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NUMBER 63

NOVEMBER 28, 1941

Office of Production Management
BUREAU OF RESEARCH & STATISTICS
STACY MAY, CHIEF

DEFENSE PROGRESS

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DEFENSE PROGRESS

BUREAU OF RESEARCH AND
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NUMBER 63 DEFENSE PROGRESS NOVEMBER 28, 1941

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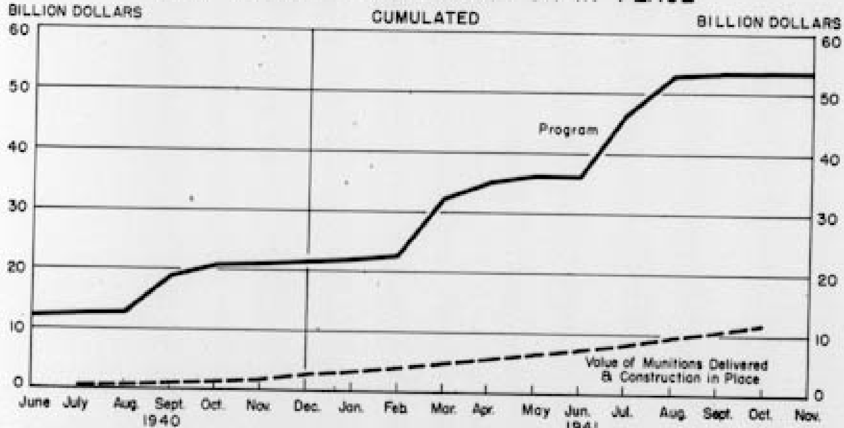
THE FIRST 16 MONTHS OF DEFENSE OUTPUT

The total value of munitions delivered and defense construction work put in place during the first 16 months of the defense program, from June 1940 to October 1941, amounted to $12 billion. This total is exclusive of pay, subsistence, travel, agricultural products, stockpile, and other nonmanufacturing items. Of this $12 billion total, $7.5 billion, or 63 percent, represents munitions deliveries, and $4.5 billion, or 37 percent, represents defense construction. Of the $7.5 billion in munitions delivered, airplanes accounted for $1.8 billion, ordnance for $1.3 billion, ships for $1.9 billion, and other munitions for $2.5 billion.

The tempo of defense output has been steadily accelerating. At the end of the first 12 months of the defense program--June 1941--the total value of defense output was $7 billion. Hence, $5 billion, or some 40 percent of total deliveries and construction work under the defense program have been added in the four months from June to October 1941. Defense output in November--munitions delivered plus defense construction--is estimated at $1.5 billion, an annual rate of $18 billion, 67 percent higher than the June 1941 rate, and 250 percent higher than the January rate.

The growth of defense output has, however, been far outstripped by the growth of the funds provided by Congress, British Orders, and Government corporations to finance the production of defense output. This is shown in Chart 1. As of October 1941 the $12 billion is about one-fifth of the total funds provided by that date. This percentage does not measure the degree of fulfillment of the program

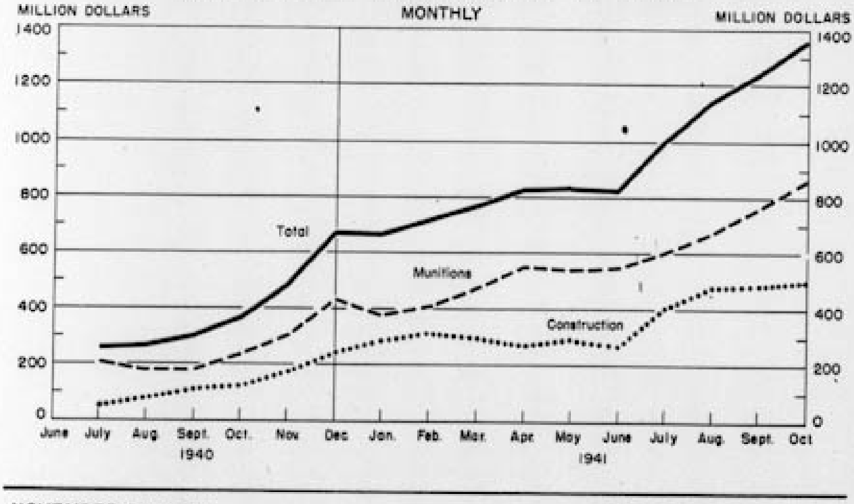
CHART 1 - PROGRAM AND VALUE OF MUNITIONS DELIVERED AND DEFENSE CONSTRUCTION IN PLACE



started in June 1940 for the program has grown since then and undoubtedly will continue to grow. It shows rather, that the increase in the rate of defense output has not been able to keep pace with the increase in requirements. Thus in July 1940 funds amounting to $11 billion were available for the items covered under munitions deliveries and defense construction. During the first six months of the program, approximately $2 billion of defense output were made available, while the program had increased by $10 billion to a total of over $21 billion. During the next six months delivered production and construction equalled $5 billion while the financed program increased by $16 billion to a total of $37 billion. The next four months yielded production of over $5 billion and the program increased an additional $20 billion. In terms of present requirements the defense output of the first 16 months, while showing a rapid rate of acceleration, has barely dented the surface of requirements.

The monthly rate of defense output climbed very sharply during the last months of 1940, rising from about $260 million a month in July and August to about $700 million in December. This is shown in Chart 2. Since January when the level of output was the same as in December, the rate of defense output has risen fairly steadily up to May when it tended to level off until July. Since then the rate of output has again turned up rather sharply as production problems were ironed out and new facilities provided under the program came into operation. The monthly rate rose to $1 billion in July 1941, was $1.3 billion in October, and is estimated at $1.5 billion for November. What is even more significant is that the value in place of defense construction has risen slowly in the last few months

CHART 2 - VALUE OF MUNITIONS DELIVERED AND DEFENSE CONSTRUCTION IN PLACE



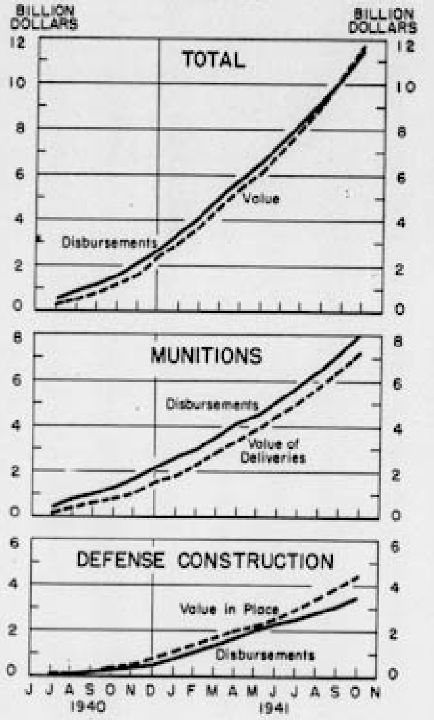
from \$475 million in August to \$500 million in October, while the value of munitions delivered has risen sharply from \$670 million in August to \$855 million in October. The defense program is moving from a period of preparation to a period when it will reap the fruits of this preparation.

Cash disbursements, in Chart 3, are shown with the corresponding estimates of total defense output, munitions deliveries, and defense construction. Cash disbursements for any month may include some prepayments and some payments on current deliveries as well as payments for deliveries in previous periods. Hence, they may differ from current defense output.

At present, total cash disbursements are slightly less than total value of munitions delivered and defense construction in place. The value of construction in place is about \$1 billion more than cash disbursements for construction while the value of munitions delivered is about a billion dollars less than cash disbursements to date. Cash disbursements for construction have been consistently less than value in place while they have been consistently more than value of munitions delivered.

CHART 3 — CASH DISBURSEMENTS FOR MUNITIONS & CONSTRUCTION & VALUE OF MUNITIONS DELIVERED & CONSTRUCTION IN PLACE

CUMULATED



NOTE: Defense Progress Series present for the first time, under munitions and construction, the value of deliveries or value in place. These values will be computed currently and will be presented in the series.

LIMITED CONVERSION OF AUTOMOBILE INDUSTRY FACILITIES FOR DEFENSE PRODUCTION

Thirteen major United States automobile manufacturers will make little use of their existing manufacturing facilities in producing defense equipment under present prime contracts. The bulk of defense equipment under contract for production in existing facilities will require little change-over from normal peace-time production since it consists largely of automotive equipment.

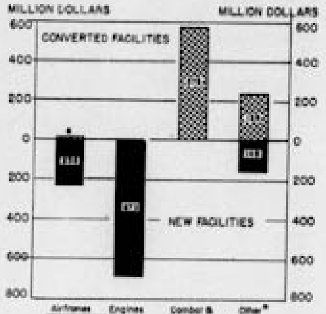
Of $1.9 billion of defense contracts awarded to, or cleared for 13 automobile companies through October 15, 1941:

> $1.2 billion, or 62 percent, was scheduled to be produced in <u>new facilities</u>
>
> The remainder, $721 million or 38 percent, was scheduled for production in <u>existing facilities</u> which are to be <u>converted</u> to defense production.

This $721 million of contracts is exclusive of subcontracts and of prime contracts placed with parts manufacturers. However, it may be compared with the automobile companies' $3 billion output during the single calendar year 1940, second highest production record in history.

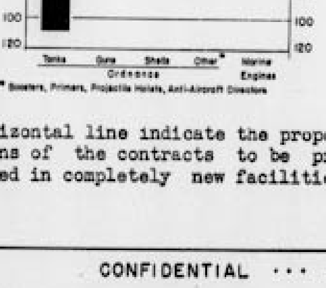
Charts 1 and 2 show the distribution of contracts according to production scheduled for existing or new facilities. The value of each of the major groups of defense items already under contract to be produced by these automobile companies is represented by separate bars. Parts of these bars lying below the horizontal line indicate the proportions of the contracts to be produced in completely new facilities.

CHART 1 - VALUE OF MAJOR MUNITIONS TO BE PRODUCED IN NEW AND CONVERTED AUTOMOBILE COMPANY FACILITIES



* Tanks, Guns, Shells, Other Ordnance, and Marine Engines.
† Excludes Tanks

CHART 2 - VALUE OF "OTHER" MUNITIONS TO BE PRODUCED IN NEW AND CONVERTED AUTOMOBILE COMPANY FACILITIES



* Boosters, Primers, Projectile Hoists, Anti-Aircraft Directors

Practically all of the $914 million worth of airplane equipment is to be produced in new plants. Less than 40 percent of the $288 million worth of tanks and other ordnance contracts are being produced in existing equipment. The chief use of existing equipment according to these figures is to produce $575 million worth of all combat vehicles including scout cars, personnel carriers, and other automotive equipment except tanks.

All of the new plants to be operated by automobile companies for producing $1.2 billion of defense products, are being financed by the Government. Contracts for $102 million will be filled in plants modified at Government expense; and $430 million will be filled in plants modified through private financing under certificates of necessity.

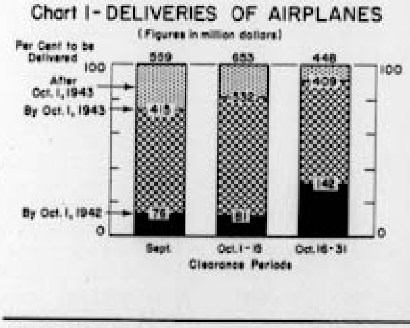
The small extent to which the automobile industry has been converted to defense production is further indicated by estimates that in July 1941, only eight percent of regular wage earners were employed in defense production. In December 1941 the proportion is expected to rise to 11 percent. By July 1942 it is estimated that 75 percent of automobile company workers will still be outside the defense program.

NOTE ON DATA: These data were obtained by an analysis of Government financed facilities contracts involving these automobile companies and of certificates of necessity requested by these companies in connection with privately financed plant modifications. All but $189 million of the supply contracts with these companies are covered by this analysis. It was assumed that this $189 million of contracts involved converted facilities.

ESTIMATED DELIVERY SCHEDULES UNDER CONTRACTS CLEARED BY THE OFFICE OF PRODUCTION MANAGEMENT

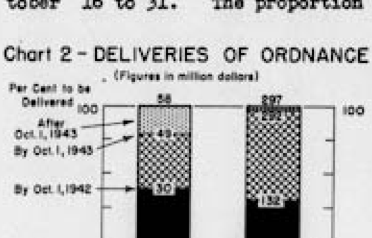
The proportion of the $1,660.7 million of contracts for airplanes and parts cleared by the Office of Production Management in September and October which is scheduled to be delivered within the next 12 months is higher for the contracts cleared during the last half of October than for those cleared in September and the first half of October. More than one-fourth of the $448.4 million of contracts cleared between October 16 and 31 are scheduled for delivery by October 1, 1942 according to preliminary delivery schedules under these contracts. About one-eighth of the $559.1 million of contracts cleared during September are scheduled for delivery by October 1, 1942. The proportion of the total value to be delivered within two years has also been higher for the more recent clearance periods. However, no contracts for heavy bombers which require a long production period are included in the clearances for the second half of October.

Chart I - DELIVERIES OF AIRPLANES



For ordnance contracts there has been a slight decline—from 52 percent to 44 percent—in the proportion to be delivered within one year as between clearances during October 1 to 15 and those during October 16 to 31. The proportion to be delivered by October 1, 1943 shows an increase from 84 to 98 percent.

Chart 2 - DELIVERIES OF ORDNANCE



On the whole, these data suggest an improving record in contract placement. However, there is danger in generalizing from such scanty information. It is proposed to follow the time distribution of new contracts currently in order to see whether the improvement continues as a consistent trend.

SUPPLIES, PRIORITIES AND ALLOCATIONS

TO CONTROL THE IMPACTS OF SHORTAGES MOST EFFECTIVELY, A PRIORITY SYSTEM must work up from the raw materials and not down from the finished products. Only in this way can it act as the 'synchronizing force' of production.

The Supply Priorities and Allocation Board on November 7 announced a policy calling for the allocation of all critical materials throughout American industries. In accordance with this policy, the Office of Production Management is to obtain detailed production program, industry by industry, for 1942.

This new policy emphasizes the principle that in order to control the impacts of shortages of raw materials most effectively, a priority system must work up from the raw materials and not down from the finished products. Only in this way can it act as the "synchronizing force" of production. Under either system, however, from "bottom-up" or from "top-down," there must be a classification of end-products according to their time preferences and a master time schedule showing in detail for each stage in the production process the quantitative requirements of raw materials for all end-products.

The present system of priorities started some 16 months ago as one working only from the finished product down and without adequate classification or statistical control. As long as defense orders did not seriously cut into the available supplies of raw materials, this system was able to operate. As shortages began to develop, control was also begun in part in certain cases from the raw materials upward. [a] At present then, the priority system is a mixture of control from finished products downward and from raw materials upward. It is now moving more and more toward greater reliance upon control from the raw materials upward, as an improved classification of the relative importance and time schedules of end-products, both military and civilian, is devised.

<u>The "Finished Product Downward" System</u>. As shortages in raw materials develop, a "finished product down" preference system encounters several major problems:

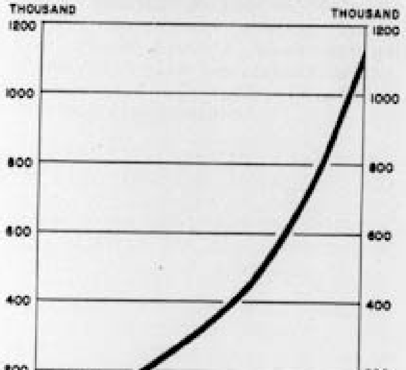
(1) <u>It is difficult to determine the total of outstanding claims for raw materials which are involved in certificates issued to holders of preference ratings</u>.

So long as there were no raw material shortages of great magnitude there was no urgent need to know the total quantity of raw materials which were "mortgaged" by end-product preference ratings issued. When the supply threatened to be definitely less than current requirements, however, fuller information became urgent. Except where a system of allocation-control from the "bottom-up" is in effect, however, it is a formidable administrative and statistical task to determine this.

The number of preference ratings which must be granted, reported, recorded, and tabulated in order to provide such information is great. So far in the present program over a million preference rating certificates and purchase orders have been issued, as shown in Chart 1. This number has surpassed all forecasts. The resulting bookkeeping has exceeded estimates and upset the tabulating time schedule. The resulting time lag has made it difficult for these tabulations to be used for administrative decisions and impossible for them to be used as a statistical basis for adequate advance planning.

CHART I - PREFERENCE RATING CERTIFICATES ISSUED

CUMULATIVE TO OCTOBER, 1941*



*Estimated. Does not include approximately 400 thousand purchase orders issued between July 1 and October 31, 1941

The great amount of bookkeeping involved in the present system was recognized fairly early. Successively, the revisions in the system have been planned with the hope of reducing the paper-work. Blanket Ratings and Project Orders were introduced with this in mind; the Defense Supplies Rating Plan [b] and the P-orders [c] had this purpose. In fact P-orders were introduced with great expectations for reducing paper-work but the volume of preference rating certificates has continued to swell.

(2) <u>It is difficult to schedule monthly deliveries of raw materials so that they do not "bunch up," interfere with each other, and do not exceed scheduled monthly requirements for the production of end-products.</u>

So long as the shortages were of minor dimensions, the chief problem was to make certain that defense deliveries would be made as scheduled. In such a case, a system of preference ratings from end-products downward was sufficient to insure the priority of defense over nondefense orders. Under such conditions there could be two parts of the supply--"priority supply" and "free supply." The "free supply" could then be disposed of at the will of the supplier. The volume of preference ratings was moderate and no great control over them was essential.

But the number of defense contracts has grown and sizable shortages of raw materials have developed so that all defense and nondefense requirements cannot be simultaneously met. When such a situation develops, defense and essential nondefense requirements must be met first and only if there is a remaining supply is it available for allocation to uses without preference ratings. As the scarcity grows, it becomes necessary to reserve the whole supply of these raw materials for military and essential civilian purposes.

In any event a "top-down" system, control from the end-products down, does not lend itself to carrying through a production plan calling for specified amounts of various end-products by specified dates.

The issuance of ratings beginning with the end-product and working down makes it difficult to prevent fabricators and contractors holding high preference ratings from "bunching" their orders for parts and raw materials well in advance of their actual production requirements. Where there are serious shortages of raw materials, such a "priority scramble" for raw materials is likely to develop, especially since price control is not an integral part of the priority system. Indeed the system rewards those who get there first with the highest ratings irrespective of actual production schedule requirements.

(3) <u>It is difficult to police the priority system to see that purchases are made in accordance with actual needs and that deliveries of end-products are made according to specifications and schedules</u>.

Under a system that proceeds from the end-product downward, each contractor must supply his various customers on the basis of the preference rating certificates which they hold. Even with an elaborate scheme of field check-up, it is difficult to be sure that in all cases every contractor has supplied customers according to the preference ratings which they hold, to say nothing of the time schedules, if any, of those ratings. Many kinds of violations of the priority system have been reported and in various ways conscious as well as unwitting deviations from the priorities system may continue to creep in. To safeguard against willful deviations, a complete accounting for all supplies and deliveries by each contractor would be necessary.

When control proceeds from the raw material upward, a statement of uses during the preceding period and of expected uses may be required before the granting of an allotment. Enforcement is easier because need must be established, before public officers, in order to obtain an allotment.

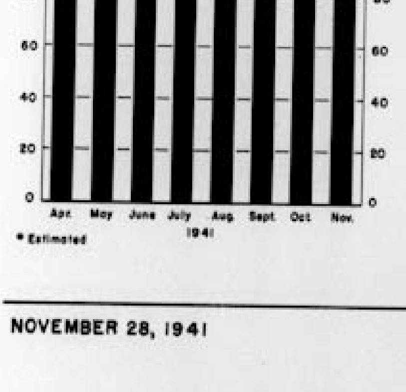
<u>The Trend toward Allocation</u>. The increasing pressure upon the available supplies of scarce raw materials led early in 1941 to the beginnings of an allocation procedure moving in the direction of "bottom-up" control. This started with a semi-allocation or "controlled priority system" for some of the raw materials, such as aluminum, magnesium, and nickel, which were the first to bear the brunt of the sharply increased demand caused by the defense program and where the problem of accounting for total supply was not as difficult as in the case of other materials. Since then the number of raw materials subject to this allocation procedure has increased.

The allocation of raw materials cannot, of course, eliminate shortages but if carried to a logical conclusion it can tend to minimize the "priority rating scramble," make price controls easier to establish and administer, and provide for an orderly withdrawal of raw materials and consequently aid the smooth functioning of the defense program. It also enables the manufacturer who has had his raw material supply curtailed to plan in advance rather than to wait until the end of any period to determine whether he will get any materials.

The effectiveness of current

allocation procedures in providing for a more orderly and effective flow of raw materials is illustrated by the cases of nickel and of copper. For both these metals the monthly requirements based upon orders for products with A and B ratings for the past few months have consistently exceeded the available new supplies. The gap between priority requirements and supplies of nickel has been steadily decreased in recent months, as shown in Chart 2. Although fabricators continue to face substantial shortages of this commodity, allocation has made progress in clearing up the earlier confusion over how much nickel a fabricator could actually count on receiving and has made possible more satisfactory planning of production.

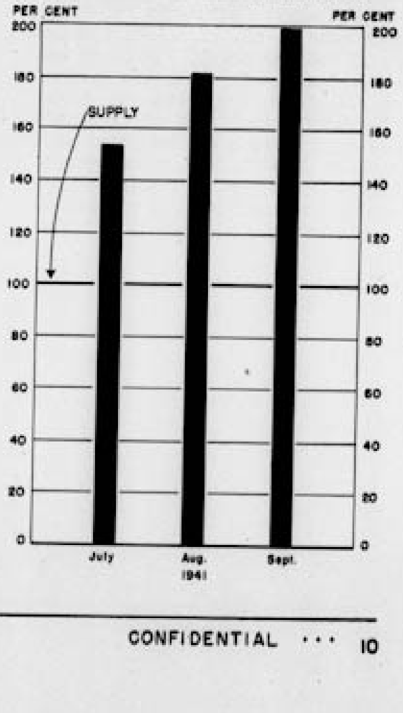
CHART 2 - REPORTED REQUIREMENTS FOR NICKEL
AS PERCENTAGE OF NEW PRIMARY SUPPLY



The allocation procedure for nickel was started in April 1941 upon the request of the International Nickel Company which was harassed by the congested state of its order books and by the clamor of fabricators for deliveries.

In the case of copper, delay in instituting the allocation procedure led to much confusion among fabricators. An allocation procedure was begun in August when the increasing gap between requirements and supplies was assuming major dimensions. As Chart 3 shows, the gap between requirements accepted for fulfillment and supply is still widening in

CHART 3 - REPORTED REQUIREMENTS FOR COPPER
AS PERCENTAGE OF NEW PRIMARY SUPPLY



October. **The gap must be reduced to improve the orderly flow of this raw material.**

Although present allocation procedures have improved the situation for fabricators they do not offer any assurance that the allotments are so made as to assure the most effective use of all scarce materials. The current procedures have been developed by individual materials divisions with very little correlation between them. Master plans and time schedules of productive requirements are not available so that it is not yet possible for the allocation of one commodity to be meshed with that of another. Yet several commodities frequently impinge upon one another in the fabrication of an end-product either because both are needed in its manufacture or because one can be used as a substitute for the other. Only by allocating in accordance with such a master schedule can it be assured that fabricators will not be held up by "plenty of steel; no copper." Until the principle of control from the "bottom-up" throughout the field of scarce raw materials is adopted and administered in accordance with an end-product preference classification and master production plan, **there can be no satisfactory assurance of the smooth flow of scarce raw materials into the production of defense materials.**

a For an outline of the evolution of the present system, see Defense Progress, Issue Number 50, Part A. Annual Review, pp. 91-102.

b This plan involves a procedure whereby a firm can establish the proportion of its business devoted directly or indirectly to national defense work. If the proportion of defense work established is substantial a certificate is granted carrying an A-10 rating to apply to the defense proportion of the producer's purchase orders.

c P-orders are issued only to industries in which the firms are engaged principally in defense work and which are having trouble in obtaining certain well defined materials. P-orders are permissive in character in that they make available to firms in a particular industry under fulfillment of certain conditions, a blanket rating applied to a specified list of materials for defense contracts.

IMPORT SHIPPING PRIORITIES

SHIPMENT OF STRATEGIC AND CRITICAL MATERIALS TO THE UNITED STATES has been expedited since June 1941 by a system of shipping priorities which has already cleared up the accumulated stocks of several materials at their foreign sources.

Shipment of strategic and critical materials to the United States has been expedited since June 1941 by a new system of shipping priorities. This system has already cleared up accumulated stocks of several materials at their foreign sources. An informal shipping priorities arrangement which prevailed before June did not prove entirely satisfactory and led to the passage of the Ship Warrants Act under which the present system was set up.

Under this act, American and foreign vessels bringing defense materials to the United States are given preferences in port facilities, stevedoring, towing, overhauling, and the procurement of fuel. In order to receive warrants for these preferences the operators of the vessels must agree to follow approved routes, carry vital cargoes, and charge reasonable rates. The ships themselves are given different classes of warrants which make the preference in shore facilities available in ascending order of the warrants assigned.

The Stockpile Shipping Imports Branch of the Office of Production Management, with the aid of an interdepartmental committee, has estimated the minimum import requirements of strategic, critical, and essential materials for the fiscal year 1942. It rates the materials and determines the tonnage required for shipping them. Transportation is arranged by the Maritime Commission which has developed several methods of expediting these shipments. It sends agents to the sources of defense materials to make detailed arrangements for prompt servicing. Under the Ship Warrants Act, it can require American or foreign vessels engaged in United States import trade to call at ports outside their regular runs to pick up defense materials, even at the loss of other cargoes which would bring greater revenue. In order to prevent congestion in docking, the Commission may also divert ships from one port to another.

Import preference ratings are based upon both the economic and political importance of the materials, and need not necessarily follow the order of preference established in the domestic distribution of materials for defense products. Strategic or critical materials urgently needed for defense purposes may not carry the same priority rating at all sources. For example, manganese ore, a comparatively large tonnage item, has three different shipping priority ratings, A-1, A, and B, depending upon the source and quality of manganese involved.

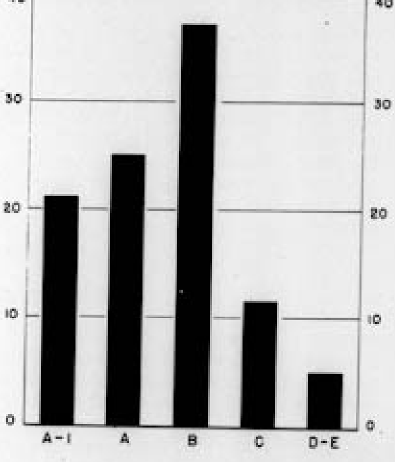
These shipping priorities are periodically reviewed by the Interdepartmental Shipping Priorities Advisory Committee and materials may be shifted from one classification to another.

As of October 31, 1941, A-1 or A ratings had been assigned to cargoes accounting for almost half the total import requirements for fiscal 1942, according to the accompanying chart. B ratings, which account for 37 percent of the requirements, made up the largest single group.

DISTRIBUTION OF U.S. IMPORT REQUIREMENTS F.Y. 1942

BY SHIPPING PRIORITY RATING

PER CENT OF TOTAL IMPORT REQUIREMENTS



About 85 percent of the tonnage in class A-1 priority ratings is made up of four outstanding defense materials, molasses (for ethyl alcohol), rubber, chromite, and copper.

Three materials, iron ore, bauxite, and manganese, constitute about 80 percent of the tonnage given A priorities. These materials are highly essential and would no doubt take the highest priority if they did not originate in the Western Hemisphere. The first two ratings, A-1 and A, include the large tonnage items of strategic and critical materials.

Class B priorities include sugar, bananas, and coffee, large tonnage items which constitute more than half the total quantity in this category. They are important items for civilian consumption originating largely within the zone of United States Naval control.

The materials in categories C and below are in general largely for civilian use but less urgently needed than the bulk of the materials given a B rating.

The improved shipping priorities system may be tested shortly by the task of handling the volume of imports required for the balance of fiscal 1942 under the recently revised and expanded stockpile program. A change in the Far Eastern political situation might also affect shipping conditions and offset recent improvements.

DEFENSE PROGRESS SERIES

Airplanes

The weighted index [a] of monthly production of military airplanes reached a new high of 68 in October; this represented a seven point increase over the previous high of 61 in September but was 12 points below the production index of 80 planned under OPM schedule 8F. The output of trainers showed the greatest increase over September and ran well ahead of schedule. The production of 4-engine bombers and 2-engine flying boats increased in October to meet schedules. Production of 1-engine pursuit planes, 1-engine bombers, and transport planes increased over September, but did not meet schedules. There was a decline in the production of 2-engine land based bombers, 2-engine pursuit planes, and observation planes during the month.

The index of total accumulated production stood at 46 at the end of October. This compares with the index of financed production requirements of 311 and orders of 265. Chart 1 indicates the rate at which total output has increased since the start of the program and the distribution of the present program among the Army, the Navy, and foreign countries.

Combat Vehicles

Production of combat vehicles also reached a new high in October as the index increased 22 points to 95 for the month. This was due largely to an increase in the output of personnel carriers and tanks and the resumption of scout car production. The increased acceptances during the month were still behind August 1 schedules, however, particularly in the case of medium tanks and 13-passenger carriers.

As can be seen in Chart 2, the index of total cumulated production stood at 36 at the end of October, while the index of production requirements was almost six times as high at 208. Practically all of these requirements have already been ordered.

Army-Type Guns

Marked increases in the October output of infantry-supporting arms and field artillery weapons raised the index of monthly production of Army-type guns 17 points over the September index to a new high of 84. However, this was but 75 percent of the monthly output scheduled on August 1, 1941, due largely to a lag in the production of antiaircraft guns.

As shown in Chart 3, the index of total cumulated production stood at 44, compared with financed production requirements of 265; 95 percent of these requirements had been ordered at the end of October.

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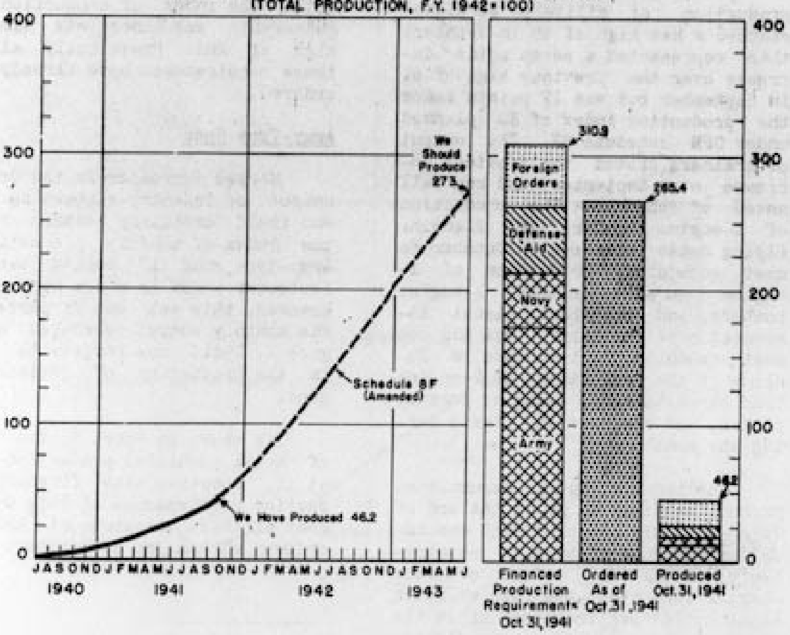
[a] The individual items included in the indexes of production are weighted to indicate their relative importance. The production rate index measures output during the month, average scheduled monthly production during fiscal year 1942 being the base or 100 percent. The total production index measures cumulated production since the start of the program, and scheduled total output during fiscal year 1942 equals 100. Output during 1942 is based upon schedules in effect on August 1, 1941, for guns and combat vehicles; for airplanes, output is based on OPM schedule 8F.

CHART I

MILITARY AIRPLANES

INDEX OF CUMULATIVE TOTAL PRODUCTION
(TOTAL PRODUCTION, F.Y. 1942 = 100)



INDEX OF PRODUCTION DURING MONTH
(AVGE. MONTHLY PRODUCTION, F.Y. 1942 = 100)

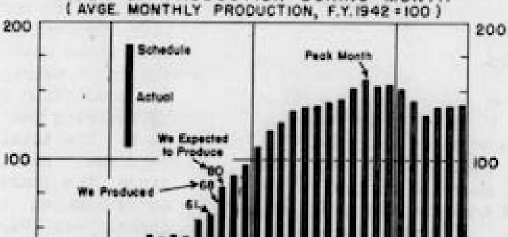
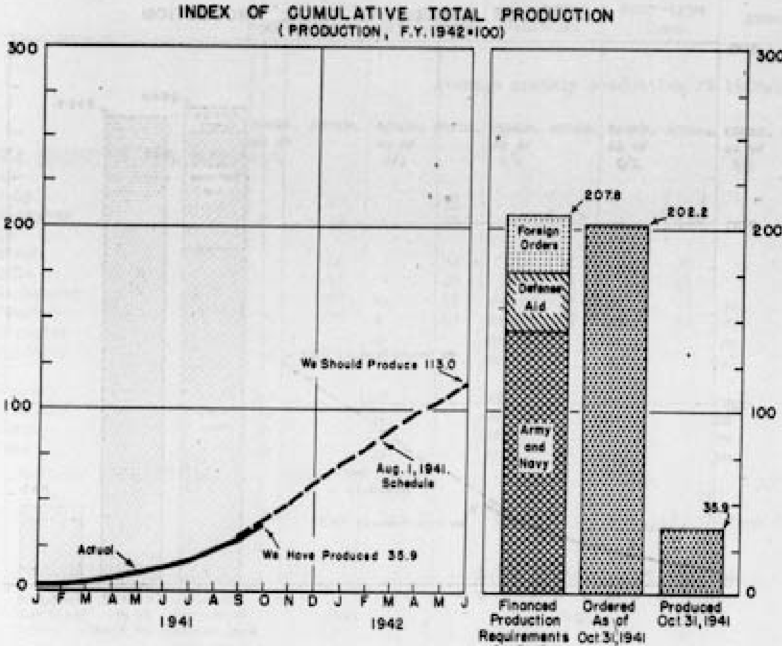


CHART 2
COMBAT VEHICLES



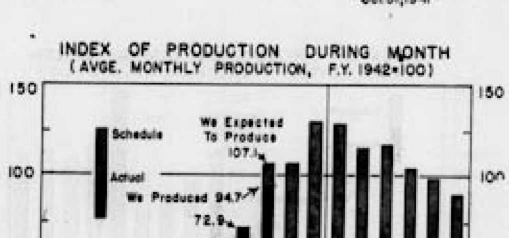
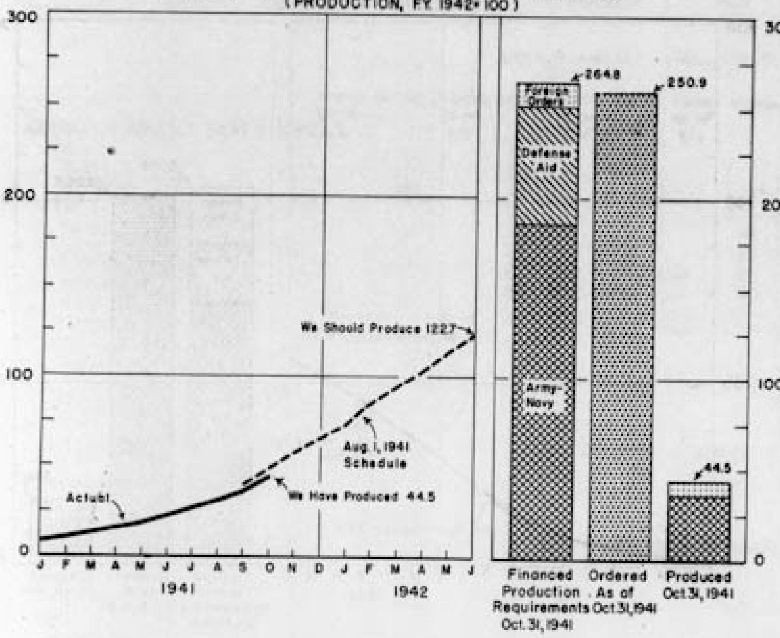
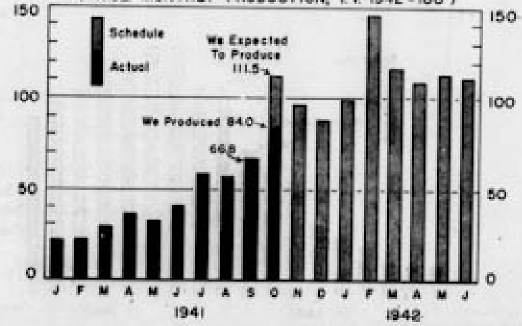


CHART 3
ARMY-TYPE GUNS

INDEX OF CUMULATIVE TOTAL PRODUCTION
(PRODUCTION, FY 1942=100)



INDEX OF PRODUCTION DURING MONTH
(AVGE. MONTHLY PRODUCTION, FY 1942=100)



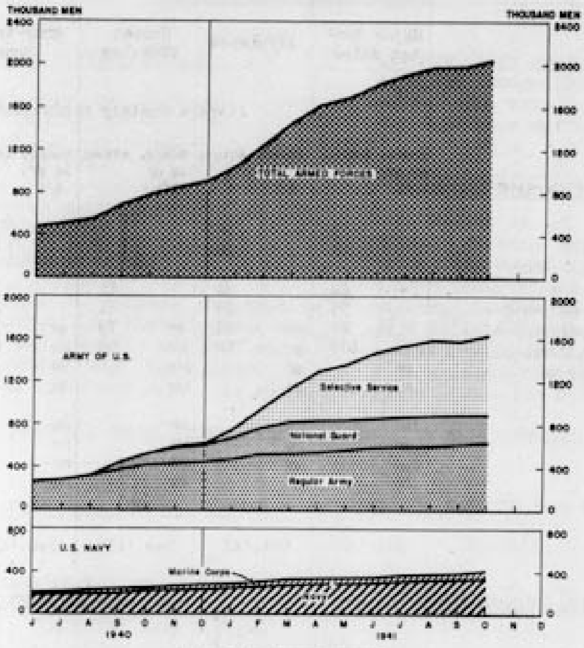
DEFENSE PROGRESS SERIES

DEFENSE EQUIPMENT INDEXES

	Major Combat Ships		Airplanes		Combat Vehicles		Army-type Guns		Ammunition	
	Average monthly production FY 1942=100									
	SCHED. AS OF 6/1	ACTUAL	SCHED. AS OF 6/1	ACTUAL	SCHED. AS OF 6/1	ACTUAL	SCHED. AS OF 6/1	ACTUAL	SCHED. AS OF 6/1	ACTUAL
MONTHLY PRODUCTION RATE DURING										
1940										
July		27		16						
December		38		26		7[a]		14[a]		11[b]
1941										
March		44		34		11		30		
June		55		45		31		41		13
September		87	63	61	87	73	98	67	55	20
October	71	109	80	68	107	95	119	84	61	
November	98		90		107		96		84	
December	82		97		130		88		111	
1942										
January	109		109		129		100		118	
February	98		120		114		146		130	
March	115		128		118		117		149	
June	126		139		69		111		164	
Av. monthly prod. FY 1942	100		100		100		100		100	
Peak month	Nov.'42		Oct.'42		Dec.'41		Feb.'42		June '42	
TOTAL CUMULATIVE PRODUCTION TO	Total production FY 1942=100									
1940										
July 31		2		1		-		-		
December 31		16		8		4		7		
1941										
March 30		27		16		6		13		9[c]
June 30		42		27		12		22		11
September 30	55	61	41	41	30	28	40	38	17	15
October 31	61	70	47	46	39	36	50	44	22	
November 30	69		55		48		58		29	
December 31	76		63		59		65		39	
1942										
January 31	85		72		69		73		48	
February 28	93		82		79		85		59	
March 31	103		73		89		95		72	
June 30	133		127		112		133		112	
Total production FY 1942	100		100		100		100		100	
Financed production requirements November 1	452		311		208		265		417[d]	
Ordered to November 1	452		265		202		251		241[d]	
To be Ordered November 1	0		46		6		14		176[d]	

[a] July 1, '40 - Dec 31, '40 average. [b] July 1, '40 - Apr 30, '41 average. [c] Apr 30, '41. [d] as of Oct. 1, '41

UNITED STATES ARMED FORCES



UNITED STATES ARMED FORCES†

	1940		1941			
	June 30	Dec. 31	March 31	June 30	Sept. 30	Oct. 31P
	(Thousand men)					
ARMED FORCES ON ACTIVE DUTY TOTAL	r 468	r 896	r 1,459	r 1,810	r 1,977	2,027
ARMY - TOTAL	r 268	r 621	r 1,148	r 1,462	r 1,587	1,624
Regular	r 265	r 426	r 486	r 510	r 535	547
Nat'l. Guard in Fed. Serv.	-	156	r 289	r 284	r 273	263
Reserve Officers	3	22	r 43	r 61	r 79	81
Selective Service Trainees	-	17	330	r 607	r 700	733
NAVY - TOTAL	r 172	r 227	r 261	r 293	r 328	339
Regular	151	r 186	r 208	r 221	236	239
Reserve	7	r 24	35	53	r 69	76
Coast Guard	14	17	18	19	23	24
MARINE CORPS - TOTAL	28	48	r 50	r 55	62	64

† Data have been revised to include the Coast Guard, warrant officers in the regular Army and the National Guard, and Army and Navy nurses.
P Preliminary

r Revised data

United States Armed Forces

More than two million men were in the combined armed forces of the United States on November 1, 1941, the day on which the Coast Guard, with its ships, stations, and equipment, became part of the Navy by the President's order.

Car Unloads for Exports

Average car unloads for export trade, other than that in grain and coal, at the Atlantic and Gulf ports during October was the highest on record at 1,885 per day. In spite of this high average there was no reported congestion at any of the ports. The comparable daily average for September was 1,736.

Pending Legislation

Estimates of supplemental national defense appropriations now before the House Appropriations Committee total $7,646 million. $6,685 million is for the War Department, $830 million for the Navy Department, and $131 million for other agencies. A breakdown by agency and object is given below:

PROPOSED THIRD SUPPLEMENTAL NATIONAL DEFENSE APPROPRIATION ACT

Object	War Dept.	Navy Dept.	Other Agencies	Total
		(Million dollars)		
Airplanes, parts, etc.	780	450a		1,230
Naval ships and parts		260		260
Ordnance (includes Navy defense installations on merchant vessels)	3,778	120		3,898
Other munitions and supplies	809			809
Posts, depots, etc.	470		116b	586
Industrial facilities	388			388
Housing			15	15
Pay, subsistence and travel	450			450
Miscellaneous	10			10
TOTAL	6,685	830	131	7,646

a Includes contract authorization of $140 million.

b Includes contract authorization of $104 million.

FOOTNOTES

DEFENSE PROGRESS SERIES

See Opposite Page

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DEFENSE PROGRESS SERIES

TOTAL UNITED STATES DEFENSE PROGRAM

	Cumulative 6/11/41 through			Monthly		
	End 1st full year 6/30/41	End last month 10/31/41	1st half current mo. 11/15/41	1 year ago 10/40	1 month ago 9/41	Latest month 10/41
	FINANCIAL PROGRAM	(million dollars)				
TOTAL DEFENSE PROGRAM IN U.S. [a]						
Program	41,547	67,981	67,981	2,553	650	6,135
Unobligated balance	9,875	P 18,264	n.a.	-	-	
Obligations	31,672	P 49,717	n.a.	n.a.	4,308	P 2,748
Value delivered and/or in place [a]	8,561	P 14,259	n.a.	406	1,501	P 1,695
Checks paid [b]	8,503	14,129	14,997	491	1,498	1,706
U. S. FINANCED PROGRAM [b]						
Program	37,862	64,212	64,212	2,015	631	6,135
Unobligated balance	9,875	P 18,264	n.a.	-	-	-
Obligations	27,987	P 45,948	n.a.	n.a.	4,289	P 2,748
Checks paid [b]	6,430	11,721	12,549	312	1,423	1,626
TREASURY GENERAL FUND ONLY [c]						
Program	35,054	59,885	59,885	1,803	174	6,135
Unobligated balance	8,403	P 17,030	n.a.	-	-	
Obligations	26,651	P 42,855	n.a.	-	3,949	P 2,601
Checks paid by U.S.Treasury [b]	6,080	11,010	11,773	297	1,319	1,526
O B J E C T S						
MUNITIONS PROD.& DEFENSE CONSTR.						
Program	36,672	57,027	57,027	1,862	303	3,676
Unobligated balance	7,312	23,695	n.a.	-	-	
Obligations	29,360	44,805	n.a.	n.a.	3,597	P 2,425
Value delivered and/or in place [d]	6,804	P 11,713	n.a.	301	1,090	P 1,263
Value not delivered or in place	22,556	P 33,692	n.a.	-	-	-
MUNITIONS PRODUCTION, TOTAL						
Program	27,866	44,250	44,250	1,192	198	3,298
Unobligated balance	4,501	20,889	n.a.	-	-	
Obligations	23,365	34,834	n.a.	n.a.	3,057	P 1,203
Value delivered and/or in place	4,434	P 7,325	n.a.	214	759	P 858
Value not delivered and/or in place	18,931	P 27,509	n.a.	-	-	
AIRPLANES PARTS & ACCESSORIES						
Program	8,481	13,173	13,173	397	1	655
Obligations	7,281	P 11,044	n.a.	n.a.	809	P 513
Value delivered	1,010	P 1,768	n.a.	50	194	P 251
ORDNANCE						
Program	7,780	13,330	13,330	199	-126	1,553
Obligations	5,418	P 9,921	n.a.	n.a.	1,524	P 359
Value delivered	698	P 1,278	n.a.	31	180	P 177

Table continued on following page. *For footnotes see opposite page.*

FOOTNOTES

DEFENSE PROGRESS SERIES

See Opposite Page

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DEFENSE PROGRESS SERIES

TOTAL UNITED STATES DEFENSE PROGRAM

	Cumulative 6/11/41 through			Monthly		
	End 1st full year 6/30/41	End last month 10/31/41	1st half current mo 11/15/41	1 year ago 10/40	1 month ago 9/41	Latest month 10/41
	(Million dollars)					
NAVAL SHIPS						
Program	6,666	8,255	8,255	21	311	110
Obligations	6,434	P 7,506	P 7,521	n.a.	180	P 37
Value delivered and/or in place	960	P 1,589	n.a.	54	148	P 161
MERCHANT SHIPS						
Program	1,606	3,867	3,867	10	0	857
Obligations	1,344	P 2,251	n.a.	n.a.	180	P 268
Value delivered and/or in place	188	P 325	n.a.	10	37	P 51
OTHER MUNITIONS AND SUPPLIES						
Program	3,333	5,625	5,625	565	12	123
Obligations	2,888	P 4,112	n.a.	n.a.	364	P 26
Value delivered	1,578	P 2,365	n.a.	69	200	P 218
DEFENSE CONSTRUCTION TOTAL						
Program	8,806	12,777	12,777	570	105	378
Unobligated balance	2,811	P 2,806	n.a.	-	-	
Obligations	5,995	P 9,971	n.a.	n.a.	540	P 1,222
Checks issued by agencies *	2,370	P 3,788	n.a.	87	331	P 405
Value unpaid obligations	3,625	P 6,183	n.a.	-	-	
INDUSTRIAL FACILITIES						
Program	5,385	7,830	7,830	322	95	381
Obligations	3,056	P 5,612	n.a.	n.a.	282	P 783
Checks issued by agencies	808	P 1,610	n.a.	29	216	P 240
POSTS, DEPOTS, STATIONS						
Program	2,969	4,305	4,305	98	10	-3
Obligations	2,664	3,950	n.a.	n.a.	214	P 398
Checks issued by agencies	1,448	P 1,910	n.a.	58	115	P 130
HOUSING, NON-MILITARY						
Program	452	642	642	150	0	0
Obligations	275	409	421	n.a.	44	P 41
Value in place *	114	P 268	n.a.	n.a.	n.a.	P 35
NON-MUNITIONS ITEMS, TOTAL						
Program	4,875	10,954	10,954	791	347	2,459
Unobligated balance	2,563	P 6,042	n.a.	-	-	
Obligations	2,312	P 4,912	n.a.	n.a.	711	P 323
Checks issued by agencies *	1,757	P 3,146	n.a.	105	411	P 432
STOCKPILE						
Program	983	1,631	1,631	102	368	0
Obligations	470	910	n.a.	n.a.	251	P 0
Checks issued by agencies	192	P 365	n.a.	11	55	P 70

Table continued on following page. For footnotes see opposite page.

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DEFENSE PROGRESS SERIES

TOTAL UNITED STATES DEFENSE PROGRAM

	Cumulative 6/11/41 through			Monthly		
	End 1st full year 6/30/41	End last month 10/31/41	1st half current mo 11/15/41	1 year ago 10/40	1 month ago 9/41	Latest month 10/41
			(Million dollars)			
AGRICULTURAL & MISC. EXPORTS (DEFENSE AID)						
Program	1,250	3,043	3,043	-	0	1,949
Obligations	109	P 790	n.a.	-	214	P 76
Checks issued by agencies	6	P 206	n.a.	-	81	P 77
PAY, SUBSISTENCE & TRAVEL f						
Army Military						
Program	944	2,563	2,563	505	0	0
Obligations	934	P 1,684	n.a.	28	167	P 146
Checks issued	696	P 1,206	n.a.	37	131	P 134
Navy Military						
Program	334	804	804	2	0	0
Obligations	334	P 490	505	23	44	P 29
Checks issued	388	P 561	n.a.	29	52	P 57
Civilian Payroll						
Program	103	162	162	28	0	16
Obligations	103	P 117	n.a.	23	0	P 4
Checks issued	356	P 558	n.a.	23	52	P 54
MISCELLANEOUS NON-MUNITIONS						
Program	1,261	2,751	2,751	154	-21	494
Obligations	362	P 921	n.a.	-	35	P 68
Checks issued by agencies	119	P 250	n.a.	5	40	P 40
A G E N C I E S						
U. S. ARMY PROGRAM	13,135	24,606	24,606	1,377	0	0
Obligations	11,404	20,598	n.a.	n.a.	2,141	P 1,379
Checks paid by U.S.Treasury	3,636	6,209	6,590	134	700	P 785
U. S. NAVY PROGRAM	12,389	17,627	17,734	85	174	113
Obligations	11,225	14,681	14,859	-	868	P 569
Checks paid by U.S.Treasury	2,217	3,791	4,017	150	377	P 442
DEFENSE AID PROGRAM	7,000	12,985	12,985	-	0	5,985
Allocations	5,177	6,784	n.a.	-	175	P 315
Obligations	2,458	4,826	n.a.	-	778	P 365
Checks Paid by U.S.Treasury	21	456	559	-	140	P 192
U. S. MARITIME COMMISSION						
Program	795	2,371	2,371	0	0	-2
Obligations	716	1,635	n.a.	-	118	P 232
Checks paid by U.S.Treasury (net) g	44	94	109	10	26	P 21
R. F. C. & SUBSIDIARIES						
Program	2,808	4,327	4,327	212	457	0
Obligations	1,336	3,093	n.a.	-	340	P 147
Checks issued by R. F. C.	350	711	776	15	104	P 100

Table continued on following page. For footnotes see opposite page. [illegible]

FOOTNOTES

DEFENSE PROGRESS SERIES

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DEFENSE PROGRESS SERIES

TOTAL UNITED STATES DEFENSE PROGRAM

	Cumulative 6/11/40 through			Monthly		
	End 1st full year 6/30/41	End last month 10/31/41	1st half current mo 11/15/41	1 year ago 10/40	1 month ago 9/41	Latest month 10/41
			(Million dollars)			
OTHER U. S. AGENCIES						
Program	1,735	2,296	2,296	341	0	39
Obligations	848	P 1,115	n.a.	-	44	P 55
Checks paid by U.S.Treasury	162	460	498	3	76	P 86
FOREIGN ORDERS						
Program (orders)	3,685	3,769	3,769	538	19	0
Obligations	3,685	3,769	3,769	538	19	0
Checks issued by Purchasing Missions	2,073	2,408	2,448	179	75	P 80

OTHER DEFENSE INDICATORS

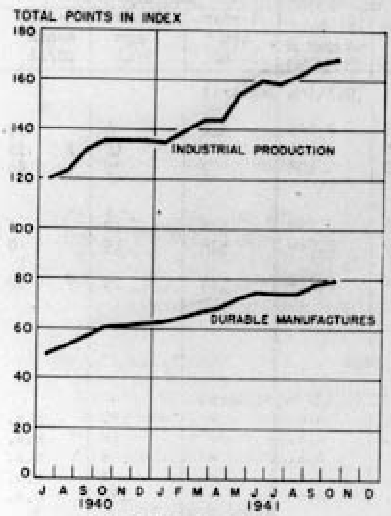
VALUE OF FACIL. ON APPLIC. FOR CERT. OF NECESSITY (Million dollars)						
Total	1,424	n.a.	n.a.	-	199	n.a.
Approved, private funds	829	n.a.	n.a.	-	52	n.a.
Approved, public funds	201	n.a.	n.a.	-	8	n.a.
Disapproved	7	n.a.	n.a.	-	2	n.a.
Pending	387	n.a.	n.a.	-	137	n.a.
DEFENSE HOUSING			(Number of dwelling units)			
Fund allocations	110,298	141,522	141,522	4,250	11,440	4,692
Cons. contracts awarded	78,820	115,141	119,451	10,469	8,178	11,970
Construction Completed	21,768	54,884	59,861	0	6,546	9,300

ECONOMIC ACTIVITY RELATED TO DEFENSE

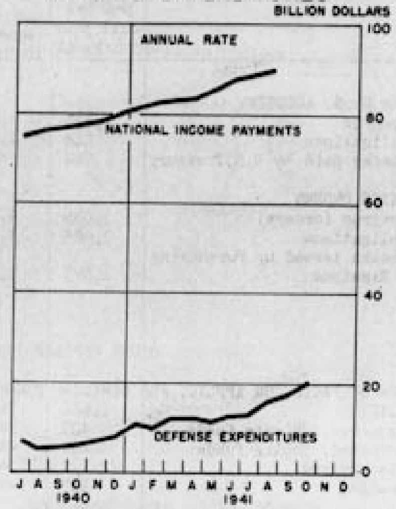
	1940	1941				
	July	January	September	October		
DEFENSE EMPLOYMENT		(Thousand workers)				
Private, 18 major indus.	1,660	2,038	2,660			
Private, contrcts.,pub.constr.	13	448	435			
Public	r 117	r 171	234			
Total direct defense	r 1,790	r 2,657	3,329			
Selected defense indus.		(Indexes 1939 = 100)				
Firearms	164.0	241.4	399.1	424.7		
Ammunitions	144.6	245.8	394.7	408.3		
Explosives	142.5	176.6	414.2	473.9		
LABOR DISPUTES IN PLANTS WITH IMPORTANT DEFENSE CONTRACTS						
Number strikes in progress	n.a.	13	P 18	P 26		
Workers involved (thousand)	n.a.	26	P 17	P 32		
Man days idle (thousand)	n.a.	146	P 111	P 192		

r Revised data P Preliminary n.a. Data not available

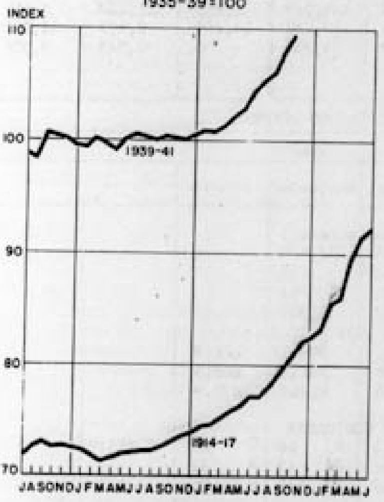
INDUSTRIAL PRODUCTION



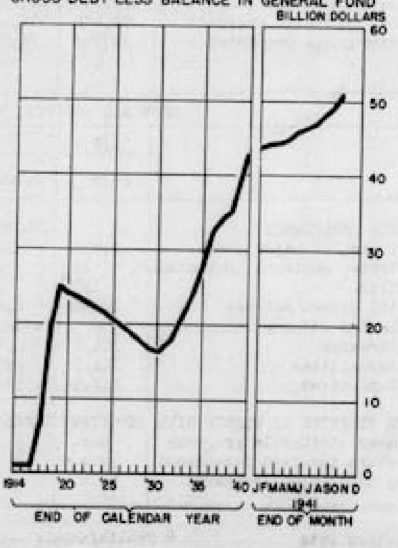
NATIONAL INCOME & DEFENSE EXPENDITURES



COST OF LIVING
1935-39=100



NET FEDERAL DEBT, 1914-41
GROSS DEBT LESS BALANCE IN GENERAL FUND



ECONOMIC ACTIVITY RELATED TO DEFENSE
(Series on these pages are not confidential and are included for the convenience of readers of Defense Progress)

	1940	1941				
	July	January	September	October	Week ending Nov. 15	Week ending Nov. 22
● FED. RES. BD. PROD. INDEXES		(Unadjusted Indexes 1935-39 = 100)				
Total industrial production	120	135	167	P 169		
Durable manufactures	131	166	206	P 210		
Nondurable manufactures	111	118	145	P 145		
Minerals	121	113	137	P 139		
BUR. FOR. & DOM. COM. MFRS. ORDERS, SHIPMENTS, INVENTORIES			(Indexes)			
New orders, total (1/39=100)	127	176	P 198			
Shipments, total (1/39=100)	117	148	P 204			
Inventories,* (12/31/38=100)	109.2	120.8	P 137.5			
Durable (12/31/38=100)	111.9	129.7	P 149.8			
Nondurable (12/31/38=100)	106.4	111.2	P 124.2			
BLS. PRICE INDEXES			(Indexes)			
Strategic Materials (8/39=100)	123.6	126.1	142.8	143.0	143.3	143.3
Critical Materials (8/39=100)	107.5	111.7	117.3	116.7	116.8	116.8
Basic Commodities (8/39=100)	108.5	120.5	155.6	153.1	153.9	154.6
Machine tools (8/39=100)	108.7	114.6	118.9	119.4	-	-
All commodities (1926=100)	77.7	80.8	91.8	92.4	92.3	92.2
			(1935-39 = 100)			
● BLS COST OF LIVING INDEX	100.3	100.8	108.1	109.4		
TRANSPORTATION & ELECTRIC POWER			(Averages)			
Freight cars						
Loadings (thous. per week)	706	684	885	914	884	799
Unloads for export (dly.)	1,502	1,352	1,736	1,885	1,928	1,796
Surplus, total (thous. dly.)	133	110	41	44	53	
Boxcars	57	43	15	19	27	
Coal cars	47	42	10	11	13	
Power prod. (mil. kwh. wkly.)	2,731	3,080	r 3,348	3,439	3,304	3,205
● NATIONAL INCOME		(Billion dollars, annual rate)				
Total income payments	75.2	81.7	P 92.2			
● FEDERAL DEBT		(Billion dollars, end of month)				
Net public debt	41.5	43.9	49.1	50.9		
EMPLOYMENT			(Thousand workers)			
Total civil nonagricultural	35,454	36,621	40,715	P 40,749		
Total WPA employment	1,655	1,890	1,037	1,040	1,056	1,058
Defense						
Private, 18 major indus.						
" contrctrs., pub. constr		Confidential data. See Page XI				
Public						
Total direct defense						
Deep-sea merchant vessels	51	49	50	50		
UNEMPLOYMENT (WPA ESTIMATE)			(Million workers)			
Number of unemployed	9.3	7.6	r 4.5	3.9		

r Revised data.
P Preliminary data.
● Graph appears on opposite page.
n.a. Data not available.

DEFENSE PROGRESS SERIES

ECONOMIC ACTIVITY RELATED TO DEFENSE

	1940	1941				
	July	January	September	October	Week ending Nov. 15	Nov. 22
EMPLOYMENT IN 18 MAJOR PRIVATE DEFENSE INDUSTRIES [1]		(Indexes 1939 = 100)				
All eighteen industries	123.3	151.3	r 198.4	202.5		
Blst. furn., st. wks., etc.	116.7	128.7	r 146.0	145.3		
Foundry. & Mach. shop prod.	114.8	137.5	r 172.1	172.8		
Elect. mach., app. & supp.	115.3	143.8	r 187.4	188.8		
Smelting and refining	112.7	124.0	r 130.5	128.3		
Brass, bronze, copper prod.	114.5	151.5	172.2	170.8		
Aluminum manufactures	121.2	146.5	r 159.7	157.9		
Machine tools	155.6	189.4	r 236.2	239.5		
Machine tool accessories	139.7	167.7	r 242.1	248.7		
Abrasives	112.1	150.7	r 190.9	193.6		
Screw-machine products	115.9	156.9	r 203.2	209.5		
Airframes	222.2	355.7	r 605.1	646.5		
Aero-engines	299.2	434.1	r 753.9	804.5		
Shipbuilding	138.7	195.8	r 358.3	394.2		
Firearms						
Ammunitions		Confidential data.		See Page XI		
Explosives						
Optical goods	111.9	138.1	r 174.3	177.0		
Instruments	115.7	147.9	r 200.3	219.6		
LABOR DISPUTES						
PLANTS WITH IMPORTANT DEFENSE CONTRACTS						
Number strikes in progress						
Workers involved (thous.)		Confidential data.		See Page XI		
Man days idle (thous.)						
ALL INDUSTRIES						
Number strikes in progress	390	r 340	P 765	P 710		
Workers involved (thous.)	83	109	P 345	P 365		
Man days idle (thous.)	529	r 660	P 1,925	P 1,960		
LABOR TURN OVER [1]		(Rate per 100 employees)				
ALL MANUFACTURING						
Total accession	4.77	5.54	5.16			
Total separation	3.35	3.41	4.53			
Quit	0.85	1.31	2.81			
Layoff	2.25	1.61	1.16			
Discharge	0.14	0.18	0.31			
Military separation	n.a.	0.19	0.13			
7 MAJOR DEFENSE INDUSTRIES						
Total accession	5.09	7.10	6.31			
Total separation	1.85	2.70	4.05			
Quit	0.84	1.24	2.61			
Layoff	0.73	0.79	0.81			
Discharge	0.15	0.22	0.32			
Military separation	n.a.	0.23	0.14			

r Revised data. P Preliminary data. n.a. Data not available.

[1] Bureau of Labor Statistics

DEFENSE PROGRESS SERIES

ECONOMIC ACTIVITY RELATED TO DEFENSE

	1940	1941				
	July	January	September	October	Week ending Nov. 15	Week ending Nov. 22
		(Rate per 100 employees)				
AIRCRAFT						
Total accession	12.40	12.17	11.30			
Total separation	3.57	3.65	3.94			
Quit	2.96	2.44	3.20			
Layoff	0.15	0.33	0.12			
SHIPBUILDING						
Total accession	13.00	18.21	13.85			
Total separation	5.40	7.91	6.15			
Quit	1.14	1.93	3.00			
Layoff	3.71	4.78	2.15			
MACHINE TOOLS						
Total accession	3.05	6.68	5.21			
Total separation	2.09	2.44	3.53			
Quit	1.28	1.77	2.76			
Layoff	0.21	0.09	0.14			
AVERAGE HOURS WORKED PER WEEK [1]			(Hours)			
Machine tools	47.5	50.4	51.5			
Aircraft	42.0	44.7	45.5			
Shipbuilding	39.3	42.0	44.9			
AVERAGE HOURLY EARNINGS [1]			(Cents)			
Machine tools	76.8	79.7	87.0			
Aircraft	73.8	77.6	85.6			
Shipbuilding	86.2	89.3	104.0			
AVERAGE WEEKLY EARNINGS [1]			(Dollars)			
Machine tools	36.45	40.15	44.77			
Aircraft	30.48	34.13	38.58			
Shipbuilding	34.03	37.69	46.69			
UNITED STATES FOREIGN TRADE						
Exports			(Million dollars)			
Total exports	317	325	417			
Exports by destination						
United Kingdom	108	117	143			
Canada	65	62	89			
British Asia	24	28	40			
China	10	8	8			
Latin America	58	59	82			
Other pro-democratic areas	11	21	28			
Russia	6	3	11			
Portugal and Spain	4	2	2			
Axis& Axis dominated areas	21	18	6			
All other	8	8	8			
		(Percent of total exports)				
Exports licensed	9.7	37.0	n.a.			

r Revised data. p Preliminary data. n.a. Data not available.

[1] Bureau of Labor Statistics

DEFENSE PROGRESS SERIES

ECONOMIC ACTIVITY RELATED TO DEFENSE

	1940	1941				
	July	January	September	October	Week ending Nov. 15	Week ending Nov. 22
Imports			(Million dollars)			
Imports for consumption	218	224	265			
Imports by origin						
United Kingdom	16	10	14			
Canada	37	35	52			
British Asia	55	63	75			
China	10	5	8			
Latin America	52	67	77			
Other pro-democratic areas	13	10	11			
Russia	1	2	3			
Portugal and Spain	2	2	3			
Axis&Axis dominated areas	23	20	10			
All other	9	9	12			
			(Percent of total imports)			
Strategic and critical materials	31.1	40.9	P 39.0			

r Revised data   P Preliminary data.   n.a. Data not available.

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CONFIDENTIAL

NUMBER 64

DECEMBER 5, 1941

Office of Production Management
BUREAU OF RESEARCH & STATISTICS

STACY MAY, CHIEF

DEFENSE PROGRESS

Issued to The President

Copy Number 1

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DEFENSE PROGRESS

BUREAU OF RESEARCH AND STATISTICS · STACY MAY, CHIEF

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ASSISTANT CHIEF & EDITOR

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NUMBER 64 **DEFENSE PROGRESS** DECEMBER 5, 1941

BRIEFS OF CONTENTS

FORECAST II OF MUNITIONS PRODUCTION AND DEFENSE CONSTRUCTION

FORECAST II OF DEFENSE PRODUCTION INDICATES THAT BY THE END OF FISCAL 1943 PRODUCTION OF MUNITIONS AND DEFENSE CONSTRUCTION WILL BE AT AN ANNUAL RATE OF $34 BILLION. THE TOTAL VALUE PRODUCED DURING THE THREE FISCAL YEARS 1940 TO 1943 WILL AMOUNT TO $59 BILLION. BY THE END OF 1942 THE VALUE OF MUNITIONS PRODUCTION AND DEFENSE CONSTRUCTION UNDER PRESENT SCHEDULES WILL BE $42 BILLION AS COMPARED WITH $34 BILLION ESTIMATED IN FORECAST I OF DEFENSE PRODUCTION MADE IN APRIL 1941.

The United States defense program will produce munitions and defense construction amounting to $59 billion by June 30, 1943. This assumes that present production schedules will be met and that the production of each item of materiel which is not yet fully scheduled to that date will be continued beyond present schedules at the highest rate on such schedules. At the present time $57 billion have been provided. If the third Supplementary Appropriation Bill is passed, funds for munitions production and defense construction will total about $64 billion.

The following table shows details of Defense Production Forecast No. II by quarters:

PRODUCTION FORECAST II

VALUE OF MUNITIONS PRODUCTION AND DEFENSE CONSTRUCTION#

OBJECTS	F.Y. 1941		F.Y. 1942				F.Y. 1943				Total	Funds Provided Incl. Pending 3rd Sup.
	July-Dec. 1940	Jan.-June 1941	July-Sept. 1941	Oct.-Dec. 1941	Jan.-Mar. 1942	Apr.-June 1942	July-Sept. 1942	Oct.-Dec. 1942	Jan.-Mar. 1943	Apr.-June 1943		
	(Million Dollars)											
Planes	315	695	510	725	1,070	1,435	1,745	1,925	2,075	2,280	12,775	14,400
Ordnance	225	475	400	685	1,205	1,620	1,980	2,440	2,650	2,650	14,330	17,200
Naval Ships	290	670	470	560	575	610	635	670	690	690	5,860	8,500
Merchant Ships	65	125	80	200	300	375	375	375	375	375	2,645	3,800
Other Ind. Prod.	660	920	565	725	935	995	1,035	1,035	1,035	1,035	8,940	6,400
Total Munitions Production	1,555	2,885	2,025	2,895	4,085	5,035	5,770	6,445	6,825	7,030	44,550	50,300
Industrial Facilities*	200	760	750	800	850	850	850	850	850	850	7,610	8,200
Other Construction	580	965	650	650	650	650	650	650	650	650	6,745	5,700
Total Defense Construction*	780	1,725	1,400	1,450	1,500	1,500	1,500	1,500	1,500	1,500	14,355	13,900
Total Munitions Production and Defense Const.	2,335	4,610	3,425	4,345	5,585	6,535	7,270	7,945	8,325	8,530	58,905	64,200

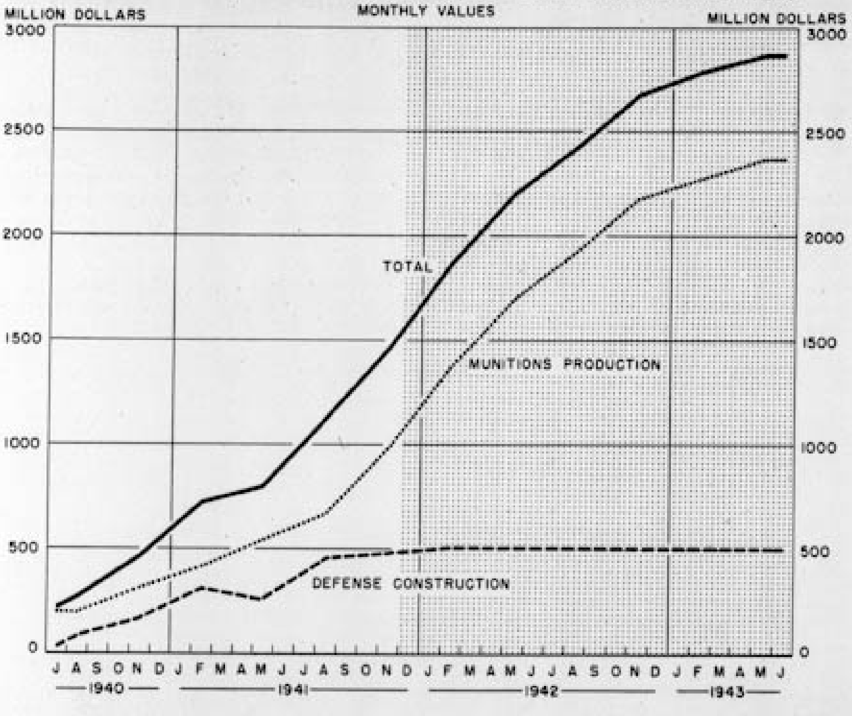
Exclusive of pay, subsistence, travel and other nonindustrial items.
* Includes equipment for Industrial Facilities.

PRODUCTION FORECAST II

CHART I — MUNITIONS PRODUCTION AND DEFENSE CONSTRUCTION

EXCLUSIVE OF PAY, SUBSISTENCE, TRAVEL, AND OTHER NONINDUSTRIAL ITEMS

MONTHLY VALUES



The above forecast of $59 billion for munitions production and defense construction by June 30, 1943, may be compared with the Interim estimate of $50 billion presented in the Second Defense Aid Hearings in September 1941. [a] The $9 billion increase over that forecast is divided about evenly among four parts of the defense program--airplanes, ordnance, facility construction, and other construction. The above forecast may be compared also with Defense Production Forecast I presented in <u>Defense Progress</u>, Issue Number 34, on April 4, 1941. According to the present forecast, munitions production and defense construction will total $42 billion by the end of 1942. According to Forecast I made last April, total munitions production and defense construction by the end of 1942 at the extension of production peaks on the schedules existing at that time would have totaled $34 billion. As compared with Forecast I the present forecast includes increases of about $2 billion each in the industrial facility and "other construction" estimate, $1.5 billion each for naval ships and miscellaneous industrial production, $0.7 billion in the estimate of merchant ship construction during the period, and $0.3 billion for planes.

The scheduled growth in the monthly rate of defense activity is shown in Chart 1. Munitions production is expected to increase from a current monthly rate of about $1 billion to $2.4 billion by June 1943 and production and construction, from $1.5 billion to $2.9 billion.

These figures do not include estimates for pay, subsistence, and travel of military forces and for various other items not involving difficult problems of industrial production. Chief among these other items are (a) agricultural products for Defense Aid and (b) the stockpile program. These items have not been included because of the impossibility of forecasting changes in the strength of the armed forces, revisions of rates of pay for military service, procurement of raw materials, and shipments of agricultural products under Defense Aid. At the present time these add about $400 million per month.

Our total defense effort (see top line on Chart 1) is scheduled to reach a level next April equivalent to an annual rate in excess of $25 billion, and to reach a $27 billion level in June 1942. By June 1943 the annual rate should be in excess of $34 billion. As indicated by the lowest curve on Chart 1, these forecasts assume that construction of industrial facilities, of fortifications, of facilities at military posts and stations, and of nonmilitary defense housing will involve the continuation of the present rate on the total defense construction program through June 1943. This would require an increase in the defense construction program of a billion dollars beyond present authorized funds, which amount to $5,700 million for this class.

Forecasts of the monthly rate of production for all munitions and

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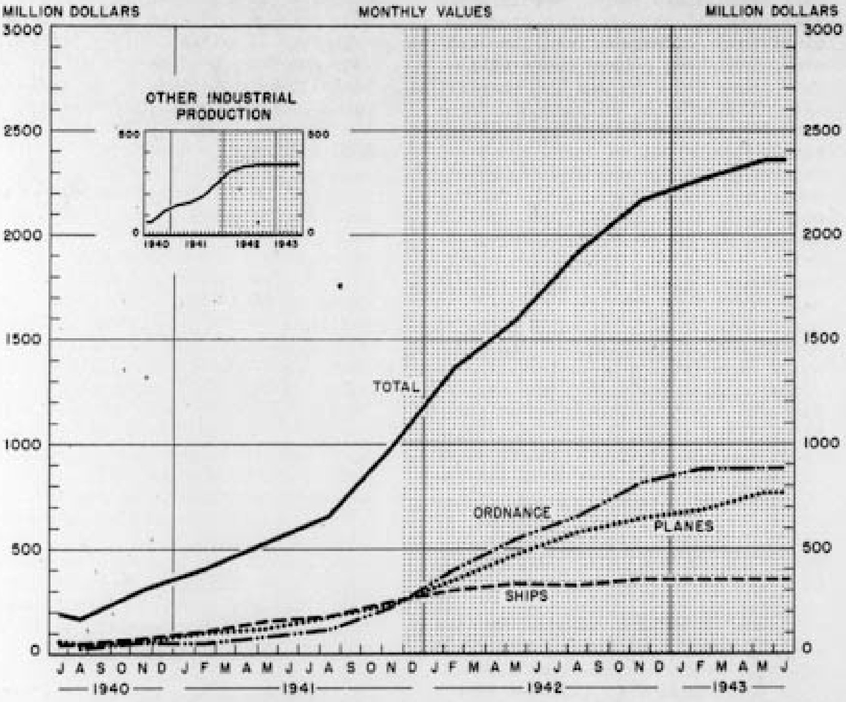
[a] Hearings, before Senate Subcommittee of the Committee on Appropriations, re Second Defense Aid Act (HR 5788), Part I, page 62.

PRODUCTION FORECAST II

CHART 2 – MUNITIONS PRODUCTION

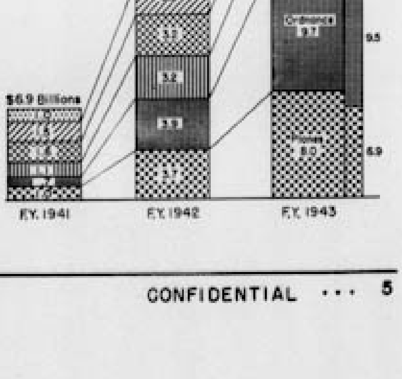


for the four main classes--ships, planes, ordnance, and other industrial production--are shown in Chart 2. The ship production curve representing, in general, monthly additions to value in place, rises steadily until after the middle of 1942. Merchant ship production reaches a peak in May and is carried at this level thereafter. It is assumed that additions to the Naval vessel program will maintain the November 1942 peak rate for Navy ship construction through the following June. The airplane production curve is based on 8-G Schedules. The forecasts assume that additions to the plane program, including maintenance, will be sufficient to continue each plant at peak operations from the time it reaches its present scheduled peak until June 1943. The ordnance curve represents the value of deliveries and in the case of Army-type guns and combat vehicles, once the peak rate of production under November 1 schedules has been attained, it is assumed that it will be possible to maintain production thereafter at that rate. In the case of ammunition the schedule rises steadily as far as the schedule runs—through December 1942. It is carried forward at that level for the next six months.

For the immediate future the present forecast may be taken as definite since relatively little can be done to better the schedules as shown. An immediate decision to increase defense production could undoubtedly affect the magnitude of the defense output during fiscal year 1943. However, a substantial degree of planning at the present time for additional production is essential even to achieve the schedules set forth herein. If the fill ins beyond peak rates for planes, ships, and ordnance are not worked out, munitions production for fiscal 1943 will be $3 billion below the scheduled figure, as is shown by the shadow bar in Chart 3. If the scheduled peak rates of production are to be reached during the months now shown, planned increases in facility utilization must be realized and new facilities must be completed and equipped according to existing facility construction schedules. Funds for the facility program, including estimates in the Third Supplementary Appropriation Bill now pending, total $8.2 billion. If an annual construction rate of $3.4 billion is maintained, it will take until the end of August 1943 to complete the

PRODUCTION FORECAST II

CHART 3—VALUE OF MUNITIONS PRODUCTION & DEFENSE CONSTRUCTION



present facility program. Moreover, if machine tool production is continued at the future rates now anticipated it will take somewhat longer to equip the facilities included in the present program.

TECHNICAL NOTE

In addition to the assumptions stated in the text, the following assumptions are also made in the above forecast:

1. Values were computed on the basis of existing prices and take no account of price changes which may occur.

2. Aircraft--that total deliveries of spare parts and equipment will equal the total funds, including the pending Third Supplementary Bill, provided for them, and that such deliveries will be distributed by quarters in the same way as are deliveries of planes.

3. Ships--that for major naval ships and for merchant ships production is measured by the increase in the quantity "percent completion times estimated total cost;" production of minor naval craft is measured by deliveries.

4. Other industrial production--that miscellaneous munitions, for which it was not practicable to use delivery schedule data, will be delivered at a rate to use up all funds provided to date and that this rate will continue through fiscal 1943.

DEFENSE PRODUCTION AND NATIONAL OUTPUT

THE NONDEFENSE PORTION OF THE NATIONAL PRODUCTION BEGAN TO DECLINE ABOUT THE MIDDLE OF 1941. WITH THE EXTENSION OF THE DEFENSE PROGRAM, THE NONDEFENSE PORTION IS DESTINED TO BECOME A SMALLER PROPORTION OF AN ENLARGED NATIONAL PRODUCTION. FROM THE LAST QUARTER OF 1940 TO THE LAST QUARTER OF 1941 DEFENSE PRODUCTION INCREASED FROM 8 TO 11 PERCENT OF THE NATIONAL TOTAL.

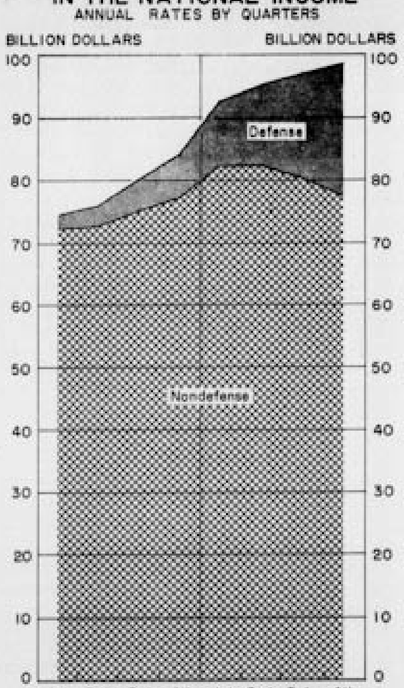
Throughout the first nine months of the defense program the value of both defense and nondefense production expanded rapidly. By the second quarter of 1941, however, defense production had grown so large in absolute amount and was accounting for such a large proportion of the nation's output that the increase of nondefense production was retarded; in the third quarter of 1941 the value of nondefense production showed a decline which is continuing during the current quarter.

Total national output [a] was proceeding at an annual rate of $80 billion during the third quarter of 1940 when the defense program was being organized. About $75 billion, or 94 percent, of this was represented by nondefense production with only six percent devoted to defense output, as Chart 1 shows. [b] By the first quarter of 1941, total output on an annual basis had risen to $92 billion, defense production had risen to $10 billion, and nondefense production had reached $82 billion. The value of nondefense production about held its own in the second, but showed a decline during the third quarter of 1941.

Nondefense production on an annual basis during the current quarter of 1941 stands at about $77 billion. The current rate of defense production, $22 billion, con-

CHART I — DEFENSE AND NONDEFENSE PRODUCTION IN THE NATIONAL INCOME

ANNUAL RATES BY QUARTERS



stitutes 22 percent of the value of the national output. The current annual rate of nondefense production <u>alone</u> is still almost as high as total production in 1939. On a per capita basis, the annual rate is higher than that for most of the years during the preceding decade, even after allowance is made for price increases.

Manufacturing constitutes an important segment, currently nearly 30 percent, of the national output. In defense production it is even more important, contributing about half of the total at the present time. As indicated by Chart 2 [b] some 35 percent of the net value product of manufacturing is being devoted to defense in the current quarter.

From the third quarter of 1940 to the third quarter of 1941 net value of manufacturing product expanded from an annual rate of $21 to an annual rate of $29 billion, with a further increase to about $30 billion in the current quarter. Manufacturing for defense during the corresponding periods increased on an annual rate from about $2 billion to approximately $8 billion, and a further increase to about $10 billion is indicated for the current quarter. The peak value of nondefense manufacturing, some $22 billion was reached in the second quarter of 1941 but has since shown a substantial decline.

Construction constitutes another important segment of national defense production. Chart 3 [b] indicates that 44 percent of the value of total construction is currently going into national defense. The peak in nondefense construction, $6.8 billion, was reached during the last quarter of 1940. There was a reduction in nondefense construction during the first quarter of 1941 when the annual rate declined to $6.4 billion. The latter level was maintained until the present quarter when a further decline is indicated.

The estimated $16 billion which is being expended for defense production during calendar year 1941 constitutes about 16 percent of the value of national production. This

CHART 2— DEFENSE AND NONDEFENSE MANUFACTURES
NET VALUE PRODUCTS
ANNUAL RATES BY QUARTERS

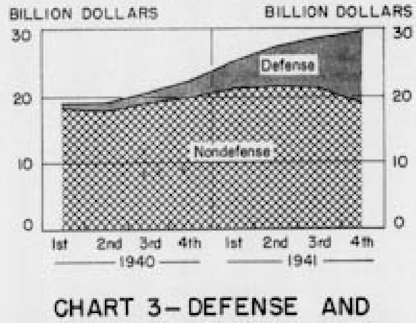
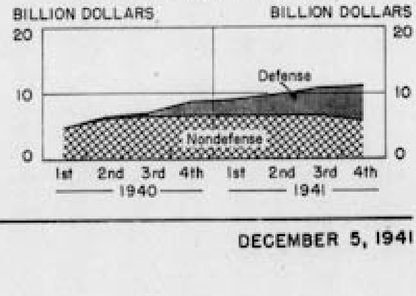


CHART 3— DEFENSE AND NONDEFENSE CONSTRUCTION

ANNUAL RATES BY QUARTERS



will be approximately doubled in 1942 under the present program. Total current expenditure including nonindustrial items now approximate 20 percent of current national output. If this rate should be doubled by the end of 1942 it will fall short of the approximately 50 percent of national output which England devotes to military requirements and the estimated 60 percent or more so devoted by Germany.

---

[a] "Total national output" as used in this article is equivalent to national income. It is not to be confused with "gross national product" which includes the amounts necessary to provide for depreciation and maintenance of capital. The national income estimates on which this article is based include corporate income taxes and largely for this reason differs from the figures on total income payments carried in Defense Progress Series.

[b] The quarterly estimates of total defense production are based on data for defense expenditures and deliveries. In estimating the net manufacturing production going to defense, the major categories of defense materiel and supplies were analyzed according to value contributed by manufacturing, mining, agriculture, transportation, and other industries. Estimates of the manufacturing contribution to the total value of the defense product at the various industrial stages were cumulated to give the final estimates here used. For example, to the value contributed by manufacturing in the building of planes was added the manufacturing content in the value of materials and services. The figures of total construction are based on the estimates of the United States Department of Commerce; the figures for defense construction are estimates of the value of defense construction in place.

DEFENSE ASPECTS OF THE TRADE AGREEMENT WITH ARGENTINA

THE RECENT TRADE AGREEMENT BETWEEN THE UNITED STATES AND ARGENTINA, MADE POSSIBLE BY THE WAR EMERGENCY, WILL AID THE DEFENSE PROGRAM BY FACILITATING THE IMPORT OF STRATEGIC AND CRITICAL MATERIALS, IMPROVE ECONOMIC CONDITIONS IN ARGENTINA, AND PROMOTE HEMISPHERE SOLIDARITY.

The Trade Agreement between the United States and Argentina, which went into effect November 15, 1941 is one of the most important steps yet taken in the program of cooperation between the democracies of the Western Hemisphere. This is the only Trade Agreement negotiated by the United States thus far during World War II. The war, which seriously strained the economy of Argentina, was a strong influence on the signing of the agreement.

The reciprocal concessions and other provisions of the agreement will strengthen the defenses of the United States, Argentina, and other American countries: (1) by facilitating increased importation of materials required by the defense program of the United States; (2) by improving the markets for Argentine products; and (3) by promoting better political relations between the United States, Argentina, and other Latin American countries.

By the agreement Argentina grants tariff concessions on 127 categories of United States goods, which represent $32 million, or 30 percent of total United States exports to Argentina in 1940. The United States grants concessions on Argentine products valued at $62 million, or 76 percent of that country's shipments to the United States in 1940. Important among the trade gains to the United States was the more favorable quota and exchange treatment to be accorded by Argentina to numerous United States exports.

Most of the commodities on which the United States granted concessions in the agreement are not produced domestically in sufficient quantities to meet normal requirements. Some of these are now highly essential to our defense program.

The accompanying table shows the reductions in duty and imports of the principal defense materials coming from Argentina during 1940.

The curtailment of exports to Europe, as a result of the war, has been a matter of serious concern to Argentina. A sharp expansion in United States imports from Argentina, largely of commodities required in the defense program, and a decline in United States exports, resulted in a United States import balance amounting to $59 million during the second 12 months of the war, ending August 1941. This balance has already helped to strengthen the economy of Argentina. The reductions in United States tariffs under the Trade Agreement should facilitate additional purchases of Argentine products by the United States, thus further alleviating the strain placed upon the Argentine economy by the war. Tariff reductions and other concessions granted by Argentina on United States products should facilitate the sale of numerous products to that country.

A significant contribution made by the Trade Agreement is the promotion of better relations between the two countries and a greater solidarity in the entire Western Hemisphere, particularly in view of the long misunderstanding between the United States and Argentina and the political influence of the Axis Powers in Latin American countries.

TARIFF RATES AND 1940 IMPORTS OF DEFENSE MATERIALS FROM ARGENTINA

Import Groups	AD VALOREM DUTY		1940 U. S. Imports From Argentina	
	Before Agreement	Under Agreement	Amount	Percent of U.S. total
	(Percent)		(Million dollars)	(Percent)
Cattle Hides	10	5	10.6	53
Canned Beef	60	30	3.7	54
Casein	98	49	1.1	88
Carpet Wool	Free	Bound Free	14.3	46
Clothing, Wool	88-90	48-53	4.4	68
Flaxseed	57	43	11.7	83
Quebracho Extract	15	7½	2.9	74

THE JOINT ECONOMIC COMMITTEES OF CANADA AND THE UNITED STATES

THE UNITED STATES AND CANADA ARE LAYING THE FOUNDATION FOR WHAT MAY BECOME PERMANENT ECONOMIC COLLABORATION THROUGH COOPERATION IN DEFENSE EFFORTS. THE COLLABORATION IS BEING IMPLEMENTED BY THE JOINT ECONOMIC AND OTHER COMMITTEES OPERATING IN THE FIELDS OF COMMON DEFENSE PROBLEMS.

The United States and Canada are laying the foundation for what may become permanent economic collaboration through cooperation in their defense efforts. Existing cooperation is evidenced by informal relations between the central banks; by reciprocal trade agreements; and by large scale interchange of goods, capital investment, and industrial ownership. Collaboration between the two countries is now being further implemented by the operation of several Joint Committees originating in the parallel defense activities.

On November 5, a Joint Defense Production Committee between the United States and Canada was established "to coordinate the capacities of the two countries for the production of defense materiel ..." This Committee was established by the two governments on the recommendation of the Joint Economic Committees.

The Joint Economic Committees of Canada and the United States were created by an exchange of notes between the two governments on June 17, 1941 "to study and to report to their respective governments on the possibilities of (1) effecting a more economic, more efficient, and more coordinated utilization of the combined resources of the two countries in the production of defense requirements (to the extent that this is not now being done), and (2) reducing the probable post-war economic dislocation consequent upon the changes which the economy in each country is presently undergoing."

The United States Committee and the Canadian Committee of the Joint Economic Committees, composed of civil servants in various government departments in the two countries, act in an advisory capacity and prepare recommendations in the form of resolutions which are transmitted to the Prime Minister of Canada and the President of the United States for action. Three meetings have been held since the inception of the Committees, which were largely devoted to organization of the work, although resolutions were passed calling for further coordination of export control, shipping arrangements, defense production, and for diminution in impediments to travel between the two countries. In addition to formal resolutions, however, the Committees have had occasion from time to time to take informal steps to bring authorities in the two countries together and to acquaint governmental officials with their tentative conclusions on specific problems of economic collaboration through letters from the respective chairmen, direct contact, circulation of excerpts from their minutes, etc.

In addition to the new Joint Defense Production Committee and the Joint Economic Committees, the governmental machinery for the direct exchange of views between officials in Canada and the United States includes the Permanent Joint Defense Board, established in August 1940, which deals with strategic and military matters; and the Joint Materials Coordinating Committee, established on May 1, 1941, to collect and exchange information on raw material supplies in the United States and Canada, and to undertake negotiations leading to the sale and purchase of these supplies, their capacity expansion, restriction in civilian use, transportation, etc. Interlocking members of the Joint Economic Committees and of the Joint Materials Coordinating Committee constitute liaison between these committees. The theoretical demarcation of function between the Materials Coordinating and the Economic Committees is that the former deals with specific problems and the latter is advisory over a broader range of considerations.

A resolution on export control was prepared by the Joint Economic Committees to remedy an obvious lack of coordination which had resulted in foreigners taking advantage of differences between Canadian export control regulations and similar restrictions in the United States. The problem was solved by the appointment in Canada of an Export Control Advisory Committee, which appointed a liaison officer to inform United States export control authorities and obtain from them information not only on the commodities subject to control, but on the severity with which controls in various commodities were administered. The need for closer collaboration in shipping matters arose after Canada, which transferred all but one of its ships to the North Atlantic run, asked for shipping space on American lines. Joint staff work became necessary to determine the relative urgency of various Canadian and United States shipping requests. A Shipping Priorities Committee was set up in Canada to determine inland and ocean shipping priorities, to decide upon the relative urgency of requests, and to furnish appropriate United States officials with information to enable them to judge Canadian requests for space in the light of United States needs.

The Committees have under study a variety of other defense problems: the Canadian deficiency of United States dollar exchange and the associated transactions under the Hyde Park Declaration of April 20, 1941, the desirability of Canadian resources being devoted to the production of exchange exports of a nondefense character, the possibility of overcoming tariff impediments to the economic movement of defense goods from Canada to the United States, the relative severity of the priority and civilian restriction programs in both countries upon nondefense civilian consumption, etc.

Numerous factors affecting the relation of the two economies to

Europe during the war are under study. The Joint Economic Committees' planning for the post-defense period has been, and may be expected for some time to be, confined to memoranda of an exploratory character. Recommendations of a conclusive character cannot be formulated until the conditions under which Europe will conduct trade with extra European countries in the post-defense period can be more clearly foreseen.

DEFENSE PROGRESS SERIES

The Yellow Section

In its Yellow Section, Defense Progress each week presents the most recent confidential information on the progress of the defense program. It is divided into four main parts:

1. A detailed statement of the latest financial data on the defense program together with comparative data to the end of the previous month, and the first full year of the defense effort.

   The financial table begins with a statement of total defense financial program to date, and the part of it that is United States financed. This total is then broken down for analysis; first, according to defense objects; second, according to defense agencies.

   The financial program is repeated and brought up to date in each issue of Defense Progress for current information.

2. Also appearing in each issue is the table of physical production indexes for major types of defense equipment month by month, showing both production cumulated to date and monthly production rates in contrast with the indexes of previously established schedules. The table is arranged so that it is possible to see at a glance the exact rate of progress in each of the defense categories, as well as its relation to what was expected at the outset of the program.

   As new information becomes available, graphs are included to illustrate the index data. The current issue includes such a graph showing the ammunition production indexes since the beginning of the program.

3. The Yellow Section records, from time to time, "Other Defense Indicators" as they become available.

4. The Yellow Section also includes data on economic activity related to defense which, because of their confidential nature, are not included in the Pink Section.

5. The Pink Section contains data on economic activity related to defense. The series is not confidential and is included for the convenience of readers of Defense Progress.

Ammunition Production In October

The weighted index ^a^ of monthly production of ammunition reached 22 in October. This represented a two point increase over the previous high of 20 recorded in September, but was only about one-third as high as it should have been on the basis of the schedules established on August 1, 1941.

A sizeable gain in the output of aircraft cannon ammunition was the principal influence making for the rise in the index. Production of small arms and antiaircraft ammunition increased slightly. There was a drop in the output of field artillery shells.

As may be seen from the chart on page VIII, the index of total cumulated production at the end of October stood at 17 in comparison with financed production requirements of 393. Almost 70 percent of requirements (258 points in the index) had been ordered as of October 31.

Pending Legislation

The Third Supplemental National Defense Appropriation Bill, 1942, reported to the House of Representatives on December 3, includes $7,743 million for national defense activities. Of this total, $5,136 million is for the War Department, $1,556 million for Defense Aid, $830 million for the Navy Department, and $221 million for other agencies. If passed, this bill would bring the total United States defense program to $72,226 million.

National Income

The annual rate of total income payments rose to $95.5 billion in October, about $20 billion above the level at the outset of the defense program in July 1940.

Wholesale Prices

The BLS price indexes of strategic and critical materials, 28 basic commodities, and all commodities increased from August 1940 to October 1941, as the chart on page IX indicates. The greatest increase occurred in basic commodities which rose 47 points. Prices leveled off during the last three weeks in November.

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[a] The individual items included in the indexes of production are weighted to indicate their relative importance. The production rate index measures output during the month, with average scheduled monthly production during fiscal year 1942 taken as 100 percent. The total production index measures cumulated production since the start of the program, with scheduled total output during fiscal year 1942 equivalent to 100 percent. Output during 1942 is currently based upon schedules as of August 1, 1941.

FOOTNOTES

DEFENSE PROGRESS SERIES

See Opposite Page

Data on obligations and unobligated balances are tentative pending determination of reserves not available for immediate obligation.

n.a. Not Available   [r] Revised   [p] Preliminary

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[c] United States Treasury General Fund includes the defense activities of all United States Government agencies (including Defense Aid). It does not include the activities of government owned corporations or foreign orders in the United States.

[d] Checks paid include (1) all checks paid out of the Treasury General Fund (cf. footnote [c]); (2) checks issued by the Reconstruction Finance Corporation and subsidiary Government corporations; (3) checks issued by foreign purchasing commissions.

[e] Value delivered and/or in place includes (1) value delivered and/or in place for ships and value of production for other munitions, (2) value in place for defense construction, and (3) checks issued by finance officers for non-munitions items.

[f] Program and obligations for pay for civilians and for the Navy include only that specifically mentioned in appropriation bills, while the cash disbursement figures include, in addition, executive defense pay which cannot be separately distinguished in the appropriation bills.

[g] Report on checks paid by the Treasury for the account of the Maritime Commission makes allowance for receipts credited to the Construction Loan Fund.

DEFENSE PROGRESS SERIES

TOTAL UNITED STATES DEFENSE PROGRAM

	Cumulative 6/11/40 through			Monthly		
	End 1st full year 6/30/41	End of October, 1941	1st half of November, 1941	October 1940	September 1941	October 1941
	FINANCIAL PROGRAM (Million dollars)					
TOTAL DEFENSE PROGRAM IN U.S. [a]						
Program	41,131	68,252	68,252	2,653	650	6,135
Unobligated balance	9,289	18,535	n.a.	-	-	-
Obligations	31,842	49,717	n.a.	2,359	4,113	p 5,486
Value delivered and/or in place	8,697	15,707	n.a.	385	1,982	p 2,285
Checks paid [d]	8,503	14,129	14,997	491	1,498	1,706
U. S. FINANCED PROGRAM [b]						
Program	37,446	64,483	64,483	2,115	631	6,135
Unobligated balance	9,289	18,535	n.a.	-	-	-
Obligations	28,157	45,948	n.a.	1,821	4,289	5,486
Checks paid [d]	6,430	11,721	12,549	312	1,423	1,626
TREASURY GENERAL FUND ONLY [c]						
Program	34,638	60,156	60,156	1,803	174	5,761
Unobligated balance	7,817	17,301	n.a.	-	-	-
Obligations	26,821	42,855	n.a.	n.a.	3,949	p 5,437
Checks paid by U.S.Treasury [d]	6,080	11,010	11,773	297	1,319	1,526
O B J E C T S						
MUNITIONS PROD.&DEFENSE CONSTR.						
Program	36,671	57,129	57,120	1,862	303	3,676
Unobligated balance	7,143	12,315	n.a.	-	-	-
Obligations	29,528	44,805	n.a.	2,354	3,398	p 5,027
Value delivered and/or in place [c]	6,941	12,519	n.a.	270	1,581	1,811
Value not delivered and/or in place	22,587	32,286	n.a.	-	-	-
MUNITIONS PRODUCTION, TOTAL						
Program	28,024	44,181	44,181	1,192	198	3,298
Unobligated balance	4,491	9,347	n.a.	-	-	-
Obligations	23,533	34,834	n.a.	1,801	2,858	p 4,088
Value delivered and/or in place [e]	4,436	8,124	n.a.	185	1,061	1,356
Value not delivered and/or in place	19,097	26,710	n.a.	-	-	-

Table continued on following page. For footnotes see opposite page.

FOOTNOTES

DEFENSE PROGRESS SERIES

See Opposite Page

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DEFENSE PROGRESS SERIES

TOTAL UNITED STATES DEFENSE PROGRAM

	Cumulative 6/11/40 through			Monthly		
	End 1st full year 6/30/41	End of October, 1941	1st half of November, 1941	October 1940	September 1941	October 1941
	(Million dollars)					
MUNITIONS PROD. (CONT'D.)						
AIRPLANES, PARTS & ACCESSORIES						
Program	8,481	13,174	13,174	397	1	655
Obligations	7,281	11,044	n.a.	809	818	p 1,385
Value delivered	1,010	1,770	n.a.	30	195	250
ORDNANCE						
Program	7,780	13,330	13,330	199	-126	1,553
Obligations	5,418	9,921	n.a.	359	1,323	p 2,412
Value delivered	700	1,280	n.a.	30	180	175
NAVAL SHIPS						
Program	6,654	8,235	8,235	21	311	110
Obligations	6,422	7,506	7,521	191	232	p 74
Value delivered and/or in place	956	2,389	n.a.	35	451	661
MERCHANT SHIPS						
Program	1,766	3,805	3,805	10	0	857
Obligations	1,514	2,251	n.a.	16	222	p 132
Value delivered and/or in place	190	320	n.a.	10	35	50
OTHER MUNITIONS AND SUPPLIES						
Program	3,343	5,637	5,637	565	12	123
Obligations	2,898	4,112	n.a.	426	263	p 85
Value delivered	1,580	2,365	n.a.	80	200	220
DEFENSE CONSTRUCTION, TOTAL						
Program	8,647	12,939	12,939	570	105	378
Unobligated balance	2,652	2,968	n.a.	-	-	-
Obligations	5,995	9,971	n.a.	553	540	p 939
Value in place	2,505	4,395	n.a.	85	520	455
Value not in place	3,490	5,576	n.a.	-	-	-
INDUSTRIAL FACILITIES						
Program	5,305	7,826	7,826	322	95	381
Obligations	3,056	5,612	n.a.	360	282	p 506
Value in place	960	1,960	n.a.	30	285	250

Table continued on following page. For footnotes see opposite page.

FOOTNOTES

DEFENSE PROGRESS SERIES

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DEFENSE PROGRESS SERIES

TOTAL UNITED STATES DEFENSE PROGRAM

	Cumulative 6/11/40 through: End 1st full year 6/30/41	Cumulative 6/11/40 through: End of October, 1941	Cumulative 6/11/40 through: 1st half of November, 1941	Monthly: October, 1940	Monthly: September 1941	Monthly: October 1941
	(Million dollars)					
DEFENSE CONSTRUCTION (CONT'D.)						
POSTS, DEPOTS, STATIONS						
Program	2,850	4,471	4,471	98	10	-3
Obligations	2,664	3,950	n.a.	158	214	p 392
Value in place	1,430	2,165	n.a.	55	200	150
HOUSING, NON-MILITARY						
Program	492	642	642	150	0	0
Obligations	275	409	421	35	44	p 41
Value in place	115	270	n.a.	0	35	35
NON-MUNITIONS ITEMS, TOTAL						
Program	4,460	11,132	11,132	791	347	2,459
Unobligated balance	2,148	6,220	n.a.	-	-	-
Obligations	2,312	4,912	n.a.	5	715	p 459
Checks issued by agencies	1,756	3,188	n.a.	115	401	p 474
STOCKPILE						
Program	983	1,631	1,631	102	368	0
Obligations	470	910	n.a.	23	251	p 55
Checks issued by agencies	192	p 365	n.a.	11	55	70
AGRICULTURAL & MISC. EXPORTS (DEFENSE AID)						
Program	1,250	3,043	3,043	-	0	1,949
Obligations	109	790	n.a.	-	214	p 148
Checks issued by agencies	5	p 248	n.a.	-	81	119
PAY, SUBSISTENCE & TRAVEL [f]						
Army Military						
Program	944	2,563	2,563	505	0	0
Obligations	934	1,684	n.a.	52	167	p 146
Checks issued	388	p 562	n.a.	39	44	50
Navy Military						
Program	376	804	804	2	0	0
Obligations	334	490	n.a.	29	44	p 29
Checks issued	696	p 1,205	n.a.	37	130	141
Civilian Payroll						
Program	32	170	170	28	0	16
Obligations	103	117	n.a.	3	4	p 4
Checks issued	356	p 558	n.a.	23	51	54

Table continued on following page. For footnotes see opposite page.

FOOTNOTES

DEFENSE PROGRESS SERIES

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DEFENSE PROGRESS SERIES

TOTAL UNITED STATES DEFENSE PROGRAM

	Cumulative 6/11/40 through			Monthly		
	End 1st full year 6/30/41	End of October, 1941	1stHalf of November, 1941	October, 1940	September 1941	October 1941
	(Million dollars)					
NON-MUNITIONS ITEMS (CONT'D.)						
MISCELLANEOUS NON-MUNITIONS						
Program	875	2,921	2,921	154	-21	494
Obligations	362	921	n.a.	-102	35	P 77
Checks issued by agencies	119	P 250	n.a.	5	P 40	P 40
AGENCIES						
U. S. ARMY						
Program	13,135	24,606	24,606	1,377	0	0
Obligations	11,404	20,598	n.a.	n.a.	2,141	P 1,379
Checks paid by U.S.Treasury	3,636	6,209	6,590	134	700	P 785
U. S. NAVY						
Program	12,308	17,627	17,627	85	174	113
Obligations	11,225	14,681	14,859	-	868	P 569
Checks paid by U.S.Treasury	2,217	3,791	4,017	150	377	P 442
DEFENSE AID						
Program	7,000	12,985	12,985	-	0	5,985
Allocations	5,177	6,784	n.a.	-	175	P 315
Obligations	2,458	4,826	n.a.	-	778	P 365
Checks paid by U.S.Treasury	21	456	559	-	140	P 192
U. S. MARITIME COMMISSION						
Program	969	2,668	2,668	0	0	-2
Obligations	886	1,635	n.a.	-	118	P 232
Checks paid by U.S.Treasury (net) [g]	44	94	109	10	26	P 21
R. F. C. & SUBSIDIARIES						
Program	2,808	4,327	4,327	212	457	0
Obligations	1,336	3,093	n.a.	-	340	P 147
Checks issued by R. F. C.	350	711	P 776	15	104	P 100
OTHER U. S. AGENCIES						
Program	1,226	2,270	2,270	341	0	39
Obligations	848	1,115	n.a.	-	44	P 55
Checks paid by U.S.Treasury	162	460	498	3	76	P 86

Table continued on following page. For footnotes see opposite page.

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DEFENSE PROGRESS SERIES

TOTAL UNITED STATES DEFENSE PROGRAM

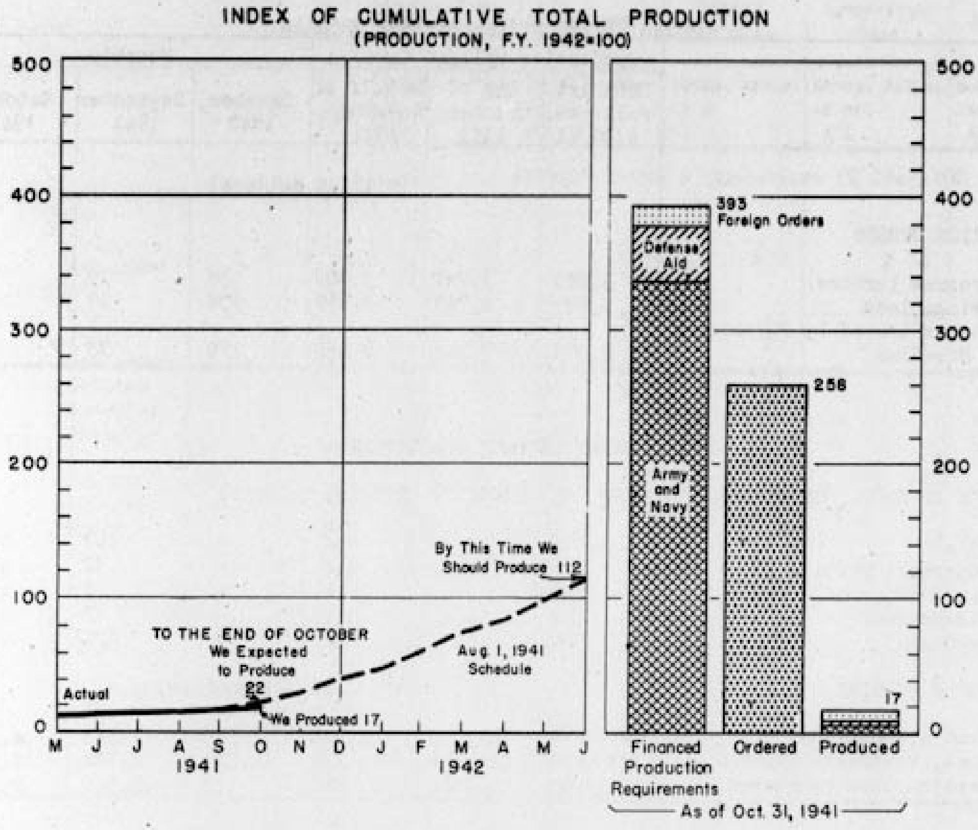
	Cumulative 6/11/40 through			Monthly		
	End 1st full year 6/30/41	End of October, 1941	1st half of November, 1941	October, 1940	September 1941	October 1941
	(Million dollars)					
FOREIGN ORDERS						
Program (orders)	3,685	3,769	3,769	538	19	0
Obligations	3,685	3,769	3,769	538	19	0
Checks issued by Purchasing Missions	2,073	2,408	2,448	179	75	P 80
OTHER DEFENSE INDICATORS						
VALUE OF FACIL. ON APPLIC. FOR CERT. OF NECESSITY (Million dollars)						
Total	1,424	n.a.	n.a.	-	199	n.a.
Approved, private funds	829	n.a.	n.a.	-	52	n.a.
Approved, public funds	201	n.a.	n.a.	-	8	n.a.
Disapproved	7	n.a.	n.a.	-	2	n.a.
Pending	387	n.a.	n.a.	-	137	n.a.
DEFENSE HOUSING	(Number of dwelling units)					
Fund allocations	110,298	141,522	141,522	4,250	11,440	4,692
Cons. contracts awarded	78,820	115,141	119,451	10,469	8,178	11,970
Construction completed	21,768	54,884	59,861	0	6,546	9,300

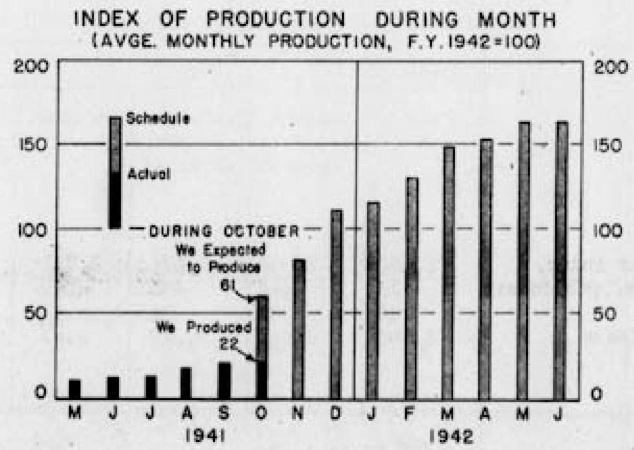
ECONOMIC ACTIVITY RELATED TO DEFENSE

	1940	1941				
	July	January	September	October		
	(Thousand workers)					
DEFENSE EMPLOYMENT						
Private, 18 major indus.	1,660	2,038	r 2,671	2,731		
Private, contrcts.,pub.constr	13	448	435	n.a.		
Public	117	171	234	n.a.		
Total direct defense	1,790	2,657	3,329	n.a.		

r Revised data. P Preliminary. n.a. Data not Available.

CHART I – AMMUNITION



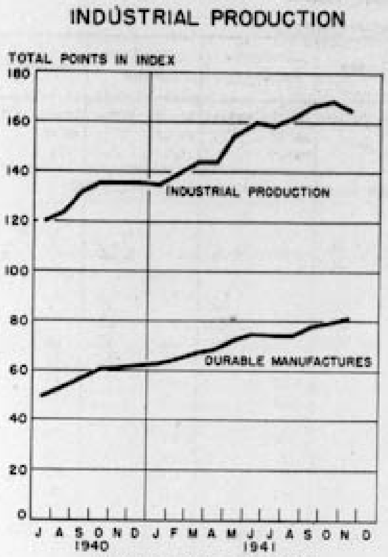


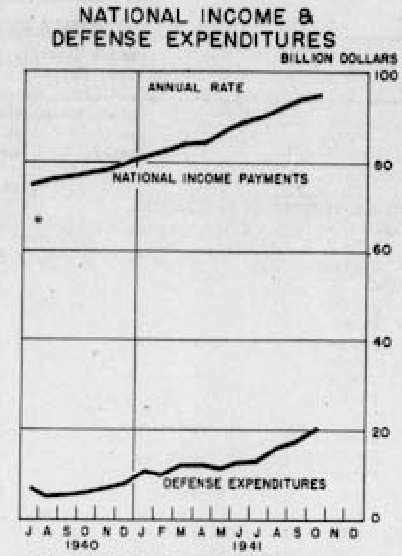
DEFENSE PROGRESS SERIES

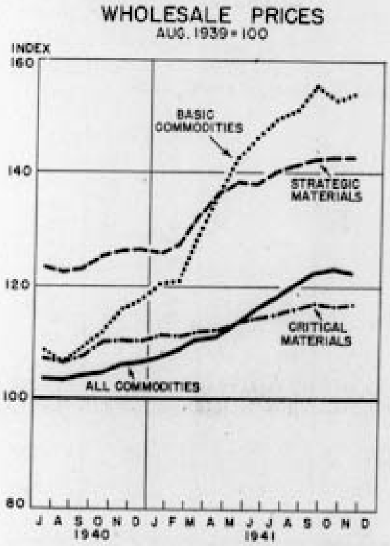
DEFENSE EQUIPMENT INDEXES

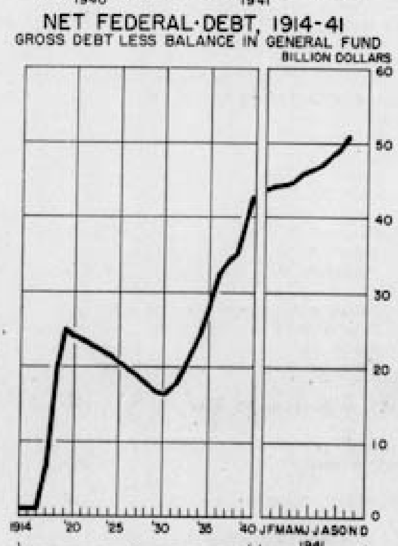
	Major Combat Ships		Airplanes		Combat Vehicles		Army-type Guns		Ammunition	
	SCHED. AS OF OCT. 1	ACTUAL	SCHED. AS OF AUG. 1	ACTUAL	SCHED. AS OF NOV. 1	ACTUAL	SCHED. AS OF 8/1	ACTUAL	SCHED. AS OF 8/1	ACTUAL
	Average monthly production FY 1942=100									
MONTHLY PRODUCTION RATE DURING										
1940										
July		27		16		a 6		a 14		b 11
December		38		26						
1941										
March		44		34		10		30		
June		55		45		27		41		13
September		87	62	61		64	98	67	35	20
October	71	109	80	68		83	112	84	61	22
November	98		90		85		96		84	
December	82		97		108		88		111	
1942										
January	109		109		110		100		118	
February	98		120		111		146		130	
March	115		128		118		117		149	
June	126		136		147		111		164	
Av. monthly prod. FY 1942	100		100		100		100		100	
Peak month	169	(11/42)	158	(10/42)	155	(5/42)	146	(2/42)	184	(6/42)
	Total production FY 1942=100									
TOTAL CUMULATIVE PRODUCTION TO										
1940										
December 31		16		8		3		7		
1941										
March 30		27		16		5		13		9c
June 30		42		27		11		22		11
September 30	55	61	41	41		25	40	38	17	15
October 31	61	70	47	46		32	50	44	22	17
November 30	69		55		39		58		29	
December 31	76		63		48		65		39	
1942										
January 31	85		72		57		73		48	
February 28	93		82		66		85		59	
March 31	103		93		76		95		72	
June 30	133		127		111		123		112	
Total production FY 1942	100		100		100		100		100	
Financed production requirements November 1	452		311		182		265		393	
Ordered to November 1	452		265		177		251		258	
To be Ordered November 1	0		46		5		14		135	

[a] Average July 1, 1940 - Dec. 31, 1940. [b] Average July 1, 1940 - April 30, 1941.
[c] April 30, 1941.


INDUSTRIAL PRODUCTION
TOTAL POINTS IN INDEX
INDUSTRIAL PRODUCTION
DURABLE MANUFACTURES
J A S O N D J F M A M J J A S O N D
1940
1941


NATIONAL INCOME & DEFENSE EXPENDITURES
BILLION DOLLARS
ANNUAL RATE
NATIONAL INCOME PAYMENTS
DEFENSE EXPENDITURES
J A S O N D J F M A M J J A S O N D
1940
1941


WHOLESALE PRICES
AUG. 1939 = 100
INDEX
BASIC COMMODITIES
STRATEGIC MATERIALS
CRITICAL MATERIALS
ALL COMMODITIES
J A S O N D J F M A M J J A S O N D
1940
1941


NET FEDERAL·DEBT, 1914-41
GROSS DEBT LESS BALANCE IN GENERAL FUND
BILLION DOLLARS
1914 '20 '25 '30 '35 '40
JFMAMJJASOND
1941
END OF CALENDAR YEAR
END OF MONTH

DEFENSE PROGRESS SERIES

ECONOMIC ACTIVITY RELATED TO DEFENSE

The series on this page are included for the convenience of readers of _Defense Progress_. The data are not confidential and there are no restrictions upon their use through their inclusion in this confidential report.

	1940	1941				
	July	January	September	October	Week ending Nov. 22	Week ending Nov. 29
●FED. RES. BD. PROD. INDEXES	(Unadjusted Indexes 1935-39 = 100)					
Total industrial production	120	135	167	P 168	Nov. est.	166
Durable manufactures	131	166	206	P 211		213
Nondurable manufactures	111	118	145	P 143		139
Minerals	121	113	137	P 139		137
BUR. FOR. & DOM. COM. MFRS. ORDERS, SHIPMENTS, INVENTORIES	(Indexes)					
New orders, total (1/39=100)	127	176	202	P 192		
Shipments, total (1/39=100)	117	148	208	P 203		
Inventories, " (12/31/38=100)	109.2	120.8	137.8	P 142.6		
Durable (12/31/38=100)	111.9	129.7	150.6	P 155.2		
Nondurable (12/31/38=100)	106.4	111.2	124.0	P 129.0		
●BLS. PRICE INDEXES	(Indexes)					
Strategic Materials (8/39=100)	123.6	126.1	142.8	143.0	143.3	143.3
Critical Materials (8/39=100)	107.5	111.7	117.3	116.7	116.8	116.8
Basic Commodities (8/39=100)	108.5	120.5	155.6	153.1	154.6	154.9
Machine tools (8/39=100)	108.7	114.6	118.9	119.4	-	-
All commodities (1926=100)	77.7	80.8	91.8	92.4	92.2	92.3
	(1935-39 = 100)					
BLS COST OF LIVING INDEX	100.3	100.8	108.1	109.4		
TRANSPORTATION & ELECTRIC POWER	(Averages)					
Freight cars						
Loadings (thous, per week)	706	684	885	914	799	866
Unloads for export (dly.)	1,502	1,352	1,736	1,885	1,796	1,831
Surplus, total (thous. dly.)	133	110	41	44	62	
Boxcars	57	43	15	19	28	
Coal cars	47	42	10	11	19	
Power prod. (mil. kwk, wkly.)	2,731	3,080	3,348	3,439	3,205	3,293
●NATIONAL INCOME	(Billion dollars, annual rate)					
Total income payments	75.2	81.7	93.7	P 94.9		
●FEDERAL DEBT	(Billion dollars, end of month)					
Net public debt	41.5	43.9	49.1	50.9	Nov.	52.7
EMPLOYMENT	(Thousand workers)					
Total civil nonagricultural	35,454	36,621	40,715	P 40,749		
Total WPA employment	1,655	1,890	1,037	1,040	1,058	1,060
Defense		Confidential data. See Page VII				
Deep-sea merchant vessels	51	49	50	50		
UNEMPLOYMENT (WPA ESTIMATE)	(Million workers)					
Number of unemployed	9.3	7.6	4.5	3.9	Nov.	3.9

●Graph appears on opposite page. P Preliminary data. n.a. Data not available

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DEFENSE PROGRESS

CONFIDENTIAL

NUMBER 65

DECEMBER 12, 1941

Office of Production Management
BUREAU OF RESEARCH & STATISTICS
STACY MAY, CHIEF

DEFENSE PROGRESS

Issued to ____The President____

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DEFENSE PROGRESS

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ECONOMIC ANALYSIS BRANCH
MORRIS A. COPELAND, CHIEF

LESTER S. KELLOGG,
ASSISTANT CHIEF & EDITOR

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NUMBER 65 **DEFENSE PROGRESS** DECEMBER 12, 1941

BRIEFS OF CONTENTS

REVISIONS IN DELIVERY SCHEDULES AND ORDERS FOR MUNITIONS AUGUST 1 — NOVEMBER 1, 1941

Procurement practices must be markedly improved if munitions production schedules are to be "stepped up at once" to meet the greatly increased requirements of the Victory Program. Recent placements of contracts have done little or nothing to step up the rate of production during the next 12 months. They have merely provided for continuing previously arranged production rates for a longer period. It is necessary to "put procurement into highest gear at once" by:

Stepping up deliveries under contracts already placed by insuring <u>full</u> use of facilities already in munitions production.

Placing contracts for the remainder of the present enacted program immediately.

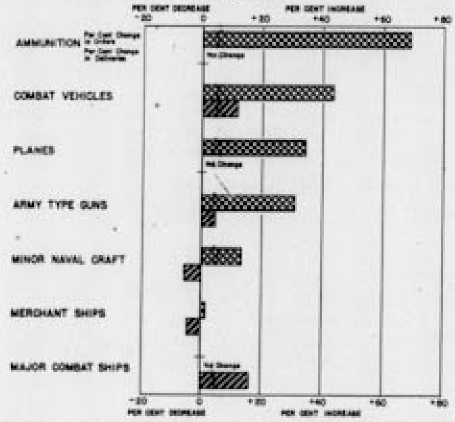
Appropriating funds and placing contracts for the Victory Program as quickly as is consistent with careful planning.

Placing new contracts so as to provide for deliveries at the earliest possible date.

Placing new contracts so as to make full use of additional existing facilities not previously drawn into the munitions program.

Charts 1 and 2 show new orders and changes in delivery schedules

CHART 1 - RECENT CHANGES IN ORDERS AND DELIVERY SCHEDULES TO JULY 1, 1942

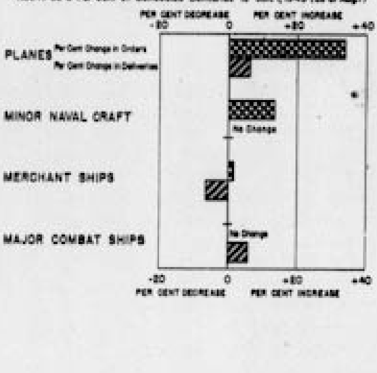


for the major categories of munitions from approximately August 1 to November 1, 1941. In terms of weighted indexes, the number of planes, guns, ammunition, and combat vehicles ordered increased by percentages ranging from 31 to 69 during this period. Deliveries scheduled prior to July 1, 1942 show no improvement for planes and amunition, and an increase of only five percent for army-type guns. There is an increase of 12 percent in scheduled deliveries for combat vehicles. Orders for minor naval craft increased 17 percent while scheduled deliveries to July 1, 1942 declined five percent. A small increase in orders for merchant ships accompanied a decline in scheduled deliveries of four percent. In the case of these ships the principal explanation offered is lack of steel. It is significant that the largest increase in expected deliveries during this short-run period is to be found in the schedules for major combat ships which were stepped up 17 percent.

An examination of schedules through another six months to January 1, 1943, shows little improvement in the broadening of the flow. Schedules for planes, minor naval craft, major combat ships, and merchant ships show a maximum in upward revision in cumulative deliveries of six percent. Unfortunately, the August 1 scheduled deliveries of ordnance did not extend beyond July

CHART 2 — RECENT CHANGES IN ORDERS AND DELIVERY SCHEDULES TO JAN. 1, 1943

New Orders from Aug. 1 to Nov. 1, 1941 as a Per Cent of Total Orders on Aug. 1 and Increases or Decreases in Scheduled Deliveries to Jan. 1, 1943 (as of Nov. 1) as a Per Cent of Scheduled Deliveries to Jan. 1, 1943 (as of Aug. 1)



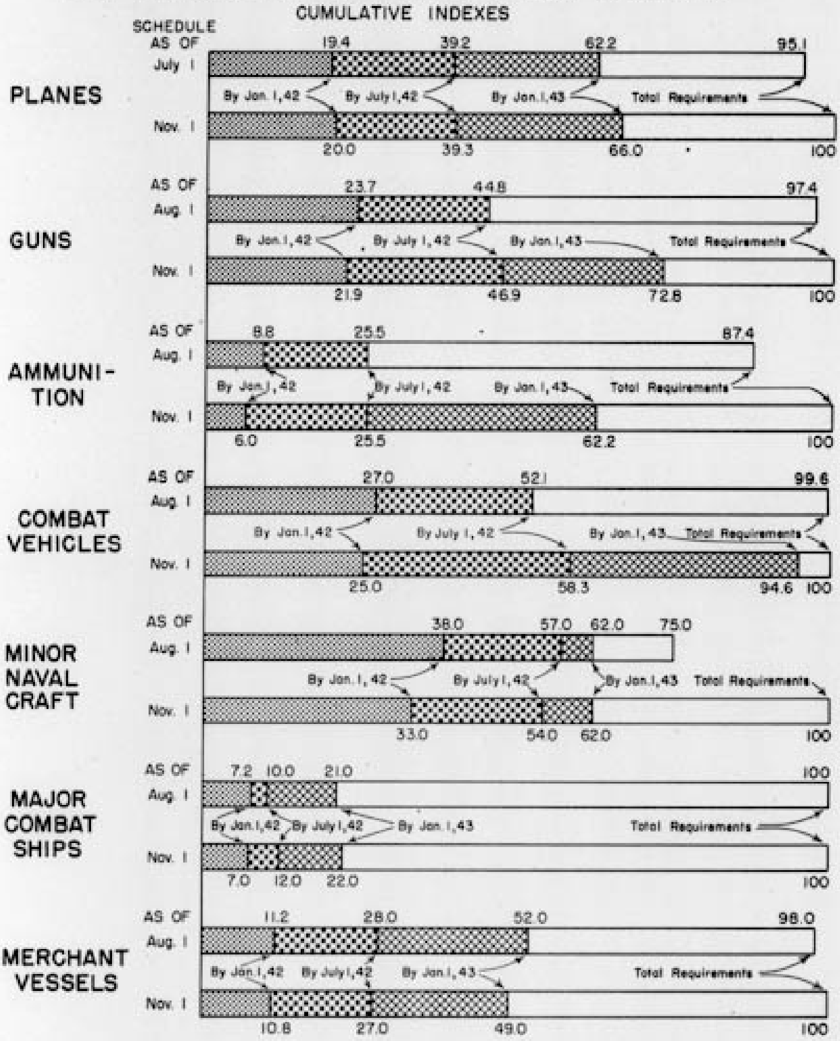
1, 1942; therefore, it is impossible to compare expected deliveries of these items beyond that date.

Chart 3 shows cumulated deliveries to January 1 and July 1, 1942 of the major categories of munitions under August and November schedules as percentages of production requirements on November 1. Under November 1 schedules we are planning to produce less than half of requirements by July 1, 1942 for all items except tanks and minor naval craft. The chart exaggerates progress in scheduling requirements if the Victory Program is taken into account.

NOTE ON DATA: Schedules, orders, and requirements are computed in terms of weighted indexes as carried in defense progress series for planes, guns, ammunition, and combat vehicles; tons of standary displacement for major combat ships; deadweight tons for merchant ships; and total number of vessels of all types for minor naval craft. For airplanes OPM schedules 8-F (July 1941) and 8-G (November 1941) are compared; for merchant vessels September 1 and November 1 schedules are compared.

CHART 3 - REVISIONS IN DELIVERY SCHEDULES AND PRODUCTION REQUIREMENTS FOR MUNITIONS

CUMULATIVE INDEXES

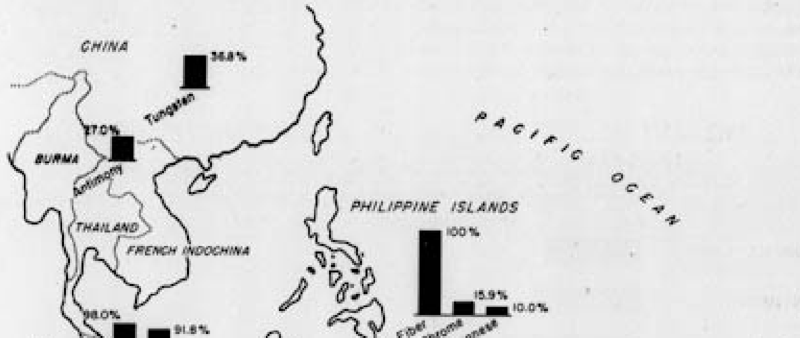


EFFECT OF WAR IN THE PACIFIC ON SUPPLIES OF DEFENSE MATERIALS

The Japanese attack endangers United States supplies of a number of strategic and critical materials which are produced in the Pacific War Zone. Present stockpiles of most of these materials are inadequate to meet rising war consumption. For a dozen or more materials originating in the Pacific war area nondefense consumption should be reduced immediately to absolutely essential uses and all new supplies not needed for the war effort should be added to stockpiles.

The accompanying map shows that the United States has depended upon sources in the Far Eastern Zone of

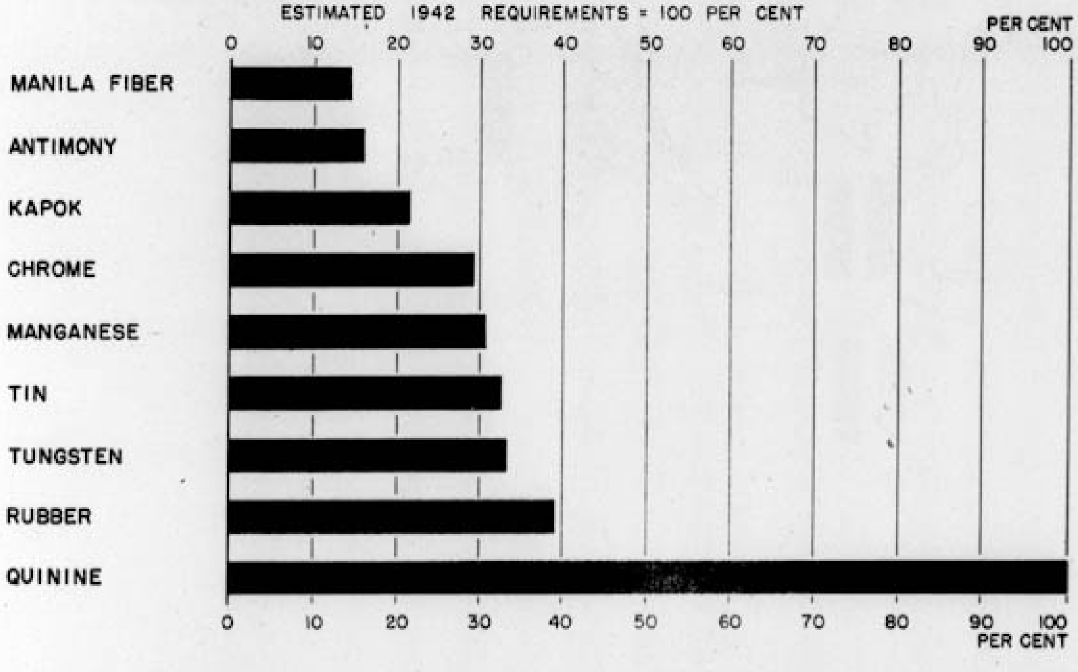
PERCENTAGE OF U.S. DEFENSE MATERIALS COMING FROM THE PACIFIC WAR ZONE



hostilities for significant proportions of nine strategic and critical ma+erials. Practically the whole supply of kapok, manila, fiber, quinine, rubber, and tin have come from areas, the supply routes to which are directly threatened. Smaller but still substantial proportions of the stockpile materials —antimony, chrome, manganese, and tungsten—have been imported from this general danger area. Imports of silk, another stockpile material, were practically cut off early after the freezing of Japanese funds by the United States at the end of August 1941. In addition other strategic and critical materials, such as hog bristles, palm oil, and teak, which have been recommended for stockpiling, are produced in and adjacent to the Pacific war area. United States supplies of tung oil, natural resins and coconut oil, although not stockpile materials, are largely produced in the danger zone.

The accompanying chart shows the status of nine materials, as indicated by Government stockpiles on December 1, 1941, in relation to estimated total requirements for 1942. The estimates of total requirements were made previous to the outbreak of hostilities in the Far East. As a result of the declaration of war against the Axis Powers the military requirements will have to be enlarged. It is imperative that steps be taken to insure that existing industrial stocks of these commodities, which are reported to

PRESENT U.S. STOCKPILES OF DEFENSE MATERIALS WITH IMPORTANT SOURCES IN THE PACIFIC WAR ZONE



be substantial--particularly for chrome, manganese, rubber, tin, and manila fiber--are utilized to meet direct defense requirements in the most effective manner.

This will involve drastic curtailment of civilian consumption below 1942 estimates. These estimates were based on estimated national income for 1942 and can be lowered without serious difficulty. As a rough indication of what might be done through curtailment of civilian consumption of these scarce materials, 1940 consumption may be compared with 1932 consumption since in both years the amount of military consumption was very small relative to the total. Consumption in 1932 represents the low point in consumption during the depression. The ratio of the difference between consumption in 1940 and 1932 and total estimated 1942 requirements, both military and civilian, supplies a measure of the degree to which curtailment of civilian consumption to 1932 levels would aid in meeting defense needs. This ratio is given for eight scarce materials in the accompanying table.

Since these estimates of 1942 requirements do not take into account the Victory Program, the ratios exaggerate the potential value of this degree of civilian curtailment. On the other hand, for many scarce materials it is possible to reduce civilian consumption far below 1932 levels.

RATIO BETWEEN CURTAILMENT OF CIVILIAN CONSUMPTION OF SCARCE MATERIALS TO 1932 LEVELS AND ESTIMATED TOTAL REQUIREMENTS IN 1942

	(Percent)		(Percent)
Antimony	37.4	Manganese	73.2
Chrome	53.9	Rubber	33.5
Kapok [a]	0	Tin	41.6
Manila Fiber	35.0	Tungsten	48.0

[a] 1932 consumption of kapok equalled that of 1940 and was only slightly less than estimated requirements for 1942.

DEFENSE PROGRESS SERIES

Airplanes

The production of military airplanes during November dropped to 63, as measured by the weighted index. [a] This was a five point decline from the previous high of 68 established in October, and was 85 percent of estimates established under OPM Schedule 8-G.

As can be seen in the chart on page XI, the index of total cumulated production was 51 at the end of November. Forty-nine percent of production to date in terms of the weighted index has gone to the United States armed forces, 48 percent has gone to the anti-Axis powers under their own purchasing programs, and the remaining three percent under Defense Aid funds. At the end of October, when OPM Schedule 8-G was established, financed production requirements stood at 311, of which 85 percent already had been ordered.

Combat Vehicles

The weighted index of monthly production for combat vehicles for November was 88, according to preliminary figures. This represented a seven point decrease from the all-time high of 95 recorded in October, but the drop was not due to any serious production problems. The high October index resulted from the final completion of a number of light tanks which had been substantially assembled previously, but lacked minor components. Lack of a similar carry-over in November created a drop from October but the monthly production of light tanks was still ahead of schedule. The production of medium tanks continued its upward trend, while scout car output advanced beyond estimates.

As of November 30, the weighted index of total production stood at 43; the financed production requirements as of this date are as yet unavailable, but at the end of October they amounted to 208. In view of the greatly expanded tank program, a sizeable increase in the index of requirements can be expected.

Pending Legislation

The Third Supplemental National Defense Appropriation Bill, 1942, was passed by the House of Representatives on December 5 and is now before the Senate.

Labor Turnover in October

Accession rates in the basic metal working industries showed a further decline in October, continuing the downward trend which has characterized hirings in these industries since peak operations were achieved in midsummer. High accession rates, however, continued to prevail in October in two of our first-line defense industries--shipbuilding (14.60) and aircraft (10.62).

In the blast furnaces, steel works, and rolling mills industry, accessions have fallen steadily from a rate of 3.97 per 100 wage earners in June 1941 to 1.97 in October 1941. This industry has operated at capacity levels for many months, but recently has experienced difficulty in securing adequate supplies of steel scrap, and some finishing mills have reported insufficient supplies of rough steel. The brass, bronze, and copper products industry has reported a steady decline in the rate of accessions since April. The current rate of 4.16 compares with a rate of 7.26 in April, and 8.78 in October 1940. This industry has reported serious shortages of copper, zinc, nickel, and steel. Likewise, the machine-tool, electrical machinery, and foundries and machine shops industries have also reported steady declines in the rate of accessions since the summer months.

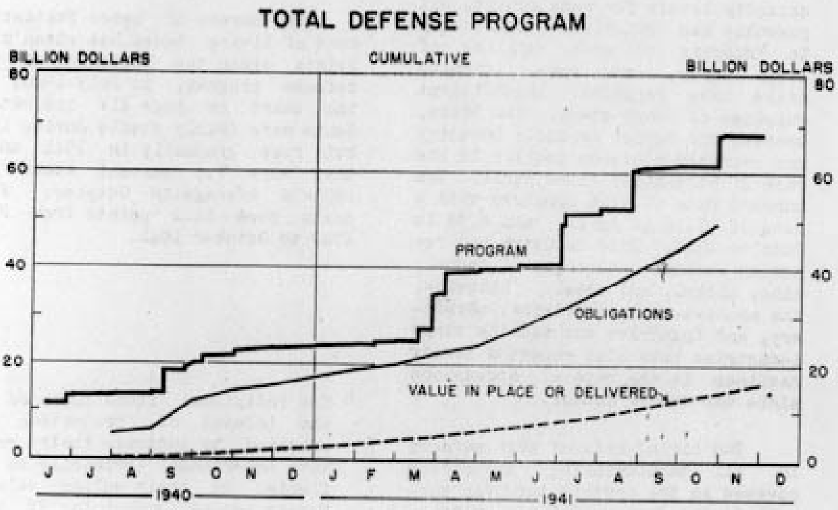
The hiring rate of wage earners in all manufacturing industries covered in the monthly turnover survey of the Bureau of Labor Statistics fell to the lowest level since December 1940 in October. Substantial declines occurred in hiring rates in all the defense industries mentioned above, except shipbuilding, and also in automobiles, engines, and certain building materials industries.

The only industry to report a significant increase in lay-offs from September to October was brass, bronze, and copper products. This was caused by raw material shortages. Virtually all manufacturing industries reported higher quit-rates than a year ago.

<u>Cost of Living Index</u>

The Bureau of Labor Statistics cost of living index has risen nine points since the beginning of the defense program, in July 1940, as the chart on page XIV indicates. Rents were fairly stable during 1940 but rose gradually in 1941 until they were 7.5 percent above the 1935-39 average in October. Food costs rose 14.2 points from July 1940 to October 1941.

[a] The individual items included in the indexes of production are weighted to indicate their relative importance (primarily as reflected by their dollar value). The scheduled output for FY 1942, established on August 1, 1941, is used as the base; the latest available delivery schedules are measured against this base. The production rate index measures output during the month, average scheduled monthly production during FY 1942 being the base or 100 percent. The total production index measures cumulated production since the start of the program, and scheduled total output during FY 1942 equals 100.


TOTAL DEFENSE PROGRAM
CUMULATIVE
BILLION DOLLARS
BILLION DOLLARS
80
60
40
20
0
PROGRAM
OBLIGATIONS
VALUE IN PLACE OR DELIVERED
J J A S O N D J F M A M J J A S O N D
1940
1941

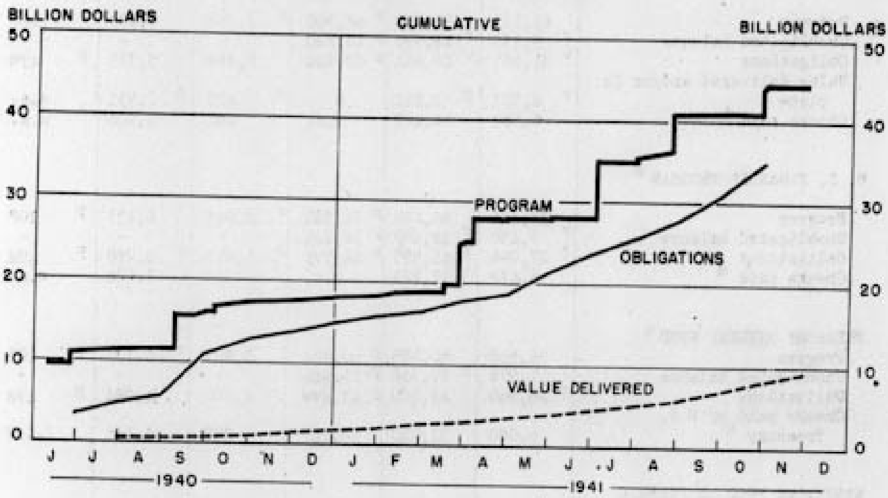
DEFENSE PROGRESS SERIES

TOTAL UNITED STATES DEFENSE PROGRAM

FINANCIAL PROGRAM SUMMARY	Cumulative 6/11/40 through			Monthly		
	End 1st full year 6/30/41	End of October, 1941	End of November, 1941	October, 1940	October, 1941	November, 1941
			(Million dollars)			
● TOTAL DEFENSE PROGRAM IN U.S. [a]						
Program	41,131	68,252	P 68,360	r 2,553	6,135	P 108
Unobligated balance	r 9,450	r 18,590	P 18,220	-	-	-
Obligations	r 31,681	r 49,662	P 50,140	2,359	5,329	P 478
Value delivered and/or in place	r 8,701	P 14,814	n.a.	r 475	P 1,731	n.a.
Checks paid [d]	8,503	14,129	n.a.	491	1,706	n.a.
U. S. FINANCED PROGRAM [b]						
Program	37,446	64,483	P 64,591	r 2,015	6,135	P 108
Unobligated balance	r 9,450	r 18,590	P 18,220	-	-	-
Obligations	r 27,996	r 45,893	P 46,371	r 1,811	r 5,280	P 478
Checks paid [d]	6,430	11,721	n.a.	312	1,626	n.a.
TREASURY GENERAL FUND [c]						
Program	34,638	60,156	P 60,264	1,803	r 6,135	P 108
Unobligated balance	r 7,978	r 17,356	P 16,986	-	-	-
Obligations	r 26,660	42,800	P 43,278	1,760	4,984	P 478
Checks paid by U.S. Treasury [d]	6,080	11,010	12,447	297	1,526	1,437
MUNITIONS PROD. & DEFENSE CONSTRUCTION						
Program	36,671	57,120	P 57,232	r 1,762	3,676	P 112
Unobligated balance	r 7,188	r 12,370	P 12,103	-	-	-
Obligations	r 29,483	44,750	P 45,129	2,354	4,870	P 379
Value delivered and/or in place [f]	r 6,945	P 11,670	P 13,150	r 360	P 1,300	P 1,480
Value not delivered nor in place	r 22,538	r 33,080	P 31,967	-	-	-
NON-MUNITIONS ITEMS, TOTAL						
Program	4,460	11,132	P 11,128	791	2,459	P -4
Unobligated balance	r 2,262	6,220	P 6,117	-	-	-
Obligations	r 2,198	4,912	P 5,011	5	459	P 99
Checks issued by agencies [e]	1,756	P 3,144	n.a.	115	P 431	n.a.

Table continued on following page. For footnotes see page opposite page X.
● Graph appears on opposite page.

MUNITIONS PRODUCTION



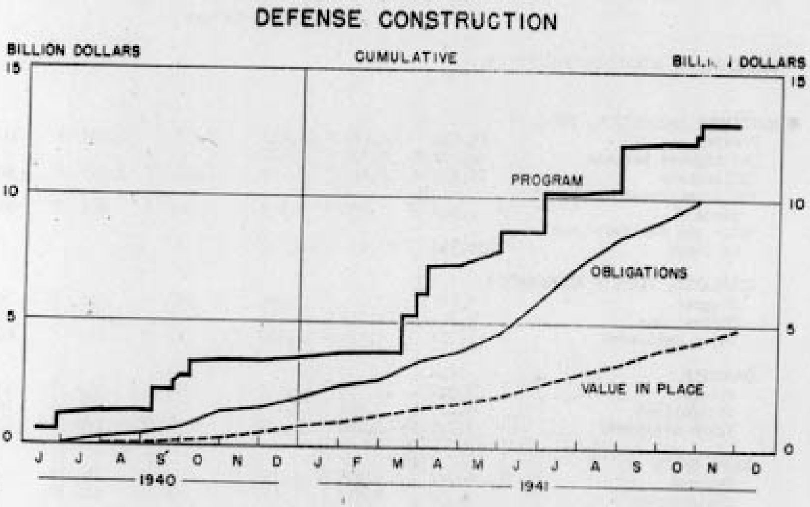
DEFENSE PROGRESS SERIES

TOTAL UNITED STATES DEFENSE PROGRAM

FINANCIAL PROGRAM	Cumulative 6/11/40 through			Monthly		
	End 1st full year 6/30/41	End of October, 1941	End of November, 1941	October, 1940	October, 1941	November, 1941
			(Million dollars)			
BREAKDOWN OF MUNITIONS PRODUCTION						
● MUNITIONS PRODUCTION, TOTAL						
Program	28,024	44,181	p 44,293	1,192	3,298	p 112
Unobligated balance	4,491	r 9,337	p 9,120	-	-	-
Obligations	23,533	p 34,844	p 35,173	1,801	p 3,749	p 329
Value delivered and/or in place *	r 4,440	p 7,290	p 8,275	235	p 825	p 985
Value not delivered nor in place	r 19,093	p 27,554	p 26,898	-	-	-
AIRPLANES, PARTS & ACCESSORIES						
Program	8,481	13,174	p 13,166	397	655	p -8
Obligations	7,281	11,045	p 11,106	809	1,383	p 61
Value delivered	1,010	p 1,735	p 1,980	r 50	p 215	p 245
ORDNANCE						
Program	7,780	13,330	p 13,451	199	1,553	p 121
Obligations	5,418	9,921	p 10,107	359	2,128	p 186
Value delivered	700	p 1,280	p 1,510	30	p 180	p 230
NAVAL SHIPS						
Program	6,654	8,235	p 8,232	21	110	p -3
Obligations	r 6,452	7,505	p 7,560	191	142	p 55
Value delivered and/or in place	r 960	p 1,590	p 1,780	r 55	p 160	p 190
MERCHANT SHIPS						
Program	1,766	3,805	p 3,805	10	857	0
Obligations	r 1,484	2,251	p 2,251	16	132	n.a.
Value delivered and/or in place	190	p 320	385	10	p 50	p 65
OTHER MUNITIONS AND SUPPLIES						
Program	3,343	5,637	p 5,639	565	123	p 2
Obligations	2,898	r 4,122	r 4,149	426	-36	p 27
Value delivered	1,580	p 2,365	p 2,620	r 90	p 220	p 255

Table continued on following page. For footnotes see page opposite page X.

● Graph appears on opposite page.


DEFENSE CONSTRUCTION
BILLION DOLLARS
CUMULATIVE
BILLION DOLLARS
15
10
5
0
PROGRAM
OBLIGATIONS
VALUE IN PLACE
J J A S O N D J F M A M J J A S O N D
1940
1941

DEFENSE PROGRESS SERIES

TOTAL UNITED STATES DEFENSE PROGRAM

FINANCIAL PROGRAM	Cumulative 6/11/40 through: End of full year 6/30/41	Cumulative: End of October, 1941	Cumulative: End of November, 1941	Monthly: October, 1940	Monthly: October, 1941	Monthly: November, 1941
	(Million dollars)					
BREAKDOWN OF DEFENSE CONSTRUCTION						
● DEFENSE CONSTRUCTION, TOTAL						
Program	8,647	12,939	P 12,939	570	378	P 0
Unobligated balance	r 2,697	r 3,033	P 2,995	-	-	-
Obligations	r 5,950	r 9,906	P 9,956	553	1,121	P 50
Value in place	2,505	P 4,380	P 4,875	r 125	P 475	P 495
Value not in place	r 3,445	P 5,526	P 5,069	-	-	-
INDUSTRIAL FACILITIES						
Program	5,305	7,826	P 7,826	322	381	P 0
Obligations	r 3,050	r 5,547	P 5,519	360	688	P -28
Value in place	960	P 1,960	P 2,235	30	P 250	P 275
POSTS, DEPOTS, STATIONS						
Program	2,850	4,471	P 4,471	98	-3	P 0
Obligations	r 2,625	3,950	P 4,016	158	392	P 66
Value in place	1,430	P 2,150	P 2,330	r 95	P 190	P 180
HOUSING, NON-MILITARY						
Program	492	642	642	150	0	0
Obligations	275	409	P 421	35	41	P 12
Value in place	115	P 270	P 310	0	P 35	P 40
BREAKDOWN OF CLASSES OF NON-MUNITIONS						
NON-MUNITIONS, TOTAL						
Program	4,460	11,132	P 11,128	791	2,459	P -4
Unobligated balance	r 2,262	6,220	P 6,117	-	-	-
Obligations	r 2,198	4,912	P 5,011	5	459	P 99
Checks issued by agencies	1,756	P 3,144	n.a.	115	P 431	n.a.
STOCKPILE						
Program	983	1,631	P 1,631	102	0	n.a.
Obligations	470	910	n.a.	23	55	n.a.
Checks issued by agencies	192	340	n.a.	11	45	n.a.
AGRICULTURAL & MISC. EXPORTS (DEFENSE AID)						
Program	1,250	3,043	P 3,043	0	r 0	n.a.
Obligations	109	790	n.a.	0	148	n.a.
Checks issued by agencies	5	248	n.a.	0	119	n.a.

Table continued on following page. For footnotes see page opposite page X.

● Graph appears on opposite page.

FOOTNOTES

DEFENSE PROGRESS SERIES

See Opposite Page

Data on obligations and unobligated balances are tentative pending determination of reserves not available for immediate obligation.

n.a. Not Available   r Revised   p Preliminary

[a] Total defense program includes all funds and authorizations made available for defense purposes by the United States Government plus foreign orders placed in this country since November 1939. The major portion of the existing program has been approved since June 11, 1940, but some authorizations (particularly portions of the naval expansion program, the merchant shipbuilding program, and the stockpile program) were made available even earlier. All funds are shown during the fiscal year in which they are available for obligation.

[b] United States financed program includes the defense activities of all United States Government agencies (including Defense Aid) plus the defense activities of government owned corporations, but does not include foreign orders.

[c] United States Treasury General Fund includes the defense activities of all United States Government agencies (including Defense Aid). It does not include the activities of government owned corporations or foreign orders in the United States.

[d] Checks paid include (1) all checks paid out of the Treasury General Fund (cf. footnote [c]); (2) checks issued by the Reconstruction Finance Corporation and subsidiary Government corporations; (3) checks issued by foreign purchasing commissions.

[e] Value delivered and/or in place includes (1) value delivered and/or in place for ships and value of production for other munitions, (2) value in place for defense construction, and (3) checks issued by finance officers for nonmunitions items.

[f] Program and obligations for pay for civilians and for the Navy include only that specifically mentioned in appropriation bills, while the cash disbursement figures include, in addition, executive defense pay which cannot be separately distinguished in the appropriation bills.

[g] Report on checks paid by the Treasury for the account of the Maritime Commission makes allowance for receipts credited to the Construction Loan Fund.

DEFENSE PROGRESS SERIES
TOTAL UNITED STATES DEFENSE PROGRAM

INANCIAL PROGRAM	Cumulative 6/11/40 through			Monthly		
	End 1st full year 6/30/41	End of October, 1941	End of November, 1941	October, 1940	October, 1941	November, 1941
NON-MUNITIONS (CONT'D)			(Million dollars)			
PAY, SUBSISTENCE & TRAVEL						
Army Military						
Program	944	2,563	2,563	505	r 1,949	0
Obligations	934	1,684	n.a.	52	146	n.a.
Checks issued	r 696	1,210	n.a.	r 37	140	n.a.
Navy Military						
Program	376	804	804	2	0	0
Obligations	334	490	535	29	27	45
Checks issued	r 388	548	n.a.	r 39	40	n.a.
Civilian Payroll						
Program	32	170	170	28	16	0
Obligations	r 32	117	n.a.	3	4	n.a.
Checks issued	356	574	n.a.	23	60	n.a.
MISCELLANEOUS NON-MUNITIONS						
Program	875	2,921	p 2,917	154	494	p -4
Obligations	r 319	921	p 975	-102	77	p 54
Checks issued by agencies	119	224	n.a.	5	27	n.a.
BREAKDOWN BY AGENCIES						
AGENCIES INCLUDED IN TREASURY GENERAL FUND						
U. S. ARMY						
Program	13,135	24,606	24,606	1,377	0	0
Obligations	11,404	20,598	n.a.	1,039	3,746	n.a.
Checks paid by U. S. Treasury	3,636	6,209	6,913	134	785	704
U. S. NAVY						
Program	12,308	17,627	17,735	85	113	108
Obligations	r 11,182	15,471	15,937	667	708	466
Checks paid by U. S. Treasury	2,217	3,791	4,233	150	442	442
DEFENSE AID						
Program	7,000	12,985	12,985	-	5,985	0
Allocations	5,177	6,784	n.a.	-	315	n.a.
Obligations	2,458	4,036	n.a.	-	340	n.a.
Checks paid by U. S. Treasury	21	456	653	-	192	197
U. S. MARITIME COMMISSION						
Program	969	2,668	2,268	0	-2	0
Obligations	886	1,635	n.a.	6	132	n.a.
Checks paid by U. S. Treasury (net)	44	94	120	10	21	26

Table continued on following page. For footnotes see opposite page.

FOOTNOTES

DEFENSE PROGRESS SERIES

See Opposite Page

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a Total defense program includes all funds and authorizations made available for defense purposes by the United States Government plus foreign orders placed in this country since November 1939. The major portion of the existing program has been approved since June 11, 1940, but some authorizations (particularly portions of the naval expansion program, the merchant shipbuilding program, and the stockpile program) were made available even earlier. All funds are shown during the fiscal year in which they are available for obligation.

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g Report on checks paid by the Treasury for the account of the Maritime Commission makes allowance for receipts credited to the Construction Loan Fund.

DEFENSE PROGRESS SERIES
TOTAL UNITED STATES DEFENSE PROGRAM

FINANCIAL PROGRAM	Cumulative 6/11/40 through: End 1st full year 6/30/41	Cumulative 6/11/40 through: End of October, 1941	Cumulative 6/11/40 through: End of November, 1941	Monthly: October, 1940	Monthly: October, 1941	Monthly: November, 1941
			(Million dollars)			
AGENCIES INCLUDED IN TREASURY GENERAL FUND (CONT'D)						
OTHER U. S. AGENCIES						
Program	1,226	2,270	2,270	341	39	0
Obligations	r 730	1,060	n.a.	48	58	n.a.
Checks paid by U. S. Treasury	162	460	528	3	86	68
ADDITIONAL AGENCIES INCLUDED IN U. S. FINANCED PROGRAM						
R. F. C. AND SUBSIDIARIES						
Program	2,808	4,327	n.a.	212	0	n.a.
Obligations	1,336	3,093	n.a.	51	296	n.a.
Checks issued by R. F. C.	350	711	n.a.	15	100	n.a.
ADDITIONAL INCLUDED IN TOTAL DEFENSE PROGRAM						
FOREIGN ORDERS						
Program (orders)	3,685	3,769	3,769	538	49	0
Obligations	3,685	3,769	3,769	538	49	0
Checks issued by Purchasing missions	2,073	2,408	n.a.	179	80	n.a.

OTHER DEFENSE INDICATORS

VALUE OF FACIL. ON APPLIC. FOR CERT. OF ~~NECESSITY~~			(Million dollars)			
Total	1,424	n.a.	n.a.	-	n.a.	n.a.
Approved, private funds	829	n.a.	n.a.	-	n.a.	n.a.
Approved, public funds	201	n.a.	n.a.	-	n.a.	n.a.
Disapproved	7	n.a.	n.a.	-	n.a.	n.a.
Pending	387	n.a.	n.a.	-	n.a.	n.a.
DEFENSE HOUSING			(Number of dwelling units)			
Fund allocations	110,298	141,522	145,655	4,250	4,692	4,133
Constr. contracts awarded	78,820	115,141	120,976	r 9,297	11,970	5,835
Construction completed	21,768	54,884	65,186	0	9,300	10,302

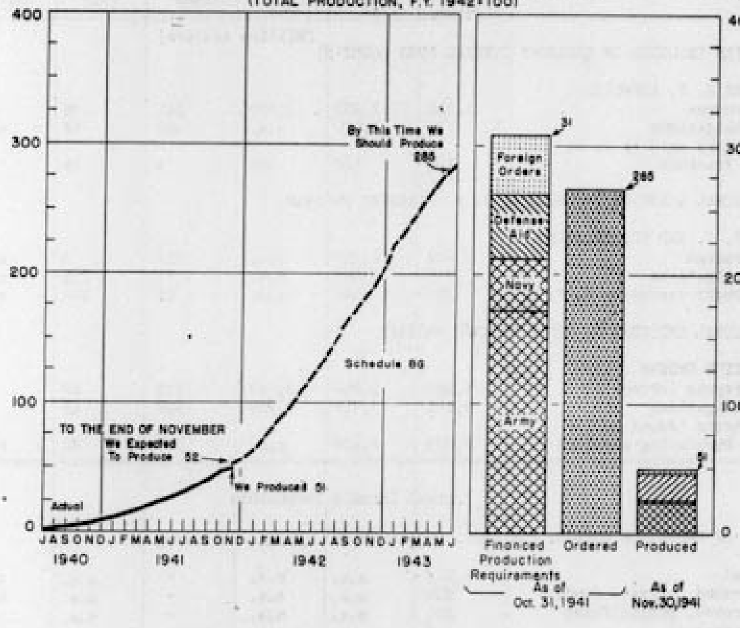
ECONOMIC ACTIVITY RELATED TO DEFENSE

	1940 July	1941 January	1941 September	1941 October		
		(Thousand workers)				
DEFENSE EMPLOYMENT						
Private, 18 major indus.	1,660	2,038	2,671	2,731		
Private, contrcts., pub. constr.	13	448	435	n.a.		
Public	117	171	234	n.a.		
Total direct defense	1,790	2,657	3,329	n.a.		

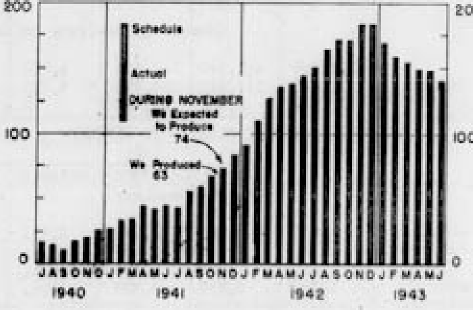
r Revised data
For footnotes see opposite page.
P Preliminary
n.a. Data not Available

MILITARY AIRPLANES

INDEX OF CUMULATIVE TOTAL PRODUCTION
(TOTAL PRODUCTION, F.Y. 1942=100)



INDEX OF PRODUCTION DURING MONTH
(AVGE. MONTHLY PRODUCTION, F.Y. 1942 = 100)



DEFENSE PROGRESS SERIES

DEFENSE EQUIPMENT INDEXES

	Airplanes		Combat Vehicles		Army-type Guns		Ammunition		Major Combat Ships		Merchant Ships	
	SCHED. AS OF NOV. 1	ACTUAL	SCHED. AS OF NOV. 1	ACTUAL	SCHED. AS OF NOV. 1	ACTUAL	SCHED. AS OF NOV. 1	ACTUAL	SCHED. AS OF OCT. 1	ACTUAL	SCHED. AS OF AUG. 1	ACTUAL
	Average monthly production FY 1942=100											
MONTHLY PRODUCTION RATE DURING												
1940												
July		16		a 7		a 14		b 11		27		9
December		26								39		18
1941												
March		34		11		30				44		26
June		45		31		41		13		55		27
September		61		73		67		20		87		45
October		68		95		94		22	91	109		63
November	74	63	86	P 88	88		44		98		80	
December	83		104		90		61		83		93	
1942												
January	93		108		121		101		109		110	
February	111		126		127		133		98		126	
March	127		133		138		149		118		144	
June	167		168		148		244		128		161	
Av. monthly prod. FY 1942	100		100		100		100		100		100	
Peak month	183	(12/42)	183	(8/42)	158	(7/42	306	(1[illegible]/42)	149	(11/42)	161	(7/42)
	Total production FY 1942=100											
TOTAL CUMULATIVE PRODUCTION TO												
1940												
July 31		1				-				2		1
December 31		8		4		7				16		6
1941												
March 30		16		6		13		c 9		27		12
June 30		27		12		22		11		42		17
September 30		41		28		38		15		61		28
October 31		46		36		44		17	61	70		33
November 30	52	51	44	P 43	52		21		69		30	
December 31	58		54		60		28		76		47	
1942												
January 31	67		63		70		34		83		58	
February 28	78		73		81		45		93		67	
March 31	87		86		92		58		103		79	
June 30	122		127		128		112		133		139	
Total production FY 1942	100		100		100		100		100		100	
Financed production requirements November 1	311		208		265		393		452		316	
Ordered to November 1	265		202		251		258		452		316	
To be Ordered November 1	46		6		14		135		0		0	

[a] Average July 1, 1940 - Dec. 31, 1940.

[b] Average July 1, 1940 - April 30, 1941.

[c] April 30, 1941.