The "Fallacy" of the Dirigible

By CARL DIENSTBACH and T. R. Mac MECHEN

IN an article called "The Fallacy of the Dirigible," Victor Lougheed, of Chicago, discovers that the governments of France, Germany, Italy and other European nations, besides the great Zeppelin and Parseval Airship Companies in Germany and that of the Clement-Bayard in France, are spending millions foolishly, in building scores of dirigible airships. Mr. Lougheed has concluded in his own mind that these crafts are delusions from the standpoint of utility and economy.

What he offers the public as facts is simply an avowal that he is densely ignorant of the entire subject, and this unfamiliarity does not fit his air of pretentious authority, which in countries where the public witness the steady operations of dirigibles during every day of the year, would immediately discredit him. Since not a single big, high-speed dirigible has yet been operated in America, this public falls an easy victim to this kind of slander.

This writer says that thirty miles an hour is the maximum speed of dirigibles. Yes; it was six years ago. What are the facts?

In 1907, Zeppelin airships were running 33 miles an hour. Their speed is certified.

In 1909, the military dirigible, "M 3," of the German army, made 38 miles an hour, and did it regularly.

In 1910, the passenger dirigible "Parseval VI" made regularly, her 33 miles an hour.

In 1911, on increasing the dirigible's size, improving its motors and refining its design, the dirigible progressed by leaps and bounds. Now the largest of all Parsevals "P X," makes 42 miles an hour; the still larger Siemens-Schuckert, 43 miles an hour; and the still larger passenger Zeppelins, Schwaben and Victoria Luise, 43 miles an hour. But the latest military Zeppelins "Z 2" and "Z 3" each make 47 miles an hour. And for this writer's information, we will impart Europe's common knowledge that any of these Zeppelins run faster than the aeroplanes built and loaded for offensive work in war-time.

Mr. Lougheed's statement that European dirigibles reach their destinations only on practically windless days is not founded on fact. Count Zeppelin's recent stay of 32 hours in the air on his return trip with the "Z 3" from Hamburg to Friedrichshafen, through a storm that wrecked all but one of the aeroplanes in the Berlin to Vienna race, should furnish Mr. Lougheed with new reflective perception. That airships do reach their destinations is extremely practical; while it is still an event for an aeroplane to even arrive.

The old Parseval III, with an actual maximum speed of only thirty miles an hour, always reached her destination if running against squalls and high winds. The wind's speed near the ground rarely exceeds 27 miles an hour. Now-a-days it is commonest practice for any expert pilot to always steer any dirigible near the ground where buildings, forests, villages, hills and mountains shield the ship from the full force of the wind. This may surprise Mr. Lougheed, but he must learn the fact that steering the dirigible at a level where the winds are weakest, compensates for its drifting backward along the more exposed parts of its course where the wind's force is unbroken.

This manoeuvering demonstrates the overwhelming by practical utility of even a thirty-mile dirigible in comparison with a forty-mile Wright aeroplane, which, to even fly in an average 30-mile wind must climb much higher in the air where the wind is not disturbed by the very obstructions that protect the dirigible. But, while the wind at greater height is unrestrained, it actually blows forty miles an hour there, whenever it is blowing thirty nearer the ground. This stops the aeroplane from making headway, and in flying higher, the machine generally encounters dangerous gusts. Even Mr. Lougheed knows that it is suicidal for an aeroplane to fly near obstacles on the ground. It is apt to be quickly upset while aproaching the obstacles and before its own speed could assist it. The most skillful pilot, if he could keep his aeroplane on even keel would not equal the dirigible. It requires all of the aeroplane pilot's skill in gusts coming from every side, to avoid running into the very obstacles that shelter and assist the dirigible on its course. A pilot who is busy balancing himself cannot steer with such nicety. Suppose that a supernaturally expert pilot kept his balance and steered his craft as cleverly as Captain Stelling steered the dirigible Parseval III, on its trip from Munich, through valleys, little wider than a street, between mountains—the aeroplane would still fail from lack of staunchness. This shows Mr. Lougheed that he states the very reverse of the truth.

The aeroplane, because of its frailty, failed under conditions where the dirigible succeeds, because of its staunchness. Captain Stelling could not prevent the Parseval III from bumping the ground and almost killing cattle, though his airship continued to make an enforced headway through a terrific airsurf. An aeroplane would have been upset and completely wrecked, while the dirigible, supported by the great upward pressure of its gas, is enabled to neutralize the worst collision. None of the "critics" have pointed to the staunchness of the ordinary balloon in thousands of landings made before the "ripping panel" was invented. Exhausting gas brought the balloon to earth; its anchor was cast, but always failing to catch immediately, the car struck the ground

with a force that would smash any aeroplane or boat; then it rebounded, and with the escape of enough gas, again came down, to drag at high speed over all kinds of obstacles, until the anchor finally held, with a terrible jerk that abruptly stopped the craft. Quite apart from a frail aeroplane, no watercraft or automobile could withstand such an experience. Passengers have been severely injured, but rarely the car and never the envelope, in spite of the terrific tugging by the wind.

When the rigid dirigible "Schuette-Lanz" recently rebounded, after striking the ground at full speed, the collision simply spilled four of its passengers. The airship rose intact. The Zeppelin airship Deutschland, short of fuel and sinking, broke thick pine trees in the Teutoburg forest, before it settled deeper and became so entangled that the airship threshed itself apart, but not before it had ploughed a deep furrow for more than 200 yards through the forest. This proved the staunchness of rigid balloons.

Mr. Lougheed is only an amateur in stating that the dirigible loses its gas because of the weak retaining qualities of its envelope. Besides they would have to reinflate extremely little if they did not want to replace the gas lost in crossing mountains. It is the commonest practice to operate dirigibles for two months without completely reinflating them, except a little fresh hydrogen daily. Mr. Lougheed grossly overestimates the cost of gas; in Germany it costs less than 2 cents per cubic meter. The inflation of the airship Schwaben which displaces some 20,000 cubic meters, cost 40,000 cents, or $400, but this lasts two months and eight passengers carried on one trip pays for the entire inflation. Loss of carrying power as the result of gas escaping is entirely negligible because the constant burning of gasoline automatically lightens the ship; if no other influence were at work, the airship, instead of losing lift would have too much gas and have to exhaust this surplus, to restore the balance between its load and its lift, as long as fuel lasts.

The writer shows the most glaring ignorance of the dirigible in not using in his own favor arguments based on the dirigible's chief inherent fault—that it will ascend with great force when the sun's rays heat the envelope and the gas, and that its gas will expand when it reaches great altitude beyond the capacity of the envelope and escape and be lost through the safety valves. When the gas cools again in the upper air, in the shadow of a cloud, or in rain or mist, not to mention snow, there is not enough lift to support the airship. A conscientious critic would, on the other hand, use arguments that Mr. Lougheed has failed to employ in his favor, by pointing out that the Zeppelin double envelopes have overcome any difficulty from gas.

This has been largely overcome by all modern airships through the remarkable aeroplane action of their hulls when driven at high speed. In other words, if there is too much gas lift the ship bow is simply pointed down and it is driven forward in that position; owing to its surplus gas which would otherwise send it skyward, it continues on a horizontal course, instead of sinking. If the gas has shrunken by cooling; or there is snow or rain on the envelope (another argument this writer fails to mention) the pilot points the bow slightly upward; instead of rising as it would do with surplus gas lift, the ship speeds on a horizontal course, because of its lifting efficiency and because it has now practically a heavier-than-air machine.

Airships, despite their staunchness, have been wrecked. Mr. Lougheed illustrates his article with pictures of nearly all the few airship wrecks. But these were due to faulty operation and handling and were inevitable during the heroic period of the dirigible as well as the aeroplane. But aeroplanes continue to be wrecked at such a lively rate that to display even a small percentage of pictures of aeroplane wrecks would fill a large book. All the money spent on aeroplanes far exceeds the total spent on airships and the aeroplane has yet to show the first return of utility. Expensive airship sheds are practically permanent and not exposed to dangers.

The most charitable thing to say of Mr. Lougheed's essay is that he is simply mistaken.

OPEN TAIL FOR NOVICES

A monoplane, with fuselage uncovered, is easier for novices to fly. A covered body presents considerable resistance in making a turn, according to the expert "Dep" flyer, George M. Dyott.

And in order to make a short turn the pilot must cause the machine to bank. An open fuselage will make a fairly sharp turn remaining level if the natural tendency to bank is counteracted by warping the inside wing. The other type of machine is more sensitive to the rudder which, therefore, can be used as a means for helping lateral stability. Preliminary instruction with an open fuselage is most beneficial as it teaches the pupil the complete art of rudder work and how to employ it intelligently. When this is mastered, and the pupil becomes a proficient pilot, the enclosed fuselage presents superior advantages.