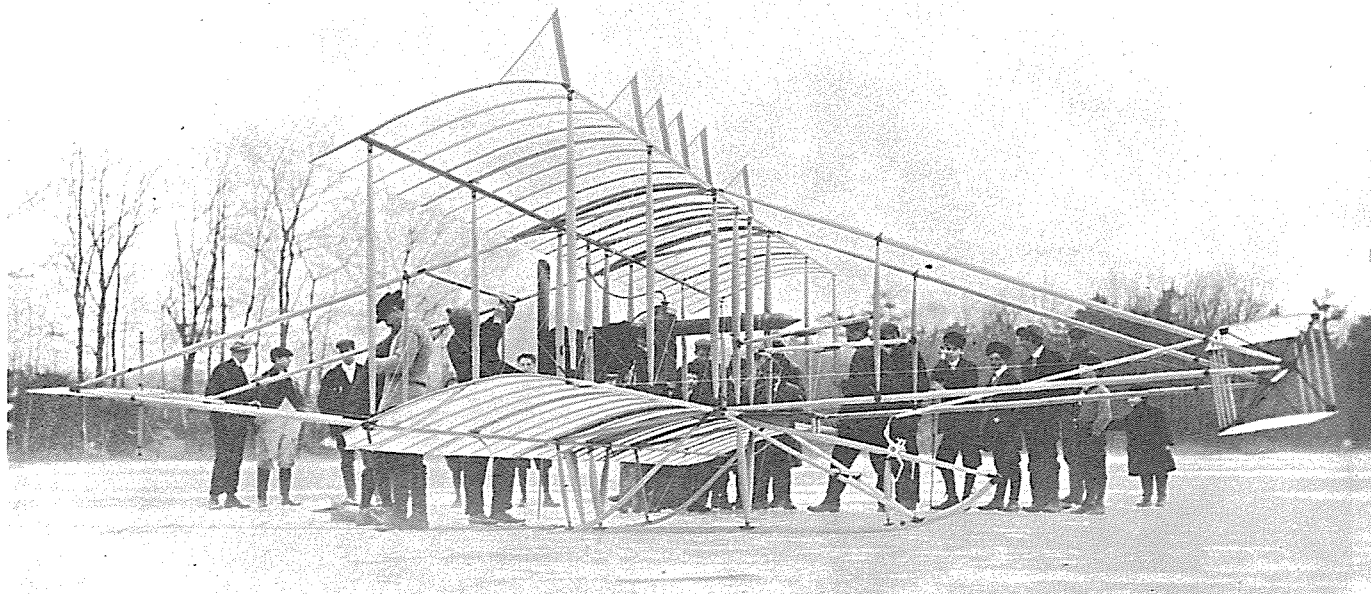




The Herring-Burgess Model A at Chebacco Lake. The rudder has been removed, but the foot control to the elevator is clearly visible. (Photo - Courtesy of Mrs. Helen B. Bolster)

The Burgess Story

Part 1 - 1910

By BARTLETT GOULD

The first Boston Aero Show opened on February 16, 1910. It ran for eight days and was the first such exhibition in the country really deserving of the name, aero show. On display were 18 full-sized aircraft--monoplanes, biplanes, and one triplane--plus the usual large complement of models. By way of contrast, a contemporary Paris show had been able to scrape together but eight machines.

The Boston newspapers, although differing in respect to the administration of President Taft, as well as the probable outcome of the proposed Jeffries-Johnson match for the heavyweight crown, found themselves in agreement on at least one thing: By far the most outstanding exhibit in the Aero Show was the new Herring-Burgess biplane. Built at the W. Starling Burgess shipyard at nearby Marblehead, the plane was the joint creation of Burgess and A. M. Herring, with the latter assuming the lion's share of the design work. True, the plane had not flown as yet, but a trial was scheduled for the following week at Chebacco Lake.

The feature found especially commendable about the Herring-Burgess was the workmanship, which indeed must have been truly unusual. Not only did all the papers mention it, but it is emphasized in the account of the Boston show appearing in the April issue of the magazine *Aircraft*. Later on in the year, a book came out called *HOW IT FLIES*. Authored by Richard Ferris, a short description of the Herring-Burgess was given on page 106; again, the superior craftsmanship was noted.

The Burgess Co. had received plaudits for its biplane. The next step was to move it to Chebacco Lake, in Essex, and try to get it into the air.

This was done. On the afternoon of February 28 the plane, with Herring at the controls, took off and flew

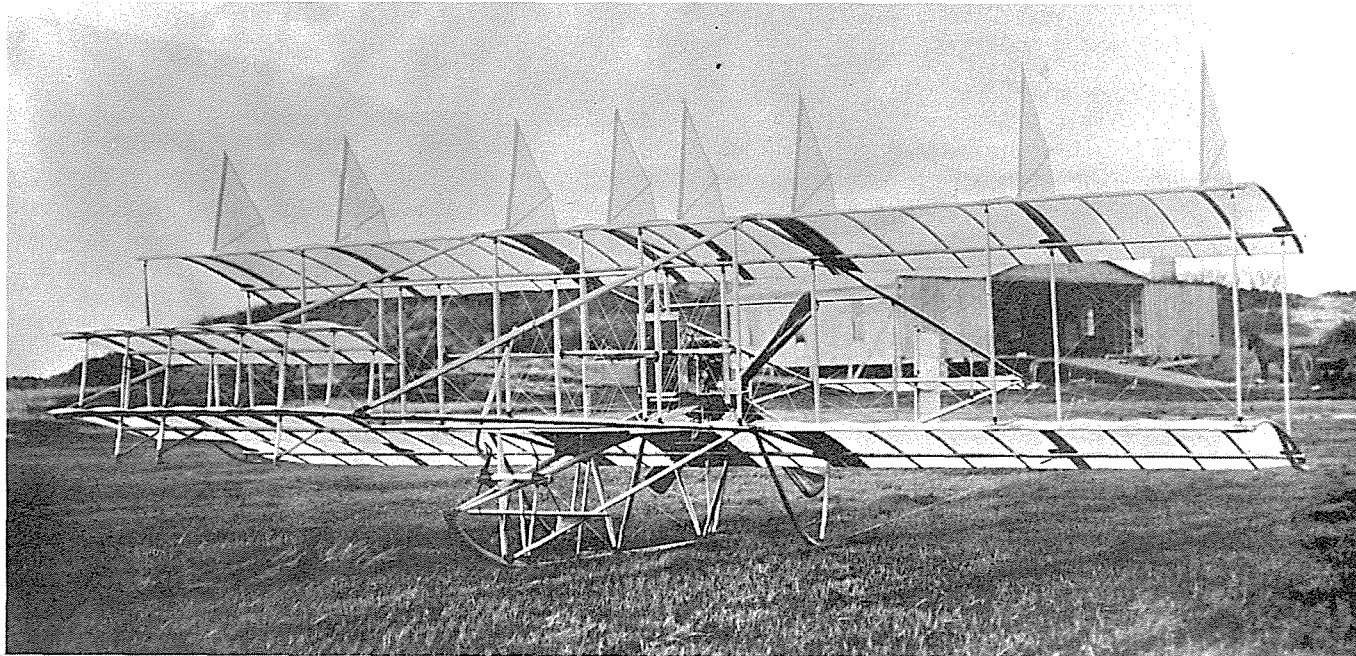
for about 120 yards, reaching an altitude of approximately 30 feet. According to the Salem Evening News one wheel was slightly damaged by a chunk of ice upon landing, which tends to prove, if proof is needed, that you shouldn't go overboard about trusting newspaper accounts. The Herring-Burgess was provided with skids, not wheels.

As can be seen from the number of good photos taken at Chebacco Lake, the airplane rested on one main skid, with an additional smaller skid on either side. The biplane elevator was positioned in front and worked by a foot pedal. Directional steering had to be by rudder alone as there were no ailerons. Six triangular fins were positioned on top of the upper wing to insure lateral stability. The pilot's seat was on the leading edge of the lower wing, there was no provision for passengers, rudder and horizontal stabilizer were in back, and power was (almost certainly) a 25 hp Curtiss, turning a 4-bladed prop.

So far as is known this first flight of the Herring-Burgess was the last, at least in New England. It was sold (one account says to C. W. Parker of Abilene, Kansas) and Burgess and Herring got to work on the next model.

W. Starling Burgess was born December 25, 1878. Son of the famous yacht designer Edward Burgess, he graduated from Harvard (after having interrupted his studies to serve as a gunner's mate during the Spanish-American War) with a degree in Engineering and Naval Architecture. His interests were not entirely technical, however; he was the author of a volume of verse entitled *THE ETERNAL LAUGHTER* which appeared in 1903.

In 1904 Burgess opened a shipyard in Marblehead, specializing in the manufacture of small boats and racing



The Herring-Burgess Model A "Flying Fish" at Plum Island, 30 miles north of Boston. (Photo - Mrs. H. B. Bolster)

craft. It was probably due to his involvement in this colorful activity that Burgess did not become interested in aviation until 1909.

With burly Augustus M. Herring it was different--his interest was of long standing. Born in 1867, he attended the Stevens Institute of Technology but did not graduate. The story went that he withdrew in disgust when his thesis, *The Flying Machine*, was not accepted.

By the time Herring became associated with Burgess, his experience with aircraft was impressive. After having worked on his own for awhile, he'd joined Professor Langley as an assistant in 1895. In 1896 he, along with William Avery and Paul Butusov, had done extensive experimental work with gliders under the direction of Octave Chanute. Besides construction, the work included a good deal of actual gliding on the sand dunes near Lake Michigan.

In 1898 Herring built a biplane powered by a compressed air motor and claimed to have made a flight of 75 feet in it. In October 1902, he and Octave Chanute were guests of the Wrights at Kill Devil Hills and stayed about ten days. They witnessed the glides the Wrights were making daily, and Herring experimented with two machines of Chanute's creation.

During March of 1909 he approached Glenn Curtiss, and after some dickering the two formed the Herring-Curtiss Company to which firm Herring contributed his vast experience and a number of aeronautical patents supposed to be of great value. But somehow there always seemed to be trouble. Langley opined he had no confidence in either Mr. Herring's reliability or his discretion. Chanute thought him a bungler, and an untrustworthy one, at that. The Wrights considered him an unscrupulous opportunist. And the Herring-Curtiss Co. was short-lived indeed, exploding in a welter of accusations, recriminations and general ill-feeling. Curtiss felt he had been badly duped.

But now, with the facilities of the shipyard at his disposal, as well as the keen engineering insight of Burgess himself, it appeared that Herring aircraft, if not exactly flooding the skies, might at least be around in considerable number.

A few changes were incorporated into the next model. Instead of six fins on the upper wing, the new machine had eight. The elevator was changed slightly

but was still operated in the same fashion. Otherwise, it was much the same.

On page 82 of the magazine *Aircraft* for April, 1910, was a full-page ad saying in part:

"Aeroplanes of unrivaled quality in design and workmanship are built by the W. Starling Burgess Co., Ltd. of Marblehead, Mass. . . . All machines will be tested and flown at the Company's Trial Grounds on Plum Island in Massachusetts Bay."

The marshes of Plum Island are located about 30 miles north of Boston and provided good, flat, unobstructed land for several miles. This, in New England, is a rarity. About the only trouble with the marshes was that they were marshes. At high tide they were likely to prove annoying unless you enjoyed wading around in an inch or two of salt water.

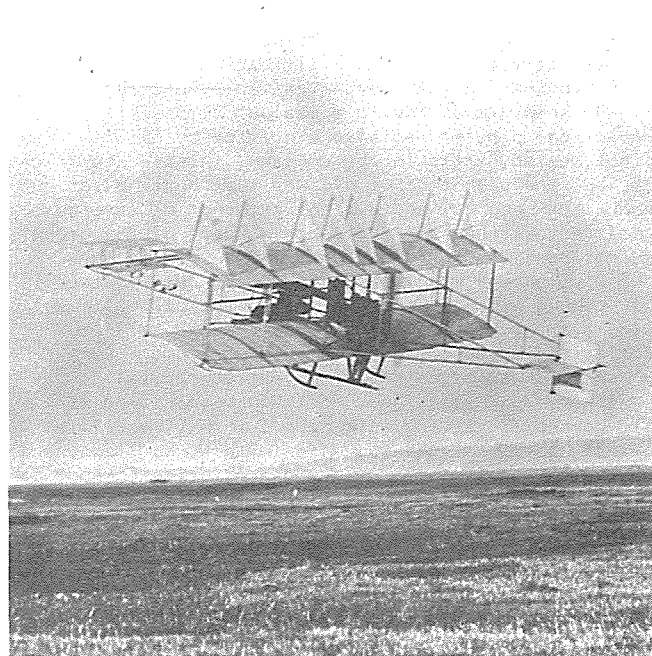
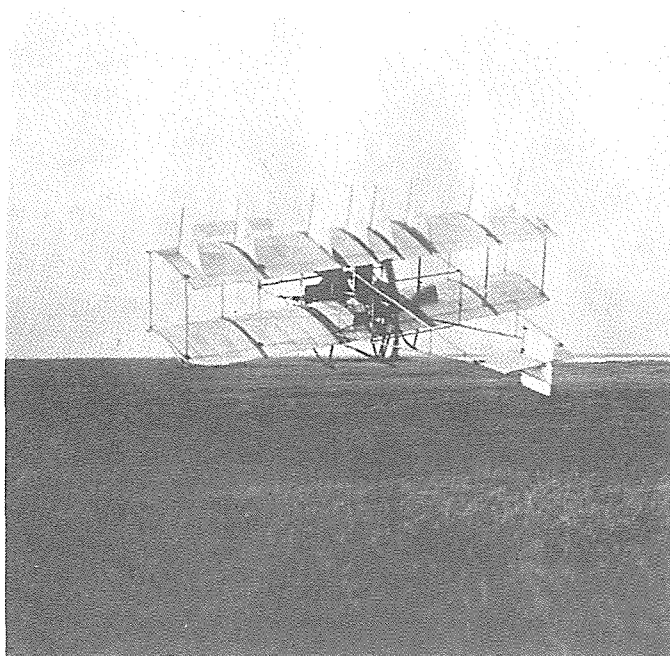
On the morning of Saturday, April 9, the Model A "Flying Fish" arrived at Plum Island, coming over from Marblehead in the Burgess yacht. A hangar had been built with living quarters in the rear, and here Mr. and Mrs. Burgess camped out while the others stayed at the Plum Island Hotel, nearby.

There was a wait of several days as Herring insisted on a dead calm before he would try the new machine. While waiting there was lots to talk about. Flamboyant J. V. Martin was present, as was young Norman Prince, rather recently graduated from Harvard and enormously interested in aeronautics. Prince entertained the other spectators by making short flights off the hangar roof in a small glider. Finally, on Sunday, April 17, the "Flying Fish" took the air.

They had taken the plane out at 5:30 A.M. The weather was cold but calm, and at 6:30 Herring took off and flew about 100 yards. He kept the altitude under 15 feet.

This first successful trial was followed by another, shorter flight, also by Herring. Then W. S. Burgess gave it a try and made one flight of 75 feet. By now the wind was springing up and further trials were called off.

The following Thursday Herring made four more flights, the longest being about 300 yards. They experienced no trouble with the actual takeoff, the skids sliding easily over the wet marsh grass. As before,



Two photos of the Model A "Flying Fish" in flight at Plum Island. (Photos - Courtesy Mrs. Helen B. Bolster)

the flights were made when there was no breeze.

It was about this time that Greely S. Curtis moved into the picture. Just under 40 and of plumpish build, Curtis had received an M.E. degree at Cornell for a thesis which reviewed the Langley experiments. This was in 1896, and for the two years previous Curtis had been in Europe. He had visited Maxim in England and, later on, worked briefly with Lilienthal.

Back in the U.S.A. Curtis had temporarily forsaken aeronautics while he achieved considerable success as a consulting engineer specializing in fire protection problems. Then, his interest rekindled in flying, he approached Burgess in late 1909 or early 1910. Burgess welcomed him as an associate.

On April 23 Curtis made a rather inauspicious beginning as a practical aviator by cracking up the "Flying Fish" on his first attempt to land. The elevator was smashed and Curtis thrown from his seat, but he was not injured. He was not discouraged, either. The plane was loaded on the Burgess yacht and returned to Marblehead for repairs, and Curtis left for Europe to check on aeronautical developments over there.

The Model A "Flying Fish" was back at Plum Island by May 6 with a new pilot who was to have a very prominent part in Burgess Co. activities for the next year, William H. Hilliard. Chunky, kind-hearted and confident, Hilliard had gained some success as an automobile racer before trying his luck in the air. He made his first short flight on May 14, and on succeeding days kept at it until, on May 23, he was able to keep aloft for half a mile.

It is not entirely clear whether Hilliard started flying and was then employed as a company aviator, or the other way around, but at any rate he went on salary and proceeded to earn it by flying at every opportunity. No turns were attempted--not for a long time to come--but there was lots of practice in taking off and getting down again. The method was to take off, fly a short ways at a moderate altitude of 10 or 15 feet, then land. The plane would be turned around on the ground and then flown back. The marshes were about four miles in length, which gave plenty of space for this straightaway flying.

It might be mentioned here that when the Burgess group first planned to fly at Plum Island they had erected a derrick catapult launching device similar to

that used by the Wrights at Huffman Prairie and afterward. There was also a 100-foot length of track built in the shape of a narrow trough to accommodate the main skid of the Model A. The derrick catapult seems never to have been used, simply because it wasn't necessary. The track was used once or twice when the grass was very dry until it was discovered that when the grass was too dry to permit an easy takeoff the trouble could be eliminated by greasing the skid thoroughly.

In early June, Greely Curtis returned from Europe bringing with him a motor (Clement-Bayard), a Bleriot



William H. Hilliard. (Photo - Mrs. Helen B. Bolster)

monoplane and some shrewd observations on European developments. He was quoted as being critical of the Wright's activities in patent litigation.

Herring had left the organization. Described by many who knew him as having a jealous disposition, the aeronautical pioneer was also a drifter by nature. He had not wanted Curtis in the company, this led to friction, and the upshot of it all was that Herring set out for New York one day and did not return. He gave no formal resignation, but the other members of the group were not really surprised when they saw him no more.

A new company was formed: on Monday June 13 the announcement was made that "all aeronautical business of the firm of W. Starling Burgess Co. Ltd. will be transferred to and carried on by Burgess Co. & Curtis." The new firm was organized with \$80,000 capital.

Perhaps June was a good month for organizing aircraft companies; at any rate, about this time William H. Hilliard was one of the founders (with W. E. Timson and C. F. Dutch) of the Arrowplane Manufacturing Company of Boston, which was incorporated with a capital of \$25,000 for the manufacture and sale of aeroplanes. Hilliard was listed as President of the firm, but the new president's duties were evidently not too demanding, as he continued to fly almost daily at Plum Island. Actually, not a great deal was to be heard from the Arrowplane Mfg. Co. If they made any splash at all, it was a tiny one.

During May the Burgess Co. had gone afield to hire a new engineer. Grave, always courteous, looking with his prim spectacles like a youngish schoolteacher, Lt. Alexander L. Pfitzner was a native of Budapest and had been an artillery officer in the Hungarian army. His specialty was internal-combustion engines, and he had been a designer for Buick and then had gone to Hammondsport to assist Glenn Curtiss. The engine that had thrust Curtiss to victory at Rheims in 1909 had been largely his work.

While at Hammondsport Pfitzner had designed and built a revolutionary monoplane that, despite a rather inordinate number of mishaps, had made some successful and remarkably speedy flights. But what made the Hungarian engineer's flying machine exciting to the experts was not the speed, but the method of achieving lateral control. Where the Wrights had solved this problem brilliantly by changing the shape of the wings, Pfitzner changed the size of the wings.

The end of each wing terminated in a sliding panel. In normal flight each panel was extended 15 inches, but at a turn of the control wheel, one panel would slide inward, while the other would slide outward to a total length, when fully extended, of 30 inches. Thus lift was decreased on one side and increased on the other.

The idea of this method of lateral control was not exactly new. In fact, it had been suggested by Alexander Graham Bell in a letter to Casey Baldwin back in March 1908. (The letter is given in SKY STORMING YANKEE on pages 100-104.) However, this seems to have been the first time it had been given a practical trial, and no less an authority than Grover Loening (in MONOPLANES AND BIPLANES) described the Pfitzner control as "simple and efficient."

Lt. Pfitzner set to work to introduce his sliding wing tip control to a Burgess biplane. There seemed every reason to be optimistic concerning the adaptation, and of course there was the additional satisfaction of knowing that this method could in no way infringe on the Wright patents.

By the end of May the new Model A was ready. There were a number of major modifications: the sliding panels, of course, a foot throttle and a control wheel to operate not only the panels but the rudder and elevator as well.

On June 15 the new plane, with Pfitzner piloting, made what might have seemed at first sight to have been an auspicious beginning flight of almost seven miles. Pfitzner reached an altitude of perhaps 50 feet and



Lt. Alexander L. Pfitzner at the controls of a Model A equipped with sliding wing panels. (Mrs. H. B. Bolster)

experimented with the lateral control, tipping first one way, then the other. But he found it disconcertingly erratic, and rather than attempt a semicircle, he made up his mind to land, turn the plane around on the ground and fly back. He picked a large open space in Rowley, but the field proved to be treacherous: on landing, the plane went into a ditch and the elevator was smashed. Although bitterly disappointed at the failure of the plane to measure up to expectations, Pfitzner nevertheless declared himself determined to try again.

By the 20th the plane had been fully repaired and on that day Pfitzner, wearing helmet, gloves and rubber boots, took off with the announced intention of flying to Little's farm and back--approximately six miles. Before the plane had reached an altitude of 10 feet, the left wing dropped and scraped the ground. Pfitzner landed, but with several miles of flat marsh ahead, did not halt the takeoff but skidded into the air again immediately. Again the wing dropped and this time dug in; the plane hit with enough force to damage it extensively. The inventor-pilot was unhurt but seemed to be deeply depressed, and when his creation was loaded onto the yacht to be shipped to Marblehead, he went along with it, a picture of dejection.

Meanwhile the Burgess Co. in general, and Hilliard in particular, had become disenchanted with the triangular fins on the other Model A, so these were removed and replaced with "Curtiss-type ailerons." By June 23 Hilliard was able to fly five miles and complete a circle.

In early July, Horace Kearney, described as Pfitzner's assistant at Hammondsport, arrived at Plum Island. An annoying delay was experienced when the prop on the Pfitzner Model A was broken, but by July 7 a new one had been installed and Pfitzner tried again. He did indeed make a new altitude record for Burgess airplanes by climbing to 100 feet, but the engine overheated almost immediately and an emergency landing had to be made on Pork Island.

Disaster struck on July 8. Pfitzner made what appeared to be a normal takeoff and had gone perhaps two miles when the wing dipped and, despite the Lieutenant's desperate efforts, would not rise. From an altitude of 50 feet the unstable craft literally dove into the creek below. By what could, without too much extravagance, be termed a miracle, the wings hit opposite banks of the creek and Pfitzner was thrown into the water, unhurt except for a slight head cut.

Unhurt? Perhaps. But when he was dragged from the water and stood dripping on the bank his face was drawn and bitter.

"I wish I'd broken my neck, boys," he said.

Despondently he surveyed the wreckage and requested

someone to take pictures. "I don't want them, but Mr. Burgess may want them for a souvenir. I'm discouraged --the game is too deep for me."

The plane was extricated from the marsh and shipped to Marblehead.

On Tuesday, July 12, Lt. Pfitzner expressed a desire to go for a long row in Marblehead harbor. He might, perhaps, make a call on one of the numerous yachts. Carrying a suitcase he walked to the waterfront and hired a dory. Silently he rowed out into the harbor and was lost to sight.

Three hours later Benjamin Stevens, a fisherman, found the dory drifting two miles from shore. The suitcase was missing but a note in Pfitzner's precise handwriting was found stating where the boat belonged. His coat, hat and a .32 caliber pistol were in the boat. The pistol had been fired very recently.

A reward was offered to anyone locating the body, but it was no use. Lt. A. L. Pfitzner and the suitcase containing the details of his ill-fated design were never seen again.

Later on, a letter from Hammondsport revealed that much less was known about Lt. Pfitzner than had been supposed. He had never mentioned any relatives, either in this country or Hungary, and it was not known whether there were any living.

Horace Kearney journeyed out to Hammondsport and brought back the Pfitzner monoplane. There was a stubborn feeling that the design should be further investigated before giving up on it.

Understandably depressed by the tragedy, the Plum Island aviators were less active than usual for a time. There was some experimenting with wheels, but of course when it came to flying from the marshes, skids were immensely better. And certainly the Burgess Co. could not be described as enthusiastic over wheeled aircraft. A full page ad appearing in both July and August issues of Aircraft said in part:

"W. Starling Burgess Co. Ltd. means good workmanship. Our Aeroplanes stand on skids, run on skids, get into the air on skids, alight on skids, and ARE SAFE on skids."

From this we may gather the Burgess Co. definitely favored skids.

There was some talk about building a factory adjoining the flying field. However, the objection was raised

that the employees might suspend their labors every time a flight was attempted, resulting in a loss of work-hours. So the scheme was abandoned.

During the early part of August an accident occurred which could easily have turned out to be fatal. One Walter Bowman (evidently an employee of the Burgess Co., but in what capacity is not clear) attempted a flight. He took off at good speed and climbed steeply. Suddenly one wing dropped and the machine dove toward the ground. To quote from the newspaper: "The aviator brought his wing tips into instant play, but without effect, and the right wing struck the ground with great force."

Everyone present expected that Bowman had been killed, but he crawled out before anyone could reach him, none the worse except for some minor scratches. One wing of the plane was completely crumpled, and the beams supporting the forward elevator were buried so deep in the marsh it required several men and considerable time to extricate the machine. The mishap was blamed on an errant gust of wind, although to our modern understanding it seems obvious that Bowman stalled and was probably in an incipient spin when he hit.

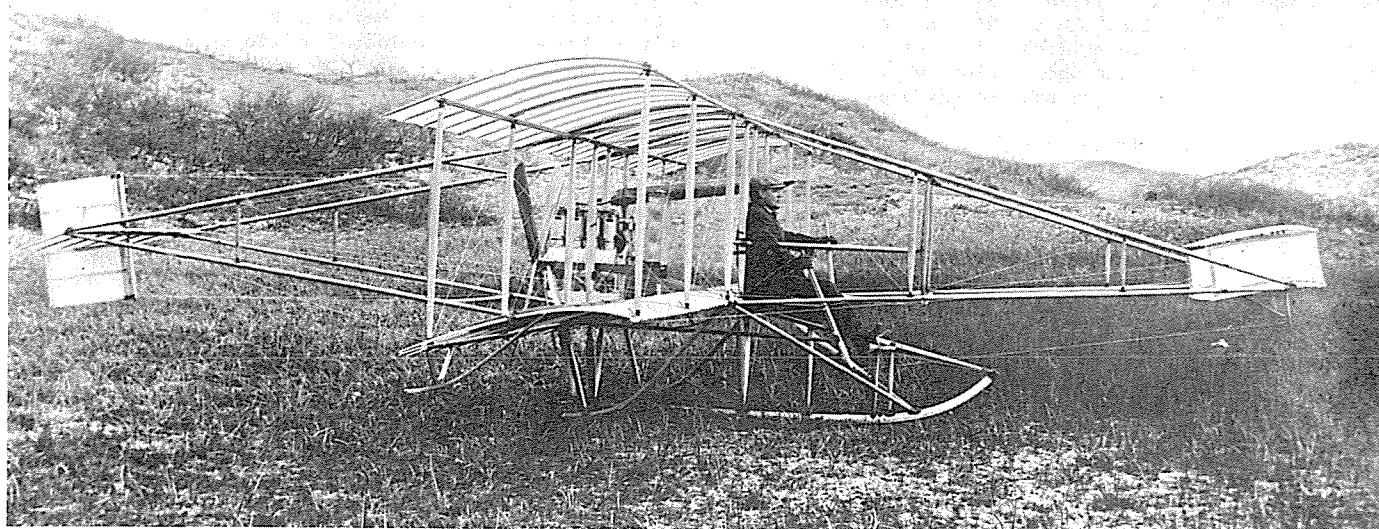
During August more experiments with wheels were tried as it became evident that skids would not be satisfactory once the Burgess planes left the friendly marshes. (Friendly to skids, that is.)

The Pfitzner sliding panels had been removed from the wings of the Model A and "Farman flaps" (ailerons) installed. And on page 274 of the September 1910 issue of Aircraft there appeared a full-page ad saying in part:

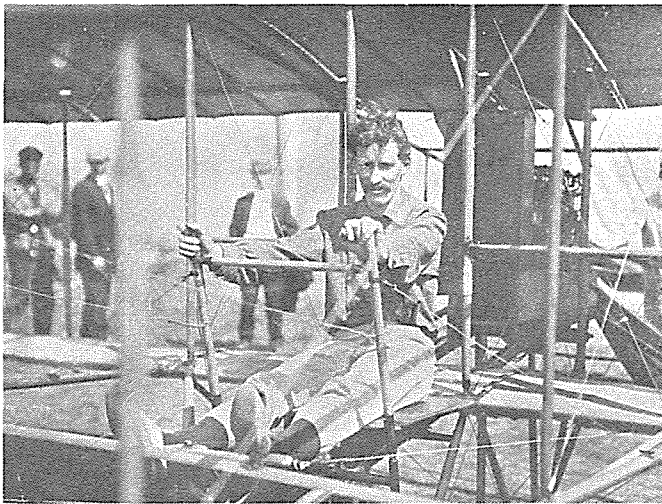
"Burgess Co. & Curtis, Marblehead, Mass. Guarantees excellence in design and workmanship. They fly well, too. Our Model A flew successfully. But our Model B beats it. Our new Model C is even better. The price remains the same."

As the days moved on, preparation for the Harvard-Boston meet began to occupy a great deal of company attention. This meet turned out to be an important event in the fortunes of the Burgess Co., so perhaps it deserves some detailed examination.

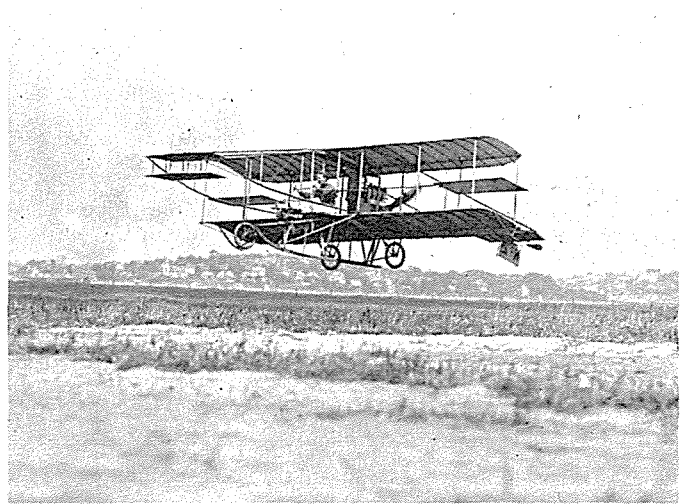
Organized by the University Aero Club, with J. V. Martin a prime mover, the Harvard-Boston was the first meet in America that could compare with the great European tourneys. The entry list was impressive, including



W. H. Hilliard in one of the versions of the Model A. (Photo - Courtesy of Mrs. Helen B. Bolster)



W. Starling Burgess in Model B-2 at Harvard-Boston Meet, September 1910. (Photo - THE STORY OF THE AEROPLANE)



W. S. Burgess flying the Model B-2 at Atlantic, September 1910. (Photo - Courtesy Mrs. Helen B. Bolster)

a Wright team of Brookins and Johnstone, with Wilbur Wright as non-flying captain; Glenn Curtiss and Charles Willard; and from England, Claude Grahame-White and A. V. Roe.

The Boston Globe had offered \$10,000 for the fastest time made by any plane flying from the field at Atlantic to Boston Light and return, twice--a distance of about 33 miles. That was the big one, but there were also prizes for distance, duration, height, speed, slow flying, bomb-dropping, et.

The Burgess Co. planned to enter two of their own machines--a Model B and a Model C--as well as Greely Curtis' Bleriot. In addition, the Pfizner monoplane had been assembled by Horace Kearney, who had real hopes: "If it has stability I won't worry about Grahame-White, Curtiss or any of them. Out in Buffalo Lt. Pfizner made a 5-mile flight and outclassed an auto that could do 65."

With the approaching meet in mind, Burgess leased a field at Atlantic, just south of Boston. After the accident to Bowman the only one to do any flying from the marshes was Hilliard, and he left toward the end of the month. By the first of September the marshes were deserted, and the Burgess Co. never returned to Plum Island.

Although listed among the contestants in the Boston Globe account, Greely Curtis' Bleriot was not, in fact, taken to the meet. The Pfizner was, and turned out to be the first ship to take the air at Harvard Field. On September 1, Kearney made a flight of about one-third of a mile, damaging the plane when a wing dug in. This mishap terminated the flight and brought upon Kearney the wrath of C. G. Glidden, who suspended Kearney immediately for flying without permission.

Kearney repaired the wing damage, and altered the monoplane by changing the position of the rudder from front to rear. Then, having been successful in getting his suspension lifted, he tried again. This time he lost control before he could take off, slammed into a fence and thoroughly wrecked the monoplane. It was sent back to Marblehead for repairs and was, evidently, never used again.

Hilliard was at the field with a new Burgess, a Model B equipped with interplane ailerons and a tricycle landing gear. The papers commented on the fine workmanship and beautiful appearance of this aeroplane. On September 6, Hilliard made a straightaway flight and almost crashed into one of the pylons. He landed, turned the plane around and flew back. Next day he made a flight of more than half a minute, and on the following day managed to make a complete circuit of the course at Atlantic making one stop on the way around.

On September 7th, W. Starling Burgess made his second flight on any field when he tried five takeoff runs and made two one-second hops.

Then, Glenn Curtiss ran into trouble and needed the loan of a motor. Burgess offered to furnish him with one if, in return, Curtiss would try out the Burgess Model B. Curtiss, of course, was only too happy, and on September 11 he made a flight in the Burgess, afterwards expressing approval of its performance.

Next day Starling Burgess made a series of short flights of about five seconds duration each. This put him in the running for second prize for amateurs, as Hilliard, being a paid company pilot, was not eligible. Clifford Harmon, of course, had all the first prizes sewed up. The celebrated amateur won a number of cups with a total estimated value of \$7,500.

As it turned out, Burgess did indeed win the second prize, a cup worth \$250. No other amateur won anything. After the meet Burgess remarked that the flights at Atlantic should really be recorded as his first and that the little hop he had made at Plum Island should not be accorded the dignity of a real flight.

According to the Boston Globe as well as the magazine *Aircraft*, there was a Burgess Model C at the meet, with John G. Stratton listed as pilot. If so, apparently neither plane nor pilot ever left the ground while the meet was in progress.

So much for the amateurs; what about the professionals? From the time when he, with A. V. Roe, docked at Boston, the meet was dominated by Claude Grahame-White. Young, handsome, enthusiastic, highly articulate, intelligent and urbane, Grahame-White was a reporter's dream. Above all, he could deliver the goods in the air.

He had brought two planes with him, a Bleriot and his beloved Farman, and he flew in good weather and bad. He went out of his way to fly over the throngs of people watching from nearby roads and hillsides and for this courtesy was applauded in the press.

He was the only flyer to make an attempt to win the Globe's \$10,000 prize, offered for a flight over Boston Light. He accomplished the feat with such savoir-faire as to make it look easy, and the following day he made the same flight again, just for the hell of it.

A feeling of generosity and good sportsmanship was evidenced after Clifford Harmon ran his Farman into a ditch and wrecked it: Grahame-White loaned the New York amateur his own biplane and Harmon used it throughout the meet. President Taft visited the field and was offered a ride by Grahame-White, but the overweight President refused the offer. His place was taken by the famous Mayor of Boston, John F. Fitzgerald.

Grahame-White had a keen sense of the dramatic.

After the Harvard-Boston, but before the Belmont meet, he flew to Washington and landed on West Executive Avenue! After chatting with the dignitaries present (the stunt had been well publicized beforehand), he took off and flew back to Benning.

During the Boston meet A. V. Roe was, of course, completely overshadowed by his colorful countryman. However, the press often spoke kindly of him, emphasizing his quietness, modesty and good sportsmanship. The sportsmanship was a real necessity--Roe cracked up his triplane no less than three times!

An interesting sidelight of the meet was a picture that appeared in the *Globe* of September 9, 1910, showing Wilbur Wright and Glenn Curtiss in earnest and seemingly friendly conversation at Atlantic. The various biographies seem to ignore this meeting for some reason. Yet is certainly occurred, and at a time when the Wrights and Curtiss were supposed to be at each other's throats.

So far as the Burgess Co. was concerned, although the pilots did not exactly cover themselves with glory during the meet, there was another development arising from it that was of far greater importance. Grahame-White had designed a small biplane on Farman lines and was looking around for someone to build it. Although understandably unimpressed with the flying skills of the Burgess group, he was thoroughly impressed with their quality workmanship. Accordingly, the Burgess Co. received a contract to build three Grahame-White "Babys" and an ad in the January 1911 issue of *Aircraft* read in part:

"The workmanship of this company has been endorsed by no less an authority than Mr. Claude Grahame-White. We are now building for Mr. White a large order of GRAHAME-WHITE BIPLANES. They are built in two different sizes, for single passenger and two passenger service.

We are also building regularly BURGESS BIPLANES for one or two passengers.

BURGESS COMPANY & CURTIS, MARBLEHEAD, MASS."

Back at Marblehead the Burgess Co. got busy on their new order as well as other construction. In November the company leased a large field in Ipswich. The new

Burgess D was tried out here. It was a two-place machine built generally to Farman lines and with the twin-stick-and-cross-rod type of control favored by Burgess. Lateral balance was effected by ailerons and Greely Curtis deflectors.

Hilliard tested this new plane at the Ipswich field on November 27. It performed satisfactorily with Hilliard alone, and by early December he was flying the Model D with a passenger.

1910 had been an eventful year, and much happened even during the closing weeks. In late November the kindly and seemingly indefatigable pioneer, Octave Chanute, died at age 78. It was pleasant to think that at least he had survived to witness some of his dreams attain a brilliant reality.

Orville Wright, while passing through England during the month of December, had occasion to witness a flight of an interesting and unusual aeroplane that was shaped like a V and inherently stable. It was the invention of a young ex-lieutenant of the British Army named J. W. Dunne. Also in December Claude Grahame-White had a nasty accident that hospitalized him. Mechanics had made an error in rigging his new Bristol "Boxkite" so that the elevator worked in reverse.

At year's end the Burgess Co. was preparing to exhibit their Model C and Model D at the New York Aero Show in January. The three Model E Grahame-White "Babys" were under construction in Marblehead.

(Note: Originally, it was W. Starling Burgess Co., Ltd. Then it became Burgess Co. & Curtis. Later on, it became The Burgess Company. Throughout this account, for the sake of simplicity and space, Burgess Co. has been used.)

NOTES ON BURGESS AIRCRAFT

With company records lost and other sources sometimes contradictory, this summary of 1910 is more discursive than definitive, and asks more questions than it answers. It is hoped that those having knowledge enabling them to correct or add to these pages will inform either the *JOURNAL* or the author. Such assistance will be appreciated, believe us!



W. R. Hilliard taking off in the Model D for a flight at Ipswich, Massachusetts. (Photo - Mrs. Helen B. Bolster)

The Burgess Co. adopted a straightforward numbering system: the first year they produced Models A, B, C, D and E.

There were several different Model A's. The first, the one exhibited at the Aero Show and then flown briefly at Chebacco Lake, was described on page 110 of the magazine *Aircraft* of May 1910. A profile sketch accompanied the description, and the length of the Model A was given as approximately 32 feet.

In *HOW IT FLIES* the span was given as 28 feet, the chord as four feet. The motor was described as a 25 hp Curtiss driving a 4-bladed propeller of Herring's design.

The six fins on top were another Herring contribution. They were supposed to act as a pendulum, so that when the plane tipped to one side and started to slide, the fins offering resistance above the center of gravity, would tend to right it.

It is interesting to note that a biplane built about this time by Captain Thomas Baldwin used a very similar device, although the Baldwin machine had only one large rectangular fin.

Ferris' book credited the Herring-Burgess with remarkable flying ability, but as he never saw it fly his assertion had little value. Actually, when it is remembered that by the end of 1909 Bleriot had flown the channel, Orville Wright had flown over one and one-half hours with a passenger, and Henry Farman had flown 144 miles, and when we also bear in mind that Herring was thoroughly familiar with the work of the Wrights and Curtiss, it seems incredible that he was not able to turn out a better design than the Model A.

The subsequent Model A was the "Flying Fish" that is usually but incorrectly credited with being the first Burgess aircraft to fly. (The name, "Flying Fish" was at times used as a type name, like Curtiss "Hawk", at other times as though it were the name of an individual plane. The former usage has been employed here.)

An obvious major change was the increase in the number of fins to eight. The foot-operated elevator seems to have been used at first, but abandoned very soon. The 1919 *YEAR BOOK* says the "Flying Fish" had both forward and rear elevators. In photos the rear tail surface appears to be a horizontal stabilizer rather than an elevator, but it is not easy to be sure.

The *YEAR BOOK* describes the "Flying Fish" as equipped with a 4-cylinder motor of approximately 30 hp. A curious omission is the name of Herring, who is never mentioned in the *YEAR BOOK* account.

It is not known, exactly, how many "Flying Fish" were made. On page 328 of Janes' *ALL THE WORLD'S AIRSHIPS*, 1910-1911 there was listed seven owners of Herring-Burgess aircraft, type or model not given. This list has been checked with Mrs. Helen B. Bolster, who went to work as secretary for the Burgess Co. in May or June 1910 and remained until the company was dissolved. Mrs. Bolster thinks the list may not be accurate.

Of the names listed, C. W. Parker purchased the Chebacco Lake flier. Another name, T. Sheldon, Mrs. Bolster does not recall. Two other names are familiar, W. H. Hilliard and Greely S. Curtis. In the December, 1910 *Aircraft*, the Arrowplane Mfg. Co. advertised a Herring-Burgess for \$2000; this was undoubtedly the one registered to Hilliard. Mrs. Bolster does not believe that Curtis ever owned a "Flying Fish"; he owned a Bleriot and may also have owned a Burgess B or C.

The American Hippodrome Co. is listed as owning three Burgess planes, and Mrs. Bolster remembers this very well. The planes were "Flying Fish" and the American Hippodrome Co. was a silk-shirted ex-acrobat from Texas who carried \$1000 bills around with him and, despite having put on enough weight to tip the scales at close to 300 pounds, was still able to do back flips. On occasion, he would demonstrate.

Mrs. Bolster is of the opinion that the American Hippodrome's "Flying Fish" came to grief. Also, she believes it was two, rather than three, planes that were

bought by the agile Texan.

The model using the Pfitzner sliding wing panels was unique. The control wheel was three-in-one; back and forth operated the elevators, to and fro worked the rudder, and turning the wheel activated the wing panels. The same principle was used in the Pfitzner monoplane.

The same type of landing skid was used on the Pfitzner model as the others. The forward elevator featured a trapezoidal fin on top. There is some inconclusive evidence that both a front and rear elevator may have been tried.

During the period they were being used, small changes were being made in the Model A's almost daily, and there is no record of most of them now. Lateral stability was approached from several directions: Perhaps, during that long summer they may even have tried warping, although there is no evidence they ever did. At any rate, they finally resorted to ailerons of one sort or another. Before then, the Burgess Co. was preparing something new and the Model A's were discontinued.

Aircraft for October 1910 lists three Burgess aircraft as prospective participants in the Harvard-Boston meet--a Model B, a Model B-2, and a Model C. The B-2 was at the meet and was the one flown by W. Starling Burgess. If the other two were there, they evidently didn't fly.

The B-2 resembled the Model A in some respects, the obvious major changes being the wheels and the interplane ailerons. It had a span of 27 feet, a length of 26 feet, and used a Burgess 2-bladed prop powered by a 25 hp 4-cylinder Curtiss. The other Model B was bigger all around and was equipped with a 50 hp engine.

In January 1911, the Burgess Co. exhibited a Model C and a Model D at the New York Aero Show. The show was reported in the February *Aircraft*, and on pages 436 and 437 there were descriptions and rough sketches of both types.

The Model C was a single-seat biplane with interplane ailerons, a cruciform tail and skids spaced a considerable distance apart and extending up to the biplane front elevator. The landing gear consisted of two small wheels attached to the skids. The span was 32 feet and the length 31 feet. Power was a 2-cylinder 30 hp Clement-Bayard.

The Model D was a large two-seater with a strong resemblance to a Farman. The skids were placed far apart and were attached to the front elevator. The control on both D and C was the same--a double stick and cross bar constructed so that the pilot could use either or both hands to guide the plane. (The same type of control was used on the B-2) Power for the Model D was a 60 hp Hendee.

Where previous Burgess planes had used interplane ailerons, the Model D used Farman-type ailerons and Greely Curtis deflectors. These deflectors were a device to overcome the drag of a pulled-down aileron by the use of a flap on the top side of the upper wing. Normally laying flat, whenever an aileron was used on one side, the deflector on the opposite side would rise to equalize the drag.

Clifford L. Webster, who went to work for the Burgess Co. as a pilot in June of 1911 and was with them for a number of years, is of the opinion that the deflectors were used on a single experimental plane, and, as they would also act as spoilers, they were extremely difficult to adjust. Further experimentation with them was abandoned when the Burgess Co. began manufacturing Wright planes under license.

It is impossible to be positive about it, but there is considerable doubt that more than one Model D was ever produced.

The Burgess Model E was the Grahame-White "Baby". Although not completed until 1911, they were designed and partially constructed in 1910. The "Babys" were really scaled-down Farmans, and could be quickly disassembled into three sections, for easy transport. They were furnished with Gnome engines of 50 or 70 hp,

depending on passenger requirements. They flew well, and made a good record in England. As might be expected, the finish and workmanship on these small aeroplanes came in for much praise from British aviation periodicals.

At this writing we are not certain of the number of "Babys" made, but are sure that at least three were sent to England.

Photos, diagram and description of the "Baby" will be found in BRITISH AIRCRAFT, 1809-1914, and a considerable amount of information on them is in Graham Wallace's biography of Claude Grahame-White.

BIBLIOGRAPHY

Aero Club of America. NAVIGATING THE AIR. New York: Doubleday, Page & Co., 1907. 259 pp., no index, photos, diagrams. Consists of articles by authorities of the day, including one by A. M. Herring on propeller testing.

AIRCRAFT YEAR BOOK, 1919. New York: Manufacturers Aircraft Association, Inc. 398 pp., indexed, photos. Contains history of Burgess Company.

Bonney, Walter T. THE HERITAGE OF KITTY HAWK. New York: W. W. Norton & Co., 1962. 211 pp., indexed, photos.

DICTIONARY OF AMERICAN BIOGRAPHY, VOL. VIII. Edited by Dumas Malone. New York: Charles Scribners Sons., 1932. (An account of Herring's life, written by Charles G. Abbott, p. 590.)

Ferris, Richard. HOW IT FLIES, OR THE CONQUEST OF THE AIR. New York: Thomas Nelson & Sons, 1910. 475 pp. no index, many photos and diagrams. An excellent non-technical book on early aircraft.

Freudenthal, Elisabeth E. FLIGHT INTO HISTORY--THE WRIGHT BROTHERS AND THE AIR AGE. Norman, Okla. University of Oklahoma Press, 1949. 268 pp., indexed, illustrated, excellent bibliography.

Grahame-White, Claude. THE STORY OF THE AEROPLANE. Boston: Small, Maynard & Co., 1911. 390 pp., indexed, many excellent photos.

Kelly, Fred C. THE WRIGHT BROTHERS. New York: Harcourt, Brace & Co., 1943. 340 pp., index, illustrated. A biography authorized by Orville Wright.

Lewis, Peter. BRITISH AIRCRAFT, 1809-1914. London: Putnam & Co., 1962. 576 pp., index, chronology, many photos and diagrams. First rate book.

Loening, Grover C. MONOPLANES AND BIPLANES. New York: Munn and Co. Inc., 1911. 331 pp., indexed, many photos and diagrams. Section on Pfizner monoplane.

Ludovici, L. J. THE CHALLENGING SKY--THE LIFE OF SIR ALLIOT VERDON-ROE. London: Herbert Jenkins Ltd. 1956. 158 pp., indexed, appendices, photos. Brief section on Harvard-Boston meet.

McMahon, John R. THE WRIGHT BROTHERS--PIONEERS OF FLIGHT. New York: Grosset & Dunlap, 1930. Photos, no index.

MIRACLE AT KITTY HAWK. The Letters of Wilbur and Orville Wright. Fred C. Kelly, Editor. New York: Farrar Straus and Young, 1951. 482 pp., indexed, photos. Includes many letters not in PAPERS.

NATIONAL CYCLOPEDIA OF AMERICAN BIOGRAPHY, VOL. XXXVII. New York: James T. White & Co., 1957. Biography of W. Starling Burgess on pages 537, 538.

Opdycke, L. E. "The 1910 Boston Globe Air Meet." A.A.H.S. JOURNAL, Vol. 7, No. 2. (Summer, 1962), pp 186-190, illustrated, bibliography.

Studer, Clara. SKY STORMING YANKEE--THE LIFE OF GLENN CURTISS. New York: Stackpole Sons, 1937. 370 pp., illustrated, no index. Contains much information on Herring, but lack of an index is a serious fault in this otherwise fine book.

THE PAPERS OF WILBUR AND ORVILLE WRIGHT. Marvin W. McFarland, Editor. New York: McGraw-Hill, 1953. Two volumes; 1278 pp., indexed, illus., appendices. Includes Chanute-Wright letters and other papers of Octave Chanute. These two books form an invaluable reference.

Wallace, Graham. CLAUDE GRAHAME-WHITE--A BIOGRAPHY.

SUMMER - 1965

London: Putnam & Co., 1960. 256 pp., indexed, photos. Has information regarding Harvard-Boston meet and Grahame-White "Babys".

Aircraft, Vol. 1. A monthly magazine published by Lawson Publishing Co., New York. The first volume runs from March 1910 to February 1911. Indexed.

Newspapers: The account of the Chebacco Lake flight is from the Salem Evening News, available at the Essex Institute, Salem, Mass. An account of the first Boston Aero Show will be found in the Boston Globe. The Harvard-Boston meet was covered extensively by the Globe. The Boston newspapers of that period are available at the Boston Public Library. The fullest account of Burgess Co. activities for the first year will be found in the Newburyport Daily News, available at the Newburyport Public Library. The quoted remarks of Pfizner, Kearney etc., are from the News. All during 1910 Burgess news was given prominence. Stories of the flights at Plum Island were in almost daily, and generally on page one.

ACKNOWLEDGMENTS

The help received from some of the people and institutions listed below will be more apparent when future installments of the Burgess story are published. But they have all demonstrated such a spirit of cooperation and forbearance that it is a pleasure to express my thanks.

Three people in particular have been of such assistance that this article could not have been written without their aid:

Mrs. Helen Bamford Bolster was with the Burgess Co. almost throughout its entire existence. Graciously and pleasantly she has answered my questions, discussed events and personalities, and made available to me many important old photos and papers.

Harold E. Morehouse is no stranger to JOURNAL readers. His series on the Flying Pioneers was of great value to my research, but Mr. Morehouse went much farther; in response to my inquiries he would search through his files and send invaluable material on early airmen and their activities with the Burgess Co.

It was from one of Mr. Morehouse's articles that I was able to contact Clifford L. Webster. Mr. Webster, an early Burgess demonstration and test pilot, had an active career in aviation for many years. Cordially and painstakingly he has answered many questions that no one without Mr. Webster's extensive experience and technical knowledge would have been able to answer.

A great many others helped. I would like to express sincere thanks to J. F. Brichacek, Myron Currier, H. F. Cowley, C. H. Grant, E. P. Knight, Donald Perry, J. C. Ronan; to C. H. Gibbs-Smith and the Victoria & Albert Museum; to Philip S. Hopkins, L. S. Casey and other personnel of the National Air Museum; to H. H. Lippincott of the Connecticut Aeronautical Historical Association; to Capt. J. H. McCurtain of the Naval Aviation Museum; to Lee M. Pearson, Historian of the Bureau of Naval Weapons; to David Proper and others of the Essex Institute; to the Boston Public Library and the Newburyport Public Library.

They made what could have been difficult and tiresome, easy and pleasant.

ABOUT THE AUTHOR: Bart Gould has had nearly a lifetime interest in aviation and its history. In the late 1930s he soloed in a J-2 Cub and acquired his private ticket in 1939. During World War II he was a metalwork instructor for the AAF's Technical Training Command. Married for 24 years, he is the father of two boys and has been teaching mathematics and related subjects at Newburyport High School for 12 years. All the while he has kept up his flying as time would allow. His interest in aviation history focused on pioneering and the pre-WW I era and led him inevitably to the Burgess story which had its beginnings so close to his home.