THE WHITE HOUSE

WASHINGTON

1/29/90: DAB said it's OK not to send this after all because mtg. w/Ross is set up. File copy. SS

January 4, 1990

MEMORANDUM FOR JOHN H. SUNUNU

FROM: D. ALLAN BROMLEY Duan

SUBJECT: LETTER FROM IAN ROSS, PRESIDENT AT&T BELL LABORATORIES

As you will recall, when Tom Murrin of Commerce and I met with you in early December, you agreed that you would be willing to meet with a subset of the National Advisory Committee on Semiconductors that Ian Ross chairs. I passed on that willingness to Ian in a telephone conversation and as the attached letter indicated, he would like to set a date for such a meeting at your convenience.

I believe that it would be helpful in many ways, if you can find time, to meet with this group and I shall call Jackie to try to arrange a time.

Enclosure

Feb 1

Murrin: Get material for Sununu

AT&T
Bell Laboratories

Ian M. Ross
President

Crawfords Corner Road
Holmdel, NJ 07733
201 949-3242

December 15, 1989

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology
Executive Office of the President
Room 360, Old Executive Office Bldg.
Washington, D.C. 20506

Dear Allan:

I am being questioned by the press on whether or not we have had a meeting with White House officials to discuss the NACS report, and I have been responding that I am expecting such a meeting but it has not yet been set up. I feel that shortly it will be embarrassing to maintain this position if we continue not to have an appointment with Sununu as you and I had discussed. Can you give me any idea on the likelihood of us getting a meeting with a subset of the Committee with Sununu, and possible dates for that meeting?

Sincerely,

Ian

THE WHITE HOUSE

WASHINGTON

September 11, 1990

MEMORANDUM FOR THOMAS J. MURRIN

FROM: **D. ALLAN BROMLEY** Allan

SUBJECT: **TILT ROTORS**

Many thanks for sending me the copy of Norm Augustine's statement to the Committee on Science, Space and Technology on the matter of tilt rotors.

As I indicated to you earlier, I have had briefings both from NASA and from Bell Aircraft personnel and I am certainly convinced at this point that the tilt rotor is a technology whose time has come, given the congestion that we face in our major cities.

On the assumption that you share this point of view, let me ask what you think we should do to make a change here. It is clear that there is strong Congressional support for moving forward with the purchase of sufficient V-22 units to demonstrate the commercial viability of these military units, and fortunately, both the House and Senate, despite all the flap earlier in the year, now seem to have moved in that direction. I suspect that until the military units become operational, and until the civilian sector has had an opportunity to see that operation and gain some confidence from it, there is probably not all that much that we can do to speed things up. It does, however, strike me as something that should be high on our priority listings.

With all best wishes.

"CORRESPONDENCE TRACKING"

TYPE: Information DOCUMENT NUMBER: 9023077

****

FROM: Murrin, Tom: Dept. of Commerce

TO: Bromley

DATE OF CORRESPONDENCE: 07/25/90

SUBJECT: Copy of "Commercial Space Ventures: a Financial Perspective"

****

ASSIGNED TO:

ACTION REQUIRED:

****

SENDER'S DUE DATE: OSTP DUE DATE:

DATE COMPLETED:

****

COPIES TO: D. Allan Bromley
Dr. Phillips

****

WHITE HOUSE TRACKING #: CONTACT PERSON:

REMARKS: Report to Dr. Bromley.

DATE RECEIVED: 08/06/90 FILE: NEOB

U.S. DEPARTMENT OF COMMERCE
Office of the Secretary

AUG 24 1990

To : Allan Bromley

From : Thomas J. Murrin
Deputy Secretary

To assure that you see attached...

Regards,

THE DEPUTY SECRETARY OF COMMERCE
Washington, D.C. 20230

JUL 25 1990

Dr. D. Allan Bromley
Assistant to the President for Science and Technology
17th and Pennsylvania Ave., N.W.
Washington, D.C. 20506

Dear Allan,

Please find enclosed a copy of our new report, *Commercial Space Ventures: a Financial Perspective.* This report, recently completed by our Office of Space Commerce, examines the financial histories of five commercial space ventures and illustrates the unique problems faced by this small but growing industry.

The report highlights the key role the financial community plays in developing a truly innovative and successful space commerce sector. It also examines the unique problems faced by space entrepreneurs who rely on government programs or hardware, the difficulties associated with obtaining the large capital investments necessary to begin most space ventures, and the problems and opportunities presented by foreign investment.

I hope that this document will be useful in our ongoing work with the Vice President on the National Space Council.

Many Thanks!

Good Luck!

God Bless!

Most sincerely,

Tom Murrin

Thomas J. Murrin

Enclosure

THE WHITE HOUSE

WASHINGTON

August 16, 1990

Dear Tom:

I much appreciate your sending me a copy of your new report, Commercial Space Ventures: A Financial Prospective. This provides uniquely detailed information on some actual cases that I found to be not only extremely interesting, but also very useful in providing an overview of the strategic situation that Americans attempting to enter the commercial space arena face.

I very recently sent you a copy of a note that I sent to Don Atwood concerning what seems to me to be a very real deficiency in the CFIUS activities. Once I hear from Don I will be back to you. It may well be that we need to make some common cause on this question.

Again, my thanks and warmest best wishes,

Sincerely yours,

D. Allan Bromley
Assistant to the President
for
Science and Technology

The Honorable Thomas J. Murrin
Deputy Secretary
Room 5840
Department of Commerce
Washington, D.C. 20230

STATEMENT BY
NORMAN R. AUGUSTINE
CHAIRMAN OF THE TILTROTOR TECHNOLOGY SUBCOMMITTEE
OF THE FAA RESEARCH, ENGINEERING & DEVELOPMENT
ADVISORY COMMITTEE

TO THE
UNITED STATES HOUSE OF REPRESENTATIVES COMMITTEE
ON SCIENCE, SPACE AND TECHNOLOGY SUBCOMMITTEE
ON TRANSPORTATION, AVIATION, AND MATERIALS

JULY 17, 1990

WASHINGTON, D. C.

Thank you, Mr. Chairman and members of the Committee, for this opportunity to share with you the views of the Tiltrotor Technology Subcommittee of the FAA Research, Engineering and Development Advisory Committee. The views I shall present are my attempt to reflect the subcommittee's findings as approved by the parent committee; however, due to the limitation on available time, neither of these groups has specifically approved my statement. Similarly, the views expressed have not been formally reviewed by the FAA and of course do not represent a statement of the Agency but rather the opinions of members of an outside, independent advisory group. The subcommittee's final report is scheduled to be submitted to Admiral Busey later this week.

Your letter of invitation dated June 27, 1990 requested that I specifically address four subjects, and I shall be pleased to do so. The first of these concerns the current status of the civil tiltrotor program.

When I initially accepted the chairmanship of the tiltrotor task group for the Federal Aviation Administration, I had assumed I would be able to use my aeronautical engineering background to address the issues affecting this aircraft. However, the subcommittee soon found that the real issue being faced is a transportation system problem and that the development of the aircraft itself, the V-22 Osprey, was a program embodying normal engineering risk and generally progressing satisfactorily in its final engineering and test phases. In short, although there are technical challenges yet to be met, none appear to lie outside the current state of engineering knowledge nor are they viewed as particularly formidable.

Our committee did not investigate the military requirements for the program, in that this is of course a DoD responsibility. As you are aware, the Department of Defense (OSD) had cancelled the program in 1989; however, development continued in 1990, with Congressionally mandated funds. The Department of Defense has not requested Fiscal Year 1991 funding so far as we know.

Simply stated, there does not appear to be any degree of abnormal risk associated with the remaining development of a tiltrotor aircraft, even somewhat in excess of the 40,000 pound Osprey class.

The second area you requested be addressed relates to the benefits of a civil tiltrotor transportation system.

The problem of air and ground transport congestion is indeed serious today and will undoubtedly continue to escalate in the future. It is projected that by the year 2000, eight out of every ten passengers will be inconvenienced by airport congestion. By that time, demand will approach double today's level. There are no apparent, readily available, or currently acceptable solutions which the committee was able to identify.

The commercial tiltrotor has been proposed as one emerging technology with a high potential to increase the aviation system's capacity and help relieve airport congestion. Commercial tiltrotor commuter aircraft can in fact alleviate the strain on airports and airways by replacing many of the small capacity, short-range conventional fixed wing commuter aircraft in a manner which largely eliminates demands they now place on existing, heavily burdened channels of operation. Tiltrotor aircraft can, for example, land at vertiports co-located at a conventional airport, yet operate simultaneously and relatively independently from standard fixed wing traffic.

For many flights, tiltrotors will not need to land at conventional airports at all, but rather will operate directly from the urban areas being served -- the desired origin and destination of many passengers -- at urban center or city-center vertiports. The conventional runway slots thereby opened can either be used to reduce congestion or to serve larger fixed wing aircraft traveling greater distances, thereby increasing system capacity. The consequent increase in the average number of passengers per conventional aircraft arrival or departure can be converted into direct revenue increases for the carrier airlines and increased convenience for the passengers.

The third area you requested we address concerns the degree to which additional research is required to ensure a viable civil tiltrotor fleet (technology, air traffic control procedures, infrastructure requirements, etc.)

For a civil tiltrotor system to achieve its potential, a new air traffic management approach will need to be adopted. In congested terminal airspace, tiltrotor departures

and arrivals must be separated from fixed wing traffic so that tiltrotors do not simply occupy the same "slots" on the runway or the same airspace during sequencing as do fixed wing aircraft. En route, tiltrotor flights need to be reasonably direct, to maximize their time-saving advantage.

Tiltrotors generally will need to operate to and from vertiports designed for commercial tiltrotor operations. These facilities would include on-airport vertiports, urban-area or city-center vertiports (off airport), smaller rural-area vertistops, and some fixed runways.

Concerns over civil applications center primarily around economics and the adaptability of aviation system infrastructure. Essentially the hurdle that faces civil tiltrotor is an overall "systems" problem of getting all the pieces to come together -- and this is proving to be challenging indeed.

First and foremost, potential future buyers and operators of civil tiltrotors seek to be convinced that the technology and economics are viable before they will commit funds and place orders for aircraft representing such a departure from conventional practice. Without extensive technical and operational data to draw upon, as would have accrued with DoD procurement and operation of the V-22 accompanied by a civil demonstration program, U. S. operators do not appear likely to buy tiltrotors in the foreseeable future. A demonstration program is therefore absolutely essential to provide needed technical and operational data if the civil tiltrotor project is to become an operational reality.

The difficulty resides in identifying a mechanism in the current U.S. economic system to implement the needed demonstration and gain the confidence of aircraft industry, government, and operators. In short, American developers appear unlikely to conduct a demonstration without first having order commitments from aircraft operators. Aircraft operators, in turn, are unwilling to commit to the purchase of fairly revolutionary new aircraft without greater understanding of their operational economics and reliability, along with assurance that needed (vertiport) facilities will be available. Operators of airport facilities, in turn, are unwilling to commit to reasonably costly new capabilities until it is clear that there are aircraft and passengers who are prepared to use them.

The viability of a commercial tiltrotor therefore depends first and foremost upon the creation of a viable demonstration program.

The final area you asked be addressed is the degree to which additional research is currently underway or planned.

The questionable status of the Osprey program, now in its second particularly tenuous year, debilitates the opportunity of conducting a civil demonstration program. Although civil payoff from a defense demonstration program would be significant and welcomed, it is the view of the committee that the development of civil needs should not in themselves be the underlying justification for DoD's conduct of a program.

Many alternatives exist depending on whether the Osprey program is cancelled, continued in R&D or pursued into full-scale production by the Department of Defense. The delay in the civil program of course continues as it awaits these decisions, although there are in fact useful actions that can and (some) are being undertaken in preparation for the arrival of this or any other vertical flight technology aircraft. These include noise abatement studies, aircraft size tradeoffs, passenger acceptance evaluations, certification of aircraft and crews, en route and terminal procedures development (air side), heliport/vertiport construction criteria preparation (ground side), interface with existing air and ground transport systems, etc.

The Tiltrotor Technology Subcommittee concluded that the requirement for civil applications for tiltrotor technology is real; that the necessary aircraft technology is available at reasonable risk; that the requirement for a system and infrastructure is understood; and that an operational demonstration program is lacking and thereby comprises the principal impediment to civil tiltrotor application in the U.S.

It is, we believe, worthy of note that the problems faced by the Civil Tiltrotor program are not particularly unique. In fact, there is a much broader problem extant in America today. In the past the defense budget was frequently the source of critical technological advancements which opened major new commercial markets for American firms (spacecraft, jet aircraft, and semiconductors and computers are among these). With

significantly declining resources available for defense, this is much less likely to be the case in the future. Yet, in America we have no real mechanism to support the development of promising but long-term, at least moderate risk, high entry cost technological undertakings. Private capital is simply too scarce and too impatient for most such pursuits. This of course contrasts sharply with the situation in most other major industrialized nations where partnerships between government and industry have evolved not only in the military but also in the civil arena.

This, Mister Chairman and members of the Committee, is the true underlying problem that the members of the Tiltrotor Subcommittee believe must be addressed -- not the features of a particular aircraft.

And with the Committee's permission, if I might close by respectfully sharing a personal experience relating directly to the subject matter at hand: this testimony was largely prepared while your witness waited on the ramp at Newark Airport for 3-1/4 hours to take off on a one-hour flight to Washington, D.C.

Again, on behalf of the FAA Tiltrotor Technology (Advisory) Subcommittee, we thank you for this opportunity to share some of our views with you. I truly regret that I was unable to appear in person to answer your questions and do appreciate your understanding of a long-standing commitment which precluded my being present.

NORMAN R. AUGUSTINE was born in 1935 in Colorado and attended Princeton University where he majored in Aeronautical Engineering, was awarded a BSE magna cum laude, an MSE, and was elected to Phi Beta Kappa, Tau Beta Pi and Sigma Xi. He holds Honorary Doctor of Engineering Degrees from Rensselaer Polytechnic Institute and Western Maryland College, and an Honorary Doctor of Science Degree from the University of Colorado.

In 1958 in California he joined the Douglas Aircraft Company where he held titles of Program Manager and Chief Engineer. Beginning 1965, he served in the Pentagon in the Office of the Secretary of Defense as an Assistant Director of Defense Research and Engineering. Joining the LTV Missiles and Space Company in Texas in 1970, he served as Vice President, Advanced Programs and Marketing. In 1973 he became Assistant Secretary of the Army and in 1975 Under Secretary of the Army. Joining Martin Marietta Corporation in 1977, he has been Chairman and Chief Executive Officer since 1987, having previously served as President and Chief Operating Officer.

Mr. Augustine is chairman of the Defense Policy Advisory Committee on Trade (DPACT), has served as president of the 40,000-member American Institute of Aeronautics and Astronautics of which he is an Honorary Fellow; as president and as chairman of the 160,000-member Association of the United States Army; chairman of the Aeronautics Panel of the Air Force Scientific Advisory Board; chairman of the Defense Science Board; chairman of the NASA Space Systems and Technology Advisory Committee, and as a member of the NASA Advisory Council. He has been elected to the National Academy of Engineering and the International Academy of Astronautics of which he is a Trustee, is an Honorary Fellow of the Society for Technical Communications, a Fellow of the American Astronautical Society and a Fellow of the Institute of Electrical and Electronic Engineers. He is a licensed professional engineer in the State of Texas.

He is a member of the Board of Directors of Phillips Petroleum Company, Procter & Gamble Corporation, the Riggs National (Bank) Corporation, the Ethics Resource Center, the Atlantic Council and the Wolf Trap (National Park) Foundation, and has served on Boards of the Colorado National Bank, Hoskyns Group plc of the U.K. as chairman, the American Helicopter Society, the American Productivity Center, the Air Force Academy Foundation, and the Research Triangle Institute. He has been on advisory boards to the White House, the U.S. Senate, NASA, the FAA, and the Departments of Defense, Army, Navy, Air Force, Energy, and Transportation, the General Accounting Office, and NATO. He is a member of the President's National Security Telecommunications Advisory Committee, the Chief of Naval Operations' Executive Panel, the Policy Council of the Business Roundtable, the Council on Competitiveness, The Business Council, and the Conference Board, and is a Member of the Corporation of the Draper Laboratory , a Principal of the Council for Excellence in Government, and a member of the Board of Governors of the Aerospace Industry Association. He is a Trustee of The Johns Hopkins University, an Honorary Member of the Faculty of the Industrial College of the Armed Forces and a member of the Advisory Council of the School of Medicine at Johns Hopkins. He has chaired 'advisory councils for Princeton University, the American University, the University of Maryland and the MIT Lincoln Laboratory, and served on advisory boards for the University of Colorado, Georgia Tech, Duke, Texas A&M, USC, Johns Hopkins, Florida State, the Defense Systems Management College, and the National Defense University, where he was a Bernard Baruch Lecturer. He has been an Associate Editor of the *Defense Systems Management Review* and served on the Editorial Boards of *Astronautics and Aeronautics* and the *Journal of Defense Research*.

He has four times been awarded the Department of Defense's highest civilian decoration, the Distinguished Service Medal, and has received the Defense Meritorious Service Medal, the Army Distinguished Service Medal, and the Air Force Exceptional Service Medal. He is a recipient of the National Security Industrial Association's James Forrestal Memorial Award, the American Astronautical Society's Military Astronautics Trophy, the American Institute of Aeronautics and Astronautics' Goddard Medal, the Association of the United States Army's Distinguished Service Award, the American Defense Preparedness Association's Gold Medal and Knowles Award, the Society of Manufacturing Engineers' Gold Medal, the Industrial College of the Armed Forces' Eisenhower Award, the National Contract Management Association's Roback Award, the Armed Forces Communications and Electronics Association's Sarnoff Award, the Institute of Electrical and Electronics Engineers' Carlton Award, the Colorado ARCS Man of Science Award, the Boy Scouts Citizen of the Year Award, the Harvard Business School Club of Washington Business Statesman Award, and is an Honorary Command Sergeant Major of the U.S. Army.

Mr. Augustine is vice president of the Boy Scouts of America and has served on a state board of the minority INROADS program. He is married to the former Margareta Engman of Stockholm, and they are the parents of a son, Gregory, who is an electrical engineer, and a daughter, Rene', who is an attorney. He is author of the book *Augustine's Laws*, printed in English, German and Italian, and soon in Russian. He holds a copyright on a calculator for baseball managers, and is listed in *Who's Who in America* and *Who's Who in the World*.

6/14/90

Withdrawal/Redaction Sheet
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Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01. Memorandum	To: Thomas Murrin From: Allan Bromley Re: Malbom Currie's Report [personal information redacted] (1 pp.)	7/17/90	(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: General Science Files
WHORM Cat.:
File Location: Industry - Manufacturing [1990]

Date Closed:	3/12/2010	**OA/ID Number:**	62037-002
FOIA/SYS Case #:	2005-0336-F	**Appeal Case #:**	
Re-review Case #:		**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
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AR Disposition:		**MR Disposition:**	
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(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

THE WHITE HOUSE

WASHINGTON

January 31, 1990

Dear Ambassador Williams:

For some time we have been seeking to improve our understanding of factors affecting the continued vitality of manufacturing-based industry in the United States. As you know, the President has indicated that industrial strength is one of the critical issues we face. Erich Bloch and I have been working with the National Academy of Engineering and the National Academy of Sciences to establish a medium for constructive discussion of national matters critical to the health of the manufacturing sector. Tom Murrin, John Betti, and John Robson have joined in support of this effort. A roster of all those who have accepted membership thus far is attached. As you may know, we originally invited Ambassador Hills to join the Forum; however, the "principals only" ruling made acceptance difficult for her.

During a 1988 workshop on how to address this exchange, it was agreed that this request can best be achieved by bringing together senior officials of the Executive Branch with key industrial and university leaders in an environment where issues can be reviewed in an open and noncontroversial manner. The result is the formation of the Manufacturing Forum and I am pleased to invite you to join this activity. A summary of the workshop proceedings and the charter for the forum are enclosed. We have succeeded in convincing Dr. Ruben F. Mettler, retired chairman of TRW, to chair the Forum.

We believe the Manufacturing Forum will serve as an important mechanism for the exchange of views between public and private sectors and will be instrumental in shaping

consensus for future policy directions. We hope you will be able to accept this invitation to join the Forum and to personally participate in this vital dialogue.

Sincerely,

D. Allan Bromley
Assistant to the President
for
Science and Technology

The Honorable Linn S. Williams
Deputy U.S. Trade Representative
1600 17th Street, Northwest
Washington, D.C. 20506

Enclosures

MANUFACTURING FORUM

Membership Roster

Ruben F. Mettler, Chairman
Retired Chairman and CEO
TRW Inc.

Academia

W. Dale Compton
Lillian M. Gilbreth Distinguished Professor of Industrial Engineering, Purdue University

James J. Duderstadt
President, University of Michigan

Paul E. Gray
President, Massachusetts Institute of Technology

Government

John A. Betti
Under Secretary of Defense for Acquisition

Erich Bloch
Director, National Science Foundation

D. Allan Bromley
Director, Office of Science and Technology Policy

Thomas J. Murrin
Deputy Secretary, Department of Commerce

Thomas J. Murrin
Deputy Secretary, Department of Commerce

John E. Robson
Deputy Secretary, Department of the Treasury

Industry

Frank W. Luerssen
Chairman and CEO, Inland Steel Industries, Inc.

Robert A. Pritzker
President and CEO, The Marmon Group, Inc.

Labor

Donald F. Ephlin
Retired Vice President, United Auto Workers

The Challenge to Manufacturing: A Proposal for a National Forum

NATIONAL ACADEMY OF ENGINEERING
NATIONAL ACADEMY OF SCIENCES

MANUFACTURING FORUM

CHARTER

During the first half of the decade, this country experienced an unprecedented challenge from overseas manufacturers and exporters of goods. Foreign manufacturers, many with facilities in countries having low-cost labor and many with governments whose policies favored exports, created an economic environment that required a dramatic response by many U.S. companies. Oftentimes the domestic companies were faced with the requirement to restructure or go out of business.

The domestic manufacturing industries were particularly challenged by the confluence of a series of events, some of which should have been anticipated and controlled by them and some that were clearly outside their immediate control. Recognizing that future challenges to this industry can be effectively met only by a concerted effort on the part of industry, government, and universities, the National Academy of Engineering and the National Academy of Sciences have created a Manufacturing Forum.

The purpose of the Forum is to provide a means by which policymakers from government, industry, and universities can meet to discuss issues that influence the competitiveness of manufacturing industries. It is a device for improving communications. Topics for discussion include such matters as technology development and utilization, incentives and disincentives for investment, strategic national plans as they relate to U.S. manufacturing industries, current and future trends in the labor force, and long-term educational needs and opportunities for the manufacturing sector. The Forum does not conduct studies, provide advice, or make recommendations on specific issues or policies.