

How Great Britain Fights in the Air

Brig. Gen. Charles Frederick Lee

R.A.F. SHANT MACHINE READY TO START ON BOMBING EXPEDITION



Brig. Gen. Charles Frederick Lee

Brigadier General Charles Frederick Lee, chief of the British Aviation Mission now in the United States, who has written the following article, is true to the tenets of the Royal Air Force, he says everything about the service but not one word about himself. He is a young man to have attained such eminence in his profession, for he was born in Yorkshire on July 14, 1887. His career is exclusively that of the army. He was educated at Eton and the Royal Military College at Sandhurst, served in a famous old regiment, the 66th Rifles, passed the inevitable four years in India, and helped to strafe the Boche in France in 1914 and 1915. He earned his army sash, "flying leaf," by reason of an extraordinary maneuver he evolved in air fighting. One of his tricks was to fall like a fluttering leaf, in a machine apparently out of control, but really tempting an opponent to close quarters and consequent undoing. He is immensely popular, not only with the general public, but with his brother officers in both the British and American armies.

HE allies have been fighting the Hun for over four years, and the British empire has sustained 2,500,000 casualties, yet, contrary to general opinion, the greatest lifesaver in the present war is the airplane. Without the airplane casualties increase by leaps and bounds. With the airplane and supremacy in the air the casualties on our side of the line decrease and the morale increases, whereas the casualties on the Hun side of the line increase and the morale decreases with marked rapidity.

There is no doubt whatever that on the western front we have a definite, almost an overwhelming, superiority in the air. It is this superiority in the air which enables us to bomb Germany and bring the war home to her, and makes it possible for an offensive to succeed. No offensive can hope for success without co-operation between all arms and the most implicit trust in the aviation service by leaders and men alike.

Machines have been developed along definite lines for definite purposes. In the olden days any machine was used for any duty. In those days it was only necessary for a pilot to fly a machine and have an elementary knowledge of other matters. Nowadays anyone can be taught to fly—that is the easiest part of the training. The difficult part comes with specialization. A pilot has to be taught to fly and fight in small single-seater scouts. He has to be taught, on highly specialized lines, the art of bombing, and last, he has to be taught co-operation with other arms. This last duty is one of the most difficult to teach and perhaps the most important of all.

Co-operation by the artillery and the airplane in 1914 was not efficient. Wireless was considered a sort of black art. It was not until 1915 that the matter was really developed and evolved. Its strides became rapid. Machines and instruments were improved, and wireless co-operation was thoroughly organized. Wireless is such a science in itself that it is useless to go into its technical details. But today there are hundreds of machines equipped with wireless and co-operating daily with the artillery, infantry and cavalry. Our work with infantry, cavalry and tanks is also of the greatest importance. A system of signals is devised as between the infantry and the airplane, and the airplane flies extremely low to get these messages, flies back and gives the commander accurate information not only as to where the infantry is, but also as to what they may be in need of.

As I began by saying, flying is designed to save life. Take, for instance, a machine which flies at a height ranging between 50 feet and 400 feet, and searches for information which is invaluable to the commander of the sector in which an attack is going to take place. It is up to the pilot of an airplane to discover if the batteries are active or if they are only camouflaged make-believe. If he can transmit the facts to the artillery commander, in the one case he can have the battery destroyed and prevented from shelling our troops, and in the case of a camouflaged target he can save the battery commander the trouble of firing at it. On the same lines it is the duty of the pilot to see where the trench mortars are in order that they may be knocked out before the attack begins, as well as the machine gun emplacements which cause such havoc to an attack if they have not been previously dealt with. Last, but not least, it is essential to know if the wire in front of the German trenches has

been cut efficiently. If it has been, all is well. If it has not, it is necessary for the artillery to again strafe it, in order that an infantry regiment may not start an attack only to find itself held up on German barbed wire. The saving of life by an efficient air force is absolutely colossal. The airplane must descend from the realm of mystery it has occupied in the public mind and assume its practical form. It should be looked on as a machine designed to carry a man through the air for a definite purpose, and that purpose is to help those on the ground to go forward.

We have to rid ourselves of mistaken notions. The life of a pilot is really far more comfortable than is possible for his comrades in the infantry, cavalry or artillery. The infantry when in the trenches are shelled continually and often heavily. They have to sleep in dugouts, some wet and some dry. They are at war the whole time except, of course, when they are back at rest. But the pilot, though his period of fighting may continue for weeks and months at a time, has a definite job to do each day. He knows when that job is over he will return to a clean house, a clean meal and a clean bed. His morale is excellent. He is flying the best machine the government can supply. He does not see the dirty side of the war. He does not find in the air the gas and the filth of the ground. It is not to be wondered at that he is proud to be in the air division. A certain type of person writes on the dangers of flying and the way he prevented himself from being killed, yet one-tenth of the untold stories in the trenches would make the air pilot's story sound very small. Yet the airman is all-important. It would not help much if America sent ten millions of men to France if there was not an efficient air service back of them.

Fortunately, things are going well. The United States has pilots of the right kind, and the material is now going overseas in the right way. I have been fortunate enough to see a good deal of American flying men, of the training which is going on in this country and of a certain number of American cadets in England. Personally, I have nothing but praise for American flyers, and those at home have nothing but praise for the cadets there. However well a pilot may fly, however good his machine may be, unless he can kill his opponent in the air, he is, to all intents and purposes, useless. To do that he must have a gun, use a preponderance of fire, outmaneuver his enemy and bring him down. There are several means and ways of achieving this excellent result. Some Germans have been forced to land without having been fired on; others have been brought down by machine-gun fire in the air, and a few small number have been shot down by infantry gunfire from trenches. The more Germans brought down, the less sacrifices of life we have on our side of the lines. Say a German airplane has come over our side of the lines; say he has taken photographs of our artillery position; say he has photographed trenches where we are assembling to attack—it is perfectly easy for him, if not interfered with, to take these back, have them developed and issued to the artillery. He can also call up batteries by wireless and have them train their guns on the infantry so assembled. Hence, it is absolutely necessary that every hostile machine on our side of the lines, every enemy machine in the air at all, shall be brought down whenever and wherever possible. Only by this means can we save our own men on the ground.

With the airman came the air-gunner. In 1914

AND THE EARLY PART OF 1915 PILOTS AND OBSERVERS CARRIED RIFLES, AND AT THAT TIME, SAT BEHIND. THERE WERE NO MACHINE GUNS ON AIRPLANES. MEN UNDOUBTEDLY FOUGHT IN THE AIR, BUT THESE SCRAPES GENERALLY RESULTED IN TWO MACHINES MANEUVERING AROUND EACH OTHER AND OCCASIONALLY GETTING IN A SHOT. SOMETIMES ONE MACHINE OR THE OTHER WAS FORCED TO LAND FOR LACK OF GASOLINE. IT WAS EXTREMELY LUCKY IF YOU COULD PUT IN A SHOT THAT WOULD EITHER DISABLE THE PILOT OR KNOCK OUT THE MACHINE. NOT UNTIL THE ADVENT OF THE LEWIS GUN DID AERIAL GUNNERY REALLY BEGIN TO MAKE ITSELF FELT. THESE HANDY LITTLE WEAPONS WERE MOUNTED ON SWIVELS ON EACH SIDE OF THE MACHINE AND CUT DOWN TO DECREASE WEIGHT. THIS, HOWEVER, THOUGH THE BEGINNING, WAS NEVER SATISFACTORY, AND THE STOPPAGES IN THE MACHINE GUN WERE FREQUENT. IN THE MIDDLE OF 1915, THE GERMAN AVIATIK HAD A SINGLE MOVABLE GUN IN THE REAR COCKPIT WHICH CAUSED QUITE A LOT OF TROUBLE TO THE ALLIES. THIS WAS FOLLOWED BY THE FRENCH NIEUPORT MACHINE, WHICH HAD A LEWIS GUN MOUNTED OVER THE TOP PLANE, AND AT THE SAME TIME WE DEVELOPED A RING MOUNTING IN THE OBSERVER'S COCKPIT. IT THUS BECAME A MACE, NOT ONLY IN MACHINES BUT ALSO IN GUNNERY AS TO WHO COULD BRING THE MOST EFFECTIVE FIRE TO BEAR ON THE ADVERSARY. IN THE AUTUMN OF 1915 EXPERIMENTS WERE MADE WITH THE VICKERS GUN MOUNTING THROUGH THE PROPELLER. THE BLADES WERE PROTECTED BY STEEL PLATES CALLED REFLECTORS, WHICH WERE SO PLACED THAT WHEN A BULLET STRUCK THE BLADE IT GLANCED OFF. NO FORM OF SYNCHRONIZER GEAR HAD BEEN EVOLVED, BUT IT WAS THE BEGINNING OF A SYSTEM WHICH IS NOW UNIVERSAL. LATE IN 1915 THE FOKKER MADE ITS APPEARANCE. THIS MACHINE HAD NOT A GREAT SPEED, BUT IT DID HAVE A SYNCHRONIZING GEAR, I. E., A GEAR WHICH ENABLED THE MACHINE GUN TO FIRE THROUGH THE BLADES OF THE PROPELLER WITHOUT HITTING THE BLADES AND WITHOUT ANY LOSS OF EFFICIENCY. IT HAD QUITE A SUCCESS FOR A TIME UNTIL THE FRENCH GOT OUT THE SPAD GEAR AND THE BRITISH THE VICKERS GEAR. THE LATTER WAS USED BY US QUITE EXTENSIVELY OVER THE LINES, BUT OWING TO THE DIFFICULTY OF TRAINING MECHANICS IN ITS USE AND THE SMALL AMOUNT THAT WAS KNOWN OF IT IN THOSE DAYS, IT LEFT QUITE A LOT TO BE DESIRED. THIS WAS FOLLOWED BY THE CONSTANTINCO GEAR, WHICH PROVED VERY SATISFACTORY. HERE, THEN, WAS A DEFINITE PROGRESS IN AERIAL GUNNERY, AND TODAY WE HAVE ON EVERY MACHINE TWO OR THREE OR FOUR MACHINE GUNS, TWO FIRING THROUGH THE PROPELLER AND TWO BEING USED BY THE OBSERVER BEHIND. IN THE CASE OF A TWO-SEATER, IF YOU CONSIDER THE AMOUNT OF ROUNDS WHICH CAN BE FIRED ON THE ENEMY FROM A MACHINE, YOU WILL UNDERSTAND WHAT A MENACE IT IS. YOU CAN FIRE 600 ROUNDS PER MINUTE FROM EACH GUN; HENCE THE PILOT CAN FIRE 1,200 ROUNDS PER MINUTE, AND THE OBSERVER CAN REACH THE SAME FIGURE WITH HIS TWO GUNS.

Machines, of course, are specialized. There are single-seater machines, which depend entirely on their power of maneuver and gunfire. There are two-seater fighters, where the pilot and the observer have to work together the whole time. There are machines designed for co-operation with artillery which carry an observer and wireless. There are large machines for day bombing and still larger machines designed for night bombing. Owing to the pace at which machines maneuver the sighting of machine guns becomes a very important factor. To hit an object in a vital spot, going 120 miles an hour, when your own machine is traveling at the same pace, requires a vast amount of training for pilots and observers, who practice gunnery continuously from the time they go on the ground school until they go overseas.

An extremely interesting form of flying has been perfected recently—cloud formation flying. In the olden days, and until most recently, pilots have been chafing about going into clouds except as a means of defense. Actual cloud flying has been regarded with a certain amount of skepticism. But cloud flying today is a necessity. Every day is not a fine day, and cloud flying has become the fashion. It is now possible for machines to go in formation through the clouds and meet above them and continue that formation on a compass bearing to their objective, come down through the clouds, bomb their objective, go up again and come home. That sounds simple, but it is simple only if pilots are properly trained for it, and have the right instruments.

Long-distance air raids into Germany are now quite common. An independent force of the R. A. F. has been formed for this purpose alone. It is independent of the army and carries out bomb raids only from its headquarters in France. I would like to write something about aerial photography, that most useful adjunct of the work of the general staff, but considerations of space forbid. I have endeavored to show the vital importance of the air force, both offensive and defensive. My message can be summarized in very few words. Send over your Liberty engines in thousands. Send over your bright young American flyers in tens of thousands, and the end of both the war and the Hun will be in sight.

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"YARB DOCTOR" BELIEVED WIZARD

Strange Old Man in Missouri Who Embittered the Countryside.

IS SHOT TO DEATH

Suspected of Setting Fires and Destroying Grain, He Is Waylaid at Night by Angry Neighbors and Killed.

Kansas City.—High up in a lonely cabin, on an elevation in an overflow district of the Missouri river, for more than 80 years the mysterious "yarb doctor" of Chariton county brewed his medicines from herbs of the forest and made prophecies to the country folk.

Who he was or where he came from no one ever knew. He gave his name as Sturman, but he never revealed his true identity. His prophecies of death and calamity came true so surely that the people of the vicinity accredited him with the powers of a wizard and feared him.

It is said that he predicted the present world war, declaring way back in the early seventies that "in the last part of the first quarter of the new century the harvest fields will be stripped of their gleaners, as they will be fighting a foe on a foreign soil, with weapons not seen before."

All of his remedies the old doctor prepared in a room which he allowed no one to else to enter. The gray, weather-beaten house straddled the mound like a drunken horseman, looking as if at any time it might reel into the lap of the swamp lands below.

A Tall, Bent Figure. The appearance of the old man was in keeping with his habitation. A tall, bent figure humped over a cane; black eyes that glittered under



Was Ambushed and Killed.

thatchlike eyebrows; long, unkempt beard and hair, surmounted by a conical cap.

The sight of him coming down the road in his ramshackle buggy, drawn by a rickety old gray mare, made the children scamper from the roadside.

The old man was a cripple when he mysteriously put in his appearance in the Missouri township. He was able to get around only by means of his horse and buggy. Although he gave freely and without charge of his remedies, he refused to "neighbor" with anyone. As he slipped his toddy in the little cross-roads store he quarreled with the bystanders. He was constantly engaged in some lawsuit and made many bitter enemies.

And then there came a July night when the men of the community decided the old doctor had been a neighborhood nuisance long enough. There had been several fires in the township. Buggy-wheel tracks were seen in the vicinity of each. Following the fires a number of sacks of wheat that were loaded at the old Keyesville landing ready to be shipped to Kansas City were cut one night and thousands of bushels of grain lost. The same wheel tracks were seen near the landing. The community was enraged. The old "yarb doctor" was held responsible.

The next afternoon, as he was jogging homeward, a number of men ambushed in the lonely road riddled his body with bullets and hastily buried him in a shallow grave.

Superstitious Fear. The community approved, but later on a dozen men were arrested for the murder. When the court ordered the body of the murdered man to be exhumed the whole neighborhood was alarmed. They feared life might come again to the old doctor. Prayer meetings in the churches and at the old camp-meeting ground were set for the day.

Each man arrested, however, proved an alibi. The prosecution was suddenly ended. The body was supposedly nailed up in a walnut box and buried in a deep grave. The neighborhood rested easier.

The grave in the woods, however, is said to be a haunted spot.

Careful as to Arrests. Cincinnati, O.—While the Cincinnati police have been on a strike the Home Guards have been doing police duty. A business man belonging to the guards relates his first experience:

"I was on Vine street with another guard sent with me when we paired off. We saw a fight across the street and ran over. When we inquired we found that some fellow had made a remark which a passer-by thought sounded too much of pro-Germanism. Did we pinch the fellow who hit him in the eye? We'll say we didn't."

COLLECTED FACTS

An international engineering congress in the interests of the Netherlands East Indies will be held at Batavia next year.

Eton (England) Rural District council has protested against British labor being employed to empty cesspools for German prisoners.

The British ministry of munitions has paid over \$50,000 toward day nurseries and institutions since the beginning of the war.

The finest variety of asbestos is known as amianthus, and the most beautiful specimens of this come from Tarnantaise, in Savoy.

In London there are women who earn a livelihood by pawning jewelry and clothes for other women who are ashamed to be seen entering a pawnshop.

It is estimated that more than 5,000 young women are now employed as elevator conductors in stores, office buildings, hotels and apartment houses in New York city.

ASSORTED BRIEFS

One householder out of every five in England is cultivating allotment gardens as compared with one in 12 two years ago.

A California ranch owner is the inventor of a portable iron gate which can be placed across main irrigation ditches to divert the flow of the water into laterals.

Grease turned into its sewers by wool-washing plants is recovered by the English city of Birmingham at its sewage plant and converted into a profitable by-product.

An inventor has brought out a machine for accurately fitting new doors to frames with a minimum of labor.

Holland is laying plans to build up its foreign trade promptly after the war.

Doors of Japanese homes are not hung on hinges but all are of the sliding kind.

Whole meat is now in great demand and swordfish steaks are sold in Faneuil Hall market stalls, Boston.

An inventor has brought out a machine for accurately fitting new doors to frames with a minimum of labor.

CASTORIA

For Infants and Children.

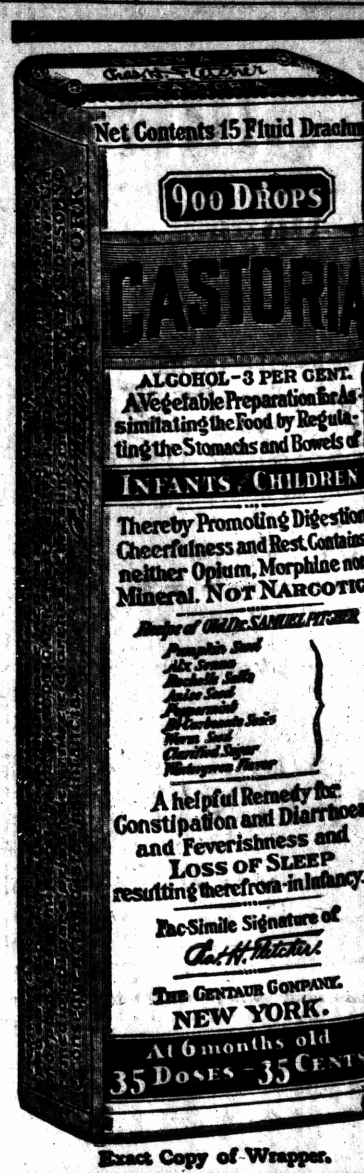
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A Vegetable Preparation for
simulating the Food by Regulating
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INFANTS, CHILDREN
Thereby Promoting Digestion
Cheerfulness and Rest. Contains
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At 6 months old
35 Doses—35 CENTS

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Aversion to Boats. On landing in France an American soldier wrote home to his father: "Sell my sailboat. I never want to see a boat again after I get home."

Itching Burning Skins. For eczemas, rashes, itchings, irritations, pimples, dandruff, sore hands, and baby hamors, Cuticura Soap and Ointment are supremely effective. For free samples address "Cuticura, Dept. X, Boston." At druggists and by mail. Soap 25, Ointment 25 and 50.—Adv.

The Huns are as rats in a trap. Now to keep them from gnawing out.

"Censored" news is the separated milk of journalism.

For PINK EYE

DISTEMPER, CATARRHAL FEVER, AND ALL NOSE AND THROAT DISEASES

Cures the sick and acts as a preventative for others. Laid on the tongue. Safe for brood mares and all others. Best kidney remedy. 50 cents a bottle, \$5.50 a dozen. Sold by all druggists and turf goods houses, or sent, express paid, by the manufacturers. Booklet, "Distemper, Cause and Cure," free.

SPOHN MEDICAL CO., Goshen, Ind., U. S. A.

Takes Time. "Mister, I am slowly starving." "Of course. It's a thing you can't do in a hurry, you know."

While Coal Is Scarce. "Summer is lingering in the lap of fall." "Then may fall never take a stand."

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OR MONEY REFUNDED—ASK ANY DRUGGIST

W. N. U., CHICAGO, NO. 43-1918.

How Acid-Stomach wrecks Health of Millions

Many people make the mistake of thinking that acid-stomach—supervening on an occasional attack of indigestion, bloating, heartburn, sour, gassy stomach, or some other such minor ailment quickly remedied—or will cure itself—and have no serious after effects. As a matter of fact, acid-stomach is responsible for a long train of serious ailments that cause awful suffering and sometimes baffle the best medical skill. It is a well established fact that many cases of chronic stomach trouble, anemia, stomatitis, gastritis, rheumatism, gout, lumbago, dizziness of the liver, auto-intoxication, dyspepsia, catarrh of the stomach, intestinal ulcer, cancer of the stomach, and frequent, watery heart trouble and heart failure, can be traced directly to an acid stomach.

This is not at all surprising when you consider that even the acid formed in the mouth from fermentation of bits of food lodged in the teeth—an acid that is actually tasteless—is yet powerful enough to eat through the enamel of the teeth and decay them. Is it any wonder, then, that an excess amount of acid in the stomach causes so much misery, undermines the strength and wrecks the health and happiness of so many people? It is not a fact, within the range of your own observation, that nine people out of ten are victims of acid-stomach?

If you ever hope to be well and strong

you must get rid of that excess acid. Nothing is gained by taking medicines which merely stimulate and give one a false sense of strength, and that leave the excess acid still in the stomach. You must depend upon your food for your strength—and unless you keep your stomach free from excess acid, pain, sour, sweet and strong, it cannot properly digest food; your whole body suffers.

What you want is relief—you—and here is the way—absolutely guaranteed—just take no chance. It's been tested tens of thousands of times with universal success. Go to your druggist and get just one package of RAYNOL's, a wonderful preparation that will literally wipe the excess acidity out of your stomach. The results obtained are nothing short of marvelous. Almost instantly it relieves that painful, puffed-up feeling after eating, belching, heartburn, sour stomach, etc. Makes the stomach feel cool and comfortable.

If you need this help it's your own fault if you suffer another day. RAYNOL's is absolutely guaranteed, so get a big box from your druggist. If it does not help you your money will be refunded. If your druggist does not keep RAYNOL's, send your name and address to the Raynol's Remedy Company, 100 S. Wabash Ave., Chicago, Ill., and they will at once mail you a 50c box and refund the money for it after you receive it.



Canada made me Prosperous

—that's what thousands of farmers say, who have gone from the U. S. to settle on homesteads or buy land in Western Canada. Canada's invitation to every industrious worker to settle in Manitoba, Saskatchewan or Alberta is especially attractive. She wants farmers to make money and happy, prosperous homes for themselves by helping her raise immense wheat crops to feed the world.

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or other lands at very low prices. Where you can buy good farm land at \$15 to \$30 per acre that will raise 20 to 45 bushels of wheat to the acre—it's easy to become prosperous. Canadian farmers also grow wonderful crops of Oats, Barley and Flax. Mixed Farming is fully as profitable an industry as grain raising. The excellent grasses, full of nutrition, are the only food required either for beef or dairy purposes. Good schools and churches; markets convenient; climate excellent. Write for literature and particulars as to reduced railway rates to Dept. of Immigration, Ottawa, Canada, or to

C. J. Breckinridge, Room 415, 112 W. Adams Street, Chicago, Ill. He will also tell you how to get a 160-acre homestead in Western Canada.

Canadian Government Agents

Personal. He—The fools are not all dead yet. She—That's as sure as you live. —Boston Transcript.

Cure pimples, headache, bad breath by taking May Apple. Also help into a cure the worst case called Doctor Pierce's Pleasant Pellets, Adv.

Pity for Benedict. "All men who get married are not fools." "No; some are merely unfortunate." —London Tit-Bits.

Never underestimate a quiet man. A great ship at anchor seems a help- less thing.

Not strange that the Huns destroy the trees on the French farms. A criminal doesn't like a tree.

The bull will bellow and snort and throw dirt—and yet not consider himself a politician.

Your Eyes

A Wholesome, Clean, Refreshing and Soothing Lotion—Murine for Redness, Swelling, Irritation, Itching and Burning of the Eyes or Eyelids.

"I don't" After the use of Murine my eyes are clear and I can see with my confidence. Ask Your Druggist for Murine for your Eyes and Eyelids. Murine Eye Remedy Co., Chicago.