

THE CAVALRY OF TOMORROW

BY E. L. M. BURNS

IT seems, at first sight, unnecessary to argue at length that cavalry must one day abandon the horse, and take to a machine. All the armies of today move rapidly toward mechanicalization (as such movements go in peace time) and no arm can remain unchanged in the general revolution. One is, therefore, somewhat astonished when one learns that the cavalry of the world is now practically in the same state as it was in 1914, although almost all other arms have been reorganized as a consequence of the appearance of new weapons and new conditions. No cavalryman seems to see any necessity for increasing and developing the power of his arm; those who are articulate roar themselves hoarse trying to convince other soldiers that cavalry is as effective as it ever was; that in the Great War it did everything that was expected of it, and more; and that in the next war it will do even better, still mounted on its ramping and snorting chargers.

But what was the actual record of the cavalry in the late war? On the western front, a melancholy one, indeed. It accomplished very little, even before barbed wire and trenches began to stretch unbrokenly across France. The higher commanders, though still distrustful of air reconnaissance when hostilities opened, soon learned to depend on the flying corps for the greater part of their strategical information. Von der Marwitz, with his Second Cavalry Corps operating with von Kluck's First Army on the right of the German line during the wheel through Belgium and France, probably had the best opportunity to prove the efficacy of his arm that any

cavalry commander had in the whole course of the war. Von Kluck wanted him to get around the flank of the British Expeditionary Force, to threaten its line of communications, which he supposed ran west to Calais and Boulogne, and by this means to force Sir John French to stand and fight. But von der Marwitz allowed himself to be held in check by weak forces of French Territorials—practically cripples and grandfathers—and never succeeded even in finding out that the British line of communications ran southwest to Havre. Von Kluck got this information eventually from the Supreme Command; meanwhile his conduct of operations had suffered very considerably from his bad guess.

The French cavalry were even worse: they got no information whatever, and spent their time charging valiantly at squadrons of Uhlans who drew them into ambushes of machine-guns manned by jägers, brought up in motor-lorries. General Sordet's cavalry corps rode 220 miles in eight days, after which, the horses being exhausted, it lapsed into practical immobility, and remained that way until after the Aisne. The French were so disgusted that they radically altered their conception of the action of cavalry; its present tactics are those of straight mounted infantry. It is most amusing to contrast these performances with the cavalrymen's gaudy pre-war promises of a cavalry battle which should precede and largely determine the outcome of the shock of the main bodies. One is very much reminded of Stephen Leacock's horseman who "rode madly off in all directions." Of the rest of the struggle in the West it is not necessary to

speaking. Massed machine-guns, trenches and barbed-wire give the horse no chance; not even cavalrymen pretend that he can be effective under such conditions.

The only part of the Great War which the cavalry can really contemplate with satisfaction was the conclusion of the Palestine campaign. Here, indeed, there was an example of the classical cavalry action: a large force of mounted men sweeping around a flank and hurling themselves on the enemy's communications. The plan was entirely successful; the rout and surrender of the enemy followed, with little hard fighting for the cavalry or the infantry attacking frontally. At the same time, the following facts should not be lost sight of: the British outnumbered the Turks more than two to one; the Turks were dispirited, badly munitioned and badly fed; control of the Ottoman armies was divided between Liman von Sanders and jealous and incompetent pashas; the long continuance of "linear" trench tactics had paralyzed the defending commanders when open warfare began, with its necessity for quick decisions. Is it likely that such a combination of circumstances will occur again in first-class warfare? Nevertheless, the success was so complete, compared with the other "victories" of the war, that the means which produced it are unquestionably worth studying.

The decision was obtained by the power of rapid movement which the Australian and British mounted infantry possessed. (The men that did the work were not, strictly speaking, cavalry, that is, men trained for mounted shock action.) Before the Turks, hotly engaged in front, knew where they were, the Aussies and yeomanry were in their rear, in occupation of some of the important road junctions, and threatening others, and driving Liman von Sanders out of Nazareth in his night-shirt. There was little fighting; occasional groups of stout-hearted German machine-gunners caused delays of five or six hours, but they were too few to affect the issue. The mobility of the mounted divisions had beaten

Jacko, who had always fought gallantly while he thought he had a chance.

II

Its mobility is precisely what gives cavalry its power. This is an extremely obvious axiom—but see how the orthodox cavalryman interprets it. He equates "horse" to "mobility." See the Regulations for Cavalry Training of the British Army: "The cavalryman's first and best weapon is his horse." This statement contains no more truth than the saying that "the infantryman's first and best weapon is the long-bow" would have contained in 1525. The horse is obsolescent now, as the long-bow was then. He loses ground steadily in civil life. Where a horse was used twenty-five years ago, a motor-car or tractor is used now, to the great increase of efficiency. It is only in the most primitive kinds of agricultural operations that anyone attempts to defend the use of the horse today on grounds of economy. The transport of armies is gradually becoming mechanized. For a while it was objected that horses could get along roads and over country, pulling wagons, that no automobile¹ could negotiate, but now caterpillar tractors have removed that disability. If money and army conservatism permitted, all transport for baggage, supplies, ammunition and the haulage of guns could be mechanized tomorrow. The machines giving the necessary performance are in existence. Such a transformation in the locomotive power of armies would be approved by all soldiers, I am convinced, once they got used to the idea, which now disconcerts them only by its novelty.

But it is remarkable that no one seems to have given any serious thought to the replacement of the horses of the cavalry by automobiles. There is, of course, no movement in this direction by cavalrymen themselves, and enthusiasts for mechanical warfare seem to believe that the arm is des-

¹Where the word automobile occurs in this article, it is intended to signify any self-propelled vehicle.

tinued to be superseded altogether by aircraft and tanks, and so pay no attention to it save to bestow an occasional sneer upon it. But it seems to me to be very improbable that either of these new arms will be able to carry out the duties of cavalry efficiently for a good many years yet. Aeroplanes can't land wherever they choose; therefore, they cannot exercise cavalry functions, which involve holding ground. They may find the enemy, but they can't be sure of keeping touch with him. Aeroplanes, too, as is well known, have their usefulness much limited by wet or foggy weather, and when it is dark, even if they fly low and drop flares, enemy troops can remain concealed from them. They can't see people hidden in woods or villages. A rather exaggerated idea of their usefulness for the collection of information was formed during the trench warfare period of the late war, for it is easy for an aeroplane observer to see a trench or gun emplacement. But it is quite difficult for him to see infantry carefully disposed in the open, taking advantage of all shadows cast by trees and bushes. The tank was designed for overcoming thick machine-gun resistance, but its heavy armor lessens its mobility; the crew is unable to see out of it very well. Tanks as now built are easy to ambush, and can't work without the protection of other troops. They can't hold ground, as they are very vulnerable to artillery fire when stationary.

Nevertheless, though the cavalry can't be replaced by tanks or aircraft, it will always suffer from many disadvantages in modern war so long as it depends on the horse for getting about. The chief of these disadvantages is that the horse is very vulnerable on account of his bulk. He offers an easy target to riflemen and machine-gunners at ranges where men would be hard to see. It is almost impossible to hide him; he only finds safety in movement, preferably away from the enemy. If he is to be well looked after when he isn't working, he must be concentrated

in standings, and these are hard to conceal, and attract bombing planes. A bomb in the middle of one of these groups of horses will kill and disable a great number of them, for horses can't lie flat on the ground like men. For their protection against splinters (which do most of the damage) it is necessary to build earth walls about five feet high and two feet thick, and this means arduous labor for many men. Also, when a horse has been killed, he has to be buried. More digging for the unfortunates who have charge of him, or, perhaps, even more unjustly, for the poor infantrymen whose home he dies near.

The rations he must have to keep him in condition are very bulky and inconvenient to handle. In the British cavalry some 1000 horses and mules are needed to move a force which can put one field gun, four machine-guns, seven light machine-guns and ninety-four riflemen into the firing line. These thousand horses devour twelve tons of forage daily. A horse also needs a great deal of water, about eight gallons a day, and if he doesn't get it he soon becomes unfit for work. Providing this water in such drought-stricken theatres of war as Palestine is usually the most harassing problem of the staff. A horse, obviously, cannot get through a barbed-wire obstacle. No cavalryman would think of attempting it. I was once told that it is possible to jump barbed-wire fences by dismounting first and laying a handkerchief on the top strand, so that the horse knows how high he has to jump, but I don't believe this ever proved practicable under battle conditions.

A cavalry charger needs a great deal of training and conditioning before he is efficient. Only superior types of horses can do the work. Getting remounts was difficult enough in the late war, and will be still more difficult in the future, as there will be far smaller reserves of horses to draw from, owing to their elimination from the economic life of the world. And then, how is the horse to be protected from the effects

of gas—which, in spite of the pious resolutions of the League of Nations, will certainly be used to a much greater extent in the next war than it was in the last? Try to get a bag over a horse's head when he is frightened, and if you succeed, try to get him to work! Finally, horse manure, as everyone knows, is the favorite incubator and *crèche* of flies. In the field, it is very difficult to dispose of it in accordance with sound hygienic principles. Getting rid of it would be another step towards the elimination of disease-wastage in fighting forces.

III

The above chronicle of defects ought to be enough to convince anyone who has not had a cavalry training that the horse is not to be depended on for warfare in this enlightened age. How, then, shall we replace him? Simply, I believe, by using an automobile that will go anywhere he can go, at the same or a better speed. Such a machine should not be hard to devise. Competent mechanical engineers could produce a model in a month. It is merely a question of adapting the devices already evolved for traversing rough ground to the particular requirements of cavalry. Let me describe the cavalry automobile as I think it should be.

It should be capable of travelling on fair roads at an average rate of twenty miles an hour over distances up to one hundred miles, and to move at fifteen miles an hour over good cavalry country, *i. e.*, terrain permitting mounted men to manoeuvre at a gallop. Its structure should be such that it could break through a medium wire entanglement, and also cross ditches of the sort dug for the drainage of fields or roads, say up to six feet wide. It should carry four or five men, including the driver, and have a light machine-gun which could be fired in any direction while the machine was in motion, and be taken off and fired from the ground when the detachment was fighting dismounted. The seating of the men would have to be ar-

ranged so that they could get off and away from the machine instantly; on this would depend their safety if they came under heavy fire. The vehicle should be as low and as narrow as possible—low, so as to present a smaller target in the open, and narrow, so as to be able to go along tracks through woods, and other defiles. It would be useful if the most vulnerable parts of the machinery could be brought close together, and protected by armor; a dual driving control might also be advisable. The whole should move, of course, on caterpillar tracks, or on some combination of wheels and tracks.

There are now many vehicles past the experimental stage coming close to these specifications in one respect or another. Tanks, carrying heavy armor, can now go across country at fifteen miles an hour, and of course break through obstacles, and cross wide ditches. Special six- or eight-wheeled French motor-cars cross the Sahara. Citroen makes a small wheel and track motor-car which may be used as the mount of the commander of a mechanically drawn field battery, and has been found satisfactory for this purpose by the British army. A company has been formed to utilize the system of springing caterpillar tracks invented by the men who designed the fast-moving British tanks. It has produced a "roadless traction" motor-truck for civil use, and has shown it before the United States War Department. The test, I understand, was a success for the machine: it was certainly impressive to see it, in moving pictures, slithering unconcernedly through loose sand on side-hills, and deep muddy pools in hollows.

Very little change in such a machine would render it most effective for cavalry purposes. It made the trip from New York to Washington as easily as a wheeled motor-truck. The makers claim that it will eventually replace wheeled trucks for road work, even, as it does not destroy the surface. Ford cars, with Lewis guns mounted on them and carrying a crew of four, were used by the Australians in Pal-

estine for cavalry duties. They escorted Lord Allenby on many of his reconnaissances before the second battle of Gaza, and acted as rear-guard, very usefully, to a cavalry brigade retreating, on one occasion. They were active too, in the final advance.

These examples, I think, will show that there is nothing outrageously visionary in the notion of a machine which will move men wherever a horse will, and more rapidly. It seems to me that a mechanical cavalry would have very considerable advantages over horse cavalry. A great many of the troubles of the mounted arm would disappear immediately: the remount difficulty, the problems of keeping horses fighting fit on active service, teaching recruits to ride and look after their horses, and so on. The vulnerability of cavalry would be very much reduced. Instead of the considerable mass of five horses, the machine gunner or rifleman would have as a target a car of about the plan dimensions of a Ford, but only two-thirds as high. A hit almost anywhere on a horse will stop him, or at least eventually need attention, but hits in non-vital parts of the machine would not matter. It would be much easier to conceal it from the air; it could carry a camouflage net.

Offensively, the machine should be far more dangerous than the horse. Its long range mobility would be greater. I believe it could successfully attack unshaken infantry by reason of its capacity for sustained speed (no matter whether it had made an approach march of five miles or five hundred), its power of breaking through obstacles, and firing while in motion. (Machine-gun fire from rapidly moving tanks has proven quite effective.) For dismounted action, mechanical cavalry would also be superior; one man could take it back from the firing line and bring it up again faster and under better control than he could four horses. It would be easier to conceal than the horses, too.

It may be thought that there would be compensating disadvantages in the adop-

tion of automobiles. Skilled mechanics would be needed to replace the skilled horsemen; if horses play out, machines break down: the horse consumes bulky rations and needs a lot of water; the machine would require a lot of gasoline, which would be hard to supply if it were operating far from its base. However, these mechanical and fuel difficulties could be overcome by good organization, and it will be easier to organize in the future for the maintenance of mechanism than for the maintenance of horseflesh. Mechanical cavalry at first might not be much more efficient than horsemen, but, as experience was gained, the automobile would almost certainly be improved in speed, manoeuvring power, and reliability. That, to my mind, is the deciding argument: a machine could be improved, the horse cannot.

It may also be objected that this proposal is merely for the production of an inferior kind of tank, and that if the army is to be mechanized it will be better to concentrate effort on the perfection of the armored type. Perhaps so, but even if it is granted that every arm of the service will turn into some kind of tank, as Col. J. F. C. Fuller predicts, experiment with light cross-country automobiles will still be of value. They will cost very much less than tanks; a given amount of money expended working with the cavalry machine will teach us more about cross-country transport at high speeds than if it is spent building tanks. Moving troops across country at high speeds is the fundamental problem which soldiers and scientists who deal in destruction have to solve. The mass of national armies is too great to allow their being moved by road and rail at a speed which permits surprise, and without surprise it is very difficult to defeat even an inferior force on the defensive.

Mobility has not increased with fire power; it has rather declined. A modern army could not make the marches Marlborough's soldiers did. All this increases the power of the defensive; decisions are

delayed, and it is now almost impossible for skill in strategy or tactics to achieve anything. If war is ever to be an art again, armies must be put on wheels. With a rapid-moving, hard-hitting force, such as mechanical cavalry might be, a commander would have a weapon with which he could effect surprise, and perhaps win great victories at small loss.

IV

By now, probably, the reader is getting suspicious. With all these weighty arguments for the abolition of the cavalry horse, and the adoption of an automobile, why is the change not made? Soldiers are not altogether fools, whatever Bernard Shaw may say; there must be some reasons, unmentioned so far, why the horse is still on the establishment.

The reason, as I see it, is this: No mechanically propelled vehicle is actually in existence which will exactly fulfil the cavalry requirements. Therefore the orthodox cavalryman, who is a fellow of little imagination, thinks the horse is the best possible mount for him. He knows the tank can cross country and defeat infantry, but it is blind, and is not mobile over long distances; that rules it out for his work. The motor-car is very mobile over long distances on tolerable roads, but it can't very well go off them to fight. That rules it out, too. There are no other types of automobile that he knows; *ergo*, there never *will* be any others, and it is not desirable that there should be. But if only a model machine were constructed, and

shown to the Gadsbys, they would be converted at once—or all of them except the last rank of die-hard horsemen.

The influence of this last rank—the fanatical worshippers of *Equus caballus*—is not to be discounted by any means. They are, in general, the cavalry officers of longest service, those who have attained the highest ranks; consequently, their prejudices are the laws of those under their authority. Take away their horses, they feel, and there remains nothing; the soul whereby they live is destroyed. Horsemen first, and soldiers afterward, they are unable to separate the concept “cavalry”—a highly mobile fighting arm—from the concept “horse”—an extremely stupid quadruped with long legs. They regard any reflections against the usefulness of their idolized beasts as the most impious kind of blasphemy. The smell of the stable is as incense to their nostrils; at heart they are all Barney Googles, slobbering over their Spark Plugs. They look on the horse as a romantic symbol of personal superiority; it is a knightly privilege to ride one.

Such convictions are not easily changed. While those who hold to them are still in the majority in high places, no progress will be made in the modernization of cavalry, but unless the arm is to die outright, sooner or later the horse must give place to the machine. The army that makes the change soonest may expect to have the best cavalry in the next war, and possibly it may have a surprisingly efficient instrument, giving it an advantage over its enemies comparable to that which the tanks gave to the Allies.

AMERICANA

ALABAMA

PRIZES for the encouragement of literary endeavor in Alabama, announced through the State Federation of Women's Clubs:

1. Press and Authors Club, Montgomery: \$10 for the best rondeau.
2. Mildred Reynolds Saffold: loving cup, to be known as the Mary Whiting Barrington Memorial Cup, to be presented each year to the person writing the best sonnet.
3. Mrs. G. H. Tatus, Greenville: \$5 for the best love story.
4. Kate Slaughter McKinney (Katydid): \$5 for the one who writes the most poetry during the year, including herself.
5. Student Writers, Selma: \$10 for the best storiette.
6. Scribblers Club, Selma: \$5 for the best sonnet or brief story.
7. Mrs. Val Taylor, Uniontown: \$10 for the best essay on "Higher Education of Women."
8. Bessemer Writers' Club: \$10 for the best short story.
9. Maud Lindsay, Sheffield: a prize for the best ballad of not more than 64 lines. Subject, "Jinny Bean's Ride at the Battle of King's Mountain."
10. Mrs. C. B. Jaynes: \$10 for metrical verse.
11. Mrs. J. E. Penny: \$10 for the best short story.
12. Mrs. Mant Hood (through the Exclusive Furniture Shop): \$10 for the best essay on "Home Decoration."
13. Birmingham Quill Club: \$10 for the best article of a devotional nature, not to exceed 1,000 words.

ARKANSAS

PLATFORM of the Missionary Baptists of Oakland:

We do not allow our members to dance, play cards, get drunk, or play ball or golf on Sunday; or men and women to go bathing together. These things should not be practiced by a Christian person. . . .

O. L. LIERLY, *Pastor*

CALIFORNIA

STRONG and sarcastic words of the Hon. Ted W. Goodyear, of Lankershim, directed at him who stripped his automobile, as set forth in the *Los Angeles Times*:

Mere words are incapable of expressing my heartfelt thanks to you for leaving the paint on my car, and the air in the tires.

But I double dare you to return for that. If there is in you any of the spirit of Jesse James and Rube Burrows, whom you so earnestly try to emulate, and you should try to return and get the dust and bills on the car, you will find an automatic shotgun that can empty five charges of buckshot over ninety degrees of Lankershim in nothing flat. If that isn't hospitality enough for you, maybe some soft noses will suffice.

In my estimation you are lower than whale tracks on the bottom of the ocean. You would sell your dead grandmother's skin for sausage casings.

Only the censorship of this newspaper prevents me from stating how, why and just what I really think of you.

Mispah, Kismet, Selah and Auf Wiedersehen! May the Lord forgive you as I do—not! I hope I have made myself sufficiently clear.

COLORADO

REASSURING news for tourists from the Rev. James Thomas, a gifted Denver divine, as reported in the eminent *News* of the same up-and-coming metropolis:

Denver is wet, exceedingly wet. Anybody can get liquor here—boys and girls as well as adults.

HEADLINE from the same great public journal:

ROTARY CLUB WILL LEAD CITY
IN GENERAL PRAYERS FOR RAIN

RESOLUTION SETS TWO MINUTES OF NEXT
WEDNESDAY'S NOON HOUR FOR INVOCATION

CONNECTICUT

INDIGNANT outburst of the Waterbury *Democrat*, a Christian newspaper:

Even the beasts of the field have a better conception of their duties towards life and for what they were created than these so-called people advocating birth control. . . . If there are those who believe and practice such a custom, it would indeed be a great relief to society in general if they kept their opinions and dirty tricks to themselves and not try to get laws passed whereby every decent citizen in Connecticut will by their very passage have to give his sanction to their barnyard antics.