

(Overleaf) The Snark missile undergoes testing.

NOT UNTIL 1957, WAS A TERM COINED TO DESCRIBE AIR/SPACE—SOON SIMPLIFIED TO AERO-SPACE

AIR FORCE LEADERS VIEWED AEROSPACE AS A NOUN, NOT AN ADJECTIVE

The concept of linking air and space first appeared in print on August 6, 1954, in a series of editorials and features sent to base newspapers by the Air Force News Service (AFNS) in the Secretary of the Air Force's Office of Information Services. It was the AFNS newspaper press releases, from 1954 to 1957, that first depicted the skies surrounding our planet as an operational medium comprising the atmosphere and the space beyond—a region for ever-loftier challenges in which the Air Force had been specializing for decades—and for the defense of which it had been assigned national responsibility by law.¹

Not until 1957, however, was a term coined to describe the medium; that term air/space—soon was simplified to aero-space. But even before Air Force Chief of Staff Gen. Thomas D. White began using the new word, he was expounding on the aerospace concept in public speeches. In an address to the National Press Club on November 29, 1957, he said:

Whoever has the capability to control the air is in a position to exert control over the land and seas beneath.... in the future, whoever has the capability to control space will likewise possess the capability to exert control of the surface of the earth. We airmen who have fought to assure that the United States has the capability to control the air are determined that the United States must win the capability to control space. In speaking of the control of air and control of space, I want to stress that there is no division, per se, between air and space. Air and space are an indivisible field of operations. It is quite obvious that we cannot control the air up to 20 miles above the earth's surface and relinquish control of space above that altitude—and still survive.²

From 1957 to 1961, when he retired, General White presented this description of the aerospace concept over and over in public speeches and congressional testimony—and other Air Force generals followed his lead.

Officials in the other military services and in some government agencies, as well as their supporters in Congress, recoiled in dismay to the Air Force's new concept. This became evident in the nation's press and in congressional hearings during 1959. If air defense, the legally assigned responsibility of the U.S. Air Force, included space, then the whole universe beyond Earth lay open to

the Air Force's claim to a vastly expanded realm of operations and a lion's share of the Defense budget. Of course, no agency outside the Air Force could willingly accept this. To them, it was vital that no one should assume from the meaning of the word aerospace that the Air Force's air mission intrinsically included space. They saw clearly that the two regions must be delineated as separate entities. Aerospace, they realized, should not be a noun meaning "a seamless medium" or "an operational continuum."³

An additional reason for keeping air and space markedly differentiated was the inability of government agencies to agree on a definition of "airspace" and "outer space" in international negotiations on "the peaceful uses of outer space."⁴

The opportunity for Defense officials to sharply split "air" from "space" came when the joint definition of aerospace was formulated for JCS Pub 1, *Dictionary of United States Military Terms for Joint Use*, published by the Joint Chiefs of Staff on February 1, 1962. They presented aerospace in its attributive sense, as an adjective:⁵

aerospace: Of, or pertaining to, the earth's envelope of atmosphere and the space above it; two separate entities considered as a single realm for activity in launching, guidance, and control of vehicles which will travel in both realms.

The 1962 definition persists essentially to this day in Joint Pub 1-02 (2000)—with the last word, "realms," changed to "entities."⁶

That first joint definition, as well as those that followed, differed distinctly from the Air Force's, which had been published on October 30, 1959, in Air Force Pamphlet (AFP) No. 11-1-4, titled, *Interim Aerospace Terminology Reference*. Air Force leaders viewed aerospace as a noun, not an adjective. They saw aerospace as a medium of operations—an operational continuum—and the Air Force has maintained that position to this day. AFP 11-1-4 defined it as "an operationally indivisible medium consisting of the total expanse beyond the Earth's surface." Part 2 of the definition described at length a number of aspects of space, beginning with the statement: "Space: the expanse (perhaps limitless) which surrounds the celestial bodies of the universe—cannot be precisely defined."⁷

A month later, on December 1, the Air Staff published Air Force Manual 1-2, *United States Air*

Frank W. Jennings was the writer and editor, from June 1, 1959 to April 15, 1985, of the Air Force Policy Letter for Commanders (the twice-monthly, four-page "Blue Letter"), published by the Director of Public Affairs in the Office of the Secretary of the Air Force. From 1954 to 1959, he wrote Air Force News Service editorials and features for base newspapers and the USAF Information Program Bulletin (the "Yellow Letter") sent to Air Force Information Officers. As a civilian employee, GM-15, he also was Chief of Policy and Program Development Division in the Internal Information Program. A retired Air Force Reserve lieutenant colonel since 1972, he retired from his civilian position in 1985. He has maintained his interest in the Air Force's development of its doctrine, with three of his articles on the subject having been published by Airpower Journal (now Aerospace Power Journal), including the Fall 1990 issue. He lives in San Antonio, Texas.

(Right) USAF Chief of Staff, Gen. Michael D. Ryan.

(Below right) Col. Flint O. DuPre. (Photo courtesy of the author.)

SINCE 1954, I HAD BEEN THINKING AND WRITING ABOUT THAT LIMITLESS EXPANSE OF THE SKY BEYOND OUR PLANET'S SURFACE, BUT I NEVER HAD THOUGHT A NEW WORD WAS NEEDED TO DESCRIBE IT

THE AIR FORCE'S LONG CLIMB FROM AIR FORCE TO AEROSPACE FORCE HAS TAKEN GREAT VISION AND COURAGE

Force Basic Doctrine. It changed terminology from air power to aerospace power, and defined aerospace as “the total expanse beyond the Earth’s surface.” Twenty-five years later, in the AFM 1-1 basic doctrine published on March 16, 1984, space was redefined as “the outer reaches of the aerospace operational medium.” This kind of aerospace terminology was generally repeated in the basic doctrine manuals and documents throughout the years that followed, that is, until 1997.⁸

In September 1997, these traditionally Air Force-oriented definitions came to an end with the publication of *Air Force Basic Doctrine*, AFDD 1. Nowhere in the new document could aerospace be found. Instead, throughout its ninety pages, two words, air and space, were substituted for aerospace—and nowhere was that disjointed term defined.⁹

Subsequently, on October 6, 1997, a new Air Force chief of staff took command and began to influence a return to the traditional concepts of Air Force doctrine. In 1998, with the publication of AFDD 2-2, *Space Operations*, aerospace was again the preferred term. The new chief, Gen. Michael E. Ryan, said of AFDD 2-2:¹⁰

As a keystone doctrine document, it underscores the seamless integration of space into the whole aerospace effort.... the aerospace medium can be most fully exploited when considered as a whole. Although there are physical differences between the atmosphere and space, there is no absolute boundary between them. The same basic military activities can be performed in each, albeit with different platforms and methods. Therefore, space operations are an integral part of aerospace power.

On May 9, 2000, Secretary of the Air Force F. Whitten Peters and the chief of staff, General Ryan, issued a “White Paper” titled, *The Aerospace Force—Defending America in the 21st Century*, stating that “our Service views the flight domains of air and space as a seamless operational medium. The leadership of the United States Air Force is committed to further integrating its people and air and space capabilities into a full-spectrum aerospace force.”¹¹

The Air Force’s long climb from air force to aerospace force has taken great vision and courage. Now, in the year 2001, it has reached cruising altitude. A look back to its take-off between 1954 and 1957 is instructive.

Sometimes, when I see the word aerospace in a newspaper, magazine or book, my heart stirs a bit as I recall how I witnessed the word’s first appearance in October 1957, as “air/space,” and months later, in July 1958, as “aerospace.” On both occasions, it took form at the end of my No. 2 pencil on a yellow legal pad I was using to write an editorial to be typed, reproduced, and sent to newspapers published at Air Force bases worldwide. Since 1954, I had been thinking and writing about that limitless expanse of the sky beyond our planet’s



surface, but I never had thought a new word was needed to describe it. I look back to October 29, 1957, when the term uniting air with space first began appearing in AFNS releases, and I recall how it developed almost by accident.

The news service—part of the Air Force’s program to inform and motivate its military and civilian members—contained news, features, and editorials, as well as illustrations for use each week by editors of base newspapers. I was one of two civilian employees then doing all the writing for AFNS. My colleague, Flint O. DuPre—a newspaperman for fourteen years in Dallas, Texas, before World War II, and a colonel in the Air Force Reserve—handled the news stories. I wrote the editorials and features; there were no bylines.¹²

The thought of the magnitude of the Air Force’s primary responsibility among the military depart-



LT. GEN. GAVIN CONTENDED THAT A WELL-DEPLOYED SYSTEM OF THE ARMY'S NIKE SURFACE-TO-AIR MISSILES WOULD PROVIDE A 100 PERCENT EFFECTIVE AREA DEFENSE—MAKING AIR FORCES OBSOLETE

ments for ensuring the Nation's continued air superiority prompted me to consider just how to explain to Air Force members the full significance of what that meant to them—how important they were individually and how vital were their roles in helping to protect our country. It soon dawned on me that no altitude limit had been set by the government for this officially assigned Air Force mission in the sky.

I first mentioned space as an integral part of the U.S. Air Force air power mission in an editorial released on August 6, 1954, less than six months after I had moved to the Air Force from the Office of the Secretary of Defense. There, I had been the editor-in-chief in the Armed Forces Information and Education Division, producing for all four military Services the *Armed Forces Talk* pamphlet series, plus pocket guides to foreign countries.¹³

It was the first editorial I had written for AFNS—and the first ever published by AFNS. In Editorial No. 54-1, I wrote: “The Air Force’s job is as big as the sky and its future as unlimited as space.” I went on to describe the scope of the Air Force’s assigned responsibilities: “The area of the Earth is about 197 million square miles, and the area of the air immediately above it is, of course, even greater. From there on out, the space distance is measured in feet, then miles, then in many millions of light years.” Other editorials carried similar messages.¹⁴

I also mentioned space as an area of special Air Force interest and responsibility in September 1957, in the second issue of the new internal information magazine, *Airman*. The article was titled, “What IS the Air Force Job?” I explained the National Security Act of 1947—intended to achieve greater effectiveness and economy—assigned primary responsibilities to land, sea, and air forces, with each concentrating on its special geographical realm. I wrote: “Very simply, the new act made the Air Force responsible for conduct of “offensive and defensive air operations” for the Nation. That overall assignment takes in a tremendous number of operations and a limitless area around our globe and above it—far into space.”¹⁵

But combining air and space into a single word came as a spontaneous outgrowth of that concept developed from 1954 to 1957 of a “limitless area” beyond our planet. It was ignited without warning by an onslaught of statements made in the press and Congressional hearings, primarily by Lt. Gen. James M. Gavin, the Army’s chief of research and development.¹⁶ Gavin contended that a well-deployed system of the Army’s Nike surface-to-air missiles would provide a 100 percent effective area defense—making air forces obsolete. He told congressional committees and the press: “For the combat Infantryman and those who fight on the ground beside him, we want to provide the best mobility obtainable. For in the missile era the man who controls the land will control the space above it. The control of land areas will be decisive.” Adding, “we want a 100 percent air defense. And we consider this attainable.”¹⁷

This brash prediction of the impending demise of the U.S. Air Force—a position obviously countenanced by the U.S. Army—can only be understood in the light of the jurisdictional battle over coveted missile and space missions among the military departments. This was the beginning of the era of long- and medium-range ballistic surface-to-surface missiles and long-range and point-defense air defense missiles, and space systems. Many Army supporters believed that long-range and medium-range missiles were a natural replacement for artillery and should be assigned to them. The Army also felt that its air defense missiles should replace Air Force air defense aircraft, because they were certain that the long range and the accuracy of the missiles could handle both point and area defense requirements. The Navy also wanted to take over the strategic air mission, using submarine-launched long-range missiles. It was in this intense period of interservice rivalry that the new word aerospace entered the vocabulary. From the beginning, it was identified with the U.S. Air Force, because it had been coined there.

The issue of ballistic missiles and the control of airspace, and of space itself, reached an apogee of national concern when, on October 4, 1957, the Soviet Union placed Sputnik into orbit around Earth. It arose at about the same time that Fletcher Knebel wrote in *Look Magazine* about “The Coming Death of the Flying Air Force.” He cited several reasons supporting his prediction that “the death rattle is in the throat of the flying Air Force.” He began with this paragraph:¹⁸

It can be heard in the corridors of the Pentagon, in our bases flung around the world, in statements of the brass and in the design rooms of industry: The flying Air Force is being grounded by the missile. Ten years ago, the guided missile was but a whis-

(Right) Lt. Gen. James M. Gavin, the U.S. Army’s chief of research and development.



per in the laboratories. Three years ago, it became a murmur of the future. Today it bursts from the launching pads with a whoosh and a roar.

Knebel, a popular and respected writer of the time, concluded his four-page piece with this: "Control of the air? 'In the missile era,' says General Gavin, 'the man who controls the land will control the space above it.' The shadow of the guided missile is upon the land—and upon the silver wings of the Air Force." Along with his prediction of the impending demise of the U. S. Air Force, Knebel reminded his readers that, while the Army was testing its aircraft-killing Nike-Ajax battery at its White Sands Proving Ground in New Mexico, "far away, in a committee room of Congress in Washington, Rep. Daniel J. Flood (Dem.-Pa.) broached the idea of abandoning the \$150 million Air Force Academy that isn't even completed yet."¹⁹

An advance copy of Knebel's article was quoted in the *Milwaukee Journal* of September 20, referring to "the changing pattern of defense" and "the coming death of the flying air force." It said also: "Secretary [of Defense] Wilson has called the current revolution in weapon technology the 'most drastic' in world history. To an airman, what could be more drastic than a development that keeps him on the ground and puts the army up in the sky?"²⁰

In a similar vein, the *Cleveland Plain Dealer* wrote an editorial on September 21, under the heading: "The Old Gray Airplane?" about General Gavin's 100% missile defense predictions with the Nike Hercules, and the Air Force's use of the Bomarc, described as a pilotless interceptor, and Snark, the Air Force's experimental pilotless bomber. The editorial ended with this: "How ironical, too, that the Air Force chose Snark as the name for its latest missile. A variety of Snark, in Lewis Carroll's lexicon, was the Boojam—the hunters of which 'softly and silently vanish away.'"²¹

Of course, the Army's idea of 100 percent control of the air from the ground turned on its head the long-held Air Force doctrine that "victory is practically assured to the commander whose air force has gained and can maintain control of the air." That belief—going back to the Army Air Corps Tactical School in 1931—referred to a commander using air forces in conjunction with his ground forces. To me, General Gavin's and Fletcher Knebel's bluntly dogmatic statements demanded a rebuttal. Was it true that air power would soon be worthless? How much of space could be controlled absolutely from the ground? In the search for the right words to respond to those provocative questions about stratospheric air operations, air/space materialized and slipped into the lexicon virtually by accident. On October 29, 1957 the Office of Information Services in the Office of the Secretary of the Air Force released my AFNS editorial (No. 57-39) that questioned "the statements by some," without mentioning any names. It said, in part:²²

So this idea—that if you control the land you control the space above it—is contrary to basic air doctrine and does not stand up under experience. What happens to air offensive forces—airplanes, missiles, or air/space vehicles of the future? According to this new theory they would be rendered completely ineffective. The defense would be invulnerable. Defense would be 100% effective.

As an Air Force member with an understanding of airpower, you know that it is the overall mission of the Air Force to gain and maintain general air supremacy. This air mission is not confined to any altitude. It includes the farthest reaches of the air—far into space. The American people have given us the primary responsibility for this.

The Air Force does not believe that a successful air attack with airplanes and missiles will be impossible in the missile era. It does not believe in the "Maginot Line concept"—that a nation's security should rely only on its defense at the expense of its offense.

The Air Force believes that in the event of war in the missile era, air defense measures, coupled with strong air counterblows against the sources of the enemy's strength will provide the best security. An understanding of the proper relationship between offensive and defensive forces is essential if we are to provide the best possible deterrence to war.

Air/space was the first embodiment in a single term of the concept that the atmosphere and space were an operational continuum. Air/space was used again from time to time in AFNS and other internal publications. My office was on the fifth floor (5C-941), and I used to walk to the nearby offices of speech writers of the Secretary of the Air Force, the Chief of Staff, and the Air Staff—all three were on the fourth and fifth floors. We would chat about topics of interest, including some of the editorials I was writing. Virtually all those writers were officers with solid operational backgrounds.²³

I can take very little credit for the simple recognition in the mid-1950s that technology was beginning to permit the movement and operation of airpower weapons, such as ballistic missiles, beyond the atmosphere, into space. Ten years earlier, in October 1947, Capt. Chuck Yeager had flown a rocket-powered experimental plane built for supersonic flight. Scientists and engineers at the time were contemplating what they hoped would become a national aerospace plane capable of Mach 30 speed and single-stage-to-orbit space flight. The Air Force had started its School of Space Medicine in 1949 to study human capabilities beyond Earth's nearest atmosphere. Beginning in 1950, the Air Force held the primary responsibility for long-range strategic missiles, including ICBMs, and had been studying military Earth satellite potentials through contracts with RAND corpora-

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(Near right) Lt. Gen. Clarence S. Irvine, USAF Deputy Chief of Staff for Materiel, shown here as a major general.

(Far right) USAF Chief of Staff Gen. Thomas D. White.



AS THE MONTHS WENT BY, THE TERM WAS REFINED QUICKLY TO AERO-SPACE AND THEN TO AEROSPACE

AEROSPACE REPLACED AIR IN THE OFFICIAL NAMES OF VARIOUS AIR FORCE CENTERS AND OTHER ORGANIZATIONS

tion. In November 1957, the Air Force approved the Dyna-Soar plan and allocated funds for researching and developing the hypersonic glider—a “dynamic soaring” vehicle—an aerospacecraft that would serve as a composite manned bomber and reconnaissance system operating in both the atmosphere and beyond.²⁴

The time for the term air/space had arrived, and I happened to be in a position that made its use necessary. It was a simple and obvious description of the operational realm the Air Force already had entered. Its usefulness was recognized immediately not only by speech writers, but by Air Force leaders, and, because of them, it spread throughout the Air Force.

As the months went by, the term was refined quickly to aero-space and then to aerospace. The first general to use it was Lt. Gen. Clarence S. Irvine, Air Force deputy chief of staff for materiel, who spoke before the National Defense Transportation Association in Washington on November 21, 1957. Responding to General Gavin's attacks on the Air Force's capabilities, Irvine said: “it is within reason that air/space ships will fight the next major conflict, and that control of space will determine victory.” He continued:²⁵

This, by the way, reminds me of a fallacious statement recently published in a national magazine to the effect that “he who controls the land will control the space above it.” Such a twist of words is a 180-degree reversal of a proved fact, as any student of air/ground warfare knows. Until air- or space-supremacy is achieved, the land itself can always be made untenable.

In March 1958, the aerospace concept received a powerful endorsement when the Air Force Chief

of Staff, Gen. Thomas D. White, explained it in the preface to the book *The USAF Report on the Ballistic Missile*. Although he did not use the newly combined air/space term, he wrote:

In discussing air and space, it should be recognized that there is no division, per se, between the two. For all practical purposes air and space merge, forming a continuous and indivisible field of operations. Just as in the past, when our capability to control the air permitted our freedom of movement on the land and seas beneath, so in the future will the capability to control space permit our freedom of movement on the surface of the earth and through the earth's atmosphere.²⁶

General White soon began including the word air/space in his presentations—first on May 16, 1958 in a speech to the Los Angeles Chamber of Commerce. Then, in the August 1958 issue of *Air Force Magazine*, General White referred to “Soviet aerospace power.”²⁶ Again, in the September *Air Reservist* “Air Force Point of View Column,” General White defined aerospace power.²⁷

Soon, aerospace replaced air in the official names of various Air Force centers and other organizations. In November 1958, *Air Force Magazine* added a subhead reading: “The Magazine of Aerospace Power.” The Air Force Association's education foundation changed its name to Space Education Foundation in 1958, after the shock of Sputnik, but in 1961, named itself the Aerospace Education Foundation. The Aero Medical Association became Aerospace Medical Association on April 28, 1959; Aircraft Industries Association became Aerospace Industries Association on May 15, 1959; and the USAF Aerospace Medical Center, Brooks AFB, Texas was dedicated on November 14, 1959. Within Headquarters USAF, Air Policy

Division, AFXPD, was redesignated Aerospace Policy Division on July 27, 1959.

"Aerospace" was proliferating. What now is called "the aerospace industry" found the term apt for its purposes—and the word was quickly adopted also in foreign languages around the world. By 1961, aerospace had been defined in a new edition of *Webster's New World Dictionary of the American Language*, College Edition. Today, most dictionaries correctly define aerospace as a noun meaning "the Earth's atmosphere and the space beyond it, considered as a continuous field."²⁸

In the long-running competition among the military departments, beginning in the 1950s—when new missiles were raising questions about who would gain and who would lose traditional roles and missions—some politicians and other supporters echoed the Army's fury about the Air Force's new term, aerospace. More than ever, congressional hearings drew public attention to what a leading congressman called the "many conflicts between the Air Force and the Army and the Navy in outer space."²⁹

It is revealing to read the colloquy between Congressman John McCormack (Dem.-Mass.) and Air Force Chief of Staff Gen. Thomas D. White on February 3, 1959. It gives insight to the intense frustration and aversion in some quarters outside the Air Force to the aerospace concept—feelings, though diminished, which have lasted to today. The very definition of the word by which the Air Force defines itself is still questioned. Part of that congressional testimony more than forty years ago went like this:³⁰

Mr. McCormack. *General, on the light side still, the matter that I would like to get information about, because the word "aerospace" is something new to me and I know that has significance from the Air Force angle, where was that coined?*

General White: *Within the last year and by the Air Force, I am willing to add. I would like to explain it if you wish.*

Mr. McCormack: *I appreciate that it was coined by the Air Force. I imagine within that space that many of these conflicts between the Air Force and the Army and the Navy in outer space would be very easily adjusted from the Air Force angle because everything then will come under "Aerospace."*

General White: *Well, I do not think the conflicts are as serious as some people would like to make them, Mr. McCormack.*

Mr. McCormack: *I noticed you stressed the word throughout your whole statement, so I assumed this morning there was some significance in this wording. Why not call it "space-aero?"*

General White: *That is a little more euphonious, perhaps.*

Mr. McCormack: *You notice I say "on the light side." I can see where it developed, however. We will see what the future holds as to the term "aerospace" and the claim for its jurisdiction.*

Six days later, on February 9, 1959, Congressman McCormack questioned Maj. Gen. Dwight E. Beach, the Army's director of air defense and special weapons in the Office of the Deputy Chief of Staff for Military Operations.³¹

Mr. McCormack: *We have heard witnesses of another service use the term "aerospace." What service do you think should have overall responsibility for space activities?*

General Beach: *Well, I never heard of that term before. I always heard of "armospace."*

Mr. McCormack: *Well, we encountered it the other day, a very sweet term, a very all-embracing term. As I said to somebody in the Army, whoever coined it ought to be made a full general. But my question is, what service do you think should have overall responsibility for military space activities?*

General Beach: *Congressman McCormack, I don't believe any one service should have overall responsibility. It should be a national effort. As General [Maj. Gen. W. W.] Dick has outlined, the Army has specific requirements for space, and our position is that no single military department should be assigned sole responsibility for military space operations.*

Thirty years after General White discussed aerospace with Congressman McCormack on the Hill, the word still rankled Army supporters. Newspaper journalist, author, and Pulitzer Prize-winner Russell Baker wrote in his nationally syndicated column, which appeared in the *San Antonio Express-News* on August 25, 1989, that the development of missiles after World War II "made the Air Force's lumbering old bombers as obsolete as the battering ram." He added that: "Control of the new super-weapons (and their sweet billion-dollar budgets) might logically have gone to Army artillery. To avert this catastrophe, which would have reduced it to a minor power, the Air Force invented aerospace.... Since air was the Air Force's domain, did it not follow that space was too? Of course not, unless you could say 'aerospace' without laughing."³²

More recently, and even more dismissive of aerospace, was a squib published in February 1999, in a nationally syndicated column titled simply *L. M. Boyd*. In Boyd's oddities column, which appears five days a week in more than 100 newspapers across the nation, he wrote: "Q. Did anything ever come of the notion to change the name of the U.S. Air Force to the U.S. Aerospace Force? A. That notion rattled around a couple of decades ago. Air Force brass wanted bigger buying budgets. It didn't get anywhere."³³



In 1958, the author accepts a presentation from Brig. Gen. Eugene B. LeBailly, then Deputy Director of the Office of Information.

WITH THE ASSIGNMENT OF GEN. MICHAEL E. RYAN AS AIR FORCE CHIEF OF STAFF...THE AIR FORCE RETURNED TO THE PRACTICE OF USING THE TERM AEROSPACE WITH FREQUENCY

While some may find the word aerospace, and perhaps even its concept, merely inelegant—and while it never has achieved universal acceptance—some find it a fearful threat to their budgets. Yet, it will not go away, because it is an inescapable part of the geography of all of us on Earth. Aerospace began to be mankind's everyday living environment in a new way when the first satellite was successfully lofted in October 1957. Now, we are in constant physical interaction within its vast expanses. We view its friendly aspect in every morning sunrise and on every starry night. It is as Earth-oriented as every one of us—and as are the primary interests of most of us. It is our planet's natural environment in the universe. It is the challenging “wild blue yonder” that airmen have sung about for years.

With the assignment of Gen. Michael E. Ryan as Air Force Chief of Staff on October 6, 1997, the Air Force returned to the practice of using the term aerospace with frequency. Historically, this is especially interesting, because the new chief's father, Gen. John D. Ryan, the Air Force Chief of Staff from August 1, 1969 to July 31, 1973, was a strong advocate of the aerospace concept.

Soon after he took command, General Michael Ryan cleared the way for the logical return of “aerospace” to both the Air Force's lexicon and its strategy. In early 1998, he encouraged key Air Force officers to use the term “aerospace power” whenever appropriate—and to avoid the expression “air and space.”³⁴ His early public discussions reflected his appreciation of the aerospace concept as a better means to both understand and communicate the Air Force's mission. He prompted the establishment of an Aerospace Basic Course at the Air University to provide all new Air Force officers and selected civilians “a full and common understanding” of aerospace power operations. He also saw that other training was initiated, such as Warrior Week—programs to educate all new Air Force officers and selected civilians with “a full and common understanding” of aerospace power operations—and Global Engagement, a similar “air and space fusion program” for Air Force Academy cadets.

In 1999, General Ryan began organizing the ten Aerospace Expeditionary Forces (AEFs) that

would form the overall Expeditionary Aerospace Force (EAF). The expeditionary aerospace force is designed to quickly provide commanders in the field, anywhere on our planet, with a wide array of support—both in and beyond the atmosphere—comprising rapidly responsive forces tailored to specific needs, and using, when necessary, Air National Guard and Air Force Reserve forces.³⁵

Finally, last year, a defining moment in the history of the concept and term aerospace occurred, when the Air Force leadership published perhaps the most significant document ever promulgated in the department's fifty-three-year history. It was an official, authoritative report setting out the Department of the Air Force's clear-eyed view of itself. Significantly, its title was *The Aerospace Force: Defending America in the 21st Century*. It was subtitled: *A White Paper on Aerospace Integration*. Signed by both the Secretary Peters and General Ryan, it was aimed at “tomorrow's aerospace leaders, who will be a part of and will lead the Air Force in the 21st Century.”³⁶ It said:

At the dawn of the new millennium, the Air Force is directing its strategic vision to meet the nation's requirements within a rapidly changing world. As a key pillar to the strategic vision, this document presents the Air Force view of the future of aerospace power. It pays tribute to those who led the Air Force into the air and then into space, and challenges the leaders of the next generation to take advantage of the synergies inherent in aerospace capabilities. It provides the conceptual foundation for the full-spectrum aerospace force and establishes the context for the Aerospace Integration Plan that outlines the next steps the Air Force will take on its aerospace journey.

This official pronouncement on “our mission and our future,” made clear that:³⁶

o Aerospace describes the seamless operational medium that encompasses the flight domains of air and space.”

o An aerospace force comprises “both air and space systems, and the people who employ and support those systems, and has the full range of capabilities to control and exploit the aerospace continuum....

o “Aerospace integration is the set of actions harmonizing air and space competencies into a full-spectrum aerospace force and advancing the warfighting capabilities of the joint force....

o “Our Service views the flight domain of air and space as a seamless operational medium. The environmental differences between air and space do not separate the employment of aerospace power with them. Commanders of aerospace power will be trained to produce military effects for the Joint Force Commander (JFC) without concern for whether they are produced by air or space platforms. By focusing on operations, our efforts will not just enhance airpower; but will capitalize on the broader capabilities of aerospace power to field a more capable warfighting aerospace force, domi-

nating the vertical dimension and achieving decisive results in conflict.”

This describes the United States Air Force of

2001—and it affirms more solidly and more clearly than ever in its history that “the Air Force’s job is as big as the sky and its future, unlimited as space.” n

NOTES

1. Air Force News Service Editorial No. 54-1, OSAF, Office of Information, Aug. 6, 1954; Ltr, Brig. Gen. H. J. Dalton, Jr. Director of Public Affairs, to Maj. Gen. H. D. Armstrong, USAF (Ret), [subj: aerospace] Feb. 5, 1980, with attachments of copies of AFNS editorials, features, and a chronology.
2. Robert F. Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force, 1907-1960, Vol. I* (Maxwell AFB, Ala.: Air University Press, 1989), p. 550; David N. Spires, *Beyond Horizons: A Half Century of Air Force Space Leadership* (Air Force Space Command & Air University Press, 1998), p. 99.
3. Futrell *Ideas, Concepts, Doctrine, Vol. I*, p. 554; Spires, *Beyond Horizons*, pp. 49-54; Lt. Col. Frank W. Jennings, USAFR, (Ret.), “Doctrinal Conflict Over the Word Aerospace,” *Airpower Journal*, Fall 1990 (Air University Press, Maxwell AFB, Ala.), pp. 46-58.
4. Col. Delbert R. Terrill Jr., USAFR, *The Air Force Role in Developing International Outer Space Law* (Maxwell AFB, Ala.: Air University Press, 1999), pp. 73-77; Spires, *Beyond Horizons*, p. 99.
5. Joint Chiefs of Staff (JCS) Pub. 1, *Dictionary of United States Military Terms for Joint Usage* (Short Title: JD), The Joint Chiefs, Feb. 1, 1962. Also, JCS Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms* (includes U.S. Acronyms and Abbreviations and NATO terms (English Only) Mar. 23, 1994, as amended through Jun. 14, 2000.
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9. Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, Sep. 1997.
10. Jennings, “New Doctrine Demands Changes in the Aerospace Force,” *Airpower Journal*, Spring 1999, pp. 93-95.
11. *The Aerospace Force: Defending America in the 21st Century: A White Paper on Aerospace Integration*. Prepared by the Aerospace Integration Task Force, HQ USAF (AF/XPXT), May 9, 2000, 34 pages. This was followed on June 19 by a similar 14-page pamphlet, entitled *America’s Air Force, Vision 2020: Global Vigilance, Reach & Power*. Produced by the Directorate of Strategic Planning, Deputy Chief of Staff for Plans and Programs (AF/XPX), it describes the Air Force’s mission in broad terms—including foundation, domain, method, building blocks of competencies, approach with innovation and adaptation, and commitment.
12. Biography press release on Francis W. Jennings OSAF, Office of Public Affairs, as of Feb. 1984; Jennings, “What IS the Air Force Job?” *Airman* magazine, Vol. 1, No. 2, Sep. 1957, pp. 1-7.
13. See note above.
14. See note above.
15. Statement of Lt. Gen. James M. Gavin, USA, Chief of R&D, before the DoD Subcmte, Senate Appns Cmte on Jun. 12, 1957. Also, his statement in hngs before the Subcmte of the Cmte on Appns, House of Reps, Eighty-Fifth Cong, 1st Sess.
16. “Weapons GI’s Will Fight With in Wars of the Future,” Aug. 2, 1957; “A High Source Says: ‘Russia’s Missile Can Be Stopped’” from *U.S. News & World Report* Sep. 13, 1957.
17. Fletcher Knebel, “Coming Death of the Flying Air Force,” *Look Magazine*, Oct. 1, 1957.
18. *Ibid.*
19. *Ibid.*
20. “Changing Pattern of Defense,” *Milwaukee Journal* [editorial], Sep. 20, 1957.
21. “The Old Gray Airplane?” *Cleveland Plain Dealer* [editorial], Sep. 21, 1957.
22. Air Force News Service Editorial No. 57-39, “Will Missiles Stop Any Offense?” OSAF, Office of Information Services, Internal Info Div, Oct. 29, 1957.
23. Futrell, *Ideas, Concepts, Doctrine, Vol. I*, p. 544; *Air University Quarterly Review*, Summer 1958. This issue, which includes twelve articles, was devoted entirely to the Air Force’s research and develop in space. *Man in Space: The United States Air Force Program for Developing the Spacecraft Crew*, ed. by Lt. Col. Kenneth F. Gantz, USAF, (New York: Duel, Sloan and Pearce, 1959). *The U. S. Air Force in Space, 1945 to the Twenty-First Century*, Symposium Proceedings, Air Force Historical Foundation, Andrews AFB, Maryland, Sep. 21-22, 1995. Ed. by R. Cargill Hall and Jacob Neufeld, pp. 71-75. Roy F. Houchin II, *Air Power History*, Fall 1999, “Hypersonic Technology and Aerospace Doctrine.”
24. See note above.
25. Speech, Lt. Gen. C. S. Irvine, DCS/M, to National Defense Transportation Association, Washington, D.C., Nov. 21, 1957. In several interviews with the author, Col. Albert D. Hatcher, Jr. USAF (Ret.), spoke of his experiences as a special assistant to Generals LeMay, McConnell, and John D. Ryan. Hatcher said that Hillary Milton, a member of the presentations group, helped Gen. Irvine with his Nov. 21 presentation. Hatcher worked with the elder Gen. Ryan on a speech titled, “Aerospace—an Expanding Matrix for Deterrence,” delivered at an AFA luncheon on Sep. 22, 1970, and published in *Vital Speeches*, [Vol. 37, No. 2], Nov. 1, 1970.
26. Gen. Thomas D. White, CSAF, “Missiles and the Race Toward Space,” pp. 19-24, in Kenneth F. Gantz, ed., *The United States Air Force Report on the Ballistic Missile* (Garden City, N.Y.: Doubleday, 1958).
27. Gen. Thomas D. White, “Air Force Point of View,” *Air Reservist*, Sep. 1958.
28. Ltr, Brig. Gen. H. J. Dalton, Jr. Director of Public Affairs, to Maj. Gen. H. D. Armstrong, USAF (Ret), [subj: aerospace] Feb. 5, 1980, with attachments of copies of AFNS editorials, features, and a chronology.
29. See note above.
30. Jennings, “Doctrinal Conflict Over the Word Aerospace,” *Airpower Journal*, Fall 1990, pp. 46-58.
31. *Ibid.*
32. *Ibid.*
33. L. M. Boyd, *San Antonio Express-News*, Feb. 4, 1999.
34. Memo, Stephen Aubin, AFA Director of Communications, to National Officers, Board of Directors, National Vice Presidents and Chapter Presidents, subj: “A 21st Century Air Force” Video, Mar. 13, 1998.
35. *Policy Letter Digest: Policy, Issues and News from the Office of the Secretary of the Air Force* (AFRP 35-3), Oct. 1999 and Jan. 2000.
36. *The Aerospace Force: Defending America in the 21st Century: A White Paper on Aerospace Integration*.