

Letter from J. A. D. McCurdy to Alexander Graham Bell, December 9, 1908

Hammondsport, N. Y., Dec. 9, 1908. Dr. Alexander Graham Bell, Baddeck, Nova Scotia.

Dear Mr. Bell:—

I am enclosing a short account of our experiments with the Loon. Although short they may be interesting to incorporate in the Bulletin and supplement the photograph of the experiments, already sent you by Mr. Curtiss. I have sent a copy of the enclosed to Ernest Larue Jones, Editor of Aeronautics and given him permission to take any facts from the article he wishes to write up a story in his magazine at his request.

I suppose you have seen the New York Herald an account of the trials of the Silver Dart here on Sunday. We refrained from sending you telegram of successful flight because they were simply preliminary canters and of no account in view of what we intend to do. On Sunday we had three starts all of about 200 yards, the machine dropping of her own accord on account of insufficient theoretical speed in advance of the propeller. On Wednesday the 9th, we had an early trial with the change from last trial of open auxiliary ports. It was assumed that this would give increased speed to the engine and that perhaps the few more revolutions obtained would be enough to cause the machine to take the air. Unfortunately, however, before we had gone 150 ft. the machine showed marked lift without my realizing the fact with the result that the machine twisted around to starboard and an accident occurred similar to the one experienced by Casey the latter part of September. We find that we must have a stronger running gear owing to the increased weight over that of the June Bug; also that the engine must have mechanical intake valves. This will necessitate a delay of two days, so on Saturday we expect to have everything in first rate shape. I have written Major Squier to this effect and extended to him an invitation to spend the week with us and witness the trials.

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With kindest regards,

Sincerely yours, Curd

Hammondsport, N. Y., Dec. 9, 1908.

As the Hammondsport members of the Aerial Experiment Association were only waiting for the completion of the new motor to be installed in the "Silver Dart," there was practically nothing to do in the flying game. The idea occurred to us on October 23rd to fill in our time by trying some experiments along the line taken up by the Baddeck members. It seemed that the boats, or floats, should rise out of the water while under way, the aeroplane would produce the lift and that perhaps the additional use of hydroplanes was unnecessary. As we had the old "June Bug" lying idle, just waiting to be used, it was decided to build two small floats large enough to support the total weight of machine and man, and place these boats under the "June Bug" in place of the running gear which was attached at that time for rising off the land. The expense of building these boats would be comparatively small, so designs were immediately gotten out to support a total weight of 850 pounds. We finally decided upon the following dimensions: 20 ft. over all, 18 in. beam and six inches of free board. These boats were constructed skeleton-like, of California Red Wood, and covered completely over with rubber oil cloth. Completed, they weigh 60 pounds each. They are spaced 7 feet apart, catamaran-like, and connected by fish-shaped trussing to the lateral cords and central panel of the "June Bug." The vertical rudder, similar to that used in the "June Bug," was mounted directly at the stern of the catamaran, while the single surface front control was mounted directly from the bow, thus doing away with the usual cantilever 2 trussing employed in our former machines. This gave a great saving in head resistance and also made the whole thing when finished look very compact and neat.

The engine used was the one originally designed for the "Silver Dart." It is a Curtiss, 8 cylinder, 3 $\frac{3}{4}$ bore x 4 in. stroke, water cooled motor, and is mounted midway between the

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planes, driving direct an eight foot propeller of 6 ¼ ft. pitch. The machine thus constructed was re- named "The Loon."

To transport "The Loon" from the aerodrome shed to the head of Lake Keuka, where two parallel wharves were built to serve as launching ways, a two wheeled cart was constructed upon which "The Loon" would balance, and by attaching a rope to the front end of the cart, the machine was easily hauled along the road.

On Saturday evening, November 28th, the first experiment was tried. The engine being started by Mr. Curtiss and the seat being taken by Mr. McCurdy, the machine started on its maiden flight. The exact push of the propeller at the time was not known, although it was probably in the neighborhood of 250 pounds. Hardly had the machine, however, covered 400 yards when the propeller shaft was twisted off, the propeller being thrown violently into the water. This concluded experiments for the day. The speed attained was calculated to be 20 miles an hour. The experiment was of such short duration that data as to the lift of the aeroplane was not obtained. A new propeller shaft was soon constructed of solid material, instead of the steel tubing formerly used, and on Sunday afternoon, November 29th, the second trial was made. The wind was blowing directly down the lake with a velocity of five or six miles an hour. The auxiliary ports in the engine which were 3 closed on the former trial, were now opened up and it was anticipated that the speed of the engine would be greatly increased. As before, Mr. Curtiss tuned up the motor and Mr. McCurdy operated. We had agreed to try running down the lake with the wind and back again against the wind, to ascertain whether there was any difference in lift due to the wind. It seemed that after running about 100 yards "The Loon" obtained her maximum lift. By "shooting" her, (by suddenly elevating the bow control,) the bows would entirely lift out of the water without any depression at the stern which would be the result in the case of an ordinary motor boat. We took a course a mile down the lake, turning in coming back against the wind, thus covering a distance of two miles in 4 minutes and 26 seconds. This gives a speed of over 27 miles an hour. It was calculated by Mr. Selfridge that the speed required to lift the "June Bug" off the ground was about 23 miles an hour, and although the

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weight of "The Loon" was very little more than the "June Bug," still an increase of speed of four miles on 23 was insufficient to cause her to take the air. This seems to indicate that the suction of the water in holding down the boat is much greater than was anticipated.

As we unfortunately could not allow the experiments with "The Loon" to interrupt trials with the "Silver Dart," it was decided to take the motor up the valley to the tent and start flying there as soon as possible. We hope, however, after we have gotten through with the "Silver Dart" for this year, we may go back to the "The Loon" and have another trial with an experiment that promises so much.

J.A.D McCurdy, Secy. Aerial Experiment Ass'n