The Names of Objects in Aerospace[1]

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THERE IS, PERHAPS, NO VOCABULARY in contemporary use more significant than the terms for objects in aerospace. The word *aerospace*, in itself, is a coinage and of recent invention. It is carefully defined by Woodford Agee Heflin, in his *Aerospace Glossary*, as "the earth's envelope of air and the space above it; the two considered as a single realm of activity in the flight of air vehicles and in the launching, guidance, and control of ballistic missiles, earth satellites, dirigible space vehicles, and the like."[2] The noun can also be used in the attributive sense, as an adjective, in *aerospace activity, aerospace medicine, aerospace power, aerospace vehicle, etc.* Dr. Heflin, under the term *aerospace*, writes:

> The upper limits of the aerospace recede upward as technology and science bring it under greater control. Three kinds of flying vehicles are adapted to its exploitation — the aircraft that flies within the atmosphere, the space-air vehicle, such as Dyna-Soar, that flies both within and above the sensible atmosphere, and the true spacecraft that flies principally in space either in orbit or under directional control.[3]

Aerospace, then, consists of three great zones in which flying objects may navigate, both under human controls and independent of them. These zones are the atmospheric space-bands encircling the earth; the non-atmospheric areas between the earth and the solar systems; and the marginal areas between the two. This paper is concerned with the nomenclature of objects designed by man to move in these zones. The title of this paper, however, is broader than its contents. The classifications presented here exclude natural objects moving in aerospace. They also exclude the designations for airplanes and gliders piloted by human beings in the earth space

[1] Presidential Address delivered at the 9th Annual Meeting of the American Name Society in Philadelphia, Pa., December 27th, 1960.

[2] Research Studies Institute, Maxwell Air Force Base (Alabama, September, 1959), p. 3.

[3] *Loc. cit.*

zones, but they include manned satellites and space platforms, those space ships of the astronauts, 'star navigators,' earthlings who are gradually gaining mastery over the earth's envelope of air and the space above it. The main vocabulary discussed here is devoted to rockets, rocket ballistic missiles, and satellites, both those that are destructive and those that are non-destructive. All the names are proper nouns. Common nouns and general type nouns are excluded, that is, such terms as *aerial torpedo, aeroballistic missile, rocket vehicle,* etc. Such generic words are descriptive of the broad areas in which the specific object-names fall. This paper is devoted to the object-names themselves, as they fill in the broader classes or categories. Many of these names are to be found in Dr. Heflin's *Aerospace Glossary*, but some have appeared since his collection was printed in September, 1959.

Before presenting the tables of names, some distinction must be made between the general categories. We have divided aerospace into three zones: the outer, inner, and transitional bands between atmospheric and non-atmospheric space. Into these zones, objects are projected from the earth. They may return to earth or they may remain in space. According to *The Oxford English Dictionary*, the term *missile*, for an object thrown to a target, appeared first in English in the year 1606, using the Latin form *res missiles*, for 'largess or gifts of perfumes and sweets reported thrown by the Roman emperors to the people.' In 1611, the word appears in a phrase *missile weapon*, describing an object thrown by hand or machine to injure or destroy a target. The term *rocket*, from French *roquet* or Italian *rocchetta*, apparently is a diminutive of Italian *rocca*, 'rock,' and it became an English word in the year 1611, when it was used to describe a cylinder of paper or metal containing a combustible substance which, if ignited, could be projected into space.

Today the term *rocket* can be applied to any projectile that is self-propelled in flight, such as the Army *Dart*, the Air Force *Atlas* and *Thor*, the Navy *Rat*, and the Navy-Air Force *Sidewinder*. It can also be applied to a self-propelled vehicle that lifts another object, perhaps a destructive missile, i.e., nuclear warhead, research cone, or space satellite. When the rocket vehicle lifts another object with intent to hurl it free at a target or into space, it becomes part of a ballistic missile. Both rockets and rocket ballistic missiles

may be either destructive or non-destructive. Non-destructive rockets are referred to as "sounding rockets," and are sent into space to obtain research data. Rocket ballistic missiles may consist of multiple-stage vehicles, as is the case of those which launch a satellite or a space platform.

The solid rocket projectile was the first stage for aerospace vehicles, and it was limited in range, speed, and both destructive and research possibilities. The ballistic missile developed a much greater potential in all these respects, and made possible the space projects in the two outer zones, those beyond the earth's atmosphere. In the development of nomenclature, both the intellectual scope and the imagination have grown as scientific progress has opened up these broader areas of exploration and conquest.

Exploration in the twentieth century Space Age has something in common with exploration in the sixteenth century New World period. The discovery of America, a new land mass on the earth, was dependent upon improved carrier vehicles and new instruments of navigation. Discovery proceeded from the areas known to men to those unknown. New types of apparel, new ways of living, and new tools to sustain life were developed by adaptation to a new environment. The whole world stands on the threshold of a vast new experience which will come through space travel. The changes in the language may be revolutionary. The naming of space objects is simply the early step across this threshold of a new language horizon.

As the *Susan Constant*, the *Discovery*, and the *Godspeed* were the three small ships which carried the first English colonists to Jamestown, Virginia, in 1607, so *Bold Orion*, *Project Mercury*, and the *Dyna-Soar* may be the type of vehicle which will cross air-space to put latter-day English explorers on some unknown planet in the year 1967. Both the older names and the new ones fall into definable categories. The *Susan Constant* would seem to have carried a personal name into the New World. The name of the *Discovery* is an abstract concept presupposing the search for something in existence but not previously known. *Godspeed*, the third ship, was also named for an abstract concept, based upon the contraction of "God speed you" or "God give you success," a phrase based upon religious faith. Thus, one may safely assume that the modern categories of names in aerospace will include personal names and abstract concepts

based upon hope or faith. Furthermore, the investigator will find that a large group of space vehicles derive their names from the stories and figures of Classic myths, a lost area of religious faith. Scientific theories, poetic imagination, historical tradition, classes of birds, beasts, and animals contribute to the naming groups. Finally, verbal ingenuity using the letters of the Greek alphabet or combining modern letters and syllables will be used to produce acronyms and blends. Wit and humor will play their part in the naming patterns. A great variety of sources,[4] then, are to be found, but they may be classified into such large groups as are discussed in the following pages.

I said, previously, that in the development of nomenclature for aerospace objects the first single-stage rockets were given less imaginative names than were the later ballistic missiles or the satellites and space-platform projects. Nevertheless, the names of the early rockets are instructive and interesting. They fall chiefly into the categories of description, personal commemoration, or bird and animal names.

Of descriptive identification some representative names are the *Dart*, a U.S. Army low-altitude missile, wire-guided, and directed at enemy tanks; or the *Pencil*, a Japanese test rocket only nine inches long. Descriptive, too, would be designations like *Redeye*, an Army bazooka-type projectile with infrared guidance for use against aircraft; *Wagtail*, an Air Force missile launched from airplanes at surface targets; the *Sidewinder*, a Navy and Air Force anti-aircraft rocket; and the *White Lance*, an Air Force missile to serve fighter bombers.

Rockets named for personal commemoration are found in several countries. In the United States, there is the *Davy Crockett*, a light battle rocket with nuclear capability, assigned to artillery groups and, presumably, performing for the modern Army what the Davy Crockett long rifle did for the frontiersman more than a century

[4] The United States Navy was instructed by Act of Congress, March 3, 1819, to name "all ships of the first class... after the States of the Union, those of the second after rivers and those of the third after the principal cities and towns." This act was amended subsequently to schedule battleships for States; cruisers for cities; destroyers for "deceased persons" in various categories; submarines after "fish and denizens of the deep;" minesweepers after birds. H. L. Mencken, *The American Language, Supplement Two* (New York, 1948), pp. 584–85.

ago. The *Bomarc* is an Air Force interceptor missile named for Boeing, maker of the frame, and for Marquardt, manufacturer of the ramjet engine. The Swedish *Bo 4* rocket is named for the Bofors Company which made it; the German glide bomb, the *Henschel 293*, was named for the Henschel und Sohn Company of Kassel, Germany, which converted its plant in 1933 from the manufacture of railroad locomotives and trucks to the production of airplanes and rocket-propelled bombs. The Russian *Golem* is an underwater rocket named for a sixteenth-century Jewish rabbi, reputed to have created a mechanical man. And finally, in the personal category, the American *Kettering*, an aerial torpedo in World War I, was named for the designer C. F. Kettering. This airborne missile was also called the *Liberty Eagle*, and thus became an early representative of a rather sizable group of rockets named for bird genera, such as the *Falcon*, a radar guided missile; the *Goose*, a diversionary missile decoy; the *Quail* or *Green Quail*, another diversionary missile; the *Hawk*, a missile designed to hit aircraft; the *Petrel*, a Navy missile launched from the air as an underwater torpedo; and the *Sparrow*, a Navy rocket guided by the launching aircraft's radar.

In the overlapping category, combining description, personal association and humor, belong such names for rockets as *High Card*, *Honest John*, *Little John*, *Little Joe*, *Shillelagh*, and *Holy Moses*, the latter term being applied to a World War II aircraft rocket that is no longer in production.

There are many rockets which are non-destructive and destined for research. In this group one is named *Marco Polo*, for the thirteenth century Venetian explorer whose trips into Asia and the Near East charted much of that terrain for European travel. This rocket is also known as the *Viking*, another type of explorer. Research missiles called drones have been named *Kingfisher*, *Spaerobee*, and *Teal*, bird designations appropriate to target objects. Some of the rocket names, however, are whimsical, such as *Baby Bobbin*, *Bumper*, and *Snooper*.

We turn from the rocket missile group to the rocket ballistic missiles, which are more complicated mechanisms, involving rocket vehicles plus projectiles, or multiple-stage rocket vehicles plus missile projectiles. Here the name categories draw upon the history of combat and of fighting men. The names even enter the world of myth and legend, indicating that as the range and potential for the

destruction or salvation of mankind grew, human imagination became correspondingly stirred. A glance at the classification of destructive ballistic missiles will show that several of the machines bear the names of combat men, such as the *Black Knight*, the *Corporal*, the *Sergeant*, the *Matador*, and the *Minuteman*. Moving into the sphere of mythology, ballistic rockets assume such names as *Atlas*, *Jupiter*, *Thor*, and *Titan*. *Atlas*, of course, is the Greek demigod who, after revolting against the heavenly powers, was condemned to hold the earth upon his shoulders, a more stable attitude than a ballistic missile aims to produce. The Roman *Jupiter* and the Scandinavian *Thor* are both associated with natural power, as expressed in thunderbolts and lightning. *Atlas*, however, as a name for an object in aerospace, may not have resulted from memory of the Classics at all. There is an aircraft company which owned that name before it manufactured a rocket capable of launching a satellite. Still, aircraft or rocket engine, the name associates with Classic myth. Some of the ballistic missiles bear the names of historic weapons used by fighting men and gods, such as the *Mace*, the spiked club used by medieval warriors for breaking armor, and the *Trident*, a three-pronged spear carried by Neptune to show his authority over the sea.

The best known of all ballistic missiles were also the first, that is, the famed *V-1* and *V-2* German robot bombs of World War II. The initial *V* is said to have been the German answer to Winston Churchill's two-fingered *V-for-Victory* sign, but the *V* in German stood not for 'victory' but for 'vengeance,' as in the German phrase *Vergeltungswaffe Eins*, 'Vengeance Weapon One.' These terrible objects were first launched on June 13, 1944, and can be said to have introduced the present epoch of missiles space-borne by rockets. Although they entailed great destruction of life and property, a variety of popular names were coined to identify them, such as 'buzz bomb,' 'doodle bug,' 'robot bomb,' 'comet bomb,' and 'whirley.' The name 'Vengeance' was sufficiently unpleasant to suggest that the *V* stood for something else, as for the initial letter of German *Versuchsmuster*, 'experimental type,' but this has not been supported by evidence.[5]

Illustrating some of the categories previously alluded to which also appear in the naming of ballistic missiles are the descriptive

[5] *Aerospace Glossary*, p. 110.

Blue Streak; the bird name *Loon*; the personal commemorative *Pershing*; and the humorous blend *Snark*, a name coined by Lewis Carroll, from *snake* and *shark*.[6] But the most important contribution of the name categories for ballistic missiles is their identification with the realms of mythology. Some of the rockets were given classic names, such as the *Nike-Ajax* and its two brothers, *Nike-Hercules* and *Nike-Zeus*. Nike as the Greek Goddess of Victory, becomes a worthy companion to the great warrior Ajax, and to Hercules and his father Zeus in undertaking labors greater than the twelve feats Hercules accomplished in former days.

One of the ambitious projects for the defense of the United States in case of an attack by intercontinental ballistic missiles has been named the *Argus* project, for the Greek monster who was equipped with one hundred eyes. Only two of these eyes were said to sleep at any one time. What better symbol of watchfulness could have been bestowed upon a defense project? One trusts that the designer who named the project recalls what happened to Argus. Jupiter was in love with Io, the sister of Argus, and he transformed her into a heifer to avoid detection by his wife, Juno. The latter placed Argus as a guard, but Jupiter sent Mercury in the guise of a shepherd, and Mercury played upon his reed so sweetly and told stories at such length that all the eyes of Argus were closed when the former ceased. Then Mercury slew Argus and released Io from her captive form.[7] There is an obvious moral here, which is that any defense will collapse if the owner is lulled to sleep by music and stories. The *Argus* project calls for the discharge of radioactive particles to burn up incoming missiles, and thus provide a protective shield for the country. But ninety-eight of the eyes of Argus must ever be kept open.

On the 12th of August, 1960, a communications satellite balloon was launched from Cape Canaveral, Florida. This balloon was enclosed in the nose-cone of a missile, but once in orbit the balloon inflated to the height of a ten-story building. Then the inflated surface acted as a sounding board for voices or signals broadcast from the earth. As everyone knows, the name chosen for this satellite was *Echo*, who in story-lore was a beautiful mountain nymph chattering so constantly that the goddess, Juno, condemned her to the loss

[6] "The Hunting of the Snark."

[7] Greek and Roman mythological accounts in this paper are drawn from C. M. Gayley, *The Classic Myths in English Literature and Art*, (Boston, 1893, 1911).

of her voice except for purpose of reply. Spurned by the handsome youth Narcissus, the nymph fled to the caves and hills where nothing remained but her voice. In the instance of the communications satellite *Echo I*, the voices being heard may even become full-bodied, for it is said to be possible to relay television images along with the sounds through the balloon satellite, resulting in a world-wide communication system.

King Midas, of the fabled golden touch, was not a god, though bequeathed certain godlike powers, such as turning everything he touched into gold. None of this, however, seems to be involved in the naming of a project of the Advanced Research Projects Agency, which orbited a *Midas* satellite on May 24, 1960, aimed to detect the launching of other satellites. The name is an acronym developed from the initial letters of *Mi*ssile *D*efense *A*larm *S*atellite. The acronym process can produce provocative combinations, as in the case of *Tiros*, a camera-eye satellite orbited on April 1, 1960, when it began immediately to send back space-pictures showing the boot of Italy, the Straits of Gibraltar, the Suez area, the eastern Mediterranean, and the southwest coast of Europe. Thousands of pictures have been sent by this television satellite, many of which have helped to improve weather forecasting, as they show cloud cover over various portions of the earth. Such satellites as *Tiros* will also help to remove the curtains from all national borders, for they will be all-seeing eyes. But does the name signify omniscient over-sight? One thinks of Latin *tiro*, 'a recruit or a beginner,' and concludes that this satellite was the beginner or novice of a series planned to provide continual inspection of aerospace. But then he learns that the name is devised from the initial letters of "*T*elevision *I*nfrared *O*bservation *S*atellite." One wonders, however, if the phrase was not designed to make the name, because the words could be arranged just as easily in a way that spelled something else.

Another satellite which is in the planning stage will be called *Samos*. This is related to the project *Sentry*, which launched the *Discoverer I* satellite on February 28, 1959. Samos is an island in the Aegean, and was once famed for a great temple to the goddess Venus. However, I cannot find that the first *Discoverer* satellite in orbit was directed to the planet Venus. Yet space reconnaissance could come from this direction as well as from any other.

The United States had thrown forty-eight satellites into orbit by January 2, 1962. Russia had put up sixteen. Of the American satellites, the names were *Discoverer, Explorer, Vanguard, Atlas, Courier, Echo, Lambda, Midas, Pioneer, Samos, Transit, Greb, Tiros,* and *Oscar.* On January 2, 1962, thirty-four American satellites were still in orbit, and three Russian. This did not include the so-called space debris, i.e., parts of rocket machines, of which some fifty objects were also whirling around the earth.

But satellites alone do not tell the story of mythology worked into the naming of space objects. An instrumented vehicle called the *Jovian* probe, manned or unmanned, is designed to approach close enough to the planet Jupiter to discover and report new data upon this planet. Although the *Jovian* probe is still to come, a *Jupiter* rocket vehicle has been the booster in the *Explorer* satellite series, and the *Jupiter C* rocket is also called the *Juno I* rocket research engine, and both have been joined, or will be, by such other members of the Classic Olympian household as the *Apollo* spacecraft, launched by a *Saturn* engine; the *Mercury* man-in-space program; and the *Venus* probe.

So, in a measure, the Age of Greece has returned to rule the space age. One of the early projects at Cape Canaveral was called *Hermes.* An antimissile once under development was named *Plato,* though why the greatest of the Greek philosophers should be called upon to designate an *anti*-something-or-other produces surprise. Even the Greek alphabet has been called significantly into play, for in numbering and dating the satellites in each year, the first satellite is called *Alpha,* with the year date prefixed; the second is called *Beta,* with the year date prefixed, and so on. *Sputnik I,* for instance, which the Russians tossed into orbit on October 4, 1957, was also called "1957 Alpha" by the International Geophysical Year scientists. *Sputnik II,* which followed on November 3, then became "1957 Beta." The first American satellite in orbit on January 31, 1958, became "1958 Alpha." *Explorer III* and *Explorer IV,* orbiting in 1958 were "1958 Gamma" and "1958 Epsilon," respectively.

One could conclude with a miscellany, pointing to the two rockets named for American Indian tribes, the *Navajo* and the *Zuñi*; the two named for magicians, the *Genie* and the *Wizard*; the four named for dogs, the *Bulldog, Bullpup, Hound Dog,* and *Terrier.* One would like to know more about all the various "godfathers" of these

objects. When and by whom were they named? Was there a little ceremony and a formal christening, or did the name just come as a signature off the drawing board? Whatever the origins, the names of objects in aerospace are varied and appropriate. They express the intent, the aspiration, the will of modern science. Let us hope that the positive and the good are written into them in greater degree than the negative and the malevolent.

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