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A STUDY

OF

OPERATIONS OF LIGHT FORCES (BOTH GERMAN AND
BRITISH) AT THE BATTLE OF JUTLAND

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AT THE

BATTLE OF JUTLAND

HISTORICAL BACKGROUND-

The date, October 21, 1805; the place, Cape Trafalgar. With Drama holding the pen there is written the concluding page in the heroic life of Lord Nelson. The loss of the national sea hero is balanced by gaining the unquestioned supremacy of the seas after a struggle born irresolutely in the defeat of the Spanish Armada in 1588 and carried on to full fruition through the Dutch wars of the 17th century. An era comes to a close. Historians, who delight in linking eras with personalities, will weave their recitals of the battles of Copenhagen, the Nile, Saint Vincent and Trafalgar around the glamorous career of the One Man who dominated this final period of the ascendancy ^{of England} to sea mastery. The saga of the rise of England will stress the untiring energy and leadership, the audacity and the bold conceptions of the last great commander of the age of sail, always under circumstances heroic; small scant will be given, if at all remarked, that this rise of the nation and her leader to the heights was achieved through normal victories. Complete destruction and annihilation of the enemy have been denied the stately ships of the line and their attendant speedy frigates by the lack of precise control over the propelling agent, wind.

One hundred and eleven years pass. To the world is given the age of steam, the beginning of industrial awakening, the steel age. New nations rise to their places in the sun. New navies sail the seas, wearing new costumes of progress. Sails and spars are laid aside forever.

England continues to dominate the world. She retains mastery

of the seas over whose trade routes her men of war not only set the pace in the latest developments in the art of maritime war but also are numerically superior to any one other nation.

To England during this period comes rest from war at sea. She sits in the audience; watches the play of less fortunate members of the family of nations. From the Monitor-Merrimac engagement of our Civil War she learns of the birth of the iron clad and the death of sail. In 1866 ^{at Sissa} she watched the young Austrian Tegethoff play well a Nelsonic role against the dilatory Italian Persano. Dash, indoctrination, zeal won through for the numerically inferior force. But still no annihilation. But with greater interest still is England to watch the development of the idea of still another Austrian, Captain Luppis who, in 1862, sought the assistance of a Scotch engineer, Whitehead, in the manufacture of the first automobile torpedo. Two years later it was an accomplishment completed. True, it was of slight immediate value. In its development lay its potentiality. Five miles per hour; 18-pound explosive charge; total weight 300 pounds. By 1870 England, awake to the new instrument of destruction, has purchased the manufacturing rights for \$15,000. The torpedo has arrived. And, in 1870, History notes another event, political in character; far more important than the advent of a new weapon. I speak of the creation of the Imperial German Empire. No longer are the principalities of the Germanic peoples to be separate; in union there is strength; under the wizardry of that master builder of statecraft, Bismarck, the parts were welded into a political government which, even in defeat, is to bring the world to its knees. This same German nation, in a sensational march of progress, brings forth in her new Navy,

which is seriously inaugurated two decades after the formation of the Empire, the first real threat to the English prestige on the seas. England must work alive in every field to stultify this new nation which threatens her world trade, her colonization spread, her industrial expansion. England must maintain her superiority on the sea.

For every rise there is a fall. Germany rose. Spain fell. The proud nation of medieval times is cast out from the list of first class powers by the United States. Two naval battles forced the issue. Naval battles fought by second rate fleets constructed in the groping twilight period of transition of tactics, ships and guns from the old to the untried styles of the new. Santiago and Manila Bay! Ships of steel propelled by steam. Guns protected by armor. No torpedo yet worthy of the notice. But a new note is struck in these two actions fought with the new weapons - the note of annihilation. The power of the projectile, the weakness of the ship and, in these cases, of the adversary, bring the clear-cut victory.

February 1904. Russia and Japan at war. At Port Arthur the Russian Squadron lays at anchor at night with all lights burning. Under the cover of darkness ten Japanese torpedo boats attack; 18 torpedoes are launched. The battleship "Tsarevitch" and two cruisers are put out of action for two months; only the poor efforts of the Japanese had spared the entire squadron. Now Rojdestvensky is on his memorable cruise to the Far East. With his armada of 50 vessels he essays the Tsushima Straits^{en} route to Vladivostock. In May 1905 the Japanese under T^ogo meet him there. The same radio which was here first used in battle at sea now broadcasts to a waiting world the story of another annihilation. The

torpedo proves of little worth in the day action but at night the 21 Japanese destroyers and the 40 torpedo boats dash out from the lee of Tsushima Island after the fleeing enemy. In the prevailing dirty weather they make their attacks; prove a great menace to each other. Admiral Custance has calculated that 8 hits were made, or 9 percent of the torpedoes fired. Three or four vessels are hit and all but one ^ast~~y~~ afloat until the next morning. Collisions number six in the flotillas; four boats are lost. Now what are the results of this battle?

The watching world is quick to discern the new note in the march of progress. England hurriedly quits her seat in the audience and embarks upon the construction of her revolutionary "Dreadnought"; Germany and the other nations are at her heels. There is to be speed in the battle line now; there is to be positive action in the thrust of the torpedo attack. The frigates of the famous Blackwood which did their task of scouting and maintaining contact so well in olden times are to be reproduced in the light cruisers. But as Admiral Mahan has enunciated, while the principles of naval strategy are unchangeable, experience in war and changes in the weapons with which war is waged may profoundly affect the application of those principles.

The race brings England and Germany to grips. In the face of the imposing construction programs of the Kaiser, England threatens to lay two keels to one. The fear of the threat of decrease of power bades England gird her loins; the exultation growing out of the unification of Germany, exemplified by the nationalistic feeling for her Navy, stirs the Germans to their best efforts to go on in the race for world power, colonial possessions, dominance in world trade

relations. The age old maritime traditions of England are matched by the thoroughness of the stolid Teuton. England who, until this period, has had to think of enemies in the abstract, now concentrates her fleets in the home waters. Germany prepares by her construction of ships and the development of her war plans for the struggle with her ultimate foe, England. Germany will do all that she can to guard against war with England. But it is not to be. Great Britain, shrewd in the wiles of diplomacy, fearful of the growing power of her rival, sees in the concerted action of France, Russia, and their Balkan allies the propitious moment to enter the lists and insure the end of this foe which has grown like a mushroom and bids fair to make her totter from the eminence of her domination of world affairs. The die is cast in August, 1914. And the great naval battle of Jutland is fought on May 31, 1916. It is of the light forces on both sides of the struggle with which we are to concern ourselves.

PREPARATIONS FOR NAVAL ACTIVITY-

How has England prepared for this battle, the greatest struggle on the water in the history of Man? First, by building and concentrating in her home waters the greatest fleet in history, numerically superior in every type to her foe. Well have the English followed the teaching of that master strategist Clausewitz who stated: "The best strategy is always to be very strong, first, generally; secondly, at the decisive point....." The superiority of numbers is the most important factor in the result of a battle....." And again "The greatest number of troops should be brought into action at the decisive point...." Well do the historians recall that the shrewd Nelson cried for numerical superiority

to gain his ends. So we find England with her fleet on solid ground in this respect. Now who was chosen for the leader of this Grand Fleet and what did he do to insure its efficiency in the battle?

On the very day that war was declared Admiral John Jellicoe hoisted his flag in HMS Iron Duke. His appointment met with unanimous approval. Here was a man who had early shown the requisites of high command. Born of a sea-faring father he had gone into the Royal Navy and from the very beginning had demonstrated his superiority over his fellows. At the Naval College he had taken an unusually large number of "firsts"; this feat was repeated at the staff gunnery school. As a lad he had shown his personal courage when he was awarded a medal for the rescuing of life at sea. The Boxer Rebellion brought him service under fire and a wound. As a Commander in the "Victoria" Fate spared his life although he lay sick in his cabin when the collision with the "Camperdown" occurred. He had been schooled in progressive subordinate positions; he had been charged with the development of naval ordnance; he had been Second Sea Lord. The outstanding officer of the Navy, he merited the respect of all his contemporaries. Though poles apart in every way from that doughty sea-dog Sir John Fisher, he had his support and recommendation. There is no question but that the parts played by the vessels of the Grand Fleet in the Battle of Jutland were dictated by the personality of the Commander-in-Chief. That has been the case in battle from time immemorial - Jutland was no exception. Now how did he impose his personality upon the fleet and what policy, doctrine and battle plan did he lay down?

I know of no better way to enunciate his doctrines than by quoting to you from his book "With the Grand Fleet". I have

taken excerpts here and there to briefly bring out with a degree of finality the answers to the questions which are invariably brought up: Did the various commanders have definite instructions? Did the battle orders provide for flexibility and decentralization? Were the plans suitable for varying conditions? Was initiative permitted? Read the answers from the one individual who best can answer.

"One of the earliest steps taken in organizing the Grand Fleet after the declaration of war was to lay down definitely the various cruising orders for the Battle Fleet and its 'lookout screen' of battle cruisers, cruisers, and light cruisers."....."War experience led to a series of diagrams being drawn up giving the cruising stations of all the various classes of cruisers and light craft under the different conditions that might exist"....."Several different cruising diagrams were similarly drawn up"....."The disposition for use at night provided for the use of destroyer attack".... "The supremely important question of how best to handle in action the large and increasing fleet engaged my attention from the commencement"....."In drawing up the various instructions for the conduct of the Fleet, both when cruising and in action, I availed myself of the advice and assistance of the experienced Flag Officers commanding the various squadrons"....."The successful and rapid deployment of the Battle Fleet from its cruising formation was a matter of the greatest importance, and constant practice in carrying out this maneuver under every varying condition was given to the Fleet when at sea"....."Orders were drawn up to meet cases of deployment in thick weather".....

...."The Battle Orders indicated the position to be occupied by our battle cruisers, cruisers, light cruisers, and destroyers on deployment.".....

"The tactics to be pursued by the different units of the fleet in action under all conceivable conditions were provided for as far as possible".....

....."Stress was laid from the beginning on the fact that the Commander-in-Chief of a large fleet could not after deployment control the movements of all the squadrons....under the conditions of modern action"..... "The necessity for wide decentralization of command after the deployment of the Fleet for action, was emphasized."..... "As the Fleet grew in size, increasing stress was laid on this point."

....."The general lines on which I intended to engage were defined".....

....."Emphasis was laid on the supreme necessity for a free use of our own torpedoes when opportunity occurred.".....

....."The influence of the torpedo on tactics became greater as the war progressed"..... "Before the opening of hostilities, for instance, torpedoes had a maximum range of about 10,000 yards. We made many improvements....including the increase in range and we had every reason to believe that the Germans had made similar progress"..... "The treat of successful torpedo attack even from the battle^h in the line was, therefore, an important factor to be taken into account"....

"Several new maneuvers were introduced and practiced by the Fleet with a view to countering possible tactics on the part of the enemy"....

....."In the orders which were issued for the guidance of the destroyers both before, during and after an action, endeavor was made to provide for all these contingencies"....

....."The duties of each class of vessel were defined"....

"Thus it was laid down as the leading principle in the general Cruiser Instructions that, after gaining touch with

the enemy, the first essential was to maintain that touch"....
...."In the event of the enemy's advanced forces becoming engaged with our Battle Cruiser Fleet the cruisers in our advanced line were to push on and gain touch with the enemy's Battle Fleet. It will be seen that this situation arose during the Jutland battle.".....

"The instructions to the light cruisers defined their duties in action as being to attack the enemy's light cruisers and torpedo craft, to support our destroyers and to attack the enemy's battle line with torpedoes."....

"The instructions for destroyers laid emphasis on the fact that they should carry out an early attack on the enemy's Battle Fleet, commencing their attacks in clear weather as soon as the Battle Fleet were engaged. Under conditions of low visibility they were to commence their attacks without waiting for the Battle Fleets to be engaged."....

From the above-quoted statements from Admiral Jellicoe we see the tremendous effort made to insure the readiness of the Grand Fleet for any eventuality. What prompted the trend of tactics? On what did the Admiral base his dispositions, dictate his instructions? Let us again turn to him for his impressions of the German High Seas Fleet. For what he thought must of necessity play a large part in what he was subsequently to do. "My knowledge of the German Navy, which was considerable, left me under no delusions as to its character. I had made it my business to keep fully acquainted with German progress."....."I had then (while in the Far East) formed a high estimate of its efficiency (The German Navy) and subsequent touch on many occasions with the German Fleet had convinced me that in material the Germans were ahead of us and that the personnel, though lacking the initiative and resources and seamanlike character of the British, was highly

disciplined and well educated and trained.".... "The branch of the German Navy from which I expected very good work was the destroyer service. I had seen German destroyers maneuvering."

"Finally, I knew perhaps better than most of our officers, how efficient was the gunnery and torpedo work of the High Seas Fleet and how rapid had been its advance in the year or two before the War."

We now have the gist of the doctrine of the Grand Fleet and the impressions of the Commander-in-Chief of the enemy which prompted them. There is one thing more. Admiral Jellicoe has felt the pulse of public opinion with the skill of a trained observer. More than that, he has reached a realization not generally appreciated. His ear to the ground tells him that the decisive naval victories in the immediate past have given the man in the street the point of view that England, past and present mistress of the seas, has every right to expect from the Royal Navy in action with the German Fleet victories even more annihilating in their scope than the successes of the minor powers, America and Japan. This is all very well, but for one consideration. To John Jellicoe has come this all-sobering thought -- the success of the Allied arms in the world conflict depends upon retaining mastery of the water so as to eventually enforce the blockade of the Central Powers which is to win the war. Not only the safety of England from invasion but continued mastery of the sea requires that the Grand Fleet be not defeated by some strange quirk of circumstances, though some new weapon, due to overconfidence. The defeat of the Grand Fleet would seal the Allied cause. No general in the field, no statesman in the council chambers, no ruler from his throne can individually bring about the loss of the war. But the Commander-in-Chief of the

Grand Fleet can permit the defeat of his force by rashness, unjudicious or inconsidered action, risky tactics, a hundred other things. Such is the gist of Winston Churchill's ^{statements,} ~~thoughts.~~ This is a sobering thought. What does the Commander in Chief do? He writes his celebrated Memorandum to the Lords of the Admiralty in ^{October} ~~December~~ 1914 to acquaint them with his proposed course of action. This embodies considerations such as to draw him under fire, perhaps to cause him to be removed from command. Pertinent parts of the document must be quoted here as follows:

...."If, for instance, the enemy battlefleet were to turn away from an advancing fleet, I should assume that the intention was to lead us over submarines and mines, and should decline to be so drawn."

"I desire to particularly draw the attention of their Lordships to this point, since it may be deemed a refusal of battle, and, indeed, might possibly result in failure to bring the enemy to action as soon as is expected and hoped."

"Such a result would be absolutely repugnant to the feelings of all British Naval Officers and men, but with new and untried methods of warfare, new tactics must be devised to meet them."

"I feel that such tactics, if not understood, may bring odium upon me, but so long as I have the confidence of their Lordships I intend to pursue what is, in my considered opinion, the proper course to defeat and annihilate the enemy's battle fleet without regard to uninstructed opinion or criticism."

The Lords of the Admiralty^{ty} endorsed his Memorandum -- Sir John Fisher was one of them at the time. Thus did the memorandum set forth Jellicoe's plan of battle. How well it prophesies the future and fits the record of the performance of the British Fleet in the ensuing action nearly two years

later shows truly the force of prior study on later activity; of the effect of training on the way battles are fought. It was a policy of caution. A doctrine of maintaining superiority, of leaving nothing to chance. The German had emerged from obscurity to naval eminence in twenty years. The phenomenon of his study and rapid ascent to the position of challenger had made necessary his being taken with a consideration of gravity. Numerically he was inferior. He must be kept so. The Grand Fleet must not suffer by uncautious maneuvers. The torpedo menace must not be accepted. So was set forth. And so the battle was fought by the English. This redounds, in my opinion, to the perseverance of the man and his faith in his studied views of the gravity of the situation.

Now Clausewitz has written: "The destruction of the enemy military force is the leading principle of war, and for the whole chapter of positive action the direct way to the aim." Based on this alone the denial by Jellicoe of drastic positive action regardless of conditions and circumstances, seems to leave him on an unsteady foundation. Causes to spring up the thought that Jellicoe is not a fighter, that he is vacillating. But let us quote Clausewitz again: "War," says he, "is the province of uncertainty. Three-fourths of those things upon which action in war must be calculated are hidden more or less in the clouds of great uncertainty." And again, the most disputed of his famous dicta: "The defensive is the stronger form of making war." Is there not here some glimmering of light?

The real place of Jellicoe in history will not be accorded him by those now living. But the innate honesty of the man in so profoundly appreciating his responsibility and in searching the depths of the public mind shows that he had the grand heart, the spirit of the great leader.

The uncertainty of war mentioned by Clausewitz and so carefully provided against in the doctrines of Jellicoe is excellently brought out by a consideration of the weather conditions which held during the most important phases of the battle. Now the weather played such an important part, in my opinion, that I cannot over emphasize the necessity for continually keeping it to the forefront in analyzing the actions. Let us quote what Captain Harper, R.N., has to say on this subject in his book, "The Truth about Jutland":

"It is of the first importance for the student and critic of the Battle of Jutland to keep in mind the conditions of visibility during the various stages of the battle. The weather had an important bearing on the issues. In fact it is not too much to say that if it had been clear the tactics used on both sides might have been very different to what they were. Clear weather would have been unfavorable to the fleet which wished to avoid action, and, therefore, have been to our advantage. During the early stages of the battle cruiser action the visibility was comparatively good; but by 4:15 p.m. the visibility to the eastward had become considerably reduced and favored the enemy. By 5 p.m. these conditions became worse and, as Beatty says: 'Our ships being silhouetted against a clear horizon to the westward, while the enemy were for the most part obscured by mist, only showing up clearly at intervals.' By the time the Battle Fleet came into action these conditions had become still worse; the sky was overcast, the sea calm, the wind light, and, owing to the combination of atmospheric conditions and the smoke from the ships, the visibility was very bad, and great difficulty was experienced in distinguishing ships. It is safe to say that at no time after 6 p.m. were more than three or four of the enemy capital ships seen at one and the same time from any one of our capital ships.' These facts have not, previously, been given sufficient prominence. Jellicoe was unaware throughout the action of the strength or composition of the German Fleet, and he could not ascertain it from the occasional glimpses obtained of a few ships through the mist and smoke. In fact, the only method to arrive at a fair and just appreciation is to remember, and keep on remembering, that our Admirals were not sitting up aloft in a balloon with a clear bird's eye view of the fleets, conducting the battle as on a game board."

Thus writes Captain Harper. Now I like to conceive of low visibility as equalizing opposing forces of different

strengths. For if ships cannot see the enemy they might just as well not be counted as in the battle. As an extreme case, one vessel may pass ^{at night} without lights within gun range of an entire fleet yet remain unscathed. The decreased visibility has equalized the power of the two unequal strengths. So if we can think properly that the visibility has reduced the two fleets to equality, then there is some merit in the belief that the retreat of the High Seas Fleet from its untenable position, to which it had been drawn through the vagaries of this selfsame mist cannot be laid with derogatory criticism at the feet of the ^{leader of the} numerically superior Grand Fleet. Rather, this is just one of the great uncertainties of war which Jellicoe had forearmed against in his decision to seek an annihilating action only ^{if} provided conditions were orthodox.

Let us now take into consideration the underlying motives of the German side of the problem. With the appropriations for the new navy, starting in the 1890's, the true spirit of the unification of the Fatherland was exemplified in the personnel of the Navy. The motive force which drove them onwards toward the goal of efficiency was both the desire to equal their splendid Army in ability and to make up by thoroughness and conscientiousness, acquired by strict discipline, for their numerical inferiority. As England alone on the sea blocked the way to Germanic world power, it was only natural that the new German Navy was built with designs suited to an engagement in the North Sea against her most probable future enemy.

As to the performance of the German Navy, Admiral Scheer well states the comparison: "Our advantage was that we had to establish our reputation, while the enemy had to defend his. We were urged on by the impulse to dare all, while he had to be careful that he did not prejudice his ancient fame."

Comparing the strategical ideas which formulated the con-

struction programs of the two fleets, Admiral Scheer also states: "....We had attached particular importance to the greatest defensive and offensive powers, and considered that we might regard speed and radius of action as secondary matters..... The English were content with less armor, but attached importance to higher speed and the largest possible caliber of gun so that they could impose upon their opponent their own choice of battle area." If this is a true statement of the underlying motives of the English it is certainly open to question, especially in a war with Germany, when the geographical location of the two countries gave to England the blockade power over her adversary. I rather think that the English were more carried away with an epigram of Sir John Fisher to the effect that "Speed is armor". While spicy and brief, it lacks the substantiation of truth -- and the English were to learn this to their sorrow.

In the War Orders which were issued to the Commander in Chief of the High Seas Fleet, according to Scheer, the task was framed as follows: "The objective of the operations must be to damage the English Fleet by offensive raids against the naval forces engaged in watching and blockading the German Bight, as well as by minelaying on the British Coast and submarine attack, whenever possible. After an equality of strength had been realized as a result of these operations, and all our forces had been got ready and concentrated, an attempt was to be made with our Fleet to seek battle under circumstances unfavorable to the enemy."

The general aim of the German Fleet can be briefly stated as not to seek decisive action with the entire English Fleet, but to test its strength against separate divisions. While at the first the Navy had been restricted in the scope of its operations as a safeguard against losses, these qualifications

were eventually swept away and the Fleet Command was notified to be careful to break off action in case unfavorable conditions arose. When, in January 1916, Admiral Scheer was promoted to the command of the Fleet he immediately enunciated a plan of operations which was approved by the Emperor on board the Flagship. Thus we see the advent of the period of renewed activity which culminated in Jutland.

Cognizant of their numerical inferiority the Germans, "whose patriotism was the motive power of the ship's companies," had carried on training which brought their vessels to a high state of individual and collective efficiency. During the war they were able to use the Baltic for tactical training and gunnery work, which was advantageous to their continued state of preparedness.

The thoroughness of the Germans expressed itself in their painstaking development of tactics of the Fleet until it reached a high state. Particularly were they perfect in disengagement from battle so as to carry out their war orders. The co-ordination of action between types is well typified in the efficiency reached by the destroyers in their breakthrough of the German Battle Line in the celebrated "Durchbruche", at which time the capital ships retired by simultaneous movements.

The effect of this training, in addition to being well brought out in Jutland, was shown in the earlier actions. In the Heligoland Bight affair Scheer states: "The battle training of our light cruisers revealed a high state of efficiency." Of the Dogger Bank action the same authority states: "This first serious fight....proved that the fighting preparedness of the ships as regards the training of all on board was on a very high level, that the ships were handled in a correct and reliable manner, that the serving

of the guns, the signalling, and the transmission of orders from ship to ship during the fight, as well as the measures necessitated by leakages, had all worked admirably. Everywhere the behaviour of the crews was exemplary."

In material, Jellicoe is frank to admit German superiority. What then of the actual strength of the two fleets which are to oppose each other.

COMPARISON OF STRENGTH-

At the Battle of Jutland, 151 English ships were waged against 99 German vessels. Considering only the light forces we note a British superiority of 105 to 72 with the British having 26 light cruisers, 5 flotilla leaders and 73 destroyers against 11 light cruisers and 61 destroyers on the German side. As to age, the English ships were newer. As to size, they were larger. As to guns they were more heavily armed. Holloway tells us that 50% of the German torpedo boats - for they were no more than that - were of 570 tons or less. Many were fired by coal. The torpedo equipment was ~~less~~ ^{more powerful} than in the English destroyers. It might be well to here remark that Scapa Flow was chosen for the principal naval base for the Grand Fleet due to the fact that the German torpedo boats could not make the passage there from Heligoland and return at high speed due to limited radius of action. And yet this distance one way is 460 miles, about the same as from San Diego to San Francisco. Yet the Germans never learned of the use of Scapa Flow as a base until the end of the war. The German light cruisers were of such limited fuel radius that a German action thru the English Channel was out of the question.

The English ships were larger, carried ~~more~~ ^{fewer} torpedoes, more were fitted for oil fuel, and were more heavily armed. Let us see just what one of the latest English destroyers was like at the battle. Commander Barry Bingham, V.C., R.N.,

tells us in his "Falklands, Jutland and the Bight": The HMS Nestor, completed in 1916, just prior to the battle, was of about 1000 tons, 260 feet long, 28 feet beam, 10 feet draft. Armed with 3 four-inch semi-automatic guns on the centerline and fitted with 4-21-inch torpedoes. Oil capacity 78,000 gallons. Turbine engines of 25,000 horsepower giving 35 knots. Complement 6 officers and 78 men. The doctrine was to fire torpedoes individually. It must also be well borne in mind that prior to the war the role of the destroyer was cast only for night torpedo attack work and that the suitable black color which they were painted was not given over for the war color shade until after the declaration of hostilities.

I cannot resist making a progressive comparison of the growth of the torpedo boats and destroyers in the two nations and present the facts on the identical progress in the United States Navy at the same time. "Jane's Fighting Ships" for 1900 acquaints us with the information that the latest English destroyers at this time were of 300 tons; 33 knots; and 235 length. The torpedo boats of the first-class were 130 tons; 140 length; 23 knots; and armed with 2 and 3 torpedo tubes. The latest German torpedo boats were of 300 tons; ^{feet} 200_^ length; 28 knots; fitted with 2 and 3 tubes, while the second rate boats were only of 150 tons. In the United States at this period were the destroyers Farragut, Goldsborough, Barry, Chauncey and vessels of that type -- 170 tons; 28 knots; 3 tubes. By 1905 England has started her "River Class" destroyers of 550 tons; 26 knots; 120 tons of coal. Her torpedo boats are of 200 tons; 25 knots; 3 torpedo tubes. Germany has increased her torpedo boats to 450 tons; 30 knots; 3 torpedo tubes; 100 tons of coal. Her torpedo boats are of 150 tons and 25 knots. In this country we note that no new

destroyers or torpedo boats have been constructed; that the navy is backward in torpedo work; that torpedoes are regarded as an inferior arm; and that the duties of the torpedo boats are largely of despatch boat character. Our 18" torpedoes of this period have a range of 1500 yards at 24 knots. For the year 1910 we note that the British have started their 800-ton destroyers of 30 knots; 2 torpedo tubes; 2 four inch guns and 4, 12-pounders. Oil is the fuel now and turbine-driven are the engines. The Germans have increased the size of their torpedo boats to 650 tons; 34 knots; 3 torpedo tubes. Jane notes that the structural strength of the German boats is great; that the trials are conducted intentionally in heavy weather; and that the vessels are seaworthy. The Ammen and Patterson class of 750 tonners have made their appearance in our navy with 29 knots; 3 torpedo tubes; oil fuel; and turbine drive. Our new 21" torpedoes had a range of 4000 yards at 27 knots.

It must be appreciated that the British destroyers used at Jutland were for the most part new vessels of 1914 and 1915, while the torpedo boats of the High Seas Fleet were not brought up to date ^{due} to the feverish activity of the German dockyards over the U-boat construction.

Little need be said about the light cruisers. Here the English outnumbered the Germans tremendously and likewise the British boats were of more recent construction and larger size, although not so sturdy.

TACTICAL ASSIGNMENT OF THE LIGHT FORCES-

In the battle both fleets were disposed into two groups, an advance unit having the battle cruisers as a backbone; and the main body with the battle line as the vertebrae. As to the destroyers on the German side, they were divided into 6 extremely mobile flotillas, according to Lieutenant de Vais, ^{Jouan,} French Navy, in his paper "The Attacks of the Torpedo Boats".

These ten boats were further divided into two half flotillas of five boats each and the half flotillas into two sections. Thirty boats of Flotillas 2, 6 and 9 operated with the battle cruisers and 31 boats ^{of} Flotillas 3, 5 and 7 plus the 1st Half Flotilla operated with the battle line. Five light cruisers operated with the battle cruisers and 6 with the main body. de Vais ^{Jovan} states that "Thus we see how the flotillas were constituted into a unique organization for attack and that they were animated by a purely offensive spirit."

The organization of the English light forces placed 12 light cruisers, 5 squadron leaders and 46 destroyers with the Battle Fleet and 14 light cruisers and 27 destroyers with Vice Admiral Beatty. The destroyers, larger than the torpedo boats of the enemy, had an armament which indicates they were constructed to protect their battle line against torpedo attack rather than to deliver attacks. The introduction of the submarine into naval warfare had necessitated the detail of destroyers to anti-submarine screens for the capital ships. To the British commanders went a greater independence of action which resulted in individual activity rather than the strict line of command of the Germans.

INITIAL DISPOSITIONS OF THE LIGHT FORCES-

The light cruisers of the British Battle Cruiser Force are noted in scouting line 4 miles ahead of the capital ships, while the destroyers are exclusively detailed for antisubmarine screen work. The heavier vessels of the 1st and 2nd cruiser squadrons are only 7 miles in the van. Certainly this disposition would not find favor today. It is my opinion that Jellicoe placed undue reliance in the ability of the Battle Cruiser Force to do his scouting for him and that he did not consider additional scouting necessary on the part of the vessels of his force. If this was his thought then sub-

sequent developments proved his hopes to have been misplaced and his troubles tremendously increased due to his lack of information and the errors of navigation. Certainly we cannot ignore that the Commander in Chief is finally forced to do his scouting from his own bridge before making his deployment.

Turning now to the dispositions in the Battle Cruiser Force of Admiral Beatty, the destroyers are again patrolling as anti-submarine screen around the capital ships, while the light cruisers are on scouting line about 6 miles in the direction of expected contact. That Admiral Beatty also had to personally develop his initial contact due to the failure of Commodore Alexander Sinclair and Rear Admiral Napier indicates that their failure to carry out the written instructions of the Commander in Chief does not entitle them to the fame and glory of their countryman Commodore Goodenough or his equally famous contemporary of other days, Captain Blackwood.

In short, the scouting lines of the British forces were, in the light of our practice, placed entirely too near to the capital ships and the indoctrination of the light cruiser commanders failed miserably in execution, save in one splendid instance of exception.

The deployment positions of the light forces are on the engaged bow and quarter of the battle line with a preponderance of strength in the van. It is worthy of note that the current instructions in the United States Navy at this writing show our deployment plan to be that of Jellicoe at Jutland. It can also be truthfully said that this deployment has never been tried in action -- for Jellicoe never had the satisfaction of all his vessels being in their assigned positions. That these positions on the engaged bow and quarter will prove to be highly dangerous in any action has been demonstrated on the game board, especially for the destroyers. Where were these forces assigned in the German formations?

As the High Seas Fleet steamed north toward the Skagge-
errak the battle cruisers of Admiral Hipper were screened
at an 8-mile radius by the light cruisers and torpedo boats
of Scouting Division 1. From that formation can be traced
the beginning of the development of the circular screening
formation in use in our service at the present time. The
German Battle Fleet came northward in column formation with
the six light cruisers, each accompanied by one destroyer,
in a 6-mile radius screen. The remaining destroyers formed
anti-submarine screens around the capital ships. As the time
passes we will note the German light forces retiring to the
unengaged side of their own line, well out of harms way and
in position to perform their well drilled maneuver of break-
ing through to the tactical offensive should their line,
under pressure, be forced to retreat. To summarize, we note
that the British cruising dispositions fell short of modern
conceptions due to the failure to use destroyers in the screen
and the short distance between screening units and capital
ships; that the deployment as planned is essentially the same
as planned for our fleet today. The German circular screen
is the basis for the one in use in our service at the present
time but it is subject to the same criticism as the British
screen in that it is too close to the force screened. The
German destroyers could be utilized up to the time of deploy-
ment as ^{an anti submarine} screen for the Main Body due to the fact that they
retired to the unengaged side of the line during action to
await their duty.

THE BEGINNING OF THE ACTION-

And so the two fleets joined in action. In the time since
that eventful day countless books have been written on the
battle. The early inaccuracies and misconceptions have
gradually been corrected and dispelled as the authoritative

accounts have been matched one with the other in the long quest for truth. I do not believe that all the truth is yet known. I do not believe that all the despatches on both sides have been made public. I do not believe that we have the final, unfurbished word as to what actually happened in many instances. And, even if the Germans did not win the battle, as some state, I do believe that we can credit them with the most searching and accurate accounts of the battle.

It is no more possible to discuss the light forces at Jutland without reference to the main bodies than it is to watch the tentacles of a lobster and not see the carcass. But the discussion of the movements of the capital ships will be fought against, interesting as they are.

All are agreed on the division of the engagement into the usual phases of the Battle Cruiser action, the Main Engagement and the Night Action. I shall abide by that precedent.

To relate all the details of all the maneuvers, contacts, actions, retreats, torpedo firings of even the light forces, is a matter which the copyist can achieve without much mental endeavor. The books have been written which will cover the facts. I have none to add. So I shall content myself with a consideration of the parts of the actions of the light forces which tend to show the adherence to doctrine -- or the lack of it; which show the initiative of the commander -- or the lack of it; which show the true strength of the torpedo as a weapon -- or ^{do} ~~the~~ weakness.

THE APPROACH AND THE BATTLE CRUISER ACTION-

Balked by bad weather, the necessity for the return to base of the submarines sent to intercept the enemy clearing his ports, the failure to use airships, all mitigated against success of a projected movement against Sunderland so the High

Seas Fleet steamed up the protecting coast of Jutland with the Scouting Group under Admiral Hipper 52 miles in the van in the hope of contacting English squadrons frequently encountered in the opening of the Skaggerrack.

Warned by the presence at sea of submarines which held back their attack, by the transmission of messages whose decoding by Admiralty officials with ciphers recovered from the sunken German "Madgeburg" indicated an important early movement of the enemy, the Grand Fleet put to sea "to be ready for eventualities". Beatty in the battle cruisers was 73 miles southeast of Jellicoe at 2:15 p.m., within a few miles of the position he has been ordered to reach when he changed course of his force to north to effect junction with the Battle Fleet. Simultaneously the German torpedo boats B-109 and B-110 are searching the Danish steamer U-Fjord which had been sighted by the Elbing and was stopped and blowing off steam. The Galatea and Phaeton had sighted this merchantman at about the same time as the Elbing so that, instead of turning to the northward with the rest of the Battle Cruiser Force, they headed over to investigate, made out the presence of the enemy war vessels -- and the battle of Jutland had commenced. That the contact had been made at this time by the easternmost scout of the ^{British} line was to prove unfortunate for the English. Ultimate contact could not have been avoided. The earlier this did happen, the better it would be for the Germans. But, in battle, one thing can be stated with a certainty -- the unusual is bound to happen, the orthodox is left for the textbooks and theory.

To the Galatea goes the distinction of receiving the first hit in the battle and to the flag officer on board the credit for making the first tactical error. After reporting the

enemy in sight the two enemy destroyers are driven off but the Elbing comes to their rescue, hits the Galatea at 2:32 after which she turns away to the northwestward without making further attempt to develop the contact although it is most important that the "large amount of smoke" which she reports at 2:39 bearing ENE should be investigated. ^{Commodore Sinclair} He is joined in his retirement by Rear Admiral Napier of the 3rd Light Cruiser Squadron and we are not to hear of these two squadrons in the battle for some time. Where is Captain Blackwood? Have these two British flag officers read their General Cruiser Instructions? At 2:32 Beatty, with the fresh memories of Dogger Bank, changes course to the SSE to cut off the enemy. Unfortunately he had previously disposed his 2nd Battle Cruiser Squadron and 5th Battle Squadron so as to have them on each bow on the northern course. Now their position is to cause him circumstantial worry. Long after this Commodore Alexander Sinclair is to radio to Beatty that he is attempting to lead the enemy to the northwest and adds plaintively: "Am I doing right?" Perhaps he is anticipating November 21, 1918, when he is to be assigned the task of leading the surrendered German Fleet between the two Allied lines into Scapa Flow. The reader is entitled to his own opinions. Hence we have the British battle cruisers, unsupported by the 5th Battle Squadron, closing the enemy without the benefit of the all-important advice from the light cruiser scouts. What are the Germans doing now? Have they read their instructions? Have they ^{the} ability to follow them unswervingly?

The Elbing turned to follow the enemy northward. As her division mates Frankfurt and Pillau received the contact message sent at 2:30 to Frankfurt the searchlight was misread and the report was translated as 24 to 26 battleships sighted. Did Rear Admiral Boedicker hesitate? No. With maneuvers showing the highest co-operation he headed to the assistance of the

Elbing to develop the information. Thus we have ⁱⁿ ~~at~~ the same incident a striking example of the right and wrong way for light cruisers to act.

Admiral Hipper with his battle cruisers closes to the southwestward in support and then takes hauls to the northwestward after his light forces, thus gratifying Beatty's wish that he may be cut off to the southward. Up goes the speed of Beatty's squadron to 22 knots. He is not the one to see the necessity for joint action and concentration. Let the ships at the foe and the devil take the hindmost. Perhaps there is just the glimmer of personal conceit and vainglorious desire in his actions. Thus the action develops. The Germans hauling to the northward and the English light forces following after their fast disappearing brothers while Beatty moves to now accomplish that which the fates robbed him of at Dogger Bank. One man stays with him and you will hear of him often for he is Commodore Goodenough, Baptized in fire at Dogger Bank, he there gave by his finished execution of the demands exacted from him the promise ~~for~~ ^{of} his deeds to come. He has read the book and he will stay in his assigned position. Now Beatty thinks he has gone far enough to the southward to cut off the enemy from Horn's Reef so he hauls around to the northeast and at 3:15 further increases speed to 23 knots. The chase is too much for him; he cannot think of concentrating; perhaps he can think only of himself. Now, the New Zealand sights Hipper's battle cruisers. But the British have been sighted earlier and soon are made out to be headed north. Hipper wants his fight and will deploy on any course to have it. How well it would have been for the Grand Fleet if this ^{action} could have been ^{fought} on the northerly course which they had now assumed. But it was not to be. Molehills sometimes become mountains and this

which is to be related is, in my opinion, the turning point of the battle and ~~is~~ the direct result of Beatty's impetuosity.

As the British have been closing to the northeastward the 2nd Battle Cruiser Squadron has been in the van and well separated from Beatty. Now it is up to them to join their leader on their starboard quarter so they haul to the southward. Hipper notes this turn on the part of the capital ships and only then does he decide to follow them to the southward. He cannot then see the other division. Hipper's turn to the southward now causes Beatty to again turn to follow and make sure ^{of} cutting him off. What a lost opportunity to bring about a preponderance of strength against an isolated unit! Now Hipper slows to 18 knots to permit Boedicker to close him. What is Beatty, unconcentrated, doing in the realm of speed? He continues at 25 knots -- and the 5th Squadron remains well distant, unable to do other than that. Beatty now orders the 13th and 9th Flotillas to take station ahead of him. This is to prove difficult of accomplishment and the fact that some of the boats endeavor to do so with belching stacks on the engaged side does not help the visibility of the good nature of the battle cruiser personnel. By 3:48 the opposing forces are engaged. Report has been made to Admiral Jellicoe of the contacts. What does he do? He feels that he cannot increase the fleet speed from the 15 knots then made due to the fact that their limited fuel will have to be carefully husbanded. This should be borne in mind. But at 3:42 he goes to 17 and at 3:55 to 18 knots. Later this goes to 20 and the battle cruisers of Hood are sent ahead. Now we go to the southward, Beatty confident of victory due to his superiority, little knowing of the Fleet of Scheer rapidly approaching from the southward.

The gods of war are not smiling on Beatty. His ships begin to be hit heavily and he signals the 13th Flotilla at

3:55 that the opportunity appeared favorable for attack. But the destroyers are having a hard time to gain their positions ahead. In the meantime Commodore Goodenough calmly established a scouting line ahead. The German scouting division 2 is driven off, retiring behind a smoke screen away from Evan-Thomas, and we find all the light forces of the Germans on the unengaged side of their line. By 4:18 Beatty makes a direct demand on the 13th Flotilla for action by ordering them to attack so as to relieve him of this terrific situation which has already brought about the sinking of the Indefatigable and the severe damage to the Lion, necessitating opening the range and temporarily halting the action. Now we are to see what the British destroyers can produce in the way of an attack with torpedoes.

Commander Bingham leads out in the Nestor and is followed by 11 other destroyers from the 13th, 10th and 9th Flotillas. Note that this evolution is not performed by distinct units. Away they go at 35 knots as from the enemy lines 15 torpedo boats emerge to counter. In the melee that ensues torpedoes are fired by both detachments. A frightful gun battle takes place. It must have been Hell out there between the battle lines. Hipper turns away; the situation of Beatty is eased, but not before the Queen Mary is sunk. Bingham gets the coveted Victoria Cross. Not to be overlooked is the fact that the British boats diverted from their attack to engage the German attack. Present practice, and most sound practice, too, is that the attack must go home regardless of anything else. There should be no diversion to fight gun duels with enemy light forces. That is a point to remember in the future. The British have fired 15 torpedoes; Two are to hit - one a destroyer and the other the Seydlitz for Hipper, in his hurry to follow Beatty turns ^{back} into the delayed attack started by the gallant Bingham. Ten ^{Torpedoes} are fired by the Germans ere they return

behind their own line. That no result comes from the German flight is not the fault of the torpedoes. Rather, it is on account of a sharp-eyed lookout on that invaluable "Southampton" which flies the pennant of Commodore Goodenough. Smoke ahead. Soon out to Beatty goes the contact. German battle fleet bearing southeast, course north. Beatty reverses course to the northward and the torpedoes run without even having been seen.

Beatty turns and runs for home. Properly so. But not so the gallant Commodore. Also properly so. Pressing on to the southward at 25 knots he makes out in the smoke and gathering mist the German ships and can obtain exact information as to their course, speed and exact composition. At 4:48 he is forced back. The range to the enemy is then 11,800 meters. Well done, Commodore Goodenough.

The next torpedo attack shows the splendid ability and initiative shown by the Germans in sensing favorable situations. Six boats of the 6th Flotilla follow the orders of Commander Max Schultz who has seen the turn of the British to the northward and realizes that not only does this place him in a favorable attack position but that his movements will be comparatively free from damage due to the blanking of the fire of the enemy. Seven torpedoes are launched but no hits are observed, two of the torpedoes being observed by the Valiant.

Thus, says de Vais, ^{Jovan} 50 torpedoes came to be fired. Only one German torpedo had hit, and that on a destroyer; two English torpedoes had found their mark -- on the Seydlitz and the V-29. In this particular attack, writes Commander H. H. Frost in an explanatory note, "there can be no doubt that the British destroyers excelled the German, despite the disorganized character of their attack. The initiative of the British captains compensated for the failures of their higher leaders.

It is true that the British destroyers were much larger and more powerful than the German boats."

The aspect has now changed with terrifying swiftness for Beatty. No longer is he superior. He must hurry to his Commander in Chief and hope that on the flight to the northward he will not have a repetition of the loss of the Blucher which featured the German retreat in the Dogger Bank. He leaves off action at 5:12 due to his haste and does not again fire until 5:40. For the Germans have concentrated and are in splendid formation while they have concentrated their light forces on the disengaged bow and beam. An opportunity for the advanced flotillas came when Hood by chance makes his contact with the enemy from an entirely unexpected bearing. "Windy corner" the British are to call this particular locality forever after. At 5:58 Hipper orders the attack. The 12th Half Flotilla launches 5 torpedoes at 6:00 at Hood's force; the 9th Flotilla launches 4 more at 6:05; and the 2nd Flotilla endeavors in vain to launch their fire but the confusion was too great and only the G-104 is able to launch one torpedo. Ten torpedoes fired at Hood's 3rd Battle Cruiser Squadron which had hurried down to the rescue. And they were all avoided, through the use of full speed and full rudder. The Invincible stops at about the time the torpedoes are crossing the English line and the Inflexible suggested that she may have been struck. There is no substantiation for this, however. But Hood's destroyers are not idle and the Shark, Acasta, Ophelia and Christopher as well as the Onslow from the force of Beatty make their attacks and the Onslow succeeds in making a hit on the Wiesbaden, while the Shark is disabled by a torpedo hit.

Two mighty fleets dashing toward each other. How is the juncture going to be made? Will the contact be so as to facilitate the deployment? But Beatty is silent. No word from

him to help his chief, now so anxious in the gathering mist. The splendid Goodenough carries on, however. He reports the course of the enemy but, unfortunately, the fact that they are disposed in line of bearing, he suffers what might be well called an optical illusion and the course signalled is in error. Then he must report having lost touch. Now where are Jellicoe's scouts? There are none. The contact of four hours has come to naught. The lack of linking vessels, well-placed scouts ahead, and favorable visibility put the British Commander in Chief in a predicament which would try the heart of the stoutest. Clashing reports had made an early deployment not to be thought of. Now there is gun fire ahead; shadowy forms loom out of the mist. There is the Lion, so close that he can be reached by searchlight. To her goes the peremptory demand: "Where is the enemy battle fleet?" Minutes pass and then the reply: "Enemy battle cruisers bear southeast". But that is not what the Admiral wants to know. Back goes the demand as first stated. Finally, at 6:14 Beatty replies: "Have sighted the enemy's battle fleet bearing south south west." Two minutes later Jellicoe has deployed on the left flank division. There may be those who feel that Admiral Jellicoe lacked many qualities. I am not one of those. Rather am I an individual who feels that, by this one clear-cut, outstanding, heroic, split second decision of deployment after harrowing minutes and hours of anxious worry, Admiral John Jellicoe became one of the truly great.

-THE BATTLE-

Just as Beatty had pressed southward with no intimation that he was being drawn into contact with the High Seas Fleet, now Scheer feels the absence of light forces ahead to warn him of danger. Hood's squadron appears out of the mist, the German flotillas in the van attack and Hipper falls back on Scheer by

a simultaneous movement of his battle cruisers. Jellicoe deploys on his left flank division as Beatty scurries between the battle lines in an endeavor to reach his station in the van that throws the entire battle line into chaos as the vessels slow and even stop to facilitate the arrival of the battle cruisers. Evan-Thomas in the 5th Squadron contents himself with a station in the rear. Well have his splendid ships behaved in the long haul northward; a better performance by other units of the Grand Fleet will not be furnished in this engagement. Commodore Sinclair in the 1st Light Cruiser Squadron runs smack into the right flank of the British battle line and in his efforts to extricate himself gets caught between two of the battleship divisions at the instant of deployment and ignominiously unwinds himself from his predicament, only to take up a safe position on the unengaged side of the battle line well out of harm's way and, it is to be hoped, out of the way of the other vessels of the fleet, who are endeavoring to be of value in maintaining the prestige of the Royal Navy. Fresh from their attack on the 3rd Battle Cruiser Squadron the German torpedo boats with the Regensburg retire to take stock of their condition and form for additional work to come. The boats which have been in the rear now press forward to the van, led by the Rostock. By 6:20 both fleets are in the ideal position for attack by destroyers of the opponent but there is now movement by either side. The pandemonium of the battle, the scurrying of ships to take station, and the driving mists all act as a deterrent.

Now Hipper turns again into a position ahead of Scheer's column. He has reported Hood's squadron at 6:10. "Guide ahead" goes to the leader of the battleship column from Scheer. And that is no stilted order to maintain course and speed -- it tells the man on the spot to judge what is best to do, and to do it.

Now the full pressure of the deployment of Jellicoe is felt by the anvil pressed against the head of the German advance and the shaft bends to the right. The rear English battleship divisions open fire, as have the battle cruiser squadrons. The "T" is being crossed with a nicety not to be dreamed of save in conditions of poor visibility. Why argue as to whether or not Jellicoe should or should not have done thus and so -- the achievement of the perfect capping position should prove an adequate answer to all save those who will not be convinced.

At 6:24 Goodenough sights the enemy battle fleet and reports its position. Well that he does for Jellicoe needs all the information available, and there are so few to appreciate their responsibility to him in this regard.

By 6:25 Hipper can stand the strain no longer and he has definitely turned to the southeast, followed by the leading battleships of the German line. By now the Rostock has brought the 3rd Flotilla into the van and she sends them on to the attack to ease the pressure on the knuckle. Commodore Michelson of the Rostock senses the gravity of the situation as he orders Captain Hollman into the kill. I can think of no better illustration of the lack of visibility at this time than that Hollman has to ask his chief in which direction the attack is to be made. Once received, he is on his way with his 7 boats. Never were destroyers to have a more favorable opportunity to thrust home than now. Turning to starboard and signalling his command to fire three destroyers, he now sees through the thick veil of smoke a column of ships only 6500 meters away. Strange, but the German boats are not drawing enemy fire. We will drive on in, then, to make doubly sure. Too bad that now he fails of greatness. For orders come from Michelson to rejoin

the Rostock. What to do? At Cape Saint Vincent Nelson broke away to head off the enemy, despite the odium of disobedience of orders. At Copenhagen, Nelson refused to see the signal to withdraw. But Hollman fails of greatness. He turns back and orders not to fire. Here we see that the man on the spot is deprived of the use of his initiative to do what he judges to be best. Fortune does not grant such favors twice to men of the Hollman stamp. Three boats, however, each launch one torpedo. The Duke of Edinburgh had to maneuver to avoid. What would have happened had 21 torpedoes been launched? I believe in subordination; I believe in loyalty to my superiors, but I also can conceive that on some occasion in the future there will come that decisive moment when I am forced to judge for myself whether or not to risk insubordination to carry on without delay an operation which will brook no delay or second thought. I shall not be afraid to make the choice and dare the deed.

Why had the attack been recalled? Rather than be recalled it should have been augmented by the 1st Half Flotilla still with the Rostock. For by now the position at the head of the bent German column is no longer tenable. Scheer must extricate his fleet. For this very situation have his ships trained long and well. It is the countermarch. Revolutionary. So it is. So much so that it is not until months after the battle that the British knew that such a maneuver had been resorted to. 180 degrees right simultaneously go the capital ships at 6:30 and the German Fleet retires westward out of the very jaws of destruction just as the Invincible sinks beneath the waves due to the fire of the Lutzow and the Derrflinger, carrying with her that splendid seaman and dashing leader, Admiral Hood. The turnaway is not soon enough to prevent the Lutzow from being put out of action at 6:37. Captain Hartog of the Derrflinger now takes over the battle cruisers and the execution

of his duties sparkles with every brilliance of superior workmanship.

Does the Grand Fleet hasten after the retiring foe? No. For many of the ships fail to note the drastic maneuver. Those who did fail to report it. Jellicoe is in ignorance of the evolution and his force carries on to the southeastward. Why the Canterbury, which had detached herself from the 3rd Battle Cruiser Squadron and maneuvered independently to the eastward of the German line failed to note the retirement or failed to report it is beyond my knowledge. Certainly the Canterbury is nearer the German fleet than the Yarmouth, flying the flag of the "retiring" Admiral Napier of the 3rd Light Cruiser Squadron. He notes the turn to the westward but makes no report. That is, until information is requested by Admiral Beatty when he furnishes the vital facts so badly needed by Jellicoe. Not that Jellicoe would have followed Scheer for he would not. Had he not specifically laid down in his memorandum that in case of the retirement of the enemy he would not be so drawn after them? But he should have known where the enemy was so as to plan accordingly.

By 6:40 the deployment of the British capital ships is completed, but by this time the German Fleet has retired and the fire is stopped all along the line. The British light forces are all on the unengaged side of their battle line -- and worthless for scouting. All but one. That one is Commodore Goodenough. What does this cessation of fire mean? Where is the enemy? No indecision here on his part and he turns the head of the famous 2nd Light Cruiser Squadron to the southward and starts out after them at 6:50. In five minutes he is under gunfire from the Koenig and the German battle cruisers but he maneuvers and goes on in so that at 7:00 he is able to report the position, course and speed of the enemy to Jellicoe. And

we now come to a part of the battle puzzling in the extreme -- the second turn-around of Scheer and the return to the general engagement, initiated at 6:55. We have all read the reason which Scheer gives for his action. I regret that I cannot believe it. More do I regret that I cannot substantiate my own belief for his actions. But I believe them so strongly that I shall present them.

Remember that Admiral Scheer, a strong character brought up in a strong school, had come to the command of the High Seas Fleet bringing with him renewed activity; dash; zeal; the fighting spirit directed at the enemy. His plan of operations was approved by the All Highest War Lord on board his very flagship. The operation on which he has long planned and is now engaged is the first of the movements of the High Seas Fleet in force in the fulfillment of his energetic offensive campaign. Now what has happened? The enemy has been met and by a brilliant tactical maneuver his vessels have been drawn back as if by magic from the fire of the capping enemy ships in the van. Can he now go home to the Jade? Is this enough of action? Will the morrow bring him a surcease from worry or must he chance facing countrymen turned hostile overnight by the tales from the ships in the center and rear of his fleet which have not yet been under fire; will they question the dash and courage of the leader who retreated before offering battle with his entire fleet? This is the trend of thought which I place in the mind of Scheer at this moment. That, and his knowledge that a brilliant move, favored by the goddess of luck, has turned the tide of battle down the pages of history. And then, too, he has made good his escape this time. What will prevent the same good fortune once more, if the British are blind to following. The decision is made. Scheer will give all hands a smell of powder and a

taste of blood. Ship's right about and into inferno.

As the German battle line hauled west, Commodore Michelson sends the 3rd Flotilla under Captain Hollman back into the breach, this time to succor the crippled Wiesbaden. For the second time Hollman must stop short of carrying out his mission, this time due to the fire of the British battle line. And again individual ships of his division persist in firing as they retire. Only four torpedoes are sent forth. Fortunately, perhaps, that they can launch that many. For the approach has had to be made near the 2nd Light Cruiser Squadron and only the fact that it is under the heavy fire of the van of the German column and has to turn back keeps it from halting the torpedo boats. Goodenough, however, sends another of his invaluable reports of contact at this time.

What is the effect of this attack, substituted for the relief work deemed foolhardy under the circumstances? We may state simply that at this time the British battle line was in a superb position, particularly the rear divisions, to severely damage the approaching German van. But Admiral Jellicoe, cognizant of the approach of the 3rd Flotilla and hearing the gunfire in the rear of his column, orders Admiral Burney to turn his squadron to the eastward and place it in column astern of the Iron Duke. Admiral Sturdee follows suit with his ^{division} ~~squadron~~. And Admiral Evan-Thomas, now being without radio reception, sees the movement of the other forces and follows suit. Thus we see four torpedo boats launching four torpedoes and causing the retirement of 15 English battleships at the very moment when they have been placed by the gods in a position of extreme tactical and gunnery superiority.

But by now the German battle line is ~~now~~ again engaged. Captain Hartog of the Derrflinger has no radio to direct his battle cruisers, but with admirable indoctrination they carry

out his wishes. Shells begin to fairly rain about the van of the advancing force. In the gathering mist which is aided by the huge smoke clouds of the 250 ships the German ships cannot make out their foe, yet stand out in relatively sharp relief against the yellow western horizon. The entire quadrant from northeast around to southeast from the Koenig is punctuated by the dull flashes of heavy guns pouring forth their avalanche of death. The "T" is perfectly capped. To continue on is sheer suicide. Even the most violent protagonists of attack must be satisfied with Scheer now. He must escape. But is there time? Perhaps, if he can but hold off the gathered hosts. So to Captain Hartog at 8:13 goes the historic despatch: "Battle cruisers turn together toward the enemy; attack with full strength. (Ram)." The death ride of the battle cruisers has begun. The order for the attack of the boats is likewise sent. Three minutes later the High Seas Fleet executes another simultaneous turn-about to the west.

Well do the battle cruisers lead the torpedo boats in for the last demonstration of the famous "Durchbruche". Flotillas 6 and 9 started the attack followed by Flotilla 3 giving a total of 17 boats. By the time Flotillas 5 and 7 had attempted to come up from the rear and join the others the propitious moment had passed and their endeavors came to naught. Likewise Flotilla 2, the best of them all, had difficulty breaking away due to mixups with scouting division 2, but finally followed after Flotilla 6. The lull in the enemy gunfire following the attack of Flotillas 6 and 9 dictated to Commodore Heinrichs that any movement of Flotilla 2 would be fruitless, so the recall was hoisted for them to obey. To summarize, what has happened? Flotillas 3, 6 and 9 have attacked, 17 boats in all. Flotillas 5 and 7 have been too far in the rear to get into action while Flotilla 2 delays until her moment has passed. Flotilla 6 fires 11 torpedoes at 7:25;

Flotilla 9, twenty torpedoes at the same time; not until 7:30 does the unlucky Captain Hollman come to action, only to find that the enemy has disappeared. A third time he turns away, and again one of his boats holds on and fires a single torpedo. So we have 32 torpedoes fired by the 3 flotillas. What is the result? As de Vais^{Jovan} so naively puts it, the action on this firing of the torpedoes is as if they had been fired almost two years before, at the time of the penning of Jellicoe's memorandum. So Jellicoe now sends out, too late to be of any good, his 4th Light Cruiser Squadron to repel the attack. It accomplishes nothing. He turns the Grand Fleet away, and the splendid German flotillas which have outdone themselves in this phase of the battle retire under the cover of smoke screens to the west. Two points away turns the English battleships, then two points more. By 7:35 ^{Jellicoe} ~~he~~ believes himself well clear of the dreaded torpedo water and turns the fleet to south by west only to find that the German torpedoes are even now enabled to reach his line. But by exceptional conditions of light and a smooth sea the lookouts are enabled to sight the tracks in time and all vessels manage by smart maneuvering to avoid the messengers of destruction. On another day a fleet may not have such "bonne chance". So ends the real battle of Jutland. So ends the opportunity of Germany to wrest supremacy of the seas from her hated rival England. So ends Jellicoe's battle against the Hun, aided by nothing; hindered by the visibility, handicapped by the failure of his light forces to carry out their duties. For Jellicoe on the morrow begins that terrific aftermatch which he so prophetically anticipated two years before.

THE NIGHT ACTION.

With the final withdrawal of the High Seas Fleet, gun action between the opposing capital ships was ended with the exception of the engagement participated in by Admiral Beatty with the German battle cruisers at 8:20. The Grand Fleet has continued on to the southwest but the failing daylight and the necessity for rapidly taking the night dispositions spur Jellicoe on to issuing his orders for the dreaded night. What is the enemy going to do? Jellicoe correctly disposes of this with the assumption that Scheer is returning to his base. Which base is he going to make? Jellicoe does not know, so he will provide as far as possible against all probable courses. Will it be wise for the British Fleet to enter into an engagement during the dark hours? Jellicoe is most decided in the negative. He considers that the Germans are superior in night fighting; that their star shells, of which the British have no practical experience, aid tremendously; that the German ships even have director fire for their secondary batteries; that their searchlight control for night attacks is highly efficient. No, a fight with the High Seas Fleet at night is not to be thought of. Well, then, he will form his capital ships in a compact formation with two divisions in each column and the three columns each separated by a mile, thus providing as far as possible against detection and attack. Now for a screen for his big ships. But will they not be subject to mistaken identify by the very vessels which they are guarding? Perhaps they may become so confused that they will attack their own battleships. Why not get them well clear by putting them in the rear of the formation, say five miles. Then they will be available when dawn breaks in the eastern sky and the Fates give him another chance at the

enemy. Then the destroyers will extend the line through which the Germans will have to break if they are to return to Horn's Reef. And if the British destroyers are blessed with such a chance at a night attack against the enemy -- well, heavy damage will be done, to say the least. Very well, then, we'll put the fleet on course south and the destroyers 5 miles astern. In the morning, concentrated and ready for the fight, we will have better luck. I wonder if such could not have been Jellicoe's thoughts as he was making his decisions. Certainly I get that impression after reading his book most searchingly. He has adopted the most reactionary defensive formation possible. No scouts out to make and retain contact; no screens of light cruisers and destroyers; all is battened down to hope for the best till the dawn. One thing he does know, although he freely admits that even at no time during the day action has the situation been clear to him due to the poor visibility and the many conflicting reports: the enemy is to the westward; may he stay there. Let us mentally shift to the Friedrich der Grosse. Admiral Scheer has had enough. Back to the Fatherland. And the night holds no terror for him. Have not his ships been drilled incessantly at the night action? Have not his torpedo boats in their many sweeps become so accustomed to the work without lights that they have the eyes of an owl? Horn's Reef is the one rendezvous acceptable to him, that his Fleet may be safe by the coming of the morning light. Then what is the course to Horn's Reef? SSE 1/4 E. Make the signal to the Main Body. And with the signal goes the term "Durchhalten" -- a most peremptory order to maintain that course, for the head of the column has been repeatedly cast to starboard as it bore the attacks of the enemy.

What to do with the destroyers? The night is the best opportunity for them to strike. Even if this will not make them available for further action on the morrow, the chance now offered must be taken advantage of. Out go the orders for a night search. Scheer is willing to accept the absence of his boats at daylight. He will be secure behind his minefields then. That is why he sent "Durchhalten". The flotillas are designated for the search and assigned areas from the ENE clockwise through SSW from the van of their own line. Only boats which had at least two torpedoes would go. Flotilla 2 and the 12th Half Flotilla; Flotilla 7, and Flotilla 5. But Commodore Michelson is unwilling to assume the responsibility so gladly taken by Scheer. He wants the boats at Horn's Reef by 3 a.m. The order to this effect which is to seriously diminish their scouting area is despatched -- and obeyed. Too bad, also, that the area allotted to Flotilla 2 should be the one least probable of offering action. For this is the unfortunate flotilla which is composed of the largest, fastest and newest of the German boats. Further, they have had no chance in action up to now. And in the sector assigned them they see nothing -- and return through the Skaggerak without having fired a torpedo. Such are the fortunes of war. The other flotillas, handicapped by ^{cleaned}unchained fires of their coal-burning boilers whose torching precludes the possibility of approaching the enemy unnoticed and which hold them down to 18 knots, make repeated contacts with enemy light forces. But a sight of the enemy capital ships is denied their lookouts. The German light forces have been definitely assigned a night search operation -- and return empty handed. They have been sent out with no thought of their being present on the morrow, yet when the morrow comes there, with the fleet, they are. Now what of the British destroyers? Jellicoe has confidence

that they can stop even a desperate attack of the German fleet to break through them. But as the hours pass, that is exactly what happens. The two Fleets converge and the long German column hits the British flotillas. Perhaps it would have recoiled, been bent by the impact. But the "Durchhalten" from the man who had on another occasion spat forth "Durchebruche" is not to be lightly cast aside. The Fleet goes through. Here, then, is the ideal situation for destroyers. They do not even have to search for their prey, it comes to them. Perhaps that is the reason for their own undoing. Undoubtedly the English destroyers wrongly thought that the contacts were with their own countrymen. That night will not soon be forgotten by the men who rode the British boats so gallantly. Historians have the picture, and the facts. It is impossible to recount the experiences of all of them. So I prefer to note here only the deeds of two flotillas -- the 4th and the 12th. Then you may know what you have a right to expect when courageous foes meet in night torpedo attacks. First, let us take the story of the 4th Flotilla and its brave commander, Captain Wintour. At 11:30 p.m., vessels were sighted which turned out to be enemy cruisers. No delay before these silhouettes barked out their guns. The Tipperary, Flotilla Leader, is severely damaged; ^{later sinks;} the Broke suffers damage to her steering gear which causes her to turn and ram the Sparrowhawk. Then, after firing torpedoes, the Spitfire collides with a German light cruiser and carries away as a souvenir of the incident 29 feet of German skin plating. But this is not all. Shortly after midnight, another contact is made, this time with the enemy 2nd Battle Squadron. Torpedoes are fired, but the same accurate and rapid enemy gunfire sinks the Fortune. Enemy battleships are next sighted. The Ardent fires a torpedo, receives heavy gunfire in return and sinks with all on board, save two, after her gallant work. Surely it is difficult for

one not present in that holocaust to be able to visualize the horrors of that night. More fortune attends the work of the 12th Flotilla of Captain Stirling.

Instead of being only 5 miles astern of the fleet during the night, the 12th Flotilla, for several reasons, found herself by midnight about 10 miles to the northeast of the 1st Battle Squadron instead of astern of it. But this was most fortunate, as variations from the orthodox sometimes are. It brought the flotilla into contact with one of the enemy battle squadrons. By 1:45 a.m., Captain Stirling sighted 6 ships on his starboard bow. Increasing speed to 25 knots and altering course to parallel the enemy to draw ahead and make his attack from the bow of his target, something not once accomplished by any other English flotilla during the night. But just then the enemy draws out of sight. But Stirling feels that his prey will return to their original course after an interval, so holds on to gain his attack position. At about 2 a.m., he reverses course and, followed by the Obedient, Marvel and On-slaught, dashes in. The other two divisions of the flotilla hold on to their course. They have been misled; the leader of the second division has his tubes trained the wrong side and must hold on until that is adjusted. In go the four boats; conditions were perfect; the return of the German destroyers at about this time caused hesitation as to hasty recognition. In to 3000 yards. 11 torpedoes are launched; the Pommern is hit by 1 or 2 of them; her ammunition explodes and she sinks -- the only German battleship to be lost. Ten minutes later the Maenad and the Narwhal make their attack and fire 4 torpedoes. No hits are made. Just where the ¹⁷ remaining boats of the flotilla went can not be discerned. However, only 6 boats were in at the kill out of the squadron. Well did they do their work. Perhaps they would have done better had their torpedoes not been set for short range shots as the German vessels noted

many of the missiles of destruction moving slowly as at the end of their run, thus making them easy to avoid by maneuvering. But no matter. The last remaining force between the German fleet and Horn's Reef is to have the Pommern as their booty ere the High Seas Fleet passes through. Too bad, also, that the all-important message to Jellicoe which makes a splendid report of the contact is never received, interfered with in its repeated transmission by the German wireless interference.

But in this terrific melee the British flotillas are so scattered that it is not until 9 in the morning that they rejoin their fleet. Most worrisome to Jellicoe, who has also lost his cruisers and the 6th Battleship Division. Such are the inconsistencies of planning. The concentrated British Fleet is scattered; ⁱⁿ their destroyers, which have been held in reserve for the morrow, justify their existence by sinking the Pommern. On the other hand the German destroyers, well trained in night search and attack, are dispersed to seek action and no thought of their subsequent use. They return empty handed and are in position on their flagship when dawn streaks the heavens. Such is the fact of the case. Small wonder I prefer the role of the historian to that of the prophet.

Teutonic persistence and obedience to "Durchhalten" win through to safety and a welcome which stirs the hearts of the German people. But not alone persistence. Do not forget the splendid preparation for the night engagements; do not forget the splendid material as evidenced by the searchlight controls, the director firing for the secondary battery; the staunchly built ships. Compare this standard of training and material with the English destroyers and their efforts. Captain Redlich of the Westfalen, a specialist on the subject, reports that the attacks showed very little training in making the approach,

in estimating the situation, in the counter-maneuvers. All attacks were executed individually. Commodore Michelson states that the attacks were executed with noteworthy boldness but with an audacity which indicated a lack of knowledge of the proper attack methods. The combination of the German scintillating excellence at maneuver and gunnery, combined with the British superficial training had permitted the seemingly impossible to occur. Well done, High Seas Fleet.

Now the foe is back in the Jade. The British have returned to their East Coast bases. Let us measure the results. Germany has lost the Pommern, through the efforts of Captain Stirling; 4 light cruisers, including the Rostock and the Frauenlob, which had been torpedoed during the night. The English had lost 3 battle cruisers, 3 armored cruisers and 8 destroyers, at least four of which went down as a result of their night encounters. What had the torpedo accomplished? de Vais^{Jouan} has summarized the use of this weapon. 74 torpedoes were fired by the British ships, including 12 by cruisers and battle cruisers. The Germans fired 109, of which 12 likewise were fired by other ships than destroyers. Only 1 German torpedo hit its target. Yet the German torpedo boats are to extricate their fleet from the worst possible predicament recorded in maritime annals. The gun hits count. Torpedo boats may achieve success through other than the number of hits their torpedoes make.

Let us not forget the light cruisers, the incomparable Goodenough and his worthy adversary Admiral Boedicker. May we profit by the errors of judgment of Admiral Napier and Commodore Sinclair. The day of the ultimate use of the light cruiser is yet to come. Who can say when that day will be?

CONCLUSION

What are the lessons we are to learn from Jutland? How can we simmer down all that we have seen transpire so that on the inevitable day in the future we may profit by our study of the merits and faults exposed by the critical X-ray eye of analysis? How can we best apply the teachings of the past to Our Fleet That Is To Be, so that on the morrow we will be ready?

As to the parts played by the light forces at Jutland we have much to learn from the errors of omission which they committed. Nor do we find any new principles involved;; on the other hand, only age-old practice. The failure of both commanders to dispose their light forces at Jutland so as to provide for adequate scouting holds our attention. With the high speeds of future actions the scouting distances must make proper allowances for this consideration. Too much emphasis cannot be laid on scouting and the consequent procurement of information of the enemy. But we cannot stop with the disposition of these light forces so as to best insure that our scouts do well their work. We must devote our best energies that this information will be properly handled through channels which eliminate duplication and permit the requisite information reaching its destination in the shortest time possible. Thought must be given to the staff organization required for the quick handling of contacts and the dissemination of reports to interested commands. Jutland showed an almost total lack of co-ordination in the entire problem of scouting. It should not be permitted in our next fleet battle. Nor should the development of the use of aircraft lull us to sleep with the abortive idea that light forces are no longer needed in scouting. They will always be needed.

The continued development of the light cruiser as a vessel in modern fleets has placed an additional restriction upon the use of the destroyer as a daytime threat through the medium of

torpedo. While at the beginning the use of the torpedo boat and destroyer was limited to night or low visibility for torpedo attacks, there have been those who felt that the time had come when those types could be used in daytime and high visibility. With the construction of large cruiser forces in all modern navies, armed with batteries of 6 and 8-inch guns, we find that the torpedo attack of tomorrow need not only surmount the difficulties imposed by the secondary defense batteries of the capital ships -- the attack must first press home through the defending divisions of light cruisers in the van or rear. Of course, the unusual is always the thing which has the best chance of succeeding, and I am not one who would say that day destroyer attacks are forever doomed. What I wish to make clear is that the destroyer attack under cover of darkness must be given the greatest thought. Jutland did show the use of the destroyer in low visibility -- and the results were all that the most ardent supporters could wish for. The British after Jutland reduced the size of their flotillas. Did not only 6 out of 18 boats of the 12th Flotilla follow Captain Stirling in? The modern British flotillas consist of only 12 boats. Other nations have followed suit. Last of all has been the United States -- and it is said that the economic reason has been the preponderant balance to sway us to that move. Certainly large squadrons can not be effectively maneuvered either by day or night. What are we doing with the night destroyer attack? Certainly not as much as should be done, if this is to be the chief destroyer maneuver. Night maneuvers without lights can always be depended upon to produce collisions, loss of life, loss of ships. But in no other way can the so-necessary experience be derived. Certainly we cannot expect to have our destroyers fulfill their functions in battle if they have not had the training in the moderate times of peace. Let the hazards

be recognized, the maneuvers carried out in detail and with intensity, the kind hand of disciplinary moderation applied to those who suffer the unkind and unfortunate fate of collision. But let the valuable night training, dangerous though it be, be carried on so that when the next battle is to be waged, we will not be weighed in the balance and found wanting. Remember, too, that the state of efficiency of a fleet is not measured alone by numbers. I would prefer to hope for success with one squadron of destroyers which had dwindled from three due to losses by collision, sinkings, etc., incurred in progressive peace-time maneuvers emulating war conditions, rather than trust to the three squadrons which have spent their nights of preparation at anchor and enter the fray numerically intact with the personnel trusting only to theory rather than ^{experience gained with} dark nights, flying spray, dashing maneuvers and the boats cleaving through. Nor will this development of night destroyer work be a matter for personnel alone. If we are to bring sure-footed reliance to the men on the bridge and at the torpedo tubes, we must develop and perfect new apparatus which will bring to us a greater sense of sureness as we dash in to the kill.

Lastly, and most important of all in many respects, let us concern ourselves with the fuel capacity of our destroyers. Remember that our present boats are constructed more or less copying the war-time boats of Great Britain. True, they have greater torpedo strength, as they should. But let us note the fuel capacity. The largest British boats at Jutland had 78,000 gallons capacity. Yet Admiral Jellicoe was continually worried as to their staying qualities with the Fleet. Keep in mind that the Battle of Jutland was fought in the more or less restricted waters of the North Sea with no long preliminary period of activity preceding the battle. The Admiralty thought so

strongly about the situation that the doughty Commodore Tyrrwhit and his light cruisers and destroyers of the Harwich Force were retained in port so as to be available in case the battle continued on into the second day, thus violating the maxim of concentrating all forces against the enemy. Now what is the problem of destroyers in the United States Navy? We find some of the existing boats with about 80,000 gallons capacity, while the maximum capacity of any destroyer now in commission is 112,000 gallons. Yet our fleet must look forward to defending the Panama Canal or the Hawaiian Islands, both places well removed from our continental limits. There may even be the possibility of a trek across the Pacific to the defense of the Philippine Islands. True, we have developed the art of fueling destroyers at sea from tankers. Too much reliance should not be placed on this makeshift attempt to increase the steaming radius of the torpedo craft. Now, with the addition of the air arm to fleets at sea we can logically look forward to seeing battles commence earlier and last longer -- than has been dictated by past practice. It will not be unusual to find fleets carrying on their air operations while hundreds of miles apart -- operations involving high speed on the part of all units. Can we then rest content with the fuel capacity of the modern destroyer in commission in our navy if it barely exceeds that of the British destroyer in the Battle of Jutland, which was continually embarrassed due to its lack of the all-important fluid? No. I think we must make every effort to change this situation in the destroyers which fly our flag in the future. By all means double the fuel capacity -- why not make it a quarter of a million gallons? Then happy will be the fleet commander who would otherwise, with his fleet of long radius battleships and cruisers, have to slow his fleet speed due to consideration for his small craft.

One word as to the disposition of destroyers in deployment. Modern practice places them on the engaged bow or quarter under the protection of the light cruisers. I question this placement. There they are frequently subjected to heavy fire from the enemy and have, perforce, to retire. Why not place them at the head and the stern of the battle line. And could not some merit be achieved from an application of the "Durchebruche" method of destroyer attack to the destroyers which are now assigned to the anti-submarine screen of the battle line? It has not, to my knowledge, been provided for in current instructions.

We are now in the ^{WW=}evitable doldrums of the peace which follows war. Just as the old-time sailormen were wont to use the calms to make full sure all gear was shipshape and ready for running in the heavy weather ahead, so should we not fall short of our responsibilities.

We must make sure that our gear is free for running, our men trained so that sudden squalls will not set our sails aback. Let us to the task, so monotonous unless we ever keep the goal in sight. It will not be enough to have the material alone ready for eventualities: our personnel must be ready, too. They must have the fundamental background of theory. But more than that, they must have that more important training which will insure immediate practical application of this theory. The time of stress will brook no delay.

Co-ordination of effort, science and skill put into full play unconsciously through that One Teacher - Experience. Not by rote, not by the matter of fact adherence to rules alone, but rather, under the inspired leadership of Genius, born of ceaseless attention to the finest detail; nurtured through years of training in the art of war; and sent forth to manhood's estate on the battle field of Victory, fired by the divine spark of Leadership. Give us the One Man who can lead us through.