

some streets, with plenty of light and air would increase the business done in the shops.

Theatres would naturally keep to the side streets, for they do not need light, and the banks, trust companies, insurance offices and other businesses, which are, so to speak, intruders on Fifth avenue because their presence spreads retail shops so far apart and makes the street so dull to walk on, would, if urged, keep off the avenue or boulevard.

The retail merchant's study of crowd psychology, as he calls it, and of the relation of his shop to routes of travel, has always been elementary and he has never

given enough weight to the general environment of his shop and of the district, nor to the study of ways to create an ideal district for his purpose. It is time for him, as I think, to undertake a more careful study of his environment and to associate with his confrères in some large scheme for creating a new and permanent retail shopping district.

The problem is pressing in other cities and any city would gain greatly by giving thought to it. A retail shopping district is a necessary feature of any community, and in a modern city it should be made convenient for use, agreeable to look at and a source of pride to all the inhabitants.

Military Science

AIRPLANE OBSERVATION

BY EMER YEAGER

AERIAL observation has not kept abreast of the other branches of military aeronautics in the great strides that have been made in aviation in the United States Army since the World War. This may be accounted for partially by the fact that the recent act of Congress reorganizing the Air Corps contains a provision that no officer who is not a qualified pilot can exercise command in a flying unit. This was intended, of course, to meet the complaint of General Mitchell that non-flyers were, by reason of their rank, commanding aviation units and pilots. The natural result was that every observer who had not already done so immediately qualified as a pilot, if he was able to do so. Thus the only observers remaining in the Air Corps today are those who either from physical or temperamental unfitness cannot qualify as pilots. It is true that there is still an aerial observers' school at Fort Sill, Okla., but it hardly stands to reason that its graduates will be content to remain only observers and serve in units under officer pilots who are subordinate to them in rank.

During the World War airplane observers were obtained by detailing officers from the

different combat branches for courses at observers' schools. As a rule, commanding officers were told when called upon for officers for this purpose that they would return to their units and be available for observation duty there. A few of them did return, but on the only occasion which came to my attention when it was requested that one of them be permitted to fly on a mission—which the observers of the squadron assigned to observe for the unit appeared to be unable to perform successfully—the refusal was curt and definite. These young officers, taken from their organizations with only a few months' training in their branches, were all given identical instruction at the observers' school. Apparently there were no efforts made at the front to assign artillery officers to adjust artillery fire or infantry officers to fly on infantry contact and liaison missions. The result was that frequently commanders found that they were receiving reports of the location of infantry companies and battalions, their formations, and the many other details that they wanted to know concerning what was happening up front, from a former artillery officer whose experience had consisted of three months in a training camp battery supplemented by two or three months devoted to teaching

standing gun drill to recruits,—an officer who had never seen an infantry unit in his life, except perhaps in a Liberty Loan parade. Similarly, the observer adjusting the fire of the two or three batteries of a battalion of artillery was most likely to turn out to be a former infantry officer who had never seen an artillery cannon except from the rear seat of an airplane at an altitude of two thousand feet.

That was excusable in the World War. Aviation was new and no one had dreamed that it would play the important part that it did play, even with its possibilities not fully taken advantage of. Besides, it was manifestly impossible to take all the observers from that small leaven of officers trained in the fundamentals of their arms, the five thousand odd officers of the Regular Army, no matter how necessary that fundamental training was for efficient aerial observation.

The situation in so far as the artillery was concerned has been described admirably by General Herr of the French Army in his book, "Field Artillery; Past, Present and Future." He says:

Airplane observation for artillery began during the war. It immediately rendered such good service that it was rapidly increased in amount. It reached its maximum efficiency at the battle of the Somme in July, 1916, and at Verdun in October, 1916. After 1917 it began to decline, and thereafter went from bad to worse until it failed almost entirely in 1918.

Many causes explain this rapid decline. The duties of the squadrons were changed incessantly, so that understanding between observers and battery commanders became impossible. The quality of artillery observers, aside from a few brilliant exceptions, grew continually worse because combat aviation, charged with a more brilliant and flattering rôle, with better remuneration in the way of publicity and generous compensation, unfortunately attracted the best material. Lastly, the equipment was not all that could be desired.

The system, despite our experience in the World War, has not been changed. Airplane observers are today members of the Air Corps. The result in case of another war will be the same, only more aggravated, for combat aviation will assume greater importance as improvements in aviation develop, which in turn will call

for a greater expansion of that branch, with corresponding increased difficulties in securing good material for airplane observers.

Immediately after the World War the Field Artillery, realizing that airplane observation had been unsatisfactory, started experimenting with trained artillery officers as observers. The Air Service did not take kindly to this, but as it was unable to furnish satisfactory observation at the Field Artillery School with its own personnel, it was forced to submit. Consequently all student officers at the Field Artillery School at Fort Sill, Okla., are now given the opportunity to make one or more adjustments of fire from the air if they so desire.

This raises another question: that of the method used in the adjustment of fire. The plan in vogue during the late war and still official for airplane adjustment was for the observer to signal the battery where the shots fell in respect to the target—over or short, right or left. The officer conducting the fire at the battery then had to plot the shots on his map and calculate the corrections to make for the next shot in order to bring it nearer the target. The trained artillery officers soon learned that for them all this was a waste of precious time. If they went into the air themselves they had a much better view of the target than they could ever hope to get from a terrestrial observation post. And, being thoroughly familiar with all the intricacies of conducting the fire of artillery from the ground, they were able to translate mentally the deviations of each shot from the target immediately into corrections for the guns. In short, they merely moved their observation post from a hilltop several thousand yards from the target to the rear seat of an airplane, directly above it. From there they could command their batteries quite as well as if on the ground. The results were that the time required for adjustment of a battery was reduced to from one-fourth to one-third that required by the old method. This plan, however, does not meet with the approval of the Air Corps, for it makes it necessary for an observer to be a

trained artilleryman. Therefore the old method is still the approved style of making adjustments. So far as is known, the Infantry and Cavalry have made no experiments along this line.

General Herr says in his treatise on artillery that the French early in 1916 assigned several observation squadrons exclusively to the artillery for use in airplane adjustments and that the observers were selected and trained by that branch. He credits this system with the excellent results obtained on the Somme and at Verdun in 1916. But later this plan was abandoned. He says:

We must return to that organization, not only for General Reserve [artillery] but for the entire artillery. This alone will permit the artillery to recruit its observers, to train them for its own needs, and to retain them by properly rewarding them for their services. This alone will assure the complete and intimate moral liaison which creates a spirit of cooperation within each arm.

Naturally, the Air Service will continue the technical surveillance of the squadrons, the supply of machines, the maintenance of *matériel* and the recruiting of pilots. But for aerial observation for the artillery, the rôle of the Air Corps will be limited to placing airplanes at the disposal of observers as a means of rapid transportation and aerial observation, just as the Motor Transport Service places a reconnaissance vehicle at the disposition of any staff officer who makes a request for it.

What is true for the artillery is equally

true for the infantry and cavalry. It is as necessary for an artilleryman to observe for the artillery, an infantryman for the infantry and a cavalryman for the cavalry as it is for a trained naval officer to observe for the fleet. An observer trained in all the detail of the branch for which he is observing will see much more of value than one who is totally unfamiliar with that branch. In addition, he will report what he sees in terms which will be understood, an important point in the excitement of battle.

In the United States Army an observation squadron is as an integral part of every infantry and cavalry division. Both the infantry divisions and the cavalry divisions contain artillery. Unless our organization is changed it would not be practicable to allot special squadrons for observation work with each branch, as indicated by General Herr. However, it is still possible to provide observers from each branch of the service to observe for their own branches and it should be done if we are to profit by past experience. But, as has often happened in the history of our army, inter-branch jealousy seems destined to prevent the development of a very important division of military aviation on a par with the development of the remainder of that arm.

AN AMERICAN COMPOSER

BY ISAAC GOLDBERG

THE figure of Henry F. Gilbert was long familiar in the corridors of Boston's Symphony Hall, and in all its lesser temples of music. He was a picturesque fellow, easily spotted at once in any gathering, however large. American to the core, he was in appearance a striking exotic, looking in later life more the Indian than the Yankee; the effect, in his final years, was heightened by a physical condition that gave to his face a coppery, and at last a cyanotic hue. His hair was as independent as his personality; he wore it long and at times shaggy. The pipe that was so often clenched between his lips completed the picture. He was, externally, a composer out of the romantic novels; his features were fashioned for the cinematic conception of a Bohemian musician.

And Bohemian he was, of the ranging spirits and the questing eye. In him, undoubtedly, there was something of the gypsy, and it sent him pioneering along American folk-ways when he might, with a little application, have made himself at home among the new musical idioms of Europe. His eyes had always a glint of humor—that true humor which is at once criticism and self-criticism; they were a watery blue, as bland as his voice. There was no compromise in his nose; it came down straight over a strange, wide mouth. His lips, from their lines alone, should have made a scowl, yet despite their droop they usually produced the effect of a genial but watchful smile.

The man—and he was every inch a man, peace be to his ashes!—was a gloriously independent soul. Though born in Somerville, on September 26, 1868, he spent most

of his life in Cambridge, where he died on May 19, 1928. The shadows, and the lights, of Harvard fell upon his modest dwelling—a house, again, out of the picture books,—an old curiosity shop with more true atmosphere than many a mansion. He lived within a stone's throw of Academe, and he threw the stone.

He carried his independence even into his illness. Long before he married, in 1906, he had been given up by the doctors. He had a heart condition that no one else, according to available medical records, has survived beyond the thirty-sixth year; yet he lived with it into his sixtieth, and might, were it not for the rigors of a New England Winter, have been good for ten years more. When, last year, he was chosen with Aaron Copland to represent American composers at the International Music Festival at Frankfurt, he made up his mind—and his body—to attend. He was warned that the ocean journey would kill him. Nevertheless, though he had to be carried on board, he made the trip and returned to tell the tale. It was characteristic of his perverseness, indeed, that the experience should have benefited him.

He was mentally active to the last. Because of its rarity, his illness is worth dwelling upon for a moment. The cardiac combination is known to physicians—that is, to some of them, since many of them appear never to have heard of it—as the tetralogy of Fallot. There was an opening between the two ventricles, together with a narrowing of the outlet to the pulmonary artery whereby a large quantity of venous blood entered into the general circulation, thus causing the peculiar complexion that