GLORIA HEATH HAS MADE HER MARK IN A MAN'S WORLD, AS A PILOT DURING WARTIME AND AS A PIONEER IN THE FIELD OF FLIGHT SAFETY.

A SINGULAR WOMAN

Any male fondly reflecting on his career achievements may find the following curriculum vitae unsettling:

HEATH, GLORIA WHITTON, aerospace scientist, consultant. Born N.Y.C. May 7, 1922. Grad. The Putney School, 1939. A.B., Smith College, 1943. Air Force service pilot, WASP, 1943–1944. Aero Insurance Underwriters, 1945–1948. Flight Safety Foundation, 1948-1965 (gov. 1970, gov. emeritus 1990). Asst. Dir. Cornell-Guggenheim Aviation Safety Center, 1965-1968. Principal Dir. SAR-ASSIST 1968–. Professional Affiliations: Civilian Advisory Comm. F.A.A., 1960–1970. Fellow Am. Inst. Aeros and Astronautics. Nat. Pilots Assoc., 1966. Am. Astronaut Soc. Awards; Drummond-Hay Trophy, 1955. Amelia Earhart Award, 1957. Barbour Int. Air Safety Award, 1965. Smith College Medal, 1971. Eng. Science Award, 1990. Women in Aerospace Lifetime Achievement Award, 1995. Women in Aviation Int. Pioneer Hall of Fame, 1999.

BY JOHN BRIGGS

GLORIA HEATH was a college student when she began a lifelong commitment to aviation.

ALTHOUGH MEN'S COLLEGES had flying clubs during the war, Gloria Heath (at right, wearing banner) and her Smith classmates had to petition for one. Joined by the wife of the Smith College president, the group held a dedication ceremony in 1941 to christen their plane, which they had named "Bird of Paradise".

World War II was a child in 1940 when Gloria Heath took to the skies. Her brother, Royal, was learning to fly and had his instructor take her on her first flight. "The view of earth from the plane was so peaceful, anxieties seemed to melt away," she wrote in her diary. For the rest of her life, flight held her captive.

Being a purposeful woman she tackled the trustees of Smith, where she was an undergraduate, and persuaded them to allow her and a few other rare enthusiasts to buy a plane for $1,500 (each of them contributing a $100 share, redeemable upon graduation) and then hired an instructor at three dollars an hour. Many universities those days had flying clubs, but this was a first at Smith.

Merely learning to fly, however, was not enough for Heath. She qualified as an instructor and studied aerodynamics, navigation, meteorology and engine maintenance. When she graduated into a world at war, her first thought was to volunteer as an instructor in the navy, but Royal, who was then in the air force, convinced her that the real future for a flying woman was in the WASPs.

The Women's Air Force Service Pilots was conceived as a replica of Britain's Air Transport Auxiliary. The women of ATA ferried war planes from factories to airfields, thus releasing men for action. Replicating ATA was not as easy as General "Hap" Arnold anticipated. Arnold was chief of Army Air Forces at that time and needed all the help he could muster. It was ridiculous, men said, to think of women handling bombers and fighters, even though women were already doing that in England. Airmen and Congress were adamantly opposed to women doing such unwomanly duties.

After months of infighting, General Arnold finally established the WASPs but had to bow to Congress and agree it would be a civilian rather

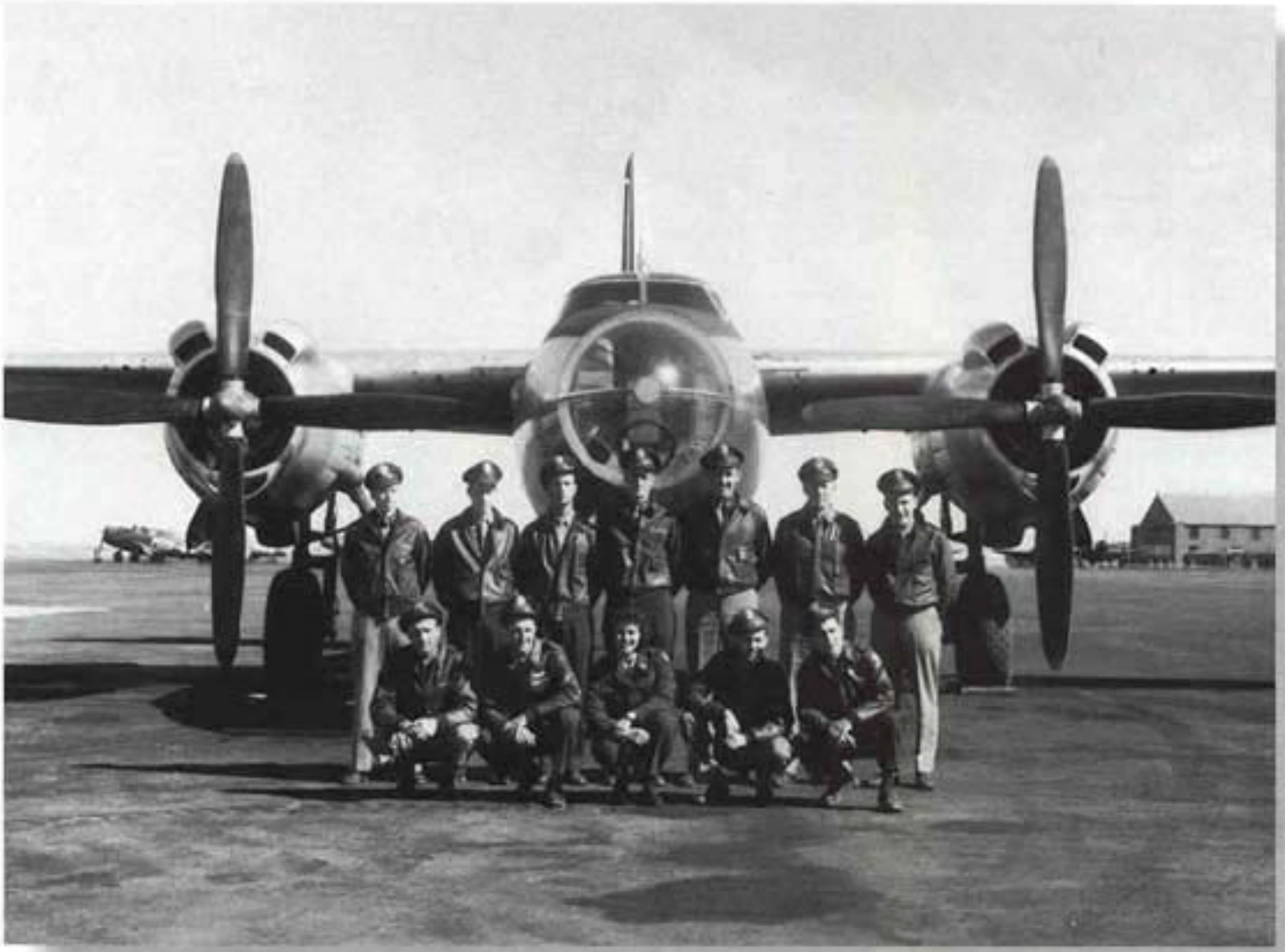
than a military organization. He reached out for a famous name to head it — Jacqueline Cochran, an all-star aviator who had won the Bendix Trophy and who had set the women's U.S. high altitude and international speed records.

In the summer of 1941, some 3,000 women held pilot's licenses, though not more than a hundred were qualified for military duty in high horsepower military planes, so the WASP program offered flight training. Jumping at the opportunity, 25,000 women applied; 1,830 were accepted. Heath was among the 1,074 who qualified after seven months' training. She was assigned to the air force base in Pocatello, Idaho, where her job was to fly a B-26 bomber at 6,000 feet towing a target at which pilots in P-47 fighters fired live ammunition. There were at least two inconveniences to the job. The fighter pilots' enthusiasm was often not matched by their accuracy — one of Heath's predecessors lost a foot to friendly fire. The other inconvenience was the quick, unpredictable roll of the B-26 on its landing approach. Twenty-six WASPs died in crashes. The men of Congress took thirty-four years to make reluctant amends and retroactively grant veterans' benefits to WASPs. It was a bit late for some.

While Heath's contribution to the war effort was understandable, she hesitates when she tries to explain how she chose the track she did in the postwar world. Then she talks of Putney School as a major influence.

"It was a unique place," she says with evident nostalgia, "tucked away in Vermont. It had started in 1935 as a progressive, coeducational boarding school. My parents chose it. They believed, like Putney, that children had to be self-reliant, to make their own decisions and live with them. Putney taught that in simple ways: 'You want to put on a play? Fine, go ahead and choose the play and the actors, build the scenery, sell the tickets.' 'You want to learn to ride? Fine, go ahead. There's the instructor and here's the horse. It will die if you don't look after it.' So, we had to feed it and care for it, muck out the stalls, clean the tack. There was none of this going down to the stable like little ladies and finding your horse groomed, saddled and waiting for you. →

HEATH'S BROTHER ROYAL was a WW II pilot, who had encouraged his sister to fly. He was piloting his P-47 in the China–Burma–India theater while Heath was in WASP training in Sweetwater, Texas *(below)*. She stands beside her Stearman open cockpit biplane.



THOUGH ONLY IN HER early twenties, Gloria Heath was already a qualified pilot when she became a WASP. She is shown with her B-26 tow-target squadron at Pocatello, Idaho, a P-47 fighter training base during World War II. She was the only woman in the squadron.

"So, when it came to finding work when the war was over, I knew I had to make up my own mind," she says. "By then flying was in my blood and I had to stay close to it."

Perhaps it was her experience with the eccentric B-26 that focused her thoughts on safety in flying as the era of peacetime dawned. Private flying would soon catch on, and, all over the world, commercial airlines were spreading their wings. The wing and a prayer attitude of wartime flying was past. Heath recognized this, and so did the insurance industry, which had an obvious interest in safety. Heath joined the engineering department of Aero Insurance Underwriters and worked for the head of the department, Jerry Lederer. Lederer had already gained notice in the aircraft world for his contributions to safety and would become renowned for it.

By 1947 there was general awareness that more safeguards were needed, and the Flight Safety Foundation was cobbled together as a forum and information base for all aspects of safety in flying. Laurence Rockefeller, then owner of Eastern Airlines, financed its start. Lederer was hired but could not immediately take up his position as head of the Engineering for Safety group, forerunner to the foundation, and Heath was chosen to establish and run it against very considerable odds. At that time the majority of women could aspire to not much more than a secretarial job in business. She was entering the aviation world dominated by men, some little different from those who, only a few years earlier, had so adamantly opposed women entering even the fringe of the air war. It would not be easy.

The whole purpose of the foundation was to act as a clearing house and disseminator of information on all aspects of air safety. It was also charged with the initiative to uncover and draw attention to hazards that were being overlooked during the hectic growth of postwar aviation. Today the foundation is preeminent in its role.

"It was a time of challenging, exciting change," Gloria Heath says a little wistfully. "All

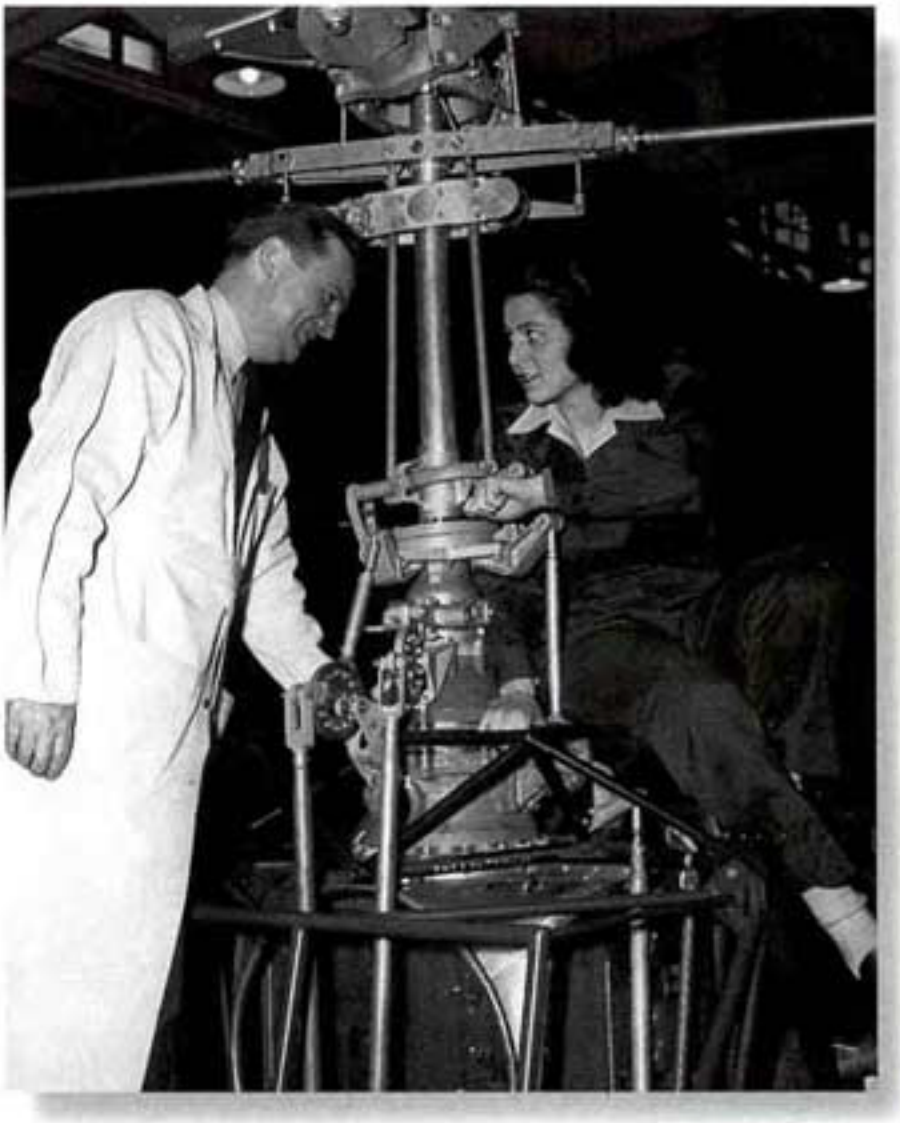
over the world airlines were starting up with relatively little experience in advanced technology and practices. We had to focus on the dangers they faced or could cause, and advocate cures. For instance, a common language had to be agreed on when pilots and controllers were speaking different languages, some reporting height in feet and some in meters.

"Before World War II and during it, long ocean crossings with passengers were made by flying boats. After the war, land planes made the crossings and that raised a whole lot of problems if they had to make a forced landing at sea. A new breed of pilots had to learn to put a plane down in rough oceans, and ships' captains had to learn the best way of coming to its assistance. I was very lucky in my years at the foundation. Jerry Lederer gave me a completely free hand to gather ideas wherever I could and I did."

In 1965 Heath moved to the Cornell–Guggenheim Safety Center as assistant director and three years later she founded her own consulting company, specializing in searching for and rescuing passengers in downed planes. Search and Rescue, or SAR as it was called, provided Heath with the stage on which she would make her name.

Safety encompassed an almost limitless range: defective design and maintenance; pilot training and fatigue; collision avoidance; weather forecasting and warning; and much more. While these were Heath's daily concerns, her brother was killed flying his own plane when it was caught in a freak thunderstorm of which the system had given no warning. "By then, I had established my own credibility. I had earned my place at the table even though all the others at it were men. Frankly," says Heath, "that didn't bother me as much as it did some. There were games that had to be played in order to get things done and I just found them amusing. I remember when I was invited to address the Wings Club, a male preserve, I was given well-intentioned advice: 'Just remember, when you are about to mention some facts that they may not be aware of or understand, preface your remarks by saying "As you well know ..." '."

During her career, Heath wore so many hats that at times she must have seemed to be a one-woman designer of aviation millinery. Perhaps most illustrative of her remarkable talent for organizing and persuading large quantities of men took place during the seventies and eighties.



AFTER THE WAR ENDED, Heath moved into aviation safety at Aero Insurance Underwriters in 1947. Richard Hatton, supervisor of the Bell Helicopter Training School, teaches her about helicopter maintenance.

In 1968 the Federal Aviation Administration first tackled the problem of civil aircraft that crashed, either at sea or in remote areas of the United States, and could not be found without extensive air searches that were often fruitless. Search and rescue missions had to be used in forty percent of fatal civil air crashes within the United States because crash sites were difficult to pinpoint accurately. The administration invited comments from the aviation community on its proposal that aircraft carry a form of electronic beacon which could be easily received by searching aircraft. In 1968 the FAA was endorsing her demand for the electronic beacons, but the wheels of bureaucracy and special interests grind slowly in a democracy. The pros and the cons have to be given time to express their opinions. There was compelling evidence of the need for such a device, and the FAA acknowledged that it came from the

DURING HER YEARS AS a flight safety advocate, Heath met with (l.-r.) Carl Christenson, vp of United Airlines, Mrs. Christenson and Mina Moussiopoulou of the Greek Civil Aviation Department.
***Below:* In 1970, as chairman of the Barbour Air Safety Award Board, she presented the award to C. O. Miller, chief of NFSB's Bureau of Aviation Safety (r.), and to Hon. Joseph O'Connell, chairman of the National Transportation Safety Board.**

Cornell–Guggenheim Aviation Safety Center.

Commercial airliners were not the heart of the problem. They filed flight plans before departure and periodically reported their positions. But private planes were under no such discipline. Heath had been campaigning for years for such planes to file flight plans and carry an electronic beacon.

Then in 1972 a Louisiana congressman, Hale Boggs, possibly did more for his country in death than he had in his life. He was aboard a private plane that crashed somewhere in Alaska and was never found. This gave the impetus to make it obligatory for civil aircraft to carry a beacon and it finally became law. But there was a catch. The beacon could only be received by search planes flying in the vicinity — the same limitation applied to ships with a beacon.

By now a restless Heath had moved her attention to outer space. She became chairman of the International Academy of Astronautics

Flight Safety Foundation's
Board of Governors

presents this certificate
in recognition of an
esteemed and respected colleague . . .

Gloria W. Heath

. . . for a lifetime of dedicated service
to the Foundation, from its beginning,
first as a member of its staff, and
later as a governor.

She has acted unselfishly and with
genuine concern for the accomplishment
of the Foundation's essential and
noble goals to improve safety
for all those who travel by air.

November 7, 1990

James Rademaker
Chairman, Board of Governors

A "SINGULAR" WOMAN IN a male-dominated industry, Heath has been recognized several times by the Flight Safety Foundation. She is shown with her colleagues (top) in Lisbon in 1988. The Women in Aviation inducted her this past March into its International Pioneer Hall of Fame (above, carrying the award).

FRAN COLLIN

GLORIA HEATH worked hard to gain acceptance in a male hierarchy. At 77, she can now relax and enjoy her home in Belle Haven.

symposium at the annual Astronautic Congress and addressed it on the subject of rescuing imperiled astronauts. To the delight of the astronauts, she defined the planning, the equipment and the procedures for bringing them back to earth and rescuing them when they landed.

"I think," she says in her quiet and modest way, "that I had a talent, if you could call it that, for viewing a solution for one problem that could be applicable to another problem and then gathering a constituency among those with influence who would fight for its adoption. There we were, conceiving a system in which ground stations around

the world could receive and relay signals from space. Why couldn't that system have a wider application, not just for astronauts but also for earth-based emergencies, whether they might be ships or planes in distress, or man-made or natural disasters anywhere in the world?

"It so happened," she adds with the glimmer of a smile of one used to the give and take of politics, "that NASA, thinking on the same line as I was, saw an opportunity to obtain funds from Congress if it could demonstrate that it would help humanity on earth as well as astronauts in space. So, it persuaded the National Oceanic and Atmospheric Administration to install a responder in its satellite that could receive distress signals from earth. All that remained — and it was a big 'all' — was to organize receiving stations on earth that could receive distress signals relayed by the satellite."

By 1982, with the United States, Canada, France and Russia setting the example to be followed later by thirty-one other nations, the worldwide system became a reality as far as ships and planes were concerned. As the moving spirit behind this long campaign, Heath must have felt rewarded when during a round-the-world race last February, Isabelle Autissier, whose boat capsized in the South Pacific, was located the following day and rescued. French-built instruments on the NOAA satellite had picked up her distress signals, relayed them to France, where, in turn they were relayed to an Italian yacht in the race that picked her up. The report concluded with a tribute that must have given great satisfaction to the woman who, though famous in aviation and space science, was little known to the general public: "Program organizers said more than 10,000 people have been saved by the program since it began in 1982."

"My only regret," Heath says, "is that the system I envisaged is still not operational for earth disasters such as floods, earthquakes or a Chernobyl or a Bhopal where immediate aid could have saved many lives. Getting international cooperation for that has been frustratingly slow. There have been all kinds of roadblocks. Poorer countries preferred to put what money they had into immediate needs rather than into a system they might use only infrequently. And there was no way of assuring that authoritarian governments would even admit they had a disaster that reflected on their management, or that aid sent to them wouldn't bypass victims and end up in the pockets of political supporters. The World Bank and United Nations have been working on it for years but we're still not there. Few things are as simple as they seem."

Gloria Heath should know. She has spent her whole career learning that lesson. It is hard to imagine how, with her mild manner and soft speech, she has so influenced the aviation and space establishment and has piloted her ideas through the shoals of special interests, committees and national bureaucracies to acceptance. She has never been in a position of authority where she could order action or acceptance. She seems to have had no interest in power nor shown the slightest envy of those whose titles, though not always their intellects, enabled them to wield it.

"This may sound spiritual," she says, "but it isn't really. It's a belief, if that's the right word, that I inherited from my mother. She was very interested in the Christian Science Church. Preoccupation with one's self, allowing your ego to dictate your reactions, only inhibits you in all kinds of ways and certainly inhibits you from being constructive. Putting your ego on hold frees you to be constructive. I think the main contribution I made was being constructive."

Sweet reasonableness. Yet, after all, the author of the *Feminine Mystique* and the author of *Worldwide Distress and Disaster Response Employing Space-Based Systems* had graduated from Smith within a year of each other. They chose very different ways of putting their burrs under the saddle of the male majority. □

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