

● PSF : Subj. File: Aviation

Expansion of the Air Corps and
Related National Defense Needs
1958

I N D E X

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WAR DEPARTMENT
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, D. C.

December 1, 1938.

MEMORANDUM FOR THE PRESIDENT:

Following the recent conference held by you on National Defense needs, I asked General Craig to have estimates prepared to show costs of an assumed two-year program which approximates the one tentatively outlined at the conference. These estimates are forwarded herewith. They are intended to be indicative only of the costs of this program but are in sufficient detail to permit quick approximation of the costs of any modification or change.

The estimates summarize as follows:- (All figures over and above those now contained in 1940 budget)

a. <u>Air Program</u> (Total cost 2-year period)	\$1,289,000,000
(1) Procurement of 8,030 additional planes to provide total of 10,000	\$667,000,000
(2) Operation of 50% of air-plane strength including additional personnel and installations	561,000,000
(3) Research and development	19,000,000
(4) 7 Government Factories	42,000,000

(Includes \$32,000,000 for construction that might be provided from W.P.A.)

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Date- 2-19-59

Signature- *Paul L. Spicer*

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- b. Procurement of sufficient stocks of essential supplies to equip the Protective Mobilization Plan Army \$421,000,000
- c. Acceleration of Industrial Preparedness 122,000,000
- Grand Total \$1,832,000,000

(Not more than half of these sums will be needed the first year)

The estimated yearly cost of maintaining the expanded air force, including the yearly purchase of some 1500 planes, approximates \$358,000,000 which is an increase of some \$273,000,000 over current costs.

In addition to the above items, the Chief of Staff now recommends an increase in the strength of ground forces to the extent of 58,000 for Regular Army and 35,000 for National Guard (exclusive of air corps personnel) at a total two-year cost of \$272,000,000 and a yearly cost thereafter of \$76,000,000.

Conferences with leaders of the aircraft industry indicate that the above program is practicable, but that there is at the present time considerable unused capacity. Unless immediate orders are placed, this situation will become worse and in some instances drastic reduction of forces will result. The Army cannot help in this situation without additional funds. It is, therefore, suggested that an emergency appropriation of some \$50,000,000 be sought which could be used to keep the aircraft industry on a sound basis pending the time when the complete program is enacted into law.

Louis Johnson

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON, D. C.

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November 30, 1938.

MEMORANDUM:

Subject: Budget Estimates for Two-year National Defense Program.

1. There are attached hereto statements, with estimates of costs, to accomplish the objectives set forth in the memorandum from the Acting Secretary of War to the Chief of Staff, dated November 15, 1938 (Tab I.)

2. The statements pertain to the following subjects:-

- a. The Airplane Program (Tab II).
- b. Augmentation of the Ground Forces of the Regular Army and the National Guard (Tab III). (This statement should be considered in connection with the Airplane Program).
- c. The critical items of equipment and supply to render effective the Protective Mobilization Plan Army until production becomes adequate (Tab IV).
- d. The necessary acceleration of industrial preparedness to maintain the Protective Mobilization Plan Army (Tab V).
- e. Draft of legislation to enable the War Department to employ such civilian personnel as may be necessary to effect the foregoing programs.
- f. Summary of Costs.

3. There follows a resume' of the statements referred to above:-

a. Airplane Program:-

(1) The program provides for an Army Air Corps of 5,620 combat airplanes, 3,750 training airplanes, and 630 miscellaneous airplanes within the total of 10,000 airplanes. Of this number 1,970 airplanes of various types are on hand or will be procured from funds already appropriated or funds included in the 1940 fiscal year estimates, leaving 8,030 additional

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to be procured to meet the requirements of the program. Of the aircraft in operation 2,791 airplanes will be in combat categories balanced as to type as follows:-

	<u>Airplanes</u>	<u>Squadrons</u>
Heavy Bomber.....	280	33 ^x
Attack Bomber.....	366	30 ^{xx}
Medium Bomber.....	408	27 ^{xxx}
Pursuit Fighter.....	168	12
Pursuit Single Engine.....	785	30
Pursuit Interceptor.....	160	6
Observation Corps and Division.....	<u>624</u>	<u>48^{xxxx}</u>
	2,791	186

Notes:

- x Includes 8 Long Range Reconnaissance squadrons.
- xx Includes 6 Light Reconnaissance (Army) squadrons.
- xxx Includes 5 Medium Reconnaissance (Army) squadrons.
- xxxx 21 Regular Army - 27 National Guard.

The remainder of the airplanes in operation will consist of training and miscellaneous types.

(2) The operation and maintenance of the active aircraft provided by the program will require personnel as follows:-

Officers, Regular and Reserve, Air Corps.....	6,582
Enlisted Men, Air Corps.....	60,859
Flying Cadets, Air Corps.....	1,200
Officers of other Branches detailed as ob- servers.....	<u>338</u>
Total.....	68,979
Officers of Services.....	1,217
Enlisted Men of Services.....	<u>9,765</u>
Aggregate.....	79,961

(3) The total cost for the program, including both direct and indirect expense, is estimated to be \$1,288,532,838. This figure is in addition to funds available for fiscal year 1939 and those now included in the War Department Budget Estimates for fiscal year 1940. A breakdown of this estimate by major items is attached marked Tab II, a.

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(4) It is believed that the proposed distribution of combat planes, as to types, will provide a reasonably balanced Army Air Force which will be capable of executing the missions it may be called upon to perform in an emergency involving the defense of United States territory or the protection of our interests in the Western Hemisphere. However, the above opinion is based on a rather hurried consideration of requirements involving a new military mission and consequently the program is subject to such adjustments as may be indicated after more thorough study by the War Department.

(5) It has not been practicable in the time available to make a complete and detailed investigation of the many factors involved in attaining the objective of an Army Air Corps of 10,000 airplanes within two years. Based on the best information attainable, it seems likely that facilities of the Army Air Corps and the aircraft industry can be sufficiently expanded to meet the requirements of the program. This estimate is predicated on the assumption that Congress will amend certain existing laws.

(6) Tab II, a, shows an estimate of the additional funds required for the fiscal year 1939 (Cash \$30,391,429 and Contract Authorizations \$71,000,000). The funds set up in this estimate for the procurement of airplanes in the fiscal year 1939 will permit the accomplishment of the purposes set forth in the memorandum of November 28, 1938, from the Assistant Secretary of War to General Craig (Tab II, b). The remainder of the amount included in the estimate for the fiscal year 1939 will provide funds for the prompt initiation of the steps deemed necessary by the Chief of Air Corps. (See memorandum from the Chief of Air Corps dated November 30, attached to his report of November 28, Tab II.)

b. Augmentation of the Ground Forces of the Regular Army and the National Guard:-

(1) The present Naval expansion program, the projected increase in the Army Air Corps and the recent definition of our foreign policy raise new problems for the War Department.

(2) Panama, which is the keystone in the defense of the Western Hemisphere, must be made impregnable. Hawaii must be strengthened to provide secure Naval and air bases for the protection of the United States. Puerto Rico must be maintained as an outpost for the protection of Panama and as an advanced operating base for action on the east coast of South America. Alaska must be considered as an outpost for protecting the United States from naval and aerial raids. The continental United States itself must be made more secure.

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(3) Air forces alone cannot accomplish these missions.

Therefore, the expansion of the air component of the Army requires a corresponding expansion of the ground forces.

(4) Additional ground forces, totalling 58,483 for the Regular Army and 35,814 for the National Guard, are required for the ground forces to execute the above missions and should be provided in a two-year program to correspond with the program for augmenting the Air Corps.

(5) The personnel requirements for an Army air component of 10,000 airplanes and for the necessary expansion of the ground forces, should logically be considered together. Both these requirements should look toward attainment of the same objective -- a balanced Army capable of enforcing our national policies in the Western Hemisphere against any overseas enemies. The fulfillment of one requirement, without meeting the other, may produce a force partially, if not wholly, impotent.

The additional cost over a two-year period will be

\$272,000,000.

c. Critical Items Required for the Protective Mobilization Plan:-

The two-year program (Tab IV) to provide for critical items required for the Protective Mobilization Plan shows those items which cannot be procured from industry in the time required and provides those items in quantity sufficient to maintain the Protective Mobilization Plan Army until production can bear the load. In other words, it will enable us to capitalize without delay our potential strength in personnel.

The additional cost will be \$420,500,000.

d. Acceleration of Industrial Preparedness:-

The two-year program (Tab V) to accelerate industrial preparedness provides for the completion of those projects essential to insure quantity production by industry prior to exhaustion of critical items by the field forces. It provides for completion of the Educational Order program; rounding out of government arsenals and plants with up-to-date machinery; completion of factory plans for critical items; acceleration of procurement planning; reserves of special machinery for the manufacture of essential munitions; and a modest reserve of strategic materials.

The additional cost will be \$121,044,200.

e. In order to insure no delay in prosecuting the above plans the following proposed language for legislation is considered essential:-

"The funds appropriated for these purposes shall be available for the employment of such civilian personnel within the War Department and in the field as may be necessary for the accomplishment of the program."

Some modification of the above language may be desirable after the context in which it is to be used is known.

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4. A summary of additional costs is as follows:-

Total costs two-year program	1939 Cash	1940 Cash	1941 Cash	:: Maintenance :: cost beginning :: FY 1942
a. <u>The Airplane Program:-</u>				::
\$1,288,532,838	\$30,391,429	\$ 610,436,863	\$ 647,704,546	:: \$357,130,906
b. <u>Augmentation of the Ground Forces:-</u>				::
\$272,000,000				::
Regular Army	---	106,000,000	140,000,000	:: 68,000,000
National Guard	---	11,000,000	15,000,000	:: 8,000,000
c. <u>Critical Items of PMP:-</u>				::
\$420,500,000	---	204,075,000	216,425,000	:: ---
d. <u>Acceleration of Industrial Preparedness:-</u>				::
\$121,044,200	---	78,907,000	42,137,200	:: ---
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\$2,102,077,038	\$30,391,429	\$1,010,418,863	\$1,061,266,746	::

M. M. M.
Chief of Staff.

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WAR DEPARTMENT
WASHINGTON

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November 15, 1938.

MEMORANDUM FOR GENERAL CRAIG:

1. Please have prepared as soon as practicable a budget estimate of the additional costs over and above those contained in the regular budget to accomplish the following objective on basis of a two-year program:

- a. An Army airplane strength of 10,000 planes properly balanced as to types.
- b. 50% of airplane strength to be on an operating basis including operating personnel, installations, materials, etc.
- c. Remainder of planes to be provided with satisfactory storage conditions and care.
- d. Provision for 7 Government aircraft factories with an average production capacity of 1200 planes per year each, on assumptions that land will be obtained from that at present available or from funds other than those contained in Army Appropriation Acts, that buildings will be constructed from relief funds, but that machinery, upkeep, operation, etc., must be provided from Army funds.
- e. Provision for necessary supporting materials and services such as Ordnance, Signal Corps, Quartermaster, Pay, etc.

2. A budget estimate is also desired to provide, on basis of two-year program, sufficient stocks of essential supplies to equip and maintain the Protective Mobilization Plan Army until production is adequate.

3. A further budget estimate is desired to provide, on basis of two-year program, for assistance to Governmental Production and Industrial Preparedness as follows:

- a. Completion of Educational Order Program.
- b. Rounding out present Government Arsenals and Plants with up-to-date machinery.
- c. Completion of the making of factory plans for critical items of supplies.
- d. Acceleration of Procurement Planning by completing industrial surveys, drawings, specifications, etc.
- e. Special machinery as reserve for manufacture of essential munitions.
- f. Stock piles of strategic materials.

4. It is also desired that proposed language for legislation be submitted which will positively enable the War Department to employ such civilian personnel both within and without the District of Columbia as may be necessary to effect the foregoing program.

(signed) Louis Johnson

Acting Secretary of War.

C O P Y

ADDRESS REPLY TO
CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.

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WAR DEPARTMENT
OFFICE OF THE CHIEF OF THE AIR CORPS
WASHINGTON

November 28, 1938.

MEMORANDUM FOR The Chief of Staff.

SUBJECT: Air Corps 10,000 Airplane, Two Year Program.

1. To implement the proposed program will cost approximately \$1,288,000,000.00 in addition to the funds already appropriated for the fiscal year 1939 and the estimates submitted for the fiscal year 1940. Additional funds required for this program in the fiscal year 1939, 1940, and 1941 are as follows:

a. Additional Costs.

	<u>F.Y. 1939</u>	<u>F.Y. 1940</u>	<u>F.Y. 1941</u>
(1) Airplanes, with G.F.E. and spare parts	80,000,000	577,094,673	9,642,440
(2) Experimental research and development		6,016,000	12,035,620
(3) Ammunition and bombs	1,500,000	61,500,000	2,000,000
(4) Purchase of real estate	7,722,000		
(5) Organization and station equipment, less airplanes		15,851,183	13,971,782
(6) Housing and technical construction			
(a) Permanent	1,000,000	182,503,054	
(b) Temporary	1,919,500	5,706,760	
(7) Personnel costs:			
(a) Officers		3,162,822	33,427,839
(b) Enlisted, including cadets	672,084	12,670,750	38,813,681
(8) Maintenance and Operation including administration & normal supply	2,567,845	47,746,271	111,903,184
(9) Training:			
(a) Instructional material	3,700,000	1,454,350	500,000
(b) Payment to civilian schools	1,300,000	3,900,000	2,600,000

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	<u>F.Y. 1939</u>	<u>F.Y. 1940</u>	<u>F.Y. 1941</u>
(10) Air Arsenals:			
(a) Building (PWA)		31,675,000	
(b) Machinery (WD)		10,297,000	
(11) Miscellaneous	1,010,000	1,059,000	1,610,000
(12) Totals			
(a) By years	101,391,429	960,636,863	226,504,546
(b) Grand Total -	1,288,532,838		

b. Regular Budget, 1940.

(1) Air Corps Direct	62,673,546
(2) W.D. Indirect	55,500,000

c. Total Cost.

(1) By Fiscal Years	101,391,429	1,078,810,409	226,504,546
(2) Grand Total -	1,406,706,384		

d. Annual Cost after Completion of Program.

(1) 1500 Airplanes, with G.F.E. and spare parts	144,218,097
(2) Experimental research and development	12,035,620
(3) Ammunition and bombs	3,000,000
(4) Organization and station equipment	3,320,000
(5) Personnel costs:	
(a) Officers	36,067,100
(b) Enlisted, including cadets	43,595,575
(6) Maintenance and Operation including administration and normal supply	113,935,134
(7) Instructional material	400,000
(8) Miscellaneous	595,000
(9) Total Annual Cost	357,130,906

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2. Distribution of the 10,000 airplanes by type operating and in reserve follows:

a. Combat.

<u>Type</u>	<u>Operating</u>	<u>Reserve</u>	<u>Total</u>
Heavy Bombers	280	272	552
Attack Bombers	366	374	740
Medium Bombers	408	420	828
Pursuit (Single Engine)	785	941	1726
Pursuit (Interceptor)	160	150	310
Pursuit (Fighter)	168	142	310
Observation	624	530	1154
Total	2791	2829	5620

b. Training.

<u>Type</u>	<u>Operating</u>	<u>Reserve</u>	<u>Total</u>
Primary Training	615	615	1230
Basic Training	600	627	1227
Advance Training	500	793	1293
Total	1715	2035	3750

c. Miscellaneous

<u>Type</u>	<u>Operating</u>	<u>Reserve</u>	<u>Total</u>
Cargo	142	22	164
Personnel Transport	27	6	33
Amphibians	24	6	30
Photographic	13	3	16
Miscellaneous	224	163	387
Total	430	200	630
GRAND TOTAL	4936	5064	10,000

d. The foregoing distribution is based upon strategical requirements as modified by predicted production possibilities over a two-year period. More detailed surveys and further conferences with industry may require some additional adjustments.

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3. Units.

a. The proposed organization required for the operation and maintenance of the operating combat airplanes provides for:

	<u>Groups</u>	<u>Squadrons</u>
GHQ Air Force, Hq. & Hq. Squadron		1
Wing Hq. & Hq. Squadron		5
Bombardment (all types)	19	71
Pursuit (all types)	13	48
Reconnaissance (all types)		19
Observation, Corps and Division		48
Observation, Balloon		3
Composite	2	
Transport	3	12
Weather		3
Communications		3
Photographic		1
Staff		3
Base Units (all types)		35

Summary:

	<u>Required</u>	<u>On Hand</u>
Combat Groups	34	14
Combat Squadrons	189	77

b. Plan of forming units.

Existing groups and separate Squadrons will be augmented by attaching personnel and airplanes as they become available. The personnel will consist of the necessary number of key men to form the cadres for one or more new groups or separate squadrons and each cadre will include experienced personnel from the parent organization. As soon as an organizational cadre, which will include the pilot personnel for the airplanes, is sufficiently trained to handle the airplanes, the cadre will move to its permanent or temporary locations and the organization fully constituted.

Examples: 2nd Bombardment Group becomes the parent organization for three new Heavy Bombardment groups scheduled for stations in the Southeast Air Base, Porto Rico and Panama.

Temporary locations for approximately eight groups and eleven separate squadrons will be necessary. These units will be located as follows: Moffett Field and Mather Field for units to go to Hawaii and Alaska and the Southeast area for units scheduled for the new Air Bases in the East, Porto Rico and Panama.

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4. Personnel.
a. Requirements.

	<u>Regular</u> <u>Officers</u>	<u>Reserve</u> <u>Officers</u>	<u>Flying</u> <u>Cadets</u>	<u>Enlisted</u> <u>Men</u>	<u>Civilian</u> <u>Employees</u>
Air Corps	4293	2289	1200	60859	
Other Arms and Services					
Observers (attached)	338				
Chemical Warfare	18			32	
Medical	442			2983	
Ordnance	87			1108	
Quartermaster	139			4290	
Signal	94			1030	
Chaplain	35				
Finance	57			322	
Adjutant General	7				
Civilians					10920
Summary:					
Other Arms and Services					
Total required**	1217			9765	
Now on duty with A.C.	220			1796	
Required increase on duty with Air Corps	997			7969	
Air Corps					
Now Assigned	1688	550	578	18686	4718
Required Increase	2605	1739	622*	42173	6202
All Arms					
Total Increase	3602	1739	622	50142	6202
Total with Air Corps	5510	2289	1200	70624	10920

*Number of flying cadets must be increased to a total of 2700 during the two year expansion period to meet reserve officer requirements.

**Additional ground forces from other Arms will be necessary to provide for the security of newly established Air bases; to augment the defenses for existing Air bases, especially in our foreign possessions; and to provide for a small expeditionary force to secure such additional operating bases in the Western hemisphere as may be necessary.

b. Plan of Procurement.

(1) Officers. The requirements for Regular Air Corps Officers, an addition of 2605 over the present strength, is to be reached over a period of ten years by the addition of approximately 375 regular officers each year in grades below the rank of Captain. To meet the total

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officer requirements at the end of the two year program the reserve officer strength on extended active duty, will be increased to a peak of 4400 officers in 1941 and then reduced over the ten year period to 2289.

(2) Enlisted Men. Recruits will be obtained through normal recruiting agencies and from activities under the supervision of the NYA. Those selected for technical training at the Air Corps Mechanics Schools, 65% of the total, will be sent in increments to Scott Field where they will be trade tested and given the basic course now conducted at Chanute Field. Thereafter they will be sent to either Lowry or Chanute Fields to obtain their training. The Air Corps should be authorized to recruit 8000 enlisted men at the earliest practicable date to insure the completion of the program in the two year period.

c. Plan of Training.

(1) Flying training (pilots) will be accomplished by utilizing selected civil flying schools for primary training. Basic training will be given at Randolph Field. Advanced training will be given at Brooks Field and Kelly Field during the two year expansion period. After the expansion period the training center (Randolph and Kelly Fields) can meet the normal annual training requirements for pilots and observers. The additional requirements necessary for the peak loads during the expansion period will be met by temporary construction and temporary increases in personnel. This additional personnel will become integrated with combat units at the end of the two year period. Brooks Field will become available as a tactical unit station.

(2) Flying training (observer) will be conducted in selected C & D observation squadrons during the two year period and thereafter at the Air Corps Training Center.

(3) Specialized combat training and officers technical training (communications, armament, etc.) will be conducted in the CHC Air Force during the two year period. Thereafter they will be conducted at the Air Corps Training Center and the Air Corps Mechanics School respectively.

(4) Enlisted Mechanics training will be conducted by the Air Corps Mechanics School. The use of Scott Field will be necessary during the two year expansion period to serve as a recruit, processing, and replacement depot. Chanute and Lowry Fields will be expanded by the use of temporary construction and by the temporary assignment of officers, civilian instructors, and enlisted men. After the two year period the normal capacity of Chanute and Lowry Fields will probably meet the annual replacement requirements. However, a further survey may indicate the necessity for a continued use of Scott Field or another suitable station.

(5) The use of activities under the supervision of the N.Y.A. and the C.A.A. are contemplated and preliminary conferences have been held with these agencies.

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5. Plan for procurement of material.

a. Complete Airplanes.

(1) To procure 6,030 airplanes from aircraft manufacturers experienced in the production of the particular types of airplanes selected for procurement. The airplane manufacturers selected as prime contractors will be required to sub-contract a reasonable percentage of their work to assure an equitable distribution of production in existing aircraft facilities.

(2) To manufacture 2,000 complete airplanes of Observation, Training and Pursuit types in Government-owned factories.

(3) To provide sufficient capacity for production of the Navy aircraft requirement for 1,187 airplanes during the Fiscal Years 1940 and 1941.

(4) To provide insofar as practicable for the normal commercial and export business of manufacturers selected for the production of Army types.

(5) To concentrate immediately on the adaptation of current models of the following types for quantity production, pending the authorization of the emergency aircraft production program.

Type	Basic Model
Bombardment	B-17
Attack-Bomber	"Sample" and "Paper" (current competitions)
Medium Bomber	B-22
Pursuit, single-engine	P-35, P-36 and P-40
Interceptor Pursuit	P-38 and P-39
Pursuit Fighter	PF-1
Observation	O-47
Advanced Trainer	BC-1
Basic Trainer	BT-9
Primary Trainer	PT-13
Cargo	C-33

(6) To provide for supervision of production in Government-owned facilities by the originators of the selected basic models.

(7) To provide for increasing the potential capacity for producing B-17 type airplanes. This to be accomplished by placing an immediate order for a production prototype of the B-17 airplane in an ad-

NOTE:

The B-22 referred to under "Basic Models" above, is a plane to be produced in six months from experiments with existing B-18 fuselage. It is believed that a plane with the carrying capacity of the Flying Fortress, with a speed approaching 300 miles per hour, and with a range of 3,000 miles, is assured from this experimentation. *lge. W.*

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b. Government-furnished Equipment.

(1) To study means of providing for coordination and control of production of all items of Ordnance, Signal and Air Corps components by the agency charged with the procurement of complete airplanes.

(2) To study means for coordinating the requirements and establishing priorities for standard parts, materials and other critical items utilized in the manufacture of complete airplanes and their components.

(3) To study means for delegating responsibility to the aircraft manufacturers for furnishing major components of the airplane, such as engines and propellers.

c. Organizational Equipment.

To utilize for procurement existing agencies and services now charged with the purchase of organizational equipment other than complete airplanes.

d. Ammunition and Bombs.

To utilize current procedure for the purchase of metal components from the commercial industry and for loading in Government facilities.

e. Miscellaneous instructional material.

To utilize current procedures and existing purchasing agencies and supply services.

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6. PLAN FOR HOUSING AND CONSTRUCTION.

- a. Technical Buildings. The estimates provide only for the minimum number of hangars, shops, storehouses and allied structures which will permit of efficient operation. For example, hangars are provided at the rate of one per group only, planes being staked in the open, at all stations save in cold climates and in the tropics. Runways have been eliminated for new stations save those in the tropics.
- b. Barracks. The estimates provide only for the additional barracks required to house new personnel to meet the program. All existing barracks are filled to maximum capacity, the new barracks being the minimum required to house the remainder of enlisted personnel.
- c. Quarters. Five sets of officers quarters and six sets of non-commissioned officers quarters only are provided at new stations called for in these estimates, the remaining officers and non-commissioned officers will live on a commutation status in civil dwellings in nearby towns. At foreign service stations quarters are provided for both officers and non-commissioned officers on account of the dearth of civil dwellings available and due to the necessity for shelter in tropical climates of Hawaii, Panama and Puerto Rico and the frigid climate of Alaska.
- d. Real Estate. Real estate should be provided for new bases at once in order that construction may begin at the earliest possible date, otherwise the construction program cannot be completed in two years, and establishments will not be ready to receive new units as constituted and trained. These estimates contain funds for real estate required for new bases and new bombing and gunnery ranges only. No effort has been made to indicate exact locations for new stations; merely the strategic area has been shown; the price per acre figure was the average for comparatively level farm land in those geographical areas.
- e. Temporary Construction. Funds are contained in the estimates for sufficient temporary construction to house personnel in C.C.C. type barracks at the schools to provide for the increase at those schools during the two-year period only. Temporary construction funds are provided also for housing new units as they are established and until they can be moved into new stations.
- f. Allied Arms and Services. The estimates provide the necessary establishments for the allied arms and services, Medical, Q.M., Ordnance, Signal, and Chemical Warfare units.
- g. Possible Economy. It is believed that considerable saving can be effected in this construction program provided factory type structures be used for technical buildings and apartment type

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housing be employed for personnel, thus eliminating the great expense due to individual hangars, shops, warehouses, and quarters. This plan would eliminate large items for roads, walks, heating, sewage and other utilities over the present method of separate and individual housing. This system cannot be put into effect at an early date so as to have the construction program ready on time schedule without departure from the present system of supervising construction in the Army.

h. The completed program will require the following Air Corps establishments, old and new.

	Alaska											
	and					PUERTO						
	U.S.	PANAMA	HAWAII	RICO	P.I.	TOTAL						
	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
AIR BASES												
Single	2	2						1		3		2
Double	5	2	2	1	2	1	0	1		9		5
Minor	13	2						1		14		2
TRAINING ESTABLISHMENT												
Tactical	1									1		
Flying	2									2		
TECHNICAL	2									2		
BOMBING AND GUNNERY RANGES												
RANGES	2	4								2		4
DEPOTS	4		1		1			1		7		
AIR ARSENALS		7										7
MATERIEL DIVISION	1									1		
TOTAL										41		20

NOTE:

There is some doubt in my mind as to the necessity for much of an air base in Alaska. I am not sufficiently well informed as yet to come to a definite conclusion, but I would say if there is a cut to be made that it probably can be done more safely in Alaska than elsewhere.

by e.w.

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7. Plan for Experimental Development.

a. To provide for complete separation of procurement from the research and development engineering agencies.

b. To provide for accelerating the development of new and improved power plants by utilizing to the maximum degree the engineering staffs of principal engine manufacturers.

c. To utilize basic aircraft designs that are adapted to re-engineing in order to secure increased performance without major change in the basic aircraft design.

d. To procure three airplanes from each of two or more manufacturers in connection with the development of new and improved models of adopted types of aircraft.

e. To modify existing research and development policies to provide an orderly program which will insure the initiation of new designs of the principal combat types each three years.

f. To concentrate on the development of new aircraft types and models as follows:

Pursuit	For production in 1941
Medium Bomber	For production in 1942
Attack-Bomber	For production in 1943
Heavy Bomber	For production in 1944

g. To concentrate on developments required for: improved production characteristics, simplification of installations and furnishings, and improved performance characteristics.

h. To immediately provide adequate experimental facilities at Wright Field, commensurate with an annual expenditure of \$12,000,000 for research and development.

i. To provide for transferring research of all Ordnance material, other than those items that are integral parts of the airplane, to the Ordnance Department.

NOTE:

Reference paragraph 7, i, the Chief of Ordnance objects to the transfer to him of the development of bomb sights and aerial fire control. This difference of opinion will have to be adjusted later.

G.C.M.

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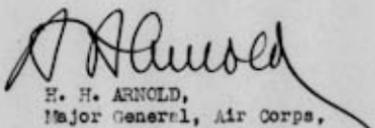
8. a. The above is a flash program, formulated with insufficient time to thoroughly analyze all factors. It is, therefore, subject to modification as to costs, tactical types, and in some cases as to methods of implementing. However, the study made has been sufficiently comprehensive to determine that the program can be accomplished within the limits indicated as to time and funds.

b. The integration of primary, advanced and specialized training, and the formation of new tactical and other units, involve the use of all facilities, stations, and organizations of the entire Air Corps including those under the Commanding General, G.H.Q. Air Force. In order to properly coordinate all phases and insure the completion of the program, it is essential that all activities of the Air Corps be under one control.

c. In addition to increasing the airplane authorization to 10,000 airplanes, certain other changes in law will be necessary (1) to permit accelerated procurement of airplanes, (2) to permit the use of civilian flying schools including the loan or sale of Government airplanes and allied equipment to their institutions, (3) to authorize the necessary increase in regular officers, cadets and enlisted men, (4) to authorize additional reserve officers on extended active duty, and (5) to authorize the necessary increase in numbers of enlisted men attending civilian schools beyond present limitation of 1/2 of 1 per cent.

d. In order that a detailed program to include necessary changes in existing laws can be submitted at the earliest practicable date, it is recommended that the above be approved in principle, or desired modifications indicated.

e. This program can begin March 1, 1939, or as soon thereafter as necessary changes in law are effected and funds are made available.


H. H. ARNOLD,
Major General, Air Corps,
Chief of the Air Corps.

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ADDRESS REPLY TO
 CHIEF OF THE AIR CORPS
 WAR DEPARTMENT
 WASHINGTON, D. C.

CONFIDENTIAL

WAR DEPARTMENT
 OFFICE OF THE CHIEF OF THE AIR CORPS
 WASHINGTON

November 30, 1938.

MEMORANDUM FOR - Chief of Staff.

1. A preliminary study of the air program estimates has resulted in the extraction of the following items that will permit the accomplishment of the purposes set forth in paragraph 2 of memorandum dated November 28, 1938, from The Assistant Secretary of War.

Quantity Procurement

Type	Stripped Airplane	Cost of complete airplane less Or- dnance & Signal Components	Ordnance & Signal Com- ponents	Total Unit Cost, includ- ing spares & spare engines	Quanti- ty pro- posed for Procure- ment	Total Cost
Pursuit (1- engine)	\$20,000	\$ 37,900	\$ 6,200	\$ 55,590	500	\$ 27,795,000
Attack-Bomber	80,000	125,500	16,800	172,250	740	127,465,000
Adv. Trainer	13,000	23,600	9,800	38,785	400	15,514,000
Observation	25,000	42,300	6,600	59,180	200	11,836,000
Sub-Total	\$138,000	\$229,300	\$39,400	\$325,805	1840	\$182,610,000

Experimental and Service Test Procurement

Heavy Bomber	200,000	280,900	16,500	345,730	13	4,494,490
Pursuit Int.	50,000	93,200	15,800	132,620	13	1,724,060
Per. Transport	55,000	92,300	11,030	124,660	10	1,246,660
Primary Train- er (Commercial)	5,000	89,000	—	11,055	65	718,575
Pursuit (1-Eng.)	20,000	37,900	6,200	55,590	13	778,260
Attack-Bomber (Paper Design)	300,000	210,000	16,800	260,000	4	1,040,000
Sub-Total	\$630,000	\$803,300	\$66,330	\$929,655	118	\$10,002,045
Grand Total						\$192,612,045

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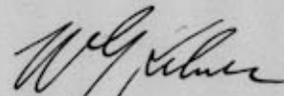
Addition to bring total Research and Development Funds to twelve million for 1939, \$8,435,610.

Grand Total, including Research and Development - \$201,047,655.

Research and Development

Addition to 1939 Research and Development Funds to bring the total up to the approved figure of \$12,000,000 ----- \$8,435,610.00.
Including this figure with the total cost of the proposed airplane procurement gives a grand total of ----- \$201,047,655.00.

2 Incls.
Annex No. 1
Annex No. 2



W. G. Kilner,
Brig. General, Air Corps,
Acting Chief of the Air Corps

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A N N E X NO. 1

TO MEMORANDUM FOR THE CHIEF OF STAFF
dated November 30, 1938.

1. The procurement of the items listed in the basic communication is predicated on the following:

a. Circular Proposals -

- (1) 38-390 - Pursuit, Single Place. Opens 1-10-39.
From 1 to 500 airplanes.
- (2) 38-385 - Attack Bomber, Two-Engine. Opens 3-17-39.
From 1 to 500 airplanes.
- (3) 39-2 - Observation Short Range Liaison. Opens 2-23-39.
From 2 to 50 airplanes.
- (4) 39-100 - Basic Combat. Opens 4-21-39.
From 1 to 500 airplanes.
- (5) 39-200 - Transport, Personnel. Opened 11-22-38.
From 1 to 10 airplanes. Exercise option.
- (6) 38-370 - Observation (O-47A). Opened 9-26-38.
Covers 1 to 400 airplanes. Exercise option.

b. Service Test and Experimental Airplanes.

Under the provisions of Paragraph k, Section 10, Air Corps Act of 1926, experimental and service test airplanes can be procured.

c. Research and Development.

Funds set up in the basic communication are for Pay-roll, Wright Field, and Experimental and Development Contracts with the Industry under the provisions of sub-paragraph k, Section 10, Air Corps Act.

2. The Air Corps Act of 1926 authorized the procurement of a 2320 airplane increase over the then existing authorized strength of 1800, thereby creating a present existing authorized Air Corps strength of 4120 airplanes. Ample margin of authorized Air Corps strength therefore exists to absorb the proposed quantity procurement of 1840 airplanes, exclusive of service test and experimental procurement.

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A N N E X NO. 2

Extracts from Air Corps Program Estimates .

1.
 - a. (1) To provide work for idle airplane factories:
Attack Bomber "Sample Design" (Martin, Northrop)
Heavy Bomber (Consolidated)
Attack Bomber "Paper Design"
Advance Trainer (sub-contracts)
Pursuit (1 Engine) (Seversky)
Research and Development (Contracts to build up engineering staffs in factories)
Engine Factories (Pratt & Whitney)
Primary Trainer (Commercial)
Observation (Liaison)
 - (2) To increase the rate of production of those factories now having orders.
Attack Bomber
Advance Trainer
Observation
 - b. To initiate procurement of those items of the 10,000 airplane program which require the greatest period of time to manufacture.
Attack Bomber (Both "paper" and sample designs)
Heavy Bomber
Pursuit Interceptor
 - c. To procure additional airplanes of adopted types which are desired in the 10,000 airplane program.
Heavy Bomber
Pursuit (1 Engine)
2. The procurement of engines and accessories to meet this airplane program will accomplish all of the objectives set forth in paragraph 2, Memorandum from The Assistant Secretary of War, dated November 28, 1938, throughout their respective phases of the aeronautical industry.
3. Provisions for Research and Development funds will expedite initiating procurement of those items which require the greatest period of time to produce, by:
- a. Providing expansion of personnel of Materiel Division.
 - b. Expediting engine accessory test program, which is essential for the airplane production program for critical types.

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Tab A

Estimated Cost of an Army Air Corps Program
10,000 Airplanes in Two Years

(Exclusive of funds included in W.D. Budget Estimates for FY 1940)

	1939		1940		1941		Maintenance Cost Begin- ning FY 1942	
	Cash	Con. Auth.	Cash	Con. Auth.	Cash	Con. Auth.	Cash	Con. Auth.
1. Airplanes, with G.F.E. and Spare Parts	10,000,000	70,000,000	303,094,673	274,000,000	9,642,440	-	87,218,097	57,000,000
2. Experimental Research and Development	-	-	4,016,000	2,000,000	10,035,820	2,000,000	10,000,000	2,000,000
3. Ammunition and Bomb Reserves	500,000	1,000,000	28,500,000	33,000,000	2,000,000	-	3,000,000	-
4. Purchase of Real Estate	7,722,000	-	-	-	-	-	-	-
5. Organizational Equipment, less airplanes (for Air Corps and services)	-	-	15,851,183	-	13,971,732	-	3,320,000	-
6. Housing and Technical Construction								
(1) Permanent	1,000,000	-	86,503,054	96,000,000	-	-	-	-
(2) Temporary	1,919,500	-	5,706,760	-	-	-	-	-
7. Personnel Costs								
(1) Officers	-	-	3,162,822	-	33,427,839	-	36,067,100	-
(2) Enlisted, including Cadets	672,084	-	12,670,750	-	38,813,681	-	43,595,575	-
8. Maintenance and Operation	2,567,845	-	35,546,271	12,200,000	111,903,184	-	113,935,134	-
9. Training								
(1) Instructional Materiel	3,700,000	-	1,454,350	-	500,000	-	400,000	-
(2) Payment to Civilian Schools	1,300,000	-	3,900,000	-	2,600,000	-	-	-
10. Air Arsenals (Airplane Plants)								
(1) Buildings (PWA)	-	-	31,675,000	-	-	-	-	-
(2) Machinery (WD)	-	-	6,297,000	4,000,000	-	-	-	-
11. Miscellaneous	1,010,000	-	1,059,000	-	1,610,000	-	595,000	-
Total	30,391,429	71,000,000	539,436,863	421,200,000	224,504,546	2,000,000	298,130,906	59,000,000
Contract Authorization Former Year	-	-	71,000,000	-	421,200,000	-	2,000,000	-
Total Cash	30,391,429	-	610,436,863	-	645,704,546	-	300,130,906	-

Total to complete Program \$1,288,532,838

* Based upon the procurement of 1,500 airplanes annually after Program is complete.

Notes: (1) In so far as the National Guard is concerned this estimate includes only the cost of the observation planes needed to complete the airplane requirements for 27 National Guard observation squadrons of 13 airplanes each.

(2) The funds set up in the above table for the procurement of airplanes in the fiscal year 1939 will permit the accomplishment of the purposes set forth in Memorandum of November 28, 1938, from the Assistant Secretary of War to General Craig. The remainder of the amount included in the above estimate for the fiscal year 1939 will provide funds for the prompt initiation of steps deemed necessary by the Chief of the Air Corps.

(3) The above figures were furnished by the Office of the Chief of Air Corps.

TAB B

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WAR DEPARTMENT
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, D.C.

November 28, 1938.

MEMORANDUM FOR GENERAL CRAIG:

1. Without additional legislative authority the air program outlined in my memorandum of November 15, 1938, can be speeded up by the early passage of a special appropriation act.

2. It is desired that the air program estimates be studied with a view to extracting therefrom the items that will permit the accomplishment of the following:

- a. Provide work for idle airplane factories and increase the rate of production of those factories now having orders.
- b. Initiate procurement of those items of the 10,000 airplane program which require the greatest period of time to manufacture.
- c. Procure additional airplanes of adopted types which are desired in the 10,000 airplane program.

(Sgd) LOUIS JOHNSON

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WAR DEPARTMENT
WASHINGTON, D. C.

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MEMORANDUM:

Subject: Augmentation of the Ground Forces of
the Regular Army and National Guard.

1. The present Naval expansion program, the projected increase in the Army Air Corps and the recent definition of our foreign policy raise new problems for the War Department.

2. Panama, which is the keystone in the defense of the Western Hemisphere, must be made impregnable. Hawaii must be strengthened to provide secure Naval and air bases for the protection of the United States. Puerto Rico must be maintained as an outpost for the protection of Panama and as an advanced operating base for action on the east coast of South America. Alaska must be considered as an outpost for protecting the United States from naval and aerial raids. The Continental United States itself must be made more secure.

3. Air forces alone cannot accomplish these missions. Therefore, the expansion of the air component of the Army requires a corresponding expansion of the ground forces.

4. Additional forces, totalling 58,483, as shown in Tab A, are essential for the Regular Army to provide:

a. The minimum augmentation of the present garrisons for Panama, Hawaii, Puerto Rico and Alaska to insure the immediate defense of those possessions. This defense must include provision for the protection of additional air bases and substantially one manning detail for the anti-aircraft and harbor defense artillery now in Panama and Hawaii.

b. An efficient expeditionary force to be immediately available to seize and hold critical areas in the Western Hemisphere. This force would have to be augmented promptly by National Guard forces.

c. Forces required for the prompt reinforcement of our overseas possessions in any major emergency.

d. The minimum augmentation of the existing forces for immediate protection of the Continental United

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States, including the establishment of a shield to cover the mobilization of the civilian components of the Army and to protect the essential industrial establishments of the nation.

5. Additional National Guard units, totalling 35,814, as shown in Tab A, are essential to supplement the Regular Army in order to provide:

a. Balanced forces for the defense of the Continental United States, including antiaircraft protection of air bases and vital establishments.

b. Certain National Guard units urgently needed in the overseas possessions to augment promptly the Regular Army garrisons.

c. Units to expand promptly the Expeditionary Force to be maintained in the Regular Army.

d. Additional expeditionary forces that may be required.

e. Active units in the Continental United States for further reinforcements of the overseas possessions in case of necessity.

6. a. The following tabulation gives pertinent data relative to existing forces and the additional forces required. These figures do not include the Air Corps, either present or proposed.

For	: Approximate Aggregate Strength, less Air Corps					
	: Regular Army			: National Guard		
	: Present* : Garrison	: Additional : Forces	: Proposed : Garrison	: Additional : Forces	: Proposed* : Garrison	
Panama	: 12,900	: 11,070	: 26,521	: -	: -	
Hawaii	: 20,675	: 3,907	: 24,582	: 2,134	: 3,852	
Alaska (for Air Base)	: -	: 80	: 588	: -	: -	
Puerto Rico	: 934	: 725	: 1,659	: 758	: 2,345	
Expeditionary Force	: -	: 29,208	: 29,208	: 2,077	: 15,374	
Continental United States	: 121,390	: 13,493	: 131,836	: 30,245	: 215,243	
Totals	: 155,911	: 58,483	: 214,394	: 35,814	: 230,819	

* For details regarding existing forces see Tab C.

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b. The aggregate strength of 236,819 for the National Guard does not include an increase of 5,000, effective April 1, 1939. This 5,000 will probably be used to complete existing units.

c. The proposed garrison for Panama includes an Infantry Brigade of 2,545 troops, and the proposed garrison for Alaska includes an Infantry Battalion of 508 troops; both to be withdrawn from the present Regular Army garrison in Continental United States. The total thus withdrawn from the United States is 3,053 troops.

d. Detailed data regarding the additional forces for each area are given in Tab B.

7. The following comments are pertinent to the data included in the above tabulation:

a. Panama and Hawaii. The strategic importance of the Panama Canal and the Naval Base in Oahu dictate that the defense of these possessions be made impregnable. For details regarding additional forces, see Pages 1 and 2, Tab B.

b. Alaska. The location of the proposed air base and the defensive character of the adjacent terrain indicate that one infantry battalion will be sufficient for initial defense. For details regarding additional forces, see Page 3, Tab B. Additional forces for the Alaskan garrison will be sent there from the United States when required. The proposed increase for the Continental United States includes one regiment of antiaircraft artillery and one battalion of 155 mm. guns, both National Guard units, which may be used for this purpose.

c. Puerto Rico. Puerto Rico is strategically located for aerial surveillance and protection of the Caribbean area, as an outpost for Panama, and as a stepping stone for aerial movements to South America. These advantages dictate the need for troops to guard the air base to be established there. Of the additional troops considered essential, 725 are to be procured by an increase in the Regular Army, and 758 by the organization of additional National Guard units in Puerto Rico. The size of the island requires that at least the three regiments of Infantry now there (one Regular Army and two National Guard) and the additional troops set up in this program, be available initially for its defense. In a major emergency, even the force thus provided will have to be reinforced promptly from Continental United States. (For details regarding additional forces, see Page 4, Tab B).

d. For an Expeditionary Force. The additional personnel required in the Regular Army and the National Guard for the organization of an expeditionary force are shown on Pages 5 and 6 of Tab B. Some of the Regular Army units included in this force do not exist in the present Regular Army. The others could not be withdrawn promptly from

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forces now available in the Regular Army without jeopardizing the security of the United States. National Guard units have been included in the organization of this force as far as consistent with the essential requirement that the major part of this expeditionary force be immediately available. Of the total of 15,374 National Guard forces included, approximately 12,097 would be provided from existing units. The expeditionary force would be organized and maintained in Continental United States until required elsewhere.

e. For Continental United States. The additional Regular Army forces listed for Continental United States on Pages 7 to 9, of Tab B, are needed for the Regular Army to provide:

(1) The additional reinforcements that should be available for prompt dispatch to our overseas possessions.

(2) The following major combat forces for the defense of Continental United States, including the protection of vital installations and facilities in the event of internal disorders during an emergency:

- 4 Infantry divisions
- 2 Cavalry divisions
- 1 Mechanized Cavalry division
- 6 Antiaircraft regiments
- Augmented harbor defense troops
- Supporting and auxiliary troops

8. a. The National Guard, as now constituted, does not contain the supporting and auxiliary units needed:

(1) To round out the forces available in the Regular Army.

(2) For the effective employment of the eighteen National Guard divisions for defense of Continental United States or as additional expeditionary forces.

b. The additional units required, which are summarized in Tab A and shown in detail in Tab B, need not be provided in the Regular Army, but it is essential that they be included in the active units of the National Guard.

c. These units could be provided if the National Guard were increased by approximately 1,974 officers and 33,840 enlisted men. Nineteen of the twenty regiments of antiaircraft artillery are needed

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to provide the protection which careful study has indicated is necessary for the mobile forces and for vital installations in Continental United States. The antiaircraft personnel is nearly half of the proposed increase

9. a. The personnel requirements for an Army Air component of 10,000 airplanes and for the necessary expansion of the ground forces, should logically be considered together. Both these requirements should look toward attainment of the same objective - a balanced Army capable of enforcing our national policies in the Western Hemisphere against any overseas enemy or enemies. The fulfillment of one requirement, without fulfillment of the other, may produce a force partially, if not wholly, impotent. The additional personnel needs of the Air Corps (including services) and the personnel needs of the remainder of the ground forces have been computed separately. In order that all personnel requirements of the Regular Army may be viewed and considered as an integrated whole, the following tabulation, showing approximately the present strengths, proposed increases and the aggregate strengths when these increases have been provided, is submitted:

	Regular Army			National Guard		
	Present Strength	Proposed Increase	Aggregate	Present Strength	Proposed Increase	Aggregate
Air Corps, including Services	22,080	57,881	79,961	2,300	2,020	4,320
Ground forces including services, (less Air Corps and Services for Air Corps)	150,733	58,183	215,216	197,700	35,814	237,514
Total	172,813	116,064	295,177*	200,000	37,834	237,834

Note: * Exclusive of Philippine Scouts.

10. a. The following are the estimated initial and annual costs for the additional forces needed for the Regular Army and the National Guard:

(1) For 2,796 officers and 55,687 enlisted men for the Regular Army, as indicated in Tab A.

Initial cost	\$178,000,000
Annual cost	68,000,000

(2) For 1,974 officers and 33,810 enlisted men for the National Guard, as indicated in Tab A.

Initial cost	\$ 18,000,000
Annual cost	8,000,000

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b. The initial costs are primarily for construction and for equipment not provided for in the War Reserves; the annual cost is primarily for pay, subsistence and maintenance.

c. An approximate breakdown of these costs for each of the overseas possessions, for an expeditionary force, and for the other forces in Continental United States is given in Tab D, attached.

11. The cost of the program for increasing the ground forces should be distributed over two years to correspond with the Air Corps Program. This would require annual expenditures approximately as follows:

a. First Year.		
(1) For Regular Army	\$100,000,000	
(2) For National Guard	11,000,000	
b. Second Year.		
(1) For Regular Army	\$110,000,000	
(2) For National Guard	15,000,000	
c. After Second Year.		
(1) For Regular Army	\$ 68,000,000	
(2) For National Guard	8,000,000	

12. Action recommended.

a. That authority be granted for estimates to be prepared and submitted, to provide for increasing the Regular Army and the National Guard in a two year program, as follows:

(1) To increase the Regular Army by 2,796 officers and 55,687 enlisted men (exclusive of the Air Corps) at estimated costs shown in paragraph 11, above.

(2) To increase the National Guard by 1,974 officers and 35,640 enlisted men, at estimated costs shown in paragraph 11, above.

Enclosures.

Tab A
Tab B
Tab C
Tab D

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TAB A

ADDITIONAL TROOPS LESS AIR CORPS REQUIRED IN
THE REGULAR ARMY AND THE NATIONAL GUARD

	Regular Army		National Guard	
	Officers	Enlisted Men	Officers	Enlisted Men
Panama	400	10,670	0	0
Hawaii	141	3,766	109	2,025
Alaska	5	75	0	0
Puerto Rico	28	697	48	710
Expeditionary Force	1,498	27,710	157	2,520
Continental United States	724	12,769	1,660	28,585
Totals	2,796	55,687	1,974	33,840
Aggregate		58,483		35,814

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TAB B

TABLE SHOWING THE PROPOSED ASSIGNMENT OF ADDITIONAL FORCES,
LESS AIR CORPS, NEEDED FOR OVERSEAS POSSESSIONS, FOR AN
EXPEDITIONARY FORCE, AND FOR THE CONTINENTAL UNITED STATES

1. FOR PANAMA

Additional Units	Personnel	
	Regular Army	
	Officers	Enlisted Men
Six Regiments, Antiaircraft (four to man materiel now available in Panama and two for protection of additional air bases to be established in Panama)	204	5304
Harbor Defense Troops (Fixed)	95	3160
One Signal Battalion (to include nucleus for Aircraft Warning Service)	14	293
One Infantry Brigade, less two Battalions (To provide immediate protection for air bases outside of the Canal Zone). Troops now available in and to be withdrawn from United States	(119)	(2426)
Additional personnel to make up shortages in the above-listed Brigade		100
One Regiment, less one Battalion, 75 mm. Pack Artillery	45	956
One Medical Regiment	23	349
Service Detachments	19	508
Total (Less Troops withdrawn from U.S.)	400	10670
Aggregate		11070

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2. FOR HAWAII

Additional Units	Personnel			
	Regular Army		National Guard*	
	Officers	Enlisted Men	Officers	Enlisted Men
Three Regiments, Antiaircraft Artillery (RA)	102	2652		
Two Regiments, Antiaircraft Artillery (NG)			68	1325
(These five Regiments are to man materiel now in Hawaii)				
Harbor Defense Troops, Fixed Additional required to man all armament with one relief	18	642		
One Signal Battalion (to include nucleus for Aircraft Warning Service)	14	293		
Two Battalions, 155 mm. Guns			41	700
Service Detachments	7	179		
Total	<u>141</u>	<u>3766</u>	<u>109</u>	<u>2025</u>
Aggregate		3907		2134

NOTE: * Enlisted personnel of National Guard units are maintenance strength only.

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3. FOR ALASKA

Additional Units	Personnel	
	Regular Army	
	Officers	Enlisted Men
One Infantry Battalion now available in and to be withdrawn from United States	(19)	(489)
Service Detachments	5	75
Total (Less Troops withdrawn from United States)	5	75
Aggregate	80	

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4. FOR PUERTO RICO

Additional Units	Personnel			
	Regular Army		National Guard*	
	Officers	Enlisted Men	Officers	Enlisted Men
One Regiment, Antiaircraft Artillery (less one Machine Gun Battalion)	25	634		
One Machine Gun Battalion for above Antiaircraft Regiment (For protection of air base to be established)			9	190
Signal Detachment, including nucleus for Antiaircraft Warning Service	3	63		
One Battalion, 155 mm. Guns (Harbor Defense)			16	260
One Battalion, 75 mm. Guns			23	260
Total	28	697	48	710
Aggregate		725		758

NOTE: *Enlisted personnel of National Guard units are maintenance strength only.

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5. FOR EXPEDITIONARY FORCE

Additional Units	Personnel			
	Regular Army		National Guard*	
	Officers	Enlisted Men	Officers	Enlisted Men
Corps Headquarters and Special Troops	68	835		
One Infantry Division (RA)	612	11537		
One Infantry Division (NG). To be obtained from existing units			(612)	(8650)
One Composite Regular Army and National Guard Infantry Division. Units to be organized, including for the National Guard a Light Tank Company, 155 mm. Howitzer Regiment and an Engineer Combat Regiment	309	5359	90	1400
To be supplied from existing units			(205)	(3230)
Two Regiments, Antiaircraft Artillery	68	1768		
One Regiment, 155 mm. Guns	59	977		
One Regiment, 155 mm. Howitzers (RA)	53	1014		
One Regiment, 155 mm. Howitzers (NG)			53	760
One Regiment, 75 mm. Howitzers (Pack)	50	973		
One Battalion Medium Tanks	30	517		
One Squadron, Scout Cars	15	188		
One Squadron, Combat Cars	14	150		

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EXPEDITIONARY FORCE, Continued

Additional Units	Personnel			
	Regular Army		National Guard*	
	Officers	Enlisted Men	Officers	Enlisted Men
Anti-Tank Units (Corps troops to supplement anti-Tank Units in Divisions and to provide for flank protection for the Corps)	11	252		
One Regiment, Engineers, General Service, less one Battalion (RA)	29	679		
One Battalion for above Regiment (NG)			14	360
One Battalion, Engineers, Heavy Ponton	13	435		
One Company, Engineers, Light Ponton	5	165		
One Battalion, Engineers, Topographic	13	286		
One Regiment, Medical	24	349		
One Company, Chemical Warfare Service, Depot	4	127		
One Company, Chemical Warfare Service, Field Laboratory	14	57		
One Battalion, Quartermaster Corps, Truck (Corps)	19	403		
One Battalion, Quartermaster Corps, Light Maintenance	17	337		
Service Detachments	71	1302		
Total	1498	27710	157	2520
Aggregate		29208		2677

* Enlisted men for National Guard units are based on the maintenance strength only.

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6. FOR CONTINENTAL UNITED STATES

Additional Units	Personnel			
	Regular Army		National Guard *	
	Officers	Enlisted Men	Officers	Enlisted Men
1st, 2d, 3d, and 4th Infantry Divisions. Personnel to bring existing units to effective strength; and to complete the Artillery of the 1st Division; the Medical Regiment and 7th Infantry of the 3d Division; and Headquarters, Special Troops, Field Artillery Brigade and Medical Regiment of the 4th Division	123	2,737		
Four Infantry Brigades (less inactive battalions and one battalion in Alaska), for Alaska, Hawaii, and Puerto Rico. Personnel to bring existing units to effective strength and complete organization of 15th Infantry	13	741		
One Mechanized Cavalry Division. To be organized by expansion of existing Mechanized Brigade	137	2,120		
One Mechanized Cavalry Brigade (NG)			130	1,800
Antiaircraft Artillery to complete five existing regiments (RA)	94	1,663		
Two Antiaircraft Artillery Regiments (including one for Hawaii) RA	68	1,768		

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CONTINENTAL UNITED STATES, Continued

Additional Units	Personnel			
	Regular Army		National Guard *	
	Officers	Enlisted Men	Officers	Enlisted Men
Twenty Antiaircraft Artillery Regiments (including one for Alaska) NG			680	13,260
Six Signal Battalions (NG)			84	1,075
Two Signal Companies, Radio Intelligence (NG)			12	300
Signal Detachment for Aircraft Warning Service (for Alaska) (RA)	2	60		
Harbor Defense Troops. To man existing armament	180	3,105		
Three Regiments, 155 mm. guns (including one battalion for Alaska)			247	3,825
One Regiment, 155 mm. Howitzers			53	750
Two Observation Battalions			30	475
Five Engineer Regiments, General Service			220	4,350
One Engineer Battalion, Water Supply			25	475
One Engineer Battalion (NG) and one company (RA), Topographic	8	86	13	225
One Engineer Battalion, Camouflage			30	275

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CONTINENTAL UNITED STATES, Continued

	Personnel			
	Regular Army		National Guard *	
	Officers	Enlisted Men	Officers	Enlisted Men
Four Medical Regiments			92	1,050
Two Military Police Battalions			44	725
Service Detachments	<u>99</u>	<u>489</u>	<u> </u>	<u> </u>
Total	<u>724</u>	<u>12,769</u>	<u>1,660</u>	<u>23,585</u>
Aggregate		13,493		30,245

* Enlisted personnel of National Guard units are maintenance strength only.

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TAB C

EXISTING STRENGTH OF THE REGULAR ARMY AND THE NATIONAL GUARD IN
PANAMA, HAWAII, ALASKA, PUERTO RICO
AND CONTINENTAL UNITED STATES

1. PANAMA

a. Personnel in Regular Army Units and Service Command in the
Panama Canal Department (September 30, 1938):

(1) Air Corps	1,519
(2) Antiaircraft	} CAC 3,243
(3) Harbor Defense	
(4) Infantry	5,417
(5) Field Artillery	646
(6) Signal	268
(7) Engineers	922
(8) Ordnance, Quartermaster	110
(9) Miscellaneous and Service Command	1,100
(10) Total, Panama Canal Department	14,655

b. No National Guard.

2. HAWAII

a. Personnel in Regular Army Units and Service Command in the
Hawaiian Department (September 30, 1938):

(1) Air Corps	1,855
(2) Antiaircraft (CAC)	1,992
(3) Harbor Defense (CAC)	2,986
(4) Infantry	8,068
(5) Field Artillery	3,579
(6) Signal	202
(7) Engineers	960
(8) Medical, Ordnance, Quartermaster	1,074
(9) Miscellaneous and Service Command	2,214
(10) Total, Hawaii, Regular Army	22,530

b. Personnel in National Guard - Infantry 1,718

3. ALASKA

a. Personnel in Regular Army Units and Service Command in
Alaska (September 30, 1938):

(1) Infantry (at Chilkoot Barracks)	253
(2) Service Command (Scattered)	168
(3) Total, Alaska	421

b. No National Guard.

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4. PUERTO RICO

a. Personnel in Units and Service Command in Puerto Rico (September 30, 1938):

(1) Infantry	825
(2) Service Command	109
(3) Total, Puerto Rico, Regular Army	<u>934</u>

b. Personnel in National Guard in Puerto Rico (December 31, 1937):

Infantry 1,587

5. CONTINENTAL UNITED STATES

a. Personnel in Regular Army Units and Service Command in Continental United States (September 30, 1938):

(1) Air Corps, including personnel in Corps Area Service Commands and War Department overhead totalling 4,480	16,039
(2) Antiaircraft (CAC)	3,050
(3) Harbor Defense (CAC)	5,458
(4) Infantry	11,653
(5) Field Artillery	18,555
(6) Cavalry	10,205
(7) Signal	1,118
(8) Engineers	3,526
(9) Medical, Ordnance, Quartermaster	4,812
(10) Miscellaneous and Service Command	33,019*
(11) Total, Continental United States	<u>137,135</u>

b. Personnel in National Guard in Continental United States - Air Corps 2,300, Ground Forces 197,700 - Total 200,000.

NOTE: * This includes:

- (a) Corps Area Service Commands, General Officers, Staff Officers, Post overhead, Personnel on duty with the National Guard, Organized Reserves, ROTC, CCC, etc. Total 18,018
- (b) War Department Overhead which includes General Officers and Staff Officers of the War Department and personnel on duty at schools and installations controlled by Chiefs of Arm or Service 13,877

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(c) Personnel at Large which includes officers
at educational institutions, military mis-
sions and personnel enroute to and from
overseas garrisons 521
Total 33,019

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TAB D

ESTIMATED COSTS FOR THE INCREASE IN THE REGULAR ARMY AND NATIONAL GUARD
FOR THE OVERSEAS DEFENSES, FOR AN EXPEDITIONARY FORCE AND
FOR CONTINENTAL UNITED STATES

INITIAL COSTS

	<u>Regular Army</u>	<u>National Guard</u>	<u>Total</u>
Panama	\$ 50,000,000	----	\$ 50,000,000
Hawaii	15,000,000	\$ 800,000	15,800,000
Alaska	3,000,000	----	3,000,000
Puerto Rico	3,000,000	300,000	3,300,000
Expeditionary Force	77,000,000	2,500,000	79,500,000
Continental United States	30,000,000	14,400,000	44,400,000
Total	<u>\$178,000,000</u>	<u>\$18,000,000</u>	<u>\$196,000,000</u>

ANNUAL COSTS

	<u>Regular Army</u>	<u>National Guard</u>	<u>Total</u>
Panama	\$ 11,500,000	----	\$ 11,500,000
Hawaii	4,500,000	\$ 500,000	5,000,000
Alaska	100,000	----	100,000
Puerto Rico	850,000	200,000	1,050,000
Expeditionary Force	35,050,000	600,000	35,650,000
Continental United States	16,000,000	6,700,000	22,700,000
Total	<u>\$ 68,000,000</u>	<u>\$ 8,000,000</u>	<u>\$76,000,000</u>

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November 22, 1938.

Supplemental Estimates - F.Y. 1940

Deficiencies in Critical Items required for the Protective Mobilization Plan

(Note: These estimates are over and above those included in regular estimates for F.Y. 1940 which are now in the Bureau of the Budget.)

<u>Appropriation Title</u>	<u>Total Cost</u>	<u>Treasury Withdrawals During FY 1940</u>	<u>Balance Contract Authorization</u>
Ordnance Services and Supplies (Arms, Ammunition, Combat Vehicles)	\$300,000,000	\$ 144,000,000	\$ 156,000,000
Engineer Service, Army (Searchlights, Engr. Equipment).....	13,000,000	3,175,000	9,825,000
Signal Service of the Army (Field wire, Telephones, Communication Equipment)	7,175,000	7,175,000	-
Seacoast Defenses (Seacoast Guns, Fire Control, Communications)	42,750,000	14,700,000	28,050,000
Chemical Warfare Service, Army (Gas Masks, Protective Equipment, Chemicals)	13,500,000	7,500,000	6,000,000
Medical and Hospital Department, Army (Medical Supplies and Equipment)...	2,500,000	2,450,000	50,000
Clothing and Equipage (Uniform Cloth, Tentage)	15,000,000	12,000,000	3,000,000
Army Transportation - Water (Mine Planting Vessels, Rescue Boats)	16,000,000	8,000,000	8,000,000
Army Transportation - Rail (Transportation Military Supplies to points of storage - Strategic Distribution of Stocks)....	5,425,000	2,500,000	2,925,000
Construction of Buildings, Utilities and Appurtenances at Military Posts (Shelter and Storage for War Reserve Stocks)	5,000,000	2,500,000	2,500,000
Acquisition of Land (For expansion of storage facilities - General Depot Areas)	150,000	75,000	75,000
TOTALS	\$ 430,500,000	\$ 204,075,000	\$ 216,425,000

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Ordnance

1. Procurement of spare parts required for the maintenance of materiel in the early months of war for the Protective Mobilization Plan \$4,100,000

2. Overhaul of equipment in storage so that it will be available for issue as needed initially for the Protective Mobilization Plan 5,000,000
 - M.G. Cal. .30 4,648
 - M.G. Cal. .50 505
 - Mounts, Tripod, Cal. .30 5,965
 - Mounts, Tripod, Cal. .50 147
 - Rifles, Automatic Model 1918 2,200
 - Recoil Mech., 75mm gun (Spares) 1,700
 - Carriages, 155 How. 357
 - Recoil Mechanisms, 155 How. 2,000
 - Carriages, 155 Gun 189
 - Recoil Mechanism, 155 Gun 554

3. Modernization of World War equipment on hand required for the Protective Mobilization Plan 5,900,000
 - High speeding 155 mm Gun Carriages 400
 - High speeding 155 mm Howitzer Carriages' 400
 - Modifying Cal. .30 Water Cooled M.G. Mounts for AA 10,000
 - Modifying Cal. .30 Water Cooled M.G. 10,000
 - Modifying Cal. .30 Browning Automatic Rifle for Inf. 13,000
 - Modifying of steel Helmets 500,000
 - Modifying of miscellaneous AA Fire Control equipment to accommodate to use of Mechanical Time Fuse (Number not listed due to quantity and variable character)

4. Renovation of artillery ammunition on hand required for Protective Mobilization Plan 30,000,000
 - 75 mm Gun (H.F.) 3,000,000 rds.
 - 75 mm Gun (Shrapnel) 600,000 rds.
 - 155 mm Gun and Howitzer (Shell) 500,000
 - Replace Power Train of Mechanical Time Train fuses 300,000

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Ordnance (Continued)

5. Procurement of shortages in essential items of equipment for Protective Mobilization Plan..... \$115,000,000

Antiaircraft Materiel

3 inch AA guns	100
Height finders, AA	60
Directors AA	50
Sound Locators AA	500
37 mm Guns AA	800

Antiaircraft Guns and Equipment.- This equipment is to complete 3/4 mobile regiments and units for the protection of seacoast defenses. These guns are mobile and are available for use on either coast. This is the most economical solution at present to meet all threats. To provide antiaircraft protection for every city would be prohibitively expensive as to materiel and as to trained operating personnel, and at best would be the old "Chinese" method of defense.

While the present objective for mobile guns is now considered the best solution for reasonable protection, later, this objective having been reached, we may be able to supply antiaircraft equipment for specific assignment for the defense of vital areas or industrial plants.

Other Essential Weapons

Semiautomatic Rifle, Cal. .30	130,000
60 mm Mortars	400
105 mm Howitzer	60
75 mm Howitzer	80
37 mm Anti-tank gun	1,400
81 mm Mortar	1,000
Light Tanks	1,000
Medium Tanks	200
Scout Car	550
Infantry hand cart	8,000



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Ordnance (Continued)

5. Procurement of shortages in essential items of ammunition for the Protective Mobilization Plan		\$140,000,000
37 mm Shell Anti-tank, aircraft, tank and AA, rds.	1,850,000	
3" AA gun mobile fixed, rds.	165,000	
Shell & Propelling Charges) 26,500 projectiles various Calibers for S.D.) 56,700 charges		
105 mm How., H.E., H.S. & Smoke, Shell, rds.	120,000	
75 mm How. Shell & Shrapnel, rds.	300,000	
81 mm Mortar, H.E. & Smoke, rds.	100,000	
75 mm gun, H.S. & Smoke, rds.	1,000,000	
Field Artillery Fuses M 47 & M 46	2,600,000	
Small arms Ammunition, Cal. .30 AP & Tracer, rds.	82,000,000	
Small arms Ammunition, Cal. .50 all types, rds.	125,000,000	

TOTAL		\$300,000,000

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E N G I N E E R S

1. S. L. 60" AA Mobile - 375 @ 25,000	\$ 9,375,000
2. Map Reprod. Equip. Mobile - 9 @ 16,000	144,000
3. Map Reprod. Equip. (Hdqs) - 7 @ 6,000	42,000
4. Water Purification Unit, Mobile - 14 @ 15,000	210,000
5. Water Supply Equipment - 40 @ 1,500	60,000
6. Explosive TNT lbs. - 169,570 @ 0.40	67,828
7. Ponton Bridge 7½-ton - 7 @ 42,000	294,000
8. Ponton Bridge 23-ton - 3 @ 54,000	162,000
9. Footbridge, Model 1935 - 27 @ 8,000	216,000
10. Boats, Assault - 1,000 @ 100	100,000
11. Compass, Lensatic - 453 @ 14	6,342
12. Nitro Starch (Explosive) lbs. - 100,000 @ 0.50	50,000
13. Stereoscope Magnifying - 75 @ 770	57,750
14. Aerial Mapping Equipment - 3 @ 300,000	900,000
15. Transits (Fire Control) - 100 @ 300	30,000
16. Alidades Brass Open Sight - 500 @ 16	8,000
17. Plane Tables 24 x 30 - 800 @ 55	44,000
18. Shovel, Gas Operated, Mtd. - 20 @ 5,000	100,000
19. Graders, Gas Operated, Mtd. - 20 @ 4,000	80,000
20. Compressors, Air Gas Operated, Mtd. - 20 @ 3,000	60,000
21. Nets, Camouflage - 2,000 @ 15	32,000
22. Sets, Generator 5 Kva - 40 @ 625	25,000
23. Alidades, Telescopic (Fire Control) - 163 @ 160	26,080
24. General Engineer Equipment	910,000
TOTAL	\$ 13,000,000

Tab B

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Signal Equipment

Marker, beacon, Projector - 95 @ \$2200	\$209,000
Radio Set SCR 131 - 244 @ \$350	85,400
Radio Set SCR 161 - 402 @ \$375	150,750
Radio Set SCR 171 - 42 @ \$375	15,750
Radio Set SCR 177 - 88 @ \$4200	369,600
Radio Set SCR 178 - 158 @ \$700	110,600
Radio Set SCR 194 - 524 @ \$300	157,200
Radio Set SCR 195 - 130 @ \$300	39,000
Radio Set SCR 203 - 85 @ \$750	63,750
Radio Set SCR 210 - 270 @ \$700	189,000
Radio Set SCR 213 - 9 @ \$4000	36,000
Radio Set SCR 245 - 90 @ \$3000	270,000
Telephones EE-8 - 47,108 @ \$40	1,884,320
Wire W-110 miles - 21,506 @ \$50	1,075,327
Reel Unit RL - 26 - 2,205 @ \$350	771,750
Switchboards BD-71 - 3200 @ \$250	800,000
Switchboards BD-72 - 1800 @ \$300	540,000
Telegraph Sets TG-5 - 1800 @ \$80	144,000
Tool Equipment - 39,495 @ \$3.50	138,233
Signal Lamps EE-80 - 158 @ \$290	45,820
Theodolites - 159 @ \$500	79,500

TOTAL \$7,175,000

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Seacoast Defenses

Defense Projects for Hawaii, Panama, and Harbor
Defenses in Continental United States \$ 42,750,000

Will provide the approved essential requirements
on a minimum security basis for:

- a. Seacoast armament, including completion of 6 long-range guns now in the regular F.Y. 1940 estimates, 24 additional long-range guns in the U.S. and 4 additional in Panama, procurement of land, fire control stations, instruments and communications, emplacements and magazines, power plants, submarine mine equipment and structures, harbor defense searchlights \$ 26,750,000

- b. Antiaircraft armament for Hawaii, Panama, and Harbor Defenses in U.S., including 69 AA guns, 42 directors, 41 height finders, 132 searchlights, 178 sound locators, and 1,067 Cal. .50 AA Machine Guns * 14,700,000

- c. Ammunition storage and access roads to defense positions in Panama 1,300,000

* Distributed as follows:

	<u>Panama</u>	<u>Hawaii</u>	<u>U.S.</u>	<u>Total</u>
3" A.A. guns	-	12	57	69
Directors	-	3	39	42
Height finders	-	3	38	41
Searchlights	-	-	132	132
Sound locators	45	-	133	178
M.G.'s	192	181	694	1,067

Tab D

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CHEMICAL WARFARE SERVICE

Gas Masks less canister & antidim set - 1,108,812 @ \$6.33	\$ 6,974,470
Canisters - 1,423,232 @ \$1.34	1,907,131
Anti-dim Set - 1,026,471 @ \$.03	30,793
Kit, Repair Gas Mask Co. - 23,016 @ \$.50	11,508
" " " " Regt. - 954 @ \$99.00	94,446
Apparatus, Charging - Portable Chemical Cylinder - 264 @ \$15.50	4,092
Laboratory, Field	12,000
Sets, accessory, Livens Projector - 30 @ \$186.65	5,600
Protector, Collective, less canister - 292 @ \$318	92,856
Canister, Collective Protector - 1,484 @ \$159	235,956
White Phosphorous - 658 tons @ \$320	210,560
H. S. - 2,579 tons @ \$490	1,263,710
C.N.B. - 55.75 tons @ \$409	22,802
Impregnite I - 1,005 tons @ \$2,312	2,323,756
Impregnite S - 862 tons @ \$360	310,320
TOTAL	\$ 13,500,000

Tab E

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Medical Corps

<u>Supplies</u>		\$1,000,000
Drugs and chemicals	\$550,000	
Surgical dressings	200,000	
Misc.Hospital Supplies	<u>250,000</u>	
	\$1,000,000	
<u>Equipment</u>		1,500,000
Surgical instruments	\$95,000	
Individual equipment	92,000	
Hospital & organizational equipment	1,000,000	
Modernization of equipment for medical establishments	<u>313,000</u>	
	\$1,500,000	
GRAND TOTAL		<u>\$2,500,000</u>

The above represents the minimum of these supplies
which it is believed should be on hand available
for instant issue.

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Clothing and Equipage

QUARTERMASTER

1. Bags, Canvas, Water Sterilizing	\$152,677
2. Cloth, khaki, for Breeches or Trousers	808,850
3. Wool, OD, 20 Oz., for Breeches or Trousers	1,611,680
4. Wool, OD, 20 oz., for Coats	2,700,400
5. Overcoats, rool collar	9,139,320
6. Field Cap	392,774
7. Tents, Storage (Wall, large, w/fly)	194,299
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TOTAL	\$15,000,000

The foregoing items are non-commercial and
should be on hand for immediate issue.

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Supporting Data

Army Transportation, Water

Coast Artillery Corps. War Requirements.

18 Mine Planters (MP)	\$ 14,400,000
17 Distribution Box Boats (DB)	765,000
45 Mine Yawls	<u>135,000</u>
Total	\$15,300,000

Air Corps. Full Peace Requirements.

4 Picket Boats, 72 ft. with radio	\$ 236,000
3 Picket Boats, 40 ft. with radio	57,000
7 Radio Controlled Boats with radio	78,400
5 Shallow Draft, 19 ft. with radio	15,000
1 Shallow Draft, 26 ft. with radio	6,500
Barges and Utility Boats	<u>307,100</u>
Total	<u>700,000</u>
GRAND TOTAL	\$16,000,000

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Army Transportation, Rail

Transportation costs to cover charges on material from point of manufacture to point of storage where such charges are not included in contracts; also to provide for strategic redistribution of War Reserve stocks in order to meet the requirements of the Protective Mobilization Plan, as follows:

Ordnance	\$ 3,000,000
Engineer	225,000
Signal	75,000
Chemical Warfare	100,000
Medical	50,000
Quartermaster	1,975,000
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TOTAL	\$ 5,425,000

Tab I

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Construction of Buildings, Utilities, and
Appurtenances at Military Posts.

To provide additional storage space for Critical
Items required for the Protective Mobilization Plan at locali-
ties in General Depot Areas which will permit strategic distri-
bution of War Reserve stocks, as follows:

Ordnance	\$ 2,000,000
Engineer	400,000
Signal	100,000
Chemical Warfare	500,000
Medical	100,000
Quartermaster	1,900,000
TOTAL	<hr/> \$ 5,000,000

Tab J

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Acquisition of Land \$ 150,000

To provide for additional land in General Depot Areas so as to permit construction of additional warehouses required for strategic storage of War Reserve stocks.

In order to meet the needs of the Protective Mobilization Plan, balanced stocks of War Reserves should be available in a western locality and also in a southeastern locality. Additional land will be required for construction of warehouses at Ogden, Utah, with a view to establishing a general depot at that locality. Above estimate would provide sufficient land for construction estimate shown in Tab J.

Tab K

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November 25, 1938.

Supplemental Estimates - F.Y. 1940
Funds for Acceleration of Industrial Preparedness
(Note: These estimates are over and above those included
in regular estimates for F.Y. 1940 which are now in
the Bureau of the Budget.)

<u>Appropriation Title</u>	<u>Total Cost</u>	<u>Treasury Withdrawals During FY 1940</u>	<u>Balance Contract Authorization</u>
1. Educational Orders	\$ 30,500,000	\$ 18,000,000	\$ 12,500,000
2. Rehabilitation of Government Establishments	21,805,000	16,627,800	5,177,200
3. Acceleration of Procurement Planning and purchase of production studies ..	1,762,200	1,762,200	
4. Special Machinery as Reserve for Manufacture of Essential Muni- tions	41,977,000	27,517,000	14,460,000
5. Stock Piles of Strategic Materials	25,000,000	15,000,000	10,000,000
TOTALS	\$121,044,200	\$78,907,000	\$42,137,200

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Educational Orders. Expansion of existing project to include all critical items or processes in our special munitions program involving approximately 250 plants.

<u>Appropriation Title</u>	<u>Total Cost</u>	<u>Treasury Withdrawals During FY 1940</u>	<u>Balance Contract Authorization</u>
Educational Orders	\$30,500,000	\$18,000,000	\$12,500,000

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Rehabilitation of present Government
arsenals with up-to-date machinery.
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<u>Appropriation</u> <u>Title</u>	<u>Total</u> <u>Cost</u>	<u>Treasury</u> <u>Withdrawals</u> <u>During F.Y. 1940</u>	<u>Balance</u> <u>Contract</u> <u>Authorization</u>
Air Corps, Army	\$ 305,000	\$ 244,000	\$ 61,000
Chemical Warfare Service, Army	4,443,000	2,665,800	1,777,200
Sea Coast Defenses	25,000	25,000	
Engineer Service, Army	172,000	172,000	
Ordnance S. & S. A.	16,295,000	13,036,000	3,259,000
Quartermaster Corps C & E	400,000	320,000	80,000
Signal Service, Army	165,000	165,000	
TOTALS.....	\$21,805,000	\$16,627,800	\$5,177,200

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Acceleration of Procurement Planning
by completing Industrial Surveys, drawings,
Specifications, and by purchase of pro-
duction studies from manufacturers.

Appropriation Title	Total Cost	Treasury Withdrawals During FY 1940	Balance Contract Authorisation
Air Corps, Army	\$ 11,000	\$ 11,000	
Chemical Warfare Service, Army	267,500	267,500	
Engineer Service, Army	5,200	5,200	
Medical & Hospital Dept., Army	37,000	37,000	
Ordnance S. & S., Army	1,287,000	1,287,000	
Quartermaster Corps (I.E.)	96,000	96,000	
Signal Service, Army	58,500	58,500	
TOTALS	\$ 1,762,200	\$ 1,762,200	0

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Special Machinery and Equipment as a reserve for the manufacture of special munitions.

<u>Appropriation Title</u>	<u>Total Cost</u>	<u>Treasury Withdrawals During FY 1940</u>	<u>Balance Contract Authorization</u>
Chemical Warfare Service, Army	\$12,650,000	\$ 7,500,000	\$ 5,060,000
Ordnance S. & S. A.	27,700,000	19,390,000	8,310,000
Quartermaster Corps (C & E)	1,616,000	526,000	1,090,000
Medical & Hosp. Dept., Army	11,000	11,000	
TOTALS	<u>\$41,977,000</u>	<u>\$27,517,000</u>	<u>\$11,460,000</u>

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Stock Piles of Strategic Raw
Materials.

<u>Appropriation</u> <u>Title</u>	<u>Total</u> <u>Cost</u>	<u>Treasury</u> <u>Withdrawals</u> <u>During F.Y. 1940</u>	<u>Balance</u> <u>Contract</u> <u>Authorization</u>
Strategic Materials	\$25,000,000	\$15,000,000	\$10,000,000

(Note: This includes the procurement, transportation and storage of four items of first priority for national requirements for two years. These items are as follows:

Chromium Ore	142,000 tons
Ferromanganese	355,300 "
Tin	51,548 "
Tungsten Ore	4,778 "

The \$25,000,000 will cover one-fourth of the tonnage noted above and is the first increment of a four-year program.

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