THE BUDGET PROCESS: POP CALL TO ACTUALS

A Study for the Mission Operations Laboratory

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List of Acronyms

ADP — Automated Data Processing Equipment

AI — Organization Code for the Information Systems Office

BCSS — Boeing Computer Support Services

CRATIS — BCSS Computer Accounting System

CSI — Cost Since Inception

FMO — Financial Management Office

FY — Fiscal Year

ISO — Information Systems Office

HMCG — HOSC Management Control Group

HOSC — Huntsville Operations

MARTS — MSFC Accounting and Resource Tracking System

MOL — Mission Operations Laboratory

NAS37200 — Computer support contract with BCSS

NTI — New Technology Incorporated

O22 — Accounting report produced by FMO

PCTC — Payload Crew Training Center

POCC — Payload Operations Control Center

POIC — Payload Operation Integration Capability

POP — Program Operating Plan

PPO — Payload Project Office

RMIS — Resource Management Information System

RFS — Request For Services

SSF — Space Station Freedom

UPN — Unique Project Number

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INTRODUCTION

Part of the role of the Mission Operations Lab is the development of budget inputs for HOSC/PCTC/POCC activity. These budget inputs are part of the formal POP process, which occurs twice yearly, and of the formal creation of the yearly operating plan. Both POPs and the operating plan serve the purpose of mapping out planned expenditures for the next fiscal year and for a number of outlying years. Based on these plans, the various Project Offices at the Center fund the HOSC/PCTC/POCC activity.

Because of Mission Operations Lab's role in budget development, some of the Project Offices have begun looking to Mission Operations, and specifically the EO02 branch, to track expenditures and explain/justify any deviations from plans. EO02 has encountered difficulties acquiring the necessary information to perform this function. It appears that the necessary linkages with other units had not been full developed and integrated with the flow of information in budget implementation. The purpose of this study is to document the budget process from the point of view of EO02 and to identify the steps necessary for it to effectively perform this role on a continuous basis. The study focuses on budget development and the accounting system.

It is important to remember that the mandate for this study was to look into what is wrong in the process and not what is right. This produced a bias in the choice of issues raised on the following pages of the report. However, interviews with people connected with the budget process revealed an overall discontent with the current method of operating was detected. Not one individual felt the current process was ideal for efficient and accountable handling of HOSC funding.

This report is designed to allow a Continuous Improvement Team to select one or more of the following issues and perform specific analysis to correct the problem. The overall structure follows over twenty steps in the budget process, using the CMS37200 contract as the focal point. A brief description of each step is given along with the introduction of one or more external or internal issues. External issues are problems associated with organizations outside of the Lab. Internal issues are problems associated with the Lab itself or the personnel within the Lab.

For an overview of the critical issues, a reading of Appendix A, Briefing on the Accounting Situation, provides valuable information in a condensed format. Appendix B provides specific data on the cash flows for several of the projects involved in the HOSC/PCTC/POCC activity.

Methodology

In order to gain a perspective on the entire budget process, interviews were held with 20 different people located in several different organizations. Each of these individuals holds a position directly dealing with some aspect of the budget process or the accounting process for MOL funds. The interviews centered on the individuals' definition of the current process, their opinion of the effectiveness of the current process, and their ideas on improvements for the funding system.

In order to further understand exactly what was occurring in the accounting system, data from the past two fiscal years was acquired. This information included the contractor's 533 report to FMO, FMO records, reports from AI33, and any information contained in the Lab files. All of this information was analyzed to find connections between the actual work and the data seen by the Project Offices.

Assumptions

*   This study concentrates on the NAS37200 Contract, the computer support contract between ISO and BCSS.

*   Feedback on actual costs is critical to adequate cost estimation development.

*   For practical purposes, the POP and Operating Plan follow the same generic process which leads to the production of a cost plan used in 3559 development.

*   The immediate goal is to produce a realistic 3559 cost plan, which can be funded by the Project Offices and executed by BCSS.

*   The ultimate goal is to accomplish an externally defined project with the allocated resources.

*   MOL is responsible for answering inquiries from the Project Offices regarding the status of HOSC/PCTC/POCC funds in the accounting process.

*   Problems associated with the 424 Science and Engineering Directorate funding process are not included in this study.

Various Budget Calls Begin Process → Divisions Gather Cost Estimates → E002 Integrates Data from Divisions → This Data Generates the 3559's → The 3559's Travel Through System → AI Receives 3559's → AI Sends 3559's to BCSS

This Data Generates the 3559's → Divisions Use 3559 to Prepare RFS's

AI Sends 3559's to BCSS → BCSS Enters 3559 Values Into Cratis → EO and BCSS Generate RFS's → Work Is Performed → BCSS Enters Time Card Charges Into Cratis → BCSS Generates Draft 533 from Cratis → AI and BCSS Adjust the 533 → BCSS Sends Final 533 to FMO → FMO Enters 533 Into MARTS → Electronic Distribution of Data → Project Office Reviews FMO Data

Divisions Use 3559 to Prepare RFS's → EO and BCSS Generate RFS's

Path MOL

AI and BCSS Adjust the 533 → AI Receives Final 533 Generated from Cratis → AI Prepares a Report for EO → EO Receives AI Generated Report → E002 Examines Hard Data → E002 Tries to Answer Questions

E002 Receives Info from FMO → E002 Examines Hard Data

Electronic Distribution of Data → E002 Receives Info from FMO

Project Office Reviews FMO Data → Project Office Inquires to EO → E002 Contacts Human Sources for Answers → E002 Tries to Answer Questions

Path Project Office

Major Steps in the Process

1. Budget calls initiate the process. Guidelines are generated at each level of the process, Headquarters, Center wide, Lab level.

2. Divisions prepare cost estimates in response to the call.

3. EO02 integrates information from divisions.

4. The 3559s are generated from this information based on the POP and Operating Plan.

5. The 3559s travel through the system for approval.

6. AI receives the 3559s.

7. AI sends 3559s to BCSS.

8. BCSS enters 3559s into CRATIS.

9. EO divisions and BCSS prepare the RFS's and send them to AI.

10. Actual work is performed.

11. BCSS enters time card charges into CRATIS.

12. BCSS generates the preliminary 533 from CRATIS.

13. AI and BCSS negotiate and agree on the actual 533 to be submitted to FMO.

14. FMO receives the 533. *(GO TO Path MOL Report)*

15. FMO enters the 533 into MARTS.

16. Electronic distribution of information occurs in MARTS. *(GO TO Path Project Office)*

17. EO02 reviews FMO information for conformity with the original cost plan.

18. EO02 integrates the various data from the MOL report and MARTS.

19. EO02 accounts to the Project Office for work performed in accordance with the original cost plan and any variation thereto.

Path Project Office

1.   PO. Project Offices review FMO data.

2.   PO. Project Offices inquire to EO in regards to the information in MARTS.

3.   PO. EO02 contacts human sources for proposed answers to the questions.

Path MOL Report

1.   MOL. AI prepares a report for MOL which is based on the CRATIS information.

2.   MOL. EO02 receives the MOL report on a monthly basis, around the twentieth of the month.

Step 1. The Budget Call

Description

The budget call initiates the process. For the POP process and the 3559 ADP Requirements process, the budget call sets the standard format for inputting budget requirements. In the POP process, guidelines originate at the Headquarters level and usually focus on any major changes in the program. The 3559 call initiates with ISO. The guidelines play a major role in determining what approaches the divisions take in developing the budget inputs.

External Issues

1.1 The accuracy of the cost estimation is directly proportional to the clarity of the guidelines. The budget process is made easier by incorporating detailed guidelines in the process. In the past, the divisions have found the guidelines understandable and workable. Many individuals advocated the continued increase in the development of specific guideline details in order to make the budget process even easier to understand at the division level.

Internal Issues

1.2 Guidelines must be in an adequate form for translation into cost estimates so that the divisions understand them. The format for the input should be as clearly stated as possible.

Step 2. Cost Estimation within the Divisions

Description

Once the budget call, POP or 3559, has been distributed to the divisions by EO02, the cost estimation teams begin to work on the problem. EO31 has individuals assigned to each element of the work. For instance, Darrell Bailey handles all of the POIC estimates, while Mike Watson handles PTC. These individuals are responsible for putting together reasonable labor and hardware requirements. They create the POP line inputs as well as the information for the 3559s. The Lab hierarchy is responsible for reviewing and approving these inputs.

External Issues

2.1 Project Offices regularly probe the budget requests from the Lab. They try to elicit detail to carry out their role in advocating the budget to other authorities. These steps are part of a chain of accountability that stretches from Congress to the contractor. In order to justify its requests to the Project Offices the Lab has to provide more detail in the budget. For the Lab to provide more detail, it must obtain more detail from its cost estimation procedures. This requirement equates to external pressure for more detail in the budget estimates generated at lower levels in the Lab.
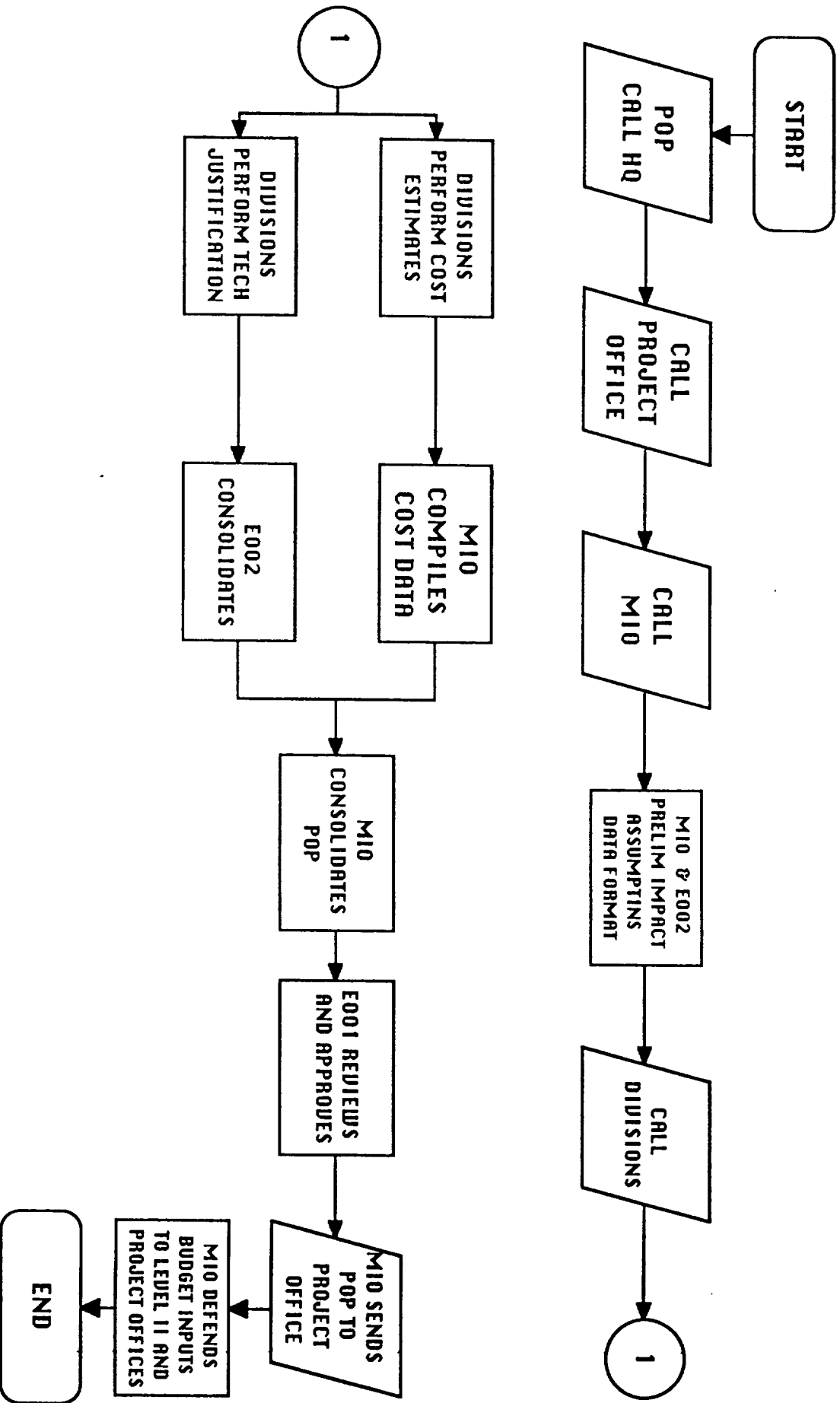
Internal Issues

2.2 In discussion with many of the division level cost estimators, the absence of documentation became very clear. Even though much of the cost estimation is tied to historical data, very little paperwork is present which can be used as justification for the current numbers. Each of the cost estimators seemed to use an incremental approach, without analyzing the appropriateness of the previous baseline. Old budgets are simply modified to reflect inflation or additional requirements. Incremental budgeting may be less appropriate for developmental programs than it is for more stable governmental programs. Because the work in developmental programs is, by its nature, non-repetitive, there is less opportunity to develop consensus on the base.

Alternatives such as zero base budgeting are also difficult to apply in developmental programs because the performance characteristics and costs of the technologies being used are not well known. This problem is compounded by the fact that detailed estimates tend to acquire an aura of certainty so that reviewers are surprised when performance varies from the plan. As more detailed estimates are required, they should be accompanied, insofar as possible, by statements communicating the degree of certainty attached to them. Parties up and down the chain should anticipate change during budget implementation. In such an environment there must be a system to rapidly communicate changes to all those affected so that they can make the necessary adjustments. This study seeks to identify the relevant parties and to trace the existing paths of official communications as an aid to Lab authorities in evaluating the current system.

2.3 The divisions are heavily reliant on the contractors for producing cost estimates. Most of the activity at the divisional level seems to revolve around checking and verifying the contractor estimates. There is no in-house technological capability for making cost estimates to verify the contractor's numbers. In particular, software cost estimation packages such as those being used by the contractors are not available to the divisions. People involved in cost estimation could particularly benefit in beginning to involve themselves in computer programs such as COCOMO, Price S, SLIM, and others. The *Cost Estimator's Reference Manual* is a very useful source of information relating to software cost estimation. Before purchasing any software packages, those employees who work directly with this subject should be tasked to determine the exact needs and requirements of such a system. Past experience and historical trends form the current foundation of most of the Lab's estimation process. Computer software technology could help in alleviating this dependence on old information. This would place Lab personnel on a more equal footing with the contractors.

2.4 Division personnel do not understand how their cost estimates are used in HQ to determine the funding levels of programs. In fact, several comments from the divisions, as well as other sources, backed up this point, in particular, when discussing the SSF budget. If the marks are all set during restructure, what is the point in doing all of the different exercises? If the engineer sees no benefit of his budget exercise effort, why should he devote a great deal of time towards it? If the goal is to improve the quality of cost estimates, the utility of detailed and accurate cost estimation packets from the divisions must be made clear.

ACTIVITY FLOW FOR THE POP PROCESS

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START ──▶ POP ──▶ CALL ──▶ CALL ──▶ M10 & E002 ──▶ CALL ──▶ (1)
          CALL HQ   PROJECT    M10      PRELIM IMPACT   DIVISIONS
                    OFFICE              ASSUMPTINS
                                        DATA FORMAT


(1) ──┬──▶ DIVISIONS ──▶ E002 ──────────────┐
      │    PERFORM TECH    CONSOLIDATES      │
      │    JUSTIFICATION                     │
      │                                      ▼
      └──▶ DIVISIONS ──▶ M10 ──────────▶ M10 ──▶ E001 REVIEWS ──▶ M10 SENDS ──▶ M10 DEFENDS ──▶ END
           PERFORM COST    COMPILES        CONSOLIDATES  AND APPROVES    POP TO        BUDGET INPUTS
           ESTIMATES       COST DATA       POP                          PROJECT       TO LEVEL II AND
                                                                        OFFICE        PROJECT OFFICES
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2.5 In order to better defend the budget requests and to better track funds, a more systematic method for tracking hardware must be created. There seems to be no all-encompassing hardware list for the HOSC. Both ISO and NTI are unable to provide an accounting to EO02. As the overall NASA budget continues to tighten, the benefits of putting effort into a detailed hardware list will become more significant. The division-level cost estimators must be convinced as to the importance of detailed budget inputs. Hardware must be identified as specifically as possible, and then tracked through the procurement process and accounting system. A great deal of effort will be required to accomplish this task, but the result will be less effort in defending the budget to higher levels. Detailed hardware lists will also allow for more accurate tracking of funds through the accounting system.

Step 3. EO02 Integration Function During the Budget Process

Description

EO02 is responsible for integrating the division level budget inputs into a package acceptable to the Project Offices and Lab management. This involves reviewing the inputs for accuracy in the dollar amounts, the cost spread over the year, and the level of detail. When substantial information is missing, EO02 must revisit the budget input with the division. This subject is currently being discussed by the Continuous Improvement group under item I.A.3.

External Issues - NONE

Internal Issues

3.1 One major difficulty in the integration function is the lack of definition in the budgets presented to EO02 by the divisions. Greater detail not only allows easier implementation during the 3559 process but also allows more effective defense of questions raised by the Project Offices. A significant element in integrating and advocating the budget is the ability to differentiate between those components which are most firmly estimated and those for which the estimates only bound the solution. These latter components represent functions for which future technologies are being developed and which cannot be estimated with the same degree of confidence as the former. The degree of certainty does not necessarily correlate with priority of the components: the more nebulous estimates may represent some of the strongest liens against the budget. A certain amount of flexibility, program or project reserve, must remain in the system to allow for unexpected alterations in the development effort. Open communication between the divisions and EO02 would greatly reduce the frustration resulting from this problem. However, regardless of the relationship between the divisions and EO02, a standard should be set for the budget inputs which reveals the degree of definition in the budgets provided by the divisions.

One possible solution is for EO02 to attach a standardized budget sheet to the POP call. This standardized budget sheet can be gradually filled in as information becomes available. During defense to Level II, this sheet can be the foundation for the resource level justification. In order to make the tracking of costs simpler, the standardized sheet should include the same categories as found on the MOL CRATIS report sent to the Lab from ISO. These categories would include labor, software, hardware, and other direct charges. With the detailed budget in hand, EO02 could monitor the cash flow with greater accuracy and insight.

EO02 could create this form because it is familiar with the information requirements. Filling in the form with the required level of detail will necessitate additional effort by the divisions, however. The decision to invest the necessary time and effort must be made in the divisions and in higher units in their line of authority. The point to be made here is that the adequacy of the integration function depends upon the nature of the information received.

3.2 The Project Offices continue to complain about hardware lines shown too early in the year to account for the time lag in the procurement process. Not until the end of the 424 process does the Project Office need to obligate money. Before this time, the Project Office does not need to have the money available. When the budget input places hardware one to three months too early in the year, the Project Office must sit on the money while the 424 form is processed through the system. The root of the problem appears to an absence of planning guidance for the cost estimators to take into account the required administrative processing time, a one-to-three month time delay in beginning the 424 process. A short meeting between the Project Office resource personnel and the Lab's cost estimators could probably resolve this situation.

Step 4. Generation of the 3559s.

Description

Sometime in August or September, ISO will issue a request to prepare the 3559s. This process follows the basic format as a POP call with the appropriate steps at each level in the Lab hierarchy. The 3559s are filled out at the division level based on the input from the POP process. The 3559s allow labor, hardware, and other materials to be broken out by quarter. These forms are then approved by branch, division, and Lab level personnel. They are then submitted to Science and Engineering Directorate for approval. ISO will base the current year funding requirements on the 3559, after the Project Office approves the dollar figure on the form.

External Issues - NONE

Internal Issues

4.1 Placing multiple funding codes on 3559s introduces the potential to compromise the accounting system. The BCSS accounting system, CRATIS, simply has no way of automatically dividing charges to a 3559 into several different UPNs. So when multiple funding codes are used

on an single 3559, the decision of how to allocate the charges among funding sources is made in AI. This step destroys the accountability link between the work being performed and the approved operating plan. The problem is particularly acute with carryover funds attached to a 3559 by AI. The use of multiple funding codes on single 3559s is major problem, especially with Payload Project Office funding. Because of the number of missions involved in the PPO, numerous funding codes are used for the PCTC account. The number of funding codes makes it impossible to trace the actual charges back to the 533. The experience with the PPO money should serve as a negative example for how to fund this particular contract. No matter how many 3559s have to written, only one funding code should be used at a time. This will increase the Lab's ability to trace the funds to the work, and decrease the work load of AI33.

4.2 The 3559, as now formatted, does not show monthly breakouts. Rather, it currently displays quarterly breakouts. This is fine for sustaining operations, i.e. computer maintenance, but development programs require a unique cash flow pattern with growth occurring on a monthly basis. The 3559 simply does not follow the operating plan because it aggregates figures quarterly, rather than monthly, thereby losing resolution on the required cash-flow profile. It is the flow of cash compared to the original operating plan that the project office is required to account for. Monthly cost plans should be provided to ISOs along with the 3559s.

In addition, a special effort must be made to communicate the unique work/cash-flow pattern of a development program. Mature programs have a much more stable pattern. Thus, the monthly variance in cash flow is much more important in the former case than in the latter. Organizations dealing primarily with maintenance sustaining efforts may be insensitive to the special needs of a development program, such as the space station as opposed to the more mature shuttle program.

4.3 The labor rates for determining cost estimation have a severe problem. What should be the correct labor rate? If BCSS averages around $26 an hour, why should the Lab use $29 or $31 in the cost estimation. Later on in the process, the labor rate may be altered in some manner resulting in an adjustment to the actual value of the 3559. No feedback is ever received by the Lab on matters such as these.

Step 5. Traveling Through the System

Description

The attached process diagram, *The Budget Process for 3559s*, details the steps involved in getting the 3559s to ISO and in receiving Project Office approval. Numerous organizations handle the forms, including the Lab, S&E, ISO, and the Project Offices. The entire process can take up to three months to finish, resulting in the existence of unapproved 3559s during the first quarter of the fiscal year.

The Budget Process for 3559's

START → ISO ISSUES CALL → EM CALLS LABS → CALL MIO → MIO & E002 PRELIM IMPACT ASSUMPTIONS DATA FORMAT → CALL DIVISIONS → (1)

(1) → DIVISIONS PREPARE 3559/3581 → SUBMIT TO MIO → MIO REVIEWS SUBMIT FROM DIVISIONS → NEED MORE INFO

NEED MORE INFO — YES → DIVISIONS PREPARE 3559/3581

NEED MORE INFO — NO → MIO COMPILES DIVISION REPORTS → E001 REVIEWS & SENDS TO EM → (2)

(2) → EM REVIEWS AND ADJUSTS RESOURCES → ISO GETS S&E REPORT → PROJECT OFFICES REVIEW → INFO RETURNS TO ISO → ISO INFORMS EM OF RESULTS → EM INFORMS LABS OF 3559 → END

This function is not being accomplished

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External Issues

5.1 When the 3559s travel through the system, the requested allocation amount may change. Both AI and the Project Offices have the opportunity to adjust the dollar figures in order to fit their own organization's goals and objectives. Project Offices may also select not to approve various 3559s for reasons unknown to the Lab. Meanwhile, BCSS receives copies of the 3559s before final approval from the Project Offices is given. Both MOL and BCSS have unapproved copies of the 3559 from which to work. There are no regularly scheduled points in the process for AI to inform the participants, divisions and BCSS, of the 3559 status. Work may actually begin on unapproved 3559s.

Many individuals interviewed recalled incidents involving this sort of problem. Usually, the stimulus to start the work is in response to pressure to meet aggressive cost/work plans that are perceived by ISO and MOL to have been accepted during the earlier budget planning of the POP. The Project Office is not aware that work may have started prior to its exercising approval or disapproval. However, work will have progressed and charges will have been made. Thus, disapproval of a 3559 forces BCSS and AI to find an alternate means to cover the cost.

Events like these reduce accountability of funds and encourage activity involving the relocation of charges from one account to another. If the goal is for accountability of funding, events which encourage the alteration of charges must be stopped. Divisions should be encouraged by the Lab to approach the Project Offices informally to validate 3559 requirements and fund sources. Secondly, AI must begin to give increased feedback to the Lab regarding the status of 3559s. If funding for a particular task on a 3559 is a problem, the Lab, not AI, should go forth to the Project Office to demand funding. The Lab develops the budget input and the Lab is responsible for insuring the completion of the work. If the Project Offices are not funding the 3559s to the proper level, the Lab must be made aware of the problem and attempt to correct the funding impasse.

5.2 Feedback on the current status of 3559s must be increased to prevent the above type of incident from occurring. EM26 currently has responsibility for notifying the divisions of the status of the 3559s. EM26 must improve communications with the divisions. Communication with Molly Savage's EO32 unit would appear to be an ideal example to study for use with the other units in the Lab. Molly Savage attributes the excellent communications to the fact that Johnnie Stephenson of EM26 completed a PIP rotation with EO32. EO32's relationship with BCSS, namely Jeff Newman, is also superb and could also serve as an example for others to emulate. Without aggressive discussions with EM26 and BCSS, the divisions will remain in the dark in regards to the approval/disapproval status. Communications with key members involved in the 3559 system offers hope as to the alleviation of some of the distress created by the complexity of ISO's funding mechanisms.

Internal Issues - None

Step 6. AI Receives the 3559s.

Description

When ISO receives the 3559s, they have the opportunity to apply carryover from the previous year to the current year 3559. This carryover amount is attached to the 3559 and is subtracted from the amount of new money which must be funded by the Project Offices. AI33 takes the 3559 and begins to develop accounting codes for each new requirement. For instance, HOSC activity is given the code 61D, while PCTC activity is given 60D. AI33 then sends the 3559s onto BCSS for entry into the CRATIS computer system.

External Issues

6.1 When AI receives the 3559, a calculation is performed which subtracts the carryover amount from the original value. This carryover figure comes from CRATIS, the BCSS accounting system. Unfortunately, EO02 has been unable to verify the carryover value produced from CRATIS with FMO reports. Inaccurate carryover leads to problems in attaining the correct value of the 3559. If the carryover is too high, the New Obligation Authority request to the Project Offices may be too small. If the carryover value is too small, the reverse situation occurs. Identification and validation of the correct carryover is truly difficult for AI with its current resource constraints.

Costing to the wrong UPN and accruing cost preclude determining the exact value of the carryover until a couple of months into the year, if at all. Because the Project Offices prefer money to be costed as soon as possible, AI allows BCSS to accrue large sums of money at the end of the fiscal year and at the beginning of the next fiscal year in order to show the money costed. Accruals obscure the true amount of carryover. The Lab can not put together an adequate cost plan without knowing the exact dollars which are unencumbered carryover.

For instance, SpaceLab Services in the HOSC, which should burn around $400,000 a month, was charged $840,000 in October of FY92. As it turns out, the Lab was expecting the difference of $440,000 to be available in the new fiscal year. Because of the lack of communication between AI and EO02, the costing of this money was a complete surprise. The impact on EO02 was felt in the development of a cost plan. After planning on spending the carryover of $840,000 over a period of two months in FY92, plans had to be altered significantly to adjust for the sudden and unexpected costing of the entire sum. Even though EO had a notion of the value of the carryover, there was no way of predicting AI's action in costing the remaining funds in entirety. Preparing cost plans for the upcoming year is very difficult without continuous interaction between AI and EO02 in determining and fixing the carryover value.

6.2 AI33 tends to err rather often in entering data regarding the 3559s. AI33 is responsible for adding the sub-rad coding to the 24 digit accounting code. When this is entered incorrectly, the 3559 becomes classified under the wrong element. For instance, 61D sub-rad represents HOSC activity. If AI33 enters 60D, the 3559 will become part of the financial records for the PCTC. Although BCSS is not affected by these type of errors (the RFS redirects workers to the correct location) FMO records are impacted. Queries for information from FMO based on the 24 digit accounting code will be erroneous if mistakes are made by AI33.

Step 7. BCSS Receives the 3559s

No issues at this time.

Step 8. BCSS Enters the 3559s into CRATIS

No issues at this time.

Step 9. EO and BCSS Generate the RFS's Together.

Description

At the working levels in the Lab, another document besides the 3559 plays a major role. The RFS (Request For Services) document authorizes BCSS to perform work for the Lab. Each RFS references back to a 3559. The 3559 provides the maximum amount of money for the general topic. The RFS's written against a 3559 may not exceed the maximum funding level. The cost associated with each RFS is originally an estimate developed by BCSS and approved by the Lab. However, the actual cost of the RFS is very rarely relayed back to the Lab personnel involved. This problem is discussed below.

External Issues

9.1 In creating a new RFS, BCSS will create an estimate for the number of labor hours required to complete the given task. This estimate is the figure used by MOL people to record the number of hours against a particular 3559 and the remaining value for the 3559. As the year progresses, the 3559 value begins to approach zero. When the actual labor hours do not match the estimate, EO is unable to account for the variance. Because no feedback from AI is received in MOL, the actual number of labor hours charged to a 3559 is not known within the divisions. The estimated value is the only figure known. The remaining value of the 3559 can not be determined by division level personnel. Uncosted money which should be available for use, goes unused until the next year. Carryover exists when it does not have to exist. If the 3559 feedback could be improved, this problem could be avoided in the future.

9.2 Some activities which are placed on an RFS encompass work associated with a number of different UPN's. This particularly occurs with various mission codes. For instance, a software package scheduled to be used by the entire ATLAS series must be charged on the RFS to only one 3559. Not knowing the specific project to place on the RFS, the originator may simply select the mission with the most money remaining on the 3559. The current CRATIS accounting system simply can not handle work tasks which are funded by several different sources.

This is a major flaw impacting everything from RFS writing to the displaying of cost on the 533. The Project Offices seem to be very dedicated to accounting for each mission's contribution to a given task. The allocation of costs of the common technology found in Mission Planning Systems, Crew Training Facilities, etc. is not settled among the Project Offices, and the accounting system for dividing costs in a multi-project manner is not in place.

Step 10. Actual Work is Performed.

Description

At this stage in the process work is actually performed. This work is officially monitored by AI44. However, the customer is somebody within the Lab. The customer has a final say in accepting the work as completed. MOL is one partner in a three-member arrangement. Contractual oversight lies with AI, but technical oversight lies within the Lab.

External Issues

10.1 Each worker for BCSS or NTI charges to a particular project with a charge number on his time card. This charge number relates to a particular RFS. In turn, the RFS relates to a particular 3559 which relates to one or more UPN funding codes. If all of the information is in place correctly, no problems will arise. However, if a worker were to use an improper charge number, the wrong account would be assessed and this fact would not be readily apparent.

Internal Issues - None

Step 11. BCSS Enters Time Card Charges into CRATIS.

Description

This step is accomplished by the accounting department in BCSS. As long as no data entry errors occur, no significant impact on the process can occur from this step. Perry Blackelby is the person who actually enters data into CRATIS. AI does have some influence over what he inputs into the system. For example, if a hardware purchase comes in he will be instructed by AI as to which money is used.

External Issues

11.1 The accounting system can be manipulated fairly easily. If AI requests for an account not to be charged, it can be arranged by BCSS. AI33 refers to this as "setting the pointer" to a particular account. For instance, if ISO needs to spend StarLab money, the BCSS computer can be instructed to concentrate charges on the StarLab funding codes, rather than distribute the charges to a variety of different funding codes. An example of this occurred in October of FY92, when almost $400,000 worth of labor was charged to StarLab instead of SpaceLab. MOL had no insight into why this occurred until several weeks after the event.

Internal Issues - None

Step 12. BCSS Generates the Draft 533 from CRATIS.

Description

The 533 is the formal document which details the actual costs a contractor incurred during the reporting period. In the case of the NAS37200 contract, the reporting period is one month. Each month BCSS will generate a 533 in order to report the cost to FMO. In producing this report, BCSS relies on the computer accounting system, CRATIS. This system contains all of the month's charges, as gathered from the work force time cards.

External Issues

12.1 The NAS37200 contract is divided into categories. These categories include Program Management, Applications Programming, Maintenance Purchases, ADP Procurement, HOSC/PCTC/POCC, and Data Reduction. Under each category the applicable 3559s are listed. Under each 3559, one can find the UPN(s) which fund the 3559. For each 3559 the accounting department of BCSS will calculate an actual labor rate for the month. This figure comes straight from the time card charges put into the accounting department by the workers.

Rather than multiply the actual labor hours by the actual labor rate for each 3559, BCSS will take an average labor rate across a category and multiply it by the actual labor hours. In the HOSC/PCTC/POCC category, all the 3559s involved will be charged not by their actual labor rate, which is known, but by the average labor rate across the category. This calculation determines a dollar figure used to cost money on the UPN. This seems to be a mechanism to protect the actual labor rates from becoming public. The calculation does not accurately reflect the true cost. UPN's maintaining a lower than average actual rate get charged too much for the services of BCSS. UPN's maintaining a higher than average actual rate get charged too little for the services of BCSS.

Internal Issues - None

Step 13. AI and BCSS Adjust the 533.

Description

AI is given a work sheet copy of the 533. Any alterations or corrections AI feels necessary to make are performed at this time. The process of rearranging charges is based on availability of funds and the necessity of showing cost for a particular funding code. At this point in the process, MOL is not a party to the negotiations allocating the the charges to the funding codes. Historical data has shown this costing process to be unpredictable. There is no way currently available to explain these changes in the 533 to the Project Offices.

<u>External Issues</u>

13.1 From data provided by the monthly 533s, FMO reports, and the MOL CRATIS report, some interesting information on accruals surfaced. This information is applicable for FY91 and includes accounts from several previous years as well as the 91 money. In order to discover accruals, one must look at the 533s to locate the estimate for completion of work in the next month. The following list describes the elements of accruals.

    a.   Large estimates in comparison to monthly costs.
    b.   Continual large estimations from month to month, as if a hardware purchase were always about to come in.
    c.   FMO shows all the money costed, while the 533 still shows work being done for that UPN.

Accruals satisfy the Project Offices' demands to cost all the money, but this practice plays havoc with cost plans. When the entire value of a particular UPN is accrued, any actual costs reported in later months will not appear in FMO reports. Rather, month to month costs will be zero. However, with assistance from CRATIS it is possible to identify work which is still being accomplished. The 533 will identify the sources of money being tapped to pay for the work. By cross-referencing the 533 against CRATIS, a view into what is going on is possible. The problem becomes one of accountability. If the Project Offices only want their money costed, who looks for job completion after-the-fact?

From discussions with various people at the Center, a general perception exists which accepts accruals as normal for hardware purchases, but as very unusual for labor. AI33 has told MOL that accruals will not be the standard operating procedure beginning in FY92. The Lab should monitor the situation very closely to insure that this is the case.

<u>Internal Issues</u> - None

Step 14. FMO Receives the Final 533.

See below.

Step 15. FMO Enters 533 Data into MARTS.

<u>Description</u>

FMO is the Center organization responsible for recording and maintaining the costs on each contract. For the NAS37200 contract, a unique data entry situation exists which allows ISO to accrue a great deal of cost. Because of this "loophole" in the process, the actual costs of the monthly HOSC/PCTC/POCC activity can not be seen by the Project Offices. Until the data entry method changes problems in tracking cost will continue.

STATION
475-28-11-T5-85-EL-X-XXX-2522

FY90

FY89 ($)

MONTH	ACT (533)	EST	VARIANCE (ACT-EST)/ACT
OCT	0	0	-----
NOV	0	0	-----
DEC	0	89305	-----
DEC REV	0	0	-----
JAN	0	0	-----
FEB	0	0	-----
MAR	0	0	-----
APR	0	0	-----
MAY	0	0	-----
JUN	0	0	-----
JUL	0	0	-----
AUG	0	100000	-----
SEP	0	0	-----

FY90 ($)

MONTH	ACT (533)	EST	VARIANCE (ACT-EST)/ACT
OCT	0	0	-----
NOV	0	0	-----
DEC	0	0	-----
JAN	0	0	-----
FEB	0	0	-----
MAR	0	0	-----
APR	0	0	-----
MAY	0	0	-----
JUN	0	39183	100.00%
JUL	0	0	-----
AUG	0	0	-----
SEP	0	285006	-----

FY91

FY90 ($)

MONTH	ACT (533)	EST	VARIANCE (ACT-EST)/ACT
OCT	0	285006	-----
NOV	53002	285006	-437.73%
DEC	40172	232004	-477.53%
JAN	37619	191832	-409.93%
FEB	45298	154213	-240.44%
MAR	50264	108915	-116.69%
APR	57437	68913	-19.98%
MAY	0	1214	-----
JUN	0	1214	-----
JUL	0	1214	-----
AUG	0	1214	-----
SEP	0	1214	-----

FY91 ($)

MONTH	ACT (533)	EST	VARIANCE (ACT-EST)/ACT
OCT	0	0	-----
NOV	0	0	-----
DEC	0	0	-----
JAN	0	0	-----
FEB	0	0	-----
MAR	0	0	-----
APR	0	0	-----
MAY	0	0	-----
JUN	0	0	-----
JUL	0	0	-----
AUG	0	0	-----
SEP	0	0	-----

FY90 ($)

MONTH	ACT (533)	EST	VARIANCE (ACT-EST)/ACT
OCT		1214	

FY92 ($)

MONTH	ACT	EST	VARIANCE (ACT-EST)/ACT
OCT			

FMO BASES ALL CURRENT MONTH ENTRIES FOR THE NAS37200 CONTRACT ON THE CSI (COST SINCE INCEPTION).

EXAMPLE:
926–82–10–AI–0

	CURRENT MONTH ACTUAL	CSI (INCLUDES THIS MONTH ACTUAL)	ESTIMATE FOR NEXT MONTH	NEW CSI (INCLUDES ESTIMATE)	FMO ENTRY
FY90					
MAR	106329	106329	300290	406619	0
APR	321142	427471	321141	748612	0
MAY	416045	843516	356484	1200000	341993
JUN	412825	1256341	361364	1617705	451388
JUL	442425	1698767	1344444	3043211	417705
AUG	480082	2178849	1768893	3947742	1425506
SEP	469258	2648107	1880841	4528948	904531
FY91					
OCT	440227	3088334	1880841	4969175	581206
NOV	–440227	2648107	1880841	4528948	440227
DEC	41446	2689553	1786195	4475748	–440227
JAN	40161	2729714	1746034	4475748	–53200
FEB	552718	3282432	1193316	4475748	0
MAR	31071	3313503	1162245	4475748	0
APR	30205	3343708	1132040	4475748	0
MAY	36195	3379903	1095845	4475748	0
JUN	31209	3411112	355000	3766112	0
JUL	444517	3855629	310060	4165689	–709636
AUG	329924	4185553	302499	4488052	399577
SEP	140759	4326312	149436	4475748	322363
FY92					
OCT	31448	4357760	117988	4475748	–12304

External Issues

15.1 For the NAS37200 contract, the 533 arrives very late in the month, around the 26th. This late arrival forces FMO to limit the amount of data entry into the accounting system for this contract. FMO only enters a new CSI (Cost Since Inception) value for each UPN. This CSI is a sum of the actual for the previous month plus an estimate for the current month. The new CSI minus last month's CSI represent a cost which is seen in all of the FMO reports. Until FMO begins to enter a prior month adjustment, FMO records will continue to not represent the actual costs per month. FMO cannot change the method of data entry without more time or more manpower.

Internal Issues - None

Step 16. Information is Distributed Electronically and Manually.

Description

FMO uses the center wide computer system to distribute information. MARTS allows authorized users to view the current FMO records. A similar system, called RMIS, allows authorized users to view month to month FMO costs. A hard copy of the O22 report is also available to MOL. This report simply details the same information available in MARTS but in a more readable form.

External Issues

16.1 Because of the reasons discussed throughout this report, FMO records are not useful to EO02 in explanations to the Project Offices of the monthly variances. The Project Offices do use the FMO reports, but do not understand why the costs do not match the operating plan. This is a major part of the problem. As long as FMO continues to enter data in the current manner, and the Project Offices use the data as the basis for the Lenoir reports to Headquarters, a disconnect will exist between the work and the operating plans. Until the problems in the system are fixed, questions from the Project Offices will continue to flood into MOL.
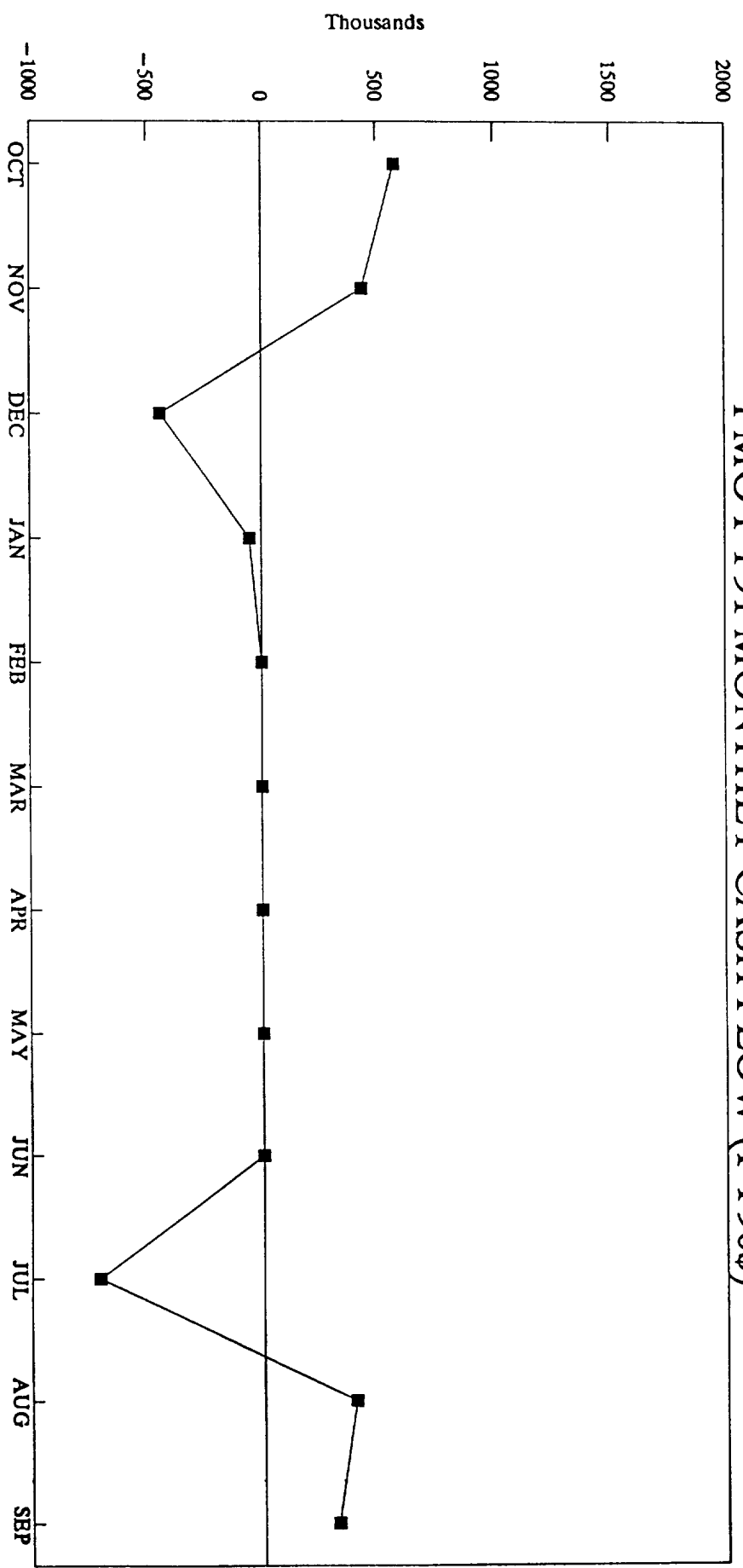
Internal Issues - None

Step 17. EO02 Receives Information from FMO.

No issues at this time.

SPACELAB SERVICES
FMO FY91 MONTHLY CASH FLOW (FY90$)

Thousands

| | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |

SPACELAB SERVICES

FMO FY91 MONTHLY CASH FLOW (FY91 $)

Thousands

2000	
1500	
1000	
500	
0	
-500	
-1000	

OCT NOV DEC JAN FEB MAR APR MAY JUN JULY AUG SEP

E002

FMOILAB.WK3

06-Dec-91
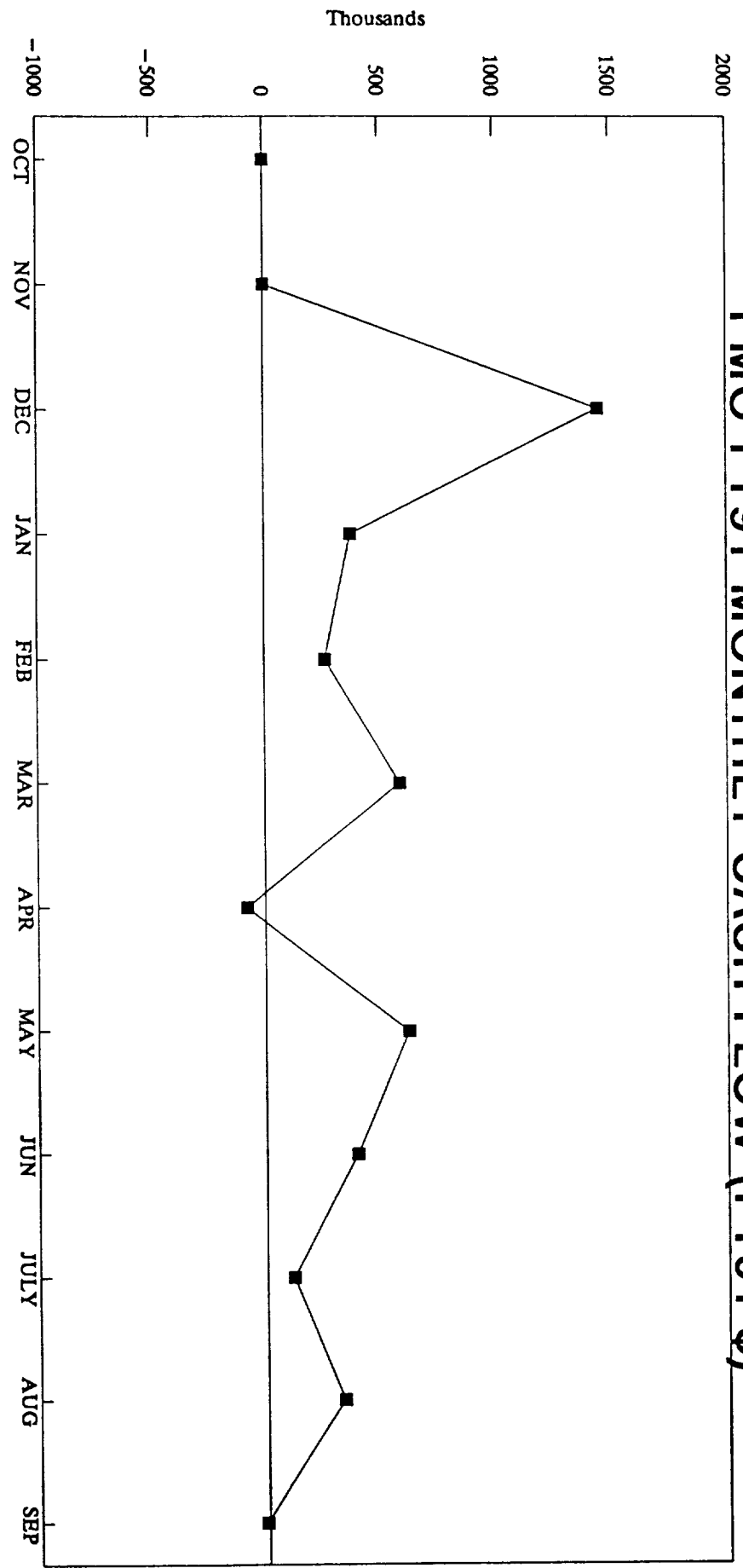
SPACELAB SERVICES

FY91 MONTHLY CASH FLOW ('90 & '91 $)

Thousands

OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

■ FMO $ ▼ CRATIS $ □ TOTAL 533 $
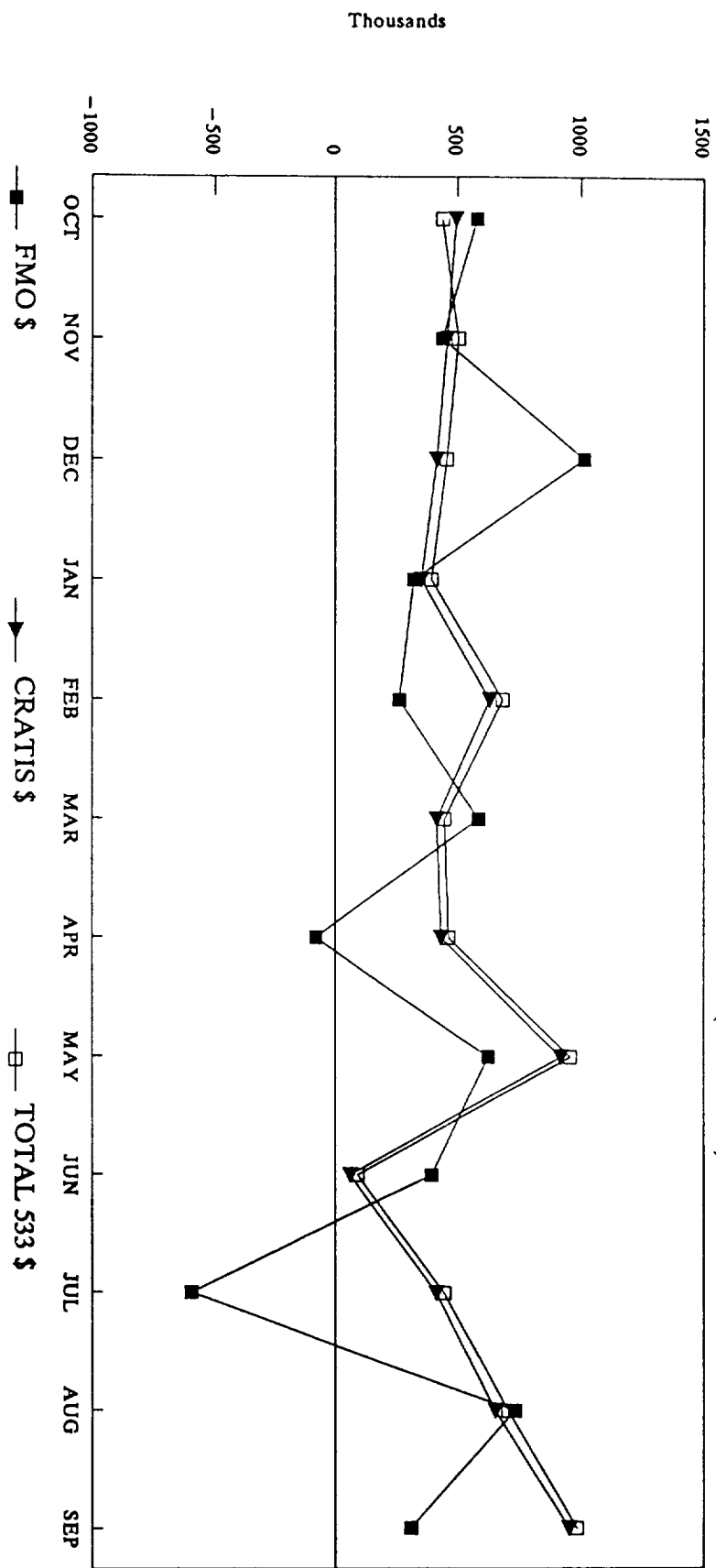
Step 18. EO02 Examines Various Sources for Answers.

Description

The information sources available to EO02 can be divided into four categories. *(See the Chart on the Information Sources for Actuals Against MOL Accounts.)* The first of these categories is FMO. The O22 report, MARTS and RMIS all provide the same type of information. As discussed above, the FMO records do not accurately reflect work performed due to the method of data entry on the NAS37200 contract and the method of cost estimating used by AI.

The actual 533s, produced by BCSS, can be very valuable. This document, broken down by UPN, shows BCSS's calculation of actuals for the month. The 533 numbers can be compared to the CRATIS report to check for accuracy. Accruals can also be identified with the 533. FMO can supply the appropriate pages of the report, although AI has promised to send the report to MOL themselves.

An alternate method for tracking cost plans is provided by the MOL report generated by AI for EO02. This report, based off of CRATIS, BCSS's accounting system, gives various information on costs for a month. Problems are many and the accuracy of the report can be called into question. However, even with the problems involved, the MOL CRATIS report does provide some insight into actuals, at least to a greater degree of visibility than FMO records. Bob Jones from BCSS produces the report.

External Issues

18.1 Currently, EO02 obtains the 533 in an indirect manner through FMO. This method is not the most efficient acquisition method. EO02 would be better served if ISO would formally authorize BCSS to send the 533 to EO02 on a monthly basis. The 533 should be received in an appropriate time period after completion of the document. This formalized process would allow MOL access to a key information source on a regular basis. ISO, by acknowledging the Lab's need to receive such information, will be forced to pay closer attention the issues discussed throughout this report.

Internal Issues - None

Step 19. EO02 Replies to the Project Office.

Description

After reviewing all of the information available, EO02 personnel attempt to answer questions from the Project Offices. As noted throughout this report, the formal information channels do not support the accountability function that the Project Offices need for Mission Operations Lab to perform in order for them to represent project status to higher levels.

INFORMATION SOURCES FOR ACTUALS AGAINST MOL ACCOUNTS

REPORT	POINT OF INFORMATION	STRENGTHS	WEAKNESSES
FMO RECORDS (MARTS, 022)	* MUST HAVE ACCESS TO MARTS THROUGH A NETWORK * BF41 CAN SUPPLY THE 022 3 DAYS AFTER PROJECT OFFICE GETS IT	+ CAN BE ACCESSED AT ANY TIME. + SAME INFORMATION USED BY PROJECT OFFICES.	- FMO DATA ENTRY OBSCURES MONTHLY ACTUALS. - INCORRECT INFORMATION DUE TO AI MANIPULATION.
MOL CRATIS REPORT	* RECEIVED IN THE MONTHLY MEETING WITH AI33 AND EO31	+ BREAKS OUT LABOR AND MATERIAL. + SHOWS AI'S VIEW OF THE WORLD, RIGHT OR WRONG. + ALLOWS MONTH TO MONTH COMPARISONS	- ERRORS ARE NUMEROUS. - COST IS NOT OFFICIAL. - NO RELATIONSHIP WITH UPN FUNDING CODES.
533 FROM BCSS	* CURRENTLY ACQUIRED VIA CONNECTIONS IN FMO	+ GIVES CURRENT ACTUALS AND ESTIMATES FOR NEXT MONTH. + ESTIMATES CAN BE ANALYZED FOR ACCRUALS. + TIES COST DIRECTLY TO UPN'S.	- DOES NOT SHOW LABOR AND MATERIALS BREAKOUT.
HUMAN SOURCES	* VARIOUS PEOPLE AT NTI AND BCSS.	+ KNOWLEDGE SUPERIOR TO AI'S. + CLOSER TO THE WORK.	- ACCESS RESTRICTED - IMPOSES ON CONTRACTOR RELATIONSHIP WITH AI.

PATH PROJECT OFFICE

Step 1.PO. Project Office Reviews Data.

See step 16 above.

Step 2.PO. Project Office Inquires to MOL.

Description

Under the current accounting system, the Project Offices view reports from FMO which do not reflect the planned expenditure of funds in the operating plan. These inconsistencies create numerous questions from the Project Offices regarding the financial situation in the HOSC/PCTC/POCC. Project Office questions, and at times Headquarter questions, are directed to the personnel in EO02. These personnel are currently responsible for answering the inquiries to the best of their knowledge.

External Issues - None

Internal Issues

2.PO.1 One of the more serious internal issues which must be solved involves the organizational structure of the Lab. Which organization, EO02 or EO31, should be responsible for responding to Project Office inquiries? Should the HMCG Manager take the lead position in tracking costs, or should EO02 be the main focus of such activity? Currently, EO02 takes the questions from the Project Offices and contacts a variety of sources for answers. Sometimes EO31 is involved; sometimes they are not.

2.PO.2 The organization given the responsibility to answer to the Project Offices must be staffed to the proper levels. The individuals given the task must also be given the authority to pursue issues with a variety of sources, including ISO, BCSS, NTI, and any other necessary points of information. These same people must also be allowed to participate in the budget preparation exercises in order to be fully familiar with the funding requirements of the Lab.

Step 3.PO. EO02 Contacts Human Sources for Answers

Descriptions

One possible source of information for EO02 is the individuals with BCSS and NTI who are involved in the financial accounting system. These people are very close to the work which is proceeding in the HOSC. They are also "experts" in the computer system which records the costs on the various funding codes. Currently, EO02 is not permitted to contact these sources of information due to an internal Lab arrangement.

External Issues - None

3.PO.1 If the Lab continues to provide a service to the Project Offices of explaining the cost patterns, contact with the individuals at BCSS and NTI will be absolutely necessary. Independent of which organization in the Lab assumes the role of question answerer, formal communication arrangements on a regular basis will need to be formed with the contractor and the subcontractor to discuss accounting issues.

PATH MISSION OPERATIONS LAB

Step 1.MOL. AI Receives the Final 533 from CRATIS.

No issues at this time.

Step 2.MOL. AI and BCSS Prepare the MOL CRATIS report.

Description

MOL has requested from AI a report breaking out the monthly costs by 3559. For each 3559, the MOL CRATIS report details cost on several categories of work, including labor, hardware, software, etc.. This report is presented to MOL during the monthly review with AI.

External Issues

2.MOL.1 The current MOL report does not provide all of the information necessary to correlate the work on each 3559 to the actual funding codes. Since the Project Offices define the cost flow by particular UPN's, as found on FMO reports, the Lab must phrase answers in language familiar to the resource people in the Project Offices. Given this necessity, the MOL CRATIS report can be of the most use only if each charge on a 3559 is tied to a particular funding code. With this information, EO02 can easily cross-reference the 533 report and the FMO reports to explain any abnormalities.

Internal Issues - None

Step 3.MOL. EO Receives the MOL CRATIS Report.

No issues at this time.

Conclusion

For each step in the budgetary process, problems develop which limit the potential for the Mission Operations Laboratory to track funds for HOSC/PCTC/POCC activity. The number of issues which have been identified in this study are tremendous. A number of external issues, in which a foreign organization impacts the budgeting and accounting process, prevent the Lab from solely improving its own operation in an attempt to alleviate the situation. Outside organizations, such as ISO, BCSS, FMO and the Project Offices, will determine the success of any Continuous Improvement effort. Determining a solution to such a multi-dimensional and multi-organizational problem, in a manner beneficial to all of the parties concerned, may be possible either through mutual adjustment or through common authority, which includes the very top level of management at Marshall.

Today's Center organizational structure, with the Lab's mother organization, Science and Engineering, and ISO's mother unit, Institutional and Program Support, formally separated, prevents Mission Operations Laboratory from forcing any solutions onto ISO. Two avenues of approach are available. The first can be an informal solution with communications between the lower levels of the Lab instructing the working level of ISO about the information needs of the Lab. The second solution can be a formal attempt, through the Center hierarchy, to require the various organizations to improve the accounting system.

Either of these two solutions implies a very long period of time for implementation. In the meantime, the Lab does have a few internal issues to solve which can lead to a more effective capability for responding to Project Office questions. Three issues: the detail of the budget inputs, the feedback to the divisions on 3559 status, and the Lab organization, can all be solved by Lab management with relatively minor contact with outside organizations.

The chart on the following page is one example of how the budget detail issue can be approached to provide better and more applicable information for solving Project Office inquiries. The feedback issue can be examined by a small group of working level employees, such as Molly Savage, Steve Lambing, etc., in cooperation with EM26. The Lab organization issue should be solved with the creation of the Management Integration Office, as long as the proper authority is given to this group for pursuing and analyzing budgetary/accounting problems.

MOL BUDGET AND ACCOUNTING FORM

PLANNED UPN ___475 28-11-XX___   ___3559 TOTAL $___   CARRYOVER AMOUNT ___

	OCT	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	FY+1	FY+2	FY+3
LABOR															
HARDWARE															
SOFTWARE															
ODC															
TOTAL															
FMO OLD $ COST															
FMO NEW $ COST															
533 OLD $ COST															
533 NEW $ COST															
CRATIS TOTAL															
LABOR															
HARDWARE															
SOFTWARE															
ODC															

31

The following table lists many of the external interfaces which the Lab must use in the development and accounting of the budget. This list is not static, rather it should develop with time as more interfaces are determined. This list should help in connecting some of the issues above to individuals and organizations throughout the budget process. This will allow for more effective action when taking on the improvement of the current system.

EXTERNAL INTERFACES TO THE EO LAB FOR THE BUDGETARY PROCESS

External Interface	Task	MIO Contact Point
ISO	Issues 3559/3581 Call for ADP Needs	Griner
EM01	Issues 3559/512-5 Call; Approves 3559s/512-5s	Griner
EM26	Reviews 3559/512-5 Lab Submits	MOL
MRC-Nancy Hammell	Helps clear up boundaries of POP guidelines (SSF).	Blair
KA11-Janice Young	Provides guidance on Space Station matters; Assists in developing the POP and 3559 budget.	Blair
BAC-Madelynn Baccus	Develops and Coordinates Boeing part of POP process with EO Lab. Makes submittal to the Project Office.	Blair
BAC-Herb Oliver	Provides the technical integration service within BAC for the POP process.	Blair
EM26-Johnny Stephenson	Assists in comparing 3559s to 424s. Informs Lab of the status of the 3559s. Takes 3559s to ISO.	Russell; Stover
KA11-Don Riggins	Requests clarifications of EO budget demands. Assists in POP guideline clarification.	Blair
BCSS-Perry Blackelby	Provides CRATIS report on HOSC expenditures.	Russell
NTI-Lee Sims	Provides information related to expenditures.	EO31
NTI-David Dowdy	Receives information copies of 424s from EO02.	Russell
EM16-Ramon Scott	Monitors 424s coming out of EO Lab. Provides information on the procurement process.	Blair, Russell
AI33-David Roberts	Contact point for AI budgeting and status of 424s, 3559s, and 404s within AI.	Russell
BCSS-Jack McCoy	Provides RFS # in order to allow matching with a 424.	Russell
AI33-Lee Member	Processes EO's 424s which place funds on 38000 contract.	Russell
EM26-Ron Winkler	Keeps track of overall 424 requests by category before they reach AI.	Russell
EH16-Carol Keith	Similar role to Ramon Scott for SSF	Blair
AI33-Alice Beam	Transfers 424s over to 404s; Track AI DCNs and 3559s.	Russell
EM15-Louise Hammaker	Processes S/E originated 424s into and out of the SSF project office.	Blair
EM16-Ramon Scott again.	Consolidates EO's 512-5 submissions to S/E	Russell; Stover
BCSS - Tim Gay	Prepares the 533 for BCSS	EO31

Currently, the NAS37200 contract does not meet the needs of the Lab for presenting an accurate picture of the work occurring in the HOSC. The problems associated with the 533 from BCSS and ISO's communication of accounting decisions to the Lab have an opportunity to be solved during the recompetition of the current contract. This investigator does not have the expertise in contract law to offer specific recommendations on this matter. However, a general topic which must be addressed by Lab management, is the amount of participation the Lab should have in setting up the funding codes for each 3559, participating in the decisions on where to place charges when the proper funding is not available, and in determining the purpose and value of questionable expenditures reported on the 533. If the Lab could be an active participant in the "review" of the 533 before it reaches FMO, some progress could be made in preventing the abnormalities in the cash flow and in alleviating the communication disconnects between ISO and the Lab resource personnel.

Until substantial alterations are made in the current budgetary process, specifically the accounting methods of ISO, the data entry methods of FMO, and the budgetary detail of the Lab's POP inputs, Project Office questions will not be adequately answered. The result will be a continued discrediting of the Lab's budget requirements and an inability by anyone at Marshall to appropriately track and explain cash expenditures relating to the NAS37200 contract. As resources become tighter under the fiscal environment of the next decade, the negative impact of this inability to account for funding expenditures will grow to unprecedented proportions.

NASA

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15. Supplementary Notes

16. Abstract

Part of the role of the Mission Operations Lab is the development of budget inputs for HOSC/PCTC/POCC activity. These budget inputs are part of the formal POP process, which occurs twice yearly, and of the formal creation of the yearly operating plan. Both POPs and the operating plan serve the purpose of mapping out planned expenditures for the next fiscal year and for a number of outlying years. Based on these plans, the various Project Offices at the Center fund the HOSC/PCTC/POCC activity. Because of Mission Operations Lab's role in budget development, some of the Project Offices have begun looking to Mission Operations, and specifically the EO02 branch, to track expenditures and explain/justify any deviations from plans. EO02 has encountered difficulties acquiring the necessary information to perform this function. It appears that the necessary linkages with other units had not been full developed and integrated with the flow of information in budget implementation. The purpose of this study is to document the budget process from the point of view of EO02 and to identify the steps necessary for it to effectively perform this role on a continuous basis.

17. Key Words (Suggested by Author(s))	18. Distribution Statement
Budgeting POP (Program Operating Plan)	unclassified-unlimited

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