W September 28, 1998

TO: H/Acting Associate Administrator for Procurement

FROM: W/Assistant Inspector General for Auditing

SUBJECT: Final Report on the Audit of Early Payment and Billing Frequency on Long-Term Contracts, Assignment Number A-HA-98-027,
Report Number IG-98-033

The subject final report is provided for your comments and use. Please refer to the executive summary for the overall audit results. We incorporated management's comments into the final report, as appropriate, and included them in their entirety as an appendix to our report. In response to management's comments, we have revised our recommendations. Therefore, we request additional comments on the revised recommendations by October 28, 1998. The recommendations will remain open for reporting purposes.

If you have questions concerning the report, please contact Mr. Dennis E. Coldren, Program Director for Human Exploration and Development of Space Audits, at (281) 483-4773, or Mr. Len Diamond, Audit Program Manager, at (407) 867-4531. We appreciate the courtesies extended to the audit staff. See Appendix G for the report distribution.

[original signed by]
Russell A. Rau

Enclosure

cc:
B/Chief Financial Officer
G/General Counsel
JM/Director, Management Assessment Division

IG-98-033

AUDIT REPORT

EARLY PAYMENT AND BILLING FREQUENCY ON LONG-TERM CONTRACTS

September 28, 1998

OFFICE OF INSPECTOR GENERAL

National Aeronautics and
Space Administration

ADDITIONAL COPIES

To obtain additional copies of this audit report, contact the Assistant Inspector General for Auditing at 202-358-1232.

SUGGESTIONS FOR FUTURE AUDITS

To suggest ideas for or to request future audits, contact the Assistant Inspector General for Auditing. Ideas and requests can also be mailed to:

Assistant Inspector General for Auditing
NASA Headquarters
Code W
300 E Street, SW
Washington, DC 20546

NASA HOTLINE

To report fraud, waste, abuse, or mismanagement, contact the NASA OIG Hotline by calling 1-800-424-9183, 1-800-535-8134 (TDD), or by writing the NASA Inspector General, P.O. Box 23089, L'Enfant Plaza Station, Washington, DC 20026. The identity of each writer and caller can be kept confidential, upon request, to the extent permitted by law.

ACRONYMS

FAR	Federal Acquisition Regulation
OIG	Office of Inspector General

TABLE OF CONTENTS

EARLY PAYMENT AND BILLING FREQUENCY ON LONG-TERM CONTRACTS

EXECUTIVE SUMMARY

INTRODUCTION

During the 1996 negotiation of the Space Flight Operations Contract,[1] the NASA Office of Inspector General (OIG) expressed concerns about the Agency agreeing to early payments and more frequent billings because of related problems with other long-term contracts. In March 1997, the OIG issued a management letter (see Appendix E) on the payment and billing practice. Nevertheless, NASA negotiated with United Space Alliance for early payment of its invoices. NASA's position is that the United Space Alliance adequately lowered the available award fee[2] as consideration[3] for early payment. However, we believe the early payment practice was not in the best interest of the Government.

OBJECTIVE

Our objective was to assess the adequacy of consideration NASA obtained for providing early payment and more favorable billing frequency terms on long-term contracts.[4] Appendix A contains additional details on objective, scope, and methodology.

RESULTS OF AUDIT

NASA needs to improve policies with regard to approving and assuring adequate consideration is received for early payment and more favorable billing frequency terms. Specifically, Agency policies did not discourage routine use of these negotiation tools, provide guidance on determining their cost to the U.S. Government over the life of the contract for purposes of negotiating consideration, or encourage use of invoice-based discounts as a method to ensure adequate consideration is received for early payment. NASA received consideration for all four long-term, high-value contracts reviewed for which favorable early payment and more frequent billing terms were granted by NASA

[1] Contract NAS9-20000, United Space Alliance.

[2] Award fee is an amount a contractor may earn in whole or in part based on evaluations of performance during the contract period. The amount of award fee available is negotiated and included in the contract.

[3] Consideration can mean reduced available award fee, a waiver of negotiations on change orders, a fee waiver, or other compensation.

[4] At our request, the NASA Office of Procurement, Program Operations Division, identified six current contracts that receive early payment or more frequent billing. We reviewed the four largest in terms of dollar value.

Centers.[5] Over the life of the contracts, the more favorable terms will cost the U.S. Treasury an estimated $36.1 million[6] in interest expense for which the Centers stated they received $104.2 million[7] as consideration. However, the consideration amount that NASA will actually receive, and therefore its adequacy, cannot be precisely determined until contract completion. The dollar value of these concessions to the contractors is dependent on the U.S. Treasury interest rates which fluctuate over time. Therefore, at the time of contract award, the appropriate level of consideration must be estimated. Additionally, we found that the consideration associated with granting these concessions was overstated in some cases. The practice of early payment and more frequent billing could conflict with Federal regulations that require the value of consideration to be greater than the cost to the U.S. Treasury and should be clearly specified to ensure proper use. As an alternative, contractors can offer discounts on individual invoices and NASA management can take the discounts when it is advantageous to the Government.

RECOMMENDATIONS AND MANAGEMENT'S RESPONSE

This report contains recommendations aimed at controlling the use and approval of early payment and more frequent billing terms during contract negotiations, and encourages the use of invoice-based discounts. Management did not concur with the recommendations contained in a draft of this report and provided additional information that we agreed was a sufficient basis for revising our recommendations. We request additional management comments on the revised audit recommendations.

[5] Marshall Space Flight Center, Johnson Space Center, and Langley Research Center.

[6] Early payment and more frequent billing terms will cost the U.S. Treasury $34.9 million and $1.2 million, respectively. At contract definitization, the combined cost to the U.S. Treasury was $32.7 million. Changes in contract values and interest rates have increased the cost to the U.S. Treasury.

[7] The amount comprises award fee pool concessions of $5.9 million and $56.9 million by Rocketdyne and United Space Alliance to Marshall Space Flight Center and Johnson Space Center, and a fixed fee waiver by Boeing Commercial Airplane Group of $41.4 million to Langley Research Center.

FINDINGS AND RECOMMENDATIONS

FINDING A. EARLY PAYMENT CONCESSIONS

NASA needs to improve existing policies on use of early payments and more frequent billing terms in Agency contracts. NASA received consideration for early payment concessions for four long-term, high-value contracts (see Appendix B). Marshall Space Flight Center (Marshall), Johnson Space Center (Johnson), and Langley Research Center (Langley) granted early payment concessions to four contractors.[8] During negotiations, the Centers agreed to pay two contractors within 7 days after billing and to pay two contractors within 15 days after billing. NASA contract negotiators granted early payment terms within the contract as a negotiating tool to obtain concessions, but we were unable to determine whether consideration was sufficient due to uncertainty associated with future interest rate fluctuations. In some cases, the value of consideration was overstated. These early payment concessions will cost the U.S. Treasury $34.9 million[9] in additional interest expense, assuming interest rates do not change and there is no further contract cost growth during the remaining contract years.

Requirements of the FAR and the NASA FAR Supplement

The prompt payment clauses of the Federal Acquisition Regulation (FAR) and the NASA FAR Supplement (see Appendix C) state that the Government is to make payment on the 30th day after receiving an invoice. The NASA FAR Supplement allows for earlier payment provided the contractor gives consideration greater than the cost to the U.S. Treasury for interest (the Treasury rate) [10] on funds paid before the 30th day. The NASA FAR Supplement does not specify the consideration to be provided in this case.

Rocketdyne, Space Shuttle Main Engine, Contract NAS8-45000

Marshall administers contract NAS8-45000 with Rocketdyne. The 6-year, 3-month contract, valued at $1.2 billion, is for the Space Shuttle main engine development and refurbishment.

---

[8] Rocketdyne; United Space Alliance; Boeing Information Space and Defense Systems; and Boeing Commercial Airplane Group.

[9] At contract definitization, the early payment concession was to cost the U.S. Treasury $31.6 million.

[10] The Treasury rate is used to calculate interest on an overdue Federal Government receivable and to determine the benefit of taking a cash discount on a Government payment. The Treasury rate, effective January 1 of each year, is based on the Treasury Tax and Loan rate for the 12-month period ending the previous September 30, rounded to the nearest whole percent. The Treasury rate is published annually in the Federal Register by October 31.

Marshall restructured NAS8-45000 from predecessor contracts[11] between NASA Headquarters and Rocketdyne. Under the terms of the contract, Marshall pays Rocketdyne 7 days after receipt of an invoice. Rocketdyne negotiated that term in the contract based on payment practices for predecessor contracts. The agreement was made through a contract modification in exchange for Rocketdyne reducing the available award fee by .5 percent during negotiations. We estimated[12] that the early payments will cost the U.S. Treasury about $3.9 million[13] over the life of the contract.

United Space Alliance, Space Flight Operations, Contract NAS9-20000

Johnson administers contract NAS9-20000 with United Space Alliance. The 6-year contract, valued at $7.3 billion, is for the Space Shuttle ground and flight system production, processing, maintenance, sustaining engineering, and operations services. Under the terms of the contract, Johnson pays United Space Alliance 7 days after receipt of an invoice. United Space Alliance wanted early payment terms as part of the contract in exchange for a reduction in the available award fee. We estimated that the early payments will cost the U.S. Treasury about $23 million[14] over the life of the contract.

Boeing Information, Space and Defense Systems, Space Station, Contract NAS15-10000

Johnson also administers contract NAS15-10000 with Boeing Information, Space and Defense Systems (Boeing). The 10-year contract, valued at $6.6 billion, is for design, analysis, verification, and delivery of the U.S. On-Orbit Segment of the Space Station and integration and verification of the International Space Station System. Under the terms of the contract, Johnson pays Boeing 15 days after receipt of an invoice. During a modification[15] to the contract, Johnson agreed to the early payment terms in exchange for an under-limit changes clause[16] of $40 million. (Johnson is

---

[11] The original contract, NAS8-27980, was definitized in 1972 and restructured with NAS8-40000 in 1986.

[12] We made our calculations for the four contracts discussed assuming a constant Treasury rate of 5 percent and no further contract cost growth.

[13] At contract definitization on June 28, 1996, the estimated interest cost to the U.S. Treasury was about $3.8 million.

[14] At contract definitization on September 26, 1996, the estimated interest cost to the U.S. Treasury was about $21.9 million.

[15] NASA agreed to the early payment during modification 208 negotiations with Boeing for NASA’s consent to subcontracts.

[16] When a Space Station change memorandum is written and the associated cost does not exceed $.5 million, NASA does not adjust Boeing's target cost and fee. However, these under-limit changes are tracked, and if the

relieved of the administrative burden of negotiating these under-limit changes because target cost and fee are not adjusted.) We estimated that the early payments will cost the U.S. Treasury about $7.1 million[17] over the life of the contract.

Boeing Commercial Airplane Group, High Speed Research, NAS1-20220

Langley administers contract NAS1-20220 with the Boeing Commercial Airplane Group (Boeing Group). The 8-year contract, valued at $440 million, is for the development and verification of airframe technologies for a supersonic transport.[18] Under the terms of the contract, Langley pays Boeing Group 15 days after receipt of an invoice. Langley granted the early payment concession so Boeing Group would accept the Government's no fee position. We estimated that the early payments will cost the U.S. Treasury about $.9 million[19] over the life of the contract.

Treasury Rate and Contract Cost Growth Influence Consideration

The value of the early payment concessions that the Centers gave to the four contractors is not quantifiable because neither the Centers nor the contractors can accurately predict the Treasury rates or contract cost growth through the life of the contract. Since acceptance of the early payment provisions in the four contracts, Treasury rate changes and contract cost growth have increased the early payment financial costs to the U.S. Treasury from $31.6 million to $34.9 million.

Award Fee Scores Can Reduce Consideration

The reduced available award fee that Rocketdyne and United Space Alliance negotiated with NASA is not quantifiable. When consideration is a reduction of available award fee, the amount of actual consideration received is reduced each time the contractor does not earn all the available fee. Receipt of the maximum amount of consideration is contingent on NASA obtaining the highest level of performance from the contractor, which may not occur. Rocketdyne and United Space Alliance have averaged 92 percent and 85 percent, respectively, of the available award fee

---

cumulative under-limit changes exceed $40 million, all subsequent changes must be individually negotiated, unless both parties agree to increase the $40 million threshold.

[17] At contract modification on May 4, 1996, the estimated interest cost to the U.S. Treasury was about $5.4 million.

[18] The High-Speed Civil Transport is envisioned to be a Mach 2.4, 300-passenger aircraft.

[19] At contract definitization, the estimated interest cost to the U.S. Treasury was more than $.5 million. Actual 1994 and 1995 (January - June) Treasury rates were 3 percent; actual 1995 (July - December), 1996, 1997, and 1998 Treasury rates were 5 percent.

since contract definitization. Appendix D shows the effects of award fee scores[20] on final consideration received by NASA.

Consideration Not Quantifiable

The consideration that Johnson negotiated with Boeing on contract NAS15-10000 is not quantifiable. Specifically, the consideration Johnson obtained was an under-limit changes clause of $40 million with no upward adjustment to target cost and fee. The value to Johnson depends on how many changes are eventually required and the associated administrative cost both Johnson and Boeing save by not negotiating each change. Also, exceeding the $40 million threshold negates the agreement to not negotiate under-limit changes.

Procurement Officer Considers Fee as Consideration

The Langley procurement officer overstated the value of Boeing's waiver of a $41.4 million fee as consideration for Langley's early payment. The Government's initial negotiation objective, which did not include a concession for early payment, was for no fee to be paid on contract NAS1-20220. The procurement officer's no-fee position was based on potential future financial gains for the prime and subcontractors on the technology that was being developed. The contractor's proposal was for a fee of $41.4 million, yet negotiations resulted in a contract with no fee and an early payment provision. The procurement officer's fee negotiation objective suggests that the contractor may have been willing to accept a substantially lower fee without the early payment concession. The Langley procurement officer attributed the waiver of the fee solely to the early payment concession. However, only an indeterminable portion of the fee waiver is attributable to the early payment concession and the adequacy of consideration received by the Government is in question.

Preferred Practice Is Discount on Invoice

There is an equitable alternative available to the practice of negotiating early payment provisions in long-term contracts which avoids the estimation and quantification problems associated with obtaining consideration. NASA can encourage contractors to submit invoices offering early payment discounts as authorized by the NASA Financial Management Manual (the financial manual). The financial manual states that discounts will be taken only when the discount terms are greater than the U.S. Treasury rate (see Appendix C). The financial manual provides a formula for use in determining when NASA should take the discount. The method ensures that the discount received is greater than the cost to the U.S. Treasury.

---

[20] Award fee scores are a numerical rating of contractor performance during an evaluation period. The score is applied to the available award fee in order to determine the award fee earned.

For example, Kennedy Space Center's (Kennedy) 15-year Shuttle Processing Contract (NAS10-10900) with Lockheed Martin Space Operations (Lockheed Martin) was consolidated into Johnson Space Center's Space Flight Operations Contract (NAS9-20000) with United Space Alliance. While under contract with Kennedy, Lockheed Martin routinely obtained early payment on invoices by offering cash discounts higher than the Treasury rate.[21] The discounts occurred outside the terms of the contract and afforded the U.S. Government and Lockheed Martin equitable treatment because the method ensured that adequate consideration was received.

REVISED RECOMMENDATION

As a result of management's comments on the draft report, we revised Recommendation 1. Draft Recommendation 1 principally sought to prohibit the Centers from negotiating early payment as part of contract terms and encourage contractors to offer early payment discounts on invoices. Management nonconcurred with the draft report recommendation and provided additional clarifying information on its position. The complete text of management's comments on the draft report is in Appendix F. Based on the management comments and additional information provided, we agree that there may be circumstances that could warrant the use of early payment terms and, therefore, this negotiation tool should not be prohibited.

RECOMMENDATION 1

We recommend that the Acting Associate Administrator for Procurement issue to contracting officers additional early payments guidance that:

- discourages routine approval of early payments;
- explains the method for performing an analysis of the total cost and value of consideration offered in exchange for early payments over the remaining life of a contract, including use of forecasts of acceptable interest rates; and
- encourages the use of invoice-based discounts for early payment.

MANAGEMENT COMMENTS

We request additional comments on the revised recommendation.

---

[21] During 1996, Lockheed Martin offered Kennedy a cash discount equivalent to 5.2 percent when the U.S. Treasury rate was 5 percent.

FINDING B. MORE FREQUENT BILLING CONCESSION

In exchange for consideration, Marshall granted Rocketdyne[22] a more frequent billing concession. This type of concession is generally intended for small businesses[23] only. In modifying contract NAS8-45000 to provide for weekly billings, Marshall did not comply with the FAR provision for contract payments. Marshall contract negotiators granted more frequent billing terms as a negotiating tool to obtain certain concessions with no assurance that adequate consideration was received. The more frequent billing concession will cost the U.S. Treasury $1.2 million in additional interest expense, assuming interest rates do not change and there is no further contract cost growth during the remaining 3 years of the contract.

FAR Requirement

FAR 52.216-7, Allowable Cost and Payment, states that the Government will make payments as work progresses, but not more often than once every 2 weeks. The FAR grants exceptions to small businesses. Appendix C provides details on the FAR clause.

Rocketdyne, Space Shuttle Main Engine, Contract NAS8-45000

As discussed in Finding A, Marshall administers contract NAS8-45000 with Rocketdyne. Under the terms of the contract, Rocketdyne bills Marshall weekly. Through a contract modification, Marshall agreed to the weekly billing in exchange for Rocketdyne reducing the available award fee by .5 percent.[24] We estimated that the more frequent billings will cost the U.S. Treasury about $1.2 million[25] over the life of the contract.

Marshall has no assurance that it received adequate consideration for the frequent billing concession to Rocketdyne because neither party can accurately predict what the Treasury rates or contract cost growth will be through the life of the contract. Also, such concessions are prohibited except for small businesses.

---

[22] Before Rocketdyne was bought by Boeing North American, Inc., in August 1996, Rocketdyne, was a division of Rockwell International. Rockwell International was NASA's second largest contractor in terms of contract awards.

[23] A small business is one that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria and size standards in 13 Code of Federal Regulations Part 121.

[24] The .5 percent fee reduction was applied to both the early payment concession and the more frequent billing concession.

[25] At contract definitization on June 28, 1996, the estimated interest cost to the U.S. Treasury was more than $1.1 million.

Revised Recommendation

As a result of management's comments on the draft report, we revised Recommendation 2. Draft Recommendation 2 sought to limit the use of more frequent billing to small businesses. Management nonconcurred with the draft report recommendation and provided additional clarifying information on its position. The complete text of management's comments on the draft report is in Appendix F. Based on the management comments and additional information provided, we agree that there may be circumstances that could warrant the use of more frequent billing terms for other than small businesses provided that the circumstances are properly approved and justified.

Recommendation 2

We recommend that the Acting Associate Administrator for Procurement issue guidance to contracting officers that:

- limits routine use of more frequent billing to small businesses, as required by FAR 52.216-7, "Allowable Cost and Payment;" and
- explains the method for performing an analysis of the total cost and value of consideration offered in exchange for more frequent billing over the remaining life of the contract, including use of forecasts of acceptable interest rates.

Management Comments

We request additional comments on the revised recommendation.

OBJECTIVE, SCOPE, AND METHODOLOGY

OBJECTIVE

Our objective was to assess the adequacy of consideration NASA obtained for providing more favorable billing frequency and early payment terms on long-term contracts.

SCOPE AND METHODOLOGY

The scope and methodology of the audit included the following.

- Review of applicable FAR, NASA FAR Supplement, and NASA Financial Management Manual clauses.

- Review of contract billing and payment arrangements on:
  - NAS8-45000 with Rocketdyne;
  - NAS9-20000 with United Space Alliance;
  - NAS15-10000 with Boeing Information, Space and Defense Systems; and
  - NAS1-20220 with Boeing Commercial Airplane Group.

- Review of waivers issued on the subject contracts regarding billing and payment arrangements.

- Review of acquisition strategy meeting documents, dated October 27, 1995, and post-negotiation memorandum, dated September 23, 1996, for contract NAS9-20000.

- Review of NASA's analysis performed from 1994 through 1996 used to support noncompliant or unusual payment and billing practices.

- Documentation, dated April 1998, of NASA's long-term (5 years or greater), high-dollar value ($50 million or more) contracts that require early payment or allow more frequent billing.

- Documentation, dated July 1, 1997, of NASA's significant, future, long-term, high-dollar value contracts that may be vulnerable to early payment and frequent billing.

AUDIT FIELD WORK

We conducted our audit from March through June 1998 in accordance with generally accepted government auditing standards. We performed field work at the Johnson Space Center and the Kennedy Space Center. Also, we reviewed limited data from NASA Headquarters, the Marshall Space Flight Center, the Langley Research Center, and the Ames Research Center.

MANAGEMENT CONTROLS

Our audit was limited to a review of the billing and payment terms on contracts NAS8-45000, NAS9-20000, NAS15-10000, and NAS1-20220. Accordingly, we did not review NASA's system of internal controls related to those contracts.

COST AND CONSIDERATION

Contractor and Contract Number		Contract Definitization	Current Contract	Notes
Rocketdyne, NAS8-45000	Contract Value	$ 1,195,600,000	$ 1,236,076,074	1
	Period of Performance in Years	6.25	6.25	2
	Consideration Received	$ 5,870,000	$ 5,870,000	3
	Estimated Interest Cost to U.S. Treasury for Frequent Billing	1,146,466	1,185,278	4
	Estimated Interest Cost to U.S. Treasury for Early Payment	3,766,959	3,894,486	5
	Total Estimated Interest Lost by NASA	4,913,425	5,079,765	
	Net Consideration	**$ 956,575**	**$ 790,235**	
United Space Alliance NAS9-20000	Contract Value	$ 6,949,000,000	$ 7,307,202,184	6
	Period of Performance in Years	6.00	6.00	7
	Consideration Received	$ 56,925,000	$ 56,925,000	8
	Estimated Interest Cost to U.S. Treasury for Early Payment	21,894,110	23,022,692	9
	Net Consideration	**$ 35,030,890**	**$ 33,902,308**	
Boeing Company NAS15-10000	Contract Value applicable for Early Payment	$ 2,618,078,998	$ 3,468,504,908	10
	Period of Performance in Years (for Early Payment only)	7.17	7.17	11
	Consideration Received	Not Quantifiable	Not Quantifiable	12
	Estimated Interest Cost to U.S. Treasury for Early Payment	5,379,614	7,127,065	13
	Net Consideration	**Not Quantifiable**	**Not Quantifiable**	
Boeing Commercial Airplane NAS1-20220	Contract Value	$ 440,000,000	$ 440,000,000	14
	Period of Performance in Years	8.00	8.00	15
	Consideration Received	$ 41,400,000	$ 41,400,000	16
	Estimated Interest Cost to U.S. Treasury for Early Payment	542,466	904,110	17
	Net Consideration	**$ 40,857,534**	**$ 40,495,890**	

Notes:

1. Contract was definitized on June 28, 1996, for $1.2 billion. The contract value has grown to $1.23 billion through contract modification 35, dated February 18, 1998.

2. The period of performance is September 30, 1995, through December 31, 2001.

3. The contracting officer documented the amount as savings during contract definitization as a result of frequent billing and early payment. The amount is .5 percent of fee reduced during negotiations.

4. We calculated the estimated interest cost to the U.S. Treasury for more frequent billing by multiplying the average daily Treasury rate (5 percent ÷ 365 days) times the number of days billed early (14 days per the FAR minus 7 days per contract terms) times the estimated biweekly value. The amount was then multiplied by 26 (biweekly periods in a year) and number of years (6.25 years) in the contract. The result is the estimated interest cost to the U.S. Treasury for more frequent billing.

5. We calculated the estimated interest cost to the U.S. Treasury for early payment by multiplying the average daily Treasury rate (5 percent ÷ 365 days) times the number of days paid early (30 days per the FAR minus 7 days per contract terms) times the estimated biweekly value. The amount was then multiplied by 26 (biweekly periods in a year) and number of years (6.25 years) in the contract. The result is the estimated interest cost to the U.S. Treasury for early payment.

6. Contract was definitized on September 26, 1996, for $6.9 billion. The contract value has increased to $7.3 billion through contract modification 147, dated March 24, 1998.

7. The contract period of performance is October 1, 1996, through September 30, 2002.

8. The contracting officer documented the amount as savings during contract definitization as a result of early payments.

9. We calculated the estimated interest cost to the U.S. Treasury for early payment by multiplying the average daily Treasury rate (5 percent ÷ 365 days) times the number of days paid early (30 days per the FAR minus 7 days per contract terms) times the estimated biweekly value. The amount was then multiplied by 26 (biweekly periods in a year) and number of years (6 years) in the contract. The result is the estimated interest cost to the U.S. Treasury for early payment.

10. Although the contract was definitized on January 13, 1995, the early payment benefit was not in place until contract modification 208, dated May 4, 1996. The contract value applicable to early payment was $2.6 billion. The contract value applicable to early payment has increased to $3.5 billion through contract modification 527, dated April 14, 1998.

11. The contract period of performance is November 15, 1993, through June 30, 2003. However, we calculated the period of performance (May 4, 1996, through June 30, 2003) remaining (7 years and 2 months) when the early payment benefit was placed on the contract.

12. According to NASA, the consideration obtained was an under-limit changes clause of $40 million with no upward adjustment to target cost and fee. However, the value to NASA of the under-limit changes clause is not quantifiable. The value to NASA depends on how many changes are eventually required and the associated administrative cost (for both NASA and Boeing) of negotiating each one.

13. We calculated the estimated interest cost to the U.S. Treasury for early payment by multiplying the average daily Treasury rate (5 percent ÷ 365 days) times the number of days paid early (30 days per the FAR minus 15 days per contract terms) times the estimated biweekly value. The amount was then multiplied by 26 (biweekly periods in a year) and number of years left (7.17 years) on the contract when the early payment benefit was received. The result is the estimated interest cost to the U.S. Treasury for early payment.

14. Contract was definitized on July 15, 1994, for $440 million and has not experienced cost growth through current contract modification 109, dated February 25, 1998.

15. The contract period of performance is July 15, 1994, through July 14, 2002.

16. The contracting officer documented the amount as savings when Langley agreed to Boeing's request for early payment in exchange for fulfilling the contract at cost with no fee.

17. We calculated the estimated interest cost to the U.S. Treasury for early payment, at contract definitization, by multiplying the average daily Treasury rate (3 percent ÷ 365 days) times the number of days paid early (30 days per the FAR minus 15 days per contract terms) times the estimated biweekly value. The amount was then multiplied by 26 (biweekly periods in a year) and number of years (8 years) in the contract. The result is the estimated interest cost to the U.S. Treasury for early payment. Over the period of performance, the Treasury rate increased to 5 percent.

FEDERAL AND NASA CRITERIA (EXCERPTS) FOR EARLY PAYMENT AND BILLING FREQUENCY

PAYMENT OF INVOICES

Federal Acquisition Regulation 52.232-25 Prompt Payment

Notwithstanding any other payment clause in this contract, the Government will make invoice payments and contract financing payments under the terms and conditions specified in this clause…. All days referred to in this clause are calendar days, unless otherwise specified….
(a) *Invoice payments*--(1) *Due date*. (i) Except as indicated in subparagraph (a)(2) and paragraph (c) of this clause, the due date for making invoice payments by the designated payment office shall be the later of the following two events:
(A) The 30th day after the designated billing office has received a proper invoice from the Contractor.…
(B) The 30th day after Government acceptance of supplies delivered or services performed by the Contractor….

NASA Federal Acquisition Regulation Supplement 1832.9—Prompt Payment Subpart 1832.906 Contract Financing Payments

Except as authorized in 1832.970, is NASA's policy to make contract financing payments on the 30th day after the designated billing office has received a proper request. However, the due date for making contract financing payments for a specific contract may be earlier than the 30th day, but not earlier than 7 days, after the designated billing office has received a proper request, provided that:

(i) The contractor provides consideration whose value is determined to be greater than the cost to the United States Treasury of interest on funds paid prior to the 30th day calculated using the Current Value of Funds Rate published annually in the Federal Register (subject to quarterly revision);
(ii) The contracting officer approves the payment date change, with the concurrence of the installation Financial Management Officer; and
(iii) The contract file includes documentation regarding the value of the consideration and the analysis determining that value.

Appendix C

CONTRACTOR INVOICING

Federal Acquisition Regulation 52.216-7 Allowable Cost and Payment

Invoicing. The Government shall make payments to the Contractor when requested as work progresses, but (except for small business concerns) not more often than once every 2 weeks, in amounts determined to be allowable by the Contracting Officer in accordance with Subpart 31.2 of the Federal Acquisition Regulation in effect on the date of this contract and the terms of this contract.

TAKING DISCOUNTS

NASA Financial Management Manual 9632-5 Deductions from Vouchers:[26]

(c) Discounts will only be taken when the discount terms, as computed in the formula below, yield an effective annual interest rate equivalent to or greater than the percentage rate based on the current value of funds to the U.S. Treasury.

The conversion formula…to convert vendor sales discount terms to an Effective Annual Rate which is then used as a comparison against the Current Value of Funds Rate to the U.S. Treasury, is as follows:

Conversion Formula

$$\frac{\text{Discount \%}}{\text{100\% less Discount \%}} \text{ times } \frac{\text{Days in Year}}{\text{\# of Days in Payment Period less \# of Days left in Discount Period}} = \text{Effective Annual Discount Rate}$$

[26] A voucher is the same as an invoice.

EXAMPLE OF IMPACT OF AWARD FEE SCORES ON FINAL CONSIDERATION RECEIVED BY NASA ($ MILLIONS)

Table 1		
Before Fee Concession		
Fee Normal	Fee Score	Fee Earned
$100.0	70	$70.0
100.0	80	80.0
100.0	90	90.0
100.0	85	85.0
100.0	88	88.0
100.0	75	75.0
100.0	90	90.0
100.0	94	94.0
100.0	73	73.0
100.0	90	90.0
$1,000.0		$835.0

Table 2		
After Fee Concession		
Fee Adjusted	Fee Score	Fee Earned
$90.0	70	$63.0
90.0	80	72.0
90.0	90	81.0
90.0	85	76.5
90.0	88	79.2
90.0	75	67.5
90.0	90	81.0
90.0	94	84.6
90.0	73	65.7
90.0	90	81.0
$900.0		$751.5

Table 3	
Concession Not Realized	
Fee Pool Before Concession	$1,000.0
Fee Pool After Concession	(900.0)
Fee Concession	$100.0
Fee Earned Before Concession	$835.0
Fee Earned After Concession	(751.5)
Earned Concession	$83.5
Fee Concession	$100.0
Fee Earned After Concession	(83.5)
Concession Not Realized	$16.5

Table 1 shows an example of a normal fee, fee scores, and earned award fee.

Table 2 shows the same example with a 10-percent reduction in fee and the corresponding reduction in earned award fee based on the same fee scores as in Table 1.

Table 3 shows that while NASA received a $100 million concession in the award fee pool, NASA realized only $83.5 million of the concession. NASA did not realize the full $100 million concession because of the effect of award fee scores on the calculation.

Consideration for Frequent Billing and Expedited Payment, Management Letter, M-IG-97-007

National Aeronautics and
Space Administration

Headquarters
Washington, DC 20546-0001

Reply to Attn of: W

March 6, 1997

TO: Johnson Space Center
ATTN: BV/Space Shuttle Procurement Officer

FROM: W/Acting Assistant Inspector General for Auditing

SUBJECT: Consideration for Frequent Billing and Expedited Payment
Management Letter Number M-IG-97-007

The NASA Office of Inspector General is reviewing the Agency's Space Shuttle Restructuring effort as described in our October 27, 1995, letter to the Associate Administrator for Space Flight (Assignment Number A-HA-96-001).

We presented a draft of this document to the Contract Acquisition Team (CAT) for the Space Flight Operations Contract (SFOC) on August 6, 1996. At the time, you were the Chairman of the CAT, which disbanded after the SFOC was awarded. We received your written response on December 2, 1996, and had several subsequent telephone discussions to clarify certain issues. NASA had already awarded the SFOC on September 26, 1996. We analyzed your response and added a Summary of NASA Management's Position and Resolution of Issue section to this document.

Our review of arrangements for early billing and payment under KSC's Orbiter Logistics Operations Contract with Rockwell International Corporation (RIC) and the Shuttle Processing Contract with Lockheed Martin Space Operations (LMSO) had identified a problem with making early payment considerations in a long term contract. Since these contracts were with the two companies that comprise the United Space Alliance joint venture, we believed that the CAT could learn from early payment methods used on the two KSC contracts. NASA installations are authorized to take favorable discounts in accordance with the NASA Financial Management Manual 9632-5c (Discounts) and the Treasury Financial Manual, TFM 6-8040.40 (Cash Discounts). The CAT should avoid certain attempts to accommodate frequent billing and early payment when negotiating the SFOC.

The purpose of the draft management letter was to provide our opinion on this issue and document our discussions with NASA management officials who could best resolve our concerns. Unlike a formal audit report, no recommendations were formally staffed for management's comments. The work on which our opinion was based was limited to a review of current contract arrangements as described herein and discussions with Department of the Treasury and NASA officials.

Issue. NASA used different methods on the two KSC contracts to obtain discounts for making early payments. The method used to pay LMSO did a better job of protecting the Government's interest than the method used to pay RIC.

- LMSO METHOD. KSC grants early payment to LMSO based on billings submitted offering cash discounts slightly higher than the Treasury Current Value of Funds Rate (CVFR). Treasury revises the CVFR at least every twelve months.

- RIC METHOD. The KSC contract with RIC provided for weekly billing and early payment (on the 7th day after receiving the bill). When the contract was negotiated, KSC computed what the cost of money would be for early payment using the then Treasury CVFR applied over the 10-year life of the contract and deducted that amount from the fee pool provided in the contract.

Potential Impact. Early payment arrangements like those made with LMSO under the Shuttle Processing Contract benefit both parties to the contract. The U.S. Government receives a discount slightly more than the Treasury rate for cost of money and the contractor receives an early discounted payment at a very favorable rate (close to the borrowing capability of the U.S. Government).

According to Treasury officials contacted during this review, early payment arrangements like those made in the contract with RIC do not make good cash management sense. Using current interest rates to compute consideration on long term contracts will adversely affect one of the parties to the contract. For the KSC contract with RIC, the U.S. Government has not received adequate consideration for frequent billing and early payment for three reasons:

1. The rate used to compute the consideration needed by the U.S. Government was 3 percent, the Treasury CVFR at the time the contract was negotiated. This procedure used is in accordance with NASA Federal Acquisition Regulation (FAR) Supplement 18-32.906 (Contract Financing Payments). Calculating consideration for a long-term contract is virtually impossible, because of fluctuations in interest rates. Such fluctuations tend to harm one of the parties to such an arrangement. In this instance, the U.S. Government was harmed because the Treasury CVFR was at its lowest point in at least the last 19 years. After the contract was signed, the Treasury CVFR increased to 5 percent. If it averages 5 percent over the life of the contract, RIC will benefit and the U.S. Government will lose $1.5 million. The Treasury CVFR has actually fluctuated between 3 percent and 9 percent over the last 10 years.

2. Since the consideration negotiated by KSC was in the form of an adjustment to the fee pool, the U.S. Government loses additionally every time RIC does not earn 100 percent of its available fee. For the last three semiannual periods RIC has earned 88 percent, 91 percent, and 96 percent of its available technical performance award fee. So the U.S. Government lost 12 percent, 9 percent, and 4 percent of the compensation negotiated by KSC for early payment during those semiannual periods.

3. The RIC contract also provides for more frequent billing of its costs on the contract, every week versus every other week. Our review of the negotiation documentation showed that KSC did not receive any compensation for the early billing arrangement. Over the life of the

contract, this would equate to the contractor receiving and the Government providing a 7-day loan for one half of the costs incurred on the contract at the very favorable rate of 3 percent. The 7 days are the first 7 days of each standard 14-day billing period allowed by the FAR. The second 7 days of each billing period are billed as allowed by FAR. If compensation was computed at the 3 percent rate used by KSC, it would have amounted to an additional $360,000 which was not obtained in the contract consideration.

Opinion. In order to avoid significant costs associated with U.S. Government financing of early payments as described above, the SFOC CAT should:

1. avoid negotiating early payment terms which include consideration provided in the contract,

2. encourage discounts that can be calculated to cover the Treasury CVFR in effect at time payment is made, and

3. if more frequent billing is negotiated in the contract, make sure discounts are computed for frequent billing as well as early payment.

Summary of NASA Management's Position and Resolution of Issue. The CAT did not follow our main suggestion (Opinion 1. above) and negotiated 7-day expedited payment terms into the SFOC. The CAT's written response emphasized that NASA had received more than adequate consideration for expedited payment. The following is an excerpt from the CAT response:

> "... NASA did not consider the current CVFR and was able to negotiate consideration for expedited payment exceeding a rate comparable to 10 percent. NASA considers this adequate consideration inasmuch as no projection anticipates rate performance close to this level..."

Subsequent telephone discussions with two CAT members disclosed that the SFOC contractor insisted on having the expedited payment terms inside the contract and would not negotiate on that issue. CAT documents state that the SFOC contractor reduced its fee pool by at least $30 million to compensate for the 7-day payment schedule. However, the CAT did not formally document the total fee pool concessions, making it impossible to determine the actual consideration received.

We recognize that SFOC negotiations were very complex, and efforts to clearly quantify the give and take in the process were difficult. This difficulty supports our position that consideration for early payment be accommodated by computing discounts using the CVFR as payment vouchers are submitted as opposed to negotiating uncertain fee pool reductions on long term contracts.

If we accept the CAT's contention that fee pool reductions for early payment equivalent to a 10 percent discount were achieved, we could say that it appears at this point in time that the government negotiated a good deal. However, only the actual costs incurred during the contract will disclose which party will benefit from this arrangement as a track record for both the CVFR and disbursements made under this contract are recorded over the life of the contract.

Because the CAT negotiated expedited payment but not frequent billing into the SFOC, our other two suggestions (Opinion 2. and 3. above) are not applicable.

If you have questions or need additional information regarding this issue, please call Ms. Janice Goodnight, Program Director, Human Exploration and Development of Space, at (281) 483-4773; or me at (202) 358-1232.

Robert J. Wesolowski

Robert J. Wesolowski

cc:
HQ-JM/D. Green
KSC-HM-CIC/J. Nary
OP/C. Whitcomb
JSC-BQ/P. Ritterhouse

MANAGEMENT'S COMMENTS

National Aeronautics and
Space Administration
Headquarters
Washington, DC 20546-0001

SEP 3 1998

Reply to Attn of:

HK

TO: W/Assistant Inspector General for Auditing

FROM: H/Acting Associate Administrator for Procurement

SUBJECT: Code H Response to OIG Draft Report of Early Payment and Billing Frequency on Long Term Contracts, No. A-HA-98-027

Enclosed is our response to subject report dated August 6, 1998.

Please call Jack Horvath at 358-0456 if you have any questions or need further coordination or assistance on this.

Tom Luedtke

Enclosure

Appendix F

HEADQUARTERS OFFICE OF PROCUREMENT

RESPONSE TO

OFFICE OF INSPECTOR GENERAL (OIG)

DRAFT REPORT NO. A-HA-98-027

DATED AUGUST 6, 1998

EARLY PAYMENT AND BILLING FREQUENCY ON LONG TERM CONTRACTS

DATE: SEP 3 1998

ENCLOSURE

Code H Response to OIG
8/6/98 Draft Report,
A-HA-98-027
Page 2

Code H's narrative response is provided as follows:

OIG RECOMMENDATION 1:

We recommend that the NASA Associate Administrator for Procurement prohibit the Centers from negotiating early payment as part of contract terms, encourage contractors to offer early payment discounts on invoices, and take those discounts that are advantageous to the U.S. Government.

CODE H RESPONSE TO RECOMMENDATION 1: NON-CONCUR

The negotiation process encompasses give and take on both sides. Nearly every cost element (unless they reflect actual costs) in a negotiation is based on an estimate or forecast (labor rates, indirect rates, material costs, escalation rates, etc.). While we would agree that early payment as a negotiation tool is not to be used as a standard practice, it would not be in the best interest of the Government to prohibit contracting officers use of early payment when benefits to the Government can be realized and it can aid in reaching settlement in difficult negotiations. The guidance at NFS 1832.906 is clear and reasonable and there is nothing in this report that would indicate that NASA contracting officers have used this tool improperly. The NASA FAR Supplement requires that contracting officers document the value of the consideration received for providing early payments. The OIG report does not properly apply the concept of "value" of the consideration received. "Value" may be in the form of specific cost concessions. It may also include performance concessions or other non-monetary specific concessions such as agreements to conclude negotiations or refrain from some action. The OIG report does not properly recognize the impact of non-monetized consideration. The OIG's own table in Appendix B indicates that these arrangements have provided substantial benefits to the Government. Although based on reasonable assumptions at the time made, even if circumstances prove somewhat less favorable than anticipated, the table shows that the Government still comes out ahead. It appears that early payment concessions played a significant role in reaching settlement on these complex, high dollar procurements. The report ignores any impacts associated with delays in reaching those settlements - which in the case of these contracts could have been considerable. Furthermore, the OIG suggestion that contractors be encouraged to offer early payment discounts on invoices misses the whole purpose of offering early payment within the contract. Contractual early payment concessions provide negotiation leverage that can induce contractors to offer more favorable contract terms. While we will continue to discourage routine use of early payments as a negotiation tool, we will support their use in accordance with regulations when the result is a clear benefit to the Government - as is the case in the instances cited. We will also encourage contractors to offer, and Centers to utilize, invoice-based prompt payment discounts. We do not consider any further action necessary and recommend this item be closed.

OIG RECOMMENDATION 2:

We recommend that the NASA Associate Administrator for Procurement direct the Centers to limit more frequent billing concessions to only small businesses, as required by FAR 52.216-7, Allowable Cost and Payment.

CODE H RESPONSE TO RECOMMENDATION 2: NON-CONCUR

FAR 52.216-7 limits the frequency of payments made to contractors to no more than once every 2 weeks (except for small business concerns). We support the concept embodied in the FAR clause, and will continue to ensure compliance with the provisions of the clause. We do not concur with Recommendation 2, however, for reasons similar to our response to Recommendation 1 above. We must reserve the right to remain flexible and allow more frequent billings in specific instances where NASA can benefit from this practice, adequate support to substantiate the benefit is provided, and deviations are approved. Recommend this item be closed.

Appendix G

REPORT DISTRIBUTION

National Aeronautics and Space Administration (NASA) Headquarters
Code B/Chief Financial Officer
Code B/Comptroller
Code C/Associate Administrator for Headquarters Operations
Code G/General Counsel
Code H/Acting Associate Administrator for Procurement
Code HK/Director, Contract Management Division
Code HS/Director, Program Operations Division
Code J/Associate Administrator for Management Systems and Facilities
Code JM/Director, Management Assessment Division
Code W/Assistant Inspector General for Inspections, Administrative Investigations, and Assessments
Code Z/Acting Associate Administrator for Policy and Plans

NASA Field Installations

Director, Ames Research Center
Director, Goddard Space Flight Center
Director, Jet Propulsion Laboratory
Director, Lyndon B. Johnson Space Center
Director, John F. Kennedy Space Center
Director, Langley Research Center
Director, Lewis Research Center
Director, George C. Marshall Space Flight Center
Director, John C. Stennis Space Center

NASA Offices of Inspector General

Ames Research Center
Goddard Space Flight Center
Jet Propulsion Laboratory
Lyndon B. Johnson Space Center
John F. Kennedy Space Center
Langley Research Center
Lewis Research Center
George C. Marshall Space Flight Center
John C. Stennis Space Center

Appendix G

Non-NASA Federal Organizations and Individuals

Assistant to the President for Science and Technology Policy
Deputy Associate Director, Energy and Science Division, Office of Management and Budget
Budget Examiner, Energy Science Division, Office of Management and Budget
Associate Director, National Security and International Affairs Division, General Accounting Office
Special Counsel, House Subcommittee on National Security, International Affairs, and Criminal Justice
Professional Assistant, Senate Subcommittee on Science, Technology, and Space

Chairman and Ranking Minority Member - Congressional Committees and Subcommittees

Senate Committee on Appropriations
Senate Subcommittee on VA, HUD and Independent Agencies
Senate Committee on Commerce, Science, and Transportation
Senate Subcommittee on Science, Technology, and Space
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on VA, HUD and Independent Agencies
House Committee on Government Reform and Oversight
House Committee on Science
House Subcommittee on Space and Aeronautics

Congressional Member

Honorable Pete Sessions, U.S. House of Representatives

MAJOR CONTRIBUTORS TO THIS REPORT

Lee T. Ball, Deputy Assistant Inspector General for Auditing
Dennis E. Coldren, Program Director for Human Exploration and Development of Space Audits
Leon Diamond, Audit Program Manager
Dennis Clay, Auditor
Loretta Garza, Auditor
June Glisan, Program Assistant
Nancy C. Cipolla, Report Process Manager