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In Wake of Craft That Cleaves the Depths Lie Many Dead Pioneers

Experiments That Led Up to Wonderful Feat of a Squadron the hydroplanes on each side are the of American Submarines the Other Day Have Cost Hundreds of Lives and Millions of Money.

expenditure of many millions inous. squadron of these "flying fish" broke all American records the other day. Old Neptune's commands to Æolus to stir the winds and pile the waves mountain high had no terrors for them. They ran one hundred and sixty-nine miles, from Newport to Gloucester, not over, but

FTER one hundred and thirty and the nations will have less war beyears of experimentation, the cause war shall have become more ru-

the loss of hundreds of No naval authority, however, dares and the sufferings of martyrs prophesy as yet such an outcome of pioneers as gruesome as the submarine development. They were unof a n.ediæval torture cham- tried in the Russo-Japanese war. Their seagoing submarine is at last earlier history was such a long chaponstrated success. A Yankee ter of disasters and fatalities that even

belly look for all the world like the headpiece and trunk of some ferocious fighting fish. Within, the manfish has air chambers and water chambers, machine made gills and lungs; the stertorous heart of the beast is never at rest as it dives, dives, dives still farther downward or, reversing the action of

to signals. Stuck fast in the mud, the That Cruise of 169 Miles from Newport to Gloucester, Far Farfadet could not be extricated in time to save these unhappy prisoners. Discipline under panic must be more

difficult to maintain on a submarine than on any other kind of craft. Few cases are recorded like those of the Japanese on No. 6 of the Mikado's navy, which sank off the harbor of Kure about fifteen months ago. To the very hour of death the stoical commander, Sakuma, wrote the record of the casualty in the

"We were making a gasolene dive when the submarine sank lower than was intended. We tried to close the sluice avoid disaster, and the sea entered the rear of the boat, which sank with a list of 25 degrees. We have worked hard to

Down Under the Billows, Has Great Meaning as Regards Wartime Power of Nation's Fleet. the commander, with his two compan-jing the hatches open has frequently led ions, stayed on in the submerged con- to tragical results. Twenty-one lives

and two feet wide. She managed to the mail steamer, but, thus wounded and admitted and the mischief done, prisoners of a watery death. The horror although rescuing parties from the mail

the battleship Rostislav, and the sole tomobile; even in a gun explosion on a mander, Lieutenant Aquilonoff, who hap- outside the path of the destruction. Not pened to be on the deck of the boat, so, however, with the submerged craft, which was running light. He swam Within its cramped quarters all

ning tower. After nightfall heavy seas were lost when the Russian Delphine broke over the luckless U3, the ventila- went down with her conning tower open. tor gave way, and the water rushing in Starting to dive, she trimmed too deep, cut off the supply of oxygen. The three and the swells caused by a passing men in the conning tower perished from steamer entered the boat through the ill In the crowded channels of busy ship. British boats was sunk while travelling ping the submarine torpedo boat runs awash by shipping a heavy sea. So many dangers avoidable by ordinary trivial a thing as shifting of weight (say craft The fate of the French Pluviose the weight of human bodies) from one sunk in the English Channel by a Calais- may result in a fatal dive. Her longi-Dover mail steamer. A rent was torn in tudinal stability being very slight, such the submarine's stern fifteen feet long a shift may force her nose sharply down-

its toll of dreadful accidents, the most notable being the destruction of the of it all was enhanced by the fact that Italian Foca with seven of her men by a benzine explosion and the destruction steamer stood out in open boats they of English and Russian submarines by could do nothing whatever. Within the gas explosions with terrible loss of life. sinking submarine the poor wreatches Here, again, the prisoner of the steel were locked and dungeoned beyond hope shell hasn't a fighting chance. You may leap into the waves from a burning A year before that the Russian Kam- launch; you may be catapulted safely bala was rammed in the Black Sea by te the ground from out of a wrecked ausurvivor of the fatality was the com- battleship you may luckily happen to be



1-American submarine making a successful run beneath the keels of warships.

2-Disaster to the Lutin, French submarine. Whole crew perished. 3-The Pluviose, torn open by a passing steamer. Twenty-three drowned by

inrush of water. 4 Japanese commander of submarine makes record of feelings while slowly asphyxiating with his crew. 5-Benzine explosion wrecks Italian

submarine Foca and kills seven men. 6-Poking her nose in the mud often prevents return to surface:

they scudded below the white-maned magical perpelses of steel and har-And not an accident marred the cruise. were all accomplished without mishap to machinery or men, without extraordinary incident or adventure.

Think what this means in wartime? It signifies that Uncle Sam's under- dangerous to opposing naval forces only water fighters needn't poke around harbors waiting for the enemy to show up. disclose. With a submerged range of a hundred

years ago none of the powers except ard the surface. France had a flotilla worth mentioning. Great Britain adopted them with reluctance. The United States until rather recently had only submarine toys, petty craft of 100 to 150 tons, incapable of long submergence and too small to accommodate good-sized crews. Now we are making vessels of 500 and 600 ten hours continuously during the run ton displacement, 150 to 200 feet in between Nantucket and Provincetown length, going fourteen knots an hour on water and ten knots below, equipped horses of the sea; two of them-these with half a dozen torpedo tubes and ten powerful torpedoes, accommodating nessed lightning-swam eleven hours at twenty to thirty men with sleeping a stretch before coming to the surface, quarters, kitchen galley and all necessities. On the surface the biggest of our The plain and fancy dives, the steady new boats are driven by oil burning motoring beneath the waves, and the engines, and their travel range is as sudden shooting up again to the surface wide as the ocean; below the surface their stored electrical energy will carry them eleven hours (perhaps even more) at a stretch. They are safe, and they are evidently formidable; exactly how the actual coming of a great war will

Some one ought to write the romance miles or more, they can go right out to of the submarine. Jules Verne's Nautisea and stick their noses under hostile lus was a tame and weak affair comhulls, before the enemy's fleet has a pared to the real story. It is a tale more fair chance to train its guns on our thrilling than the development of avlascaboard cities. Possibly they can de- tion, more entrancing than the voyages stroy such a fleet altogether. No one of those early mariners with "hearts third return her stern barely showed knows about that yet. If indeed a flo- of oak and triple brass," who dared to above the surface, and she quickly sank, tilla of these sneaking, invisible craft, put a few rude boards together and to rise no more. Old Ocean had claimed with their high power torpedoes, shall adventure the wide, uncharted seas as his prey the invading vessel and all be able actually to rip out the bowels without reckoning or compass. The air her crew. The accident that determined of great Dreadnoughts and Indomita- is the bird's and the sea is the domain her fate was trivial, sufficiently ridicua comparatively few well directed blows, aeroplane wings; to dive, he has in- had become wedged fast in the intake year before, the men lived at least in a partly raised position. But the stone, thirteen of the crew perishing and of submarine navigation were now fully closed himself in a steel shell built in cock of her water ballast tanks; the in-

their seaworthiness was doubted. Ten the tail, springs suddenly upward tow-

In modern submarine building, beginning in the middle 80's, France took the lead, a lead that has been maintained despite a succession of catastrophes and horrors that has caused the whole civilized world to gasp and sicken. Toulon, Bizerta, Calais-can any one think of plates could not withstand it, and they pump out the water, but the boat rethem yet without shuddering? On open gave way, a lmitting the sea to the in- mains in the same position. sea, with air and light, the manning of lifeboats, the hope of a rescue, the shipwrecked sailor has a fighting chance. caught in their steel shell on the sea bottom like prisoners in a flooded dungeon, or asphyxiated by foul gases, or shocked to death by electricity, or detainty. There was no possible reprieva

Gayly, as practised swimmer dives headforemost from a springboard into the sea, the French submarine Lutin dived into the waters of Bizerta Harbor, on the coast of Tunis, on October 16, 1906. Three times she sprang lightly and easily into the depths, but on her

described at once menaced the crew, But what chance had these poor devils, Sheeted lightning sprang across the circuits of the storage batteries and motor as the water short-circuited them; the corrosive action of the acids of the batteries on the metal tubes caused the forvoured by flames, or blown into eternity mation of deadly asphyxiating gas, and, by a sudden explosion under sea? Death if by some miracle the occupants could spake his summons with hideous cer- possibly have escaped these perils, death painful. I thought I would hold out by drowning would yet have awaited against gasolene gas, but now I am inof the awful, sentence, no executioner's them. The bodies of the commander of toxicated by the gasaxe or inquisitor's bludgeon to put an the vessel and the quartermaster were end to the tortures of the trapper pris- found later clasped in each other's arms. it helplessly because three of the frantic sleep of death. sailors had already wedged themselves into the narrow cupola of the tower, and frantically resisted his efforts to dislodge them. The other members of the crew died likewise of gas asphyxiation. their bodies twisted together in horrible

In the Lutin's sister ship, the Farfadet, which foundered in the same harbor the tubes to safety while the boat was thus and sunk by the cargo steamer Eddy- tence that the safety and practicability as we now know it will be at an end. piscine fashion. Look at these strange flow of water under the heavy sea bot-Navies will be transferred to the air, craft. The horizontal rudder is the tail; tom pressure was so great that the tank plainly heard their knocking in response tion of a captain's loyalty to his ship. The slightest carelessness about leav-

"A word to his majesty. I respectfully Death in various of the forms above beg to say that it is my hope that your majesty will see to it that the bereaved families of the crew are provided for.

This is foremost in my mind. "The air pressure is becoming so great that I feel as if my eardrums were

"It is now 12:30 p. m. My respiration has become difficult and more and more "It is now 12:30 p. m. and"-

That was the last word, as the pen Lieutenant Fepaux's last act was a vain dropped, evidently, from the useless attempt to work the release lever of the hand, and the reeling brain of the galconning tower hood. His hand clutched lant officer was at last overcome by the

But what a mockery was discipline itself in the case of the German boat U3, which sank in January of this year? A Quick action, it is said, would have mistaken sense of duty cost the lives of Commander Fischer, Lieutenant Kolbe tanks been hastily emptied and the conand a helmsman. After the submarine ning compartment closed, she might have failed to return to the surface the salvage risen to the surface, but the instant for that, and turn our minds resolutely from ly to the only way of egress, the steering ship Vulkan put chains around her and action was somehow not selzed and she reflecting on our own personal chances." pulled her up. Twenty-seven of the went down with her men to their death. crew crawled out through the torpedo In a thick fog the British C11 was hit nobly spoke. He added in the next sen-

away and was saved, but the twenty mer within the shell of the craft all perished. Al of the British flotilla came into collision with the bottom of a steamer, scraped along the entire length of the other's hull and emerged at the further end with a bad rip in her conning tower. saved this submarine. Had the ballast

doom. The fool who, contrary to express orders, lights a eigarette in the gasolena laden air blows not merely himself but

his innocent mates into eternity.

Working in suffocating mines, steking in the engine rooms of Atlantic liners, digging sand in caissons in the agony of air compressure, diving for pearls to depths of the Persian Sea-is there any labor such as these comparable with the hell of submarine service under its most favorable conditions? No bed to lia upon, no cookery to stay appetite, no moving about to rest cramped limbs; a pigeonhole for your station, the reek of sweating human bodies mingling with the foul odors of leaking gas and oil to assail your nostrils; and then-think of it!-within the hot, tightly inclosed structure, travelling in a cold surrounding medium, condensation of the moisture and dirty rain! The roar of the machinery within the narrow space deafens the ears. The gasolene fumes bring splitting headaches. Men drop in their tracks unconscious. Pure, sweet air! What a priceless boon denied! And behind all these awful discomforts of the body the need of ceaseless vigilance, the terrifying thought that if the least precaution is forgotten or even if all human precautions are taken agony and death may suddenly envelop the fuckless crew. "We don't think of these things." was

the answer of a submarine officer to a visitor who pressed inquiry on such subjects. "Every one of us knows that with the wreck of our craft the chances of escape are practically very small. The It was an American officer who thus