



National Security and
International Affairs Division

B-270955

February 6, 1996

The Honorable Phil Gramm
United States Senate

Dear Senator Gramm:

As requested, we are responding to concerns expressed to you about the National Aeronautics and Space Administration's (NASA) involvement in the French Government's Ariane 501 Cryogenic Main Stage Reentry Measurement Project (also known as the Clipperton Project). Your constituent asked numerous questions related to (1) the nature and rationale for NASA's assistance to a foreign government in developing a launch vehicle that could compete with those of U.S. companies, (2) the extent to which appropriated funds are supporting NASA's assistance to the French, (3) U.S. government officials' payments for meals and entertainment expenses provided by the French, and (4) the extent of the U.S. Navy involvement in this project.

NASA'S ASSISTANCE TO THE ARIANE 5
PROGRAM IS LIMITED TO A SAFETY ISSUE

To minimize the potential for adverse impacts on life and property, NASA has used a radar system developed at the Johnson Space Center (JSC) to study the breakup of the U.S. space shuttle's external tank as it reenters the Earth's atmosphere to validate predictions of where its fragments might fall. The French space agency, Centre National D'Etudes Spatiales (CNES), requested NASA's assistance in validating reentry predictions of main stage components of its new Ariane 5 launch vehicle.¹ NASA agreed to assist the French providing that, among other things, its assistance would be limited to safety-related issues.

Under the agreement, a JSC team will deploy the radar along the Ariane 5's projected reentry path. The radar system will gather data on the vehicle's main stage breakup as it reenters the Earth's atmosphere. NASA will provide CNES a

¹The first flight of the Ariane 5, originally scheduled for November 1995, has been delayed until May 1996.

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technical report and present an option for similarly supporting another Ariane 5 mission.

The Ariane 5's projected reentry path is over the Pacific Ocean, and NASA has identified a tiny French-owned uninhabited atoll, called Clipperton Island, located approximately 650 miles west of Mexico, as the best location for the radar. NASA has leased a 90-foot vessel to move the crew, radar equipment, and supplies to and from the island and to provide logistic support during the mission. NASA estimates its team will spend a total of 6 to 8 weeks on the island, including travel time.

THE FRENCH WILL REIMBURSE
NASA'S COST FOR THE PROJECT

NASA estimates the project will cost \$1.39 million. The French government has deposited \$822,000 in NASA's account at the Federal Reserve Bank of New York, to be used for payment purposes. Under the agreement, further deposits are expected.

Under the agreement, the French will reimburse NASA for evaluating the site, leasing the transport and logistics vessel, training personnel on moving heavy equipment through the surf, using civil service and contract personnel on the project, equipment depreciation, and related support.

NASA has set up a separate account to keep track of its costs under the agreement. As of November 30, 1995, NASA had obligated \$488,087 but charged only \$278,437 to that account. Most of the difference was due to more than \$160,000 in engineering support contractor costs. NASA officials at JSC said that these costs had not been charged because of the time lag in putting contractor cost data into the accounting records and that the costs should be in the accounting records for the month ending January 1996. NASA had also not charged the account for civil service salary costs, including those incurred during fiscal year 1995.

We discussed these matters with NASA officials at JSC and they assured us that they would make the required accounting adjustments to charge all appropriate project costs to the account. They also said that JSC financial officials will conduct a final reconciliation to ensure that all cost categories included in the initial estimates, such as the currently unbilled civil service salary costs, are included in the final cost settlement with CNES.

TRAVEL COSTS OF NASA PERSONNEL

The travel expenses of NASA personnel working on the project have been charged to the French government, except for \$150 charged erroneously to a non-reimbursable account. In those instances where meals were provided by the French government, the travelers' allowances were reduced by appropriate amounts.

THE EXTENT OF U.S. NAVY INVOLVEMENT

NASA officials told us that the reentry of the French rocket might provide the U.S. Navy Aegis Program, which is a ship-based missile defense system that NASA has assisted the Navy in testing, a real opportunity to test its system. The Navy's observations would also provide the opportunity to compare the test results with those of NASA's radar. Therefore, NASA officials notified the Navy about the project in case the Navy would be interested in monitoring the reentry. They also pointed out that NASA would benefit if the Navy provided additional observations and measurement data. At the time of our January 1996 discussion, NASA had not received a response from the Navy.

SCOPE AND METHODOLOGY

To address the concerns raised, we reviewed the agreement between NASA and CNES and discussed the project with NASA officials at JSC. We also reviewed budget and accounting records, travel vouchers, purchase orders, funding authorizations, and reimbursement documentation related to the project. We performed our review between December 1995 and January 1996 in accordance with generally accepted government auditing standards.

Unless you announce its contents earlier, we plan no further distribution of this report until 5 days after its issue date. At that time, we will send copies to the NASA Administrator and other interested parties.

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If you or your staff have any questions concerning this letter, please contact me at (202) 512-8412. The major contributors to this letter were Brad Hathaway, Frank Degnan, James Berry, and Vijay Barnabas.

Sincerely yours,

A handwritten signature in cursive script that reads "David R. Warren". The signature is written in black ink and has a long, horizontal flourish extending to the right.

David R. Warren
Director, Defense
Management Issues

(709179)

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