

# The Nation's Achievements During Two Years of War

## in research, production and fighting

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**E**VEN in ordinary times most of us find graduation to be a pretty exciting experience; but to graduate, as you gentlemen are doing, in the midst of the most devastating war the world has ever seen, plunges you into unlimited opportunities for accomplishment, adventure, and service to the human race. To many of you the far horizons of today will soon become familiar ground; strange lands and strange people will play vital parts in your lives; undertakings, which today are wholly unknown to you, may soon become commonplace. The primeval struggle for existence on which you will embark will not always be pretty; but it will be real and vital and exciting; and it will make heavy demands on all of your best qualities—courage, adaptability, perseverance, ingenuity, honesty, and loyalty. . . .

I think we may accept as a truism the statement we hear on all sides—that the world struggle is on such a vast scale that no one—literally no one person—can visualize all of it. We can study charts and statistics and comparative figures from which we can make plans and predict results with a certain degree of confidence. We may even see for ourselves huge fleets of ships; a steady stream of aircraft passing overhead for hours at a time; armies of such size that days and weeks are required to pass through a given port; supplies and munitions overflowing all available storehouses and piled in dumps that stretch for miles along the road. It is another question, however, to visualize fully all of the people and forces and figures that we have to deal with and to understand the multitudinous readjustments that must be made in the mechanics of world society to enable such enormous forces to operate. Armies of many millions; air forces and merchant ships in such huge numbers that only two years ago our enemies scoffed at our then goals as fantastic; navies doubling and redoubling in size in less time than formerly was required to build a single ship; trucks, tanks, guns, and supplies of all kinds rolling out in overwhelming numbers and pouring to the scene of battle with a force and power that will not be denied. . . .

I have been freer to move about than most of you, and I shall try to tell you of some of the accomplishments that I have seen outside the country.

In the early months of the war I was in command of a Carrier Task Force in the South Pacific. We were the first United States Naval Force to reach the Coral Sea. Like the whalers of old, we cruised about for nearly 60 days without ever coming to anchor or sighting a port. All of our fueling and transfer of stores was accomplished well out of sight of land with a weather-eye open for enemy submarine attack. We kept out of sight in the hope of catching a portion of the Japanese Fleet by surprise away from the coverage of his landbased planes; but we also stayed continuously at sea for the very simple reason that there was not a single harbor west of Pearl Harbor where our deepest draft vessel could anchor with security against enemy submarines and without undue risk of piling up on a pinnacle rock. As it was, we had to navigate waters that had not been surveyed for 150 years. At times our aircraft had to scout ahead to warn us of uncharted shoal water. Now, less than 18 months later, we have a complete chain of strongly defended bases

with many good harbors stretching from California to Australia. From these firmly established bases, our forces have made fine progress in launching the relentless closing-in on Japanese aggression. In the short period of 18 months harbors have been surveyed; defense forces have been made secure; supply bases set up; airfields placed in operation; barracks, hospitals, movies and recreational facilities have followed the flag. We now have some of the bases from which huge air forces and naval forces and armies may press home our victory. A large area of the world has been developed in a few months to an extent that in times of peace might not have occurred for centuries. Veritable miracles have been accomplished by the complete release of all of the energies of the most powerful, the most energetic and the most resourceful nation of the world.

We all know what critical sea, air and land battles have been fought in order to win for us this secure foothold in the Pacific. We can all visualize what battles still lie ahead before our enemy has been reduced to impotence and we have evened the score for his treachery and barbarity. May we never again allow a possible enemy alien within 100 miles of the island bases we may select as our strong points and outposts.

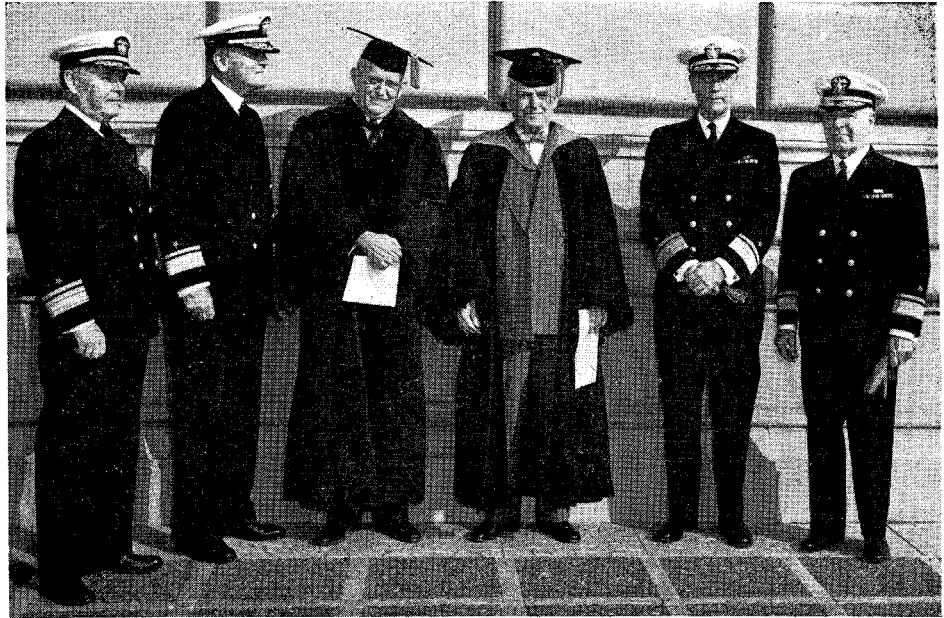
. . . . Within the past few months I have been privileged to visit the Mediterranean, the Persian Gulf area and various parts of the Middle East and Africa. I wish you all could see for yourselves what your fellow soldiers, sailors and airmen have done in preparation for the assault on the citadel of Europe. At every harbor of any size, a United States Port Authority is established with all of the equipment required for the service and supply of the United States Navy, United States transports, and United States cargo ships. At every port we were met by our Army and Navy officials. We went ashore in American launches, were driven to our destination in United States cars with United States drivers; our baggage for a considerable party was distributed with an accuracy and promptness that might be copied by some of our bigger transfer companies. We found our service men completely at home in their new environments in strange lands among strange people; eager to help the new arrival and quite ready to patronize him for arriving so late. Similarly, our chain of air bases literally encircles the globe. Wherever needed, airfields have been carved out of the wilderness, or out of the desert, or out of the jungle in spite of all physical obstacles. Whether in the tropics or in the Arctic, all of our airfields might have been turned out by the same hand; all have well-built runways and landing areas; sufficient fighters to defend the base; repair and storage facilities; reasonably comfortable barracks; laundries; movies, except at the very front; American uniforms and frank though serious American faces; and the Stars and Stripes flies from the flagstaff. Here, too, the new arrival is made welcome with careful attention to his welfare and comfort and future employment.

Armies by the millions; aircraft by the thousands; huge convoy after huge convoy of deeply-laden ships are pouring into the harbors and airports of Europe for the undoing of our enemies and for the aid and comfort of our Allies. . . .

\*An address delivered at the Commencement exercises of the California Institute of Technology February 18, 1944.

**AT RIGHT:**

Left to right: Rear Admiral I. C. Johnson, Head of Officer Procurement, 11th Naval District; Rear Admiral Ralston S. Holmes, Navy Department Liaison Officer, N.D. R.C., C.I.T.; Reverend Lloyd Douglas, Commencement Chaplain and author of "The Robe"; Dr. Robert A. Millikan, Chairman of the Executive Council, C.I.T.; Rear Admiral Wilson Brown, Naval Aide to the President of the United States, Commencement Speaker; Rear Admiral J. R. De-frees, Inspector of Naval Material, Los Angeles District.



Indeed, in addition to being the arsenal of democracy as we promised, our Armed Forces have built up a war machine more powerful in the aggregate than any other nation's in the world and our fighters are proving their superiority over our enemies in every field of combat. Our weapons and our fighters are of the best. America is on the march! We have accomplished in two short years more than our enemies have done in 25 years of deliberate, planned treachery. . . . .

. . . . . your generation will have to decide what must

be held on to and what changes, if any, must be made to meet changing conditions. The postwar period will require many major readjustments. We will pass through another phase of trial and error. New theories of government and finance will be shouted from the housetops. Old abandoned theories will be dressed up with new trimmings and new allure. The millennium will be promised by factions whose true aims may be as different as the poles. It will be hard to know what to believe and what not to believe. You will have to keep your heads and have faith that destiny and the native commonsense of our people and the ever increasing benefits of education will pull us through again as they have so often in the past.



Rear Admiral Ralston S. Holmes receiving Legion of Merit Award from Rear Admiral Wilson Brown, Naval Aide to the President, and author of the accompanying article.

I do not pretend to know why this nation has been able to do what it has done. We must agree, of course, that we have the very great benefits of material resources and favorable climate. Our founders and forebears brought with them from Europe their heritage of hope, aspiration and experience that derived from generation after generation of masses of humanity struggling for a better world. And yet, people with fine ideals have migrated to other portions of the globe without making material progress to be compared with ours. Something in our heritage gives us a deep-seated national sense of fair-play and a very real wish to help other people that inspires trust and hope and confidence among our own people and, also, among most of the other peoples of the world. My own faith in our greatness is based upon the conviction that our Constitution is an inspired document. It has served us well. I believe we must preserve its basic merits and not be in too great a hurry to throw overboard the well-tried for promising, but untried, theories. Under the shelter of the Constitution we have developed schools and colleges in such numbers and of such quality that our youth are able to take full advantage of the opportunities offered for initiative and enterprise. It is our system of education that enables our people to learn quickly the arts of modern war just as they master the arts of peace. During each succeeding generation it becomes more and more apparent how the spread of education adds to our ability to do things. When I entered the Navy 45 years ago, many of our enlisted men could not read. Everything had to be taught laboriously in oral classes. Today all of our men can learn a great deal

about any technical subject with the sole aid of properly prepared books of instruction. That is certainly one of the reasons why we can learn so quickly and accomplish so much in such a short time.

The world has known for many centuries that men cannot hope to defeat an armed foe with bare hands. It has also been recognized for centuries that antiquated weapons are pretty helpless before their modern successors. During this war, however, new weapons have developed so rapidly that one of the basic struggles has been to keep ahead of the enemy in research and development as well as to keep ahead in quantity and quality of arms and men. Fortunately for our survival and for the survival of our faith and customs and manner of living, we have never been content merely to copy weapons and methods from others. We have always done our full share in invention and development. Today, however, thanks again to our colleges and to the large number of eager, energetic, young scientists, we have set a new record that is doing so much to shorten and to win the war. Many of our war inventions will be of inestimable value to civilization in peace. All research being marked "Secret and Confidential," you have probably been greatly mystified by the mysterious comings and goings of the members of your own Research Department. I am, of course, not at liberty to disclose any secrets; but I can reveal to you what you all probably already know, that when the history of war inventions is written, the name of California Institute of Technology will stand high on the Roll of Honor. As one who has been privileged to see for himself some of the early work of your scientists, and also to follow ever since with deepest interest the use to which your inventions have been put, I tender my homage to the vision, leadership, knowledge, and sustained effort that have done so much to provide our fighting forces with some of their very best weapons. The country will hail your accomplishments when the veil of secrecy is lifted.

When we attempt to evaluate the factors that will lead to victory, we are, perhaps, apt to overrate material resources, war production capacity and total population; and to lose sight of the even greater importance of the fighting qualities of the race. There can be no question that the number of planes, ships, guns and all of the other instruments of war that we are pouring out in such vast quantities are playing, and will continue to play, a decisive part. But our greatest strength lies in the fact that we are head and shoulders above all other nations in the vast number of young people whose basic education enables them to master every technical detail of modern, scientific war and who, in addition, have the will to fight and the will to win. Our colleges throughout the nation have transformed themselves into huge training centers for our armies and navies. Other countries have some extremely intelligent, well-educated people; but among the nations at war the production of educated, fighting men and women is far below ours.

It would be fooling ourselves to suppose for an instant that you gentlemen will become competent, well-rounded officers overnight; but I say to you with all earnestness that each and every one of you can master some phase or specialty of the profession of war in a very short period of time so as to make each one of you a highly useful member of the service. College men who joined the services only a few months ago are already experienced veterans, living up fully to all of their obligations and making us all thrill with pride in their accomplishments. What they have done you can do. You have every right to

approach your new duties with confidence. However, in order to lead, and in order to command the respect of your subordinates, you must master thoroughly every detail of the particular duty to which you may be assigned. You must learn quickly more about your own job than anybody who looks to you for orders. You can do this by virtue of your previous education and training; and by the continuance of the energy and industry that has brought you to your present position. You must strike at the heart of whatever duty may be assigned you, to learn the essentials and to apply what you learn to increase the fighting efficiency of your unit. Do not allow yourselves to be confused by "red tape" or by tradition, which appears to divert you from essentials to matters of form that impede progress. Traditions and ceremony have their value and importance in time of peace. In time of war nothing must obstruct offensive and decisive action. We must always do the commonsense thing in the most direct manner possible. We must keep in mind the importance of the time element in everything that lies ahead of us. We must hasten our mobilization, our education in war, the part each one must play in our war machinery. The success of a battle, to say nothing of self-preservation, requires that reaction to emergency shall be correct, precise and immediate. It is, therefore, of paramount importance that you train yourselves and your subordinates to preserve constant alertness and immediate readiness for offensive action. War in the air, on the sea and on the land still requires the same cool nerve as was required for the winning of the west. You have got to draw first and shoot straighter than the other fellow. Our score to date shows that we can still do it. I wish you good luck, good hunting, and happy landings.

## COMMENCEMENT EXERCISES

THE commencement exercises closing the Institute Academic year 1943-44 were held at 4:00 P.M. on Friday, February 18, at the Civic Auditorium in Pasadena. The season and the setting were quite different from those with which previous graduating classes have been familiar. The candidates for degrees entered the auditorium to martial music provided by the Navy V-12 band. The candidates were followed as usual by the faculty, trustees, and special guests who took their places on the stage. Besides those participating in the exercises, the guests included Rear Admirals I. C. Johnson and Joseph R. Defrees.

The invocation and chaplain's address were given by the Reverend Lloyd C. Douglas, author of "The Robe." The principal address was presented by Rear Admiral Wilson Brown, U.S.N., Naval Aide to the President. His subject was "The Nation's Achievements During Two Years of War in Research," (see page 18).

Following Admiral Brown's address 10 certificates were awarded for the completion of the Navy Engineering Specialists requirements. The Bachelor of Science degree was conferred upon 94 men, 13 men received the M.S. degree, and nine men received the Ph.D. degree.

Dr. Millikan presented "The Progress of the Institute" starting with its founding in 1891 by Amos Throop and carrying through its development to the present. He extrapolated the curve of the Institute's development into the future, proclaiming that the Institute would be helpful in meeting the problems which will be associated with the industrial advancement of the Pacific Coast area.