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Charles R. Brown  
*U.S. Navy*

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## **THE ROLE OF THE NAVY IN FUTURE WARFARE**

A lecture delivered by  
*Rear Admiral Charles R. Brown, USN*  
at the Naval War College  
February 15, 1949

The title of my talk today is the role of the Navy in future warfare. In such a discussion my inclination is to immediately thrust myself into the future since the history of the past, however glorious, is of little but academic interest to us unless it has definite application in the future.

However, I find it impossible to proceed without first explaining my concept of the functions and purposes of a navy and this, in turn, inevitably leads me into a brief review of the past. So, if you will forgive me, I will broaden my subject to include the role of the Navy, or more properly expressed, the role of sea power in the past, present and future. For sea power has never meant simply navies alone. It has always meant the sum total of all weapons, installations, and geographical and other circumstances—all factors which enable a nation to control and exploit the sea during war time. One of the most important elements of sea power is shipping, in which is still carried (and for an indefinite time to come will continue to be carried) most of the men and commodities that move across the sea. It would be just as unreasoning to consider sea power in terms of warships alone, as it would be to consider railroad trains in terms solely of locomotives. A locomotive represents power—true enough—but, without cars attached, it is power with no functional meaning. And, without shipping naval efforts are equally negative. We may keep the enemy from using the sea, but that does not enable us to use the sea for ourselves.

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Admiral Brown is Chief of Staff to the President of the Naval War College.

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The history of most great wars is rich with examples of shippings' contribution to the war effort. Most of the materials that went into the British aircraft that hurled back the luftwaffe in the Battle of Britain of 1940 were brought to the scene of operation by ship. Without shipping, not all of the guns, and tanks, and soldiers, *and airplanes* in the world could have saved Britain. And the same applies to the later bomber offensive against Germany. Most of the men, and the food they ate, and the fuel and bombs needed to mount that offensive, came across on a bridge of ships. Russian might was kept in the war by the food and munitions we sent across the sea. And Japan was defeated by the great American advance that was literally floated across the vast reaches of the Pacific.

We think of Germany's role in the last war as that of a land power only. But even she leaned heavily on her shipping. She needed it in the Baltic and the North Sea for support of her Russian operations and for maintenance of her vital communications with Scandinavia. She used it coastwise between Germany, the Low Countries, and France to relieve a heavily overburdened rail and highway system. And while Italy remained in the fight and an active front existed across the Mediterranean, shipping was an indispensable means not only of handling Italian coastwise transportation, but of maintaining military communications with the Axis armies in North Africa. And I might add parenthetically, the Allied offensive against that shipping was the determining element in forcing Rommel's retreat.

But nowhere was the need of shipping so compelling as it was with Japan. It is curious that, upon the entrance of the United States and Japan into war, the daily press made full comparison of their relative naval strength, but forgot to note that Japan had never more than nine million tons of shipping with which to carry on commerce and military enterprises over a vast maritime area. It

was never enough and, with increasing losses to our submarines, aircraft and other weapons, her national economy rapidly deteriorated and then collapsed.

The ugly little tramp steamer thus occupies an important quarter of the shield of naval power. It is less splendid than the great aircraft carrier but no less vital. Both are ships and, to all the embattled nations of the last war, there was nothing quite so valuable as a ship. And it will continue to be so in the future. It is a fundamental law of Physics. That is, you can build a huge tub—call it a hull if you will—and float it on the surface of the water. It floats by itself, mind you; it requires no power to keep it afloat. You can fill it up with goods, or guns, or airplanes, or soldiers, and with relatively little power you can move it cheaply to any point you wish. There are no rails or roadbeds to worry about, no mountains to cross, no tunnels to dig. It is by far the cheapest and easiest means of transportation known to man. And the more our civilization advances the more we will come to use this cheap and easy road of the sea for all of our bulk transportation.

We are all familiar with the role of the naval airplane in the last war. It was used for search, observation and reconnaissance in every phase, and so distinguished an officer as Admiral Spruance has expressed the opinion that photographic reconnaissance alone provided us with a wealth of vital material which could never have been hoped for in the past and without which countless lives might have been unnecessarily expended. The airplane also proved an invaluable weapon in anti-submarine warfare, both in its own right and as a closely articulated member of air-surface hunter-killer teams. But it was with the aircraft carrier that the naval airplane achieved its most dramatic successes, for the part played by our carriers was dominant and indispensable. They assured us a concentration of air strength possessed of extreme mobility, range and endurance. They spearheaded and supported our amphibious ad-

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vance at every long step in the Pacific. The immense distances and widely scattered defenses offered great opportunity for the employment of these mobile forces which struck at great range and left all but selected targets by-passed and isolated. In a war in which command of the air was essential, they never failed to gain that command at the required time and place. In a naval war, they destroyed the enemy fleet and annihilated the air power of that fleet. In an amphibious war, they excelled in the direct support of troops. And all of these things, combined with the mobility and long sea-keeping ability of the American Fleet, gave their attack a feature of continuous initiative and surprise revolutionary in the progress of warfare.

Furthermore, we have now crossed a threshold. Using atomic bombs and other new weapons of science, the flexibility and destructiveness of the carrier airplane has been increased many fold. And the Navy, no longer shackled by the historic barriers of the shoreline, can now strike telling blows deep in enemy territory. For, with no intention of detracting from the land-based airplane but in simple justice to its carrier-based sister, it must be recognized that the aircraft carrier task force provides the only truly mobile air force in the world. Not only the aircraft themselves, but their fields are capable of rapid movement. It is therefore, a force with all of the peculiar advantages of mobility such as the ability to concentrate and the ability to achieve surprise while the land-based enemy struggles to redeploy aircraft scattered over hundreds of fixed fields which may be separated by thousands of miles. Redeployment of aircraft to meet such threats is next to impossible, so the blow must be absorbed by local defense forces. To be effective the enemy must be strong everywhere, a most difficult thing to achieve.

To state it in another way, the aircraft carrier may be said to gather up and coordinate all the principles of war and employ

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them with prime emphasis on the principles of mass, movement and surprise.

The carrier's compact, self-sufficient organization gives conditions very difficult to obtain ashore, particularly in advanced theaters. The aircraft receive excellent upkeep and repair, and the air crews live in surroundings which enhance efficiency and morale. Air operations are served by a highly compact intelligence and communication organization which permits up-to-the-minute briefing prior to take-off and precise control in the air. Cruising in enemy waters, the task force is protected by its fighter patrols, a certain number of which may be airborne during daylight periods, and by its night fighters during darkness. These fighters are directed to their interceptions by highly trained personnel using excellent radar equipment. Radar picket vessels and airborne early warning sets extend the effective range of this radar many miles beyond the task force. Such enemy aircraft as can penetrate this fighter plane defense are met over the task group by a truly tremendous concentration of anti-aircraft fire which, directed by radar, denies the enemy planes the advantages of cloud cover and darkness. The heavier shells, of course, are influence fused and explode when passing within lethal range of an aircraft. An average fast carrier task group of the last war had a concentration of over 1600 guns to use in its defense. When translated into fire-power, gentlemen, that means over 6,000 bullets per second or just under 200 tons of steel every minute. This, in its ability to deliver hot metal, surpasses any conceivable concentration of artillery ashore. It was positively brutal and it is small wonder that even those Japs who were not suicidally inclined grew to consider an anti-carrier mission as almost automatic enrollment in the Kamikaze Corps.

Before leaving the carrier, I would like to point out that the carrier-based airplane is not and should not be considered as a rival of the land-based airplane. The two are capable of a bril-

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liant partnership which can multiply rather than add to the overall effectiveness of our effort. For in war, as in any organic phenomenon, the whole is infinitely more than the mechanical sum of its parts. Land-air power can and does operate over the seas and not only should this be recognized, but it should be welcomed and utilized to the fullest. By the same token it should be equally apparent and gratifying that sea-air power can operate over the land with equal facility and effectiveness. The defenses of the enemy can be spread thin by the more varied direction of sea-air power's attack making easier the more inflexible approach of land-air power. On the other hand, land-air power, by the crushing weight of its sustained offensive, can aid and abet these rapier-like thrusts of sea-air power. There is no duplication unless it is the duplication of the "one-two" punch.

New weapons have had a profound effect upon the thinking of us all. The blinding fury of atomic warfare unhappily represents man's most significant conquest since the discovery of fire. The historic balance between offense and defense has been utterly destroyed. To deny the impact of this on naval thinking would be downright folly. Indeed it would be courting disaster.

Every new weapon is a challenge to sea power; a challenge to recognize it, utilize it, and defend itself against it—or perish. Even those new weapons of the last war enormously complicated our problems. They opened new avenues to us, closed others, and in many cases circumscribed the profitable employment of the Navy. Today, we have atomic fission. Tomorrow (when it comes and it will come) we will have the ultra-long range guided missile with an atomic head. We must, all of us—ground, sea and air—learn how to utilize these weapons and how to defend ourselves against them. Victory or defeat, when and if we must fight again, will hinge upon the degree of our success in doing this.

By the same token we must never permit our enthusiasm for the new to cause us to prematurely discard the old. Certainly, we must cast away garments which are moth-eaten. But we must avoid swapping a serviceable coat for a new one that does not fit. Our job is to sharpshoot; setting our sights neither too high nor too low. We must come forth with the most nearly correct answer obtainable. We are no longer blessed with unlimited resources, and we must be certain that those we have are divided in the most effective manner.

In remembering that the war of tomorrow is to be fought with new weapons, we must not forget that so was the war of yesterday and the day before that. The unrelenting progress of mankind causes continual changes in weapons. Drastic change has been so persistent during the last one hundred years that (if I might be permitted to coin a phrase) change may be said to have become one of the constants of strategy.

And a review of the past will warn us against the dangers of being too quick to discard as well as too slow to adopt. For example, the opinions expressed between the last two wars on the role of air in sea operations were too often founded on theory motivated by personal prejudice. And to a large degree the utterances of both visionary and reactionary were ultimately proved false. Those who planned on naval engagements after the fashion of Jutland and Trafalgar were bitterly disappointed. Those who scoffed at the menace of the airplane saw their dreams go up in the black, greasy smoke at Pearl Harbor. But those who proceeded, because of the startling successes of submarines and aircraft, to paint with reckless brush pictures of war taking place wholly in the air or wholly under seas were found to be equally wide of the mark. False proclamations were issued that navies were obsolete, that the heavy bomber would interdict all sea lanes, that no ship could op-

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erate within reach of land-based airplanes, and so on; predictions which were not borne out by the experience of any warring nation.

Technology marches on a broad front. Its progress is not confined to those few implements which, today, seemed favored of the gods. Those implements which, today, seem threatened with extinction may sometimes use the same technology to develop tomorrow new means of offensive usage, thus furthering their intrinsic merit, and new means of defending themselves, thus continuing their useful life. What we will then have will not be a return to the conditions of yesterday, but something new and distinctive.

It is a great misfortune that a discussion such as this can seldom be indulged in without creating bitterness which generates resistance and, in the end, delays progress. The simple fact is that change must occur. To ignore it is disastrous. But revolutions are seldom as complete as revolutionaries hope, and the wise man must travel the unpopular and little publicized middle road, being neither lulled by the wishful thinking of black reactionaries, nor swept away by the rantings of wild-eyed enthusiasts.

But enough of the present. Let us look into the future. And as we look into that future we see many factors affecting the employment of navies. But during the foreseeable future it is equally clear that there will continue to be a place for navies—both their surface and air components. Indeed, so long as there are oceans there will be ships. No serious student of sea power (and these students are by no means confined to the naval profession) has yet to suggest that sea power is on the way out. It was no “happenstance” that the greatest of all air wars and the one which saw the most titanic land battles of all times was also the greatest of all sea wars. World War II saw sea power reach its heights in its influence on history; not alone in the magnitude of operations, but in the degree to which those operations contributed

to final victory. And, in any great war in the future, sea power is still as certain to be decisive as it formerly has been. Indeed, the greatly increased quantity and complexity of equipment to be used in future wars makes sea power even more important than ever before. Just as an army is useful in land warfare, for those who propose to fight across the seas, a navy is a necessary possession. In the hands of an intelligent and understanding high command it is an invaluable weapon. And I might add this:

Sea power is the friend, ally and indeed the proud servant of air power. For, with the aid of land power, it can seize, develop and support overseas air bases close to an enemy, thereby multiplying the effectiveness of air power by many, many fold. For if we cut the distance a bomber must fly in half we multiply its effectiveness by four. If we cut the distance down to one fourth, we multiply its effectiveness by sixteen. In other words, given the same size air force, we will have sixteen times as many bombers to fight a war at this range (indicating) as we would have if we were forced to fight out at this range (indicating).

This old law of mathematics applies to all weapons from the bow and arrow to the guided missile. The day of the long range guided missile is still many years in the future but, when it comes, navies will still be needed to take it closer to the enemy. Modern weapons are enormously expensive. This is true whether we are speaking of a jet bomber costing several million dollars or an atomic bomb the cost of which is a measurable percentage of our national effort. We must not waste them trying to hit a target thousands of miles away when we have the means of getting much closer.

So much for the foreseeable future and, for that matter, the predictable future which lies just beyond that. But what of the speculative future—the “wide blue yonder”, the day of the ultra-

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long range guided missile with an atomic head—what about sea power then?

First, let us examine the most accepted version of warfare in the atomic age. It seems universally conceded that, with our present type of government, we must accept, not deliver the first blow. I decline to subscribe to this gloomy view but, however you view it, such warfare is not attractive. Cities will be vast catastrophe areas, and the normal channels of communications and transportation will be in unutterable confusion. Even the smaller towns and the rural areas, though perhaps not struck directly, will be in varying degrees of confusion and disorganization due to the collapse of the metropolitan centers with which their economies are intertwined.

Of course, a great deal can be done in the way of passive defense, such as going underground and decentralizing and reorganizing vital industries and services, and adopting other methods to avoid complete paralysis of the nation. But the idea that a nation, after weeks of atomic warfare, could achieve a fraction of the production of America, during World War II simply does not make sense. The atomic war must be fought largely with stockpiles of arms in their finished state. Stockpiles of raw materials may be practically valueless; just as useless as that huge pile of gold we kept buried in the ground throughout World War II. And incidentally, let us not forget that gold too was once an essential sinew of war, and it is most doubtful that our forefathers ever foresaw the day when it would not be.

Thus it can be seen that our ability to strike back after an atomic attack will depend upon the degree to which our armed forces have made themselves independent of the urban communities and their industries for supply and support. In the past our military establishments have simply been cadres which underwent

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enormous but slow expansion after the outbreak of war. Such expansion cannot take place after an atomic attack. The idea that must be hammered home above all else is that practically the only forces which will be able to fight after an atomic attack will consist of those already in uniform using the arms and equipment already in the arsenals. And those arsenals must be in caves in the wilderness or otherwise suitably dispersed, hidden, and protected.

It has been suggested (and the suggestion seems sound) that the forces which will fight in an atomic war should be divided into three elements. The first will be the "Retaliatory Force", which will return the bombardment with our own atomic weapons. This force must remain in sharp isolation from the national community. Its functions must not be compromised in the slightest by the demands for relief from the stricken areas. The "Retaliatory Force" must either be a highly mobile sea force or one which has been scattered over a large number of dispersed reservations. Possibly it will be a combination of these two, but if a portion of the "Retaliatory Force" is to occupy reservations, each reservation must be of a considerable area to permit atomic explosives and their carriers to be secreted and protected as much as possible by underground storage. The entire "Retaliatory Force" must have a completely independent system of inter-communications, since the supreme command may have been eliminated or its communications disrupted almost immediately.

The second force will be known as the "Defensive Force". Its mission will be to resist invasion, to defend against the bombardment of atomic missiles by whatever scientific means that have been developed, to organize the relief of the stricken areas, and to administer the interior along as nearly constitutional lines as possible. Here, if anywhere, is the place for the citizen army. But it must be admirably trained and capable of at least local mobilization. There will be no time for training and nation-wide mobilization once

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atomic warfare starts. Perhaps the old ideal of the minute man with his musket over the fireplace will be resurrected in suitably modernized form. In any event, adequate provisions will have to be made for local mobilization, for maximum decentralization of arms and supply depots, and also for decentralization of tactical authority. Strategical rather than tactical concentration will be necessary to avoid high spatial density of military forces. And it must be again emphasized that the arms, supplies and implements of transportation to be depended upon will be those stockpiled in as secure a manner as possible.

One more word about the Defensive Force, there is a popular school of thought today that atomic war necessitates emphasis on pure defense and the expenditure of vast sums on defense alone. I cannot go along with this despite the hypothetical proofs advanced. History is too replete with instances of the "Maginot Line" theories that have fallen before a dynamic and well conceived offense. I do not mean to say our defensive forces will be unimportant, but no aggressor nation will be discouraged from attacking us because of the excellence of our defenses alone. She will be far more deterred by visible evidence that we have the offensive potential to deal her decisive blows.

And it is therefore to the operations of the third force known as the "Offensive Force" to which your most thoughtful attention is invited. The outcome of the war, the decision as to who is victor and who is vanquished (a sorry distinction at best in times of atomic warfare) will depend upon the strategic situation existing after about the first sixty days of war. I know of only two factors influencing the strategic situation after the first sixty days of atomic war. One is morale, always a gambler's choice when dealing with the speculative future. Building up a national morale of such toughness and resiliency that it can withstand the shock of this type of warfare is a matter of supreme importance to the mili-

tary thinker, but it is beyond the scope of the present discussion. I mention it now simply to indicate my recognition of the problem.

But let us return to the remaining factor influencing the strategic situation after the first sixty days of atomic warfare. This factor will be based upon the degree of success of the "Offensive Force". Remember the "Retaliatory Force" is engaged in bringing the enemy down to our own level. The "Defensive Force" is avoiding utter chaos. If the "Offensive Force" can seize and rapidly develop a section of enemy territory *which dominates the enemy's vital areas* then that force will be in a position to continue the *initial* retaliatory bombardment on a far more effective scale. Not only that but it will relieve pressure on the homeland, since much of the enemy's resources must be directed against the captured area. Thus we draw double on our money since the effectiveness of our own bombardment is increased while the effectiveness of the enemy's bombardment is decreased.

Obviously, the "Offensive Force" must be completely professional and trained to the utmost degree. The target to be seized must be of a considerable area but, since the forces available will be limited, it must also be one which can be fairly easily conquered and even more easily defended from reconquest. And it should be repeated that it must be one that dominates the enemy's vital areas.

Extreme swiftness of invasion will be of inestimable value. This makes the employment of air power most inviting and unquestionably it will be utilized to the limit. But the invasion, occupation, development and support of a considerable area solely or even chiefly by air would be an incredibly difficult task, even if we assume a minimum of air opposition. The task of the offensive force is obviously one tailored to sea power. But it must be a sea power geared to atomic warfare. Its organization, legis-

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tics and tactics must conform to the requirements of atomic warfare. Ordinary harbors and ports as we know them will be useless. Supplies, replacements and spare parts must be loaded over the beaches from dispersed, hidden and protected arsenals. All ships must be kept adequately dispersed at all times—even prior to the outbreak of hostilities. The invasion force itself must be already embarked, or at least capable of swift embarkation from hundreds of isolated points for, almost immediately, all ships must be ready to proceed to predetermined rendezvous and from thence to the chosen objective, where a swift invasion will be undertaken utilizing surprise to the utmost. It will be an herculean task, involving not only the seizure of territory but its development with incredible rapidity into launching sites suitably separated and adequately supplied.

There briefly sketched, is one version of warfare in the atomic age. As mentioned at the beginning, it is not a pretty picture. It is unnecessary to say that we all most fervently hope the world will be spared this Armageddon. But in the calamitous event that it cannot, our job as always will be to win the war. We must realize that a reasonable state of readiness by past standards may invite disastrous defeat in the future. During the transitional years that lie ahead of us, our thinking and our planning must remain broad and flexible to insure that we achieve a maximum state of readiness at all times.

Perhaps most of you will feel that I have painted a much too gloomy picture of the future. Well, I agree. I have my personal doubts that atomic warfare, horrible as it may be, will ever reach the cataclysmic proportions I have outlined. But a good planner must plan for the worst and hope for the best, and I have simply chosen the worst situation so that we might examine the role of sea power under such conditions. Actually, as I have said, I question the ability of even the atomic bomb to so completely

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destroy such vast areas as our land presents. Further than that, I refuse to subscribe to a doctrine of despair. I decline to accept it as our inescapable fate that we must suffer the full measure of destructiveness this terrible weapon does possess. I heartily subscribe to the homely old saying that: "There ain't no holt what can't be broke." Science presented us with atomic warfare. Science must provide defenses against it. She may not, indeed probably cannot find a complete answer, but she *must* give us something which will offer humanity a more reasonable chance of survival than the measures that I, as an unscientific student of warfare, have been able to outline today.

But, whatever the specific changes indicated by atomic warfare, this much is clear. Our military leaders must bestir themselves to a wholly unprecedented degree in revising military concepts inherited from the past. They must be prepared to dismiss as possibly irrelevant lessons learned the hard way in the last war. This will not be easy. It would be much easier if we had lost the war, or had our leadership been stupid, blundering or marked by unnecessary delay in adjustment. But such a judgment is not correct in spite of the malicious slander of lesser men. I do not contend that no mistakes were made. But, on the whole, our leadership was unquestionably brilliant and remarkable in its flexibility. Our ground forces proved to be masters of mechanized and amphibious warfare, our navy was not found wedded to the battle-line, crossing-the-"T" type of warfare (and don't let anyone ever tell you that, no matter who he may be—no navy ever handled air power more intelligently or effectively) and our air force, though sincerely wedded to the theory of pure air power, rendered timely and invaluable close air support to the sister services.

The problems we face today have grown too great to be solved by the "specialized" thinking of the past. The crying need

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today is for large numbers of military thinkers who collectively will represent a “super” Clausewitz or a “super” Mahan—brilliant strategists, not of land power, not of sea power, and not of air power, but able broad-gauged individuals who can view the whole picture of *military* strategy and come forth with well-reasoned and dispassionate answers to the warfare of the future. I am not speaking of a super general staff, but of the leaders within the several services. Perhaps such paragons can be found just as great needs in the past gave us an Abraham Lincoln or a George Washington. But they will not come unless the irresistible urge is built up to find them, to know whom we seek. This means that those of us of the military cloth must cease our “compartmentalized” thinking. We must realize that we are not, per se, army officers, naval officers, or air force officers. We are *military* officers (and by God we are Americans too!) and we must, each of us according to our several talents, strive to see the broad picture without personal or service bias.