The US Air Force’s job is the application of aerospace power to the defense of the US and the free world. This job encompasses superiority across the broad range of potential conflict, flexibility, and control of military response to aggression at every level, and the need for preparation to protect ourselves against extension of aggression into space. The Air Force requirement to meet this multifold assignment is the greatest challenge in the history of the air arm . . .

SPACE AND THE COLD WAR

By the Hon. Eugene M. Zuckert
SECRETARY OF THE AIR FORCE

T WAS suggested that I discuss the future of the Air Force in space. As both starting point and finish line for everything I say, just keep in mind that the job of the Air Force is not space; it is defense. It is not research and development, not strategic, not tactical, nor any of these. It is the application of airpower or aerospace power to the defense of the United States and the free world.

Some of my remarks may be responsive to the suggestion about space, but it seems more important to me to talk about the future of the Air Force in the defense of the United States. The future is from now on, and now is cold war.

The cold war, reduced to essentials, is a confrontation of sovereign powers in which one side maintains a pressure of aggressive expansionism, forcing the other to maintain a defense against it. The most urgent requirement of that defense is to deter the aggressor from using military force to attain his ends. We are the defenders.

I would like to make four points about that defense.

First, we must have superiority at the top level of intensity of war, and must extend that deterrent superiority to lower levels in order to contain or limit war and aggression.

Second, we must have flexibility and control of the application of destructive power at each level.

Third, we must be prepared to protect ourselves against the extension of aggressive pressure into space.

Fourth, the Air Force role in this over-all defense requirement presents the greatest challenge in the history of any military organization.

In this cold-war confrontation, the technological and industrial capabilities of both sides are such that sooner or later, if not now, the unrestrained use of that power for nuclear destruction would make its employment in war a net losing proposition for both sides. The defender must have power to wreak unacceptable damage on the aggressor as a first requirement of his defense. This is where strategic deterrence starts.

But an aggressor whose political system may make expansion a necessity will, if deterred by fear of retaliation from using his full power, seek other opportunities. He will try to find the place to apply his power which he calculates will not provoke his own destruction. Close one avenue to him and he tries another. He can logically be expected to stay short of triggering his own destruction. The aggressor naturally has the initiative in this game so we must be able to apply whatever force is necessary to deny him his objective.

So far, we have been able to do so. The risk has been too great for him. We must keep it that way. We have our own reasons for desisting from war but until we can make him apply the same reasoning to his national behavior, we have no choice but to make sure —and make sure he knows—that war—any war he starts—means certain military defeat for him. We know, of (Continued on following page)
Men still matter in the Air Force global deterrent mission and as typified by these SAC crewmen (above) shown at briefing prior to going on extended alert. Newest dimension of USAF aerospace power is the instant retaliatory capability afforded by the solid-fueled USAF Minuteman ICBM (right), shown blasting off from its protected silo during flight testing at Cape Canaveral.

course, that all-out war makes no sense for either side, nor for the rest of the world.

The defender, of course, has to maintain a force adequate to prevent ultimate defeat. This requirement may change, but the use of the force is his final effort. Two courses are then open. The defender can, as a matter of judgment, wait and weigh each application of the aggressor’s power in order to or until he can decide it is sufficiently threatening to warrant the jugular response. As a second course, he can prepare to overcome the aggressor’s military power before that point is reached. It seems to me that the first course is closed at the end. A sensible defense is to be ready to respond at a lower level with whatever force is deemed necessary to stop the aggressor—and at a net loss for his attempt.

The United States is leader of the free world, in President Kennedy’s words, by both strength and conviction. Our conviction, both moral and military, is that we must be prepared to stop aggression at levels of intensity below the level of maximum destruction.

Our basic strength, our power to deter aggression, our ability to defend ourselves must always be greatest at the top. In our strategic bomber and missile forces, we maintain power adequate to deter an enemy from striking for our jugular. Strategic forces, of course, have the capability of counterforce attack which does not constitute total devastation of a nation.

We have to maintain this superiority at the top, but we must also have it at levels of war more likely to be brought against us. That is why we are building deterrence down from the top level of intensity. The reason is simple. The only way we know of forcing an aggressor to keep down his use of military force is to make each level of intensity of conflict more certain of defeat for him than the one below it. He won’t be deterred unless he knows that as his commitment goes up, his chances go down.

One hears talk about the danger and probability of escalation. The effect of my first point, extending the deterrent with superiority at each level, is to make escalation a penalty and not an opportunity for an aggressor.

At each level where we determine we want to stop aggression, we must be prepared to make the most efficient possible use of every resource available to us, skillfully employing advancing technology to save human resources. It is imperative that, for the long haul, we hold the investment at each level to the absolute minimum necessary to maintain effective deterrent superiority. The cheapest way to stop war is at the lowest level of conflict with the quickest possible stop to aggression. To me, this means we use tactical nuclear weapons whenever we determine the military situation demands their use, whether by Army, Navy, Marines, or the Air Force.

If we would have the aggressor desist from any course of action which may be desirable to him but unacceptable to us, we must have him know that we will use whatever force it takes, nuclear or non-nuclear, to stop him. This kind of deterrence employs all services.

The President has made clear his determination to have more choices than no response or total response. This is the purpose of counterforce. This is the reason we must have flexibility in strategic forces. This is why the great increase in what has been called tactical forces, now designated in the budget as General Purpose Forces. One phase of the buildup is the combining of ground power with airpower in the new STRICOM, headquartered at MacDill Air Force Base, Fla.

At the Air Force Special Warfare Center at Eglin AFB, the accumulated experience of four decades of
air operations is being applied to the job of developing airpower techniques for the very low rungs on the ladders of war's intensity. This is the AFCOIN program, or the Air Force part of the nation's preparation for counterinsurgency struggles.

For this work, we are trying out beefed-up T-28s and B-26s with more power and more weapons—fourteen .50-caliber machine guns and a dozen external ordnance stations, for example, on a B-26 with a thousand more horsepower than the original.

Support techniques are keeping pace. We can snatch a 10,000-pound cargo package off a C-123 without touching down. We can get a C-150F fully loaded into a grass or clay runway of less than 1,000 feet. We are working on a system for snatcheting a cagelike capsule of twenty to twenty-five men off one of these planes without landing it. This technique will be a big help to the Army in getting over that first difficult period of concentration of men during an airborne operation.

For the general roles of air superiority and interdiction, our effective power will go up by an order of magnitude with the advent of the F-4C added to the F-105, with both then to be supplemented by the first fighter designed from scratch for dual-service use—the F-111, better known as the TFX.

While we are extending downward the effectiveness of our deterrent power, great changes are taking place at the level of the strategic deterrent. Missiles are coming into the inventory to provide a very special kind of delivery system for nuclear explosives.

The concept of strategic deterrence, of course, is a progression from the strategic bombing concepts of the '30s. The B-47s and B-52s, also progressions from our deterrent power, great changes are taking place at the level of the strategic deterrent. Missiles of strategic deterrence for some years. Current projections of the strategic forces, however, assume that a major part of the job can be done by missiles—land based or sea based—at a lower investment of men, money, and machines than would be possible with manned bombers of today's design.

In other words, the B-52 is passing the heavy explosive delivery part of its job on to the missiles. The Air Force believes that the effective life of the B-52 could be extended, in a joint role with missiles, through use of the Skybolt, but the return on the projected Skybolt investment was judged not worth the cost in the light of all the factors involved.

The missiles do only the explosives delivery job. They have to be pretargeted and, once launched, cannot be recalled or redirected. They cannot follow a movable target. They cannot discriminate. They cannot assess damage, nor report battle conditions. They make for a rigid defense posture. While they necessarily carry the brunt of the strategic strike, total dependence upon them would not be consistent with our objective of controlling destruction and preserving always some foundation for ending the conflict.

Because of the variety of such requirements in our approach to strategic warfare, some type of manned system seems called for. The type of aircraft we've been calling strategic bombers are characterized by extreme range capabilities, very high ceiling, great load-carrying capacity, long endurance, multijob possibilities.

current studies are directed at determining the possible application of these flight characteristics at the point within the missions bracket between missiles on one side and high-performance fighters on the other. The RS-70 is the most advanced of these concepts, but it is not by any means the only type of manned system of significant strategic potential.

We can't say now just where we will come out, but there doesn't seem to be any question as to the value of manned vehicles able to stay aloft for long periods, travel very great distances, fly high or fly low, and fly fast. There are many jobs to be done, reconnaissance-strike missions, observation or surveillance, command and control, or weapon launching.

We can get the flexibility of my second point with airpower. This is one reason why I have no taste for the salty beer that results from the crying into it by those who seem to write off manned systems because of the job changes I've mentioned.

But the main reason why I don't intend to join in drinking any tear-salted beer is that while we still have to do all the jobs assigned to airpower, we have the difficult, demanding, challenging, and expanding new job to do in space.

(Continued on following page)

Eugene M. Zuckert was named Secretary of the Air Force by President Kennedy in 1961 after a long and distinguished career in law, business, and government service that has included pioneering efforts in the legal aspects of atomic energy, membership in the Atomic Energy Commission, the Assistant Secretaryship of the Air Force under the first Air Force Secretary, now-Sen. Stuart Symington of Missouri, membership on the faculty of the Harvard Graduate School of Business Administration, and many important advisory posts in the defense field. A native of New York City, he received his law degree from Yale University. Mr. Zuckert has also served as a director of the President's People-to-People Health Program, which sponsors the USS Hope seaborne medical mission to underdeveloped countries of the world. He is also one of the principal architects of statistical control systems used by the Air Force. The above is condensed from a speech delivered by the Air Force Secretary to personnel at the Air Force Missile Test Center, Patrick AFB, Fla., March 3, 1963.
Before I say anything about our future in space, let me establish two bench marks. The first is that the Air Force needs everything it can get from NASA. NASA needs us, too, as the record of how NASA puts things into space indicates, but if there weren't a NASA, the same facility and capability would have to be created some other way.

There is reassuring precedent for the principle of having an outside-of-defense civilian agency provide the type of support we need. The case at point is the Atomic Energy Commission. Our own nuclear weapon flexibility as well as the Polaris-carrying submarine is sufficient testimony.

The clear lesson for us in the space field is that we must put requirements on NASA to meet whatever part of our needs can be met in this way. We must utilize every possible resource to build the necessary military capability, and I can assure you that NASA is ready to respond. Jim Webb, the NASA Administrator, harbors no illusions about NASA's responsibilities in support of national defense requirements.

The second bench mark is that there is no such thing as peaceful space or military space. There is just space. A new and massive space program in a civilian agency was launched nearly five years ago, with—for reasons which seemed not unreasonable at the time—a great hullabaloo about peaceful objectives.

The nation is holding to those peaceful objectives, but we also know that the military services will have to do the same thing in space that they have always done in the media of the land, sea, and air. The Air Force forward space program is, therefore, aimed at two general objectives.

The first is to acquire the capability to utilize space in support of the military forces operating in the familiar environments of land, sea, and air. Space offers new aids. Observation, warning, communications, military geodesy, and meteorology are areas for the application of space technology to defense. All of the services have requirements of their own, and it is up to the Air Force to provide them the access they need for their purposes. The Secretary of Defense has assigned the responsibility to us.

Right here, let me caution against letting any interservice differences blur either judgment or vision. It is my position that competition in ideas among the three services is desirable. The imaginative, strong-minded people we need in this business are going to have differences, and they must be resolved constructively.

Our second general objective is to acquire the necessary defense capability for the aerospace regions themselves. We must be able to protect the peaceful activities in space of the nations of the free world. We believe that space can be free to all for peaceful activity only if somebody keeps it free. We are that somebody. The job involves mastering the space environment in order to deny to a hostile power the uninhibited military exploitation of space. We can only do this if we have the ability to detect and counter any military threat. We believe that both manned and unmanned systems will be required, but we cannot say now in what relative investment.

We have a lot to learn. The recent agreement with NASA for joint participation in the Gemini program is one way. That agreement represents an answer from both DoD and NASA to critics who said there was no place in space for military man. Our own activity directed toward manned space vehicles will increase, and with NASA's backup we'll attain the needed capability earlier than we would otherwise.

A term you hear around Washington to denote the areas of cooperation between government agencies is "interface." Such terms usually leave me pretty cold but this one does have some descriptive value.

There will be plenty of problems between the Air Force and NASA, but not by any means all at the
"interface" points such as Cape Canaveral. Neither of us would be true to trust or tradition if there weren’t. Any machine as big as the national space effort is bound to have some kind of friction. But just remember, a clutch is a friction interface. Its purpose is to join two shafts for the transmission of power.

The power we can get will provide protection for the free world in space. This was my third point—to make sure that no aggressor can exploit space, either for expansionism on earth or interference in space with the peaceful pursuits of the free world.

The people of the United States know they must have an Air Force second to none if they are to apply their strength constructively in peace. My fourth point covers just a few things, then, that the Air Force officer must believe, know, and practice.

Get these ideas straight:
The Air Force is at the highest state of readiness and response capability in all its history.

It is strengthening that posture almost monthly.

It needs better people than ever before. It has more opportunity for their professional growth and potential contribution to the nation’s defense than ever before.

It needs the old skills, but to a far greater degree, for AFCOIN and General Purpose Forces, for airlift and air defense, and for the new mission of heavy multiman-crew, long-endurance aircraft.

And then it needs that whole new range of skills, the skills and techniques which are being developed by the Slaytons, the Coopers, the Grissoms—and all of their colleagues, civil and military—to enable America to keep her place as freedom’s leader by strength and conviction.

The Air Force is an organization of professionals. It takes brains and hard work to keep up. The competition is tough, but the opportunities to serve your country and make a mark in the service to which you have dedicated your lives will continue to expand.

It all adds up to a reminder for those who wear the Air Force uniform that the wild blue yonder is still beyond.—END

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Technological Teamwork: How USAF Boosts the National Space Program

In recognition of the increased impact of space programs on our national resources and their direct effect on our future national security, Air Force space activities are closely coordinated with the National Aeronautics and Space Administration. One example is the recent agreement between the Department of Defense and the National Aeronautics and Space Administration on the Gemini program. The intent is to ensure that the scientific and operational experiments undertaken as a part of the Gemini program will be directed toward satisfying both military and National Aeronautics and Space Administration requirements and objectives.

The Air Force has made significant progress during the past year in its programs related to space. We have formulated a forward space program to meet space defense requirements.

First, let me cite some of the accomplishments of our current program.

During the past year, there have been several firings of large solid-rocket motors. A joint NASA-Air Force program for the development of large solid-rocket engines has been established.

Titan III is being developed to provide a large payload launch capability for future national space programs. Phase I of this development has been completed. This consists of the formal process whereby preliminary engineering and management planning are accomplished with the contractor in order to arrive at definitive specifications and refined cost and schedule estimates. Contracts have been negotiated with three major contractors for a booster which can meet anticipated payload requirements of 25,000 pounds.

The Discoverer project continues to provide essential data on environment and component performance.

During this year, basic design of the Dyna-Soar vehicle will be completed. Fabrication and test of spacecraft components and subsystems will continue. Assembly of two flight models for system integration and testing will be started. We will use the Titan III to launch the Dyna-Soar.

We have continued to explore technical problem areas associated with the achievement of an aerospace plane capability. The Air Force envisions this vehicle to be manned, operate from SAC-type bases, and deliver into orbit and retrieve orbital payloads at costs far less than today’s. It will be able to make critical orbital-plane changes within the atmosphere. Its recoverable booster characteristic will permit routine, repetitive military space operations.

The Air Force has been recently assigned the responsibility for developing, procuring, launching, and controlling the satellites for the DoD Communications Satellite Program. We have a development plan, and we are preparing to request proposals from industry for the program.

Now, let me discuss our long-range space program.

Our forward space development program integrates the R&D work of many years into a cohesive space program. Funding for all facets of the program is not included in the FY 1964 budget, but the program will provide a guide for Air Force space activities for the near future.

The Air Force has developed a solid foundation of space on which military capabilities can be built. These efforts have brought us to a point where significant military space possibilities are clearly apparent. Utilizing the technological base so far established, the Air Force must translate these technical capabilities into actual defense systems. The time required to move from a development stage to operational systems is measured in years. Yet, it is the ready military capability, not the technological base, that accomplishes deterrence. Accordingly, the Air Force proposes to begin some of these conversions at once.

The forward program aims at two basic objectives: First, to enhance the general military posture of the United States by building a defense capability in space. Space is not only a new area of vulnerability to attack, but also serves important means of supporting the terrestrial forces of the United States in relation to a military threat posed by a hostile power.

Second, to provide a capability within the space region for the purpose of denying to a hostile power the uninhibited military exploitation of space, and to provide a system of protection for US scientific activities in space.—END

The foregoing is from Air Force Secretary Zuckert’s statement before the House Committee on Armed Services, United States House of Representatives, February 21, 1963.