1958

Brief history prepared at the time of the dedication of new Engineering School buildings, Monterey, 1956

Naval Postgraduate School

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Ref: (a) OpNav Inst 5750.9, OP-09B9 Ser: 2455P09B9 of 5 May 1959
(b) 12ND Inst 5750.1, ND12-001A of 25 June 1959

Encl: (1) Command history and appendices
(2) Legislation and Directives Pertinent to the USNPGS
(3) Dedication of Buildings, 31 May 1956 – USNPGS, Monterey, California
(4) 6 Photographs

1. In accordance with references (a) and (b), OPNAV Report 5750-5, historical material on the U. S. Naval Postgraduate School is submitted herewith in enclosures (1), (2), (3), and (4).

[Signature]
E. E. Tidswell

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minus Appendix E
HISTORY OF THE U. S. NAVAL POSTGRADUATE SCHOOL

The U. S. Naval Postgraduate School had a modest beginning at the Naval Academy at Annapolis in 1909, at which time the first class of ten officers enrolled in a Marine Engineering curriculum. Today, in its location at Monterey, California, approximately 1200 officer students are enrolled in approximately forty curricula in engineering and related subjects, in the Engineering School and the General Line School. Facilities are being planned and implemented to accommodate a total of 1400 officer students--600 in the Engineering School and 800 in the General Line School. Since 1909 the growth and development of the U. S. Naval Postgraduate School has been in keeping with its original objective of providing the Navy with officers of advanced technical education capable of administering and directing a modern Navy.

The need for technically trained officers became evident at the turn of the century. The idea of a naval graduate school had its inception in a course of instruction in Marine Engineering which the Bureau of Engineering instituted in 1904. The results of this course were so encouraging that in 1909 the Secretary of the Navy established a School of Marine Engineering at the Naval Academy in Annapolis. In 1912 the School was designated the Postgraduate Department of the U. S. Naval Academy.

The operation of the School was temporarily suspended during World War I. In 1919 classes were resumed in converted Marine Barracks on the Naval Academy grounds. At this time curricula in Mechanical Engineering and Electrical Engineering were added. With the passing years other curricula--Ordnance Engineering, Radio Engineering, Aerological Engineering and Aeronautical Engineering--were added as the Navy's need for officers
with technical knowledge in these fields became evident.

In 1927 the General Line School was established within the Postgraduate School to provide courses of instruction to acquaint junior line officers returning from sea duty with modern developments taking place in the Navy. The courses dealt with naval and military subjects for the most part. The General Line School remained as an integral part of the Postgraduate Department until the declaration of the emergency prior to the outbreak of World War II, at which time it was discontinued because of the need for officers in the growing fleet.

The enrollment in the Postgraduate School increased rapidly in the war years both in the several engineering curricula and in the communications curriculum which was added to meet the need for trained communication officers in the naval establishment. The School outgrew its quarters necessitating the building of an annex to house the additional classrooms and laboratories required. Even with this addition, the space requirements of the expanded school were not met.

The post-war program called for yet further expansion and the re-establishment of the General Line School with a greatly increased enrollment. In 1946 the General Line School was established at Newport, Rhode Island, as an outlying element of the Postgraduate School and continued until disestablished in 1952; in 1948 an additional General Line School was established at Monterey, California. The objective of the General Line School program for the re-established schools--that of providing an integrated course in naval science to broaden the professional knowledge of unrestricted line officers of the Regular Navy--continued in effect as
it had since the inception of this program. The current curriculum is designed to provide such a course of approximately six months in length for ex-Reserve and ex-Temporary officers who have transferred to Regular status, and a curriculum of nine and one-half months for other Regular officers at the end of five to seven years of commissioned service.

The physical growth of the School and its increase in scope and importance were recognized in Congressional action which resulted in legislation during the years 1945 to 1951 emphasizing the academic level of the School, and providing for continued growth in a new location with modern buildings and equipment. This legislation authorized the School to confer Bachelors, Masters, and Doctors degrees in engineering and related subjects; created the position of academic dean to insure continuity in academic policy, established the School as a separate naval activity to be known as the United States Naval Postgraduate School; authorized the establishment of the School at Monterey, California; and provided funds to initiate the construction of buildings to house modern laboratories and classrooms at that location.

In December 1948 a survey was conducted by Region IV Committee on Engineering schools of the Engineering Council for Professional Development (ECFD). As a result of this survey which was a detailed and thorough investigation of the curricula, faculty and facilities of the School, the Naval Postgraduate School was informed on 29 October 1949 by the ECFD that the Curricula in Aeronautical Engineering, Electrical Engineering (including option in Electronics) and Mechanical Engineering were accredited.

On 22 December 1951, by order of the Secretary of the Navy, the United States Naval Postgraduate School was officially disestablished at Annapolis,
Maryland, and established at Monterey, California. Concurrently with this relocation, the U. S. Naval School (General Line) at Monterey was disestablished as a separate military command and its functions and facilities were assumed by the U. S. Naval Postgraduate School. At the same time, there was established the U. S. Naval Administrative Command, U. S. Naval Postgraduate School, Monterey, to provide logistic support, including supply, public works, medical and dental functions, for the Naval Postgraduate School and its components.

The U. S. Naval Postgraduate School, Monterey, now comprises the Engineering School under a director, the General Line School under a director, and the Administrative Command under a commanding officer. In command of the Naval Postgraduate School and all of its components is a line officer of flag rank in the Regular Navy with the title of superintendent.
HISTORY

U.S. NAVAL

POSTGRADUATE SCHOOL

1909–1958
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MISSION

"To conduct and direct the instruction of commissioned officers by advanced education, to broaden the professional knowledge of general line officers, and to provide such other indoctrination, technical and professional instruction as may be prescribed to meet the needs of the Naval Service."

TASKS

Tasks to be accomplished in support of the above mission are as follows:

To provide the advanced education necessary for selected groups of officers to develop proficiency in design, inspection and installation of material, with attendant research problems, and to provide practical and theoretical training necessary for unrestricted line officers to serve in the Naval Service by:

(a) Planning, conducting and maintaining suitable postgraduate courses at the U. S. Naval Postgraduate School, Monterey, California and other civilian colleges;

(b) Planning and directing advanced professional education through the medium of the General Line and Naval Science School;

(c) Planning and directing graduate management education through the medium of the Management School.

(d) Exercise general supervision over the Naval Intelligence School, Washington, D. C.
Prior to 1909

General Order #27 of 9 June 1909 was the first formal recognition of the vital need for advanced training in technical specialties of officers of the U.S. Navy. Up until this time, in principle, Naval Academy graduates received no postgraduate instruction. Their advanced education was a personal matter, gained from experience and such unsupervised professional study as they elected to pursue. However, as early as 1881, permission was obtained by two cadet engineers to undertake a course in Naval Architecture at the Royal Naval College, Greenwich, England. In the ensuing years two or more graduates each year followed a similar program at Greenwich, Glasgow or Paris. Although there was no very definite policy established along these lines the Navy Regulations of 1893 did state that “naval cadets who show a peculiar aptitude for the profession of Naval Construction may be selected by the Secretary of the Navy for such a scientific mechanical education as will fit them for said profession.”

The "Personnel Bill" of 1899 and the report in 1900 by Rear Admiral George W. Melville, the Navy's Engineer in Chief at that time, both recognized the need for planned advanced technical education. In 1900 the first steps were taken to provide that education within the Navy's own facilities when a postgraduate course for prospective naval constructors was started at the Naval Academy under Naval Constructors Spear and Hobson. This course was soon transferred to the Massachusetts Institute of Technology. A class of instruction in engineering was organized in the Bureau of Engineering in 1904. Rear Admiral Charles W. Rae, the incumbent Engineer in Chief, in 1907 reported at that time the favorable results of the class initiated in 1904 and reemphasized the need for such specialist training. The boosters for advanced education must have experienced a sense of genuine accomplishment when General Order #27 was published.

1909 - 1917

This 1909 order transferred control and supervision of postgraduate instruction to the Superintendent of the U.S. Naval Academy. Two rooms in the loft of Isherwood Hall, which housed the Naval Academy's Engineering Department, became headquarters for the new School of Marine Engineering which had a designated head who was responsible to the Superintendent of the Academy. Ten students were ordered to the first class of the new school. Their course was planned to include: Design of Marine Machinery, Shop Practice and Management at private concerns, and Experimental Engineering and Testing.
Three years later, in General Order #233, October 31, 1912, the Secretary of the Navy directed that certain changes be made. The School of Marine Engineering became the Postgraduate Department of the Naval Academy. The Head of the Postgraduate Department was given the same general status as the Heads of the Academy's academic departments but he was not a member of the Academic Board. The courses were broadened to include those in the areas of Ordnance and Gunnery, Marine Engineering, Electrical Engineering, Radio Telegraphy, Naval Construction, and Civil Engineering. Headquarters remained in Isherwood Hall. All students were started on their postgraduate curricula within the facilities of the Naval Academy. Their final schooling in the areas of their specialties was provided in civilian universities. Students in Mechanical Engineering spent one year (three terms) at the Naval Academy and one year at Columbia University, with practical work at the navy yards. Students in Electrical Engineering also spent one year at the Naval Academy and one year at Columbia University. Their practical work took them to the navy yards, to the General Electric Company, to Sperry Company, and American Telephone and Telegraph Company. Ordnance students spent one term at the Naval Academy and rounded out their education at Bethlehem and Midvale, Schenectady, Rochester, at the proving grounds, Washington Navy Yard, Bureau of Ordnance, and various other points for special subjects. Naval Construction students spent two terms at the Naval Academy, followed by three years at the Massachusetts Institute of Technology. Students in Civil Engineering spent two terms at the Naval Academy, and two years at Rensselaer Polytechnic Institute.

In 1915, the Secretary of the Navy requested the President of the Society for the Promotion of Engineering Education to appoint a committee to make recommendations concerning the Postgraduate Department. This committee visited the Department in January 1916, and based their recommendations on situation as observed and the Navy requirements at that time. These requirements revealed 230 positions afloat which demanded postgraduate education in Marine and Electrical Engineering. At that time there were 62 graduates of the Department, approximately 40 of whom would be available at any one time to fill these positions. Training lines of the period provided for an annual input of 15 Marine Engineers, 5 Electrical Engineers and a token number of Ordnance officers, Naval Construction specialists and Civil Engineers.

The first two paragraphs of the report of this committee are quoted because of their timeliness, in principle, through the years. "The first subject which impresses itself forcibly upon the committee after a study of the situation, is the pressing need of an enlargement of the scope of this School. A modern ship of war is a great mechanical laboratory. Its construction, and its operation as well, demand a thorough training in scientific and engineering principles. Even our present Navy requires, in the opinion of the Committee, that the number of men trained in the School should be largely increased, and with the demand for a still larger Navy and an adequate state of preparation on the part of the United States to meet any foe, the necessity for an enlargement of the School is still more evident."
"In the opinion of the Committee, the School should be enlarged so as to be capable of turning out not less than 75 men annually, with provision for a still greater increase in the future. Eventually, it is probable that at least one-fourth of the students in each graduating class from the undergraduate department of the Naval Academy, will require postgraduate training. The number of midshipmen in the present fourth class is 267, so that if the above proportion is correct, there is immediate need of provision for taking care of nearly 70 men each year in the Postgraduate School."

Recommendations following this introduction therefore included: (1) immediate increase of entering classes to 50 in addition to those students assigned to Naval Construction and Ordnance; (2) construction of a new, adequate building. The committee remarked upon the work overload of the instructional staff and stressed importance of time and opportunity for research. They recommended an additional instructor in an existing course, an additional course with the resultant requirement for another professor and instructor. These additions to the staff of three professors and two instructors would provide a total of four professors and four instructors. They approved the continuation of the use of civilian institutions for the final phases of the postgraduate education. They also approved the heavier than normal schedule carried by the students on the basis of their greater maturity and the importance of maximum coverage in a limited period. One additional recommendation covered a common one-year course for Ordnance and Naval Construction students with the Marine and Electrical Engineering students.

Courses covered at the Naval Academy under the Postgraduate Department 1916-17 included Mathematics, Mechanics, Thermodynamics, Chemistry, Electricity, Strength of Materials, Machine Design, Electrical Laboratory, Testing Materials Laboratory and Engineering Laboratory. In February 1917, a course in Exposition, two lecture hours per week, was introduced for the purpose of inculcating "clear, concise and simple methods of expression with particular reference to technical reports".

Civilian educational institutions used during this period were Columbia University, Massachusetts Institute of Technology, and Rensselaer Polytechnic Institute.

In March 1917 activities of the Postgraduate Department were suspended because of the need for these officers in the operating forces during World War I.

1919 – 1942

In 1919, operation of the School was resumed in new quarters in the former Marine Barracks. Students in the MERA (Mechanical, Electrical, Radio, Aeronautical Engineering) areas reported in June; students in Naval Construction in September,
and Ordnance students the following April. A September 1921 report \(^{(1)}\) shows the following distribution of students: 27 MERA reported in June 1920 (1 resignation, 3 EDO assigned to sea June 1921, 3 receiving Radio instruction at Harvard, 4 Aeronautical Engineering at MIT, 3 Internal Combustion Engine Design, 3 Turbine Design, 2 Electric Machine Design, and 4 Electric Shop Propulsion at Columbia); 22 Naval Construction students reporting in September 1920 would be continuing this course at MIT; the 34 MERA students, who had reported to the Naval Academy in June 1921, included one officer from the Coast Guard, one from the Chilean and one from the Argentine Navy. Eight of the 34 were to take subsequent work in Aeronautical Engineering at MIT. The others would be distributed between Columbia and Harvard. The 12 Ordnance students, who had reported in January 1921, were specializing as follows: 2 in Torpedoes, 2 in Ordnance Design at MIT, 2 in Fire Control Apparatus at Columbia, 3 in Ballistics at the University of Chicago, 3 in Explosives at University of Michigan. Eight students were pursuing graduate work in law at George Washington University. This course had become a regular postgraduate course within the purview of the Postgraduate School. The report further indicates that a total of 142 students would be under instruction as of January 1922. On this September 1941 date, the staff of the School included the Head plus 3 other naval officers, and 9 civilians (3 professors, 4 associate professors, 1 assistant professor, and 1 instructor), an increase of 2 civilians in a two-year period. A course in Logic had been substituted for English. The course in Technical Composition, initially introduced in 1917 before the school activities were suspended, now followed the course in Logic. These two courses were taught by a professor loaned by the English Department of the Naval Academy.

The directive for selection of postgraduate students in engineering, dated January 1922 for the class commencing July 1922, announced that approximately 50 officers would be selected including 20 for Mechanical Engineering, 15 for Electrical Engineering, 10 for Radio Engineering, 5 for Aeronautical Engineering. In June 1922 the Bureau of Navigation Circular Letter No. 21–22 announced that thereafter two classes per year would be ordered to the Postgraduate School. The June class would usually be composed of Engineering students; the September class would be divided among Ordnance, Engineering and Naval Construction. Each class would be limited to a maximum of 60 officers, the total number and their distribution among the several specialties depending upon the needs of the service. Candidates for these classes were required to have five or more years of sea service in order to be considered by the board. Diesel Engineering was introduced in 1924, and Aerology in 1926 with an initial input of 8 officers. This course in Aerology necessitated the introduction of German into the groundwork course at Annapolis. Arrangements for the German language instruction were made on a part-time basis with St. John's Academy. Beginning in July 1925, input of student officers into all curricula was made at the same time, namely July. This single input had many administrative advantages.

\(^{(1)}\) Report from Head of Postgraduate School to Postgraduate Council dated 22 September 1921.
The changes which took place through these years, in the numbers of students assigned to postgraduate education and the areas in which they were trained, were a clear indication of the attempt to keep abreast of the technological changes in the "tools of the trade". They were probably the result also of the recommendations made by a board appointed in 1919 by the Bureau of Navigation to make a study of the instruction and training of Line officers. A footnote on the first page of this report states: "This report is published by permission of the Navy Department for the information of the service. The report of the board has been approved, but the shortage of officers will not permit the recommendations to be carried into effect at the present."

This Board considered the entire career of the naval officer. It was apparent that education was a necessity because of the multiplicity of subjects in which the naval officer was required to have a working knowledge. It was further clear that it would be both impractical and impossible to give all of the instruction which an officer would need throughout his naval life in the first, or Naval Academy, phase. They recommended four periods of instruction. The four periods included the Naval Academy, the General Line Course, the Junior War College, and the Senior War College. Of particular importance in connection with the Postgraduate School was the second period or phase, whose function they defined as "the unification and confirmation of previous instruction and experience of officers, and their progressive instruction in readiness for duties of the next higher order." It was envisioned by the Board that all officers of the Line would be Naval Academy graduates. All officers of the same class would be ordered to take the General Line Course at the end of approximately five years at sea. The curriculum of the course should bring the technical knowledge of the officers up to date in all branches and advance their knowledge of their profession particularly in matters of operation. During the line course the officers were to be watched carefully to determine in which branch each officer should specialize. A proposed General Line Course was included in the report of the Board with the recommendation that the course begin in October 1919 with the assignment of approximately 20 officers from the Naval Academy classes of 1912, 1913 and 1914. The recommendation continued that "the number of students should increase rapidly from year to year until conditions and facilities are such that a whole Naval Academy class may return for the course."

Needless to say, whatever the merits of the recommendations of the Knox-King-Pye report, they have never come to fruition as planned. The events of the passing years have necessitated many adjustments. However, the report was the foundation for our present postgraduate system. The General Line Course became a reality in 1927 with an original enrollment of 15 U. S. Naval officers and 4 officers of the Cuban Navy. By 1934 this number had increased to 134.
A Bureau of Navigation letter in 1931 expressed the policy with regard to the postgraduate education of a naval officer as follows:

"The plan for officer education contemplates that eventually all line officers shall take the General Line Course at the Postgraduate School when ordered to their first tour of shore duty, and

"From the officers who complete the one year General Line Course there will be selected a limited number of officers for a year's postgraduate training at the Postgraduate School in a prescribed specialty with the idea of developing them as operating specialists. Either from this group or from the original group there will be chosen a small number of design and production specialists in each branch who will have in addition to the second year of postgraduate work a third year of instruction at a civilian university." Through the years to World War II this plan was carried out to the maximum extent possible. New special fields were added to those already in existence as their need became apparent. In 1930 an operating communications course was introduced; in 1931, the separate courses in Mechanical, Electrical, and Diesel Engineering were combined into a single Marine Engineering Course. In 1932, instruction at the Postgraduate School for Naval Constructors and Civil Engineers was terminated and officers in these specialties received their entire training at MIT and RPI. In 1933, the course in Marine Engineering (Operating) was established.

The year 1935 shows 144 officers taking the General Line curriculum. These students were divided into groups, and their curriculum was slightly modified according to the technical field in which they would specialize. Numbers were as follows: 4 Aerology; 23 Marine Engineering (Design); 26 Marine Engineering (Operating); 10 Radio Engineering; 24 Communications; 25 Ordnance Engineering; 12 Aeronautical Engineering; the remaining officers took the unmodified General Line curriculum. During this same year, 1935, 104 officers were in their second year postgraduate work at Annapolis, studying a prescribed specialty, and 48 were taking a third year away from Annapolis, at various naval manufacturing plants and civilian universities. In addition to the above numbers were: 33 studying Naval Construction at MIT; 4 Civil Engineering at RPI; 15 Law at George Washington; and 35 in a course in finance and supply matters which had been instituted in 1934 at the Philadelphia Navy Yard.

At the time the original class of 10 students entered upon their postgraduate training in 1909 the question of location of the school was relatively unimportant because this small number could be absorbed. As the brigade of midshipmen was expanded and the postgraduate school enrollees increased, space did become a problem. The original capacity of the quarters in Isherwood Hall was approximately 30. When the School was resumed in 1919 in the former Marine Barracks the capacity was increased to 150. Subsequently
the capacity was increased to approximately 250 in 1931 by making feasible alterations to the building.

Lack of space and other factors had prompted discussion and consideration of change of location for the Postgraduate School as far back as the early '20s. Admiral H. B. Wilson, Superintendent of the Naval Academy 1921–24, strongly advocated removal of the School from the limits of Annapolis; however, the majority report in 1924 of a board of officers, appointed by the Secretary of the Navy to study this matter of location, stated that Annapolis was "the best site for the Postgraduate School" and recommended its retention there. The problem was restudied in 1931 and, once again, the majority report of the Board of Visitors was against relocation. House Joint Resolution 245, based on the findings against relocation by these two Boards, concluded: "Therefore be it resolved that it is the sense of Congress that the Postgraduate School should be kept at Annapolis, and the Secretary of the Navy is hereby directed to retain the Postgraduate School at Annapolis." There were extensive hearings on this resolution and Rear Admiral F. B. Upham, then Chief of the Bureau of Navigation, took his stand for relocation. In stating his views he quoted a portion of the minority report of 1924 in which Mr. J. T. Williams, noted journalist of the time, said: "The desirability of the transfer of the present Postgraduate School from Annapolis at the earliest possible moment is respectfully urged for the following reasons:

"Annapolis is too small a community to accommodate the undergraduates who constitute the midshipmen regiment and the postgraduates attending the Postgraduate School. Annapolis is associated in the public mind with the midshipmen. The responsibility of their morals and discipline is shared by the citizens of Annapolis. To shoulder their fair share of this responsibility is the duty of the community in whose homes the midshipmen are frequent visitors, at whose churches some of them worship, of whose stores many of them are customers, to whose places of amusement many of them go for recreation.

"Wholly different is the relationship of Annapolis to the Postgraduate School. The latter is attended by naval officers of considerable experience in the world of affairs. Their characters have already been formed. Their postgraduate work has for its paramount, if not its exclusive purpose, the training of their minds. The Naval Academy is a school of character; the Postgraduate School ought to be a naval university.

"So long as the Postgraduate School remains at Annapolis, it will continue to compete with the Naval Academy for the goodwill and favor of the Annapolis community. The morals and discipline of the Academy will continue to be a target for the criticism of the students of the Postgraduate School; this criticism will be echoed by many Annapolitans."
"Again, the midshipmen are, as one of them said, "looking toward the sea"; many of the students at the Postgraduate School are "looking toward the land".

"The best preparatory schools in the country are not to be found outside the gates of our great universities for good and sufficient reasons. The same reasons argue against making the Naval Academy a tail to the Postgraduate School's kite or vice versa.

"The graduate schools of the Army are not located at Highland Falls for good and sufficient reasons. Why, in order to be different from the Army, should the Navy place its postgraduate university outside the gate of the training school of character which the Naval Academy provides for the midshipmen?".

The differences in mission were only a part of the picture. Lack of adequate space, as numbers assigned to the School increased, and the attendant problems of housing, high rents, etc., for the individual students were emphasized in the hearings. But costs which would be involved in the move, and political interests and pressures once again defeated the proposal. The time was to come, however, when change of location of the School would become an absolute necessity, when the question would be not whether they should move it, but where they should put it.

Through the rest of the '30s the School continued to function, trying to live within the limits of a budget which showed certain curtailment probably caused by the general depression. Decommissioning of numbers of ships made it possible to assign larger numbers of officers to the General Line Course. Upon the declaration of the emergency prior to our entry into World War II the General Line Course was discontinued because of the need for these officers to man a fleet which was then expanding rapidly. Furthermore, the space at the School was required for the training of larger numbers of officers in technical areas. Thus the School continued to grow despite the discontinuance of the General Line portion.

1942 – 1951

In 1942, it became necessary to add an annex to the Postgraduate School building for laboratory and classroom space, chiefly because of the great increase in activity in the electronics field. A 418-seat auditorium was added; galleries were enclosed to make their space usable; basement space was converted for laboratories; but adequate room for the expanded school was still a problem. In one year, 1941 to 1942, the total number of postgraduate students about doubled, and these new, larger numbers remained relatively constant through the World War II years. It was readily apparent, even before the close of the war, that the Annapolis location would never again suffice. Activities of the School had not been curtailed during
the war years; they would not be so affected in the event of any future emergency. Some courses might be interrupted temporarily, but others would take their place and enrollment would have a tendency to increase rather than decrease. These realizations emphasized the fact that any new location for a permanent school should be one that would not be subject to claims of a higher priority under emergency conditions.

The selection for a new site for the Naval Postgraduate School was initiated in May 1945 with the appointment by the Secretary of the Navy of a special board to investigate available sites and make a recommendation for the relocation of the Postgraduate School. During the next four months, investigations were made in numerous localities on the East Coast, in the Mid-West, and on the West Coast. The stipulated requisites for the new location were:

(a) Adjacent to a large body of water to permit instruction and research in under-water methods of attack and defense and instruction in ship tactics.

(b) Within a reasonable distance of a deep anchorage to accommodate all types of ships for training and indoctrination purposes.

(c) In close proximity to an airfield for necessary training and experimentation for naval aviator students and to afford ready means for aviators to maintain flying proficiency in an area where climatic conditions are favorable for year-round flying.

(d) Adjacent to a large body of water for combat intelligence and electronics instruction and to permit radar sweep of open waters for tracking ships and aircraft.

(e) Near a sizable town or city, but not one too large, to effect economy in the provision of markets, stores, schools, etc., for dependents of school personnel and to permit active participation in the community life.

This Board, known as the Spanagel Board, recommended that the School be located near Monterey, California and that the Del Monte Hotel property and additional land be purchased for this purpose.

When this matter was presented to Congress in 1946, a Congressional Committee also visited numerous sites including Monterey, California; Coos Bay, Oregon; Astoria and Tongue Point, Oregon; Puget Sound, Washington, including Sand Point, Whidbey Island, and Bremerton; Portland, Oregon; Los Angeles, California; San Diego, California; Balboa-Newport Harbors; Santa Ana, California. They concurred in the recommendation of the Spanagel Board that the School be established at Monterey, California.
Extensive hearings were held in the Congress and, as a result of these hearings, on 31 July 1947, Public Law 302 was enacted by the 80th Congress. This Bill authorized the purchase of the Del Monte Hotel and various other existing buildings together with certain lands at Monterey, California. Funds in the amount of $2,500,000 were appropriated for the purchase and for conversion of existing buildings, as necessary, to allow for their early utilization to accommodate a General Line School of some 500 officers, prior to full conversion and transfer of the entire Postgraduate School.

Further legislation by the same Congress (Public Law 303) authorized the establishment of the U. S. Naval Postgraduate School. Following this legislation, the Secretary of the Navy redesignated the Postgraduate School, U. S. Naval Academy, Annapolis, Maryland, as the U. S. Naval Postgraduate School, Annapolis, Maryland, and specified that the title of the commanding officer of the school should become "Superintendent", these changes to be effective 1 August 1947.

In the meantime certain other legislative developments indicated the increasing importance and stature of the School. Public Law 250, 79th Congress, dated December 7, 1945 authorized the head of the Postgraduate School to confer masters and doctors degrees in engineering and related fields. Included in Public Law 303 of the 80th Congress was authorization for the granting of a Bachelor of Science degree in engineering and other scientific fields. Regulations governing the awarding of all degrees, revised as necessary from time to time, have been approved by the Secretary of the Navy. Public Law 402, 79th Congress, dated June 10, 1946, established the civilian position of Academic Dean of the Postgraduate School.

The reestablishment of the General Line School was not postponed until the facilities at Monterey were available. At the close of World War II the Navy was faced with obligations to the thousands of Reserve officers who had transferred to the Regular Navy. These officers required additional instruction in general line matters of seamanship, gunnery, naval engineering, administration and command, which would allow them to compete on a more nearly equal basis with their contemporaries who were graduates of the Naval Academy. It was estimated that some 10,000 officer transferees would require this course. When all other junior line officers, Naval Academy and NROTC graduates, were added, the need for an overall capacity in a General Line School was judged to be above 1200. As an interim measure, the General Line School was established at Newport, Rhode Island as a subordinate activity of the Postgraduate School. Classes were started on 1 July 1946. The capacity of the School was 600. The Monterey site, as converted with the original appropriation was to provide space for an additional 500 General Line students. The General Line School at Monterey was established in late 1947 and convened its first class in February 1948. It was anticipated that the tremendous backlog of transferred officers would have completed their basic general line education by 1954 and that, at that time, the School would be returned to its original purpose as outlined by the 1919 Board.
Experience during World War II had generated recognition of another important need, that is for a school for the training of naval intelligence officers. To fulfill this need the U. S. Naval School (Naval Intelligence) was established at Anacostia, D. C., with a starting date of 1 July 1946. This School also was to be a subordinate activity of the Postgraduate School. Original plans called for relocation of the Naval Intelligence School to Monterey when feasible, but as of 1959, such a move is no longer contemplated.

Activation of the subordinate activities at Newport and Anacostia allowed the facilities at Annapolis to be used exclusively for the advanced technical and engineering courses. Even so, conditions remained crowded. Some alleviation resulted from the transfer of the Aerology students to Monterey in July 1948, but the situation continued to grow worse. In September 1951, the Superintendent made strong representation before Congress for the Naval Postgraduate School items in the Military Public Works Appropriations Bill (FY 1952). He stated: "We most urgently need about a 40 percent increase of space now. It is vital to the successful accomplishment of a very important mission - the education of people competent to utilize the things being produced by science-research and development - on which we are spending billions of dollars. A penurious attitude toward the advanced education necessary to insure competent utilization of the things being produced by science in this day, is altogether incompatible with the recognition that is being given to the importance of research and advancement in the applications thereof - as manifested by relatively unlimited, or at least generous, appropriation. Our advanced (postgraduate) educational programs have to do with the utilization of the products of this enormous effort. To modernize the one and leave the other to fend as best it can with the facilities of a past generation just doesn't make sense."

He continued: "Administrative space, classroom space, instructor office space, all are badly over-crowded. Laboratory space is so inadequate that despite maximum possible utilization of existing space, much of the School's equipment has to remain in storage. An eminent committee of the American Council on Education in 1947 recommended immediate acquisition of 40% additional space; in the succeeding four years the situation has become worse. The new facilities at Monterey are required to meet this very urgent need."

A plan had already been made for an interim establishment of the Postgraduate School at Monterey, using one wing of the Del Monte Hotel for classrooms, instructor offices, and some laboratories; this space was to be supplemented by 8 Butler Huts, each 40' x 160', for the accommodation of other laboratories. By this means the School would realize the 40% expansion which had long since been called for. The plan also provided for the vacating of the Annapolis site at the close of
the second term, and the opening of the third term at Monterey. The school year of 1951 had been started early, that is in July, in order to make the move possible that very year. By this plan, it was estimated the School would acquire "accommodations of minimum adequacy" 18 months in advance of the date that would be possible if the move were postponed until permanent buildings were completed. This plan would have the additional advantage of having staff and faculty on the site for monitoring and supervising the construction of the permanent facilities.

The Naval Postgraduate School projects survived the drastic scrutiny to which they were subjected (Fiscal Year 1952 Public Works Authorization and Appropriation Bills; over-all authorization reduced to about 1/3 of amount sought, and appropriations to 80% of amount authorized). Congressional action finally completed on October 20, 1951 authorized and provided funds not only for the interim establishment at Monterey but also for the first increment of a permanent establishment there for the Engineering School. "Engineering School" was the name which was to be given to the technical courses conducted at Annapolis after their consolidation with the General Line School already at Monterey.

At this point the advanced planning of the Navy paid real dividends. Awarding of contracts for the interim establishment took place four days after the completion of Congressional action and on 25 October 1951 ground was broken for the interim construction projects. The School's first two terms of the 1951-52 year were completed on 21 November, a closing ceremony terminating operations at Annapolis was held and the move to Monterey was begun. The directive from the Secretary of the Navy relocating the Postgraduate School was dated 5 December 1951 effective as of 22 December 1951. This same directive established the U. S. Naval Administrative Command, whose mission was "to provide logistic support, including public works, medical, dental and supply functions for the Naval Postgraduate School and its components." It disestablished the U. S. Naval School, General Line, Monterey, California, and assigned the facilities and functions of this school to the U. S. Naval Postgraduate School. As of 22 December the Superintendent assumed his duties as Superintendent of the Naval Postgraduate School with additional duty as Director, Engineering School, U. S. Naval Postgraduate School. This additional duty was to be continued through the transition and consolidation periods. The officer allowance for the U. S. Naval Postgraduate School, Monterey, California at the time of the School's establishment there was 88.

1952 - Present

On 16 February 1952 the formal opening ceremony for the newly located school was held with the Secretary of the Navy and many distinguished officers and civilian guests in attendance. Classes in the Engineering School were resumed on 18 February.
The first increment of the new building program; i.e., the portion for which ground was broken in June 1952 included: (1) Main Engineering Building, a five-story structure with about 200,000 square feet of floor space, which was planned to house the Departments of Electronics and Physics, Chemistry and Metallurgy, and most of Aerology; (2) Electrical Engineering Building, a two-story structure with about 35,000 square feet of floor space; (3) a portion of an ultimate 57,000 square foot two-story building to house the Department of Mathematics, classrooms and drafting rooms, and some Engineering School departmental offices; and (4) a portion of a new heating plant as required to support the first building increment. A second increment was to provide: (1) a three-story, 76,000 square foot structure for the laboratories of the Aeronautical Engineering and Mechanical Engineering Departments; (2) a 1200-seat capacity Lecture Hall; and (3) completion of the 57,000 square foot building and the heating plant begun with the first increment. The planning of the time called for 3rd and 4th increments, the third increment to provide: (1) a 60-bed infirmary; (2) a 200-man barracks and mess hall for the enlisted allowance of the School; (3) permanent buildings for the General Line School; (4) Library (including collateral equipment); and the 4th increment to provide: (1) permanent Steam Engineering Laboratory and Nuclear Reactor Building; (2) permanent Ordnance and Gunwery Laboratory Building; (3) Aerothermodynamics and Aircraft Propulsion Laboratory Building; (4) Subsonic Aerodynamics Laboratory Building; (5) 500-seat Chapel; (6) Gymnasium and athletic field; (7) 300-seat auditorium.

The buildings provided for in increments one and two became reality. The dedication of the five new buildings took place on 31 May 1956. With one exception they were named in honor of naval officers who had been closely associated with the development of the Navy's educational program and/or with the Naval Postgraduate School. One building was named in honor of a civilian professor who was associated with the School from 1913 until 1946.

The changes and construction provided for in the original increments three and four have not materialized. Each passing year limitations of military construction funds have pushed these plans farther into the future.

In 1955 the General Line School shorter program, established after World War II, was terminated, and a return was made to a program more nearly paralleling in principle the original plan recommended for such a school in 1919. This revised program of 9 1/2 months duration was planned for officers who had already earned their baccalaureate degree and had had five to seven years of service in the Navy.
June 1956 saw the addition of a new school as a component of the Naval Postgraduate School. This new Management School was to provide "an educational program for officers in the application of sound scientific management practice to the complex organizational structure and operations of the Navy with a view toward increasing efficiency and economy of operation." Officers of the Supply and Civil Engineering Corps made up the first class and emphasis was placed on theory of general management, financial management and inventory management. In August 1957, the Management School was expanded to include Line officers as well. Two classes per year of five months' duration each have been held since 1957 and the curriculum includes various areas of industrial management as well as additional material in the basic areas.

During 1957 discussions were begun on establishing a bachelor of science program within the General Line School. The concept was that this curriculum would fit into the Navy's five-term college program with the ultimate aim of carrying out the entire five-term program at Monterey. Initial input was scheduled for August of 1958. There would be two inputs annually, primarily made up of pilots. The curriculum was planned to include some subjects taught in the General Line curriculum with sufficient new courses to justify the granting of a bachelor of science degree, no major designated. The discussions resulted in the initiation of this program on schedule in August 1958 after an official re-designation of the school as the General Line and Naval Science School, to become effective as of 1 July 1958. Initial input into this program was 42.
BRIEF BIOGRAPHICAL SKETCH OF
REAR ADMIRAL ELMER E. YEOMANS, U. S. NAVY

FAMILY

Rear Admiral Elmer E. Yeomans was born in Terre Haute, Indiana on 17 May 1902, son of George H. and Sarah E. Yeomans. In April 1923 he married Helen Belmont Austin of New London, Conn. His official address is Linton, Indiana.

EDUCATION

Rear Admiral Yeomans attended Linton High School, Linton, Indiana. He was graduated from the U. S. Naval Academy with the Class of 1924.

NAVAL CAREER

From June 1924 to December 1927 Admiral Yeomans served in the engineering and gunnery departments of the USS TENNESSEE. He attended the Submarine School in New London, Conn. and was graduated therefrom in June 1928. He served on board the submarine USS R-3 in the Pacific Fleet from June 1928 until July 1931.

He attended Postgraduate School at Annapolis from June 1931 to June 1932, studying Marine Engineering; continued these studies the following year at the University of California, and was awarded a Master of Science degree from that University.

He served as Executive Officer of the USS S-14 in the Panama Canal Zone from June 1933 to June 1934 and assumed command of the USS S-17 in June 1934. Upon decommissioning of the S-17 in May 1935 he assumed command of the USS S-20, a command he held until June 1936.

He served as Submarine Electrical Design Officer and Storage Battery Officer with the Bureau of Engineering from June 1936 to August 1938. In August 1938 he assumed command of the USS SARGO, operating with the Pacific Fleet. From March 1941 to May 1942 he served as Operations Officer for Commander Submarine Squadron FIVE. He assumed command of Submarine Division FIFTY THREE in May 1942.

He served as Submarine Readiness Officer in the headquarters of the Commander-in-Chief, U. S. Fleet, Washington, D. C. for ten months commencing in late 1942. From this duty he returned to the Pacific as Planning Officer for Commander Submarine Force, Pacific Fleet, in which billet he served until the end of World War II.
Subsequent to the war Rear Admiral Yeomans served as Chief of Staff for Commander Submarine Force, Atlantic Fleet, for a short period. He was then ordered to duty as Naval Aide to the Assistant Secretary of the Navy, the Honorable W. John Kenney, in Washington, D. C. After about fifteen months in this duty he was ordered to the National War College at Fort Leslie J. McNair, Washington, D. C., from which he was graduated in June 1948.

From the National War College he went to duty as Chief of Staff for Commander Submarine Force, Pacific Fleet, in which assignment he served until assuming command of the USS ROANOKE on 16 December 1949. He commanded the USS ROANOKE until December 1950, when he was ordered to duty in the Office of the Chief of Naval Operations. He served as Director of the Logistics Plans Division of the Office of the Chief of Naval Operations and as Navy member on the Joint Logistics Plans Committee of the Joint Chiefs of Staff until December 1953.

Rear Admiral Yeomans assumed command of Cruiser Division FOUR at Boston, Massachusetts, on 11 January 1954 and on June 3, 1955, reported as Deputy Commander, Naval Striking and Support Forces, Southern Europe. In January 1958 he became Superintendent of the U. S. Naval Postgraduate School, Monterey, California.

DECORATIONS

Rear Admiral Yeomans was awarded the Legion of Merit for his service while performing duties as Strategic Planning Officer on the staff of Commander Submarine Force, Pacific Fleet, from May 1944 to September 1945, and the Bronze Star Medal for his service while performing duties as Operations Officer of Task Force FORTY TWO from May 1942 to November 1942, and additional duty as Commander Submarine Division FIFTY THREE from June 1942 to February 1943.

CLUBS AND SOCIETIES

Rear Admiral Yeomans is a member of the Army-Navy Country Club, the American Society of Naval Engineers and the Alumni Association of the University of California.
<table>
<thead>
<tr>
<th>NAME AND RANK</th>
<th>DATES</th>
<th>NA CLASS</th>
<th>STATUS 10/1/58</th>
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<tbody>
<tr>
<td>LCDR Milton Eugene Reed</td>
<td>1909 - 6/1912</td>
<td>1891</td>
<td>Ret. CAPT 11/25 D. 1/32</td>
</tr>
<tr>
<td>CAPT Lloyd Horwitz Chandler (Acting)</td>
<td>3/1915 - 7/1915</td>
<td>1888</td>
<td>Ret. 12/21 CAPT RADM D. 1/47</td>
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<tr>
<td>CDR Louis McCoy Nulton (Acting)</td>
<td>7/1915 - 9/1915</td>
<td>1899</td>
<td>Ret. 9/33 ADM D. 11/54</td>
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<tr>
<td>CDR Wat Tyler Cluverius, Jr.</td>
<td>4/1917 - 11/1918</td>
<td>1896</td>
<td>Ret. 1/39 ADM D. 10/52</td>
</tr>
<tr>
<td>CAPT Ernest Joseph King</td>
<td>5/1919 - 6/1921</td>
<td>1901</td>
<td>D. RADM 6/56</td>
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<tr>
<td>CDR Joseph Otto Fisher</td>
<td>7/1921 - 8/1922</td>
<td>1902</td>
<td>Ret. 8/28 CAPT D. 8/33</td>
</tr>
<tr>
<td>CDR Alexander Sharp, Jr.</td>
<td>8/1922 - 6/1923</td>
<td>1906</td>
<td>Ret. 9/46 VADM 6306 BanneckburnDr., Bethesda, Md.</td>
</tr>
<tr>
<td>LCDR Albert Miller Penn</td>
<td>7/1923 - 9/1924</td>
<td>1908</td>
<td>D. 9/47 RADM</td>
</tr>
<tr>
<td>CDR Robert Alfred Theobald</td>
<td>9/1924 - 6/1927</td>
<td>1907</td>
<td>Ret. 2/45 RADM; D. 5/57</td>
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<tr>
<td>CAPT Albert Thomas Church</td>
<td>9/1927 - 6/1931</td>
<td>1905</td>
<td>Ret. 1/43 RADM; D. 3/54</td>
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<tr>
<td>CAPT Frank Howard Sadler</td>
<td>6/1931 - 6/1933</td>
<td>1903</td>
<td>Ret. 7/43 RADM Five Acres, Newbern, Alabama</td>
</tr>
<tr>
<td>CAPT Elwood Morse Tillson (Acting)</td>
<td>11/1942 - 1/1943</td>
<td>1920</td>
<td>Ret. 6/49 RADM 555 C Ave. Coronado, California</td>
</tr>
</tbody>
</table>
SUPERINTENDENTS:

RA DM Herman A. Spanagel (Head - Supt -) 6/1944 - 7/1947 1914 Ret. 6/49 RADM 5302 Briley Pl., Washington 16, D.C.
8/1947 - 6/1950


RA DM Earl Everett Stone 12/1955 - 12/1957 1918 Ret. 12/57 RADM 979 Coral Dr., MPCC, Pebble Beach, California

DIRECTOR, ENGINEERING SCHOOL

CAPT Harold David Krick 9/53 1923 Ret. 7/53 CAPT Austin, Texas

CAPT James Henry Ward 9/53 - 10/54 1926 RADM Active

CAPT Charles Tod Singleton, Jr. 10/54 - 7/56 1926 Ret. 7/56 RADM

CAPT Earl Tobias Schreiber 7/56 - 9/57 1929 Ret. 7/59 RADM

CAPT Harold Millar Heming 9/57 - Present 1930

GENERAL LINE/GENERAL LINE NAVAL SCIENCE SCHOOL
MONTEREY, CALIFORNIA

COMMANDING OFFICER:


CAPT Thomas Joseph Casey 4/1949 - 8/1951 1923 Ret. 7/53 CAPT 1113 Via Coronel, Palos Verdes Estates, Calif

CAPT John Steuert Tracy 8/1951 - 12/1951 1927 Ret. 1/56 RADM P.O. Box 366, Pebble Beach, Calif.
<table>
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<th>Name</th>
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<th>Rank</th>
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<tbody>
<tr>
<td>CAPT John Steuart Tracy</td>
<td>12/1951 - 2/1953</td>
<td>Ret. 1/56 RADM</td>
<td>P.O. Box 366, Pebble Beach, Calif.</td>
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<tr>
<td>CAPT Marcus William Williamson</td>
<td>5/1955 - 7/1955</td>
<td>Active</td>
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<tr>
<td>CAPT Everett Milton Block</td>
<td>7/1955 - 7/1956</td>
<td>Ret. 7/56 CAPT</td>
<td>Stony Lane, E. Greenwich, R.I.</td>
</tr>
<tr>
<td>*CAPT Williston Lamar Dye</td>
<td>7/1956 - 7/1957</td>
<td>Active</td>
<td></td>
</tr>
<tr>
<td>CAPT Albert Peyton Coffin</td>
<td>7/1957 - 6/1958</td>
<td>Active</td>
<td></td>
</tr>
<tr>
<td>CAPT Robert Park Beebe</td>
<td>6/1958 - Present</td>
<td>Active</td>
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**GENERAL LINE SCHOOL, NEWPORT, RHODE ISLAND**

<table>
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<tr>
<td>CAPT Frederick Moosbrugger</td>
<td>1946 - 2/1949</td>
<td>Ret. 1/57 RADM</td>
<td>c/o Navy Dept.</td>
</tr>
<tr>
<td>CAPT Thomas Henry Hederman</td>
<td>8/1950 - 2/1952</td>
<td>Ret. 7/53 RADM</td>
<td>7059 Neptune Place, La Jolla, California</td>
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**MANAGEMENT SCHOOL**

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<tr>
<td>*CAPT Williston Lamar Dye</td>
<td>- 7/57</td>
<td>(See under GLS *)</td>
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<tr>
<td>CAPT John Adrian Hack</td>
<td>7/57 - 7/59</td>
<td>Active</td>
<td></td>
</tr>
<tr>
<td>CAPT Thomas L. Conroy</td>
<td>7/59 - present</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Start</td>
<td>End</td>
<td>Year</td>
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<tr>
<td>-----------------------------</td>
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<td>--------</td>
<td>------</td>
</tr>
<tr>
<td>CAPT John Steuert Tracy</td>
<td>12/51</td>
<td>8/52</td>
<td>1927</td>
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<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>CAPT Thomas Carson Phifer</td>
<td>3/52</td>
<td>8/52</td>
<td>1931</td>
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<tr>
<td>CAPT William C. F. Robards</td>
<td>8/52</td>
<td>4/54</td>
<td>1932</td>
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<td>CAPT George Thomas McCready, Jr.</td>
<td>7/54</td>
<td>4/57</td>
<td>1930</td>
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<tr>
<td>CAPT Maxim William Firth</td>
<td>4/57</td>
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**ACADEMIC DEANS**

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<tr>
<td>Ford L. Wilkinson, Jr.</td>
<td>3/1947</td>
<td>12/1948</td>
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<tr>
<td>P. J. Kiefer (Acting)</td>
<td>12/1948</td>
<td>6/1949</td>
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<td>Roy S. Glasgow</td>
<td>7/1949</td>
<td>Present</td>
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</table>
MEMBERS OF FIRST CLASS, 1909, U. S. NAVAL POSTGRADUATE SCHOOL

LCDR Harry Lurgh BRINSER. USNA Class 1899. Born: Pennsylvania
Navy Cross, Legion of Merit.

Legion of Merit
Head of USNPG Dept. Sept. 1927 - June 1931.

Retired 1 Oct. 1946. RADM
Legion of Merit.
107 Grafton St., Chevy Chase 15, Maryland.

LT Stafford H. R. DOYLE, USNA Class 1900. Born: South Carolina
Retired: 1 July 1935. CAPT. Died: 8 Feb. 1942, Gallatin, Tenn.
Navy Cross.

LT Joseph Otto FISHER. USNA Class 1902. Born: Maine
Head of USNPG Dept. July 1921 - Aug. 1922.

LT James Otto RICHARDSON. USNA Class 1902. Born: Texas
Retired: 1 Oct. 1942. ADM.
2705 35th Place, N.W., Washington 7, D.C.

LT Samuel Murray ROBINSON. USNA Class 1903. Born: Texas.
Retired: 1 Jan. 1946. ADM.
DSM, Officer of the Order of the Crown, Order of the Southern Cross (Brazil)
3006 H.A.S. Street, Apt. 1, Houston 21, Tex.

LCDR Walter Benjamin TARDY. USNA Class 1898. Born: Arkansas.
Retired: 11 Nov. 1919. LCDR. Died: 30 Nov. 1932, Annapolis, Md.


(Appendix C)
<table>
<thead>
<tr>
<th>Year</th>
<th>Students</th>
<th>No. and Area</th>
<th>Civilian Univ. Used</th>
<th>Personnel Allowance to PGSchool</th>
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<tbody>
<tr>
<td>1909-10</td>
<td>10</td>
<td>Marine Engineering</td>
<td>MIT</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Columbia</td>
<td></td>
</tr>
<tr>
<td>1916</td>
<td>Training lines provided 20 + per year</td>
<td>15 Marine Engineering 5 Electrical Engineering</td>
<td>MIT</td>
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<tr>
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<td>Token (Ordnance no. (Nav. Construction (Civil Engineering</td>
<td>Columbia</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>RPI</td>
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<tr>
<td>1920</td>
<td>61</td>
<td>Mechanical Engineering Electrical Engineering</td>
<td>MIT</td>
<td>4 Officers</td>
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<td></td>
<td>+ 8</td>
<td>Radio Engineering Aeronautical Engineering Naval Construction Ordnance Law</td>
<td>Columbia</td>
<td>7 Civilian faculty</td>
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<tr>
<td></td>
<td>Total 69</td>
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<tr>
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<td></td>
<td>Harvard</td>
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<td>Univ. of Chicago</td>
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<td>Univ. of Michigan</td>
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<tr>
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<td></td>
<td>George Washington</td>
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<tr>
<td>Jan 1922</td>
<td>142</td>
<td>Total under instruction in all phases</td>
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<tr>
<td>1929-32</td>
<td>162 at NA</td>
<td>General Line Mechanical Engineering E.E. Diesel Aeronautical Aerology Communications Compass Design Naval Construction Civil Engineering Ordnance 1st yr. &quot; 2nd yr.</td>
<td>32 Columbia</td>
<td>16 Ordnance Plants May 1931</td>
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<td>7 Penn State</td>
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<td>24 MIT</td>
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<td>10 Harvard</td>
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<td>6 RPI</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>2 Univ. of Michigan</td>
<td></td>
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<tr>
<td></td>
<td>100 at Civ. Univ., &amp; Plants Total 262</td>
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<td>13 civilian faculty - salaries $3100 - $5000</td>
<td>top authorized by law</td>
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<td>Appendix D(1)</td>
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<tr>
<td>Year</td>
<td>Students</td>
<td>No., and Area</td>
<td>Civilian Univ. Used</td>
<td>Personnel Allowance for PGSchool</td>
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<tr>
<td>1935-36</td>
<td>At NA</td>
<td>4 Aerology</td>
<td>MIT</td>
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<td></td>
<td>144 General Line to continue in</td>
<td>23 Marine Engr. (Design)</td>
<td>RPI</td>
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<td></td>
<td>104 2nd yr. Total at NA 248*</td>
<td>26 Marine Engr. (Operating)</td>
<td>George Washington</td>
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<td></td>
<td>48 3rd year at civilian univ. or naval plants</td>
<td>10 Radio Engr.</td>
<td>Philadelphia Navy Yard</td>
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<td></td>
<td>33</td>
<td>Naval Construction at Naval Engineering</td>
<td></td>
<td>19 Officers</td>
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<td></td>
<td>4</td>
<td>Civil Engineering</td>
<td>MIT</td>
<td>12 civilian faculty</td>
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<td></td>
<td>1 USCG</td>
<td>Law</td>
<td>RPI</td>
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<tr>
<td></td>
<td>15</td>
<td>Finance and Supply</td>
<td>George Washington</td>
<td></td>
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<tr>
<td></td>
<td>35</td>
<td></td>
<td>Philadelphia Navy Yard</td>
<td></td>
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<tr>
<td></td>
<td>Total under instruction 383</td>
<td>Pursuing 28 scientific and engineering curricula all but 3 leading to master's degrees</td>
<td></td>
<td>30 officers</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>59 civilian faculty</td>
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</table>

1947-48
| Total 570 | Pursuing 28 scientific and engineering curricula all but 3 leading to master's degrees | 30 officers | 59 civilian faculty |

1951-52
<p>| at NA     | Introduce: Operations Analysis, Comptrollership at George Washington Univ. | See attached sheet for 1951-52 |
| 202 entering | Initial input under MDAP funds | |
| 17 Navy    | First woman officer enrolled | |
| 16 Army    | (Communications) | |
| 7 MarCorps | | |
| 8 CoastGuard | | |
| 6 (Belgium (Ecuador (Norway (Venezuela | | |
| 173 2nd-3rdyr | | |
| | | | Appendix D(1) |</p>
<table>
<thead>
<tr>
<th>Year</th>
<th>Students</th>
<th>No. and Area</th>
<th>Civilian Univ. Used</th>
<th>Personnel Allowance for PG School</th>
</tr>
</thead>
</table>
| 1951-52 (contd) | 158 Navy  
11 MarCorps  
3 Canada  
1 Venezuela | 397 | Total 772 | 12/1/53 *122 officers  
*324 enlisted  
*237 civilians  
97 civilian faculty |  
8/1/55 *109 officers  
*264 enlisted  
*274 civilians  
99 civilian faculty |
| 1958-59 | Eng. School only  
1st yr 306  
2nd yr 270  
3rd yr 79  
655 | At civilian univ.  
281 | See attached sheet for 1958-59 | 6/30/58 *120 officers  
*245 enlisted  
*261 civilians  
*122 civilian faculty |

*Administrative Command allowance included

(Appendix D(1))
CIVILIAN SCHOOLS UTILIZED 1951

California Institute of Technology
University of California
University of California (Los Angeles)
Carnegie Institute of Technology
Catholic University
Columbia University
Georgetown University
George Washington University
Georgia Technological Institute
Harvard University
Lehigh University
Massachusetts Institute of Technology
University of Michigan
University of Minnesota
New York University
Ohio State University
University of Pittsburgh
Princeton University
Rensselaer Polytechnic Institute
Rochester Institute of Technology
Scripps Institute of Oceanography
University of Southern California
Stevens Institute of Technology
Stanford University
Webb Institute of Naval Architecture
CIVILIAN INSTITUTIONS UTILIZED 1958–59

Boston University
California Institute of Technology
University of California
University of California (Los Angeles)
Carnegie Institute of Technology
Catholic University
University of Chicago
University of Colorado
Cranfield (England)
Duke University
Georgetown University
George Washington University
Harvard University
University of Illinois
University of Iowa
University of Maryland
Massachusetts Institute of Technology
Kennan
University of Michigan
North Carolina State
Notre Dame
Ohio State University
Pennsylvania State University
University of Pennsylvania
University of Pittsburgh
Princeton University
Rensselaer Polytechnic Institute
Rutgers University
Southern Methodist University
Stanford University
Tufts University
Union Theological Seminary
University of Washington
Webb Institute of Naval Architecture
### CIVILIANS EMPLOYED 1927 - 1940

#### PROFESSORS OF

<table>
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<th>Discipline</th>
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<tr>
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<tr>
<td>Marine Engineering</td>
<td>3 3 3 3 4 4 3 2 2 2 3</td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>3 3 3 4 4 3 3 3 3 3</td>
</tr>
<tr>
<td>Radio</td>
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<tr>
<td>Physics</td>
<td>1 1</td>
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<tr>
<td>Chemistry &amp; Metallurgy</td>
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</tr>
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<td>Psychology</td>
<td>1 1</td>
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<td>International Law</td>
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<td>Economics</td>
<td>1 1</td>
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<tr>
<td>German</td>
<td>1 1</td>
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<td><strong>TOTAL</strong></td>
<td>13 13 16 18 17</td>
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#### CLERKS

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<th>Position</th>
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<td>Chief Clerk</td>
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<td>Stenographer</td>
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<tr>
<td>Typewriter</td>
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<tr>
<td>Typewriter (File Clerk)</td>
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<tr>
<td>Jr. Oper. Misc. Dup. Devices</td>
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<tr>
<td>Messenger</td>
<td>1 1 1 1 1 1 1 1 1 1 1 1 1</td>
</tr>
<tr>
<td>Jr. Library Asst.</td>
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</tr>
<tr>
<td>Jr. Laboratory Helper</td>
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<tr>
<td><strong>Total Group IV(b)</strong></td>
<td>6 6 6 6 6 6 6 6 7 8 8 8 9</td>
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#### MECHANICS

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<tr>
<td>Machinists</td>
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</tr>
<tr>
<td>Instrumentmaker</td>
<td>1 1 1 1 1 1 1 1 1 1 1 1 1 1</td>
</tr>
<tr>
<td>Toolmaker</td>
<td>1 1 1 1 1 1 1 1 1 1 1 1 1 1</td>
</tr>
<tr>
<td>Water Tender</td>
<td>1 1 1 1 1 1 1 1 1 1 1 1 1 1</td>
</tr>
<tr>
<td>Engineer</td>
<td>1 1 1 1 1 1 1 1 1 1 1 1 1 1</td>
</tr>
<tr>
<td>General Helper</td>
<td>1 1</td>
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<td>Laboratory Helper (Chem.)</td>
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<tr>
<td>Laboratory Helper (Mech.)</td>
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<tr>
<td>Electrician</td>
<td>1 1 1 1 1 1 1 1 1 1 1 1 1 1</td>
</tr>
<tr>
<td>Sheetmetal Worker</td>
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<tr>
<td>Buffer and Polisher</td>
<td>5 5 6 6 6 6 6 6 6 6 7 7 7 7 7</td>
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<tr>
<td>Laborers</td>
<td>14 14 14 13 12 12 12 11 11 11 11</td>
</tr>
</tbody>
</table>

**Total, Mechs. & Laborers**

Appendix D (2)
MATERIAL OF HISTORICAL PERTINENCE AVAILABLE AT THE U. S. NAVAL POSTGRADUATE SCHOOL

1. Catalogues 1931 - present
2. Student rosters from 1909 - present
3. Student transcripts
4. Photographs
   (a) All Heads and Superintendents
   (b) Miscellaneous – buildings, ceremonies, activities, etc.

(Appendix F)
DEDICATION
OF BUILDINGS

Held on 31 May 1956
Aerial photograph of the School showing in the foreground the five new Engineering School buildings, and in the background the Administration Building, General Line School, and Bachelor Officers Quarters.
Dedication

of the buildings of the

UNITED STATES NAVAL POSTGRADUATE SCHOOL

Monterey, California

Rear Admiral Earl E. Stone, United States Navy, Superintendent

PRINCIPAL ADDRESS:

The Honorable Charles S. Thomas,
Secretary of the Navy

BUILDING DEDICATIONS:

BULLARD HALL  Admiral Raymond A. Spruance,
United States Navy (Retired)

HALLIGAN HALL  Admiral Richmond K. Turner,
United States Navy (Retired)

HERRMANN HALL  Vice Admiral T. G. W. Settle,
United States Navy

KING HALL  Fleet Admiral Chester W. Nimitz,
United States Navy

ROOT HALL  Doctor Clinton C. Bramble,
former Professor of Mathematics

SPANAGEL HALL  Vice Admiral Robert W. Hayler,
United States Navy (Retired)

1  King Hall

2  Spanagel Hall

3  Bullard Hall

4  Halligan Hall

5  Root Hall

6  Herrmann Hall
Rear Admiral William Hannum Grubb Bullard
United States Navy (Deceased)
BULLARD HALL

BULLARD HALL is named in honor of the late Rear Admiral WILLIAM HANNUM GRUBB BULLARD, United States Navy, one of the pioneers in this country and an international authority on the promotion of radio communication. He contributed materially to the Navy’s educational program through organizing the Electrical Engineering Department at the Naval Academy about 1907 and through authorship of the excellent textbooks which, with successive revisions, formed the basis of that course for some three decades. BULLARD HALL is a modern laboratory building, housing the laboratory and shop facilities of the Department of Electrical Engineering.

William H. G. BULLARD was born in Medin, Pennsylvania, on December 6, 1866, and entered the Naval Academy from that state in 1882. He graduated in 1886 and, as was then required, served two years at sea before being commissioned Ensign. There followed a succession of normal duty assignment rotation until the outbreak of the Spanish-American War found him serving in the USS COLUMBIA, conveying General Nelson A. Miles and his troops to Puerto Rico and transporting troops to Guanica.

He completed a course of instruction on Torpedoes in 1900, and in January 1903 reported to the Naval Academy for his third tour there. During this tour as instructor in electricity, under the Department of Physics and Chemistry, he wrote the Naval Electrician’s Text and Handbook in 1904. This book proved so useful that it was re-issued in several editions and used for years at the Naval Academy.

He next went as Navigator to the Cruiser GALVESTON upon her commissioning in 1906, and shortly thereafter transferred to the new MAINE, Flagship of the Atlantic Fleet, as Navigator and later Executive Officer. In August 1907 he again reported to the Naval Academy to organize and head the Department of Electrical Engineering, newly created in recognition of the growing importance of this field to the Navy. Having firmly established the Department, he was detached in June 1911 to command the Minelayer SAN FRANCISCO.

In 1912, the then Captain BULLARD was appointed Superintendent of the United States Naval Radio Service. In this capacity, he made an extensive survey of the use of radio in several countries of Europe, and in 1913 was a delegate to the International Safety at Sea Conference in London. Following this, he took charge of the Tuckerton, New Jersey, Radio Station, and was senior member of the Board on Organization of Radio Service, both initially and when it reconvened in 1916.

During World War I, he commanded the battleship ARKANSAS, first in the ATLANTIC FLEET and later as a unit of Admiral Hugh Rodman’s SIXTH BATTLE SQUADRON of the GRAND FLEET. Advanced to the rank of Rear Admiral, he commanded the U. S. Naval Base at Malta, and later commanded the U. S. Naval Forces in the Eastern Mediterranean, based at Corfu. During the latter tour, he was a member of the Inter-Allied Armistice Commission which effected, with notable tact and forbearance, the surrender of the Austro-Hungarian fleet to the United States. For these services he was awarded the U. S. Distinguished Service Medal and received the “Commander, Legion D’Honneur” and the “Order of the Knights of Polonia Restituta” from the French and Polish governments, respectively.

After eight months as a member of the Inter-Allied Conference on Radio he served from 1919 to 1921 as Director of Communications in the Navy Department. In this capacity he prevented “by persistent and convincing presentation of his views” the sale to foreign interests of patent rights in the Alexanderson alternator, thus essential to radio communications progress. He has, with some justification, been called the “Father of American Radio”. There is no doubt that his extraordinary knowledge of the subject, together with his firm stand for his country’s rights, helped preserve to the United States her prestige in this field.

Rear Admiral BULLARD then returned to sea as Commander YANGTZE PATROL FORCE until he was retired from active duty on September 11, 1922. While retired, he counseled the formation of an independent company which developed into the Radio Corporation of America. On March 2, 1927 he was appointed by President Coolidge to a six-year term as Chairman of the National Radio Commission, serving in this capacity until his death in Washington on November 24th of that same year.
Rear Admiral John Halligan
United States Navy (Deceased)
HALLIGAN HALL

HALLIGAN HALL is named in honor of Rear Admiral JOHN HALLIGAN, United States Navy, deceased, a distinguished officer who as Head of the Postgraduate Department of the Naval Academy from 1915 to 1917 was most instrumental in advancing the Navy’s program of postgraduate education. The building is a most modern laboratory type which houses the extensive laboratory, testing and shop facilities of both the Aeronautical engineering and the Mechanical Engineering Departments of the Engineering School.

John Halligan was born in South Boston, Massachusetts, on May 14th, 1876. He attended local schools and was appointed to the United States Naval Academy as a Naval Cadet in 1894. He graduated as the Head of his Class in 1898 and then served two years at sea before being commissioned Ensign, as was then required by law. Shortly after joining the Cruiser BROOKLYN, Flagship of Commodore Winfield Scott Schley, he participated in the Battle of Santiago Bay while still a Naval Cadet and was awarded the Special Meritorious Medal for his outstanding service in that action. After the war, he served in the normal succession of sea and shore duty assignments, completing two years as Navigator of the Battleship WYOMING in 1915.

He then reported, as a commander, to the Naval Academy where he was assigned as Head of the Postgraduate Department, which was then operating in Isherwood Hall with a faculty of three professors teaching small groups of Marine Engineering students. Under his leadership, the faculty was enlarged and the scope of instruction was broadened to include “warm-up” courses in Ordnance, Naval Construction, and Civil Engineering; and larger groups of Marine Engineering students were enrolled. However, our entry into World War I brought a suspension of these activities; the faculty was assigned to other Naval Academy departments and Commander Halligan went to sea as Aide to the Commander, Patrol Force, Atlantic Fleet.

His next assignment as Chief of Staff to the Commander, U. S. Naval Forces in France, brought him the award of the Distinguished Service Medal for “exceptionally meritorious service in a duty of great responsibility”, as well as the decoration of “Officer of the Legion of Honor” from the government of France. He assumed command of the Battleship OHIO in May 1918, and during this tour enjoyed the unique experience of commanding two battleships simultaneously. This occurred when, in the course of experimental work, the battleship IOWA was operated under full radio control by the OHIO. In November 1920 he was assigned duty in charge of the Naval Experiment Station at Annapolis for three years followed by a tour in command of the newly constructed Light Cruiser DETROIT.

In June 1925 he was appointed Chief of the Bureau of Engineering in the Navy Department with the rank of Rear Admiral and with the traditional title of Engineering in Chief of the Navy. Following this assignment and a period of training at the Naval Air Station, Pensacola, Florida, he was designated a Naval Aviation Observer in July 1928 and shortly thereafter assumed command of the Aircraft Carrier SARATOGA. In April 1929 he reported for duty as Commander Aircraft Squadrons, Scouting Fleet, holding this post until October 1930 when he became Assistant Chief of Naval Operations. After being relieved of this job, Rear Admiral Halligan attended the Naval War College, Newport, and then reported for duty as Commander Aircraft Squadrons, Scouting Force, with his flag in the Aircraft Carrier LEXINGTON. Incident to a reorganization of Naval Aeronautical Forces in April of 1933, he became Commander Aircraft, Battle Force, and Commander Aircraft, U. S. Fleet, with his flag in the SARATOGA.

Admiral Halligan returned ashore as Commandant of the Thirteenth Naval District at Puget Sound, Bremerton, Washington, in July 1934 and served in that capacity until his death in December of the same year. He was buried with full military honors in the Naval Academy Cemetery at Annapolis on December 18, 1934. A destroyer the USS HALLIGAN (DD-584), named in his honor, was launched on March 19, 1943 and christened by his widow, Mrs. Katrina Loomis Halligan, who now resides at Annapolis, Maryland.
Rear Admiral Ernest Edward Herrmann
United States Navy (Deceased)
HERRMANN HALL

HERRMANN HALL is named in honor of Rear Admiral ERNEST EDWARD HERRMANN, United States Navy, deceased, who as Superintendent from 1950 to 1952 so effectively supervised the movement of the Naval Postgraduate School from Annapolis and its establishment with the General Line School as an integrated command in the present Monterey facilities. This building, formerly the world-famous Del Monte Hotel, houses the principal administrative offices of the Postgraduate School command as well as living accommodations for the large number of bachelor officers here. At present, the General Line School utilizes one complete wing for administrative and instruction purposes, pending the expected construction of its own especially designed building.

Ernest E. Herrmann was born July 17, 1896 in New York City and attended public schools there. He was appointed to the Naval Academy from New York, entering with the Class of 1919 on July 7, 1915. Because of World War I, he was graduated one year early and commissioned Ensign on June 6, 1918. Joining the armored cruiser SOUTH DAKOTA, he immediately saw combat service escorting troop convoys to France.

After another brief tour in the armored cruiser, HUNTINGTON, he was ordered to the destroyer, WORDEN, where he served in several capacities, including Engineer and Executive Officer. Ordered to duty in connection with fitting out of the new destroyer HOPKINS in 1921, he progressed through the duties of Engineer, Gunnery, Navigator and Executive Officer to Commanding Officer before he was detached in 1924.

There followed his first tour as an Ordnance and Gunnery instructor at the Naval Academy, during which time he wrote the textbook Exterior Ballistics, 1926 which was in use there for many years. After a sea duty tour during which he participated in operations in the Yangtze Campaign as Assistant Gunnery Officer of the armored cruiser PITTSBURGH and as Communications Officer for the Commander in Chief, U.S. Asiatic Fleet, he returned to the Naval Academy in June 1929, again as instructor in Ordnance and Gunnery. While in this capacity he wrote Notes on Fire Control, which likewise served as a textbook at the Naval Academy for many years.

From June 1930 until June 1934 he served as Air Defense Officer and later Assistant Gunnery Officer of the battleship WEST VIRGINIA and for each of the three years of this tour was awarded a Letter of Commendation for direct contribution toward his ship's winning the annual Gunnery Trophy and Battle Efficiency Pennant, a truly unusual feat. In 1934 he again returned to the Naval Academy for a three-year tour as instructor, later Senior Instructor, in Ordnance and Gunnery. Going to sea again in 1937, he served successively as Gunnery Officer of the WEST VIRGINIA, Executive Officer of the destroyer tender, WHITNEY and as Gunnery Officer on the staff of Admiral J. O. Richardson, Commander in Chief, United States Fleet.

The imminence and outbreak of World War II found the then Captain Herrmann in the very responsible post of Chief Planner and Coordinator for all anti-aircraft matters for the Bureau of Ordnance. His professionally brilliant energetic, and fore-sighted discharge of these responsibilities through March 1944 won him the later award of a Gold Star in lieu of a Third Legion of Merit.

When finally relieved of his responsibilities in Washington, he entered immediately into combat operations upon assuming command of the heavy cruiser, BOSTON in June 1944. Operating principally with Task Force 58 and with Admiral William F. Halsey's Third Fleet, the BOSTON was in the thick of the fight through the Marianas, Carolines, Philippines, and Iwo Jima campaigns, including Halsey's hit-and-run strikes on the shrinking Japanese Empire itself. These operations won for the Captain of the BOSTON the award of the Legion of Merit and a Gold Star in lieu of a Second Legion of Merit, both with the Combat V.

Bringing his ship back to the United States at the end of March 1945 for a badly needed overhaul, Captain Herrmann was relieved three months later and reported for duty as Assistant Chief of Logistic Plans in the Office of the Chief of Naval Operations. After having stepped up to become Chief of Logistic Plans, he was appointed Rear Admiral in November 1946 and a few months later was appointed head of the Naval Section of the U. S. Survey Mission on Aid to Turkey.

In August 1947, Rear Admiral Herrmann assumed Command of Cruiser Division THREE, and of Task Force SEVENTY-ONE, which included all of our combatant ships on the China Station. After a brief return to the United States to assume command of Cruiser Division THIRTEEN, he again returned to the China Station and resumed command of Task Force SEVENTY-ONE, now designated the Western Pacific Striking Force until he was relieved in 1949.

Following a brief assignment by the Chief of Naval Operations to survey several Naval Districts, Rear Admiral Herrmann assumed duty in June 1950 as Superintendent of the U. S. Naval Postgraduate School at Annapolis, Md. He served in this capacity, where he was intimately involved in the completion and implementation of plans for the erection of new facilities and the moving of this institution to Monterey, California, until his death in November 1962 after the move had been smoothly and successfully completed in February of that year.
Fleet Admiral Ernest Joseph King
United States Navy
KING HALL

KING HALL is named in honor of Fleet Admiral ERNEST JOSEPH KING, United States Navy, who as Head of the Postgraduate Department during the resumption of operations after World War I built up the nucleus of the present civilian faculty and initiated the greatly diversified educational program which characterizes the School today. This building is the Lecture Hall and Student Assembly Building, functionally designed to serve these purposes in a most admirable fashion for up to twelve hundred persons. Not only is it of highly efficient acoustical design but it has the most modern audio and visual projection equipment installed.

Ernest Joseph KING was born in Lorain, Ohio, on November 23, 1878. Attending public schools there, he was appointed to the Naval Academy in 1897. He made his first summer cruise as a naval cadet in the USS SAN FRANCISCO, Flagship of the Northern Patrol Squadron, under wartime (Spanish-American) conditions. After graduation in 1901 he served successively in the Gunboat EAGLE, surveying Cienfuegos, Cuba; the Cruiser CINCINNATI, in the Asiatic Fleet during the Russo-Japanese War; the ILLINOIS, flagship of the European Squadron; then back to the U. S. Atlantic Fleet as Engineer Officer of the battleship ALABAMA in 1905. Coming ashore to the Naval Academy, he served two years as Ordnance and Gunnery instructor and one year on the Executive Staff there before returning to sea as Aide to the Commander Second Division, Atlantic Fleet in the Flagship MINNESOTA in 1908. He then reported to the battleship NEW HAMPSHIRE as Engineer Officer until June 1911 when he began a one-year tour as Aide and Flag Secretary to the Commander in Chief, U. S. Atlantic Fleet in the CONNECTICUT.

In June 1912, he reported to the Naval Engineering Experiment Station at Annapolis for a two-year tour, following which he took his first command, the destroyer, TERRY. After a few months he transferred to command the Destroyer CASSIN, with additional duty as Aide to the Commander, Torpedo Flotilla, U. S. Atlantic Fleet, and in June assumed command of the Sixth Division of that Flotilla. Having reported at the end of 1915 as Aide and Staff Engineer to Admiral H. T. Mayo, he served in this capacity throughout the World War I period and was awarded the Navy Cross for distinguished service in the line of his profession as Chief of Staff.

In May 1919 he reported to the Naval Academy as Head of the Postgraduate Department, facing the task of rebuilding and expanding the scope of that institution after its suspension for World War I. Following a year in command of the supply ship, BRIDGE, he reported to the Staff of the Commander, Submarine Flotillas in 1922 and shortly thereafter assumed command of Submarine Division Eleven, later also commanding Submarine Division Three as additional duty. During his subsequent three-year tour in command of the Submarine Base, New London, he was awarded the Distinguished Service Medal for meritorious service in charge of the salvaging of the sunken submarine, S-51.

The then Captain KING assumed command of the Aircraft Tender WRIGHT in July 1926, interrupting this tour to undergo flight training at Pensacola, as the rapidly expanding Naval Aviation arm needed senior officers. He was designated Naval Aviator No. 3368 in May 1927. Shortly after resuming command of the WRIGHT, he was again detached for temporary duty in charge of salvage operations on the sunken submarine S-4 in December 1927, for which service he received the Gold Star in lieu of a second Distinguished Service Medal. After a brief tour as Commander Aircraft Squadrons, Scouting Fleet, he served as Assistant Chief of the Bureau of Aeronautics and then in command of the Naval Air Station, Norfolk, Virginia. There followed two years in command of the Aircraft Carrier LEXINGTON and the Senior Course at the Naval War College, after which he assumed duty as Chief of the Bureau of Aeronautics with the rank of Rear Admiral, in April 1933.

The next five years saw Admiral King move through a succession of important Fleet commands, broken only by a short tour on the General Board, until he became Commander in Chief, U. S. Atlantic Fleet with the rank of Admiral in February 1941. After the outbreak of World War II, he was appointed Commander in Chief, United States Fleet, and a few months later assumed the duties of Chief of Naval Operations as well. Shortly after the war, the President by Executive Order combined the functions of these two offices under the Chief of Naval Operations in the person of Fleet Admiral KING, this new superior rank having been created by the Congress as special recognition for four officers of the Navy. Awarded the Gold Star in lieu of a third Distinguished Service Medal for his wartime direction, he was relieved of Chief of Naval Operations by Fleet Admiral Chester Nimitz on December 15, 1945 and has since served as an advisor to the Secretary of the Navy.

Many foreign decorations, as well as Academic and Civic honors beyond convenient enumeration, have been bestowed on Fleet Admiral KING in grateful recognition of his superlative leadership of all our naval forces throughout World War II.
Senior Professor Ralph Eugene Root
(Emeritus)
ROOT HALL

ROOT HALL is named in honor of RALPH EUGENE ROOT, PhD, Senior Professor, United States Navy, Retired. It houses the classrooms and office spaces of the Mathematics, Aeronautics, Aerology and Mechanical Engineering Departments as well as some laboratories and curricular offices. Presently, it also accommodates the Technical Library pending the erection of a proposed new building for that purpose.

Dr. ROOT was born July 18, 1879 on a farm in Grundy County, Missouri, the third of seven children of Lewis F. and Sarah Eleanor (Pollock) Root. He started his education in the rural schools near Akron, Plymouth County, Iowa, where his family moved in 1883. He attended Morningside College where he was graduated with a Bachelor of Science degree in 1905. His higher education included the earning of the Master of Science degree from the University of Iowa in 1909 and Doctor of Philosophy from the University of Chicago in 1911. He was subsequently awarded an honorary degree of Doctor of Science by Morningside College in 1942.

Dr. ROOT started his teaching career in the Forest City, Iowa, High School in 1905, moving on the following year to become Instructor in Mathematics at the University of Iowa while he studied toward his own Master of Science degree. In 1910 he was appointed a Teaching Fellow at the University of Chicago, while he studied for his Doctorate of Philosophy, awarded in 1911. After two years as Instructor in Mathematics at the University, Dr. Root became Instructor in Mathematics and Mechanics at the United States Naval Academy in 1913.

At this time, the Postgraduate Department of the Naval Academy was beginning to take form under Lieutenant Commander J. P. Morton, U. S. Navy. Dr. Root's inclinations and talents naturally lead him into involvement with this pioneering activity. Such a break with the old and setting up of new precedents in any governmental organization is not work for the timid. Dr. Root and another teacher named Doggett were hired on a tenuous basis in 1914, being paid from funds provided for lectures. They, augmented by a third teacher who had Civil Service status at the Naval Engineering Experimental Station, comprised the teaching staff for the two small groups of officer students in Marine Engineering, using laboratory facilities of the Naval Academy and the Engineering Experimental Station.

In the following year 1915, regular appointments to the faculty were authorized. Under Rear Admiral (then Commander) John Halligan, U. S. Navy, three Professors (including Dr. Root) and three Instructors expanded their activities to giving "warm-up" courses to small groups in Ordnance, Naval Construction, and Civil Engineering as well as the larger group in Marine Engineering.

The Postgraduate School was interrupted by World War I in April 1917, the teachers being given assignments in the Academic Departments of the Naval Academy and only a skeleton organization maintained. After the war, the Postgraduate School resumed operations under the leadership of Fleet Admiral (then Captain) Ernest J. King, U. S. Navy, with ample quarters in the old Marine Barracks (named HALLIGAN HALL) and with Professors Root and Doggett as the nucleus around which a much larger civilian faculty was built up to accommodate a larger student body and a more diversified educational program.

The limited faculty during those earlier, formative years of the School, gave the professors an unusual scope of opportunities and responsibilities which Professor Root indulged to the fullest. Professors of Mathematics found themselves teaching mechanics and applied mechanics with applications to ordnance, strength of materials, structures, and later to radio, aeronautics, and meteorology.

Professor Root was the guiding spirit of this versatile faculty until his retirement in 1946. Before retiring, Professor Root had a most active hand in furthering the "coming of age" of the institution to whose development he had contributed so richly. Working with Rear Admiral Spanagel, he laid much of the foundation for the authorization of the School to grant Bachelor's, Masters and Doctor's degrees, and for the reorganization of the faculty under a civilian Dean. His contributions are many, among the most important being Iterated Limits in General Analysis, (Doctor's Dissertation), American Journal of Mathematics, 1914; Limits In Terms of Order, Transactions, American Mathematical Society, 1914; The Mathematics Of Engineering, Williams and Wilkins, 1927 and Dynamics Of Engine And Shaft, Wiley, 1933.
Rear Admiral Herman Adolf Spanagel
United States Navy (Retired)
SPANAGEL HALL

SPANAGEL HALL is named in honor of Rear Admiral HERMAN A. SPANAGEL, United States Navy, Retired. This distinguished officer, as Superintendent of the U. S. Naval Postgraduate School from June, 1944, through June, 1960, made outstanding contributions to the Navy's postgraduate educational program and laid the groundwork for the present establishment in Monterey. It is a modern functional educational building of five full floors and a specially designed superstructure for the operation of electronic and aerological equipment. It includes the laboratories, classrooms and offices principally of the Physics, Metallurgy and Chemistry, Electrical Engineering, and Engineering Electronics Departments. The Director of the Engineering School and two curricular officers also have administrative offices in the building.

Herman Adolf SPANAGEL was born in Canton, Ohio, on December 16, 1891. He was appointed to the U. S. Naval Academy in 1910, being graduated and commissioned Ensign on June 6, 1914. After serving in the Battleship SOUTH CAROLINA and a brief tour of duty at the Naval Training Station, Great Lakes, Illinois, he reported as Executive Officer of the destroyer WILKES at Queenstown, Ireland to see active combat service in World War I.

A few months after the Armistice, he was ordered to a course of instruction in Ordnance Engineering at the U. S. Naval Postgraduate School, followed by a postgraduate course in metallurgy at Lehigh University, Bethlehem, Pa. During the latter period he found time to play on Lehigh's Intercollegiate Championship Lacrosse team in 1920.

Progressing through an impressive succession of sea and shore duty assignments, including Gunnery Officer of Destroyer Squadron Twelve, Command of the destroyer BRECKENRIDGE, Executive Officer of the cruiser CONCORD, Design Officer at the Naval Gun Factory, and Proof Officer at the Naval Proving Ground, the then Captain Spanagel was Officer in Charge of the Planning and Estimating Division of the Naval Gun Factory during the tremendous expansion and acceleration of activity that accompanied the outbreak of World War II.

In September, 1942, he assumed command of the cruiser NASHVILLE which was then in the Aleutian Islands Area but shortly thereafter proceeded to join our hard-pressed forces in the South Pacific. While commanding this ship he was almost continually in a combat situation from November, 1942, until April, 1944, as a part of the forces that were breaking up and turning back the Japanese invasion of the South Pacific. During parts of this period he also acted as Commander Support Forces and as Commander Cruiser Division Fifteen in combat operations.

He was awarded the Legion of Merit, with Combat "V", for "exceptionally meritorious service as Commanding Officer of the NASHVILLE during action against enemy Japanese forces in the Solomon Islands Area." He was further awarded a Gold Star in lieu of a Second Legion of Merit with Combat "V" for "outstanding services as Commanding Officer of the NASHVILLE and as Acting Commander Cruiser Division Fifteen in action against the enemy, supporting the landings at Cape Gloucester, New Britain Island."

Returning to the United States in April, 1944, he assumed duty as Head of the U. S. Naval Postgraduate School, and three years later was designated the first Superintendent of the School, in which capacity he served until June 30, 1950. During this period, he initiated and supported legislative action which culminated in the authorization of the Naval Postgraduate School to award degrees of Master of Science and Doctor of Science, in the establishment of the present school at Monterey, and other legislation for the betterment of the Navy's postgraduate education system. For his long service during his period of expansion of postgraduate curricula, he received a Letter of Commendation from the Secretary of the Navy.

On June 30, 1949, with still a year to serve as Superintendent of the Naval Postgraduate School, he was placed on the retired list with the rank of Rear Admiral. A long and illustrious career of service was brought to a close when Rear Admiral SPANAGEL was relieved of active duty on September 11, 1960.
1. The U. S. Naval Postgraduate School, Annapolis, Maryland.


5. Aerial view of the Engineering School buildings plus King Hall, (the Lecture Hall and Student Assembly Building).

6. First graduation in King Hall, June 1956.
U. S. NAVAL POSTGRADUATE SCHOOL, Monterey, Calif., June 24. -- Architect's drawing shows the new Engineering School buildings of the U. S. Naval Postgraduate School, ground breaking for which will occur on June 26, 1952. The 5-story main building in background will house electronics, physics, chemistry, metallurgy, and aerology laboratories. In front of this building will be a 2-story electrical engineering laboratory and a long, narrow 2-story building which will only be partially completed at this time and will house the department of mathematics, most of the classrooms, and some departmental offices. The buildings will be connected by covered walks. If a three-and-one-half million dollar appropriation now before Congress is approved, the mathematics building will be completed and a 3-story mechanical engineering and aeronautical engineering laboratory (right background) will be constructed. A 1200-seat lecture hall in the rear of the 5-story structure and a heating plant (not shown) will also be constructed. Trees shown in the drawing are actually in existence at present and will be left where they now stand to preserve the natural beauty of the grounds.

-- Drawing by Skidmore, Owings & Merrill, Architects