3,000 PLANES A MONTH

Careful Inquiry Shows Real Progress in American Output, Including One Machine Which Is Unburnable

By JAMES ARTHUR SEAVEY.

A CONSIDERABLE amount of language, written and oral, has been fired at long range and short at the aircraft production situation in this country. Of late the fire has been so intense that what parts of speech had been held in reserve have been sent to the first-line trenches. But it has seemed to many quite plain but very good American citizens that much of the discussion has failed either to illuminate or improve a condition that was until recently about as bad as it well could be.

It is not of the slightest assistance to the task of licking Germany to establish the fact that Gutzon Borglum is the very best investigator among all the sculptors in the United States, or that he did or did not try to become interested in an aircraft plant, or that some of Colonel Deeds's ancestors were born in Germany and spelled their name Dietz, or that the Colonel transferred to his wife or his business associate in Dayton, after he had become an officer in the United States Army, shares of stock in companies which, either because of or in spite of his influence with the Aircraft Production Board obtained contracts for aircraft, or even that some of the subsidiaries of a certain motor corporation were hard up for working capital until they got some of these fat contracts.

Let all the charges and innuendoes be admitted to be true, wholly or in part. How will it all add a single cubit to the stature of an airplane?

What the American Army in France and in Flanders wants is plenty of American flying machines and plenty of husky young Americans to fly them. And what the American people want to know is why that army overseas does not get what it wants. By this time every schoolboy in Germany knows that the American aircraft program has fallen down, and fallen hard. What the folk here at home, who are paying the war bills of the United States, and who will gladly continue to pay as long as the need exists, wish to know is what has been done to correct past blunders, what can be done to supply Pershing's troops with the airplanes they need and the men to fly them.

How many aircraft plants, ready for action, are there in this country, anyway? Where are they? What can they turn out? Are they working to their capacity? If not, why not? Can the present capacity be enlarged? Have the owners of the plants received sufficient orders from the Government, or serious assurances of such orders, to justify them in putting good American dollars into a 50 or 100 per cent. factory enlargement? If not, again why not?

It is the purpose of this article to answer some of these questions. In order to do so, a survey of the actualities and possibilities of American aircraft production has been made. It has been difficult, sometimes impossible, to obtain as full and accurate information as could be desired, because of the disinclination of those interested to speak their minds freely, lest sooner or later they find their names on an official black list, or because it was difficult to discuss war products without revealing what ought to be war secrets. And no loyal American and no decent American publication would, for a moment, do anything to delay the hamstringing of the Hun. But, for all that, information was obtained that may be of interest to many of our citizens and, perhaps, useful to the Government, behind which every true American will stand until Tennyson's vision has been realized and there has been established, to endure until the dawn of the eternal morning, "the brotherhood of man, the federation of the world."

But before going into details, and for the specific purpose of giving all the non-aid and discomfort that is possible to the enemy, it may be stated that neither the United States nor its allies need feel any great concern lest Germany gain supremacy of the air by the use of the so-called "flying tanks." The brave Lufbery may have been sent to his death by one of these alleged new German inventions, but the Huns have nothing on the Yankees. It is not permitted to tell the story in very great detail, but this much may be given for bedrock fact:

Within a comparatively short distance from New York there is being manufactured, in hitherto unknown quantity production, an airplane built of material that cannot burn, as the material of poor Lufbery's machine burned, and it can be made in the same quantity production in any country where there is labor to do the work. Indeed, these machines can be turned out almost as rapidly as Henry Ford can turn out "flivvers" or cylinders for the Liberty Motor. If all Americans and all their war allies cannot be of good cheer at this news, then "cheer up" has no meaning for them.

The only thing about the invention that may tend to dampen our national ardor is that it is not the product of native inventive genius. To give the name of the inventor would be to identify the airplane. At this time that cannot be done. It may be stated, however, that he is a native of a European country, neutral in this war, and he has been working on his invention for several years. The company which is manufacturing it, however, is all American. So convinced has the Government become of the practicability and great usefulness of this new aircraft that its manufacturers are now executing a Government contract.

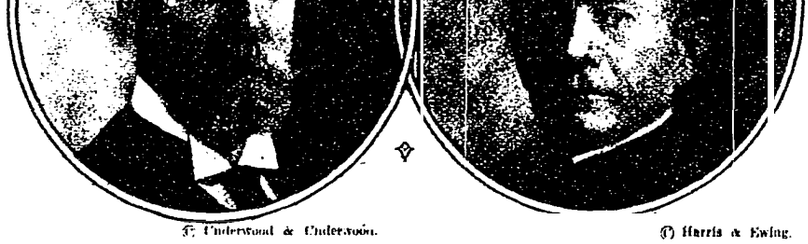
At the plant where the machines are manufactured some of them are now being fitted with the Liberty Motor. If motor and plane work well together, and tests already made indicate that there will be no trouble on this score, the Secretary of War may make almost any statement he likes regarding the number of aircraft the American Expeditionary Forces will have at their disposal at any given time, and nobody will be able after that time to accuse him of exaggeration. So confident is the manufacturing company that it has solved the problem of aircraft production that when I spoke to one of the officers of a production of 500 a month he replied:

"Why, my dear Sir, that is no production at all. But I do not purpose being drawn into any sort of a talk about our machine. We do not need any publicity; we do not want any publicity, and we're not going to have any publicity if we can help it. Besides, our tongues are tied officially, and the knot is sealed with the Government seal."

Now, what are the aircraft requirements of the American forces in Picardy

(Continued on Page 8)

© Central News Photo Service.



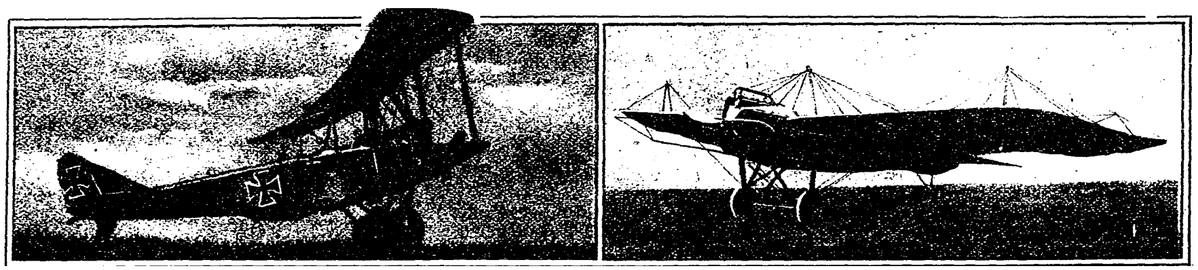
© Underwood & Underwood. © Harris & Ewing.

ONE OF MANY TYPES OF BOMBING PLANES.

Every Kind of Successful Foreign Machine Is Now Being Duplicated by Our Factories. This Is an English Handley-Page Bomber.

Below, (Left,) Charles E. Hughes, the President's Investigator; (Right,) Brig. Gen. W. L. Kenly, New Chief of Military Aeronautics.

3,000 Planes a Month Now America's Output



Two Captured German War Planes, from Which American Makers Are Imitating Desirable Features. The One on the Right Is an Albatross Monoplane.

(Continued from Page 1)

and Flanders? And how can those requirements be met in this country?

An airship must have a crew. The complement of some is only the pilot, of others the pilot and observer, while several persons make up the crew of a bombing plane. Therefore, our aircraft problem contains the two factors of men and machines. A conservative estimate is that the American Flying Corps should consist of not less than two thousand men, with ample reserves of both aircraft and men. Leon Cammenn, the eminent Russo-American aeronautical engineer, speaking of the size of our flying forces overseas, said:

"If we had an American flying corps of five thousand men, we could bomb the Germans off the face of the earth."

But we could get along fairly comfortably, thank you, if we had overseas fliers and machines to the number of 2,000 and the proper reserves for both. Authorities estimate that the reserve of fliers ought to be not far from 40 per cent. Therefore we ought to have 800 trained fliers in reserve for every 2,000 "first-line" fliers. The figures published from time to time regarding the size of the flying forces of the allies and the Central Powers are not regarded as being particularly reliable, but it is fairly safe to assert that had we a flying corps of 2,000 men and reserves with the American Expeditionary Forces, ours would be the largest on any fighting front.

For some reason, good and sufficient to the United States Signal Corps, recruiting men for the aviation section was stopped several months ago. The halting of recruiting may have been due to the fact that the training schools could accommodate no more recruits, or it may have been because there was not a sufficient quantity of training planes. At any rate, the understanding is that recruiting will soon be resumed, and young Americans with aspirations to become warriors of the air will have no need to go up into Canada and enlist in the Royal Flying Corps. Any discussion of the human element in the aircraft situation may be dismissed, therefore, with the statement that there is practically no limit to our man power, there are plenty of training camp accommodations, and, in a very short time, there will be a sufficient supply of training planes.

The situation regarding the airplanes is somewhat different. It must be remembered that all the warring nations had three years of advantage over the United States in bringing aircraft production to its highest efficiency, because they had been fighting three years when we began. Some of our aircraft producers had foreign contracts, but not many; and the aircraft industry in the United States, on that day in early April when we threw Uncle Sam's hat into the ring and decided to make the world safe for democracy, was at a low ebb. Although two young Americans invented the aircraft, people of the United States, generally speaking, took no very intense interest in doing their traveling by air, and it was extremely difficult for aircraft manufacturers to keep going, even in a small way.

But with our entrance into the war, the whole situation changed. Aircraft companies sprang up like mushrooms. Many of them existed only on paper. Those which could produce any machines at all were few, and with very limited capacity, except the Curtiss Aeroplane and Motor Company of Buffalo. That was the largest producing aircraft company when we declared war on Germany, and it is the largest in this country today. Representatives of practically all the new companies and absolutely all the old ones swooped down upon the War Department in the hope of obtaining aircraft contracts. They got almost no immediate encouragement. Most of them say that they are not getting as much encouragement as they should today. Many of the American aircraft builders who have Government contracts have importuned the Aircraft Production Board to give them contracts which will justify them in doubling the size of their plants.

Few of them have received any such encouragement, although the Wright-Martin Company of New Brunswick has begun work on a great new plant not far from New York. But even if the builders and would-be builders of American aircraft didn't get as many contracts ten or fifteen minutes after we entered the war as they would like to have had, their numbers kept on increasing until today the Aeronautical Society of America has in its office in the Building of the United Engineering Societies at 33 West Thirty-ninth Street a list of 185 American manufacturers of airplanes and airplane parts. Nor does the long list indicate in any accurate way the potentiality of American aircraft manufacturers. The reliance of this nation, at present, for quantity production of airplanes must be placed in just about twenty plants. The most important of these are:

Aeromarine Plane and Motor Corporation, New York; Boeing Aircraft Company, Seattle, Wash.; Burgess Company, Marblehead, Mass.; Continental Aircraft Corporation, New York; Curtiss Aeroplane and Motor Company, Buffalo, N. Y.; Dayton-Wright Aeroplane Company, Dayton, Ohio; Fisher Body Corporation, Detroit, Mich.; Gallaudet Aircraft Corporation, East Greenwich, L. I.; L. W. F. Engineering Company, College Point, L. I.; Lanzius Aircraft Company, New York; Lewis & Vought Corporation, Long Island City; Michigan Aircraft Company, Grand Rapids, Mich.; Palmer-Simpson Corporation, Saranac Lake, N. Y.; St. Louis Aircraft Corporation, St. Louis, Mo.; Springfield Aircraft Corporation, Springfield, Mass.; Standard Aircraft Corporation, Elizabeth, N. J.; Sturtevant Aeroplane Company, Jamaica Plain, Mass.; Thomas-Morse Aircraft Corporation, Ithaca, N. Y.; Wright-Martin Aircraft Corporation, New Brunswick, N. J.; Wright-Martin Aircraft Corporation, California.

Of this number, at least twelve are already working on Government contracts, and soon contracts to others on the list will have been awarded. As has been stated, the largest of the lot is the Curtiss Company. The other large quantity production plants are those of the Dayton-Wright Company, Wright-Martin Company, Fisher Body Corporation, Standard Aircraft Corporation, Boeing Aircraft Company, and the L. W. F. Engineering Company.

Now, how many finished airplanes can these twelve or fifteen concerns that are known to have Government contracts turn out in a given length of time, or rather how many are they turning out?

Suppose we don't deal in futures. The Aircraft Production Board and the Committee on Public Information have been unfortunate in making predictions, no doubt thought to be based on accurate information when they were made, but which could not possibly be fulfilled. Therefore, let us deal with actual production as we find it and not with what the schedules call for.

A few days ago I had access to an official production report from four of the largest airplane plants. That report shows that the Curtiss Company is turning out 500 planes a month; the Fisher Body Corporation 260 planes a month; the Standard Aircraft Corporation 260 planes a month, and the Dayton-Wright Company a few more than 300 a month. The latter company's production schedule calls for 160 finished planes in May, 324 in June, and 480 in July.

That is fine production on paper, but I like the actual monthly figures better. On the latter basis, we find that these four plants combined are turning out 1,260 complete airplanes a month, or 15,120 planes a year. That is the monthly and yearly output, according to present figures, of only four of twelve concerns known to be turning out planes for the Government. But the output of all four of these plants can be and will be materially increased. Therefore, suppose we say that the average output of each of the twelve plants is, on a weekly production of fifty planes, 217 planes a month. That gives us a total output of 2,604 planes a month, or 31,248 planes a year, which is as near the exact present production of aircraft in this country as figures are obtainable to prove.

Nearly 3,000 planes a month is the present rate at which aircraft is being produced in the United States! Rather comforting information when we have been told recently that there isn't a single American plane in France.

But not all of the machines that are being manufactured go to France. The new machine, of which mention has already been made, has the unique advantage of being able to be shifted from an observation plane to a bombing plane so quickly that the time taken to make the shift need not be taken into consideration. It is neither my business nor anybody else's business, except that of the United States military authorities, to know or to tell just how many of just what kind of planes are being shipped to the battlefront.

But this may be told: Many of the factories having Government contracts are turning out some of the four different types of plane—battle planes, observation planes, bombing planes, and training planes. The Standard Corporation has been confining its attention chiefly to training planes, and the same is true of the Curtiss Company. The American type of training plane is, generally speaking, a modification of and great improvement on the old Standard machine. The other planes being turned out are, in practically all cases, reproductions or American modifications of British, French, and Italian machines. Indeed, I suspect that it is quite within the bounds of exact verity to say that some of the best features of the German machines have been "swiped" by our manufacturers for the fighting good of our American fliers overseas. It would be strange if this were not true, because our allies have sent to us many German planes that have been captured, like the Albatross and the Taube, as well as samples of the best types of all the allied machines.

The rather general opinion in this country seems to be that of all the world's aircraft the French planes are the best. This, I find, is not the opinion of many airplane experts. Most of them are of the opinion that the Italian planes are the best in the world. They rate the French next, then the British, then the German, and, of course, reserve opinion about our own until more of their work has been seen.

Furthermore, there are some airplane sharps who believe that this country should not attempt to build a single fighting plane. Their reasons for holding this opinion are two. First, so they say, the life of a fighting plane is just about fifty hours, and the life of any particular type of airplane is from eight to ten weeks. Therefore, these aircraft experts say, we can serve our own cause and that of our allies best by shipping to England and to France the materials for building fighting planes and let them be built almost on the spot where it has been seen that a type could be improved upon. To follow any other plan in the building of battle planes, those who urge this plan assert, would be just about like printing a New York newspaper in Denver, Col.

There are plenty of other experts, however, who assert that such a plan is entirely impractical. They say that in both England and France all airplane labor that can possibly be obtained is already overworked, and that our British and French allies much prefer that we shall supply our own aircraft. To the layman this statement seems to be freighted with wisdom and with truth. But, whatever may be the varying opinion of experts on the subject, the fact remains that we are building battle planes in this country, a very considerable number of them every month, and shipping them overseas. And right here it may be stated that in all of our building the manufacturers are providing reserves of machines, as the Signal Corps is providing reserves of men.

It has been stated above that the reserves of men should be 40 per cent. of the fighting force. A safe reserve margin for machines is 100 per cent. The Dayton-Wright Company is providing reserve machine power to the extent of 75 per cent. Some experts hold that this reserve strength is not enough. But at any rate everybody agrees that the machine reserve should be not less than 75 per cent., and many hold that it should be 100 per cent. Therefore, for every thousand machines flying beneath the sunny skies of France and of Flanders there should be either 750 or 1,000 machines, or their complete parts, behind our lines. When we know, then, that the building of one airplane really means the building of three-quarters of another one or the whole of another one, the American people may get some notion of the figures here given of the extent to which we have speeded up aircraft production in comparatively few months.

In talking with aircraft experts, I have been somewhat surprised to find that many of them hold that, of all the different types of planes, the bombing plane is the most important.

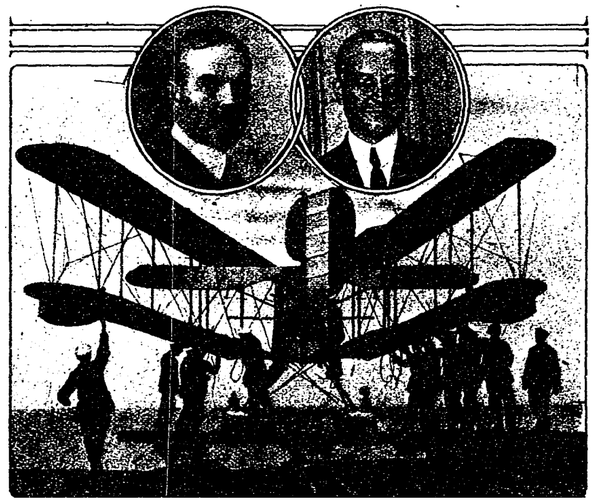
"Of course," said one of my expert friends, "the battle plane is important, its pilot is as brave and as daring as they make 'em, and the stories of the air fights of the 'aces' loom large in the imagination. But the single and double fighters, when the size of the armies in this war is considered, do not do an abnormal amount of damage. The observation and signaling planes are the eyes and the ears of those who direct the fighting plans. But the bombing plane, carrying tons of high explosives, may wipe out several regiments in a single flight or destroy miles of communications. That is real damage, and it makes the enemy wince. The air bombers are the real air devils."

American aircraft plants are turning out a very considerable number of "air devils" every week. And battlers, bombers, observers, and trainers all have to be equipped with the engines to drive them. The Liberty Motor may not yet be a complete success, but the fact remains that, in spite of all its faults, it does work. One engineer, and a very eminent one, told me that the Liberty Motor could never be used in fighting planes, because its vibration would shake the planes to pieces. And the vibration was caused, he said, because the Liberty Motor was a 12-cylinder engine, the cylinders set V-shaped and shaving an angle of forty-five degrees, when it should not be less than sixty degrees. All right. That's what the books say, and that may be the soundest sort of theory, but the fact remains that Liberty Motors are pushing battle planes today at a speed of between 135 and 140 miles an hour and, so far, the vibration hasn't been great enough to disturb anybody.

Furthermore, the Liberty Motor is being turned out in quantities. Henry Ford is turning out the cylinders—cylinders for every single Liberty Motor that drives a flying machine—and he has found a way to produce Liberty Motor cylinders in quantity similar to the way in which he produces automobiles in quantity. There are just three operations in producing cylinders for the Liberties. These operations might be described about as follows: r-r-r-r—swish—biff—and there are your cylinders. They say in Detroit that, when Mr. Ford gets a little time, after the war is over, he is going to put in operation a plan to turn out a Pullman car train of ten cars, with a high-power locomotive attached, at the rate of 500 a day. He says that story is a dod-gasted lie.

But there are other airplane engines besides the Liberty, and we are making them—making them every day. Over in New Brunswick, for instance, the Wright-Martin people are turning out the Hispana-Suiza, an eight-cylinder V-type engine, developing about 160 horse power. In the course of my investigation I found persons who said that the Hispana-Suiza was not adapted to the driving of a fighting plane. I ran that story down and found the fact to be that the Hispana-Suiza drove the planes in which the great French ace, Captain Guynemer, did most of his killing of boche fliers. If the Hispana-Suiza was good enough for Guynemer, it ought to be good enough for almost any American flier. Then the Hall-Scott motor, four-cylinder, 130 horse power, and the Gnome, seven-cylinder rotary, 90 horse power, and the Sturtevant motor, eight-cylinder, 90 horse power, are being manufactured here and can push airplanes very handily. Furthermore, our supply of motors can easily keep pace with the production of airplanes.

And so, after our several attacks of national nervousness and biliousness and peevishness and heart disease and near-apoplexy, we find that our Uncle Samuel is not so badly off for airplanes as he might be. A production of nearly 3,000 planes a month isn't so bad, and production is steadily increasing. So be it resolved, That we stop damning everybody in general and the Government at Washington in particular, that all the official crooks be sent to State prison, if they can be convicted, but that we stop calling names until the jury has brought in convictions, that we get out of the swamp-land of dumps and into the meadowland of smiles, and—Cheer up!



American Fliers Will Soon Use Machines Like This British Naval Seaplane, Which Is Shown About to Enter the Water. Above, on the Left, John D. Ryan, New Chairman of the Aircraft Production Board; on the Right, Colonel E. A. Deeds, One of the Former Production Chiefs, Whose Management Was Attacked by Gutzon Borglum.