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NEXT WAR OVER *in few* MINUTES!

To Be Infinitely More Destructive and Decisive in the Five Minutes of Its Duration Than the Whole Four Years of the World War, Says Expert Radio Engineer, as He Forecasts Devastating Consequences of New Miracles of Science

By Charles G. Reinhart

WAR, that "mad game the world so loves to play," has in recent centuries grown shorter in duration as it grew more efficient in destruction.

Lieutenant Colonel David Sarnoff

Once there were conflicts that lasted 700 years and more, as the Moslem War, which continued from 710 to 1492. History records, too, a Hundred Years' War and a Thirty Years' War. The average duration of the forty-two important wars which preceded the world conflict was forty-eight years, according to one authority. The World War, most terrible of all, lasted four years. The shortest of its important predecessors was the Seven Weeks' War, between Austria and Prussia in 1866.

Yet even seven weeks may seem a long campaign when science holds the stop-watch in this mad game. For high officers of the American Army have recently been informed that, by the utilization of radio, wars in the future may be fought and won in a few minutes.

"Startling as this statement may seem," they were told, "it is not inconceivable that a future great war may last five minutes rather than five years, and yet be infinitely more destructive and decisive than the last World War."

This rigid curtailment of the last argument of Kings was prophesied by Lieutenant Colonel David Sarnoff, S. O. R. C., vice president and general manager of the Radio Corporation of America, and an outstanding authority on the possibilities of the latest miracle of science. Among the men to whom he spoke were the leading military authorities of the United States, meeting at the Army Industrial College, in Washington. Naturally, it aroused wide comment.

MORE terrible than any army with banners are the destructive wartime possibilities of the new science as foreseen by Sarnoff.

"Consider," he said, in amplifying his startling statement, "a few of the possibilities which exist in offensive warfare along scientific lines. It is now conceivable that heavy charges of high explosives may be secreted under important governmental buildings, docks, factories and other strategically important points, these charges being connected to radio-receiving equipment capable of detonating the explosives when a certain secret code signal is sent on a particular wave length. If a potential enemy were to prepare in this way for anticipated hostilities, on the outbreak of war he could readily send out the signal of destruction and to a considerable extent paralyze his opponent.

"We know enough today about the radio control of remote mechanisms (the field of radioteledynamics) to expect that, as development proceeds, unmanned airplanes, surface vessels, submarines and land tanks carrying dangerously destructive explosives, poisonous gases or disease-breeding bacilli could be aimed at the population centers of the enemy and sent to their destination in shoals.

"The various forms of destructive radiation have not yet been worked out thoroughly, although we know that the X-rays and heat rays are extremely injurious in sufficient concentration. An investigation of these and perhaps as yet unknown rays, as well as other incendiary or disintegrating agencies, may well lead to the development of extremely powerful methods of warfare."

SCIENCE, lending its aid to the nations, believes Sarnoff, is thus prepared to make them bring about the second radical change in methods in all the history of warfare.

"The fighting methods used by nations locked in the struggle of war," he pointed out, "have been radically changed only once during historic times. The general use of gunpowder did bring about a basic modification in military strategy and tactics. So long as man was restricted to the use of hand weapons, such as the sword, fighting methods were comparatively limited in their variety. After all, the soldiery at the siege of Troy fought in no very different manner from the British archers at Agincourt.

"Gunpowder made a big difference because it rendered the defensive armor of the Middle Ages obsolete and placed all men more nearly on a par as fighting units. This was perhaps the first striking illustration of the influence of science on warfare. It has, in fact, led to a very real change in military procedure, and even has brought about conditions virtually amounting to a deadlock over extended areas and long periods of time when nearly equal forces of men were matched against each other.

"The opposing lines of men in the trenches during the great war were immobilized because of the possibilities of the high-power rifle and the machine gun as well as artillery barrage. The development of this type of warfare is probably limited and we may now anticipate a real revolution in methods of fighting when all the agencies of science are concentrated on the development of destructive instrumentalities.

"Without in the slightest underestimating the value of the physical agencies which proved effective in the last war, is it not reasonable to visualize the possibility that future great wars may well be fought and won on the basis of brains and scientific devices rather than numerical preponderance?"

DESTRUCTIVE chemicals and injurious bacilli, Sarnoff believes, have only begun to be developed as agencies of war. In his opinion their potentialities are enormous and demand appropriate countermeasures.

George Washington's famous utterance, "To be prepared for war is one of the most effectual means of preserving peace," can apply even to the scientific warfare of the future, it would seem. Sarnoff voiced much the same idea in modern terms when he declared:

"If victory is to be largely influenced by scientific knowledge as well as military and industrial organization, it certainly follows that now is the time to study intensively scientific agencies of destruction and perhaps even more vigorously the countermeasures for combating them on a wholesale defensive scale. This work cannot be completely developed by civilian industrial companies. In the first place, it is a highly specialized field and requires a detailed and confidential knowledge of military problems and methods. In the second place, it is considerably removed in its early stages from any commercial application, and the considerable expenditures of time, energy and money which are involved in such work would not be normally undertaken by industrial concerns without some direction by Government agencies.

"On the other hand, the personnel necessary to carry forward scientific military research must be drawn from the universities and the great industrial concerns of the United States. It may well be that the scientists and engineers should be borrowed by the military department from time to time. Also, it is not unlikely that their military research would have some by-product results capable of commercial application. And the reverse may also be desirable; that is, military experts might well be assigned, at regular periods, for some training and experience at commercial laboratories and plants.

"Some of the fields of research which require attention by such a military scientific group are the remote control of mechanisms, the production and rapid transmission by wire, radio or otherwise of photographs, radio direction-finding on all wave lengths, the further development of secret methods of communication, the study of all forms of offensive radiation, chemicals and other substances and the development of protective measures against each of these offensive devices."

AN IMPORTANT problem which would demand solution in the event of future war, Sarnoff believes, is the effective utilization of existing radio resources as well as of those to be developed. During the last war, he pointed out, radio reception by the public was prohibited. This, he is convinced, would be a mistake under conditions which might come about in the event of future hostilities.

"It is far better to utilize the capabilities of radio broadcasting than to discard them," he said. "Of course, radio broadcast transmission would have to be strictly controlled by the Government under wartime conditions, but reception should be permitted. It would be possible for the Government to issue expeditiously and simultaneously reports and stimulating announcements to many millions of listeners and possibly the entire Nation.

"In cases of airplane raids or other impending attacks, instantaneous warnings could be issued which would reach the entire population virtually instantly. Announcements dealing with mobilization and other military matters could be in effect a daily military bulletin service of high efficiency and universal scope.

"On the other hand, it is reasonable to assume that, with the advent of international broadcasting and the further development in this field, which is sure to follow, the enemy may, in time of war, be able to have direct access to the homes of citizens and other residents in the country, with consequent possible dangers which should be carefully considered. Means can, no doubt, be developed and provided for dealing with radiations from enemy countries, but this will follow only after a clear recognition of the existence of this problem.

"It is certain that the existence of millions of receiving sets in the homes of the citizens of this country, together with the availability of great interconnected networks of broadcasting stations, will place at the disposal of the Government during any possible later war a most powerful weapon for organization and the maintenance of national morale. And this very fact, also, makes it necessary to perfect plans whereby the enemy's waves of sinister propaganda may be under control."

The idea of a disastrous war, begun and ended in five minutes, may well stagger the imagination. Yet, one can reflect, an earlier people might have been just as startled had our present engines of war been described to them. The men who fought at Thermopylae, at Tours or at Senlac Hill would undoubtedly have scoffed at prophecy which foretold huge mechanical birds dropping fiery death from the skies; or guns which shot their fatal projectiles miles where the arrow traveled only yards. Even the men who fell in Belgium in 1914 probably never visualized the power of certain weapons which the great nations of the world hold in reserve today.

SIR SAMUEL HOARE, British Air Minister, brought this into sharp emphasis recently when he said:

"In the whole of the late war some 300 tons of bombs were dropped by enemy aircraft on this country. Air forces today could drop almost this same weight in the first twenty-four hours of war and could continue this scale of attack almost indefinitely."

There is wide evidence to support that statement. Today, it is said, the British, for example, have a torpedo plane with two pilots and twenty-three men. Another report mentions a silent plane with machine guns in the wings as well as the hull. The United States owns a plane with a regular ordnance load of 2422 pounds. It has, too, a twenty-three-ton tank carrying a thirty-seven-millimeter gun and traveling at twelve miles an hour. Great Britain is said to have twelve-ton tanks which can make up to eighteen miles an hour and a one-ton tank which can be driven through water for landing operations. At sea there are now 35,000-ton dreadnoughts and enormous armored aircraft-carriers.

POISON gas, one of the worst scourges of the World War, is not an entirely new development. Historians say this means of offense was used as far back as the fifth century B. C., when sulphur was burned to assist besieging forces in a war between Athens and Sparta. At sea quicklime had been thrown into the sea in the hope that its fumes would incapacitate men on opposing vessels.

Yet the gas attack launched at Ypres in 1915 had all the elements of novelty and, improved by the resources of science, introduced almost a new element in warfare. According to experts, even that dangerous attack was mild compared to what science could do today with gas in a war between nations.

Certain students who view the future with pessimism visualize the possibility of nations driven to desperation resorting to all the horrors of poison gas, aviation, unrestricted submarine warfare and even germ warfare, despite treaties which prohibit them. In such an event the use of explosives detonated by wireless rays would appear a not improbable step.

What would follow no one can tell. The possibilities seem limitless.

In the war foreseen by Colonel Sarnoff the tremendous 12-inch coast-defense rifles will be rendered useless by a perfection of radio agencies of death

Gas masks protected soldiers from death in the World War, but can there be any protection from the mysterious, unseen messenger of destruction which the next few years may bring?

Wars that dragged through years and which left the earth staggering between debt and the ravages of conflict will, if Colonel Sarnoff's prophecy is fulfilled, begin and end within the lapse of seconds or, at most, minutes