

**EXECUTIVE SECRETARIAT**  
ROUTING SLIP

*Memo  
Change*

TO:

		ACTION	INFO	DATE	INITIAL
1	DCI <i>PS</i>		X		
2	DDCI		X		
3	EXDIR		X		
4	D/ICS				
5	DDI		X		
6	DDA				
7	DDO				
8	DDS&T	X			
9	Chm/NIC				
10	GC				
11	IG				
12	Compt				
13	D/OLL				
14	D/PAO				
15	D/PERS				
16	VC/NIC				
17	D/OS		X		
18	D/OSWR		X		
19	D/SOVA		X		
20	C/S		X		
21	ES		X		
22					

SUSPENSE 7 August 86  
Date

Remarks To 8: Please prepare response as requested.

[Redacted Signature Box]

Executive Secretary  
29 July 1986  
Date

**3637** (10-81)

STAT

The Director of Central Intelligence

Washington, D. C. 20505

Executive Registry
EG-3428/1

28 July 1986

NOTE FOR: DDS&T  
FROM: DCI  
SUBJECT: Possible Soviet Sabotage  
of Our Space Program

Please take the lead in drafting  
a response from me to General Graham.



William J. Casey

Attachment:  
Ltr dtd 23 July 86 to DCI  
from General Daniel O. Graham

1010 Vermont Avenue, N.W. • Suite 1000 • Washington, D.C. 20005 • (202) 737-4979

Lt. Gen. Daniel O. Graham  
USA (Ret.)  
Director

July 23, 1986

Executive Registry
CG- 3428X

The Honorable William Casey  
Director  
Central Intelligence Agency  
Washington, DC 20505

Dear Bill:

I hate to bug a busy man, but this is in my view a critical matter.

The case for Soviet sabotage of our space program is too strong to be ignored or soft-pedalled. When the likes of Tad Szulc, a perennial apologist for Soviet actions, writes a column like the one attached, you can be sure that suspicions in the general public are running high. I know that my pro-SDI army out there is highly suspicious of KGB involvement. They are not yet voicing the suspicion of a "cover-up," but that idea will surely surface if they perceive inaction to promote arms-control deals.

The basic fact is that the West has had a series of catastrophes with space vehicles beginning in August 1985 — two Titans, the Shuttle, the Delta, the Nike-Orion and the Ariane.

My experts calculate the odds against this being coincidence, given the reliability records of the systems involved, are 250 million to one.

The notion that this is due to a rash of ineptitude might hold up if only NASA was involved, but the fact is that there were four launch organizations involved. It defies logic to assume they all went sour together.

None of the explanations for these "accidents" are fully satisfying and some downright mysterious.

These sidebars add to the suspicion of foul play:

1. The absence of normal Soviet surveillance of the Challenger flight (and perhaps one of the Titan shots).
2. The extraordinarily quick response with "condolences" by the Soviets.
3. The Canaveral blow-ups occurring at nearly the same time after launch (around 73 seconds).
4. The 1983 disappearance of an Air Force officer expert in destruct systems.

5. French suspicions of sabotage of Ariane.
6. The assassination of an FRG scientist for collaboration with SDI.
7. The conviction and imprisonment of a man in 1966 for sabotage of Gemini 9.

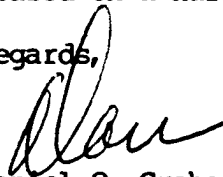
Bill, none of this adds up to proof of Soviet sabotage, but to me it demands an answer to these questions:

Did the Soviets, after the Cuban Missile Crisis and Kennedy's announcement of the Moon Landing Mission, decide to put in place the means to ground the American space program should the need arise?

Did the Soviets, as part of their frenetic effort to destroy the SDI Program, activate those means?

I strongly urge you and Ed Meese to leave no stone unturned in getting answers to these questions, based on a hard-nosed investigation.

Regards,



Daniel O. Graham  
Lt. Gen., USA (Ret.)

Enclosure

# Sabotaged Missile Launches?

## Explosions, Key Air Force Officer's Disappearance Probed

By TAD SZULC

In a departure from its public position, the French government has concluded that the explosion of its Ariane rocket at the Kourou launch site in French Guinea on May 30 may have been due to sabotage. According to French intelligence officials, the investigation into the Ariane accident has been secretly reopened because, "Initially we had no reason to raise the question of sabotage, but now we have reason to ask that question."

France has shared its concerns and suspicions about Ariane with the highest levels of U.S. intelligence—French Defense Minister Andre Giraud is believed to have touched on this topic when he visited Washington last Tuesday and Wednesday—because of the series of catastrophes involving American space launches this year. The French and American accidents are adding up to a bizarre pattern, surrounded by strange coincidences and unexplained events, deeply preoccupying Western intelligence. These include the apparent defection to the Soviet Union in 1983 of the U.S. Air Force's leading expert on rocket self-destruct procedures.

With the loss of the space shuttle Challenger on Jan. 28, a Titan 34-D rocket on April 18, a Delta rocket on May 3 and the French Ariane, all of which carried American reconnaissance satellites, the United States no longer has the capability of

putting satellites into orbit to monitor Soviet nuclear deployments and serve as early-warning systems against a ballistic-missile attack. The Challenger and the Delta rocket were launched from Cape Canaveral in Florida, the Titan from Vandenberg Air Force Base in California. Before the string of 1986 losses, a Titan blew up at Vandenberg last August and an Ariane rocket exploded at Kourou in September.

Although specific causes of all these accidents varied in each case, according to technical inquiry reports, the common denominator was that most of the rockets—including the Challenger's solid-fuel boosters—had to be destroyed by radio command from the ground to prevent debris from falling into inhabited areas.

In the case of Ariane, the technical report on the causes of the May 30 accident concluded that it was the failure of the rocket's third-stage engine to ignite properly and propel the rocket into orbit that forced a loss of power and triggered the destruct order four minutes and 36 seconds after launch. The full text of this report is available only to Ariane's potential payload customers. For example, it was presented on Wednesday to the Commerce Department and the National Aeronautics and Space Administration by Frederic d'Allest, the general manager of France's National Center of Space Studies. But French intelligence officials say that while the report is technically correct (the 1985 Ariane accident had the same cause), "it is very easy to perform sabotage in this context by one very well-placed person."

French intelligence officials declined to provide details concerning their new suspicions, but experts in this realm are fascinated and intrigued by a series of extraneous events that may have a bearing on the destruction of the West's satellite launch capability.

By far the most interesting is the mysterious disappearance three years ago of a U.S. Air Force officer who specialized in space-launch command, control and communications for satellite surveillance systems. Capt. William Howard Hughes Jr., then 34 years old, was the "lead analyst" of the Command Control and Communication Surveillance Systems at the Air Force Operational Test and Evalu-

ation Center at Kirkland Air Force Base in Albuquerque, N.M., which tests new space-related weapons systems. Among his responsibilities was the training of range officers in charge of destroying rockets malfunctioning after launch.

Hughes, who was single, was dispatched to the Netherlands on July 18, 1983, to work with North Atlantic Treaty Organization officers on the operations of AWACs electronic surveillance aircraft. He was due back in Albuquerque that Aug. 1. But after leaving for Europe, he was never seen again. On Dec. 9, 1983, the Air Force formally declared him a deserter.

Intelligence officers believe that Hughes was either captured by Soviet agents or voluntarily defected to the Soviet Union. At the time of his disappearance, the Air Force said that he had no classified materials with him. But these intelligence officers point out that Hughes' knowledge of all the top-secret rocket launch procedures was invaluable to the Soviets, perhaps more so than the secrets delivered by recently captured spies. "He is worth his weight in gold to the Russians in terms of future 'Star Wars,' if we have them," one said. They see a clear link between Hughes and possible sabotage of the American and French launches.

Another bizarre occurrence, neither explainable nor evidence of anything, was the sudden disappearance of Soviet trawlers from the Cape Canaveral area four hours before the scheduled launch of the Challenger on Jan. 28. The trawlers, which are electronic spy vessels, had been on station off the cape from the start of the U.S. space program. On that January morning, however, three or four trawlers steamed at flank speed in a northeastern direction away from the coast. Normally, these trawlers seek to monitor telemetric signals from the rockets before, during and after launch because they provide crucial data on the space vehicles' performance—among the most avidly sought information by both the United States and the Soviet Union on each other's ballistic arsenals. It is an absolute mystery why the trawlers, as observed by the U.S. Navy, went off station in this manner.

*Tad Szulc is a Washington journalist who has long covered intelligence matters.*

# Terrorist Group Kills Executive Near Munich

By Robert J. McCartney  
Washington Post Foreign Service

MUNICH, July 9—A powerful, remote-controlled bomb killed a top business executive and his driver this morning in an attack that government officials and police said may signal the beginning of an upsurge of left-wing extremist violence in West Germany.

A note found under the battery used to detonate the 22-pound bomb asserted that the leftist Red Army Faction, West Germany's self-styled urban guerrilla group, had staged the attack, officials said.

Karl Heinz Beckurts, 56, a nuclear physicist and chief of research and development of the giant Siemens corporation, and his chauffeur, Eckhard Groppler, 44, were killed half a mile from the executive's house en route to his office this morning. The explosion shot flames three stories high and hurled the armor-plated BMW in which they were riding more than 10 feet across the road, according to two witnesses.

The terrorists apparently chose their target to seek to exploit opposition to nuclear power and to West German cooperation in research on the U.S. Strategic Defense Initiative, or "Star Wars."

A seven-page letter, signed by the Red Army Faction and displayed at a news conference at the federal prosecutor's office in Karlsruhe, cited "secret negotiations" involving Siemens in a possible role in the SDI research program.

Kurt Rebmann, chief federal prosecutor, said the "negotiations" were a reference to a June 1985

meeting about SDI between West German corporate and government officials.

Rebmann said Beckurts' name was on a list of participating business executives that police found in a raid on a suspected Red Army hideout, The Associated Press reported.

The letter also referred to the company's role in a planned nuclear waste reprocessing plant at Wackersdorf.

"Attack the current strategic projects of the political, economic and military formation of the imperialist systems in Western Europe!" the Red Army note began.

It identified Beckurts as the Siemens corporate director in charge of nuclear projects, but company spokesman Werner Osel said that Beckurts did not directly supervise nuclear research.

Osel said the Munich-based company has no formal contracts or proposals for participation in the SDI program.

Siemens, a multinational electronics and electrical company, is a leading builder of nuclear power plants. Before joining Siemens in 1980, Beckurts had been chief of West Germany's nuclear research center.

Antinuclear feeling here has drawn renewed strength following the Chernobyl nuclear accident in the Soviet Union, officials said. Protests aimed at blocking construction the Wackersdorf plant in the southern state of Bavaria have grown increasingly violent this summer.

Rebmann said that the terrorists were seeking to gain favor with the militant wing of the anti-nuclear movement, and that he believed that the Red Army Faction would stage further attacks.

Interior Minister Friedrich Zimmermann

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***"The government is determined to use constitutional means to combat such murderers and men of violence."***

— Chancellor Helmut Kohl

warned last month that the group was likely to escalate its activities because it had rebuilt its strength following a series of arrests and shootings of its members.

The last senior business figure killed by the Red Army Faction was Ernst Zimmermann, who was shot to death at his home near Munich in February 1985. The group also asserted that it planted the bomb that killed two Americans and injured 20 other persons at the U.S. Rhein-Main Air Base near Frankfurt last August.

"This type of terrorist attack is yet another challenge to our democracy," Chancellor Helmut Kohl said today. "The government is determined to use constitutional means to combat such murderers and men of violence."

The terrorists blew up Beckurts' car as it passed between a thick forest and a field of low shrubs just outside the well-to-do suburb of Strasslach where he lived, eight miles south of Munich. The bomb was located next to a solitary tree, whose branches were singed by the blast, on the right-hand side of the roadway.

The terrorists apparently waited in the woods on the opposite side of the road and watched for Beckurts' car to pass. Beckurts' bodyguard, riding in a car immediately behind the executive, was unable to react in time to prevent the attack. The blast crumpled Beckurts' car but only smashed the windshield of the second vehicle.

Government officials said that the attack was carried out with great efficiency, noting that such remote-controlled devices have not been used before by the Red Army Faction. Interior Minister Zimmermann suggested that the terrorists may have had help from other extremist groups in other countries.

The Red Army Faction's note identified the unit that carried out the attack as the "Mara Cagol Commando," named for the wife of Renato Curcio, founder of Italy's Red Brigades. Cagol was killed in 1975 in a police raid in northern Italy.

Witnesses saw a white van leaving the area of the explosion shortly after the blast, police said. Late this afternoon police investigators still were searching the road for clues and had sealed off two miles of roadway connecting Strasslach to Munich.

THE NEW YORK TIMES, THURSDAY, JULY 10, 1986

## High-Tech Research Director and Driver Slain by Bomb in Bavaria

By JOHN TAGLIABUE  
Special to The New York Times

MUNICH, West Germany, July 9 — Terrorists using a remote-control bomb killed the research director of West Germany's largest electronics company and his driver today.

A seven-page letter found near the site of the bombing and signed by the Red Army Faction terrorist group said Karl-Heinz Beckurts, the 56-year-old director of research and technology at Siemens A.G., was killed because he was a proponent of nuclear energy and a collaborator in the Strategic Defense Initiative, the space-based missile defense system proposed by the Reagan Administration.

The authorities attributed the killing to members of the Red Army Faction, the name given itself by the so-called Baader-Meinhof Gang, which gained notoriety for terrorism in the 1970's.

The explosion occurred at about 7:30 A.M. in Strasslach, a town about 15 miles south of Munich, while Mr. Beckurts was on his way to work at a Siemens research center in Perlach, a suburb of this southern West German city.

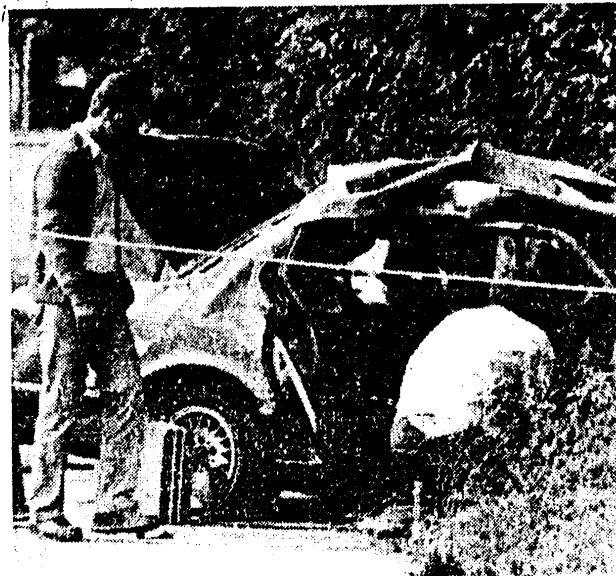
### Loud Explosion Heard

Witnesses said they heard a loud explosion, and a schoolboy said he saw a 90-foot flame burst from underneath Mr. Beckurts's car.

The authorities said a powerful bomb of about 22 pounds of explosives had evidently been attached to an oak tree along the country road that Mr. Beckurts usually took home.

Later in the day, the dark blue four-door BMW that Mr. Beckurts used lay in a ditch opposite the site of the explosion, its doors, trunk and hood torn open, twisted and shredded, and its interior smeared with blood and glass.

The authorities said Mr. Beckurts



German police officers inspecting the car in which Karl-Heinz Beckurts and his driver were killed in a bomb explosion yesterday near Munich.

and the driver, Eckart Groppler, were apparently killed instantly by the force of the explosion.

Witnesses said they saw a white Volkswagen bus flee the site of the explosion, and the police mounted a nationwide manhunt for the attackers.

Although some news agencies reported that Mr. Beckurts was riding in an armor-plated car, police at the site

of the bombing said the automobile appeared to be a standard BMW with no special heavy plating.

The bombing was the latest in a string of attacks on West German industry leaders, and the first such assault since February 1985, when a man and woman broke into the house of Ernst Zimmermann, the chairman of Motoren und Turbinen Union, a maker

of turbines and motors, and shot him fatally in the head.

The two security agents who followed Mr. Beckurts in a second car were unhurt, and their light blue BMW stood on the roadside this afternoon with its windshield smashed and its trunk sprung open by the blast.

Chancellor Helmut Kohl, through a spokesman, condemned the attack as "cold-blooded murder."

The Red Army Faction, which took responsibility for the killing, built its reputation in the 1970's in a series of brutal bombings and other attacks against German businessmen and United States Army bases. Since the group began its activities in 1971, it has claimed 30 victims.

The group has loosely defined its goal as the overthrow of the West German political system, but it has never clearly defined the type of system it sought to install in its place.

Mr. Beckurts studied nuclear physics at the Max Planck Institute for Physics in Göttingen, and was named in 1963 director of the Institute for Applied Nuclear Physics at the nuclear research center in Karlsruhe.

In 1981, Siemens brought Mr. Beckurts into its management board as director of research and technology and head of the company's huge research facility at Perlach, where he directed the work of more than 36,000 scientists and other workers.

The letter taking responsibility bore the typical star and machine gun of the Red Army Faction and was signed by a group calling itself the Mara Cagol Command.

The letter also referred to what it said was Mr. Beckurts's involvement in the United States Strategic Defense Initiative, commonly called "Star Wars."

IS THE KGB SABOTAGING SDI?

Daniel O. Graham  
Lt. Gen., USA (Ret.)  
Director, High Frontier

The Challenger tragedy occurred on January 28, just 10 minutes before I was to address an influential audience of Germans at Heidelberg University on the need for Allied involvement in the President's space defense program. You can imagine the chilling effect that catastrophe had on the audience.

Returning to Washington, I contemplated both the political and physical setbacks this tragedy would create for the President's SDI program. Critical tests would be delayed, and the anti-SDI politicians and media would have a field day crying: "You see, U.S. space engineering is not what it's cracked up to be. We told you SDI would never work."

It was also evident to me that there would be great happiness in the Kremlin at the setback to SDI and U.S. space programs in general. When it was reported that the Soviet spy ships which had always before monitored every shuttle launch were curiously absent at this launch, my intelligence background began to assert itself. Could it also be that KGB officers were celebrating a spectacular "victory"? Could foul play have destroyed the Challenger and its crew?

As evidence came in, my suspicions of dirty work became restrained. Still, with some trepidation that it might be considered paranoid, I wrote to former Secretary of State William Rogers (who was chairing the Presidential Commission investigating the shuttle accident) and urged a thorough



investigation of the possibility of sabotage. I told him that sabotage was low on my list of probable causes, but argued that lack of attention to the foul play possibility could encourage speculations at some later date--a la the Kennedy assassination.

If it had been possible to know what was to follow, I would not have been so tentative in my letter to Mr. Rogers. Since then, all other attempts by the United States to enter space have resulted in catastrophic failures. First, the old workhorse of space transportation, the Titan II, blew up shortly after launch by the Air Force from Vandenberg Air Force Base, destroying a critical reconnaissance satellite.

Then, a NASA launch of a Nike-Orion rocket, carrying a scientific probe, misfired after liftoff from the New Mexico desert on April 25. It was the first failure for this booster after 55 successful launches.

Finally, another system, the Delta rocket, had to be destroyed by ground controllers after a mechanical malfunction sent it spinning out of control shortly after launch. The rocket's payload--a \$57 million weather satellite--was also destroyed.

The fiery demise of four of our space transportation systems in a row cannot be logically ascribed to "coincidence." Two government agencies are involved--NASA and the Department of Defense. All four systems had high reliability histories, the Shuttle 100%, the others around 95%. The chances of four in a row failing are mathematically astronomical. The case for foul play is undeniably strong.

Three elements must be considered in examining the sabotage

possibility: motivation, capability, and vulnerability.

With regard to motivation, there can be little doubt that the Soviet Union would have much to gain by denying, even temporarily, U.S. access to space. They are frantically trying to scuttle SDI and have pulled out all propaganda and political stops to accomplish this end. To assume that they would refrain from pulling out a "dirty tricks" stop doesn't make sense. If the KGB thought that U.S. access to space could be denied for a critical year or better, NASA discredited, and SDI set back severely, they would certainly consider sabotage.

The Soviets know, just as domestic critics of SDI know, that the best bet for preventing U.S. defenses against their missile force is to make certain no deployment decision is made during Ronald Reagan's Presidency. In this context, even a year's delay of SDI is critical to their strategic plans.

Does the KGB have the capability to sabotage our space program? While motivation is clear, capability is less so, and should be the focus of investigation. The record over the past few years of uncovering Soviet agents in highly sensitive positions in both government and high-tech industry suggests that placement of agents in positions to sabotage our space vehicles cannot be brushed aside lightly. In fact, the level of subverted personnel required to sabotage space shots is far lower than that required to steal the plans for our spy satellites or to deliver our top-secret Navy codes to the KGB.

And this leads to the third point: vulnerability. The vulnerability of our space transportation systems is inherently

great. These are highly complex machines, serviced by thousands of technicians. Minor tampering with key components can cause major disasters. For instance, a half-dollar inserted between the much-maligned O-ring seals of the solid rocket boosters on the Challenger could have created that spectacular tragedy. Unexplained engine cut-offs, short circuits, etc. could all be caused deliberately by a technician anywhere between the factory and the launch pad.

All this does not constitute proof of foul play, but it does demand the most thorough investigation of that possibility. Before we lambaste NASA for mismanagement or industry for shoddy work, we'd better find out if they, along with all the rest of us, are not victims of deliberate action by the KGB.

There is in all this one very ironic aspect. Those of us who have been strong supporters of strategic defense have been frequently confronted by opponents who soberly warn that SDI is so upsetting to the Kremlin that the Soviets would start World War III Nuclear to prevent us from defending ourselves with space systems. These same spokesmen call us paranoids for wondering whether the Soviets are sufficiently upset with SDI to sabotage our space systems. Odd, isn't it?

To me, there is no question that the KGB has considered sabotaging our Shuttle and three other space access systems. The question is: Did they do it?

1010 Vermont Avenue, N.W. • Suite 1000 • Washington, D.C. 20005 • (202) 737-4979

Lt. Gen. Daniel O. Graham  
USA (Ret.)  
Director

February 11, 1986

Ambassador William P. Rogers  
Chairman, The Presidential Commission  
on the Space Shuttle Challenger Accident  
1737 H Street, N. W.  
Washington, DC 20006

Dear Ambassador Rogers:

I note that among the distinguished members of your commission there are no intelligence types. Let me serve for a moment as a representative of that suspicious breed in the hope that a bit of suspicion may forestall some future problems.

It is not reasonable to assume that the tragic loss of the Shuttle Challenger and its crew of fine young Americans was the result of foul play. On the other hand, it is unreasonable to dismiss peremptorily the possibility that foul play was involved.

One thing is certain. If the Presidential Commission does not look carefully at the possibility of sabotage, we can expect a rash of speculative articles, even books, making the case for foul play. One can readily imagine titles such as: "Were our Astronauts Assassinated?" There will probably be such speculation no matter how carefully the possibility of sabotage is examined, but a less-than-thorough probe of this issue will guarantee a flood of both serious and sensationalized argument.

A serious probe of the sabotage possibility would be called for no matter what the circumstances, but certain aspects of this tragedy make such a probe imperative. The US Space Program is the pride and joy of America, coupled closely to the new wave of confidence in the West, and central to the Strategic Defense Initiative. As such, the centerpiece of the program, the Shuttle, is as hated by America's enemies as it is admired by America and its friends.

In particular, SDI has become a bane to the Soviet Union because space defenses would sharply reduce the military and political value of their huge arsenal of ballistic nuclear missiles, restore confidence in the non-communist World, and move the West onto a new, higher plane of technology where the USSR will be hard pressed to compete. On the fanatic fringe of domestic Left politics there is also reason to deplore progress in SDI. The shift of strategy from reliance on nuclear vengeance to reliance on non-nuclear space defenses has gutted the Nuclear Freeze Movement which many on the Left had believed was their ticket to political power. Both the Kremlin and the radical Left would have reason to rejoice at the loss of Challenger, and both are prone to violence.

Of course, establishing a motive proves nothing except a need to look further. But there are other reasons supporting a serious investigation.

One of the most intriguing aspects of the Challenger tragedy is the absence of Soviet spy ships off the coast of Florida and along the flight path. As one might expect, the Soviets have consistently stationed their signals collection ships as close as the Coast Guard would allow to gather as much data as possible on Shuttle flights. Only in the case of the ill-fated Challenger flight did they fail to show. Coincidence? Perhaps. But could it be that they wished to be absent from the scene of a crime?

Another peculiarity was the speed with which the Soviet Embassy offered condolences. It may sound churlish to question a gesture of common decency. But those who know the Soviet system well know that reaction to an event of great political and military impact is never off the cuff, that is without serious consultation among the leadership. That Soviet condolences arrived in a matter of minutes is unusual at least.

Another aspect that raises questions is the fact that it appears now that the proximate cause of the explosion was a weakening and rupture of the steel casing around the starboard solid booster. This kind of malfunction was considered so remote a possibility that the engineers, whose attention to safety is excruciatingly refined, didn't even bother to install a sensor to detect such a problem. Was that a case of failure of seals or could that sturdy steel casing have been weakened or punctured by a deliberate act carried out too late in the launch procedure to be detected visually? Would it have been possible for a "Walker" to have provided ground-to-shuttle command links and codes to interfere with the system?

If someone had wanted to sabotage the Shuttle could it be done? One thing is certain, security around Cape Canaveral is not overly strict. For those who have attended launches, it seems pretty obvious that much of the security is designed to prevent danger from the launch to the spectators, not the reverse. Tens of thousands of people gather within sight of the huge space vehicle. People in vans and campers arrive far ahead of time to jockey for good position. It would be hard to make the case that a determined sniper could not get in position for a shot to be drowned in the awesome roar of the launch.

If the President's Commission elects to investigate thoroughly the sabotage possibility, it is in the security area where they will meet dogged resistance. As a former intelligence chief, I know that the natural inclination of all security institutions in situations such as this is to exclude foul play if at all possible. Gaps in the security systems (and they always exist) are bound to be uncovered. Further, security organizations in such investigations are consistently faced with trying to prove negatives— "Can you rule out the possibility that

---?" So those charged with physical security of the Shuttle, safeguarding the ground-to-Shuttle control codes, and plant security in industry will not welcome a probe of possible sabotage.

Whether such a probe led to anything else, it would tighten up lax security. Your Commission should overcome the objections of bureaucracy and probe the foul play possibility thoroughly. If you do not, there will be incessant speculation. If you do, you will probably not be able to settle the question in every citizen's mind, but you will provide credible answers for the great majority. And, while sabotage is not high on most observers' lists of possible explanations of the Challenger tragedy (including mine), it should not now be excluded entirely from anyone's list of possibilities.

Sincerely,



Daniel O. Graham  
Lt. Gen., USA (Ret.)

DOG:bdc



Presidential Commission  
on the  
Space Shuttle Challenger Accident

March 28, 1986

Mr. Daniel O. Graham  
Director  
High Frontier  
1010 Vermont Avenue, N.W., Suite 1000  
Washington, DC 20005

Dear Mr. Graham

Mr. Rogers has received your letter of March 28, 1986. We appreciate your support and offer of assistance. At the present time, the Commission staffing is complete. If, however, a need arises for your expertise, one of the members of the staff will contact you.

On behalf of Mr. Rogers, I want to thank you for your interest in working with us on what we all agree is an immensely important task.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas T. Reinhardt". The signature is fluid and cursive, written over a white background.

Thomas T. Reinhardt  
Executive Secretary

WASHINGTON TIMES

22 May 1986

# Shuttle explosion probers warned to suspect sabotage

By Walter Andrews  
and Warren Strobel  
THE WASHINGTON TIMES

A former director of the Defense Intelligence Agency yesterday called on the presidential commission investigating the January space shuttle catastrophe to look into the possibility of sabotage.

"The case for foul play is undeniably strong," retired Army Lt. General Daniel O. Graham said in a statement. The general is currently head of the High Frontier, a non-profit group organized to gain support for a space defense against nuclear missiles.

Mike Weinberg, a spokesman for the presidential commission, declined comment other than to say "the commission will consider all aspects of the matter."

A spokesman for the Federal Bureau of Investigation, Lane Bonner, said FBI agents were present at Cape Kennedy for the January 28 liftoff as they routinely are for all space launches.

He said "I'm not aware that there's any sabotage investigation underway." Asked if any evidence pointed to sabotage, the spokesman replied "I can't comment on that."

In a telephone interview, Gen. Graham — who was director of the DIA from 1974 to 1976 — said he doubted that sabotage was being investigated "because I know what kind of reaction one gets when you bring up such a possibility. The security people get very nervous."

In the interview, Gen. Graham said he was not making a case for sabotage in the shuttle launch and the failure since then of three NASA rocket boosters. "I'm just saying that you ought to look awfully close at it."

He said "the only choices you have are coincidence, a gross drop in



Lt. Gen. Daniel Graham

efficiency or a third possibility — sabotage."

The general noted that in recent weeks there had been three failures of normally very reliable space boosters — an Air Force Titan II rocket, which destroyed an important spy satellite; an April 25 misfire of NASA's Nike-Orion, the rocket's first in 55 launches and a more recent failure of the highly reliable NASA Delta rocket.

"The fiery demise of four [including the space shuttle] of our space transportation systems in a row cannot be logically ascribed to 'coincidence,'" Gen. Graham said. Concerning possible mismanagement, he noted both NASA and the Pentagon were involved.

He also noted all four space launch systems had histories of high reliability: the shuttle 100 percent and the others 95 percent.

"The chances of four in a row failing are mathematically astronomical. The case for foul play is undeni-

ably strong," the general said.

Three elements — motivation, capability and vulnerability — should be considered in examining the possibility of sabotage, Gen. Graham said.

On motivation, he said the Soviet KGB would certainly consider sabotage if it thought it would set back the President's Strategic Defense Initiative space defense program by denying American access to space for a year or more. He did not elaborate on how this denial would set back the SDI.

On the space program's vulnerability, the general said it is "inherently great" because of the highly complex machinery and thousands of technicians involved.

"Minor tampering with key components can cause major disasters," he said.

On capability, he said "while motivation is clear, capability is less so, and should be the focus of the investigation."

It would take lower ranking personnel to sabotage space shots than those accused in recent years of stealing spy satellite plans or Navy communications codes, he said.

His suspicions of sabotage were first raised when it was reported that Soviet spy ships, which usually monitor shuttle launches, "were curiously absent at this launch," the general said.

He then wrote the chairman of the presidential commission, former Secretary of State William Rogers, and asked him to look into what he then considered the low possibility of sabotage in order to forestall later speculation such as occurred after the 1963 assassination of President Kennedy.

"If it had been possible to know what was to follow, I would not have been so tentative in my letter to Mr. Rogers," the general said in his statement.



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## OUR SPACE FAILURES

Was that extraordinary string of launch failures in America's space program due to technological mistakes, coincidence or just plain bad luck? Or could sabotage have been involved?

Lt. Gen. Daniel O. Graham, former director of the Defense Intelligence Agency, for one, has urged the presidential commission investigating the explosion of the space shuttle *Challenger* to look into the possibility of sabotage. Graham, who now heads High Frontier, a private space-defense research group, says, "The Soviets have been pulling out all the stops in their propaganda machine to prevent us from using space for SDI (President Reagan's Strategic Defense Initiative). I wouldn't be surprised if they were also pulling out all the stops in their dirty tricks machine, too. You cannot ignore the possibility." Graham acknowledges that no hard evidence of sabotage has yet been presented, but says some "curious things" occurred in connection with the January shuttle tragedy. "The Soviets withdrew all their (reconnaissance) ships from the launch area off Cape Canaveral during the launch. That was a first. Also, the condolence message from the Soviet Embassy here came very fast, uncharacteristically so."

The successive unmanned rocket failures that followed *Challenger* also have aroused intense curiosity in security circles. These involved the April 18th explosion five seconds after liftoff of an Air Force Titan rocket carrying a badly needed spy satellite. Previously, the Titan had been regarded as one of our most dependable military launchers. This was followed on April 25th with the explosion of a Nike Orion rocket with a scientific probe. Before that, the Orion had a record of 120 consecutive NASA successes. And just over a week later, a Delta rocket carrying a weather satellite misfired and was destroyed by flight safety officers. The Delta had recorded 43 straight successes for NASA dating back over several years. Commenting on the Delta failure, one NASA official said the engine shutdown "almost seemed like something flipped the switch."

Whatever the cause of the successive launch failures, there's no question but that the U.S. space program has suffered a damaging setback. Our three remaining shuttles, which had been counted on to carry vital SDI and other defense satellites into space, are not expected to fly again until mid-1987 at the earliest. And the Air Force's Titan explosion in April left the Pentagon with only one spy-in-the-sky satellite, a thin margin in today's dangerous world when Soviet military moves must be constantly monitored.

HUMAN EVENTS

17 May 1986

## **Was the Space Program Sabotaged?**

In trying to explain the recent malfunction of a Delta rocket, the type scheduled to launch SDI experiments into space later this year, one NASA official said the engine shutdown "almost seemed like something flipped the switch."

While investigators have suggested an electrical circuit on the engine may have failed, there is also the distinct possibility of sabotage. Lt. Gen. Daniel O. Graham (Ret.), former director of the Defense Intelligence Agency, says that sabotage could have been accomplished through "transmission frequencies" by sending the wrong information to the space vehicle.

Graham, who now directs High Frontier, a pro-SDI research organization, says, "The Soviets have been pulling out all the stops in their propaganda machine to prevent us from using space for SDI. I wouldn't be surprised if they were also pulling out all the stops in their dirty tricks machine, too. You can't ignore the possibility."

Graham says that he has sent a letter to William Rogers, the head of the presidential commission investigating the destruction of the space shuttle Challenger, urging him to look at the possibility of sabotage in that disaster.

Graham acknowledges that no hard evidence of sabotage has yet been presented, but that some "curious things" took place in connection with the shuttle tragedy. "The Soviets pulled out all their ships from the area near the cape during the Challenger launch," he says. "That was a first. Also, the condolence message from the Soviet embassy here came very fast, uncharacteristically so."

On the question of how the Soviets could have pulled it off, Graham says the Soviets have been trying for years to get "sleepers" into the U.S. space industry. He points out that the movie, "The Falcon and the Snowman," was about a real life story of a Soviet operative working at the defense firm TRW.

"If the Soviets have the right access," he says, "they could do it. It's not an impossible feat."

# Electrical Surge Caused Delta to Fail

## Accident Finding Leads NASA Probers to Urge Delaying Atlas Centaur Launch

By Michael Isikoff  
Washington Post Staff Writer

CAPE CANAVERAL, Fla., May 5—NASA investigators said today that the failure of a Delta rocket over the Atlantic Saturday night apparently was caused by two powerful surges of electricity that drained power from the battery in the first-stage engine, choking off the rocket's fuel supply 71 seconds after liftoff.

Although investigators said they cannot yet pinpoint the cause of the electrical malfunction, they are sufficiently concerned about the Delta's engine system to advise postponing the upcoming launch of an Atlas Centaur rocket, the nation's only large launch vehicle not grounded by a recent failure. The Atlas Centaur has a similar engine system made by the same company, Rockwell International's Rocketdyne division in Canoga Park, Cal.

Lawrence J. Ross, chairman of the National Aeronautics and Space Administration's eight-member board investigating the Delta accident, said there are "strong resemblances" between the two engines and he has spoken to the Air Force about delaying the Atlas Centaur launch of a Navy communications satellite.

"There's a fair probability it will be delayed, unless we stumble on an answer very, very quickly," said Ross at a news briefing here.

The discovery of the electrical failure, and its potential relationship to the Atlas Centaur, was described by aerospace experts as virtually the crowning blow to a national space program devastated by the Jan. 28 Challenger shuttle disaster and the April 18 explosion of an Air Force Titan 34D rocket.

Even temporarily grounding the Atlas Centaur will leave the country with no means of orbiting heavy military and commercial satellites since the shuttle, the Titan and the Delta rockets are officially grounded pending accident investigations.

"This puts us right out of the space business," said Gary Flandro, a prominent rocket expert at Georgia Tech University. "It's a terrible disaster . . . We can't do any military payloads, we can't do any SDI experiments, we can't do anything."

Flandro also noted that the Delta and Atlas Centaur engines were "really tried and proven, and tremendously reliable."

"This is just not a mode of failure that's been observed before," he said. "I'm amazed they [NASA] would be caught by this sort of difficulty . . . It's a very peculiar situation."

The latest crisis was triggered Saturday when the normally reliable Delta, carrying a \$57.5 million weather satellite, suddenly veered out of control and broke apart short-

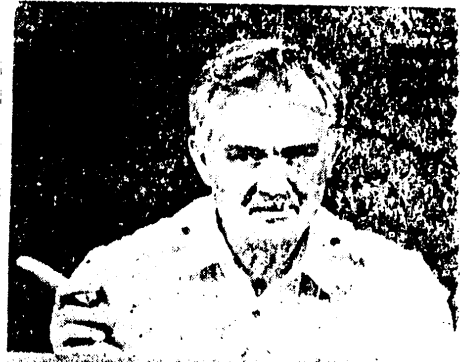
ly after launch, forcing Air Force range officers to destroy it from the ground with onboard explosives.

William Russell, NASA's Delta project manager, said investigators reviewing telemetry data discovered that there had been two "spikes," or sharp electrical surges, through the engine's main power lines starting at 70 seconds into the flight, just before the engine lost power.

The first surge lasted 6 or 8 milliseconds and pulled power from the engine's main battery down to an abnormally low 10 or 11 volts, he said. The surge quickly abated, but nine-tenths of a second later there was another electrical surge, lasting 14 or 15 milliseconds, that measured about 150 amperes—at least 12 times higher than the normal current, Russell said.

This second surge again drained the battery, cutting power to the valves that hold open the first-stage engine's fuel lines. The abrupt cutoff of fuel to the rocket's first stage appears to have caused the sharp break in engine power that Russell said Saturday resembled "a commanded shutdown."

But while Russell called the telemetry showing the two electrical surges "quite a significant find," investigators remain stumped as to what caused the malfunction. Russell said that faulty wiring, mishandling or improper construction of the engine are possibilities.



William Russell, NASA's Delta project manager, describes the shutdown

"We're still going back and looking at all the prelaunch processing of the vehicle to make sure we didn't do something that may have caused it," he said.

The Delta engine, known as a RS27 engine, has been used throughout the 26 years of the Delta project without any history of problems, said Joyce Lincoln, a spokeswoman for the Rocketdyne division.

"I don't think there's any question about this not being a design flaw," she said.

Rocketdyne is the shuttle orbiter's main engine source of difficulty the shuttle program.

Investigators, respectively, speculation of possible they cannot rule it out, likely" that any ground-rocket engine's shutdown

"There is absolutely no question about the investigators said.