RADIO

Radar's Future

When the war is over, it may be used to cut down railroad accidents, and even your automobile may be equipped with a unit.

➤ IF YOU have ever shouted in the direction of a cliff, then measured the time it takes the echo to return to determine how far you are from the cliff, you have used a means similar to radar to check distance. However, radar uses ultra-high frequency radio waves, while the echo is made up of sound waves.

Many important Allied victories would have been virtually impossible without radar. In anti-aircraft defense, radar is used to detect the approach of raiding planes at great distances through darkness and fog. Installed on fighter planes, radar enables pilots to spot enemy planes in bad weather, and to get range for attack. It helped lick the U-boat menace by spotting submarines when they came to the surface at night to recharge their batteries. In spite of fog, smoke, or night's blackness, radar can spot the enemy more than 100 miles away. The day-after-day bombardment of Germany's arsenals and supply lines that preceded the invasion would not have been possible without radar.

When the war is over, radar will not drop out of the picture. Today we have only reached the bare beginning of radar development. Many peacetime applications are already known, others only need time for research to bring them into practical form.

When the war is over radar may be used to cut down railroad accidents. Radar units mounted in the engine cab of a locomotive would enable the engineer to detect oncoming trains on the same track, or trouble ahead, so that he could slow the train down in time. He would use the invisible eye of radar to give him visibility in storms, fog or on moonless nights.

Ships equipped with radar can sail into a harbor during a heavy fog and come into dock without colliding with other ships. At sea, radar will detect other ships, icebergs, floating wrecks, and other hazards.

In the air, radar will give pilots of commercial airliners an accurate picture of their altitude at all times. It will also detect objects such as high tension wires, radio antennae, tall buildings, mountains and other planes even though they are not visible, so that the pilot can steer clear of them. It will permit a plane to land in a dense fog, without other assistance.

Even your automobile may have a radar unit that will make driving safe in fog, storms, or snow. With a radar beam shooting out in front of your car you would know of the position of obstructions, other cars and trucks even though you cannot see them.

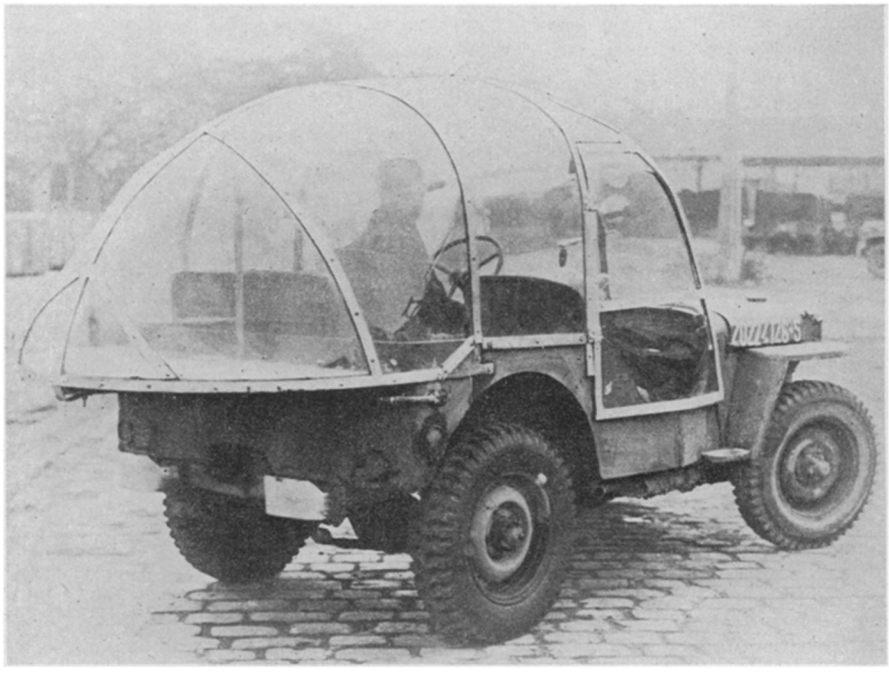
Until recently, it was taboo even to mention the word "radar," which means radio detecting and ranging: *ra* (radio) *d* (directioning) *a* (and) *a* (ranging). The letters r-a-d-a-r spell the same forward and backward. This spelling of the word gives a clue to what it is, a radio echo.

Twenty-two years ago, Dr. A. H. Taylor and Leo C. Young of the Naval Research Laboratory discovered that certain radio waves bounced back from steel, like the echo from a cliff. This was the beginning of radar for America as we know it today. Other pioneers rapidly picked up the idea and intensive research is still in progress. These men were Maj. Gen. Roger B. Colton, U. S. Army, Dr. John H. Dellinger, of the National Bureau of Standards, and Robert M. Page, of Naval Research Laboratory. Although these men were long on faith in radar, they were short on funds to carry on research.

As World War II came nearer to being a reality, radio manufacturers gave their cooperation in perfecting military radar, and in getting it into mass production. Today, military and naval men agree that we might have lost the war 10 years before it began, if these pioneers had not persevered in radar research.

The Axis got its first taste of radar from the United States on the night of Nov. 14, 1942. Out in the Southwest Pacific, off Guadalcanal, it was storming, and one of our warships was hunting for Jap men-o'-war. Like a searchlight beam, the radar beam probed the enshrouding turbulent darkness, until a reflected signal was received, registering the presence of an enemy vessel more than eight miles away.

Our big battleship raised her guns, and sent powerful high explosives thundering



DRESSED FOR WINTER—American soldiers in western Europe have devised a variety of winter coverings for their jeeps, as shown in this OWI photograph. This jeep has a plastic top constructed entirely of salvaged material, complete with windshield wipers, a spotlight and a windshield defroster.