# A Castle in the Air: The William and Mary Flight School

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Abstract

In the 1920s and 1930s, the world was captivated by aviation, and the College of William and Mary was no exception. Under the progressive leadership of Dr. Julian A. C. Chandler, the college made aviation history in 1931, when it established the world's first college-sponsored flight school. The new Department of Aeronautics won national attention, and infused the campus and local community with a spirit of "air-mindedness." Despite its great promise, the flight school was gone less than five years after it had begun. Like many other college reform efforts that marked the 1920s and 1930s, it had been a risky venture, and one that, in the end, did not pay off. The flight school was a castle in the air, built on the inspiration of a few influential men, but lacking the financial and institutional foundation that might have supported it once those men were gone. This paper recounts the story of the William and Mary Department of Aeronautics, placing it in the context of prevailing conditions at the college, in aviation, and in higher education.

# A Castle in the Air: The William and Mary Flight School[1]

"If you have built castles in the air, your work need not be lost; that is where they should be. Now put the foundations under them." (Thoreau, 1854)

In the early 1930s, the roar of airplane engines could be heard around the world. Less than thirty years after the Wright brothers made the first successful flights in a motorized, pilot-controlled airplane in 1903, the world had already witnessed aerial warfare, flying circuses, airmail, and Lindbergh's 1927 solo flight across the Atlantic (Crouch, 2003). Aviation was increasingly becoming part of people's lives, and a part of the popular culture.

Williamsburg, Virginia was not untouched by the wave of excitement generated by aviation, but it had not felt its impact directly until the late 1920s, when Hughes Kistler, a student at the College of William and Mary, in protest over the college's strict rules regarding automobiles, arrived on campus in his own private airplane ("W. & M. College," 1931). By the end of 1931, the city of Williamsburg had built an airport, three students had received private pilot's licenses, and several more were enrolled in the ground school and flight training programs of the College's newly established Department of Aeronautics. The program attracted the attention of significant figures in U.S. aviation, including representatives of the government, the military, and even Amelia Earhart. It seemed that William and Mary, under the visionary leadership of its president, Dr. J. A. C. Chandler, was on the cutting edge of collegiate aviation education.

William and Mary's efforts to expand into uncharted territory were not unique. The period between the two World Wars was marked by extensive growth in higher education as judged by several measures, including the number of students attending college, the kinds of institutions available to them, and the physical size of those institutions (Thelin, 2004). Junior colleges and technical colleges took their places alongside traditional universities. Public education led to a dramatic rise in the number of aspiring collegians, and coeducation and colleges for women provided additional options for young ladies to continue their education. Universities developed their intercollegiate athletics programs and poured money into new facilities, sometimes at the expense of faculty salaries, as in the case of Southern Methodist University. In many cases, investments in growth and reform paid off in the form of more students, new philanthropic contributions, and alumni and community loyalty. In other cases, leaders met with considerable resistance. Harvard president Abbott Lawrence Lowell was ridiculed by students for his attempt to reshape the campus through the "house" system, while Alexander Meiklejohn's unpopular reform efforts at Amherst College led to his dismissal.

William and Mary caught the wave of progress early on. Its flight school was only one of the many new initiatives that revitalized the college during Julian Chandler's presidency, from 1919 to 1934 (Kale, 1985; Sherman, 1993; Whittenburg, 2004). A look behind the public face of the aviation program, however, reveals an operation that was founded largely on inspiration, driven by the enthusiasm of a small number of influential individuals, but sorely lacking in financial stability and institutional commitment. When the inspiration disappeared, the obstacles proved to be insurmountable. What seemed so promising in 1931 had come to an end only five years later, and is now simply a curious item of William and Mary trivia, all but unknown even to long-time members of the campus community. This paper traces the short but fascinating life of the William and Mary flight school, an unsuccessful product of the progressive expansionist movement that characterized many colleges and universities of its day.

## Aeronautical Education in the United States by 1930

Aeronautics had been a subject of scientific interest long before the Wright brothers' plane lifted off the ground at Kitty Hawk. Physicists and engineers in England, Germany, and Russia had conducted research in aerodynamics as early as 1878 (Crouch, 2003). For several years, European countries far exceeded the United States in terms of both flying skill and aviation research

(Launius & Daly Bednarek, 2003). The reputations and findings of some of the key European scientists crossed the Atlantic and began to be incorporated into the physics and engineering programs in U.S. colleges and universities. Lectures in aerodynamics began at the Massachusetts Institute of Technology (MIT) in 1913, and the University of Michigan created a department of aeronautics three years later, becoming the first institution of higher education in the U.S. to offer a full four-year degree program in aeronautical engineering. By the mid-1920s, five universities offered aeronautical engineering programs, but only two (Michigan and MIT) offered degree programs (Hallion, 1977).

In 1925, Daniel Guggenheim donated $500,000 to New York University to establish the Daniel Guggenheim School of Aeronautics. Although the federal government had begun to take more of an interest in aeronautical research and development by this time, Guggenheim saw a need for greater attention in the field of civil and commercial aviation. Mechanically unsound aircraft had led to a large number of accidents that dampened public enthusiasm for flying. Guggenheim believed that in order to reassure people that flying could indeed be safe, highly qualified engineers were needed to design safer airplanes. Realizing that a single gift would not accomplish his goal, he established the Daniel Guggenheim Fund for the Promotion of Aeronautical Education in 1926. Over the next four years, the Fund awarded major grants to establish seven other Guggenheim schools at universities strategically located across the country: MIT, Caltech, Stanford, the University of Washington, the University of Michigan, the Georgia School of Technology, and the University of Akron (Crouch, 2003; Hallion, 1977). Money from the Fund was also used to support educational and research programs at Northwestern University and Syracuse University. Additionally, the Fund provided money to faculty and graduate students for independent study and foreign exchange, and established the Guggenheim Fund Committee on Elementary and Secondary Aeronautical Education to promote the teaching of aeronautics at the primary and secondary school levels. By 1930, Daniel Guggenheim felt his objectives had been achieved and the Fund closed, having allocated close to $1.7 million. Its value to the U.S. aeronautical industry was incalculable. By the middle of the 20th century, alumni of Guggenheim schools made up the vast majority of this country's senior aeronautical scientists and engineers, and graduates held similarly high positions in many other countries as well (Hallion, 1997).

Although Daniel Guggenheim directed his philanthropy primarily to improving the mechanical safety of aircraft through engineering education, he was also cognizant of the public image problems created by foolish or poorly trained pilots. He and his son Harry sponsored two national air tours to promote a positive image of aviation. Through the tours they also hoped to generate public interest in aviation services and demonstrate the reliability of air transport (Hallion, 1977). The first tour took place in 1926 and featured Floyd Bennett, who had flown over the North Pole with Robert Byrd earlier that year. The newly famous Charles Lindbergh was the star of the tour the following year. At each stop Bennett and Lindbergh gave talks and interviews emphasizing the value of commercial aviation, encouraging the use of airmail, and promoting the establishment of airports around the country. Both tours were considered highly successful, with airmail use increasing by more than 50 percent after Lindbergh's tour alone.

The Guggenheims' contributions helped establish aviation as a part of the cultural vernacular. They promoted the use of air services, increased the public's awareness and expectation of air safety, and helped justify the public's growing confidence through aeronautical education programs that resulted in safer aircraft design. The problem of safer operation of those aircraft was left to others to solve.

## William and Mary during the Chandler Years

Dr. Julian A. C. Chandler became president of William and Mary in 1919. His affiliation with the college began much earlier, having received his B.A. and M.A. from the college in 1891 and 1892, respectively (Sherman, 1993; Smith, 1976). Chandler hailed from a well-established Virginia family, and he was an outstanding student with extraordinary energy. He took his doctorate at Johns Hopkins University, after which he taught history and literature at and was appointed acting president of Richmond Woman's College, all before the age of 25 (Smith, 1976). He worked as an editor for Silver-Burdett publishing company, and published several works of his own on American and Virginia history. From 1909 to 1918, he earned his reputation as a powerful agent of educational reform as Superintendent of Schools in Richmond, Virginia (Sherman, 1993; Smith, 1976). During his tenure as superintendent, Chandler introduced a vocational education program, rigorous teacher training, and raised more than $600,000 to fund a massive plan of new construction that utterly transformed the city's school facilities. His actions were not always popular, but the results were impressive (Smith, 1976).

Chandler's success in Richmond foreshadowed his ambitions for William and Mary. As president, he continued to demonstrate an invaluable blend of energy, ideas, and political influence. He was a highly regarded member of the community, served as a member and officer of the Williamsburg Rotary Club, and he understood the power of using connections to achieve goals. Some thought that he should have run for governor, but he chose to remain at William and Mary for the rest of his life, working at a relentless pace to expand the breadth and quality of William and Mary's campus facilities and academic programs (Kale, 1985; Whittenburg, 2004).

To understand the magnitude and impact of Chandler's reforms, some attention must be given to the turbulent journey the college had taken in the years prior to his arrival. William and Mary had faced enormous challenges in the decades following the Civil War. The fact that the school was still alive was a great tribute to the dedication of Chandler's predecessor, Lyon Gardiner Tyler, who had served the college as president since 1888 (Kale, 1985; Sherman, 1993). Under President Tyler, the college had grown from only five buildings to thirteen. He had modernized the curriculum, established the college's first admissions requirements, and institutionalized the athletics program. Perhaps most importantly, Tyler had succeeded in securing full public status for the college in 1906 (Godson, 1993). Before that time, William and Mary had functioned as a private institution with two Boards of Visitors that were often at odds with one another. Acquiring public status also addressed some of the financial problems that had persistently plagued the college up to that point. As part of its newly enhanced public mission, the college was required to offer teacher training. Women were admitted to the college for the first time in 1918, and Tyler hoped to attract them with a new vocational program in home economics, supported by the 1917 Smith-Hughes Act (Godson, 1993). Tyler also succeeded in increasing the size of the student body by opening the college to the Students' Army Training Corps (SATC) in 1918. The SATC brought 98 young men to the college that fall, including Yelverton Kent, who would later become involved with the flight school (Godson; Kent, 1975). The critical importance of Tyler's efforts is evident in the fact that women and SATC students together made up more than 75% of the student body in the fall of 1918.

As much as Tyler had done for William and Mary by the time he retired in 1919, much more needed to be done to secure the college's future. World War I had taken a severe toll on the student body. When Chandler was appointed to the presidency, student enrollment stood at a mere 131 (Kale, 1985; Sherman, 1993). He was aware that the college needed more students and a larger, more modern campus to accommodate them. Within six months of assuming his new post, Chandler launched a $1,000,000 fundraising campaign, which drew the support of influential figures such as John D. Rockefeller, Jr. and Andrew Carnegie and laid the foundation for the present-day William and Mary Endowment Association (Kale, 1985; Sherman, 1993; Whittenburg, 2004).

Within two years, the college saw a five-fold increase in its student body, and numbers continued to rise. This expansion was due, in part, to the growing number of high school graduates and the fact that the pool of potential applicants had doubled with the admission of women just a few years earlier. More importantly, however, Chandler had embarked on an ambitious building plan that provided for additional dormitories, a dining hall, and administrative and instructional facilities, more than tripling the size of the campus. He also initiated extension programs in Richmond, Newport News, Norfolk, Hampton, and Petersburg and later established branch campuses in Richmond and Norfolk. The law school was revived, and pre-professional programs were added to the curriculum in the fields of forestry, business, secretarial science, social work, agriculture, library science, and, in 1931, aviation. (Kale, 1985; Sherman, 1993; Whittenburg, 2004).

The addition of so many vocational programs at a self-proclaimed liberal arts institution may seem strange or inappropriate today. Indeed, not everyone agreed with Chandler's shift in curriculum at the time either, as will be shown later. Chandler believed in the value of the liberal arts, but he also believed strongly in grounding education in the practical needs of the day (Sherman, 1993; Smith, 1976). One of the pillars of his reform plan as superintendent in Richmond had been the vocational education program. In building that program, Chandler had worked closely with local businesses to determine what their needs were and to develop the vocational curriculum to match (Smith, 1976). He brought a similar philosophy to William and Mary, expressed in his 1919 article, "The Sphere of the Modern College" (as cited in Sherman). Chandler viewed education as a means of preparing students for their chosen roles in society and also of meeting societal needs. He believed that businesses would readily give financial support to educational programs that would produce well-trained workers. To that end, Chandler thought that the college curriculum should be more or less equally divided between the liberal arts and vocational subjects, such as home economics, business, education, and applied science, providing an education that would better serve the community, the state, and indeed all of humanity (Sherman, 1993). Viewed in this way, a program in aviation was very much in keeping with Chandler's philosophy of education and his mission for the college, as further evidenced by the fact that the rationale for the flight school was often couched in terms of serving the greater good and imparting humanizing values characteristic of the liberal arts ("Aerialities," 1932; "Col. Young Endorses," 1932; Colonial Echo, 1933; "Popp and Blitzer," 1932). Incorporating a vocational component into the curriculum found ideological and financial support from both the federal and state governments. The establishment of vocational programs was encouraged by the 1917 Smith-Hughes Act, of which the college had already availed itself in developing its home economics program. The state-mandated teacher training program was another example of vocationalism already well established by the time Chandler took office.

Although Chandler may have desired the support of the faculty and others in carrying his vision forward, he did not need it in practice. When he accepted the presidency, Chandler had secured assurances from the Board of Visitors that he would be granted clear authority for the administration of the college, answering only to the Board (Sherman, 1993). He used this power freely and frequently throughout his tenure. His authoritarian leadership style did not endear him to many of his faculty and administrative colleagues, and some of his expansion efforts drew opposition (Kale, 1985; Sherman, 1993; Whittenburg, 2004). Without doubt though, he was a committed advocate for the college and he is remembered with admiration as the father of the modern William and Mary (Kale, 1985).

## History of Flight at William and Mary

Historically speaking, the students at William and Mary were no strangers to the air. In 1786, a group of students formed a balloon club with the support of William and Mary's president, the Reverend James Madison. For several years, the club conducted experiments and in 1801 finally succeeded in raising a colorful, home-made balloon on Williamsburg's Court House Green (Rollo & Crabill, 2003). A marker on the corner of Richmond Road and Stadium Drive claims that this flight represents "the earliest recorded evidence of aeronautics in the commonwealth" (Department of Historic Resources, 1991, as pictured in Rollo & Crabill). Letters from flight historians at Edwards Air Force Base and the National Air and Space Museum in 1982 affirmed that the William and Mary Balloon Club was very possibly the first organization of its kind at any institution of higher education in the world (U.A., Flight School subject file[2]).

More than a century later, "air-mindedness" was again sweeping through campus. National interest in aviation was reflected at William and Mary, and the campus fever was further fueled by the presence of Hughes Kistler and his racing airplane. An editorial column in the student newspaper, the Flat Hat, called flying "William and Mary's latest fad…With one student already driving his own plane, and others actively interested, we have an idea there will be something interesting brewing in this field before long" ("This Department," 1929).

The editors of the Flat Hat were quite correct in their prediction. One month later, the paper reported that a glider club was being considered, pending formal approval from the college administration ("Aviation Grows," 1929). Approval was evidently granted, and a club was formed under the technical guidance of William and Mary mathematics professor Floyd Bailey, who had been introduced to the sport of gliding by renowned glider pilot Dr. Wolfgang Klemperer. The William and Mary Glider Club was one of the earliest college glider clubs in the United States, and the first glider club established south of the Mason-Dixon line ("Aviation Grows," 1929; "Open Forum," 1930; "W. & M. Glider Club," 1930). The club acquired a glider in the spring of 1930, and several of its members took the National Glider Association's licensing exam that May ("Glider Club Soon," 1930; "Glider Club Will," 1930).

——Although accounts of the William and Mary flight school often neglect to mention the Glider Club (Aron, 2005; Olson, 1976; Sherman, 1993; "W&M Aviation," 1932), the club was an important first step in the college's involvement with aviation. It provided an initial outlet for those students who were eager to take to the skies and paved the way for the developments that were soon to come.

## The Department of Aeronautics and Flight School

In 1931, a steamship called the "Southland" weighed anchor at Jamestown, just a few miles from the William and Mary campus. It carried students and instructors of the Raymond Riordan School (also referred to as the James Riordan School), a New York preparatory high school for boys. The school had embarked on a semester away and planned to spend three months docked at Jamestown. The curriculum and pedagogy of the Riordan School incorporated a philosophy of active learning, and the boys spent a good deal of time engaged in practical activities, such as field trips, community service projects, woodcraft, and aviation

("Riordan School," 1931). Raymond Riordan, who was acquainted with Dr. Chandler, approached him about allowing the Riordan students to use William and Mary's science labs. In exchange, the Riordan School would provide flight instruction to students from William and Mary (U.A., Flight School subject file; U.A., Kent, 1975). Chandler agreed and an informational meeting was held in November 1930 for students interested in taking the flight class, which would be conducted when the Riordan School arrived in January 1931 ("Aviation Course," 1930). The cost of the course was $300 per student – no small sum at that time, given that fees, room and board for a semester totaled approximately $250 (U.A., Bulletin, 1931) – and included both ground instruction and 20 hours of flight time, sufficient training to qualify for a private pilot's license. Yelverton Kent, one of the first students and later an instructor at the flight school, recalled that a special arrangement was made for five students of Chandler's choice to enroll in the course at only half that price (U.A., Kent, 1975). Kent, who had first come to William and Mary as part of the SATC in 1918, had returned to finish his education and was living in the President's House as a friend and role model to Chandler's son, who was also a student at the college (U.A., Kent). Julian Chandler, Jr., known as "Judy," was very interested in aviation. Naturally, he and Kent were two of the students tapped by Dr. Chandler for the discounted flying lessons. They signed up for the class along with 25 other William and Mary students ("Twenty-Seven File," 1930). By the end of the semester, Judy Chandler, Kent, and another student, Colin Vince, had completed the training and earned their private pilot's licenses, and Judy Chandler had purchased one of the Riordan School's training planes for his own use ("College Students Pass," 1931; "W. & M. Students," 1931).

It is unclear exactly when or how the proposal was made to establish a formal flight program at the college, but it seems that the idea came about through conversations between Dr. Chandler and Lt. Col. Earl C. Popp, one of the Riordan School's flight instructors (U.A., Kent, 1975; "W. & M. College," 1931). Dr. Chandler was actively seeking advice and financial support in the summer of 1931, but without much success or encouragement. In June, a Mr.

Abbott Ingalls met on behalf of the college with R.R. Saltus, Jr., secretary of the Ludington Airline, to get his thoughts on William and Mary's efforts to establish a flight school (U.A., J. A. C. Chandler papers: Budget – Airport). Saltus thought that there was little chance of William and Mary finding a donor to support such a venture. Those interested in financing aviation education (such as the Guggenheims) had already given a great deal of money and were not likely to support new initiatives. Furthermore, Saltus opposed the very idea of a vocational flight program at a liberal arts college such as William and Mary. Saltus believed that the aviation industry was already saturated with graduates from existing aeronautics and flight training programs, and he saw no reason why William and Mary should want to assume the liability associated with a college-sponsored flight school.

Why indeed? No other college had yet incorporated actual flight training into its academic program. All of the aeronautics programs offered at other schools were based in classrooms and laboratories. Students who wanted to learn to fly had to enroll at commercial flight schools or join an extra-curricular flying club, where members provided their own equipment and practiced their flying independently and without risk to the institution. Yel Kent believed that the flight program was Dr. Chandler's way of indulging his son (U.A., Kent, 1975). Perhaps Chandler was indeed influenced by Judy's enthusiasm; perhaps he was intrigued by the idea of doing something no other college had done; or perhaps he hoped that such an undertaking would draw widespread attention and financial support to William and Mary, which was operating at a severe deficit at the time (U.A., Board of Visitors minutes, June 10, 1932). All that can be said definitively is that he was determined and extremely optimistic.

On July 31, 1931, Kenneth Chorley, a member of the Board of Visitors, wrote to Chandler, saying, "I have been absolutely unable to interest anyone to put any money up to establish your aviation school" (U.A., J. A. C. Chandler papers: Budget – Airport). That same day, the Virginia Gazette reported:

> Dr. J. A. Chandler, President, has announced that William and Mary College will open a school of aeronautics with both ground institution [sic] and flight training courses leading to Department of Commerce licenses, beginning with the fall session … It is said that the founding of the school of aeronautics is made possible by the generosity of friends of the college. ("To Teach Aviation," 1931)

This last statement may have been a prayer rather than a report of fact. According to a letter to L.U. Noland, a Newport News businessman, in August of that year, Chandler had raised only $5,000 towards the operation of the flight school (U.A., J. A. C. Chandler papers: Budget – Airport). Nevertheless, the Department of Aeronautics began operations in September as promised under the direction of Col. Popp, who had played an important role in inspiring Chandler to establish the school in the first place. Students could take up to two semesters of ground school course work, which consisted of lectures and lab work in the theory of flight, aerodynamics, airplane engines and engine maintenance, meteorology, and navigation ("Aerodynamics & Flight," 1932). Ground school enrollment was required of any student who wished to pursue flight training, with credit issued through the Department of Physics. Flight instruction was offered without credit by the Department of Aeronautics for a fee of $150 per semester. This allowed students to obtain pilot's licenses within a single semester at about one-fourth the cost of a commercial flight school (Aeronautical Chamber of Commerce, 1932). Those who desired additional instruction toward higher-grade licenses could do so by special arrangement, provided they could afford to pay the additional fees.

The financing of the Department of Aeronautics is a matter of no small curiosity. The revenue generated by student fees covered only a fraction of the program's expenses. A statement of receipts and disbursements for the year from September 8, 1931 to September 10, 1932 indicates that Chandler made liberal use of "creative accounting" practices in the case of the flight school, as he often did in balancing college accounts (U.A., J. A. C. Chandler papers:

Budget – Airport; Kale, 1985). During that year, nearly $8,000 was moved to the Department of Aeronautics from other endowment and construction funds, supplementing $14,317 received in donations. Even this was not enough, and more than $2,500 was taken out in bank loans. Chandler's determination to pursue the flight program despite the high cost is all the more remarkable given William and Mary's financial troubles. Somehow, despite the additional challenges presented by the Great Depression, Chandler was managing to bring William and Mary closer to eliminating its debt load. He reported to the Board of Visitors in 1932 that the operating expense deficit was $110,000, down from $175,000 the year before (U.A., Board of Visitor minutes, June 10, 1932). The following year it was down to $25,000 (U.A., Board of Visitor minutes, June 9, 1933). He attributed the deficit reduction to massive spending cuts, including the elimination of faculty in 1931-32 and 1932-33, the very time when the flight school was drawing off considerable resources and necessitating additional loans. In his report to the Board in 1932, Chandler expressed his gratitude to the faculty for their ongoing dedication:

> The fact is, they have been working on some new plans for the curriculum but have felt that it was best to hold up until the financial status of the College justifies us in making certain changes. I wish to assure the Board, however, that the one thought that has prevailed throughout the session on the part of the faculty has been to strengthen the primary purpose of the College, namely, the training of our young people in the liberal arts and sciences. (U.A., Board of Visitor minutes, June 10, 1932)

To think that this statement was made while Chandler himself was fostering the development of a costly new and essentially vocational program is rather perplexing. It makes more sense, however, in view of the flight school's ambiguous status at the college: it can almost be said that the William and Mary flight school did not officially exist. Col. Popp and the Department of Aeronautics were mentioned only once in the Board of Visitors minutes from 1930 to 1936, namely, in a list of course enrollments (U.A., Board of Visitors minutes, June 10, 1932). Unlike other faculty, Popp's appointment and salary were never formally approved by the Board; he never again appeared in faculty or course enrollment lists; there is no record of Board discussions about starting a flight program, no indication of major gifts made to support the program, and no reports on the department's progress. A motion was passed in 1929 authorizing Dr. Chandler to cooperate with state and city officials "to use the name of the college in an effort to establish an air port [sic] at Williamsburg" (U.A., Board of Visitors minutes, December 13, 1929), but there is no further reference to the airport, even though the college purchased it from the city in 1932 ("City Airport," 1932). Faculty minutes also lack any reference to the Department of Aeronautics, despite the notoriety the program received for its curriculum-based flight training model. Popp is mentioned in the minutes only to indicate his absence: he missed most, if not all, of the faculty meetings that took place while he was at the college (U.A., Faculty Minutes 1911-1933). In the college yearbook, the Colonial Echo, Popp is listed as a member of the instructional faculty only once, in 1933.

## The Operations of the Flight School

However insecure and invisible the flight school may have seemed according to the administrative records, it was anything but invisible to the students and the general public. In the first semester, 33 students signed up for Aero 101, the introductory ground school course, and 17 of those also registered for Aero 103, the flight training course (Carner, 1933; College Catalog 1931-32). By the end of the semester, seven young men and one young woman had earned licenses (including Judy Chandler and Yel Kent, who passed the examination for transport pilot's licenses, the highest-grade license available) and another ten were in the process of completing their solo flight work ("Eight Earn," 1932; "Wings," 1932). The Glider Club was replaced by a Flight Club, whose members organized lectures and other educational programs for the campus. Col. Popp spoke to student groups, the Rotary Club, the Alumni Association, and others about developments in aeronautics and the college's role in promoting aviation for the good of humanity ("Popp and Blitzer," 1932; "Popp Speaker," 1932; "Rotarians Hear," 1931).

Colonel Popp was an excellent spokesman for the aviation program. He had useful contacts in the industry and was able to bring the college's program to the attention of high-ranking officials in the field of aeronautics ("Brick Hangar," 1931; "Col. Young Endorses," 1932). He viewed aviation as a potential successor to the automobile industry, with private aviation at the heart of the industry's future ("Rotarians Hear," 1931). His expertise and manner impressed students and townspeople alike, as judged by reviews of his speaking engagements and recollections of his former students (Olson, 1976; "Popp Speaker," 1932; "Rotarians Hear," 1931). The college's auditor wrote to President Chandler in 1932, praising Popp for his accurate keeping of flight school records (U.A., J. A. C. Chandler papers: Budget – Airport). Popp was also respected for the concern for safety that he brought to the program. Students lauded Popp's method, "which stresses a psychological observance of the student and his reactions to flying, plus the safety factor of quality equipment" (Colonial Echo, 1933).

Fairly little is known about Popp's career prior to his involvement with the College. The Flat Hat introduced him to the student body in 1931, calling him "a man of wide flying experience, but … also a man of considerable teaching experience, having at one time been the superintndent [sic] of one of the country's finest secondary schools" ("Aerialities," 1931). The writer added, "Colonel Popp established an unusual record when he trained the first school flight group of the world, that of the Raymond Riordon [sic] School." The latter claim would indeed be a remarkable achievement if it proved to be true. Its accuracy must be questioned, however, in light of the fact that no mention of the Riordan School's flying program could be found in either the New York Times or the Aircraft Year Book, which devoted a chapter each year to developments in aeronautical education in elementary and secondary schools, as well as in universities. Popp's accomplishments at William and Mary, however, did not escape notice or documentation.

The Flat Hat and the Virginia Gazette were eager to report on the aviation activities of the college. The two papers, both weeklies at that time, added regular columns on aviation, just in case readers' appetite for news was unsatisfied by the front page reports that came out in nearly every issue from September 1931 through April 1933. An editorial in the Flat Hat boasted that the flight school had brought William and Mary "national acclaim in no less than five leading aeronautical publications and more than thirty metropolitan newspapers" ("A Pioneer Priority," 1931). The Aircraft Year Book, a comprehensive annual volume of industry news, statistics and other information, twice devoted paragraphs to William and Mary in its chapter on colleges and universities, rather than a simple inclusion in the alphabetical list of institutions engaged in aeronautical education (Aeronautical Chamber of Commerce, 1932, 1933).

As the word about William and Mary's flight program spread, letters poured in from prospective students and instructors. One student pilot with a flair for hyperbole wrote in the Flat Hat, "Forty million individuals began to write letters inquiring about the flight courses … At least ten thousand of these letters were answered by your weary scribe—who has estimated the above figures by the number of hours he spent upon the letters" ("W&M Aviation," 1932). Col. Popp's more modest estimate of 400 letters is, if accurate, still very impressive ("Aeronautical Engineers," 1931). Students began to enroll at William and Mary specifically for the flight courses, some of them graduates of the Riordan School (U.A., Barton Traver Hulse scrapbook; U.A., J. A. C. Chandler papers: Budget - Airport). Perhaps this was exactly what Dr. Chandler had hoped for when he decided to launch the program. Unfortunately, the facilities available at the school were not sufficient to meet the demand.

Dr. Chandler knew the flight school was in trouble. In the summer of 1932, only one year after he had announced the opening of the aviation program, Chandler replied to one of the many flight instructors who had written to inquire about a position at the school. "With matters as they are, it looks as if it will be necessary to abolish our department of aviation after September 1. There are simply no funds to carry on this work" (U.A., J. A. C.

Chandler papers: Employment – Academic – Aviation 1931-33). To complicate matters further, the airport itself was in jeopardy.

The first Williamsburg airport was built in 1931 on the Scott-Davis farms, about a mile from the William and Mary campus ("Instruction in Aviation," 1931). The State Highway Department agreed to construct the runways in exchange for the city assuming a 5-year lease with option of purchase. It is unclear whether the college shared any financial responsibility for the lease at this time, but the airport was to be operated by the Department of Aeronautics, and the college purchased part of the land in order to build a hangar ("Municipal Airport," 1932; "Work Will Start," 1934). Around the same time, the city of Williamsburg was finalizing plans for a new highway bypass to divert traffic away from the historic part of town. Money had been appropriated for the project in 1930, but the Virginia Gazette editorial page complained in November 1931 that construction was rumored to have been postponed ("That By-Pass," 1931). Less than a week later, an article appeared on the paper's front page announcing that construction had begun on the college's new hangar, to cost about $10,000 ("Brick Hangar," 1931).

Taken together, these two apparently unrelated news items are very important. The bypass, as actually constructed in 1933, ran only 40 feet from the airport's north-south runway, essentially shutting it down ("H. G. Shirley Opposes," 1934). One must then ask: why would William and Mary erect a state-of-the-art hangar costing $10,000 on an airfield that was soon to be rendered useless? The bypass had been planned before the flight school came into being, and it is unlikely that Chandler was unaware of it. It is conceivable that earlier plans for the bypass were such that the airport would not have been affected, or that Chandler expected the construction to be postponed longer than it was. This explanation certainly could not have applied in February 1932, however, when the college assumed ownership of the airport lease and purchase option. Chandler's reasons for pouring scarce resources into such an uncertain and illogical venture remain a mystery.

The Department of Aeronautics did manage to survive beyond its first year. Col. Popp made arrangements with Dr. Chandler to operate the airport as a private business starting in September

1932. Popp assumed the responsibility for staff salaries, aircraft maintenance, supplies, and solicitation of financial support. In exchange, the college agreed to cover insurance costs and provide Popp and the airport staff with free room, board and utilities (U.A., J. A. C. Chandler papers: Airport – Budget). The program was again listed in the course catalog and, as far as the students and the public were concerned, Chandler and Popp's innovative program continued to move ahead at full throttle. In fact, the next academic year, 1932-33, saw many of the flight school's greatest moments and was characterized by a swell of optimism for the school's future. The Colonial Echo dedicated three pages to the flight program in 1933, describing the accomplishments, mission, and prospects of the flight school thus:

> In the course of two college years, about forty student pilots have been trained for licenses. … Although these figures represent a greater number of flyers than have been turned out in a similar length of time by any other Collegiate flight club or organization, still the highest value of William and Mary's latest priority is a thing for the future to realize. … There is an aura of mistaken impressions existing in the opinions of the American public that must be overcome before this nation can realize the real benefits of modern aviation. … There are a thousand ways to apply aeronautics to modern and future efficiency in all arts and sciences, and above all there is a practical psychological value that adds an advantage to the art of living life.

The view of aviation as a service to humanity was reflected in the flight school's efforts to bring the benefits of flight to the general public. Even after William and Mary took over the airport, Col. Popp assured the people of Williamsburg that the airport, which was still to be used as a municipal airport, was "open to public inspection at any time and its equipment is offered for any emergency services the citizens may require" ("Municipal Airport," 1932). Requests for such services were indeed made from time to time. Pilots from the flight school were called upon to transport students and local citizens to hospitals for emergency treatment or in cases of family illnesses. Col. Popp announced to the student body in December 1931 that the flight school would provide transportation to New York for students who were traveling there for the holidays. The cost for the 4-hour flight was $33 round-trip, a "considerable savings" when compared to the expense, time, and inconvenience of an overnight train trip with meals ("Aeronautical Engineers," 1931). Even the Virginia General Assembly took advantage of the flight school when a representative attending a special session in Williamsburg realized he had left some essential papers at his office in Richmond. A pilot flew to Richmond and back, a trip that would take a full two hours by car in 2005. He made it in 35 minutes, delivering the papers to the delegate before his meeting began ("College Aviator," 1934; "First Aviation School," 1934). These services no doubt increased the positive regard the public and campus already displayed for the aviation program.

The flight school continued to gain national attention as well. Col. Clarence Young, U.S. Assistant Secretary of Commerce for Aeronautics, met with Col. Popp in the fall of 1932 and was excited to learn about William and Mary's unique flight program. He hoped to be able to promote William and Mary's model across the country and encourage other colleges to initiate similar programs ("Col. Young Endorses," 1932). Perhaps as a result of Col. Young's efforts, William and Mary received its special mention in the Aircraft Year Book in 1933 (Aeronautical Chamber of Commerce, 1933). Details about the program and its accomplishments were shared with flight enthusiasts worldwide, as was the college's justification for making flight instruction a priority:

> The courses were not designed primarily as an introduction to aviation as a profession, but because college authorities are convinced that aviation is destined to take an increasingly important part in the business and cultural interests of all and that the college is the logical place to offer such instruction. (p. 170)

In another triumph for the school, the Flight Club took first place in the prestigious Loening Intercollegiate Flying Competition in 1933 (Carner, 1933; U.A., Flight School subject file). Contrary to what the name suggests, the Loening Trophy was not awarded for skill in flying. Rather, it was adjudicated on the basis of the number of members, the number and condition of planes used by the club, total hours of flying time logged by members, club finances, and non-flight activities sponsored by the club. William and Mary's application was probably aided that year by the fact that Amelia Earhart attended the Flight Club's membership banquet that year, and delivered a public address (Carner; U.A., Flight School subject file). The club's standing as one of the premier collegiate flying clubs in the country was reaffirmed the following year, when it again took honors in the Loening competition, this time placing second (U.A., Flight School subject file).

## The End of the Flight School

Much had changed since the previous year, however, and one could argue that the 1934 Loening prize was awarded posthumously. The Department of Aeronautics had reached its peak in 1932-33 and was all but gone by the end of the following academic year. Student enrollment at the college fell after 1931-32, and consequently, enrollments in the flight courses dropped as well (U.A., Board of Visitors minutes, 1932, 1933; Carner, 1933). Records do not indicate how the flight school fared in comparison with the rest of the college, but it is likely that the widespread effects of the Depression would have made the cost of flight training prohibitive to even more students. Students returning to campus in September 1933 learned that Otto Johnson, formerly chief mechanic at the airport, had taken over as director of the Department of Aeronautics ("Otto Johnson," 1933). Dr. Chandler's health was failing by this time, and his death on May 31, 1934 fairly assured the closing of the flight school. The Department of Aeronautics was not mentioned in the college catalog again after 1933-34. The Flight Club continued its activities into the 1934-35 academic year as an extra-curricular student organization, but even that disappeared from the college yearbooks after 1935. Surprisingly, the departure of the popular and highly respected Col. Popp received no mention in any of the college publications or the Virginia Gazette. A letter from Col. Popp to Mr. Charles Duke, Bursar, indicates that Popp was still in Williamsburg in September 1934, working for a Boston-based company called Aero Pickup Service Corporation, but he appears to have had no relationship to the college at that point (U.A., J. S. Bryan papers: Airport – 1934-1936). Yel Kent recalled that Popp left Williamsburg to move to California (U.A., Kent, 1975).

The last vestige of the William and Mary flight program was the old airport, and that was about to disappear as well. Before Dr. Chandler's death, several acres of land had been purchased near Ewell Station, about five miles from campus, for use as a new airport. A grant from the Civil Works Administration was given to the city on the condition that the city own or lease the property for use as an airport. In a reversal of its earlier arrangement, the college now owned the property, and the city paid rent with a 5-year option to buy ("Work Will Start," 1934). The old airport was abandoned as soon as the new airport was complete. The last mention of flight activity found in the 1930s was a notice on the front page of the Flat Hat in May 1935, which read:

> No student will be permitted to engage in any flight activities conducted at the old College Airport without having first requested and obtained permission from the College authorities. This permission will not be granted without the parents' consent, and only then if in the opinion of the Administration it is desirable. ("Notice," 1935)

Officially, the Department of Aeronautics ended just as it had begun. Neither Board of Visitors minutes, nor faculty minutes, nor the presidential papers of Chandler's successor, John Stewart Bryan, include any mention of the department or the flight program. Despite its one-time popularity, the program, like its first director, disappeared with no fanfare, no announcement, and no explanation.

## Conclusion

Despite its short lifespan, the William and Mary Department of Aeronautics was a bold experiment, posing a new challenge to other university administrators who thought such a program could not (or should not) be done. More than 40 students received pilot's licenses at the school, and many more benefited from the ground school courses, all without a single injury to the students (Olson, 1976). Its lasting impact, however, was probably negligible. A column in the Flat Hat in 1932 indicated that two other colleges had already followed William and Mary's example, and that several others were making plans start flight schools as well ("W&M Aviation," 1932). Unfortunately, this statement could not be verified by any other source. To the contrary, for the remainder of the 1930s the Aircraft Year Book recorded no movement to embrace college-sponsored flight instruction, which was the one thing that set the William and Mary program apart. The college's classroom-based ground school was rigorous and comprehensive, but there was nothing particularly revolutionary about it compared with what other colleges were doing in their own classrooms at the time.

Within a few years, national defense needs would provide the impetus for a boom in pilot training programs. The federally funded Civilian Pilot Training Program (CPTP), administered by the Civil Aeronautics Administration of the U.S. Department of Commerce, trained approximately 60,000 young men and women between February 1939 and June 1941, bringing the nation's total number of certified pilots to nearly 100,000 (Aeronautical Chamber of Commerce, 1941). Graduates of the CPTP provided the military with a ready pool of potential pilots and flight instructors at a time when the country was preparing for the possibility of war. CPTP courses were offered at 907 training centers across the country, 707 of which were affiliated with colleges and universities (Aeronautical Chamber of Commerce, 1941). In fact, CPTP courses were offered at William and Mary in both semesters of the 1940-41 academic year, with academic credit awarded for both the ground school and flight portions of the program (Strunsky, 1940; "Flight Training," 1941). The cost to the student was a mere $25. CPTP training centers were responsible for purchasing aircraft, providing classroom space, and hiring instructors, which means that by the middle of 1941, several hundred colleges had invested in equipment and personnel for the purpose of training pilots. It is reasonable to assume that many of them continued their flight training programs even after the national crisis ended.

Today, more than 90 of the approximately 530 pilot training programs approved by the F.A.A. are formally operated by U.S. colleges and universities, including private, public, two-year, four-year, technical, and liberal arts institutions (Federal Aviation Administration, n.d.). It would be difficult to argue, however, that the example of William and Mary's flight school had much, if anything, to do with the development of college-sponsored flight training. William and Mary's model may have planted seeds in the minds of some influential people within the aviation industry, and it may have demonstrated that college-sponsored flight programs were possible. Once the need for young, qualified pilots became a matter of national security, however, it was logical for the government and armed forces to look to colleges to help address the issue. The former existence of a flight program at William and Mary most likely had very little impact.

Had the flight school managed to survive the lean years of the Depression and continue operations until the time when pilot training became a matter of national concern, it might have witnessed a resurgence of popular and financial support. Changes to the program would have been inevitable, however, due to developments in the field of aviation itself. Private planes never did take their place next to the family car, and municipalities did not build airports with the same zeal as roadways, as some aviation proponents had hoped or predicted (Aeronautical Chamber of Commerce, 1941; "Rotarians Hear," 1931; "Will There Be," 1945). The change in aviation's role in American life would probably have raised new questions about the college's reasons for continuing the program. Furthermore, as aircraft technology advanced and costs increased, the financial commitment of the college would have had to keep pace.

President Chandler might have thought the flight program was worth whatever resources were necessary to maintain it, but his successor clearly did not. President Bryan firmly believed in the liberal arts mission of the college, defined by the college curriculum committee as imparting to the students "skill, not in technical procedure, but in the discovery of truth…" (Sherman, 1993, p. 652). The 1906 act that had established the college as a public institution protected the teacher training program, but secretarial science, library science, journalism, and many other vocational programs introduced during the Chandler years shared the flight school's fate.

The story of the William and Mary flight school is largely the story of the people who created it. Without Earl Popp, J.A.C. Chandler, and perhaps Judy Chandler as well, the Department of Aeronautics would never have gotten off the ground. Dr. Chandler was a powerful force in the community and on the campus, and he found a very useful partner in Col. Popp. Popp's connections, personality, experience in the industry, and strict attention to safety served the cause of the flight school well. He inspired students, reached out to the community, and brought William and Mary to the attention of people in the highest ranks of aviation. His departure coincided with a decline in news coverage about the flight school and marked the beginning of the program's end. Of course, time inevitably would have tempered the initial thrill that greeted the aviation program anyway, and it may be that Col. Popp's presence would not have made much difference in that respect.

Presumably, President Chandler would have abandoned the flight school himself at some point if it had become clear that the program would never pay for itself (either directly through financial contributions or indirectly through substantially increased enrollments or national attention). His unquestioned devotion to William and Mary would not have permitted him to continue with a program that had absolutely no expectation of success to justify its strain on the college's resources. The question is how long he would have been willing to wait before determining that the flight school demanded more than it was worth.

The influence and dedication of Popp and Chandler together were sufficient, at least initially, to overcome the lack of financial resources and institutional commitment to the flight program. Losing either of these leaders certainly would have been a blow to the school, but to lose both of them at almost the same time was simply more than the nascent program could withstand.

Ultimately, the William and Mary flight school was a castle in the air, well built and glorious while it stood, but lacking a solid foundation to sustain it. Even Dr. Chandler, with all of his vision, commitment, and administrative skill, was unable to find the support necessary to make the flight school a stable and lasting part of the college. With his untimely death, the castle toppled. History may regard the aeronautics program as part of the larger progressive trend in higher education in the early 20th century, but for William and Mary, all that remains is a fascinating and little-known story of the college's inspired effort to fly.

## Notes

[1] The author gratefully acknowledges Norman Crabill, of the Virginia Aeronautical Historical Society, and B.J. Pryor for their interest and assistance in researching this paper.

[2] Materials obtained from the College of William and Mary University Archives will be identified throughout this paper with "U.A." at the beginning of the text citation. These items are alphabetized in the bibliography according to the actual file names, without the "U.A." designation.

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