Structures	
42 - Insurance Claims and Indemnities	15

GEORGE C. MARSHALL SPACE FLIGHT CENTER

PROGRAM OPERATING PLAN

(In Thousands of Dollars)

Organizational Unit _____

Designator 65-3

Date _____

CODE	OBJECT CLASS/COST ELEMENT CONTRACTOR/OR OTHER DESCRIPTIVE TITLE	ACTUAL FY 1965	CUMULATIVE OBLIGATIONS FY 1966								FY 1967
			JULY	AUG	SEPT	OCT	NOV	DEC	3RD QUARTER	4TH QUARTER	

FIN-72 (June 1965) (OT)

POP 65-3
SPECIAL SUMMARIZATION
INSTRUCTIONS

The following categories may be funded from AO or R&D appropriations. To facilitate overall review and analysis, it is requested that the specified MSFC organizational units submit total category requirements by appropriation for AO and by project for R&D. (See enclosure 5, page 2.) Information furnished should clearly designate the appropriation which will be used to fund each line item listed. Detail for the summarizations shown herein will also be shown on individual forms in the AO and R&D sections.

Category	Originating Office	Submittal Date	To
1. Communications	MSO	July 19	FMO
2. Computation Activities (Lease, Purchase & Maint.)	R&DO	July 19	FMO
3. Reimbursables			
a. Equip. Replacements	TSO	July 19	FMO
b. Reimbursable Work for Other Agencies	All	July 19	FMO
4. R&A Projects/Minor Construction Projects	All	July 12	F&D-P

Reimbursable Work for Other Government Agencies

Reimbursable work for other Government agencies will more than likely be performed by R&D personnel. However, since this work is not applicable to any MSFC project, it will always be classed as AO effort. This category would include any type of activity that we would perform for any Government agency on a reimbursable basis.

Minor Construction/Repairs and Alterations Projects

Minor Construction and Minor Repairs and Alterations Projects will be submitted by R&DO, IO, and Staff Offices to F&D-P. F&D will coordinate, consolidate, and submit the approved projects to FMO by July 19, for inclusion with AO and R&D fund requirements.

Minor Construction and Minor Repairs and Alterations Projects are those that fall within the following dollar limitations:

1. $100,000 maximum for new facilities
2. $250,000 maximum for additions or alterations to existing facilities.

(Projects costing in excess of the above limitations fall in the Construction of Facilities category, and should be so classified and submitted.)

For the R&A submission all AO Minor Construction and Repair and Alteration Projects should be listed first and, after striking a total, the R&D funded projects should be listed. (R&D funded projects should be grouped by R&D project - Saturn I, IB, V, Engine Development, etc.) All Michoud, MTF, Slidell and various location projects will be R&D funded. AO projects will include only those at Huntsville which are of a general purpose nature and which are not relatable to R&D projects. Any project that is R&D project oriented will be shown in the R&D listing. In both cases, list individual projects by title and amounts for FY-66 and FY-67. The FY-68 thru FY-70 estimate will be a level of effort projection at appropriation level. Each project listed for FY-66 and FY-67 will be supported by a brief write-up, including description, cost estimate and justification. Show actuals for FY-65 at appropriation level.

In addition, brief descriptions, justifications, cost estimates, and apportionment of cost between Object Classes for FY-66 and FY-67 funded R&A projects will be submitted on multilith mats of NASA Form 925 (enclosure 5, page 3). Grouping of projects will be by fiscal year, location, fund source, (AO or R&D) and identification of new construction or addition/modification to existing structures.

GEORGE C. MARSHALL SPACE FLIGHT CENTER

SPECIAL SUMMARIZATIONS BY FISCAL YEARS

ORGANIZATIONAL UNIT _____

R&D REQUIREMENTS SUMMARIZED BY PROJECT/SRT PROGRAM

DESIGNATOR: _____

DATE: _____

CODE	PROGRAM/PROJECT OBJECT CLASS	ESTIMATED OBLIGATIONS (THOUSANDS OF DOLLARS)						
		FY 1965	FY 1966	FY 1967	FY 1968	FY 1969	FY 1970	TOTAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION **OBJECT CLASSIFICATION JUSTIFICATION**	APPROPRIATION	BUDGET ESTIMATES FY-

NAME OF INSTALLATION	OBJECT CLASSIFICATION

NARRATIVE JUSTIFICATION:

NASA FORM 925 AUG 63

POP 65-3
MANPOWER PLANNING
GUIDELINES AND INSTRUCTIONS

GROUND RULES

Using the attached manpower planning definitions and the units of measure which are outlined herein, manpower projections are required for the present fiscal year and for five years thereafter. Projections are required in end-of-year strength, by man-years, and by man-months. All data submitted should satisfy the requirements imposed by the format of the specific chart.

Since overtime is worked in varying degrees by civil service and support contractor personnel, the equivalent man-year and man-month figures estimated will exceed the actual number of employees. This is because the equivalent man-unit figure assumes regular time only.

Industrial Operations and the Center's Staff and Services Offices should submit the applicable forms in the same manner in which PEP 65-2 was submitted.

The laboratories in R&DO will be issued separate guidelines for their submissions to this budget call from R&DO Resources Management Office. R-RM will then be responsible for submitting the required data to Executive Staff according to these guidelines.

The attached charts are examples of an R&DO detailed submission for contractors and civil service. R-RM, I-RM, and each Center Staff and Service Office will be responsible for reviewing the detailed input from their organizational elements and then summarizing the data by organization, by program (project), by system (stage), and by contractor.

Actual Monthly data for civil service and contractors for March, April, May and June (those months not covered by PEP 65-2) should be included as a separate submission.

Since Housekeeping Support Contractor personnel are not oriented or charged to R&D projects, they should be distributed by function (e.g. guard services, transportation, etc.). All Management Services Office's and Technical Services Office's contractors are defined as Housekeeping Support Contractors.

UNITS OF MEASURE

A. End-of-Year Strength

The actual number of civil service or support contractor personnel on board (past) or expected to be on board (future) at the end of a fiscal year.

B. Equivalent Man-years

For civil service an equivalent man-year is 2080 hours. This figure is used throughout all government agencies even though a year consists of 52 weeks plus one day, and five times out of seven this extra day will be a work day. Leap year also provides an additional day which would also most likely be a work day. No overtime is included and no deductions are provided for holidays or leave as they are still part of a civil service man-year, the hours off being charged to "Non-Work". An equivalent man-year for a support contractor is defined as 2080 hours plus allowable overtime for an on-site contractor and 2016 hours plus allowable overtime for an off-site contractor. This is in agreement with the man-year figure being used in the new single support contracts.

C. Equivalent Man-months

An average projected equivalent man-month for civil service is defined as equal to 173.33 man-hours.

Actual data, when required for each of the above, will be determined on the basis of the actual number of working days (including the 8 legal holidays for civil service) and/or hours of the month in question.

DEFINITIONS

A. Civil Service Personnel

1. Direct Personnel

Personnel that can be clearly identified to specific projects (R&D, C of F, or non-reimbursable programmatic projects) on the basis of actual time worked.

2. Indirect Personnel

Personnel that can be clearly identified as providing supporting services which cannot be directly related to a single project.

a. Program Support Personnel. Personnel engaged in technical supporting functions as well as those engaged in common or supporting services. Specifically this is defined as the indirect personnel in R&DO and IO (except those who qualify in paragraph c. below).

b. General and Administrative Support Personnel. Personnel that are clearly identified with providing overall installation support. Specifically this area is restricted to personnel in the Center's Staff, support, and services areas (except those who qualify in paragraph c. below).

c. General Support of Construction Programs Personnel. Personnel that can be clearly identified in managing C of F programs to include preliminary design and engineering studies and investigations, supervision and inspection.

B. Military Personnel

Military personnel are members of the Armed Forces detailed to NASA. Military personnel and manhours are identified as such and not related to projects or systems.

C. In-House Support Contractor Personnel

In-House support contractor personnel are personnel physically located on or near the Center who provide continuing support services in the categories:

1. R&D Funded Contractor Personnel

a. Engineering Support Services Personnel. Support contractor and prime contractor personnel who work directly on MSFC in-house projects and/or supplement the MSFC manpower workforce on post or in their plant in furnishing engineering support, drafting, computer operating and programming, technical facility operation, level of effort fabrication support, and technical documentation reimbursed from R&D funds.

b. Management Operations Support Service Personnel. Personnel used by support contractors in assuming full responsibility for operation of sub-installations such as Michoud and MTF.

2. Administrative Operations Funded Contractor Personnel

a. Engineering Support Services Personnel. Personnel used by support contractors who furnish engineering support, drafting, computer operation and programming, technical facility operation, and level of effort fabrication support reimbursed from A. O. funds.

b. Housekeeping Support Services Personnel. Contractor support personnel furnished for internal Huntsville housekeeping such as janitorial, ground keeping, fire protection, security maintenance, chart or art work, excluding services normally supplied on an "as called for" commercial basis.

GEORGE C. MARSHALL SPACE FLIGHT CENTER

_____ CONTRACTOR MANPOWER PLAN

ORGANIZATION/PROGRAM/SYSTEM/CONTRACTOR DETAIL DATA

Organizational Unit _____

Designator 65-3

Date _____

Organization/
Program/

System/	MAN YRS	FY - 1966 MAN - MONTHS												MAN - YEARS					
Contractor	FY-65	JUL	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	FY 1966	FY 1967	FY 1968	FY 1969	FY 1970	FY 1971
Example:																			
P&VE Lab																			
Saturn I																			
S-I Stage																			
Chrysler																			
Brown																			
Hayes																			
S-IV																			
Brown																			
IU																			
Etc.																			
TOTAL																			

PAGE_____ OF _____ PAGES

GEORGE C. MARSHALL SPACE FLIGHT CENTER

_____CIVIL SERVICE MANPOWER PLAN

DISTRIBUTION OF PERMANENT PERSONNEL

FY-1966 ORGANIZATION/PROGRAM/SYSTEM SUMMARY

(DATA IN MANMONTHS AND END OF MONTH)

Organizational Unit _____

Designator 65-3

Date _____

	JUL		AUG		SEP		OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN	
Organization/ Program/System	Man Month	EOM	Man Month	EOM	Man Month	EOM	Man Month	EOM	Man Month	EOM	Man Month	EOM	Man Month	EOM	Man Month	EOM	Man Month	EOM	Man Month	EOM	Man Month	EOM	Man Month	EOM
Example:																								
Test Laboratory																								
Saturn I																								
S-I																								
S-IV																								
IU																								
GSE																								
Veh. Support																								
Etc.																								
Indirect Non Work*																								
TOTAL																								
Etc.																								

*Note: Non-Work entires to be made in the man-year columns only.

PAGE_____ OF _____ PAGES

GEORGE C. MARSHALL SPACE FLIGHT CENTER

_____ CIVIL SERVICE MANPOWER PLAN

Organizational Unit _____ (DATA IN END OF YEAR)

Designator 65-3 Date _____

TYPE OF PERSONNEL	FY 1966	FY 1967	FY 1968	FY 1969	FY 1970	FY 1971
Organization						
1. Direct Personnel						
2. Indirect Personnel						
a. Program Support						
b. G&A						
c. General Support of C of F						
3. Military						
4. Consultants and Experts						
5. Co-ops						
"X" LAB (Repeat above breakout for each lab or major office)						

PAGE _____ OF _____ PAGES

GEORGE C. MARSHALL SPACE FLIGHT CENTER

_____ CIVIL SERVICE MANPOWER PLAN

DISTRIBUTION OF PERMANENT PERSONNEL

FY-1966 - FY-1971 PROGRAM/SYSTEM SUMMARY

(DATA IN MANYEARS AND END OF YEAR)

(R&DO AND IO ONLY)

Organizational Unit _____ Date _____

Designator 65-3

ORGANIZATION/ PROGRAM/SYSTEM	FY 1966		FY 1967		FY 1968		FY 1969		FY 1970		FY 1971	
	Man Year	EOY	Man Year	EOY	Man Year	EOY	Man Year	EOY	Man Year	EOY	Man Year	EOY
Example:												
Test Laboratory												
Saturn I												
S-I												
S-IV												
IU												
GSE												
Veh. Support												
Etc.												
Indirect Non-Work*												
TOTAL												

*Note: Non-Work entries are to be made in the manyear columns only.

PAGE ____ OF ____ PAGES

Subject: Collection, Preparation and Submission of POP 65-3

6. POP 65-2 submission to MSF suggested that problems may occur in future cost growth. These problem areas are

a. The experiments area where duplication is a factor.

b. The AES Program where follow-on activities are not clearly defined.

It is important that funds for Apollo applications be separated as discrete packages in the budget so that Apollo lunar landing costs will not grow as a result of extraneous activities.

7. The Construction of Facilities POP will be developed by F&D based on currently authorized program authority for FY-61 through FY-65, the Congressionally authorized FY-66 program, and the FY-67 projects currently approved. The final FY-67 C of F budget with supporting documentation is scheduled for late August. F&D will issue local guidelines subsequent to the receipt of firm Headquarters guidelines.

8. The original plan for a NASA-wide mechanized program for POP 65-3 has not materialized but MSF has decided to mechanize the MSF R&D portion of its POP submission to AA. Our POP Call is geared to this decision.

9. The AES Program has recently undergone some revision. Guidelines for this program to incorporate these revisions will be issued under separate cover.

10. The following Center coordinators should be contacted for additional information:

Overall Center Coordinator
E. T. Mallory, E-R
876-4995

R&D Operations
J. Fryman, R-RM-P
876-1554

Administrative Operations
L. E. Snyder, FIN-B
876-3850

Industrial Operations
C. Williams, I-RM-P
876-5618

Manpower Planning
H. W. Vaughn, Jr., E-R
876-1343

for J. N. Foster
Hans H. Maus

Encs.
a/s