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TACTICS

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THESIS ON TACTICS

The question, "Who won the World War," is one that will forever remain unanswered. The question, "Which wins a naval battle," Strategy, Logistics or Tactics is one that cannot be correctly answered with the reply, Strategy or Logistics or Tactics won it. In any combined effort it is inaccurate to state that any one of the several elements comprising the combined effort produced the final result. The statement, so frequently read, that Strategy makes possible the winning of a battle; Tactics alone wins it, is not literally true. The winning of a battle is a combined effort and no single element can be said to have won the battle alone. Proper co-ordination and combination of effort is required. Strategy alone cannot win a battle, neither can Tactics alone. Strategy and Tactics are, therefore, co-ordinate. It was seen in the Thesis on Strategy that these two branches of the art of war overlap. Strategy and Tactics are convenient terms for referring to those acts which take place in various phases of a combined effort in warfare.

Webster defines Tactics as "The art of handling troops or ships in battle or in the immediate presence of the enemy; the methods by which a commander seeks to defeat the enemy after battle is joined." This definition is fairly accurate, but the modern idea of Tactics is somewhat broader both in theatre and in scope. Tactics is now used to define those acts which are performed, not only after battle is joined, but after battle becomes probable. The movement and concentration of forces, the determination or acceptance of the field of battle, are acts referred to as Strategic. From this time on, when battle is possible or probable, the acts that follow and are a continuation of those which have preceded, are now called Tactics. Tactics, therefore, comprises those acts which

immediately precede the joining of battle as well as to those acts after battle is joined. Also Tactics comprises more than the mere handling of ships in battle. Sir Edward Hamley says, "The theatre of war is the province of Strategy, the field of battle is the province of Tactics." The Encyclopedia Britannica says, "Strategy has been curtly described as the art of concentrating an effective fighting force ---- at a given place at a given time, and tactics as the art of using it ---- when there." None of these definitions is complete. They merely give an idea of what is meant by the two terms as ordinarily used. For ordinary purposes this is all that is necessary. In the art of war, however, the precise meaning of words and their accurate and correct use is essential. It Tactics refers only to acts performed after battle is joined it should never be used to refer to those acts performed before battle is joined. No matter how short a time before. Sir Edward Hamley's statement that, "The theatre of war is the province of Strategy, the field of battle is the province of Tactics," does not get us very far on the road of clear understanding of the two terms. Does the "theatre of war" include the "field of battle?" If so, then by this definition, Tactics is inferred to be subordinate to Strategy. The definition of the Encyclopedia Britannica says nothing about a battle. This definition, therefore, is not in harmony with the other two. We are accustomed to consult a dictionary, or an encyclopedia, for the definition of a word and for its various shades of meaning. In the case of military words and phrases it is apparent that this is insufficient. The precise definition of these words, however, is of the utmost importance and the need of authoritative definition of military words and phrases is at present supplied by no publication.

A tactician must know the capabilities of all weapons which will be used in a naval battle. He must know the

effect upon their use of various elements, such as sun, wind, sea, visibility. He must know the effect upon his forces of gun fire, torpedo hits, mines, aerial bombs, etc. His knowledge must comprise everything that can affect the issue of an engagement under various conditions. This all affects tactics. Based on this knowledge a commander disposes his forces.

Certain "principles of tactics" have been enunciated which will not be copied in this paper. Certain tactical rules have been laid down for battleships and for other types. All these may be read in the pamphlet on Tactics issued by the Naval War College. The fundamental or guiding principle is very simple -- to simultaneously attack with superior force an inferior force of the enemy. Tactics deals with the application of this principle, offensively in attacking the enemy, defensively in preventing the enemy to deliver such an attack upon us. All formations, approaches deployments and maneuvers are based upon it. The tactical rules are laid down for the different units under varying conditions with the object of best accomplishing this end. These rules and principles, in general, are sound. The rules must necessarily be altered from time to time as weapons and fighting implements change. It is possible, also, that tactical rules may be found defective when tested by actual performance in battle. No matter how beautiful in theory a formation, or maneuver, may be, no matter how logical a tactical rule may appear, if actual practical test in battle does not support it, the formation, maneuver or rule must be abandoned. Our study of tactics therefore must be based fundamentally upon the tactics employed in naval battles. Here our only chance of error lies in drawing false conclusions. While the study of the tactics employed in naval battles is of great value it is, apparently, attended with some dangers. The Battle of Jutland was fought at a time when long and systematic study of naval strategy and tactics was the fashion. In no preceding war had

a naval commander been so schooled for his task. The result at Jutland is not reassuring. A superior force engaged the enemy and the result was far from a decisive victory. Was it due to too much theoretical study? Anyone may reach his own conclusion. Personally I do not believe that thorough knowledge is detrimental. It must however be coupled with something else. Fighting is essential. How best to fight is the object of all the study and preparation.

Taking the Battle of Jutland as our last great naval battle and lesson in tactics we find that much is omitted from the lesson. At Jutland there were no air planes, no air ships, no plane carriers, no submarines, no mines, no destroyer attacks worthy of the name, no idea of deck penetration, no idea of effective target angles, no idea of zones of effective gun fire and of ineffective gun fire, no concerted, simultaneous attack by all types. In all these matters we therefore learn little from the Battle of Jutland. Every one of these elements is a vital factor in modern tactics.

In this paper some of these factors will be discussed in a general way, but it should be constantly borne in mind that the discussion necessarily is not based upon any practical results in battle.

The first thing a commander of a fleet must consider when at sea facing a possible engagement is the disposition of his forces. This has been very ably discussed in the Naval Battle. In the formation decided upon the commander has so disposed his forces as:

1. To gain information and to guard against surprise;
2. To protect his forces;
3. To speedily deploy for battle.

The circular screen is the result. It is believed this is the best general formation. Study at the War College the past year, however, appears to indicate the advisability of shifting the positions of some of the units. The light cruis-

ers are vulnerable to submarine attack in their isolated positions in the screen. They should either be placed behind the destroyers or be accompanied by destroyer anti-submarine protection. They would probably be in better position if placed inside the destroyers. A single screen of destroyers is insufficient to protect against submarine penetration. Submarines may submerge, pass under such a screen and then periscope after hearing the destroyer screen pass overhead. Destroyers should be placed behind the screen to prevent submarines from periscoping. This will force submarines to remain submerged and greatly handicap their activities when within a short distance of their objective.

The screen in the circular formation is not disposed in this manner for the purpose of fighting. In order to fight, either a major attack or a minor attack, the units must take up some other formation. The object of the circular screen is largely to guard against surprise. It of course has among others, the following functions:

- (a) to guard against surprise;
- (b) to deny the enemy information;
- (c) to prevent penetration by isolated or inferior units.

It is the battle fleet in the center of the formation that is being thus protected and assisted. The screen is spread out to a radius of about thirty miles in order to give timely warning of the enemy presence or approach. In other words time is the most important factor in determining the radius. It is evident when the fleet is cruising that the warning in time is shorter for an enemy attack or approach from ahead than from the rear. It seems logical therefore that the formation instead of being circular should be a modified circular formation, the radii being dependent upon time instead of miles. This would be practically accomplished by flattening the rear of the circular formation. There appears to be no valid reason why the formation

should conform to the regular geometrical figure of a circle. The main argument in favor of such a regular formation is facility of change of course. The flattening of the rear would not interfere with such immediate change of course. If the course were changed permanently the screen flattens in the new rear and the old flattened part resumes the circular position. The flattening of the rear of the formation possesses two important advantages:

1. Quicker concentration to meet minor attack;
2. Shorter time to reach battle stations in deployment for a major engagement.

To enable submarines to reach the enemy battle line two courses of action appear possible. (1) To assist the submarine in gaining a position in advance by turning the whole formation ninety degrees or even one hundred and eighty degrees. (2) Approach at a speed slower than the speed of the submarines. In either method the commander from his advance information should calculate the probable position of the battle line when action opens and send this information to the submarines. The commander should inform his force, particularly the submarines, that the battle will probably be fought on a certain meridian or parallel and the battle course. The battle course must be interpreted as the course given or the course 180 degrees from it. The submarines then proceed to place themselves along this line and then await the coming of the enemy battle fleet. The result will be continued submarine attacks throughout the battle.

In the Naval Battle the circular screen is divided into three sectors of 120 degrees each, the sectors remaining fixed by compass bearings from the center or pivot. The reason for three sector division apparently is to facilitate deploying two-thirds of the light forces in the van and one third in the rear. Such deployment accords with the War Instructions. If

we turn to the Battle of Jutland we find that the German main fleet reversed the battle course twice. The main engagement was fought first on easterly course, then west, then east, then west. With a mobile fleet well drilled in tactics we must apparently accept its ability to reverse the battle course almost at will. In such event a fleet finding the battle course unfavorable will certainly reverse it. Thus in a few moments what was an advantage to us, two thirds our light forces in the van, becomes a disadvantage, with the two thirds light forces in the rear. Even in the preliminary deployment the sending of two thirds of the light forces to one flank assumes that we can dictate the battle course. The enemy has at least an equal chance of dictating what the battle course shall be. It seems therefore sounder tactics to dispose our light forces equally van and rear. This is at least the only logical thing to do if we are to take the offensive and forcing the battle we may with some justice assume that he will fight on whatever battle course we select. If, therefore, we are to follow the tactical principle of offensive action we should deploy our light forces in equal numbers van and rear. To do otherwise is to seek a very precarious advantage. If we decide to deploy our light forces equally van and rear the circular formation could be divided into four sectors. These sectors may be on any compass bearings from the pivot we elect. In order that they may be conveniently named, North, South, East and West Sectors our division should be 315 degrees to 45 degrees for the North Sector, etc. In the case of a circular screen protecting a convoy the reasons for four sectors becomes still greater. In the case of a convoy there is no possibility of our being able to select the battle course. We must deploy and fight at any point, on any bearing and on any battle course the enemy elects. In this case our light forces must deploy equally van and rear, therefore four sectors are practically mandatory.

An added reason for adopting four sectors instead of three is the added facility with which a sector commander may defend his sector. A minor attack in one sector thus displaces a smaller part of the screen.

Information.

A commander must have information or accept and fight under great disadvantage. It is assumed the commander receives information, while the enemy is still at a distance, by means of scouts either surface or air. Such early scouting may be considered as either strategic or tactical. It is in the area where the one merges into and overlaps the other. In any case the presence of the enemy is known in a general way, but before action it is necessary to know his position, speed, formation and composition more in detail. This is obtained by tactical scouting. This will be done by surface craft submarines and air planes. This information is conveyed to the commander by means of his "communications." Before battle is joined communication should be efficient, but during battle there is no assurance that it will be effective. In the Battle of Jutland we find that flag signals, radio and search lights all suffered. One of the German Admirals had to go to the third ship before he could find a vessel from which he could communicate. Fortunately the most vital time is before the battle opens. After the battle opens information and communication while important is less vital. With improvement in radio, interference on the part of the enemy becomes less likely. The minimum of radio communication, however, will always be sought. At Jutland we read of radio despatches being deciphered in British shore stations and then forwarded to the British forces. It is not likely that the British broke the German code in a few minutes. It is more likely that they possessed it when the battle opened. From this we learn that a battle code or cipher should be reserved and used for the first time

when battle is imminent. What the admiral does with the information is even more important than receiving it. In a modern major engagement the numbers are so large and the units so varied that it is impossible for any commander to carry a mental picture of conditions. All forces and movements should therefore be plotted. Furthermore the smoke of battle will limit the vision of the commander; the great distances will leave most of the fighting forces and the battle field out of view. Plotting is therefore the only method by which the progress of the battle can be followed. In order that the position of forces may be reported accurately and briefly and again be as accurately plotted, some system of indentifying the position of each force or unit must be adopted. The following is one method of accomplishing this in a simple manner. Furnish each vessel with what may be called battle plotting sheets. These sheets consist of squares five miles on each side. Each square is again ruled by fainter lines into one mile squares. Several hours before battle the commander sends to all forces the position of the pivot in latitude and longitude at a certain hour and directs plotting sheets to be used. The pivot is then plotted always at the point of origin at a fixed point on the battle plotting sheet. All vessels then correct their position relative to the position of the pivot and plot their position on the plotting sheet. Thereafter all plotting and navigation is done on the plotting sheet. The large squares are numbered, and the smaller one mile squares in each five mile square is understood to be numbered also in a certain order from one to twenty-five. Positions can then be reported to within one mile by merely naming the two squares, first the five mile square followed by the one mile square. The scale can be any convenient size for the area covered and the forces engaged. The squares need not be five mile. If distance in column is 500 yards a four mile square would be more convenient than a five mile square for

plotting purposes. The numbered squares could be designated as two mile or one mile square depending upon the area covered and the accuracy with which it was desired that forces be plotted. The point is that by radioing two numbers the position of any ship or force can be reported and plotted with any degree of accuracy desired. Latitude and longitude are unsuitable for evident reasons. The only requirement is to start all units at the same moment from their accurately plotted positions on the plotting sheet. Serious difficulties arose at Jutland due to errors in navigation. The reasons for all these errors is not known, but there would probably be less chance of error in using the plotting sheet than in using a chart with latitude and longitude. During battle if there are detached forces, as at Jutland, or even if certain forces are out of sight, the position of the fleet flag and the positions of such detached forces should be reported from time to time. The admiral is thus able to keep touch with the positions of all his forces, keep them plotted, and make necessary dispositions. Submarines in particular should as frequently as possible report their positions. The commander might by this means be able to lead the enemy into submarine area. The same is true in regard to mine areas.

Briefly the commander in chief should have a plotting room, a plotting force, and plot on the same plotting sheet as all vessels of his command. He should fight the battle from this plotting sheet instead of through a slot in the conning tower. It appears to be the only method by which he can exercise control of his forces before battle opens, and the only method by which he can keep intelligent track of what is happening during battle. All this requires perfection and efficiency in communications. If our fleet hasn't this perfection now they should acquire it. Our submarines in particular should be equipped with apparatus capable of communicating the necessary distance. It is the only method by which the commander in chief can have any definite

idea of their whereabouts. The planting of mines can be done with greater boldness if their exact position can be instantly reported to all forces. A number of submarines may be only a mile or a few miles out of striking distance of the enemy and the commander-in-chief might easily be able to lead the enemy fleet into them, or force the enemy fleet to turn into them by turning away from a torpedo menace. A few torpedo hits on the enemy battle line might reduce the enemy speed with the many resulting advantages.

We have seen that at Jutland there was no simultaneous and concerted attack by all forces. There were probably several reasons that caused this. The error in position was probably one of the principal reasons. The plotting sheet if used several hours before battle is joined will assist in bringing all units of a force into action simultaneously. This is important but with a large and mixed force it requires careful planning and accurate cooperation.

The next two points that will be discussed have received little attention in tactics, but in future they will probably have a vital effect on tactics, if not on ship design. They are target angle and deck penetration. The target angle of ninety degrees of course is the most vulnerable. This is the normal position of side armor of vessels when engaging an enemy directly abeam. Fire effect tables give the range of penetration for various calibers of guns when firing against armor of varying thickness at target angles of ninety degrees and less. If a vessel's armor is being penetrated with ninety degree target angle at 19,000 yards the vessel can by turning fifteen degrees protect herself from penetration. Tables, curves or diagrams can readily be constructed showing armor penetration for all calibers. By making these diagrams for our own vessels and for all vessels of the enemy we have a most valuable guide in selecting that range at which our ships suffer the least damage while

inflicting serious damage on the enemy. It is possible to select ranges at which our shots will penetrate the enemy armor while our armor is either non-penetrative, or if it is, by turning fifteen or thirty degrees, we make the enemy's shots non-penetrative. Knowledge of this factor and data at hand will show an admiral immediately what range to select for fighting, or what course to take if at a disadvantageous range.

Connected with the foregoing is the vital question of deck penetration. It is believed that our navy now possesses fuses that will enable shell to pass through bulkheads, penetrate the armored deck and explode in the vitals of a ship. If we haven't such a fuse it must be developed. Even without such a fuse shell will penetrate the armored deck and inflict serious damage. Diagrams showing ranges at which deck penetration can be inflicted upon certain vessels of the enemy are vital. Due to the heavier side and deck armor which our vessels carry as compared with some vessels of probable enemies we possess a distinct advantage if we are prepared to take advantage of it. Comparing certain vessels of our navy with certain foreign vessels it will be found that our guns have deck penetration for ranges from 33,000 to 19,000 yards and side armor penetration for ranges from 21,000 yards and under. It is thus seen that at all ranges under 33,000 yards our shells are penetrative for both deck and side armor and that none of the enemy shells can penetrate our armor. Evidently at this range we have a distinct and decisive advantage for this particular type of vessels. By constructing such diagrams and combining them for a fleet action we can readily see at what ranges we can inflict the maximum damage while receiving the minimum from the enemy. Those vessels of our fleet that would receive penetrative hits can be either turned to present a non-penetrative target angle, left at a longer range or permitted to suffer damage for the sake of inflicting greater damage on the enemy. On the other hand if our diagrams show

that at a certain range the enemy can penetrate our decks and we cannot penetrate his it is evident that we must pass through that range as rapidly as possible and lay a smoke screen for our protection while making the approach through these critical ranges. If the guns of our fleet have insufficient elevation to reach ranges which are possible for the enemy we are not only unable to engage him at those long ranges, but we ourselves are subject to deck penetration. The more nearly vertical the fall of shot the more certain are we of deck penetration and the greater will be the target presented by the armored deck. With the development of plane spotting and indirect fire the question of deck penetration will become of greater and greater importance. If indirect fire proves successful from ships as now seems probable it may be that battles will be decided beyond the ranges at which side armor penetration is possible. Plunging fire and deck penetration will then be all important. Air planes, submarines, torpedoes, smoke screens, all are forcing vessels to engage at longer ranges and in this way forcing them to develop and perhaps adopt indirect fire. Even now with airplane spotting we are able to conduct effective fire at ranges of extreme visibility. At these ranges deck armor only can be penetrated. Soon attention is bound to be directed to this method of serious damage to the vitals of a ship. The next question is naturally how can this method of damaging an enemy be increased. Three evident methods occur to mind immediately: plane spot, indirect fire, plunging fire. Plunging fire will increase the probability of hitting and at the same time increase the probability of deck penetration. Plunging fire can be obtained by high angle guns. Hence the angle of elevation of naval guns must be increased to the maximum, not only to get increased range, but also to get plunging fire. The Army obtains plunging fire from mortars. This is also the most accurate type of gun in the possession of

of the Army. The twelve inch mortars of the Army, however, have a range of only about 18,000 yards. A greater range is needed for the Navy. The Limitation Treaty, furthermore, prevents our placing such guns on our vessels. It is possible that indirect fire and the importance of deck penetration at long ranges may lead to the design of an eight inch high angle gun capable of firing thirty to forty thousand yards. Such guns mounted on fast, unarmored ten thousand ton vessels (which are permitted under the limitation treaty) and stationed five to ten miles outside of our battle line might have a decisive effect upon the enemy.

