January 6, 1999

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TO: B/Comptroller
M/Associate Administrator for Space Flight

FROM: W/Assistant Inspector General for Inspections, Administrative Investigations, and Assessments

SUBJECT: Follow-up Assessment of Management Alert Issued February 6, 1998, Chartered Flights between the United States and Russia, G-98-014, Redacted Report*

This assessment is a follow-up of our Management Alert issued to the Johnson Space Center (JSC) on February 6, 1998. That alert expressed our concerns regarding JSC's cost benefit analysis of the JSC Charter Aircraft Operations between the United States and Russia (See Appendix A, Management Alert). Additionally, our follow-up assessment addresses findings regarding our overall review of the charter service and JSC's internal 3-month and 6-month reviews.

In 1993, Russia became a partner in the International Space Station (ISS) Program. Increased ISS activities with the Russians resulted in more frequent travel by Government and contractor personnel between Russia and the United States. In January 1998, JSC contracted with the Department of Defense (DoD) Air Mobility Command (AMC) Civil Reserve Air Fleet (CRAF) to provide charter flight service between the United States and Russia.[1] JSC personnel performed a cost benefit analysis and concluded the charter flights would be cost beneficial (See Attachment A of Management Alert, Appendix A).

BACKGROUND

The Office of Inspector General (OIG) Management Alert issued in February 1998, found that JSC's cost benefit analysis supporting the charter service was deficient. JSC officials responded to our alert advising that they would conduct a 6-month trial period of the service. The officials also conveyed that they would conduct a 3-month, mid-course review and

* We have redacted portions of this report and a paragraph from Appendix I due to references to security information. The redacted passages do not impact the validity of this report or management's response.

[1] Selected United States commercial airlines are contractually committed in emergencies to support DoD airlift requirements. Based on peacetime availability, these services are available to civilian Federal agencies.

compare actual use data to the estimated data used to construct the initial cost benefit analysis. JSC officials also stated that if the service continued beyond the initial 6-month period, regular reviews of the charter service would be conducted to ensure the service was effective (See Appendix B).

We reviewed JSC's 3-month and 6-month analyses. The JSC analyses indicate that although the charter service costs more than projected, the service should continue based on tangible and intangible programmatic benefits. Some of the benefits include: personnel security, occupational safety and health, and employee morale and well being (See Appendix C).[2]

MANAGEMENT ALERT FOLLOW-UP

A. Charter Service Costs Versus Commercial Airline Services

Based on our review of JSC's data regarding the service, we conclude that the charter service is not cost effective. The capacity of the Boeing 727 class aircraft typically used by the charter service is 143 passengers. In order for the service to be cost effective, JSC has established a goal of 90 passengers per one way flight. For the first 24 flights of the service, the number of passengers ranged from 9 to 108—most flights have carried less than 50 passengers (See Appendix D).[3]

Our calculations, which are based on the January 1998 through September 1998 JSC cost data, show that the average cost per person ranged from $2,753 to $19,883. In contrast, the average cost of a commercial round-trip baseline flight to Moscow is $2,048.[4] Based on our calculations NASA's use of the charter service resulted in about $3 million in excessive cost to the Government during its first 9 months of operation. Appendix E contains a comparison chart of individual flights.

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[2] Enhanced program connectivity and logistics operations were also included as programmatic benefits. Although program connectivity (including interface with the Russians) may be achieved during discussions en route on the charter, it is not dependent on the use of the charter service. Connectivity can be achieved through various means including e-mail, Internet webpages, post charter flight debriefings, and face to face meetings. Logistics operations deal primarily with the dissemination of information and location of personnel. These issues are addressed in the Occupational Health and Safety and Security sections of this report.

[3] A special review is to be held with program and contracts officials if the passenger count drops below 30 to determine whether the flight is necessary. To date, only one leg of the charter service has been canceled.

[4] Base Line Cost/Person is the average cost calculated by the OIG from airfares noted in Appendix D to this report.

Civil Servant	$1,914.00
Boeing	$2,480.54
Russian	$1,750.00
Average	$2,048.18

B. Cargo Shipments

The original JSC Cost Benefit Analysis estimated that transportation of cargo aboard the charter would realize cost savings of $12,500 per month.[5] This cost savings has not been realized. NASA has not yet transported cargo as anticipated. One reason is that the Vnukovo I terminal in Moscow, where the charter lands, is not equipped to process cargo through customs. To process cargo through customs, it must be transported by truck from the Vnukovo I terminal to the Sheremetyevo airport. This option is reported too costly.

JSC transportation personnel have been negotiating with Russian officials to allow customs processing at Vnukovo airport through RSC-Energia (Energia). Energia reportedly owns the Vnukovo III terminal and is equipped to process cargo through customs. No agreements have been negotiated and NASA officials are not sure how soon cargo will be transported using the charter services.

C. Transportation Regulations

The NASA Financial Management Manual (FMM) establishes policies and procedures for official NASA travel. Section 9731-14a.(1) of the FMM states that a chartered flight may be used on a one-time basis provided "[t]here is no common carrier transportation readily available between the points to be visited." Common carrier transportation is readily available between all stops (other than required for refueling or crew transfer) currently serviced by the AMC charter.

Section 9731-5e(1) of the FMM states that common carrier travel will "generally result in the most efficient use of energy resources and in the least costly and most expeditious performance of travel."[6] JSC and OIG cost estimates indicate that these charter services are not the most efficient or expeditious means of travel (due to frequent stops for refueling and crew changes). Also, because of the biweekly charter schedule, individuals may be compelled to stay in Russia longer than work requirements dictate. This is inefficient use of time and travel expenses.

D. Reimbursement Practice For Space-Available Travel[7]

JSC policy allows dependents of NASA employees and contractors and dependents of Russian Space Agency employees and contractors to travel between the United States

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[5] Attachment A of Management Alert, dated February 6, 1998 (See Appendix A).

[6] For reasons of cost, official travel by common carrier is required of Department of State, United States Information Agency, and United States Agency for International Development employees, including ambassadors, traveling overseas. Exceptions are not granted on the basis of personal preference or minor inconveniences to the traveler resulting from common carrier scheduling. Travel for top-level diplomatic missions is provided by Government aircraft. See also FMM 9731-5b and 9731-7a.

[7] Space Available is a DoD term that means the seat would not otherwise be used.

and Russia on a space-available basis. Reimbursement to NASA for these trips is based on "lowest coach fare" in accordance with a JSC Policy for Space-Available Travel (See Appendix F).

JSC does not require the space-available passengers to reimburse the Government at an applicable Government rate or the actual rate based on the price of the charter. Instead, NASA allows the passengers to fly at the lowest coach rates they can obtain, regardless of airline restrictions, between the time the charter flights were planned and the actual charter travel date. These lowest coach rates contain airline restrictions that do not coincide with the charter flight schedules and are not usually acceptable or applicable to a traveler on Government business.[8] Consequently, NASA's practice does not reflect what the average person would pay if they planned and booked such a flight in advance based on the dates of the charter flight.[9]

The space-available travel practice resulted in 41 passengers traveling outbound, 42 passengers traveling inbound, as of the end of September 1998.[10] The total reimbursement for these flights was $39,595.30.[11] The average price per person for a round trip was $954.10.[12] The additional space-available passengers have received exceptional bargains when compared to the usual Government rate cost or the average cost per person based on the price of the charter.

E. Insurance Coverage

Government travelers automatically receive $200,000 of life insurance coverage provided by American Express each time they charge a common carrier ticket to either their American Express Government Card or a Government Travel Account.[13] Charter

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[8] Restrictions include specific days and times of travel, periods of advance reservation, minimum and maximum lengths of stay, and airport and route specifications.

[9] DoD applies a more reasonable process for travel reimbursement: As long as the Government flight satisfies the restrictions associated with a particular coach fare, the fare with restrictions could qualify as the "full coach fare" as detailed in OMB Circular A-126.

[10] Outbound means traveling on the leg of the round trip between the United States and Russia. Inbound means traveling on the leg of the round trip between Russia and the United States.

[11] The price varies according to the reimbursable agreement between the parties. The price for a child under the age of 2 years is 10 percent of the lowest coach fare, and a child between the ages of 2 and 11 years is 50 percent of the lowest coach fare. Anyone above age 11 pays the full lowest coach fare. As part of the agreement, each traveler must sign a statement: "To the best of my knowledge and belief, the lowest coach fare applicable to this request is $_____" (See Appendix F).

[12] The calculation does not include DoD passengers that traveled space-available free for a portion of the round trip (7 outbound, 9 inbound).

[13] Policy is underwritten by AMEX Assurance Company, Administrative Office, Green Bay, Wisconsin. Coverage is subject to terms and conditions of Policy AX0949.

aircraft passengers do not receive this life insurance coverage, since their flights are not purchased through American Express Travel Services.

In January 1998, JSC established the requirement of JSC employees and contractors to use the charter service when traveling to and from Russia (See Attachment B of Management Alert, Appendix A). Passengers who have their own liability coverage and travel via the charter service may jeopardize their coverage. The FMM addresses this concern. Specifically, section 9731-7b(1) of the FMM states:

> Except where the conditions of the employee's assignment to a position prevail, NASA travelers will not normally be required to travel in Government aircraft or nonscheduled commercial aircraft without their consent. Paramount among the reasons why the use of such aircraft should not be required is the fact that many personal insurance contracts contain clauses which void the policies if death or injury results from the use of certain type of aircraft.

By requiring use of the charter service, personal insurance policies may be voided without the knowledge of the passengers. This requirement may place JSC employees, contractors, and their families at personal risk.

F. Funding on Purchase Order T-5260V

JSC did not always obligate sufficient funds in its accounting system to cover the chartered flights.[14] As of August 10, 1998, JSC's accounting system reflected the following with respect to the purchase order for the charter aircraft:

Funding	$3,508,322.30
Less Disbursements	$2,893,945.00
Unliquidated Funds	$ 614,377.30

JSC had disbursed funds for flights through the end of May 1998. According to the data available through August 10, 1998, six additional flights were flown in June and July for which payment also has been made.[15]

Cost of June flights	$ 511,848.00
Cost of July flights	$ 551,271.00
Total	$ 1,063,119.00

[14] The funding for the charter services is provided under a different appropriation line item than would be provided for commercial flights. The charter service is funded from the appropriation for Human Space Flight; however, funding for commercial flights for civil servants is provided from the appropriation for Mission Support.

[15] Flights 1203, 1204, 1213, 1221, 1223, and 1224 (See Appendix D).

Therefore, these figures indicate that JSC had insufficient funds on the contract to cover the services received, and created a shortfall of $448,742 (cost of June and July flights minus unliquidated funds). The shortfall indicates poor contracting practices, at least, and a violation of the Anti-Deficiency Act, 31 U.S.C. 1341, at worst.[16]

EVALUATION OF JSC INTERNAL REVIEW

A. Occupational Health and Safety

In its 3-month review, JSC personnel cited occupational health and safety as a programmatic benefit of using the charter service (See Appendix C). In addition, JSC personnel have claimed the charter service is safer than commercial aircraft. Most of the discussions of occupational health and safety deal primarily with morale, comfort, and dissemination of health-related information for overseas travelers.

Individuals who have used the charter service described morale benefits in terms of convenient airport locations in Houston and Moscow, and the space available on the aircraft to lie down across the seats and sleep. This "benefit" of course depends on the aircraft remaining unfilled.

JSC officials also cited the ease of disseminating up-to-date health information for overseas travelers as the passengers board the charter or during the flight. However, the distribution of this material is not dependent on the use of the charter aircraft. This material, available on a Center for Disease Control website,[17] can be distributed through any number of mechanisms (e.g., through American Express Travel Services or made available through a link on the JSC Russian Travel Information website).
Personnel interviewed also stated the charter service is safer than commercial airlines because DoD flight safety requirements used by the AMC exceed Federal Aviation Administration (FAA) safety requirements for commercial airlines.[18] In fact, most commercial airlines are also listed among DoD approved carriers for use by the AMC.

In addition, the National Transportation and Safety Board (NTSB) tracks aviation safety statistics. The NTSB categorizes commercial flights as "Scheduled Services." Flights such as the chartered aircraft flights used by NASA, are categorized as

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[16] NASA Policy Directive 9050.3D, Administrative Control of Appropriations and Funds, effective January 22, 1997, states, "An obligation or expenditure in excess of classifications or established below the allotment level, while cause of administrative discipline if the circumstances warrant, does not by itself constitute a violation of 31 U.S.C. 1341."

[17] http://www.cdc.gov/travel/index.htm

[18] These requirements are contained in the DoD's Commercial Air Carrier Quality and Safety Requirements document.

"Nonscheduled Services."[19] Nonscheduled Services actually have a statistically higher incident rate than Scheduled Services (See Appendix G).[20]

Categorically, most incidents occur during the take off and landing phase of the flight with few incidents occurring mid-flight.[21] For a typical one-way trip to Moscow, the charter aircraft experiences 5 takeoffs and 5 landings.[22] An individual flying commercially to Moscow could make a non-stop flight within the United States and a non-stop flight to Moscow, totaling 2 takeoffs and 2 landings. The frequent stops made by the charter aircraft increase its exposure to risk.

B. Security

JSC, in its 3-month review, considered increased security as another benefit of the charter service (See Appendix C).[23] JSC personnel also stated that the charter provides a means to record who is currently in Russia and who is traveling to and from Russia. Much like the dissemination of up-to-date health information, determining who is in Russia (as well as arrivals and departures) may be more convenient using the charter. However, this information is not dependent on the use of the charter aircraft, but on strict adherence to established administrative procedures.[24]

Security requirements at Huntsville International (Huntsville) and Dulles International (Dulles) airports are prescribed by Federal Aviation Regulation (FAR) Part 107, Airport Security. Scheduled commercial aircraft landing at Huntsville and Dulles must comply with FAR Part 108, Airplane Operator Security requirements. FAR Part 108 requires aircraft to land at FAR Part 107 regulated airports or at airports overseas that comply with International Civil Aviation Organization (ICAO) Annex 17 security guidelines.[25]

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[19] Scheduled and Nonscheduled Services (Airlines) both operate under 14 CFR 121 requirements.

[20] Incident rates (accidents and fatalities) are based on accidents per 100,000 flight hours, accidents per 1,000,000 miles flown, and accidents per 100,000 departures.

[21] Statistical Summary of Commercial Jet Airplane Accidents, Airplane Safety Engineering Boeing Commercial Airplane Group, June 1998.

[22] Most outbound chartered flights originate from Ellington Field in Houston, Texas. Intermediate stops to load and unload passengers are made at Huntsville International Airport near Marshall Space Flight Center (MSFC) and Dulles International Airport near NASA Headquarters in Washington, DC. Refueling and crew change stops are made at airfields in Gander, Newfoundland, and Keflavic, Iceland. Flights terminate at Vnukovo Airport in Moscow, Russia.

[23] Employees paralleled security to the concept of convenience (e.g., less traffic at Vnukovo airport, less "jostling" of personnel, no lines at the airports, see Appendix C).

[24] Current administrative procedures for identifying travelers in Russia include the registration of arrival notification with the NASA Moscow Liaison Office and travel coordination with program points-of-contact.

[25] Compliance with ICAO Annex 17 is assessed at overseas airports by the FAA if that airport is the last point of departure for aircraft arriving in the United States.

Security for Gander, Newfoundland, and Keflavic, Iceland, airports is provided by DoD, and, as refueling stops, these airports pose less of a security risk.

Since NASA is primarily operating a private charter, the stringent security requirements of FAR Part 107 and FAR Part 108 do not apply.[26] In addition, JSC has not conducted an airport security assessment beyond physical security of NASA space at Ellington Field. JSC does not have copies of any airport security assessments that may possibly have been conducted by the City of Houston.[27] JSC personnel also do not have copies of the aircraft security programs required of AMC contract air carriers.[28]

We also note that NASA personnel have not conducted security assessments of the Vnukovo airport in Moscow.[29] JSC personnel stated that they believed that security assessments for the Vnukovo airport were conducted by the Moscow Embassy, DoD, or the Secret Service. However, we did not find evidence that any of these organizations have conducted security assessments of the Vnukovo airport. JSC and Moscow Embassy personnel have related anecdotal information that since Air Force One and Air Force Two land at Vnukovo, the security must be adequate because this is where the President and Vice President land. We must note, however, that the Secret Service provides its own security and advance teams to conduct limited security assessments for each specific landing site for those aircraft.

Vnukovo is a domestic airport and is not a last point of departure for aircraft landing in the United States. Therefore, the FAA does not assess the airport's security. Although Vnukovo airport has an x-ray machine, certifications and user training on its operation is unknown. Since the FAA does not assess Vnukovo airport to evaluate the effectiveness of security in accordance with provisions of ICAO Annex 17, there is no way to determine the effectiveness of Vnukovo's security procedures.

Because security at Ellington Field and the Vnukovo airports are primarily based on trust and anecdotal stories of security, there is no way to assess the level of security provided at either of these airports.

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[26] When our draft report was issued to the Agency on November 14, 1998, we indicated that in the instances when NASA has received reimbursements by space-available travelers, FAR Part 108 requirements may change the status of the charter from a private charter to a public charter. In this event, FAR Part 107 and Part 108 security requirements would be levied on the charter airlines and on the airports servicing the charters. This translates into additional costs for NASA. However, FAA recently determined that aircraft under contract with the Government are considered private charters, regardless of reimbursements received from passengers. FAA also determined that security measures as specified in FAR Part 108 do not apply to these chartered aircraft.

[27] The City of Houston owns Ellington Field.

[28] Fiscal Year 1998 CRAF Contract, Part I, section C6.

[29] No one from the NASA security offices at JSC or at Headquarters has visited the Vnukovo airport.

In September 1998, the Department of State released a Worldwide Caution advising Americans overseas to increase their security and lessen their vulnerabilities (See Appendix H). This caution advises Americans to maintain a low profile and vary their routes and times for required travel. Use of the charter service neither provides a low profile means of transportation nor allows travelers to vary their routes. Traveling via commercial airlines would decrease the profile of NASA employees and allow them to vary their travel times and routines.

RECOMMENDATION

We recommend that JSC terminate its charter air service between the United States and Russia for routine travel. In special situations, when the full capacity of a chartered aircraft would be used and the use of that aircraft would be more economical than commercial flights, a charter could be considered. This should be more the exception than the rule and should be fully justified.

SUMMARY OF NASA MANAGEMENT RESPONSES

We received the Office of Space Flight's (OSF) response on December 7, 1998 (See Appendix I). OSF does not concur with our recommendation to terminate the charter service. JSC assembled a "Cross-Center Team" to examine and respond to the findings in our draft report. OSF and JSC believe the charter is a component in an overall effort to support the ISS. The OSF response addresses section by section many of the issues raised in our draft report.

We received the Comptroller's response on December 30, 1998 (See Appendix J). The Comptroller's response indicates the use of the charter "should have been justified on programmatic grounds, and not on grounds of cost-effectiveness" and defers opinions on programmatic benefits to others. The Comptroller's memo also includes a funding agreement with OSF that sustains funding for the charter through FY 2000, reduces the amount by half in FY 2001, and does not provide funding for subsequent years (OSF did not mention the phase out of funding in their response).

EVALUATION OF MANAGEMENT RESPONSES

We evaluated OSF/JSC's response to our draft report. Based on our analysis, JSC still has not justified the charter arrangement.

JSC no longer justifies the use of the charter based on cost but justifies its benefit as programmatic and as part of "a rhythm of activity" associated with the ISS. JSC states that passenger levels continue to increase. Since our analysis for the first 9 months of operation (January through September 1998) contained in our draft report, ridership continues to fall below the goal of 90 passengers per one way flight. Since September, passengers have ranged from a low of 7 to a one-time high of 123 (averaging only 44 passengers per one way flight). On only one occasion did 90 or more passengers use the charter and on 14 occasions, fewer than 90 passengers used the charter (for the period of October through December 1998).

The JSC response also states an agreement/protocol was reached between NASA, the Russian Space Agency (RSA) and Energia to transport international cargo aboard the charter and that shipping will begin in December. When attempting to verify this statement, we determined that the protocol currently involves only one test shipment of cargo to Vnukovo airport to determine if future shipments to Vnukovo will be possible. This test is scheduled for late January 1999 with no subsequent shipments to Vnukovo planned.

JSC claims that "no commercially available flight flies from NASA Center to Center and then to Moscow." Although this may be true, there are an abundance of commercially available flights from NASA Centers to New York and from New York nonstop to Moscow. In addition, JSC explains the importance of Tech Trans International transportation services and the NASA Warden System and its ability to locate personnel in Russia. However, JSC fails to identify why these services cannot be used to support personnel arriving and departing via commercial airlines.

In regard to FMM 9731-7b(1), concerning personal insurance coverage, JSC claims that the "vast majority" of NASA civil service employees use Federal Employee Group Life Insurance (FEGLI) and NASA Employee Benefits Association (NEBA) insurance policies and further asserts that FEGLI and NEBA have no applicable exclusions from the use of the charter aircraft. However, JSC fails to address exclusions for those employees with private insurance. Moreover, JSC did not address contractor employees with private insurance who comprise the majority of charter passengers. The Agency's own regulations specifically address possible risk of voiding insurance coverage from the use of nonscheduled commercial aircraft.

JSC confirms that the City of Houston has not recently conducted a security assessment of Ellington Field. JSC states that Center personnel possess Federal Bureau of Investigation and United States Air Force Office of Special Investigations threat assessments. OIG staff at JSC reviewed the two assessments and found the threat assessments not particularly germane to the specific activities associated with the charter service or with international flights originating and terminating from Ellington Field.

The JSC response also states that FAA Security advised NASA that the Vnukovo airport meets "all applicable western security standards." When attempting to verify this statement, the FAA source of this information in Houston told the OIG he was referring to Ellington Field, rather than Vnukovo airport in Moscow. In addition, although NASA and Embassy personnel in Moscow have no concerns over Vnukovo security, no threat assessments for this airport have been conducted.

CONCLUSION

The charter service is not cost effective to NASA. We believe that commercial air services could provide a more cost effective means of transportation in support of the ISS. In addition, JSC has not provided sufficient programmatic justification for the additional cost. Although JSC has recommended some improvements to its charter service (scheduling, cost-

reimbursements, funding), we reaffirm our recommendation to terminate the service except in heavy passenger load situations that could justify special charter arrangements.

We request that management reconsider our recommendation and advise this office not later than February 1, 1999, of any corrective action resulting from such reassessment.

David M. Cushing

11 Enclosures
Appendix A: OIG Management Alert Letter, Dated February 6, 1998
Appendix B: JSC's Response to OIG Management Alert Letter
Appendix C: JSC's 3-Month/6-Month Review
Appendix D: OIG Calculation of Charter Costs
Appendix E: OIG Comparison Chart of Individual Flights
Appendix F: JSC's Policy for Space Available Travel
Appendix G: NTSB Incident Statistics
Appendix H: State Department Worldwide Caution
Appendix I: Office of Space Flight Response to Draft Report (Redacted Version)
Appendix J: Comptroller Response to Draft Report
Appendix K: Report Distribution

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