Supplying Submarines by Trailer

Carrying fuel and supplies in a tender, a
submarine is made lighter and more mobile

AUTOMOBILES have trailers, motor trucks have trailers—why not submarines? Apparently acting on such an idea, Philippo L. E. del Fungo-Giera, of New York city, has patented a tender or trailer which submarines may frisk over the high seas as unconcernedly as a farmer hauls his milk cans in a two-wheeled vehicle behind his Ford.

The tender, which is about thirty feet long, can be submerged a convenient distance from the field of operation and thus concealed from the enemy. In it, fuel supplies, compressed oxygen, oil and other stores are carried. When the submarine runs out of such necessaries it can return to the tender and renew its store. The frequent long trips to and from a naval base are largely eliminated.

Of interest about an invention of this kind is the fact that while the Allies might use it, it is improbable that the Germans could. The North Sea is patrolled by several thousand submarine-chasers of various types for which reason it seems unlikely that the Germans could use the idea.

Upon approaching the scene of action the submarine vessel would attempt to reach shallow water if possible. There she would submerge and anchor the tender. For this purpose an armored cable connects the electrical machinery within the tender with the controlling mechanism inside a marking buoy above. The crew unbolt the cover of the buoy, insert an electric plug which is connected with the submarine's dynamos, and turn on the current. Four anchor cables are released instantly. Electric motors drive the four winches which partially wind up their respective cables again. The tender

Cross-section of the tender,
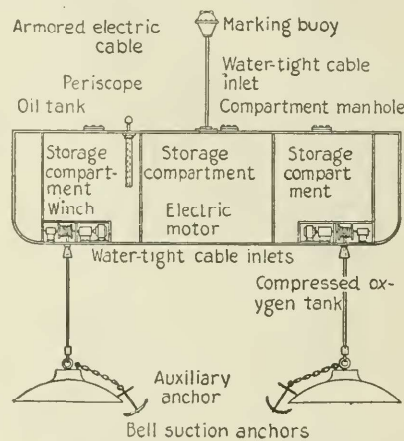showing the storage compartments and apparatus used

is thus made to sink to the desired depth, while the buoy cables automatically pay out a corresponding amount. After concealing the marking buoy with seaweed, observations are taken to determine its position, and the submarine proceeds upon its way.

Allied submarines which operate in the Baltic sea, perhaps a thousand miles from their naval bases, ordinarily have to spend a week's time in traveling to the scene of action and returning. Fuel and provisions are used up so rapidly that the submarines have little more than a week and a half in which to raid Germany's ships. However, advocates of the new invention believe tenders are capable of improving this situation. While pulling a trailer may slow up a submarine's progress to and from bases somewhat, this is made up for by the longer time the store of supplies brought along permits the craft to stay at sea. It would clearly be out of the question to haul supply tanks through the North Sea, around the north of Scotland, and to plant them in the Atlantic Ocean itself.

Obtaining supplies from the tender is accomplished by first manipulating the anchor cables in such a way that the craft may rise to the surface. Then one of the crew opens and enters a manhole, afterward taking out through this opening any package stores the submarine may desire. The stored oxygen, which is used for breathing when the submarine travels under water, is discharged into the submarine by means of suitable hose connections. The oils are likewise pumped across through hose. A man may be left permanently on the tender to lower it still farther if in danger.

There's Food and Drink and Fuel in the Tank

The submarine is about to return to its tender to take on needed stores. The crew simply lassoes the floating buoy, connects an electric cable, and by means of a control mechanism inside the submarine, causes motors within the tender to unwind the anchor cables and allow them to come to the surface. A member of the crew then scrambles over to the tender, opens a hatch, and takes out any package stores desired. Oil and fuel are transferred by pumping them through a hose. The oxygen is also piped across. If desired, a man may be left on the trailer permanently, to raise or lower it by means of hand winches when necessary