

NAVAL EDUCATION - U.S.

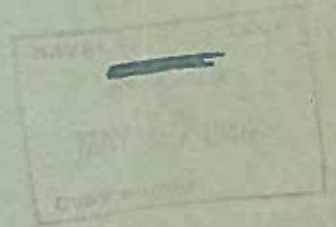
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Naval War College



REPORT OF BOARD
TO STUDY
THE METHODS OF EDUCATING NAVAL OFFICERS

Pye Board



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THE SECRETARY OF THE NAVY

Washington

Mar 3 1944

From: The Secretary of the Navy.
To: Rear Admiral William S. Pye, U.S.N.
N.O.B., Newport, Rhode Island
Subj: Board to Study the Methods of Educating Naval
Officers.

1. A Board is hereby appointed consisting of yourself as President, and of the following additional members:

Rear Admiral Herbert S. Howard, USN
Rear Admiral William W. Smith, USN
Rear Admiral Arthur W. Radford, USN
Brig. General Gerald C. Thomas, USMC
Captain Vincent R. Murphy, U.S.N.
Dr. Franklyn B. Snyder

Captain Vincent R. Murphy, USN, will act as recorder.

2. The Board will convene at the Navy Department for the purpose of making a comprehensive study of the entire field of Naval officer education for all branches of the service except for chaplains, medical and dental officers. In its investigation the Board shall give careful consideration to the recommendations contained in Enclosure (A).

3. The Board will determine its own procedures and methods of operation and will employ such additional personnel as may be necessary.

/s/ Frank Knox

Encl. (A)
Report of Committee on same subject dated 18 January 1944.

THE SECRETARY OF THE NAVY

Washington

18 January 1944.

To: The Secretary of the Navy.

SUBJECT: Study of Methods of Educating Naval Officers.

1. The following recommendations are submitted by the Committee appointed by you on 22 December 1943 to recommend the best method of approach for a study of the broad field of instruction and training of naval officers:

1. A Board should be appointed by the Secretary of the Navy to make a comprehensive study of the entire field of naval officer education for all branches of the service except for Chaplains, Medical, and Dental officers.

2. The Board should consist of seven members; five naval officers of flag or captain rank, one Marine Corps officer, and one civilian educator. It is further recommended that the naval officers be: four seagoing Line officers, one of whom is specialized in aviation, and one Line officer--engineer specialist. (The names of the officers to be submitted by the Chief of Naval Personnel.)

3. The details relative to the procedure, method and organization necessary to make the study should be determined and prescribed by the Board.

4. The Board should consider and determine the division of officer education into periods both for command and for specialist branches and should determine the spacing and time allotment of these periods for each branch.

5. In its investigation the Board should give careful consideration to the following:

- (a) The reports and surveys of previous Boards on Naval officer education and other pertinent data.
- (b) The general and specific objectives of Naval officer education for the various instruction and training periods essential to equip an officer with the education necessary to his grade and branch.

ENC. A

- (c) The scope of education in each training period in the development of naval officers.
- (d) The entrance age for midshipmen and the method of their selection and induction into the Naval Academy, and the question of carrying on the preliminary education in established colleges rather than at the Naval Academy.
- (e) The relative merit, advantages and disadvantages of a single institution for preliminary training of war officers - Army, Navy, and Air, - followed by extensive specialized training in the assigned branch.
- (f) The possible consolidation of sections of naval instruction with similar instruction that may form part of the United States Army's, Marine Corps' and Coast Guard's educational programs.
- (g) The desirability of accepting for commission in the Navy a limited number of graduates of selected colleges and schools of technology.
- (h) The effect of proposed instruction and training periods on the size of officer personnel.
- (i) The Board will give special attention to the modification, additions or subtractions in naval education necessary to take full advantage of the lessons of the present war.
- (j) The method of future supervision of all naval officer education and where in the Navy Department the responsibility should rest, and how it should be administered.
- (k) The provision of controls at the various Naval educational institutions organized for the purpose of constant curriculum revision and to keep the curricula of these institutions abreast of contemporary changes in the fleet and educational world.
- (l) The revision of the method of appointment and functioning of members of the Board of Visitors to the Naval Academy.

6. The final report should include a study of the necessary educational facilities, and the Bureau of Naval Personnel should furnish the preliminary estimate of the cost of implementing the Board's recommendations.

7. The Board should further recommend any changes in, or additions to, present law necessary to permit operation under its proposed program.

8. The report of the Board should be submitted to Cominch, Cinpac and CinClant for their comment before action by the Secretary of the Navy.

9. The final report of the Board to be submitted to the Secretary of the Navy not later than 1 July 1944.

/s/ RANDALL JACOBS
Randall Jacobs
Rear Admiral, U.S.N.

/s/ JOHN R. BEARDALL
John R. Beardall,
Rear Admiral, U.S.N.

/s/ Joseph W. Powell
Joseph W. Powell.

1 July 1944

From: The Secretary of the Navy.
To: Vice Admiral W. S. Pye, U.S.N., (Ret.),
N.O.B.,
Newport, Rhode Island.

Subj: Board to Study the Methods of Educating Naval Officers

Ref: (a) SecNav letter of 3 March 1944, same subject.

1. In view of the fact that Rear Admiral Arthur W. Radford, U.S. Navy, a member of the board convened by reference (a), was unable to be present at the sessions of the board, and designated as his alternate Captain Richard W. Ruble, U.S. Navy, who attended the sessions of the board, Captain Ruble is hereby appointed a substitute member vice Rear Admiral Arthur W. Radford, and as such substitute is authorized to sign the report of the Board.

/s/ James Forrestal

CC:
Rear Admiral Arthur W. Radford, U.S.N.
Captain Richard W. Ruble, U.S.N.

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SUPPLEMENTARY REPORT

Since the paragraphs of the Supplementary Report are numbered to correspond with those of the Principal Report, the above Table of Contents is equally applicable to that report.

Report of a Board appointed by the Secretary of the Navy
to Study the Methods of Educating Naval Officers.

Submitted

July 1944

1. The Report of the Board appointed by the Secretary of the Navy to Study the Methods of Educating Naval Officers is presented in two papers:

(a) A Principal Report which comprises

(1) The Introduction,

(2) Part I, which discusses and makes recommendations as to the main features of the required educational system for officers of all combatant branches of the Navy and of the Marine Corps,

(3) Part II, which discusses and makes specific recommendations as to matters presented to the Board in an enclosure to its precept, regarding which matters a careful consideration by the Board was directed.

(b) A Supplementary Report elaborating and amplifying particular sections of the Principal Report, and providing more specific data to assist the Bureau of Naval Personnel in estimating the cost of implementing the recommendations of the Board. The paragraphs of the Supplementary Report are numbered to correspond with the paragraphs of the Principal Report which they amplify.

2. This paper constitutes the Principal Report of the Board.

INTRODUCTION

3. The Objective of this Board is, as a result of a comprehensive study of the entire field of Naval Officer education for all branches of the service except chaplains, medical and dental officers, to make concrete recommendations in relation to the nature and scope of the essential Naval educational system, and in relation to other specific matters presented for the consideration of the Board in an enclosure to its precept.

4. The Basic Assumptions upon which this report are founded are listed below. These assumptions are based upon information presented to the Board by various officers who appeared before it. The failure of some of these assumptions to be realized will not vitiate, but may modify to a greater or lesser extent, the conclusions of the Board. It is assumed that:

- (a) the Navy will continue as a separate branch of the armed forces, or, at least, as a well-defined Naval service. Naval aviation is considered an integral part of the Navy;
- (b) the Coast Guard, at the end of the War, will be removed from the jurisdiction of the Navy Department;
- (c) the Naval Line officer strength required to man stations other than those connected with the educational system for officers, will be approximately 36,200, of whom about 17,240

will be performing duty with the surface and subsurface forces, 17,240 with the air forces, and about 1,720 will be trained specialists, such as construction-engineering specialists, restricted to the performance of engineering duty only;

(d) the total number of line officers will be considerably in excess of the figures in the sub-paragraph above, in order to provide for an adequate number of officers engaged in educational activities either as students or as instructors for other officers.

(e) in order to maintain such officer strength there will be required an annual entry to the commissioned ranks of the line of the Navy of from 2800 to 3400 ensigns; the number depending upon the future plan of distribution, promotion and elimination of line officer personnel;

(f) the officer strength of the Marine Corps, Supply Corps and Civil Engineering Corps, will continue in approximately the present ratio in relation to line officer strength; the number of annual officer entries will be respectively, approximately 570, - 290, - 35.

(g) while the distribution of officers by percentages in the various grades and periods of service in grades, may be modified in the future, such modification will not result in percentages or periods of service radically different from those now current;

(h) all line officers of the Navy will be on one list but selection for promotion will be so regulated that as soon as practicable approximately one-half of the officers in each grade above ensign, specialists excepted, shall be qualified aviation officers;

(i) approximately one-half of each Naval Academy class, by the end of the third year after graduation, will be qualified as aviation officers;

(j) the present system of promotion by selection or some reasonably close approximation thereto, will be retained;

(k) facilities exist or will be created to carry out the Board's recommendations.

5. Definition of Terms. In order to simplify and clarify later discussion several terms used therein in relation to Naval officer personnel, are here defined.

(a) Command Branch. The command branch comprises all officers of the line of the Navy who are not restricted to the performance of engineering duty only.

(b) Specialist Branches. The specialist branches comprise all officers of the line of the Navy who are restricted to the performance of engineering duty only, and officers of the Supply Corps and of the Civil Engineer Corps.

(c) Specially Qualified Officers. Specially qualified officers are those officers of the command branch who by specific post-graduate education, training and experience,

become specially qualified for the performance of certain types of duty such as aviation, submarine, operational staff, engineering (manipulation), gunnery, communications, law, and similar operational or research duties. Every officer should be specially qualified in one or more of such duties. Such qualification in most cases will require a specific course of post-graduate education and training. The original period of special education and a subsequent limited number of assignments to the type of duty for which specially qualified, are considered normal activities in the career of an officer of the command branch.

6. Basic Considerations.

(a) The objective of the system of Naval education is to obtain the best officer material and to equip it by education and training for the most effective performance of its future duties. The complete system of education must be such as to produce officers trained in advance to perform the duties to which they may be assigned when the Navy is expanded for war, and especially to produce an adequate number of highly selected officers capable of exercising high command in time of war, with skill, imagination and determination.

(b) Any system of Naval education must be suitable to its objective but its effectiveness also will depend upon the suitability of the personnel selected to receive such education. Hence the selection of personnel for each

phase of Naval education is, and must be recognized as, a fundamental part of an effective educational system.

(c) The present war has demonstrated in relation to the future education of Naval officers that:

(1) All Naval officers must have a more thorough knowledge of the capabilities, limitations and general principles of employment, separately and in coordination, of combat aviation, surface, subsurface, ground and amphibious forces, and the requirements, means and methods of their logistic support. To accomplish this it will be necessary to expand the attendance of officers at schools of other branches and services, and to provide for many officers periods of performance of duty with other branches of the Naval service and with other services.

(2) A larger percentage of officers must be more thoroughly and specially educated and trained for the performance of operational staff duties, including joint staffs, particularly in regard to operational and logistic planning.

(3) A larger percentage of officers should be specially qualified in applied communications.

(4) Officers must be given special education and training for command at an earlier age. For officers of the command branch education and training in materiel matters is important but distinctly secondary to education and training for command.

(d) It is obviously impossible and impracticable to equip an officer for the whole period of his service during any one educational period. Education, therefore, must be progressive and must be provided at appropriate periods in an officer's career.

(e) Periods of education should precede periods of increase responsibility, thus preparing the officer for the anticipated more important duties. In the progressive periods of Naval education for officers of the command branch, emphasis shifts from the manipulation of materiel to the exercise of command. All Naval education and training should stress the development and practice of combat leadership.

(f) While no one man can be master of all the aspects of the Naval profession, the Navy as a whole must include, and means must be provided for the education of some officers specially qualified in each of the various arts, industries and sciences, which can, in any way, contribute to the advancement of the conduct of Naval warfare.

PART I

7. This part of the Principal Report discusses and states the recommendations of the Board in relation to the required educational system for officers of all combatant branches of the Naval service.

8. The field of education and training for officers of the combatant branches of the Naval service divides itself logically into two main subdivisions,

(a) education and training preparatory to being commissioned hereafter referred to as preparatory education; and

(b) education and training conducted periodically throughout the officer's commissioned service; hereafter referred to as post-graduate education.

9. Part I is presented in two sections. Section 1 pertains to Preparatory Education; Section 2 pertains to Post-graduate Education. The method of selection of students for each of these types of education is discussed in Part II of this Principal Report.

Section I - Preparatory Education

10. The function of preparatory education is sixfold:

(a) to develop military character, including discipline, the attributes of leadership, and the basic virtues such as patriotism, loyalty, courage, obedience and self-sacrificing performance of duty;

(b) to provide sufficient basic indoctrination and professional training to ensure ability to become in a short period of active service, an efficient junior officer;

(c) to provide a broad but functional basic and professional education suitable as a foundation for essential further post-graduate education and training as a regular officer;

- (d) to provide the basic elements of a liberal education;
- (e) to develop mental capacity, with emphasis upon ability to reason to a logical conclusion;
- (f) to develop the physical endurance and ability needed to work under pressure, and to inculcate habits that will preserve good health.

11. The Board is of the opinion that because of the traditions of the Naval Academy and of the fact that there students can be educated and trained under rigid discipline, a four year course at the Naval Academy, compared to any other suggested educational system, will best fulfill the function of preparatory education for Naval officers, and most uniformly will produce effective officers for all combatant branches of the Naval Service.

12. While it is neither practicable nor economical to increase the capacity of the Naval Academy to produce all of the required commissioned officers for the combatant branches of the Naval service, it is considered essential for maximum efficiency and coordination between branches that the following percentages of the annual officer entries to such branches be Naval Academy graduates:

Line, 33-1/3 - 40%, preferably 40%;

Supply Corps, 33-1/3%;

Marine Corps, 33-1/3%;

Civil Engineer Corps, 33-1/3% - 40%.

13. Based upon the estimated officer strength of the post-war Navy, the above percentages will require the following approximate number of Naval Academy graduates annually:

Line, 1300 plus,
Supply Corps, 90,
Marine Corps, 190,
Civil Engineer Corps, 15.

14. Thus the number of Naval Academy graduates required annually will be approximately 1600, or assuming a four year course about double the present capacity of the Naval Academy.

15. It has been demonstrated, as later recommended in Part II of this report, that certain modifications in the method of selecting midshipmen and certain changes in the curriculum of the Naval Academy will produce officers of greater capacity.

16. As the line constitutes the major portion of the officer personnel, methods of preparatory education for line officers, other than the Naval Academy will be considered before considering such methods for the other combatant corps.

17. Prior to the war two methods of preparatory education to produce Reserve officers were current, the Aviation Cadet program and the Naval Reserve Officers' Training Corps. Shortly after the commencement of the war several Reserve Midshipmens' Training Schools were established. More recently there has been established a Navy-College (V-12) program which by means of a

nationwide qualifying examination determines the suitability of applicants, and by further examination selects students for the V-12 program. Upon completion of a definitely specialized course at college these students are sent to a Naval Reserve Midshipmens' School, or to flight training for aviation, or to further special educational courses.

18. The current war-time objective of these methods of preparatory education is to produce in a minimum acceptable period of time, Reserve officers capable of performing adequately the duties of a junior officer in one particular branch, or in some cases, in one particular speciality.

19. The current procedure is meeting war requirements in an excellent manner. As currently conducted, however, no one of the courses is adequate to uniformly produce officers of adequate education and training to warrant its adoption as a post-war system of preparatory education either for officers of the regular Navy or for Reserve officers a large percentage of whom may later be commissioned in the regular Navy. Any system of post-war preparatory education must effectively fulfill its function as stated in paragraph 10. In view of this fact, the system of preparatory education at other colleges and universities should include the most essential elements of the Naval Academy curriculum but should be so slanted toward a standard college course as to warrant the award by the college of a diploma and a degree, and to warrant the anticipation by the student, of later civilian employment if at the end of 3 years active ser-

vice he returns to civil life.

20. The Board is convinced that the following requirements must be met by any post-war system of preparatory education for line officer personnel other than the Naval Academy.

(a) There must be a contract between the Navy Department and the university or college concerned, providing for instruction of a definite number of students selected by the Navy Department, in a definite course prepared jointly by the University and the Navy Department.

(b) The Navy Department must adopt a definite procedure for selecting and assigning students for such instruction. This procedure should be the same as that adopted for selecting Midshipmen for the Naval Academy.

(c) The curricula of this course must -

(1) provide adequate education to warrant the appointment of graduates as officers of the regular Navy;

(2) provide sufficient drill periods to permit adequate professional training;

(3) provide a six weeks period each summer for training on board ship or at an air station;

(4) provide such features of education as would warrant the award of a diploma and a degree by the university or college, and of such character as to fit the student for civilian employment after three years active service as ensign in case he not be

appointed an officer in the regular Navy.

21. Preparatory Education for Officers of the Supply Corps.

The Supply Corps will require approximately 250 - 275 officer entries per year. Approximately 90 of these should be Naval Academy graduates. The others should be obtained by the same process, Navy-College training, as is used to obtain line officers, the required number being assigned to the Supply Corps after two years active service at sea.

22. Preparatory Education for Officers of the Marine Corps.

The Marine Corps will require 550 - 575 officer entries per year. Approximately 190 of these should be Naval Academy graduates. It has been the practice of the Marine Corps to obtain officers other than Naval Academy graduates through the Platoon Leaders' Course, enrolling students of colleges not identified with either Army or Navy R.O.T.C. training, and by the promotion of enlisted personnel trained in service schools. These methods have proven satisfactory in the past and are believed to be satisfactory for the post-war procurement of Marine Officers.

23. Preparatory Education for Officers of the Civil Engineer Corps.

The work of the Seabee organization during the war has resulted in an expressed desire by the Chief of Bureau of Yards and Docks, that approximately one-half the number of annual entries to the Civil Engineer Corps be Naval Academy graduates. For officers other than these the pre-war method of selecting officers by competitive examination from graduates of recognized engineering courses who have had several years practical engineer-

ing experience since graduation, is believed to be satisfactory for the future.

24. Recommendations in relation to a system of Preparatory Education.

(a) That the Naval Academy be the primary source of Officer personnel for the regular Naval service;

(b) That the capacity of the Naval Academy be increased at the earliest practicable date to such an extent as to permit an annual graduation of at least 1600 midshipmen.

(c) That the course be four years and that the curricula be modified in accordance with the recommendations of the Special Curriculum Committee appointed by the Superintendent, U. S. Naval Academy, in its report submitted on 20 March, 1944.

(d) That graduates of the Naval Academy be assigned to the various combatant branches of the Naval service, in percentages of required annual entries approximately as follows:
Line, not less than 33-1/3%, preferably nearer to 40%,
Supply Corps, 33-1/3%,
Marine Corps, 33-1/3%,
Civil Engineer Corps, 33-1/3% to 40%.

(e) That as a secondary source of officer personnel for the Line and Supply Corps there be established a Naval Officers Training Corps, with the following general characteristics:

(1) The students to be selected by the Navy Department,

designated as Reserve Midshipmen, and assigned to specified universities and colleges for Preparatory education as Naval Officers. These students to be selected by the same process as is adopted for the selection of Midshipmen, from citizens of the various states in accordance with the distribution of population.

(2) The Navy Department to contract with universities and colleges suitably distributed geographically throughout the United States, to conduct in cooperation with the Navy Department a definite four year course certain portions of which will be prescribed by the Navy Department. This course must be of such a nature as to warrant upon its successful completion, the award by the university or college concerned, of a diploma and a degree, and must constitute adequate and suitable preparatory education to warrant appointment as a commissioned officer in the regular Navy. This course, likewise, should be such as to fit the student for civilian employment in case at the end of three years active service as an ensign in the Naval Reserve, he not be appointed as a regular officer.

(3) As a definite feature of this Naval Officers' Training Course the Navy Department should provide

three periods of not less than six weeks each, of training on board ship for students allocated to the sea branch, and at air stations for those allocated to the aviation branch.

(f) That the pre-war system of obtaining officers of the Marine Corps be resumed upon the termination of the present war, except that the percentage of Naval Academy graduates be increased.

(g) That the pre-war system of obtaining officers for the Civil Engineer Corps be resumed upon termination of the present war, except that the percentage of Naval Academy graduates be increased.

Section Two - Post-graduate Education.

25. The Board has based its later recommendations as to an appropriate system of post-graduate education upon the following conclusions:

(a) The general plan for post-graduate education of line officers presented in the Report of the Knox-King-Pye Board of 1920 was, and still is, sound.

(b) The plan contained in that report, although the report was approved by the Navy Department, was only partially carried out due to the shortage of officers. Failure to fully implement the recommendations of that Board resulted in a standard of Naval officer efficiency below that which

is attainable if during peacetime the allowed officer strength of the Navy is adequate to permit proper periods of post-graduate education for a suitable percentage of the commissioned personnel.

(c) It is estimated that to attain the desired state of efficiency, that is, a state of education and training which will permit war-time expansion of Naval personnel with the least loss of efficiency, it will be necessary during peacetime for approximately 15% of the officers of the line of the Navy, 10% of Marine officers, and 5% of the officers of the Supply and Civil Engineer Corps, to be engaged at all times in educational pursuits either as student officers or as instructors for such officer students.

(d) All commissioned officers of the combatant branches require one period of post-graduate education in the duties of their particular branch. This period of post-graduate education should be mandatory for all. For officers of the command branch this is provided by the General Line Course and courses to produce specially qualified officers. For Naval line officer specialists by a course in Construction Engineering; for Marine officers, by the Marine Corps Basic School; for Supply Corps officers, by the Supply Corps School of Application; and for the Civil Engineer

Corps for Naval Academy graduates by a three year course in Naval Civil Engineering, and for officers appointed from civil life, by a four month Indoctrination course and a period of at least one year service in a ship of the fleet.

(e) It will be impracticable to provide all officers with the later more advanced periods of post-graduate education. It should be kept in mind in selecting officers for later periods of post-graduate education that each such period is a preparation for greater authority and responsibility, and consequently the most promising officers should be so selected. Selection for such further post-graduate education should be indicative of suitability for selection for promotion. Only by such successive periods of education can the most efficient leaders be developed.

26. The career of a line officer divides itself according to the nature of the duties performed, into five phases, each leading to the following one of increased authority and responsibility. These phases are represented approximately by established graded advance in rank, and are:

(a) Division and junior division officer - during which the officer exercises control over weapons and small groups of men, stands deck and engineering watches, or controls a single aircraft or small surface craft such as a P.T. boat -

the ranks of Ensign, Lieutenant (jg) and part of Lieutenant grade; roughly, the first 7-11 years of commissioned service. Preparatory education should fit the officer for the duties of this period.

(b) Head of Department and minor staff duties - during which the officer control a definite portion of the ship's organization, performs staff duties, or commands a small ship or aviation unit - part of Lieutenant grade, all of Lieutenant Commander grade and part of Commander grade; roughly, from the 7th to 23rd year of commissioned service. Post-graduate education is essential as preparation for this and later periods.

(c) Commanding Officer - during which the officer commands a large ship, performs important staff duty, or commands a group of small ships or a large aviation unit - the ranks of Commander and Captain; roughly, from the 23rd to 30th year of commissioned service.

(d) Division Commander - commands division of large ships or small mixed forces, or aviation groups, acts as Chief of Staff - ranks of Captain, Commodore (if retained), and Rear Admiral; roughly, 30th to 35th year of commissioned service.

(e) Force and Fleet Commander - commands forces, fleets, areas, or fills high administrative posts on shore - ranks

of Rear Admiral, Vice Admiral and Admiral; roughly, 35th to 42nd year of commissioned service.

27. The ranks mentioned in the five phases above are the ranks appropriate for service during that phase. They are not the ranks during which education for that phase should be accomplished. Each period of post-graduate education should prepare the officer for the following phase of service; hence, a period of post-graduate education should be concluded prior to entrance to the phase of service for which it is a preparation.

28. Recommendations in relation to a system of Post-graduate Education. The Board recommends that the following post-graduate courses be established for officers of the command branch, to be provided at four distinct periods. The first period is essential for all such officers in order to fit them for the performance of normal Naval duties; the three later periods are essential for those officers whose records demonstrate better than average capacity for leadership.

(1) The first period should be at the end of five years commissioned service. It should comprise:

(a) A General Line course, and

(b) such courses as may be required to produce specially qualified officers in essential Naval activities, arts and sciences.

(2) The second period should be during the first three years in the grade of Lieutenant Commander. It should
comprise:

(a) A Command and Staff Course.

(b) Upon completion of the Command and Staff course a total of about 50 of these officers in groups of appropriate size, should be detailed to take a course at one of the following, the Army Command and General Staff School, the Army Air Force School of Applied Tactics at Orlando, Fla., the Marine Command and Staff School at Quantico, and appropriate Army Branch Schools such as Coast Artillery and Chemical Warfare.

(3) The third period should be during the first three years of the Commander grade. It should comprise:

(a) a Naval War College course.

(b) Upon completion of the Naval War College course an appropriate number of these officers should be detailed to take the Army-Navy Staff College course, and if and when reestablished, the Army War College Course.

(4) The fourth period should be during the grade of Captain or Flag Officer. It should comprise an Advanced War College Course.

29. The General Line Course.

(a) The general objective of the General Line Course is to prepare the officer for efficient performance of duty as Head of Department on board ship or of an administrative unit on shore; and as a commanding officer of a small ship or aviation unit.

(b) The specific objectives of its curriculum are:

(1) To continue the development of the powers of analysis and reasoning;

(2) To ensure mutual understanding in relation to the capabilities and limitations of all Naval weapons, types of ships and aircraft;

(3) To indoctrinate in the most effective uses and operation of types of ships and aircraft singly and in coordination;

(4) To familiarize with the Naval system of ship, aviation and shore establishment organization and duties of the Head of Departments thereof;

(5) To introduce to the more important and basic tactical concepts and the underlying axioms;

(6) To acquaint with the fundamental considerations which control economic, political and social relations;

(7) To provide a forum for the exchange of ideas and experiences in various types of ships and aircraft, and to acquaint student officers with the latest development in their own and other branches;

(8) To familiarize with the principles and practices of Naval communications with emphasis on the operational aspects thereof.

30. The General Line Course should be of eleven months duration and in view of the probable many sources of future Naval officers, should be mandatory for all officers of the command branch except

those undergoing special post-graduate education for a specialist assignment. In order that officers of the same class-group may become acquainted with each other, and in order that there be an opportunity to judge relative aptitude for specialized training to follow, all officers of the class-group should be ordered to take this course simultaneously.

31. The number of officers in a class-group at this period may be as high as 2000. The need for the General Line Course will be immediate upon the termination of the war. Steps should be taken at once to obtain an existing educational institution suitable for the immediate inauguration of this course, upon the termination of the war.

32. Post-graduate courses to produce specially qualified officers of the command branch.

(a) Specially qualified officers of the command branch may be divided into general classes as follows; those who specialize

- (1) in the performance of operational staff duties;
- (2) in a technical materiel branch with a view to supervising the design and production of materiel;
- (3) in a technical materiel branch with a view to becoming expert in the manipulation of such materiel;
- (4) in other branches such as law, recruitment and distribution of personnel, interpreters and translators, and similar less well defined branches.

(b) Post-graduate course to produce specially qualified officers of the first three classes should follow immediately after the General Line Course; post-graduate education for officers of the last class should be given early in, or before attaining the grade of Lieutenant-commander.

(c) Post-graduate education for many of the officers of the first three classes should be given in whole or in part in a Navy Post-graduate School; for the fourth class, in civilian colleges.

(d) There should be established a new Navy Post-graduate School capable of accommodating approximately 1000 students. Because of the contemplated expansion of the Naval Academy and the difficult living conditions there, it should not be established in Annapolis. There will be many advantages in locating the Post-graduate School and the General Line Course in the same place. This will permit more uniform and economical administration by placing both schools under one head and one faculty. It will likewise save much time and money by eliminating, for many officers, a change of station upon completion of the General Line Course.

(e) Post-graduate courses to follow immediately after the General Line Course, should be provided in:

- (1) Operational staff duties;
- (2) Design and production of Ordnance Material;
- (3) Aeronautical engineering-power plants and structures
- (4) Aeronautical engineering-armament;
- (5) Aerology;
- (6) The operation and maintenance of engineering plants.

- (7) The operation and maintenance of electrical plants;
- (8) Damage control materiel and methods;
- (9) Applied communications;
- (10) Operation and care of Radar equipment;
- (11) Operation, control and maintenance of torpedoes and mines;
- (12) Installation, operation and maintenance of nets and booms.

(f) Necessity for courses other than as stated in (e) above will undoubtedly arise and such courses should be provided as required.

33. The general objective of the course in operational staff duties should be:

To educate and train officers for the performance of operational staff duties on the staffs of flag officers afloat and ashore, and for comparable duties in the administration and operation of the Navy Shore Establishment.

34. The specific objectives of the course should be:

(a) To impart thorough knowledge of the organization, duties and responsibilities of the various staffs and of the individual members thereof.

(b) To impart a thorough knowledge of the mechanics of communications, and their relation to organization, administration, and to the conduct of operations.

(c) To impart a thorough knowledge of division, type and force tactics, the principles underlying them and the techniques by which they are executed.

(d) To impart a thorough knowledge of the organization, duties and responsibilities of the various offices and Bureaus of the Navy Department and of Sea Frontiers, Naval Districts, Navy Yards and Naval Bases.

(e) To familiarize officers with the operational functions of command, including the solution of minor military problems, the formulation of directives, and the supervision of the planned action.

(f) To furnish background for and to indicate methods of solutions of logistic problems, particularly those within the sphere of Naval control.

(g) To train officers in the planning and execution of tactical, strategical, gunnery and other exercises.

(h) To acquaint officers with the organization, administration, and problems of the Army, Marine Corps, and Coast Guard.

35. The course in operational staff duties will require approximately 11 months.

36. The general objective of the post-graduate courses in design and production of technical materiel should be:

By comprehensive and advanced courses in a particular technical materiel branch of the Naval profession to qualify officers for the supervision of research, design and production of materiel pertinent to that branch; and through such education,

to stimulate original and inventive thought along still further advanced lines.

37. The specific objectives of this type of education differ widely among the particular technical subjects in which instruction is required. It is felt that they may be best expressed in the concept that they should lead to a master's degree.

38. The general objective of all courses in the manipulation of materiel should be:

By comprehensive instruction and training to qualify officers in the operation, control, maintenance and repair of a particular kind of Naval materiel or installation.

39. Most of the above listed post-graduate courses will require six months to a year at the Navy Post Graduate School and several will require additional periods of attendance at designated civilian colleges.

40. The Command and Staff Course should be conducted at the Naval War College, Newport, R. I. Its general objective should be:

To provide basic education in the Science, and the Art of War, with special emphasis upon the operational functions of command and the organization, functions, and procedure of operational staffs in planning and in the supervision of the planned action.

41. The specific objectives of the Command and Staff Course should be:

- (1) To familiarize officers with Naval strategy, tactics and logistics, and with current fleet practices in the conduct of operations.
- (2) To familiarize officers with the capabilities and limitations of various weapons, types of ships and aircraft, and of sea, land, and air forces, and the relationship of such forces in the conduct of amphibious and combined operations.
- (3) To continue the development of leadership and the powers of analysis and reasoning with particular emphasis upon the solution of military problems.
- (4) To familiarize officers with Naval staff organization functions, and procedure, and with the duties of officers of the operational staff in planning and in the execution of Naval and combined operations.
- (5) To ensure a common conception of the basic considerations in relation to, and of the practical methods of carrying out, war operations which common conception is essential to ensure that thorough cooperation and coordination which produce unity of action.
- (6) To more thoroughly explore the considerations which control economic, political and social relations.
- (7) To simulate the practice of war by the conduct of maneuver board and chart maneuver exercises.

42. This course should be of eleven months duration and should be provided for approximately fifty per cent of the officers who reach the rank of Lieutenant Commander. At least one-third of those officers of the class-group who in the second portion of the first period of post-graduate education were specially qualified for the performance of operational staff duties, should be assigned to this course. The number of students will be approximately 600 annually. To make possible the instruction of this number of officers a large increase in the facilities of the Naval War College will be required. This matter is discussed in the Supplement.

43. The courses, at Army and Marine Schools which constitute the second part of this period will vary in length, from six months to one year.

44. The Naval War College Course should be conducted at the Naval War College, Newport, R. I. Its general objective should be:

To provide a confirmation and summary of, and adequate familiarity with, advanced elements of the Naval profession, emphasizing those principles which govern in the administration and operation of forces and fleets, in order to prepare officers for prospective employment as commanding officers of capital ships, commanders of groups of smaller ships or aircraft, or as chiefs of staff.

45. The specific objectives of the War College Course should

be:

(1) To confirm, and to continue, instruction and training in the advanced parts of the Naval profession and to ensure a knowledge of international relations, international law, strategy, tactics and logistics.

(2) To familiarize officers with the broad aspects and trends of history, particularly Naval, military and diplomatic history.

(3) To ensure comprehensive appreciation of the functions of the several offices and Bureaus of the Navy Department and of Service Forces, bases and other shore establishments, in the conduct of war.

(4) To ensure familiarity with planning for, and the conduct of, major fleet and amphibious operations.

(5) To simulate the practice of war by the solution of military problems and by the conduct of maneuver board and chart exercises.

46. This period of post-graduate education should be provided for at least fifty percent of the officers who reach the grade of Commander. The officers so assigned should include at least one-third of those officers of the class-group who previously have completed the Command and Staff course. The number of officers to be assigned to the Naval War College Course will be approximately 350-400 annually. Additional facilities required

are discussed in Par. 42 of the Supplement.

47. Upon completion of the War College Course an appropriate number of these officers should be ordered to the Army-Navy Staff College. Although at present the Army-Navy Staff College course is of but five months duration, it is believed that in time of peace it should be extended to eleven months.

48. The Advanced War College Course. This final period of Naval post-graduate education, should be conducted at the Naval War College.

49. The general objective of the Advanced War College course should be to prepare selected officers for important fleet commands.

50. The specific objectives of this course should be:

- (1) To ensure familiarity with the latest fleet practices in the conduct of operations, with current war plans, and with the current state of international relations;
- (2) To familiarize with the latest practice in the solution of military problems, the formulation of directives, and the supervision of the planned action;
- (3) To familiarize with the latest practice in the conduct of amphibious and combined operations;
- (4) To simulate the practice of war by the solution of military problems and the conduct of maneuver board and chart board exercises.

51. The Advanced War College Course should immediately precede assignment to an important command in the fleet. To be effective, the exercise of command of an important fleet unit requires preparation. Such preparation, while on shore, can best be accomplished at the Naval War College, where the officer is temporarily relieved from other responsibilities. Absence of such preparation reduces the efficiency of the fleet. This course should be of eleven months' duration. The number of student officers should be approximately 25.

Post-graduate Education for Line Officer Specialists.

52. The officers of the "Specialist Branch" of the line fall into two categories:

(a) those who, after two years service in the command branch are selected for special post-graduate education and training in Naval construction and Naval engineering, and who upon completion of such instruction are designated for "engineering duty only", and

(b) those who, usually after a course to produce specially qualified officers in manipulation, perform command branch duties primarily along the line of their speciality and later, in the grade of Lieutenant-commander or commander, are selected for "engineering duty only."

53. Specialists of the first category will be expected to perform duties in connection with the design, construction and repair of ships, including the power plants thereof. Post-graduate education for officers of this category should consist

of a 3 year course in combined Naval Architecture and Marine Engineering at a civilian university. The present course at Massachusetts Institute of Technology, designed for this purpose, is believed satisfactory. Because of the probable increase in the post-war number of officers assigned to this course, it may be desirable to conduct the course in two institutions. The total number of students simultaneously in attendance may be as high as 180.

54. In view of the intricate and complicated features of modern ships, it is more than possible that, after a period of 5 to 7 years productive duty after completing the post-graduate course, further specialization for a small number of officers will be required in the fields of hull design and construction and other technical specialties. Courses at civilian colleges are available. It is highly desirable that a few officers take appropriate courses in foreign countries in order that our Navy may be informed of the latest foreign practices.

55. Officers of the second category may be assumed to have had a course for "specially qualified officers" and to have developed knowledge and skill through actual experience. The 3 year post-graduate course is not required by them but the later special courses may be in some instances. Among the specialists of this second category will be specialists in ordnance, communications and aerology.

56. Post-graduate Education for Officers of the Supply Corps.
The Board recommends the following post-graduate education for

officers of the Supply Corps:

- (a) a basic course in the duties of officers of the Supply Corps, to be conducted at the Naval Supply Corps School;
- (b) such additional post-graduate courses for a limited number of Supply Officers, at least five years after being commissioned in the Supply Corps, as have in the past been conducted at the Harvard School of Business Administration, Babson Institute, and Lowell Textile Institute;
- (c) in addition to the above an appropriate number, approximately a total of 5-10 Supply Corps Officers should be assigned annually to the Command and Staff Course, and to the Naval War College Course;
- (d) an appropriate number of Supply Officers should attend the Army Industrial College, if it, or a similar course is reestablished.

Post-graduate Education for Civil Engineer Officers.

57. Civil Engineer Officers are of two categories,
- (a) Graduates of the Naval Academy or of the Naval Officers' Training Corps, selected after two years active service at sea.
 - (b) Graduates of civilian civil engineering courses selected from civil life by competitive examination.
58. The Board recommends the following post-graduate education for Civil Engineer Officers:

(a) For graduates of the Naval Academy or Naval Officers' Training Corps - after two years service at sea, a 3 year course in Naval Civil Engineering at a civilian college or university, such as has been given successfully at Rensselaer Polytechnic Institute.

(b) For officers appointed from civil life - a 4 months indoctrination course in Naval customs, traditions, and Naval civil engineering problems followed by assignment to duty at sea for a period of one year.

(c) Further post-graduate education should follow the lines of further education for line officers for engineering duty only, that is, officers in limited numbers should later be sent to universities or colleges in the United States and abroad for special courses in particular aspects of the profession.

(d) In addition to the above, an appropriate number, probably not over a total of 5 Civil Engineer officers should be assigned annually to the Navy Command and Staff Course, the Marine Command and Staff Course, and the Naval War College Course.

Post-graduate Education for Marine Officers.

59. The Board recommends the following post-graduate education for Marine Officers, as qualification for command,

(a) Basic Officers' School, for all Marine officers from

whatever source obtained, immediately upon appointment. The course should be 9 or 10 months duration. Its general objective should be, to indoctrinate, and to train officers for the effective performance of duty as junior leaders.

(b) Company Officers' School corresponding in general with the General Line Course for line officers, after approximately 5 years commissioned service. The course should be 9 or 10 months. Its general objective should be,

to fit officers for company command and for duty on battalion or regimental staffs, and duty in Marine Corps Headquarters.

(c) Command and Staff School, corresponding in general with the Command and Staff Course for the command branch of the Navy, for officers of over 10 years service or early in the grade of major. About 30% of all officers reaching the appropriate grade, should take this course. It should be about 11 months in duration. Its general objective should be,

to prepare officers for regimental command and for the performance of important operational staff duties.

(d) An appropriate number of graduates of the Marine Command and Staff School, should be ordered to the Navy Command and Staff course and to the Army Command and Staff course.

(e) An appropriate number of experienced Marine Officers of the rank of Lieut. Colonel, should be assigned to the Naval War College course, the Army-Navy Staff College, and to the Army War College, if and when it is re-opened.

60. The Board recommends the following post-graduate courses to produce the required "specially qualified" Marine Officers:

- (a) Aviation Ground Officers' course,
- (b) Artillery Officers' course,
- (c) Engineer Officers' course,
- (d) Communication Officers' course,
- (e) Ordnance Officers' course,
- (f) Quartermaster Officers' course,
- (g) Radar Officers' course,
- (h) Tank and Vehicle Officers' course,
- (i) Sea-duty training course.

61. Some officers of the Marine Corps should attend the General Line Course. Aviators will be qualified as fliers at Naval Aviation Training Schools. Some of the above courses can be carried on in connection with similar schools of the Army and Navy. In some other specialties such as radio engineering, aeronautical engineering, aerology and applied communications, Marine Officers should attend Navy Schools.

PART II

62. Part II of this report discusses and makes specific recommendations as to matters presented to the Board in an enclosure to its precept. For clarity each subject is stated preceding its discussion.

63. Consider the reports and surveys of previous Boards on Naval Officer education and other pertinent data.

64. The Board has carefully considered the reports and surveys of previous Boards. The indicated size of the post-war Navy has introduced an entirely new factor into the educational system, that of obtaining the major portion of the post-war officer strength from sources other than the Naval Academy. This aspect of Naval education has not been considered previously. Insofar as concerns the Naval Academy, the Board is unanimously of the opinion that the course should be four years, and that the recent report of the Special Curriculum Committee appointed by the Superintendent constitutes an excellent basis for revision of the Naval Academy curriculum. In regard to post-graduate education the Board approves the general plan contained in the Report of the Knox-King-Pye Board of 1920.

65. Determine the general and specific objectives of Naval Officers education for the various instruction and training periods essential to equip an officer with the education

necessary to his grade and branch.

66. The general objectives of all recommended periods of education and training have been stated in Part I of this report. Specific objectives have been stated for all periods for which the specific objective is not apparent from the nature of the course.

67. Determine the scope of education in each training period in the development of Naval officers.

68. The scope of education in each training period is covered in Part I by enumeration of such courses, and by the statements of general and specific objectives of the recommended courses.

69. Determine the best entrance age for Midshipmen.

70. The Board recommends that the age limitation of entry to the Naval Academy and to the Naval Officers' Training Corps, be from the 17th to 19th birthday. Should universal military service be adopted with a proviso that service at the Naval Academy or in the Naval Officers' Training Corps shall not be considered as such service, it will be necessary to raise the age limits to from the 18th to 20th birthday.

71. Reducing the maximum age of entry will result in graduation at an earlier average age permitting the first period of post-graduate education at a more suitable age, and permitting officers to reach command rank earlier.

72. Reducing the age spread to 2 years, instead of 4 years as it is at present, will result in a greater uniformity among students in respect to physical capacity and educational attainments. Under the present age spread many midshipmen enter the Naval Academy direct from High School while others have had two to three years of college. Their physical capacities also differ widely due to differences in age. The present situation creates a definite handicap to the younger man and tends to the formation of bad habits by the older man to whom the subjects studied during the first year may be but a review.

73. The existing wide spread in age limits is believed to have been adopted to ensure that age should not debar any young man from being eligible for an appointment to the Naval Academy. If the later recommendations of this Board in relation to the method of selection and induction of midshipmen are approved, there will be opportunities each year for all eligible young men and, consequently, there will be no need for such a wide age spread.

74. Make recommendations as to the method of selection and induction of Midshipmen.

75. The objective of a method of selection of midshipmen is to obtain the best possible officer material, qualified only by a desirable geographical distribution of officer personnel throughout the nation. The Board is unanimously of the opinion

that the quality of the officer personnel obtained by the present method of appointment of midshipmen is not the best obtainable and recommends a change in the method.

76. During the last 20 years the attrition of a class during the four year course at the Naval Academy from all causes, mostly from deficiencies in scholastic ability or inaptitude, has averaged over 25%. Such a wastage is most uneconomical but its most serious aspect is the reduction in the number of officers produced by the Naval Academy. This wastage, it is believed, can be reduced by at least 50% by increasing the number of candidates for appointment and by a careful screening of such candidates in order to obtain the best officer material available. Upon the shoulders of its Naval officers the fate of the nation may depend. Eligibility for education and training for a commission as an officer of the Navy should depend only on four factors, character, intelligence, aptitude, and physical capacity.

77. The Board is further of the opinion that candidates for the Naval Officers Training Corps, should have the same qualifications as students at the Naval Academy, and that appointments for both should be made simultaneously by the same method. In so far as practicable each selected candidate should be permitted to choose the Naval Academy or a designated college, in which he desires to receive his preparatory education.

78. Experience in selecting students for assignment to the V-12 (Navy-College) training has demonstrated a practical means of giving qualifying examinations to thousands of applicants. In the last test only 5000 applicants were accepted from 105,200 who took the qualifying examination. The colleges now carrying on Navy V-12 courses state that the standard of students obtained by the methods used in their selection, is well above the normal standard of college students.

79. This V-12 qualifying test demonstrates that it is possible to throw the appointments to the Naval Academy and Naval Officers' Training Corps open to nationwide competitive examination, and the Board believes that such a procedure with certain restrictions to insure geographical distribution in accordance with population distribution, will produce a higher standard of officer personnel. Such a procedure is likewise more in keeping with the democratic principles of this country than is the present system.

80. As an incentive to enlisted personnel of the Navy and Marine Corps, it is desirable that 5% of the appointments to the Naval Academy and to the Naval Officers' Training Corps be made from such enlisted personnel. For these appointments competition should be between such enlisted personnel only and should not take cognizance of the residence of the candidate.

81. The Board is also of the opinion, that as a reward for the parent's service, sons of service personnel who have served more than fifteen years in the Army, Navy, Marine Corps or Coast Guard, or who have been killed in, or retired from such service due to wounds or disease incident to, such service, should be considered as a special class, and should compete among candidates of the same class for an appropriate number of appointments.

82. The Board recognizes that such a qualifying examination as is now given to applicants for the V-12 is not alone adequate to be considered as a final competitive examination. It does believe, however, that such an examination is a satisfactory method of reducing the number of candidates within each state or territory, or within each special class group to 5 times the existing available appointments, roughly to 20,000.

83. In order to determine which of these 20,000 are to receive appointments, a second examination would be required. This second examination would be strictly competitive within groups as follows:

- (a) citizens of each state and territory,
- (b) enlisted personnel,
- (c) sons of service personnel,
- (d) There should be a proviso that no candidate of any group or class shall be appointed whose mark on this

final examination is below the average mark of all the candidates who took this examination; and, further, if because of the preceding restriction, the number of candidates selected from any state or territory, or from the enlisted personnel, or from sons of service personnel is below the assigned quota, such vacancy shall be filled by appointment of the candidate having the highest final examination mark among those who otherwise would be ineligible for appointment due to the quota from his state, territory, or class group having been filled.

84. The final competitive examination should comprise three parts

- (a) a mental examination to establish the candidates scholastic attainments and reasoning power;
- (b) a character and aptitude test;
- (c) a physical examination.

85. Each of these three examinations should have a definite weight in determining the candidates final examination mark. Physical qualification for aviation should be given such weight that if the marks of two candidates in the mental examination and in the character and aptitude test, be equal a candidate qualified physically for aviation will be selected over one not so qualified.

86. The Board recommends that appointment to the Naval Academy and to the Naval Officers' Training Corps be made simultaneously and by the same method,

(a) for 90% of the number of annual appointments, on a competitive basis between citizens of each state and territory, the number of appointments allocated to each being in proportion to population but not less than one to any state or territory;

(b) for 5% of the number of annual appointments, on a competitive basis between eligible enlisted personnel of the Navy and Marine Corps;

(c) for 5% of the number of annual appointments, on a competitive basis between eligible sons of service personnel of the Army, Navy, Marine Corps and Coast Guard who have completed fifteen years active service, or who have been killed in, or retired from, or died, due to wounds or disease incident to, such service.

87. The Board further recommends

(a) that all eligible candidates be required to take a qualifying examination of the nature of that used as a qualifying examination for candidates for the V-12 program, and that from the marks made upon such qualifying examination there be selected from each state, territory, and special group as stated above, for a final competitive

examination, 5 times as many candidates as there are appointments allocated to that state, territory or group.

(b) That appointments be made within each group in accordance with relative standing in this final examination, except that no candidate shall be appointed whose mark on the final examination was below the average mark of all of the candidates who took the examination.

(c) That any vacancy which exists by reason of the restriction imposed by (b) above, shall be filled by that candidate having the highest final examination mark of those who failed of appointment because the quota assigned to his state, territory, or special group had been filled.

(d) That the final examination comprise three parts,

(1) a mental examination to establish the candidates scholastic attainments and reasoning power;

(2) a character and aptitude test; and,

(3) a physical examination;

each of which shall have a definite predetermined weight in establishing the final mark.

(e) That as far as possible within the limits of attendance the successful candidates in order of their final mark within their respective groups, be allowed to choose

the Naval Academy, or a definite university or college from those available, as the places in which they desire to receive their preparatory examination.

88. An alternative method of making appointments to the Naval Academy and Naval Officers' Training Corps is discussed in the Supplement.

89. Is it practicable to carry on the preliminary education in established colleges rather than at the Naval Academy?

90. The Board is of the opinion, confirmed by statements of officers who have appeared before this Board, both young and old, that a four year course at the Naval Academy is essential to the production of the most efficient officers. Scholastic education equivalent to that obtained at the Naval Academy could be obtained at any one of many of the nation's technical schools and colleges but none of such schools can provide the equivalent training, discipline, and indoctrination and character building. Indoctrination is effective in proportion to the early age at which it is started and the length of period over which it extends.

91. The Board recommends that no attempt be made to provide preliminary education for midshipmen or for students of the Naval Officers' Training Corps, other than at the Naval Academy or at designated colleges and universities in connection with the previously recommended Naval Officers' Training Course.

92. What is the relative merit, advantages and disadvantages of a single institution for preliminary training of war officers - Army, Navy, and Air - followed by extensive specialized instruction in the assigned branch?

93. The idea of a single institution for preliminary training of officers of different branches has a popular appeal. It appears to offer the advantages of

- (a) a common background;
- (b) close association in formative years, tending to understanding and friendship;
- (c) possible elimination or lessening of "service rivalries";
- (d) earlier and perhaps greater appreciation of common problems.

It has the following very definite disadvantages,

- (a) the number of officers required by the Navy alone will be such that it will be impracticable to educate them all in the same institution, and presumably the requirements of the Army ground and Air forces will also be large;
- (b) although much of the first two years course is basic and fundamental, particularly in mathematics, physics, English, history, etc., much of it also is functional and this part must suffer if an attempt be made to generalize it;

(c) except for the above basic subjects and the development of character and the inculcation of discipline, there is little common background for all services at the preliminary level;

(d) instruction at the preliminary level covers details and no ordinary man can master the details of all branches hence, instruction in other branches will normally be at the expense of instruction in the branch for which the student is being trained.

94. The Board is of the opinion that most of the advantages listed above are impractical of attainment and are based upon a misconception of the course as a purely educational rather than a functional educational and training course, and upon a failure to realize the number of students involved. There is also, in the minds of the advocates of such joint education an apparent failure to realize that divergent paths after college, tend to divergent interests and points of view and that it is the difference in these interests and points of view, with or without appreciation of each other's problems, that lead to differences of opinion and so-called service rivalries.

95. The Board is further of the opinion that no effective coordination is possible except through mutual understanding which can only begin when each individual concerned is well indoctrinated in the ways and methods of his own branch.

Therefore, insofar as education is concerned, this Board is of the opinion that the tying together of the services is a function of post-graduate education and training.

96. The Board therefore recommends against any proposal to consolidate any part of the preparatory education of officers of the Naval service (including Marines) with that of any other branch of the armed forces. In its opinion such proposal is impracticable as well as unjustifiable.

97. Consider the possible consolidation of sections of Naval instruction with similar instruction that may form part of the United States Army's, Marine Corps' and Coast Guard's educational programs.

98. The Board interprets consolidation to mean combined general instruction jointly administered and jointly applicable to more than one service, and not merely an exchange of students between institutions whose primary objectives cover the problems of one service only.

99. The question of consolidation of preparatory education of war officers - Army, Navy, and Air - in a single institution has been discussed in the preceding paragraphs. Coordination with the Marine Corps has been fully covered in Part I in the recommendations for an educational system for the Naval service. In such discussion also there was advocated the attendance of Naval and Marine officers at various post-graduate courses

conducted by the Army. It is likewise important that Army officers both ground and air, attend the Navy Command and Staff Course, the Marine Corps Command and Staff Course, and the Naval War College course. The only consolidation of educational facilities which the Board considers desirable is the Army-Navy Staff College now functioning under the direction and supervision of the Joint Chief of Staff, and if established as later recommended by this Board, a College of National Defense.

100. There remains, however, the question of possible consolidation of preparatory education of the Navy and Coast Guard and of certain sections of their post-graduate education.

101. It would appear, on the surface, that there is much to recommend a consolidation of Coast Guard and Naval preparatory education. However, as emphasized to this Board by the Commandant of the Coast Guard, the basic objectives of the Navy and Coast Guard in time of peace, and to a large extent in time of war, are fundamentally different. The Coast Guard is concerned and is becoming increasingly more so, with saving of life at sea, the enforcement of the navigation and custom laws, the operation and maintenance of lighthouses, buoys and other aids to navigation, the life saving stations and other strictly civil functions. The Navy on the other hand, is a military force, the chief concern of which is war or possible war, in

which the emphasis is necessarily on the destruction of life and property of our enemies.

102. Preparatory education and training for such divergent future careers cannot properly be combined even though there is something in common between them and even though in time of war, the Coast Guard comes under Naval jurisdiction, and is serving and has served with great distinction in certain phases of Naval war activity. In the first period of post-graduate education it is probable that many courses provided by the Navy will be suitable for Coast Guard officers and they should be permitted to attend them. So far as can be foreseen no post-graduate courses conducted by the Coast Guard will be desirable for Naval officers.

103. The Board therefore recommends that while officers of each service should be eligible and should be invited to attend any post-graduate course conducted by any other service, that there be no consolidation for preparatory education, and for post-graduate education only in the Army-Navy Staff College, and if established, in a College of National Defense.

104. What is the desirability of accepting for commissioning in the Navy of a limited number of graduates of selected colleges and schools of technology?

105. The Board is of the opinion as previously expressed, that all officers of the line and of the Supply Corps should

be graduates of the Naval Academy or Naval Officers' Training Corps; but that approximately one-third of the annual entries to the Marine Corps should be obtained from graduates of colleges via the Platoon Leaders' course; and that from 60-66-2/3% of the annual entries to the Civil Engineer Corps should be selected from graduates of college civil engineering courses.

106. The Board recommends that except as noted above no graduates of colleges and schools of technology, other than Naval Officers' Training Corps, be accepted for commissioning in the combatant branches of the regular Naval service.

107. What will be the effect of the proposed instruction and training periods on the size of officer personnel?

108. The strength of the officer personnel will need to be increased above that required to man all stations not connected with officer education and training as follows:

Line Officers, 15%

Marine Officers, 10%

Supply Officers, 5%

Civil Engineer Officers, 5%.

109. What modifications, additions, or subtractions in Naval education are necessary to take full advantage of the lessons of the war?

110. The present war has demonstrated that the pre-war general plan for officer education was sound in principle but

that the officer strength was inadequate to permit an adequate percentage of the officers to receive the benefit of the available educational courses. There has been no evidence to indicate that any pre-war courses should be omitted. There is ample evidence to prove that there should be additional courses in the duties of an operational staff, and a much wider and more carefully selected attendance at courses dealing with the exercise of command and the conduct of war. There is also ample evidence to indicate that education and training in applied communications, in the use of radar, and the design and production of communication and radar materiel, should be greatly expanded. All courses and training must be greatly expanded in the fields of joint, and of combined, operations.

111. The Board has taken cognizance of these lessons in its recommendations in relation to post-graduate education.

112. Method of future supervision of all Naval officers' education and where in the Navy Department the responsibility should rest and how it should be administered.

113. The Bureau of Naval Personnel is the agency of the Navy Department charged with the responsibility for procurement, education, training and assignment to duty of all officers of the Naval establishment. It is assisted in this duty by Personnel and Training Divisions in the various offices and bureaus of the Department, but the ultimate responsibility rests

with the Bureau of Personnel. While it is self-evident that all activities of the Navy have a vital interest in the qualifications of the personnel needed to discharge their respective functions, the logical place for general supervision of officers' education appears to be, as at present, in the Bureau of Naval Personnel and the responsibility should rest with the Chief of that Bureau.

114. There should be an Officer Training Division of the Bureau of Personnel specifically charged, under the Chief of the Bureau, with the supervision and administration (on the Bureau level) of officer education and training. This division should coordinate executive activities and should supervise the execution of established policies. It should maintain close liaison with appropriate personnel divisions of the various offices and bureaus of the Navy Department in order that the special educational needs of those offices and bureaus may be met.

115. Sound organization, both military and civilian, demands that responsibility for administration and for the execution of established policies be vested in the officer charged with exercising the authority, who as recommended above, is the Chief of Naval Personnel. However, it must be recognized that established policies, general objectives, and methods of attaining them must be kept abreast of new and changing conditions.

and new techniques both in the military and educational fields. It must be recognized also, that educational institutions and those who administer them tend strongly toward conservatism and stagnation and that positive controls must be more or less forced upon them. Provision must be made, too, for firm and disinterested general guidance in order that the educational system as a whole may be coordinated and its several parts kept free from individual ideas and concepts of changing administrators. As previously recommended, central control should rest in the Bureau of Naval Personnel. However, to meet the need for disinterested, but competent, general advice, it is recommended that an advisory body be established. This body should consist of the Commander in Chief, U. S. Fleet and Chief of Naval Operations, The Commandant of the Marine Corps, and the Chiefs of the Bureaus of the Navy Department except the Chief of Naval Personnel. This Body should meet at least once a year and should be specifically charged with the review of general educational policies, the general objectives of Naval education, and the means and methods by which they are carried out. Their report should be submitted, via the Chief of Naval Personnel, to the Secretary of the Navy, who will be the final authority.

116. The provision of controls at the various Naval educational institutions organized for the purpose of constant

curriculum revision and to keep the curricula of these institutions abreast of contemporary changes in the fleet and educational world.

117. In accordance with the recommendations of paragraph 115 above, it may be assumed that general policies and general objectives will be established for each institution and the head of the institution will be charged with their execution. The responsibility for the provision of adequate controls must rest with him. However, general policy should provide, at each institution, for a special faculty committee specifically charged with the annual review and revision of existing curricula.

These committees should take cognizance of new concepts and techniques and should revise both subject matter and methods of instruction to keep abreast of changing conditions and developments. Since the faculties of most of our educational institutions must necessarily be made up of or dominated by Naval officers, whose tour of duty is relatively short and whose source is the active Fleet, there will be little danger of stationary curricula. It may be argued that the internal control provided above may be ineffective and that external committees will better serve the purpose, but it is submitted that, in reality, no external committee, in any reasonable time, can possibly attain the familiarity with the details of curricula that is necessary for their effective revision. External committees

may profitably make general surveys, but details must be left to the institutions themselves.

118. The revision of the method of appointment and functioning of members of the Board of Visitors to the Naval Academy.

119. The Board of Visitors to the Naval Academy should serve a useful and necessary purpose, particularly in the field of an objective survey and of providing valuable contact and familiarity with the best thought in the civilian educational world. Its activities and the results attainable are however, considerably curtailed by the present method of appointment and methods of functioning. Under this method, the Board is appointed for, and functions over, a very short period with the inevitable result that its observations are either necessarily superficial or largely preconceived. To make it a truly effective body, its members should be appointed for a period of at least a year, with provision for reappointment, up to three appointments, of sufficient of its members to assure continuity. The Board should be organized into appropriate committees at the beginning of each academic year and each committee charged with the function of investigating and reporting on specific phases of the Academy's activities. The individual members should be permitted and required to conduct such surveys and investigations, at the Academy, as will enable them to thoroughly understand the Academy's problems and to

effectively evaluate the means and methods through which they should be met. In order that the best and most representative talent may be available, the surveys and investigations recommended above should be conducted at the discretion of the individual members and at any time during the year. Prior to the end of the academic year, the Board as a whole should formally meet at the Naval Academy and formulate its report. This report should be submitted to the Secretary of the Navy, who should refer it to the advisory body previously recommended above and the Chief of Naval Personnel for their review and comment. Final action should rest with the Secretary of the Navy.

120. Recommend changes in or additions to present law necessary to permit operation under its proposed program.

121. It is apparent that extensive changes in or additions to present law will be necessary to effect the Board's program. Detailed recommendations in this regard are believed beyond the intended scope of its precept. Major changes required are enumerated below:

- (a) The authorized number of midshipmen at the Naval Academy will have to be increased.
- (b) The age limits for admission to the Naval Academy will have to be changed.

- (c) The method of nomination and appointment of candidates for midshipmen will have to be completely changed. New legislation governing appointment to the Naval Officers' Training Corps will have to be enacted.
- (d) The present law governing size, operation and administration of the Naval Reserve Officers' Training Corps will have to be completely changed, as will the laws governing the appointment of such officers to the Regular Navy.
- (e) The laws governing appointment of second lieutenants in the Marine Corps will have to be changed.
- (f) The laws governing examination of candidates for admission to the Naval Academy will have to be completely changed.
- (g) Laws relative to appointments of Naval Aviators, of Naval Reserve and Marine Corps Reserve Officers as officers in the line of the Navy and Marine Corps will have to be changed.
- (h) Laws governing appointment of officers to the Supply Corps will have to be changed.
- (i) Legislation will have to be obtained for the expansion of the Naval Academy and Naval War College and for the purchase or construction of new General Line and Postgraduate Schools.

(j) Legislation will have to be obtained for the establishment of the Naval Officers' Training Corps and for its subsequent administration and operation, including provisions for the ultimate handling of its graduates.

(k) The laws governing the method of appointment and procedure of the Board of Visitors to the Naval Academy will have to be revised.

ADDITIONAL RECOMMENDATIONS

122. Additional matters, not covered elsewhere in this report, but closely related to the general educational system and affecting in more or less degree its successful functioning have come to the attention of the Board. There is submitted, therefore, for consideration, certain additional recommendations in regard thereto.

123. A College of National Defense. The Board believes that the present war and the events leading up to it, both at home and abroad, have clearly demonstrated a necessity for a much broader appreciation of the intimate inter-relationship between national and international policy and the military force by which such policies are sustained and enforced. The factors that enter into these relationships are many and complex, and include social, political, racial and economic considerations as well as military ones. In the solution of these problems, many branches of the government other than the War and Navy Departments are involved, particularly the Departments

of State, Commerce, and Treasury, and certain committees of the Congress. Certainly the common education of representative members of each of these branches would contribute greatly towards well rounded, more closely integrated, and consistent consideration than has been hitherto possible. While not prepared to make specific recommendations as to the nature and scope of a possible curriculum or even the form that such an institution should take, the Board does recommend that the general idea be fully explored as to its feasibility and that some means be found for specialized education of selected officials, both military and civil, along these lines.

124. Combined Exercises. Irrespective of the merits of any educational system, such systems must be supplemented by, if indeed they should not largely consist of, actual experience. The utilization of knowledge is more important than knowledge itself, even though knowledge may be a prerequisite. It is apparent, therefore, that Fleet and Joint Exercises, particularly in the fields of amphibious and combined operations, must be greatly expanded, realistically conceived, and means provided for their execution. All services, in the past, have suffered greatly from lack of time, material and sites for large scale operations. "Constructive" ships, planes, men and equipment do not lend themselves to realistic results - too often the solution of difficulties is "constructive" also.

The Navy must retain sufficient transports, auxiliaries, landing craft, minesweepers, net vessels and similar types, together with bases and training sites, to provide thorough and comprehensive training in all phases of Naval operations, as well as to develop new techniques.

125. Exchange of Officers. In addition to the exchange of students at the various schools covered in the main report, and the inauguration of joint exercises on a much larger scale, there is necessity also for a much freer exchange of officers between all services. Representative officers, in suitable numbers, should be given periodic tours of duty in other branches and services in order that there may take place a "mutual exchange of information and experience" and that there be more general dissemination of knowledge in regard to each others problems.

126. Faculties. The Board feels that it is most important that the institutions, both Naval and civilian, charged with the execution of its recommended programs be equipped with the best obtainable teaching staffs, both officer and civilian. To this end, such personnel must be selected with great care and positive controls established to ensure that only the best are retained. In the case of civilian personnel, the emoluments must be sufficient to attract outstanding men. It is believed, also, that with the establishment of the Naval

Officers' Training Corps, there will be an excellent opportunity for the inauguration of a system of exchange professorships between and among the various institutions concerned, including the Naval Academy. Such a system offers great promise of mutual benefit and will serve the very useful purpose of keeping all elements of the program in close contact with each other and with the latest developments in the educational world.

127. Interpretors and Translators. The experience of the war has demonstrated the need in the Navy of interpretors and translators in much greater numbers, and qualified in many more languages, than will be practicable to produce from the Naval Academy or college sources. To meet this need, it is recommended that selected officers, in much greater numbers than in the past, be ordered to tours of duty in foreign countries for the specific purpose of mastering the language and studying the country and the people.

128. Fleet Schools. The present Fleet and Operational schools, which are essentially training rather than educational activities should be continued in substantially their present form. Their primary function is refresher training for an immediate purpose and they serve, also, to indoctrinate in the latest and best standardized practice.

129. General. In conclusion, it must be clearly realized that the effectiveness of any system of education, training and experience is limited by the capacity and character of the individuals who are subjected to it. In war, the conduct of which is the field for which our officers are being trained, decisions are all important; faulty decisions may be irretrievable. Therefore, the attraction of the country's best talent to the military profession is a matter of supreme importance. Not only must the original material be carefully selected, but, by a careful process of selection and elimination, only the best of that material should achieve the active direction of important affairs. It is the considered opinion of this Board that a Naval career must be made more attractive and its emoluments more comparable with those of civil life if the highest standards are to be achieved. This is particularly true with respect to the young men entering from colleges. The incentive must be reasonably high or in time of peace the best of the group will prefer the greater potential possibilities of a civil career. In view of the uncertainties of promotion, selection and retention, the entering salary must be higher than entering salaries in civil life and a substantial bonus must be provided for those separated from the service at an early age. It is our belief also that Naval officers in general are underpaid in comparison

with their responsibilities and with their contemporaries in civil life. In the anticipated long period of peace which should follow the present war, such concrete inducements must be offered as will attract to the service men of the desired high standard.

William S. Pye,
Rear Admiral, U.S.N.
President.

Herbert S. Howard,
Rear Admiral, U.S.N.
Member.

William W. Smith,
Rear Admiral, U.S.N.
Member.

Gerald C. Thomas,
Brig. General, U.S.M.C.
Member.

Richard W. Ruble,
Captain, U.S.N.
Member.

Dr. Franklyn B. Snyder,
Member.

Vincent R. Murphy,
Captain, U.S.N.
Member and Recorder.

SUPPLEMENTARY REPORT

1. The Board realizing that its report would necessarily be long, decided upon presenting it in two papers. In order that its conclusions and recommendations, with the principal underlying considerations, might be more concisely presented, these are contained in the Principal Report. Such further discussion and detailed considerations as are considered essential are contained in the Supplementary Report.
2. This paper constitutes the Supplementary Report. It is not complete in itself as it is confined to amplification and elaboration of the matter discussed in the Principal Report. The following paragraphs are numbered to correspond to the paragraphs of the Principal Report which they elaborate or amplify.
3. The objective of the Board was derived from its precept and the enclosure thereto. As will be seen in both the Principal and Supplementary Reports, certain closely related matters such as ages in the various ranks, promotion, size of the officer personnel, and other factors materially affecting any educational system have had to be considered, but the conclusions and recommendations of the Board, have been limited to those having a direct bearing on the educational system including as a part of such system the method and require-

ments for obtaining officer material of the required high standard.

4. Accurate and authoritative information as to the future situation to be provided for is lacking at the present time. In order that the study might be confined to reasonable limits, and that the general picture be not hopelessly confused with almost innumerable alternatives, it was necessary to make certain basic assumptions. These assumptions are predicated upon the Board's best interpretation of the information now available to it. It is realized that some of the assumptions made anticipate the assumed solution of important current problems. The assumptions made do not necessarily reflect the Board's views on these problems - they simply represent its best estimate as to their ultimate general resolution. The degree to which this report may be vitiated by the failure of some or all of its assumptions to be realized is dependent upon the nature and number of assumptions affected. However, the general overall educational system herein recommended is believed to be basically sound.

4.(a) Irrespective of whether or not the armed services are eventually re-organized into one department of national defense, the duties and responsibilities at present vested in the officers of the Navy will have to be carried on and officer personnel will have to be

specially educated for that purpose. It matters little by what name either the organization or the officers may be called - the functions are "absolute" and will have to be executed by competent officers.

4.(b) The basis of this assumption is fully covered in paragraph (101), Part II, of the Principal Report.

4.(c) The figures used in this assumption are based upon estimates obtained from the Bureau of Naval Personnel. They are predicated upon the estimated size of the Navy required for the discharge of its responsibilities under what now appears to be the most acceptable plan for post-war military requirements.

4.(d) Unless a sufficient number of officers are provided, in excess of those necessary to man the active ships and shore billets, it is obvious that no educational system can be effective. Without an allowance of officers for educational purposes, we will inevitably revert to the "catch-as-catch-can" basis prevalent before the war.

4.(e) These numbers are arrived at by an analysis of the selection and promotion system now in operation.

4.(f) -----

4.(g) It is possible that the distribution in the various grades may be changed, but it is envisaged that

such changes as may occur will, in general, follow the principles of the present system. At any rate, it is necessary to assume some basis for educational periods.

4.(h) The assumption that one-half the officers will be engaged in aviation activities is predicated upon the information as to the size of post-war Naval aviation given to the Board by officers appearing before it.

4.(i) The great majority of officers actively engaged in aviation activities are required in the lower ranks and at an early age. Hence qualification for aviation duty should occur soon after entry into the commissioned ranks.

4.(j) Such changes as may occur in the promotion by selection system will most probably be in detail or method only. It is unlikely that the governing principles will be materially altered.

4.(k) Since the Board was directed to include a study of the necessary educational facilities, it is believed that it should not limit itself to the utilization of only existing facilities, but should objectively study the matters presented and then recommend the additional facilities found necessary.

5. -----

6. The basic considerations outlined in this paragraph represent pre-requisite preliminary conclusions of the Board. They

are given in some detail in order that the general structure upon which its later recommendations are founded may be clearly visualized.

6.(a) From time to time various criticisms and suggestions relative to the Navy's officer educational system or certain of its essential parts, have reflected the view that officers should be educated for various other purposes such as for national leadership in political, social, industrial or scientific pursuits. However vital to national life and progress such leadership may be, the Board definitely rejects the idea that education for it is a legitimate objective of Naval education. The proper function of Naval education is leadership in Naval pursuits. It is the function of other systems and other institutions to produce leaders in other fields.

6.(b) It is obvious in any system that better material is capable of producing better results. Some men are more readily adaptable to the pursuit of certain phases of Naval activity than others. Not all men are, or even can be, qualified for the exercise of command in its highest echelons, even though they be perfectly satisfactory in other responsibilities. Hence careful selection, based upon demonstrated efficiency, inclination and adaptability is a requisite characteristic of any

system which is to provide a reasonable return on the effort expended.

6.(c)(1) Modern war is a very complex enterprise. Its operations are far-reaching and all inclusive, encompassing land, sea, under-sea, and air operations both separately and in combination. While it is unreasonable to expect any man to be a master of the details of all these various activities, it is essential that some officers be qualified in their overall direction and supervision, and that all officers be more familiar with the operations and problems of the other services.

(2) Operational planning, in the present war, is both large-scaled and detailed. Even though the operation is on the largest scale, it must be planned to the last detail. Our pre-war training in these matters was inadequate both in its scope and in the number of officers so trained. Logistics has assumed an importance out of all proportion to our pre-war conception. The success of any operation may well rest upon the thoroughness and soundness with which it was conceived and planned. Special preparation of officers for this duty is both possible and vitally necessary.

(3) Modern communication systems are numerous and varied. They are in continuous operation and their

proper supervision and control is a vital element of the exercise of command. It is essential that large numbers of officers be qualified in their practical operation and conduct. Such qualification requires special training.

(4) The necessity for education and training for command at an earlier age is apparent both from a consideration of the physical strain of war operations and from the necessity of large scale expansion which always accompanies the prosecution of hostilities. Promotion during hostilities is of necessity rapidly accelerated - the Lieutenant Commanders of peace are the Captains in war and must be prepared to discharge comparable responsibilities. There is little time for formal education after war commences.

6.(d) Much of the criticism of the Naval Academy, found in the reports of various Boards of Visitors appears to be based on an assumption that that institution should produce a finished Naval Officer. Such an assumption is fallacious. The Naval Academy equips an officer for the first period of his career. As appears later in this report, the Navy's educational system should be a composite one, comprising several elements. The Naval Academy is but one link in this chain.

6.(e) As an officer's career progresses he is less and less concerned with details and more and more concerned with the broader aspects of Naval affairs. His education should reflect this reality.

6.(f) The Navy long ago rejected the theory of dividing itself into various corps of specialists each composed of experts in its own field and each restricted to the performance of duty in that field. While this practice is the rule in some foreign navies, notably the British, the weight of opinion supports the view that, for our Navy, the present practice is still sound. In lieu of the specialist theory, our Navy has adopted the policy of specially qualifying officers in some one of each branch of the profession in addition to their general qualifications as an officer of the command branch. It is therefore necessary that each officer specialize in some one branch of the profession in order that experts in each line be always available and, further, in order that there may take place a mutual exchange of knowledge wherein one "expert" gives his special knowledge and experience in return for that of others.

- 7. -----
- 8. -----
- 9. -----

10. Much discussion of the curriculum of the Naval Academy and of courses to be provided by universities and colleges conducting preparatory education of students of the Naval Officers' Training Corps, can be eliminated by a definite determination of the function of such preparatory education. The Board's opinion of such function is expressed in paragraph 10 of the Principal Report.

11. For nearly a century the Naval Academy has been the cradle of the Navy. It is far more than an educational institution. It is a school of indoctrination in which Naval traditions are ever present as inspiration to its students, and in which coincidentally with the acquisition of specialized knowledge and training, there is developed a uniformly high character and self-sacrificing spirit in the performance of duty. For centuries it has been recognized that as a foundation for the development of maximum efficiency in Naval personnel, early submission to rigid discipline, and early introduction to the ways of a life at sea, are essential. It is the unanimous opinion of this Board that for a moderate percentage of our Naval officer personnel, a 4 year course at the Naval Academy is essential, in order to provide an adequate number of fully indoctrinated and well disciplined officers to set for, and to maintain in, the whole body of

Naval officer personnel, the required high standard of indoctrination and discipline.

12. If all officers commissioned for service in the Navy were to be retained in the Navy throughout their lives it would be desirable that all be graduated from the Naval Academy. According to present indications about 1/3 of the officers commissioned as ensign in the line of the Navy will return to civil life after 3 years service as ensigns. It is estimated that the cost to the Navy Department of graduating an officer from the Naval Officers' Training Corps will be about 1/3 the cost of graduating him from the Naval Academy. The advantages of graduation from the Naval Academy, however, are such that this greater cost is warranted for definite percentages of officers of each of the combatant branches and corps of the Navy.

13. -----

14. -----

15. Suggested modifications in the method of selecting midshipmen are thoroughly discussed in paragraphs 74-88 - of the Principal Report and in paragraph 75 - of this Supplementary Report. Recommendation concerning the Naval Academy curriculum is contained in paragraph 24(c) - of the Principal Report.

16. -----

17. The establishment of the Navy-College (V-12) program has created the basis upon which the recommended Naval Officers' Training Corps should be built. The cordial relations now existing between the colleges and universities and the Navy Department gives promise of the desired future cooperation of the colleges and universities in establishing the recommended Naval Officers' Training Corps.

18. The objectives of the post-war Naval Officers' Training Corps will be the same as the objectives of the Naval Academy but with a recognition that in the Naval Officers' Training Corps the full attainment of these objectives may not be possible due to the necessity of providing for the student adequate special education to qualify him for a college diploma and degree, and to fit him for later civilian employment in case he not be commissioned in the regular Navy.

19. -----

20. In connection with the length and nature of the course to be provided by the selected colleges or universities, two ideas seem worthy of consideration.

20.(a) A four year course all of which, except the summer training periods, would be conducted at the same college or university, and,

20.(b) A four year course of which, except for the summer training periods, three years would be conducted at

the college or university, and one year, the senior year, would be conducted, for senior groups from all such colleges and universities jointly, for the sea branch at a Reserve Midshipmens' Training School, and for the aviation branch at a Naval Air Station.

Scheme (a) has the advantages of immediate availability, and of greater individual training of the students of the senior class in leadership by performing the duties of Midshipmen Officers during their senior year.

Scheme (b) has the advantages of placing the students under more positive discipline during their senior year; permitting a more effective scheduling of time and, hence, providing more time for training. Scheme (b) is practical only if the instruction during the senior year be such that all colleges and universities concerned would upon its completion, be willing to award a diploma and degree in the same manner as though all four years of the course had been taken at college. Colleges and universities could not be expected to look favorably upon this scheme unless much of the instruction of this senior year would be given by qualified civilian instructors from such colleges, serving with the Navy on the basis of exchange professorships. Scheme (b) has from a

practical viewpoint, one great advantage, namely, it would reduce the number of Naval students under instruction at colleges and universities thus making more educational facilities available for civilians. This scheme might reduce the number of colleges required for Naval preparatory education thus making it possible to select those colleges best fitted for participation in such education, and reducing the number to be supplied with the required Naval training equipment. Scheme (a), however, is considered the more practical.

21. Prior to the present war the Supply Corps obtained its officer personnel partly from graduates of the Naval Academy (primarily from those whose eyes had deteriorated below line officer requirements), partly by competitive examination from among college graduates many of whom had had N.R.O.T.C. training, and partly by commissioning efficient Pay Clerks. Because of the greater familiarity with the Navy, its traditions and discipline, the Supply Corps desires that 1/3 of its annual entries be Naval Academy graduates. If, as herein recommended, the Naval Officers' Training Corps be established, graduates of such course will be suitable material for Supply Corps officers, and the total number of students to be so trained should make an appropriate allowance to meet approximately 2/3 the annual requirements of officer entries to the Supply Corps.

22. The provision that approximately 1/3 of the officers entering the Marine Corps be Naval Academy graduates is, as for the Supply Corps, for the purpose of ensuring intimate integration and common understanding between that corps and the line of the Navy. For the remaining entries, the system in effect prior to the war has proven so eminently satisfactory that it should not be interfered with.

23. The present war has demonstrated, particularly as a result of experience with the "Seabee" organization, the need for a larger percentage of Naval Academy graduates in the Civil Engineer Corps. It has been found that many "pure civil engineers", while eminently qualified for and needed in the purely engineering phases of the Corps' work, are not well adapted for the leadership and supervision of the military-engineering functions of the "Seabees". Even though the "Seabee" organization may be considerably curtailed or even eliminated after the war, it will still be necessary to provide for its rapid and large scale expansion in the event of a subsequent outbreak of hostilities. Qualified officers within the regular Naval service must be readily available. The Chief of the Bureau of Yards and Docks has recommended to the Board that 50% of the annual entries to the Corps be Naval Academy graduates. In view of other requirements the Board has recommended 33-1/3 to 40%. The practice of obtaining

the remaining annual entries from the graduates of civil institutions assures a broad background of specialties and experience within the Corps as a whole which is most desirable.

24. (a) Naval opinion, as indicated before this Board, is unanimously against the construction of a second Naval Academy.

24.(b) Studies have been made by the Naval Academy which indicate that the present Naval Academy at Annapolis is capable of being expanded to permit the graduation of 1600 Midshipmen annually. The cost of such expansion is estimated to be much less than the cost to build a second Naval Academy of the present one's approximate capacity.

24.(c) The Board considered various suggestions for modification of the length of the Naval Academy course but after consideration of the recommendations of the Special Curriculum Committee appointed by the Superintendent, submitted on 20 March, 1944, the Board is convinced that to fill the function of preparatory education a four year course is essential and that a longer course would not produce additional benefits commensurate with the additional time consumed.

24.(d) -----

24.(e)(1) The Board is convinced that in order to obtain officer material of the desired standard, it will be necessary to provide inducements to cause young men to agree to serve in the Navy for a period of 3 years after graduation from the Naval Officers' Training Corps. This 3 year period is perhaps the most vital of a young man's life. He desires then to establish himself in his life's work. This is the period in which industry desires to take young men for training for later lucrative positions. The Board is of the opinion that only by enrolling selected students as Reserve Midshipmen and paying the cost of their college tuition, can young men of the required standard be induced to take the Naval Officers' Training Course under an agreement to serve 3 years active duty as a Reserve Ensign. On the other hand by such inducements plus a fair chance of being appointed an officer in the regular Navy, the Navy Department establishes the right to select such students and to prescribe the course to be given to them.

(2) Opinion is that colleges and universities now cooperating with the Navy Department in the V-12 program would be willing to conduct a Naval Officers' Training Corps program in coordination with the Navy Department. The number of students to be accommodated would be from

7,800 to 10,500 depending upon the future plan of distribution and promotion of officer personnel. The capacity of the colleges and universities now engaged in the V-12 program to conduct satisfactorily the proposed Naval Officers' Training Corps education and training, is estimated at about 11,000. It is believed that a curriculum can be produced which will meet Navy requirements and at the same time warrant the award of a college diploma and a degree, and be adequate to ensure later civilian employment in case the graduate fails to be appointed an officer in the regular Navy.

(3) Because of the fact that the education of a student of the Naval Officers' Training Corps must be slanted with a view to possible later civilian employment, it will tend toward aviation or toward the field of mechanical and electrical engineering more identified with ships, hence all summer periods should be devoted to the type of service, aviation or sea-going for which the student is training.

24.(f) -----

24.(g) -----

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28. The practice of providing special education at periodic intervals, roughly agreeing with more or less distinct periods of increased responsibility, was established, for our Navy, by the Knox-King-Pye Board. It is basically sound and to some extent is in use in practically every Army and Navy in the world. There may be some question, however, as to how much of this education should be compulsory for all officers. Obviously, such education for all officers of the command branch is desirable. There are, however, grave considerations of the cost involved, both in money and in the loss of the service of the officers in productive work. There are, also, more or less inherent limitations and capacities of individual officers. This Board believes that the first period of post-graduate education, should be compulsory for all, both as a unification and confirmation of initial instruction after five years active service, and as a necessary preparation for those further duties which will normally fall to the great majority of officers. The later periods need not be compulsory but training for command for at least one such period should be provided for every officer whose record indicates his capacity for high command. Selection for such training should, in the command branch, be indicative of suitability for selection for promotion. With the Navy's system of selection for promotion only a moderate percentage of our Naval officer personnel

reach the higher grades. It is uneconomical and unjustifiable to further educate officers whose records or service reputation are such that further promotion is unlikely.

28.(1) Five years is selected as the appropriate length of time required for the graduate to fully mature and to acquire sufficient general experience to make post-graduate courses most profitable. Experience at the Post-graduate School clearly demonstrates that this period is not too long for the student to retain his adaptability for, and his interest in, academic pursuits.

28.(2) This period is selected both as fitting the future duties to be performed and at the same time beginning instruction for higher command at an early age.

28.(3) In our pre-war system, attendance at the Naval War College (Senior course) was available principally to senior Commanders and Captains. As a result, due to the war expansion, very few of our present commanders of combatant ships, squadrons and divisions of destroyers, aircraft and submarines, many of whom have to be entrusted with important independent operations, have had this instruction. Moreover, the most likely change in our selection system will be in the direction of accelerated promotion for a small number of outstanding officers.

28.(4) The operations of war have become so complex that it is felt necessary to add a fourth period to those recommended in the Knox-King-Pye Board. It is commonly acknowledged that the efficiency of our active Fleets will be greatly increased if the prospective commander of forces, squadrons and divisions prior to taking command, are familiarized with current fleet practices, orders and doctrines, with current war plans and with the current political situation. Our past experience in this respect left much to be desired. It is believed that the addition of this fourth period will go far to correct the situation.

29. It is believed that the general and specific objectives of this course are set forth with sufficient clarity in the Principal Report. It should be especially noted that these objectives do not include specific preparation for further courses in material specialties. As originally conceived, the objective of the General Line Course was as herein recommended, emphasis on material matters being strictly limited. There is evidence that it later deteriorated into a series of curricula specifically oriented toward some one of the material specialties. This should not be allowed to occur again.

30. The duration of this course is well established by previous experience. It is realized that the provision that all officers of the same class-group be ordered there simultaneously

may offer administrative difficulties, but it is not impracticable of achievement and promises definite advantages. The General Line Course will assist student officers in determining their bent and desire for a particular type of special qualification. It will assist the Department in determining the relative qualification for types of specialized education in which the number of officers must be limited.

31. The figure of 2000 is probably conservative, but is subject to revision when the requirements of the post-war Navy are accurately known. It should be noted, however, that the termination of the war will find in the Navy many young Reserve officers with excellent war experience and desirous of making the Navy a career. These officers will be badly needed to meet the post-war requirements until the recommended procedures for annual entries can be established. However, the vast majority of them have been trained for and assigned to a particular duty and their general qualifications and experience is limited. The General Line Course could be an immediate and suitable remedy for this situation provided plans are made now and an institution obtained for the purpose.

32. (a) These general classifications cover the specialties needed in a well rounded Navy. It should be noted, as already discussed in paragraph 6 (f) of this Supplementary Report, that officers taking these courses are

officers of the command branch, but who, in addition to their general qualifications, should be specially qualified in some one aspect of the profession.

32.(b) These courses should be commenced as early in the career as practicable, commensurate with the attainment of sufficient practical experience and with the determination of the individual aptitude and interest. For the first three classes the period immediately following the General Line Course best meets these needs.

32.(c) The present system, consisting of approximately one year at the Navy Postgraduate School, followed by one or more years, depending upon the subject being pursued, at a civilian college or university has been very successful. Since the Naval Academy makes no attempt to produce graduate mechanical, electrical, ordnance, or similar engineers, a year at the Postgraduate School is necessary to equip the student for real post-graduate work at civilian institutions. It is most desirable that the advanced work be given in civilian colleges or universities in the interest of economy and, of greater importance, in the interest of broad and comprehensive education.

32.(d) The capacity of the present Post-graduate School buildings is approximately 550. However, these buildings,

or their sites, will probably be required for the contemplated expansion of the Naval Academy, Few, if any, of the original reasons for locating the Post-graduate School at Annapolis are of importance today. Even allowing for considerable expansion of the facilities of the city of Annapolis it is extremely doubtful if that city could support two institutions of the sizes contemplated in the recommendations of the Board. When it is considered that the vast majority of the students at the Post-graduate School will be married and will require housing for their families, it is believed readily apparent that a new school must be established at a new location. It is also apparent that the new location must be in an area capable of readily supplying the housing accommodations which will be needed. Since the need will be immediate and pressing as soon as the war is over, it appears advisable, also, to acquire an existing institution rather than attempt to build one. Hunter College in New York City, now utilized for the training of WAVES, appears to offer many of the needed facilities and is recommended for consideration. The location of the General Line Course and Post-graduate School at the same place will effect a real economy in administration and in reduction of travel and will also make available,

as instructors and lecturers in the General Line Course, outstanding authorities on the latest developments in technical fields.

32.(e) Some of the courses enumerated will have to be further divided, such as, for instance, the design and production of ordnance material, which will be subdivided into metallurgy, explosives, etc.

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41. It will be noted from the specific objectives of the Command and Staff Course, that at this point begins an officer's education in relation to the operations of a ship in coordination with other ships, and in the exercise of command.

42. The present facilities at the Naval War College can accommodate at most 110 student officers. If the recommendations of this Board are approved the attendance at the Naval War College in all three courses, Command and Staff, Naval War College and Advanced War College, will approximate 1000 stu-

dent officers. It is apparent that a tremendous expansion of War College facilities will be required, and should be available at the earliest possible date after the termination of the war. Fortunately Coaster's Harbor Island upon which the Naval War College is situated is government property and now a part of the Naval Training Station, Newport. It is believed that should this part of the Training Station be turned over for use as a Naval War College the necessary modifications of buildings would produce a satisfactory War College installation in a minimum of time and expense. The Navy possesses nearby a housing project of 600 apartments which although constructed for enlisted personnel would be acceptable as quarters for families of 600 officers. Existing barracks could readily be converted to bachelor officer quarters and additional apartments. The existing drill halls can readily be converted into auditoriums, maneuver board rooms and study rooms. The need for these expanded courses will be urgent. Each year's delay after the armistice means the loss of vital periods of post-graduate education for 900-1000 officers.

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46. ----- See Par 42 above.

47. The Army-Navy Staff College has been in operation about one year. It fulfills a long needed period of instruction in

the organization and procedure of Joint Staffs and provides a basis of common understanding of the capabilities, limitations, and methods of operation of sea, land, and air forces in combined operations. This course should be continued after the war. Its length should be extended and the number of students should be increased.

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52. The two categories enumerated cover all the officers of the "Specialist Branch" of the line of the Navy. These officers, after designation for the performance of "engineering duty only" perform duty almost wholly connected with material. They include the officers of the former Construction Corps and those who will, in the future, perform the duties previously assigned to that corps. They include also specialists in the design, production and maintenance of engines and power plants, radio and radar material, aeronautical power plants and structures, and ordnance material of all kinds. There have been included as specialists a few aerologists and it is probable that in the future certain communications specialists and possibly other types may be required. The number of officers for engineering duty only will be greatly expanded after

the war and the Navy Department should determine in advance the requirements as to the number and type of specialists required in each grade. The nature and importance of the duties performed by these specialists is such that expert knowledge and full time application is required.

53. An additional reason for conducting the combined Naval Architecture and Marine Engineering Course at two institutions is the desirability of broadening the base of our specialist branches and avoiding possible in-breeding.

54. The present course in Combined Naval Architecture and Marine Engineering is somewhat of an experiment. Too little experience with its product has yet been gained to warrant proper evaluation of its success. It originated with the consolidation of the former Bureau of Engineering and Construction and Repair into the Bureau of Ships and is an attempt to meet the need for officers generally qualified in all phases of the design and construction of ships. While this general background is highly desirable, it is extremely doubtful that one man can be so expert in all phases of ship design and construction that further specialization will not be necessary.

55. The later special courses referred to in this paragraph are intended to provide for advanced work in a particular aspect of engineering. Only a few officers will be required in

these fields. The courses should be taken at civilian colleges or universities either in the United States or abroad.

56. The soundness of the recommendations of this paragraph has been demonstrated by past experience. More officers, however, should be made available for courses at Harvard, Lowell and Babson Institute or other institutions where such courses are available. "Sabbatical year" details to appropriate branches of industry might also be usefully employed. The important role in the present war assumed by logistics makes it imperative that Supply Officers, in larger numbers than before, attend the Command and Staff, and Naval War College courses.

57. The Civil Engineer Corps has two rather distinct though closely related functions. One deals with the management and construction of Public Works in domestic and rear areas in comparative tranquility and the other in the military field of simultaneous and coordinated construction in the fighting areas. In time of war this latter function assumes transcendent importance. It is this consideration which necessitates a thorough appreciation of Naval and military problems and dictates the provision that Naval Academy graduates be utilized for special education and transfer to the Corps. Past practice has been to make available for this purpose officers whose eyes have deteriorated below the line requirements.

Appointments from civil life are desirable in order to include men of wide training and experience in many of the various specialties of the profession.

58. (a) ----

58. (b) The provision of one year's duty at sea for appointees to the Civil Engineer Corps is a new concept. It was recommended by the Chief of the Bureau of Yards and Docks and its purpose is familiarity with the Navy as a whole in order to provide a sound background for the solution of future problems as well as to promote cooperation and mutual understanding.

58. (c) ----

58. (d) As noted above for officers of the Supply Corps, the war has clearly brought out the sometimes intimate relation between building and fighting. The Seabee organization is primarily a military one. Those Civil Engineers who are to be later charged with the planning and construction of advance bases should attend the Command and Staff and War College courses.

59. Past experience has demonstrated the soundness of the general system for the post-graduate instruction of Marine officers.

59. (a) The Basic School has been in operation for a number of years and has most effectively fulfilled its

mission. The problems of the Marine Corps, while closely related to those of the Army and the Navy, are peculiarly its own. Special preparation for meeting them is essential. This school also serves a most important morale and indoctrinal purpose.

59.(b),(c) It might at first seem logical that these two schools could well be combined with those of the Army. However, as in (a) above, the Marine Corps operates in a field of its own not covered at present by either the Army or the Navy. Its own schools are deemed essential.

59.(d) The advantages of an interchange of students between schools of all services are apparent. Such interchanges not only serve as a means of mutual exchange of ideas but they contribute greatly toward cooperation and toward the ultimate adoption of the best practice.

59.(e) In the more generalized atmosphere of the broader aspects of war covered by the Army and Navy War Colleges, the necessity for a separate school for Marine Officers disappears. Marine Officers in rather large numbers should attend these institutions.

60. The specialties listed in this paragraph cover those activities of the corps in which special instruction and training are necessary. Here again it must be remembered that the Marine Corp's problems are its own. Many of these courses are

of short duration and are designed to equip an officer for his next immediate duty. Others come later in the career and are intended to cover advanced aspects of that particular branch in which an officer may be expected to perform most of his duty.

61. It is desirable that some Marine Officers attend the General Line Course primarily to foster mutual cooperation and familiarity and to furnish instructors for the Marine Corps schools in which Naval subjects are given general treatment. There is no justification for separate schools for Marine aviation. The subject is fully covered in Naval Aviation Training Schools. Similarly, there is no justification for special Marine Schools for courses in the design and production of material or in aerology.

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64. With the exception of the report of the Knox-King-Pye Board of 1920, most of the reports and surveys available to the Board deal chiefly with the Naval Academy curriculum and consist largely of the reports of various Boards of Visitors. In connection with these latter reports, it is significant that much of the criticism leveled at the Academy is contained in minority reports and represents the views of individuals rather than the views of the Boards as a whole. It is significant also that the most critical of these appear to be

predicated upon a conception that the Academy's curriculum has remained stagnant over a long period of years. The opposite is true. The curriculum was extensively changed in 1932, in 1937 and again in 1939, these latter changes originating from within the Naval service and on the initiative of the Superintendent. The present Superintendent initiated a new and comprehensive study in December of 1943. The report of this Committee was available to the Board of Visitors of 1944, was carefully examined by them, and met with general approbation. It is this report, which was also available to this Board, which is referred to in Part II, of the Principal Report as the "Special Curriculum Committee appointed by the Superintendent" and which this Board approves. The controversial issues with respect to the nature and scope of the Naval Academy curriculum revolve chiefly around the length of the course, the amount of general and "cultural" education to be included, and the degree to which its students should be specialized in a particular field. The length of the course is naturally a function of the matter to be covered there. This Board resolves the question of the matter to be covered on the general principle that the Academy should be limited to the coverage of only those matters which every Naval officer must know. To carry the coverage of every subject to the degree that every graduate will be an expert in every field

is an impossible objective. To carry general preparation in particular fields such as mechanical or electrical engineering to the point where a graduate might immediately enter upon civilian post-graduate work in those fields is wasteful of effort, time and money in that only a small percentage of the graduates will utilize this preparation and for those who will not the time might be more profitably spent. In our Navy we make Naval officers first and specialists afterward. It is much cheaper to give additional special preparation to the few who will need it than to provide it for all. The additional preparation is provided for in the Naval Postgraduate School. With respect to the so called cultural subjects, this Board believes they are amply provided for in the report of the Superintendent's Committee.

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75. The Board recognizes that the recommended change in the method of selecting Midshipmen is a radical departure from the method currently prescribed by law. In view of the fact that the recommended method may not be acceptable to the Navy Department or to Congress, a second method requiring a less drastic change is proposed as an alternative.

Alternative Plan for Selection of Midshipmen and Students for the Naval Officers' Training Corps.

75.(a) Appointments to the Naval Academy and to the Naval Officers' Training Corps shall be made simultaneously and by the same process;

75.(b) The total number of required annual appointments, estimated at about 3800, to be allocated as follows:

- (1) Presidential appointments, 250;
- (2) Vice Presidential appointments, 25;
- (3) Enlisted personnel 5% of total, estimated 200;
- (4) Remaining appointments to be allocated equally

to Senators and Congressmen, estimated at 6 each; any excess appointments remaining after such allocation to be divided equally between Presidential appointments and enlisted personnel appointments.

75.(c) The Vice President and each Senator and Congressman to nominate 10 candidates for each appointment allocated to him.

75.(d) Candidates for Presidential appointments to be limited to sons of active, retired or deceased officer personnel of the Army, Navy, Marine Corps, and Coast Guard, and of enlisted personnel who have served fifteen years in the service, or have died or been retired due to injuries or disease incurred in line of duty.

75.(e) Enlisted candidates to be selected by the Navy Department.

75.(f) All candidates to be subject simultaneously to such competitive examination as may be prescribed by the Navy Department, in which examination character, education, aptitude and physical condition and capacity, shall be factors.

75.(g) Appointments within each group of candidates nominated by each Senator and Congressman, and within each other group, shall be filled by the Navy Department in order from the highest ranking candidates as determined by the competitive examination, except that no candidate shall be appointed whose mark in the competitive examination is below the average mark obtained by all of the candidates.

75.(h) When through failure of candidates to qualify, an appointment becomes available for reassignment it shall be assigned to that candidate having the highest com-

petitive examination mark, for whom otherwise no appointment would be available.

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90. The question of the practicability and desirability of carrying on two years of preparatory education and training at established colleges followed by two years at the Naval Academy is one of the most difficult with which the Board was faced. This question requires careful consideration particularly because if the Naval Academy is doubled in capacity as herein recommended, it will be able to provide education and training for approximately one-half of the number of students to be simultaneously under instruction; and also because

there is considerable public and service opinion in favor of such plan.

This Board after careful consideration of all aspects of the proposal in comparison with a plan to educate a portion of our officer material by a four year course at the Naval Academy and a portion by a four year course at one of various selected civilian colleges and universities, decided upon the latter. Because of the interest in this question the matter is presented here in some detail.

In order to simplify the discussion the plans are called: Plan A - two years preparatory education at college followed by two years at the Naval Academy.

Plan B - approximately one-half of our officer material to be given four years education at the Naval Academy, and one-half four years education at a selected college, in a course approximating the Naval Academy curricula but so slanted as to permit the student to obtain a college diploma and a degree, and thus be well fitted for later employment in civil life.

Plan A will undoubtedly produce a more uniform officer product than will Plan B. The average efficiency of officer products of Plan A will not be as great as that of those who under Plan B take a four year Naval Academy

course, but will be higher than that of those who under Plan B do not attend the Naval Academy at all.

This uniformity of product with elimination of jealousies and cliques which may result from different origins, is a great advantage of Plan A. Its disadvantages appear from the point of view of the Navy, only when consideration is directed to the effect of drastic elimination of officers which will be necessary during or at the end of the first seven year period, and when this plan is compared with Plan B from the point of view of the colleges and of the individual officers who may be eliminated.

Present indications are that any acceptable plan of officer distribution in grades and length of service in grades will necessitate elimination of about 30% of each year's annual entries by the end of 7 years service, the major part of such elimination taking place at the end of three years service.

Under these conditions Plan A would result in approximately 30% of each class group of regular officers being eliminated from the service within 7 years after graduation. Every year approximately 800 disgruntled officers would be seeking civilian employment, damning the Navy's system of selection and causing a serious loss in morale among those officers who have not reached the time for elimination. From the point of view of the Navy this situation would be intolerable. From the point of view

of the individual it is much better to limit elimination in these early years chiefly to Reserve Officers who in return for their education and pay agreed at the start to serve three years on active duty as Reserve Ensigns with the full understanding that only a portion might, on their own request, and after demonstrating their efficiency, be appointed officers in the regular Navy. Under these conditions practically all of the required early elimination will be of officers who entered the Navy with a full understanding that the three years of active service was in exchange for their education and pay. The type of man who would voluntarily make such a contract is most apt to be one who would appreciate what he had gained and therefore he would leave the service with appreciation and without the disgruntled attitude of a man who had anticipated a Naval career and had been so soon eliminated.

In Plan B the individual returning to civil life will be a graduate of a civilian college, with a degree and a diploma. Knowing that at the end of three years commissioned service he will be free to return to civil life, he can plan accordingly. As a graduate of a civilian college he will have many more civilian contacts than had he been a graduate of the Naval Academy.

There is still to be considered the attitude of the colleges and universities toward these two plans. Practically all colleges which have had any experience in Navy-College Cooperative education are favorably disposed toward a continuation of such program. Selection of a college or university for the location of a Naval R.O.T.C. unit has been considered an honor. Selection of an institution for the education and training of Naval officers under Plan B, will be an even greater honor. The colleges have been benefitted by the high character and the good example set for other students by members of the R.O.T.C. Much of the prestige and benefit to the college would be lost if the college term for preparatory education of Naval officers were reduced to two years as contemplated in Plan A. Plan A has other disadvantages:

(1) As the students would be of but two classes both at college and at the Naval Academy, there would be lacking that opportunity to develop leadership which will exist when four classes are present in the same institution.

(2) Lack of uniformity in instruction during the first two years would create difficulty in students adapting themselves to Naval Academy methods.

(3) Because Navy-College students would attend college only two years, the colleges would face administrative difficulties in accommodating themselves to such a change in program. It is doubtful that the best colleges and universities would favor Plan A; in fact many might decline to join in such a Plan.

Plan A as compared to Plan B, reduces the efficiency of approximately half of the personnel and increases the efficiency of half in order to provide a uniform product from which as much as 30% will be eliminated in the first few years.

Plan B retains approximately all of the 4 year Naval Academy graduates and eliminates about 60% of those whose Naval education had not been so complete. The Board is of the opinion that Plan B is more acceptable than Plan A, from the points of view of Naval efficiency, of the colleges and universities, and of the individual officers.