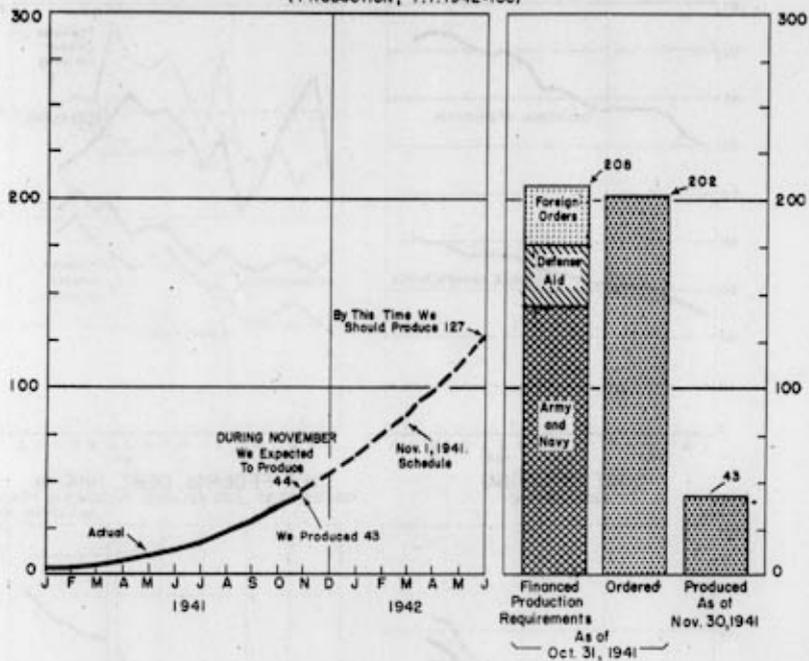
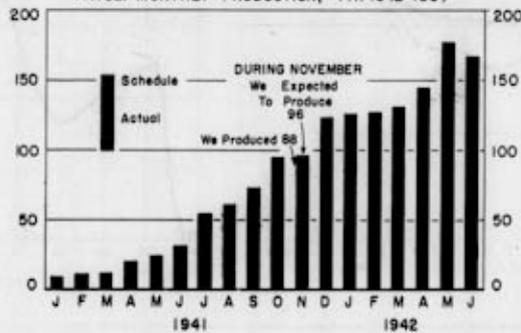


COMBAT VEHICLES

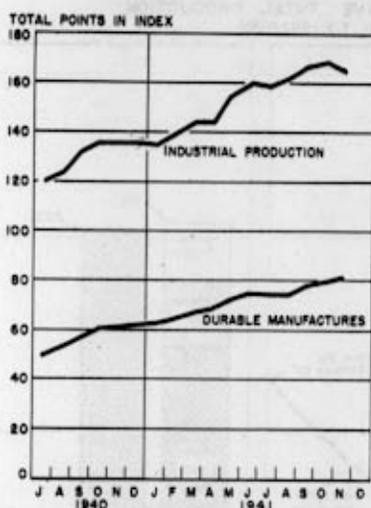
INDEX OF CUMULATIVE TOTAL PRODUCTION  
( PRODUCTION, F.Y. 1942=100)



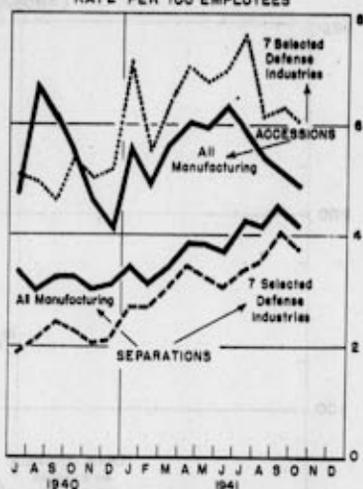
INDEX OF PRODUCTION DURING MONTH  
( AVG. MONTHLY PRODUCTION, F.Y. 1942=100)



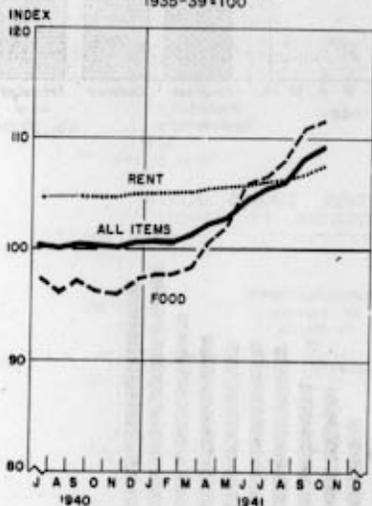
INDUSTRIAL PRODUCTION



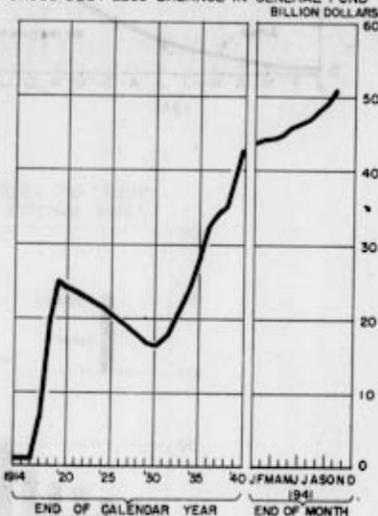
LABOR TURNOVER RATE PER 100 EMPLOYEES



COST OF LIVING 1935-39=100



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



## 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				Week Ending Dec. 6
	July	January	September	October	November	
● <b>FED. RES. BD. PROD. INDEXES</b>		(Unadjusted Indexes 1935-39 = 100)				
Total industrial production	120	135	167 P	168	166	
Durable manufactures	131	166	206 P	211	213	
Non-durable manufactures	111	118	145 P	143	139	
Minerals	121	113	137 P	139	137	
<b>BUR. FOR. &amp; DOM. COM. MFRS.</b>		(Indexes)				
<b>ORDERS, SHIPMENTS, INVENTORIES</b>						
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		
Non-durable (12/31/38=100)	106.4	111.2	124.0 P	129.0		
<b>BLS. PRICE INDEXES</b>		(Indexes)				
Strategic Materials (8/39=100)	123.6	126.1	142.8	143.0	P 143.1	143.0
Critical Materials (8/39=100)	107.5	111.7	117.3	116.7	P 116.6	116.8
Basic Commodities (8/39=100)	108.5	120.5	155.6	153.1	154.4	156.4
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	n.a.	92.2
● <b>BLS COST OF LIVING INDEX</b>	100.3	100.8	(1935-39 = 100) 108.1	109.4		
<b>TRANSPORTATION &amp; ELECTRIC POWER</b>		(Averages)				
<b>Freight cars</b>						
Loadings (thous. per week)	706	684	885	914	864	833
Unloads for export (dly.)	1,502	1,352	1,736	1,885	P 1,794	1,705
Surplus, total (thous. dly.)	133	110	41	44	61	
Boxcars	57	43	15	19	28	
Coal cars	47	42	10	11	18	
Power prod. (mil. kWh. wkly.)	2,731	3,080	3,348	3,439	P 3,302	3,369
<b>NATIONAL INCOME</b>		(Billion dollars, annual rate)				
Total income payments	75.2	81.7	93.7 P	94.9		
● <b>FEDERAL DEBT</b>		(Billion dollars, end of month)				
Net public debt	41.5	43.9	49.1	50.9	52.7	
<b>EMPLOYMENT</b>		(Thousand workers)				
Total civil nonagricultural	35,904	37,142	40,715	40,749		
Total WPA employment	1,655	1,890	1,037	1,040	P 1,056	1,063
Defense		Confidential data. See Page VII				
Deep-sea merchant vessels	51	49	50	50		
<b>UNEMPLOYMENT (WPA ESTIMATE)</b>		(Million workers)				
Number of unemployed	9.3	7.6	4.5	3.9	3.9	

\* Revised data.

P Preliminary data.

n.a. Data not available.

● Graph appears on opposite page.

## ECONOMIC ACTIVITY RELATED TO DEFENSE

	1940		1941	
	July	January	September	October
LABOR TURN OVER <sup>h</sup>	(Rate per 100 employees)			
● ALL MANUFACTURING				
Total accession	4.77	5.54	5.16	4.87
Total separation	3.35	3.41	4.53	4.13
Quit	0.85	1.31	2.81	2.11
Layoff	2.25	1.61	1.16	1.41
Discharge	0.14	0.18	0.31	0.28
Military separation	n.a.	0.19	0.13	0.21
● 7 MAJOR DEFENSE INDUSTRIES				
Total accession	5.09	7.10	6.31	6.07
Total separation	1.85	2.70	4.05	3.76
Quit	0.84	1.24	2.61	2.01
Layoff	0.73	0.79	0.81	0.99
Discharge	0.15	0.22	0.32	0.35
Military separation	n.a.	0.23	0.14	0.23
AIRCRAFT				
Total accession	12.40	12.17	11.30	10.62
Total separation	3.57	3.65	3.94	4.08
Quit	2.96	2.44	3.20	2.73
Layoff	0.15	0.33	0.12	0.53
SHIPBUILDING				
Total accession	13.00	18.21	13.85	14.60
Total separation	5.40	7.91	6.15	6.04
Quit	1.14	1.93	3.00	2.70
Layoff	3.71	4.78	2.15	2.38
MACHINE TOOLS				
Total accession	3.05	6.68	5.21	4.35
Total separation	2.09	2.44	3.53	2.70
Quit	1.28	1.77	2.76	1.93
Layoff	0.21	0.09	0.14	0.18

n.a. Data not available.

● Graph appears on Page XIV.

<sup>h</sup> Bureau of Labor Statistics

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# DEFENSE PROGRESS

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DEFENSE  
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NUMBER 26

DECEMBER 19, 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

ECONOMIC ANALYSIS BRANCH  
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LESTER S. KELLOGG,  
ASSISTANT CHIEF & EDITOR

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**BRIEFS OF CONTENTS**Page

● THE QUICKEST WAY TO INCREASE WAR OUTPUT TO MEET THE REQUIREMENTS OF THE WAR PROGRAM is through more intensive utilization of existing munitions plants and equipment. There exists considerable slack in present plant utilization in the war industries. This can be taken up by increased employment on the second and third shifts and elimination of weekend blackouts.

1

● PRICE RISES IN GOVERNMENT SUBSISTENCE AND CLOTHING PURCHASES are indicated by the fragmentary data available and emphasize the need for an index of the Government's "cost of spending" as a guide to budgetary policy. However, price data for ships, planes, tanks, other important munitions items, and public construction are lacking and difficult to secure.

7

● DEFENSE PROGRESS SERIES. The total defense program in the United States has been raised to \$78 billion by the passage of the Third Supplemental National Defense Appropriations Act, 1942, 1943. Hours and earnings in defense industries continued to advance in October with machine tools reporting an average work week of 51.8 hours.

I

## PLANT UTILIZATION IN WAR INDUSTRIES

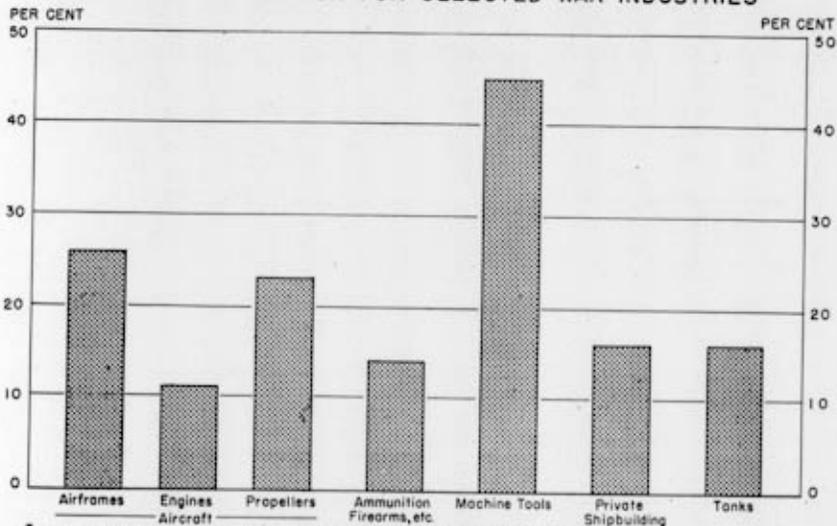
THE QUICKEST WAY TO INCREASE WAR OUTPUT TO MEET THE REQUIREMENTS OF THE WAR PROGRAM IS THROUGH MORE INTENSIVE UTILIZATION OF EXISTING MUNITIONS PLANTS AND EQUIPMENT. THERE EXISTS CONSIDERABLE SLACK IN PRESENT PLANT UTILIZATION IN THE WAR INDUSTRIES. THIS CAN BE TAKEN UP BY INCREASED EMPLOYMENT ON THE SECOND AND THIRD SHIFTS AND ELIMINATION OF WEEKEND BLACKOUTS.

On the economic front, the war calls for a tremendous lift in war production. Three possible ways to achieve this drastic speed-up in munitions output are available: (1) greater utilization of the war plants in operation; (2) large scale conversion of civilian facilities; and (3) provision of new facilities.

More intensive utilization of the existing war plants and equip-

ment will yield the most immediate results. The other two measures, while necessary and urgent, cannot be expected to yield results as quickly as the first, although they may ultimately yield greater results. However, it is important to obtain immediate results. Increased facility utilization as a means to this end will be discussed here. The long range program of conversion and new facilities will be discussed at a later date.

### MINIMUM POTENTIAL INCREASES IN THE CURRENT AVERAGE RATES OF PLANT UTILIZATION FOR SELECTED WAR INDUSTRIES\*



\*Percentage superiority of three best plants in June over current rate of plant utilization in each industry.

Existing evidence does not permit us to determine exactly the extent to which war production can be increased by the fuller utilization of munitions facilities. But there can be no question that in several important munitions industries increases in output ranging from 15 percent upwards can be achieved through increased utilization if the proper steps are taken.

Rough measures of the minimum potential increases in plant utilization for selected war industries are shown in the accompanying chart. They indicate that the minimum poten-

tial increases in the average rates of plant utilization vary from 11 percent in aero-engines to 45 percent in machine tools. These measures show the percentage increases in the current average rates of plant utilization that would be brought about if the latter were brought up to the level of the average of the three highest rates in each industry in June.

These rough measures are based on the data shown in Table 1. It shows that the current average rates of plant utilization vary from 60 hours per week in private shipbuild-

TABLE 1 - CURRENT RATES OF PLANT UTILIZATION FOR SELECTED WAR INDUSTRIES  
One Week in Each of Selected Months

Industry	Number of Plants	Average of Three Best in June (Hours)	Latest Average of Plants in Industry (Hours)	Most Recent Month
Aircraft				
Airframes	38	96	76	October
Engines	17	107	96	October
Propellers	16	116	95	October
Ammunition, Explosives, Firearms, and Ordnance	244	71 <sup>a</sup>	62	September
Machine Tools	107	112	77	September
Shipbuilding (Private)	113	69	60	September
Tanks	6	86 <sup>b</sup>	74	September

<sup>a</sup> Based on the three best in an identical sample of nine plants in March, June, and September. Data in June were available for 64 plants and if the three best of this larger group were taken, the average would be 122 hours instead of 71.

<sup>b</sup> Based on three best in September. No earlier data available.

ing to 96 hours in aero-engines. <sup>a</sup> The table likewise shows the average rate of utilization for the three plants with the highest rates of utilization in each industry in June. As can be seen from the table, the average of the three highest rates in each industry in June was substantially higher than the current average rate of plant utilization in the industry.

Comparisons between plants involve difficulties because of differences in size, in character of product, and in a variety of other conditions. Nonetheless, a careful examination of the available information on plant utilization leads to the conclusion that it should be possible in general to raise the average rate of utilization in an industry to a level at least as high

TABLE 2 - ANALYSIS OF SHIFT OPERATIONS IN SELECTED WAR INDUSTRIES  
One Week in September 1941

Industry	Comparison of Shift Operations		Comparison of Weekend Operations	
	Percentage Ratio Second Shift to First Shift <sup>a</sup>	Percentage Ratio Third Shift to First Shift <sup>a</sup>	Percentage Ratio Saturday to Regular Weekday <sup>b</sup>	Percentage Ratio Sunday to Regular Weekday <sup>b</sup>
Aircraft				
Airframes	57 <sup>c</sup>	14 <sup>c</sup>	<u>d</u>	<u>d</u>
Engines	61 <sup>c</sup>	39 <sup>c</sup>	<u>d</u>	<u>d</u>
Propellers	59 <sup>c</sup>	33 <sup>c</sup>	<u>d</u>	<u>d</u>
Ammunition, Explosives, Firearms, and Ordnance	28	1	48	7
Machine Tools	35	10	59	6
Machine Tool Accessories	30	7	63	4
Shipbuilding (Private)	24	6	71	6
Tanks	38	25	63	19

<sup>a</sup> Computed on the basis of total weekly hours on each shift.

<sup>b</sup> Computed on the basis of total daily hours on all shifts combined.

<sup>c</sup> Computed on the basis of workers employed on each shift.

<sup>d</sup> Not available.

as that represented by the three best plants in the industry last June.

If the average rate of plant utilization in each industry were brought up to the June level of the three best plants there would be a considerable increase in man-hours worked. If this were done and if this increase in man-hours were to bring about an approximately proportionate increase of output, then the increase in output would be as shown in the chart.

In order to achieve the objective of greater plant utilization, greater numbers of workers must be added to the second and third shifts and more work must be done on Saturdays and Sundays. This appears clearly from Table 2 showing the percentage of workers on second and third shifts to those on the first shift and that of Saturday and Sunday to regular week-day operations. Indeed, it has been proposed to run plants 160 hours each week, leaving eight hours for maintenance and repairs. On this basis, the increase of man-hours worked would range from 100 percent above present levels in aircraft to 167 percent in private shipbuilding.

The theoretical maximum of 168 hours per week is certainly beyond the range of possible attainment. The fact that existing practices fall so far short of the proposed goal of 160 hours per week makes it likely that the June records of the

three best plants of each industry can be exceeded by the average plant quickly and without recourse to extreme measures or substantial increases in production costs. To carry out the program of increased utilization may involve substantial added cost. We should be prepared to pay the cost if necessary.

That increased plant utilization offers possibilities of a very considerable increase in output is clear from the record of plant utilization over a period of months. There has been much discussion for a considerable time about the necessity of increasing the utilization of the plants producing war materials. As can be seen from Table 3, there has been but little improvement in the rate of plant utilization since March. The tendency has been upward but not very significantly. But during the same period of time, total direct war employment rose between 40 and 50 percent. More people have been employed in plants without bringing about a more intensive use of such plants. From this table and scattered earlier data we may conclude that while there has been a slight increase in plant utilization since July 1, 1940, very little has been done to modify the utilization practices characteristic in peace time.

To push the possibilities of increased plant utilization to the full will involve drastic changes in

accustomed patterns of relationship between the first and other shifts and realignments in managerial controls.

It will also involve changes in the method of letting contracts by the Government and in the speed with which contracts are let. An examination of replies to questionnaires by firms with Government contracts indicates that a substantial number of plants feel that the existing rate of plant utilization is sufficient to meet contract schedules, and that more orders would bring about increased plant utilization.

In reports covering some 45 plants engaged in manufacturing parts for tanks and certain types of ammunition sufficient information was provided in only four cases to compare the manufacturer's estimate with possible increase in output. In these four cases, the manufacturers estimated it would be possible to increase their September output by 30 percent if sufficient orders had been placed to justify it and if sufficient materials and labor were available. Three months

TABLE 3 - INDEXES OF MINIMUM POTENTIAL INCREASES IN AVERAGE RATES OF PLANT UTILIZATION FOR SELECTED WAR INDUSTRIES <sup>a</sup> One Week in Each of Selected Months

Industry	March	June	September	October
	(Percentage)			
Aircraft				
Airframes	31	23	27	26
Engines	14	13	13	11
Propellers	23	28	30	22
Ammunition, Explosives, Firearms, Ordnance, Etc.	21	20	14	
Machine Tools	56	51	45	
Machine Tool Acces- sories	80	84	<sup>b</sup>	
Shipbuilding (Private)	16	16	16	

<sup>a</sup> Measured by percentage superiority of average of three highest rates in June over average rate in whole industry at selected periods.

<sup>b</sup> Information for September incomplete. Preliminary information shows improved rates of utilization.

after the date of inquiry the scheduled output for the month was only three percent higher than the September output. Scheduled output for these four plants will not equal what the manufacturers estimated as immediately possible in September until six months later--March 1942. Less complete reports covering conditions in 70 private shipyards in September indicate an even larger potential increase.

Over-all estimates indicate that in general supplies of labor and raw materials should be sufficient for war production. In some cases, however, the factors limiting increased plant utilization are shortages of labor, raw materials, and equipment. In these cases, better planning and control of the flow of labor and raw materials would be necessary to bring about desired increases in plant utilization. There is need for an improved system on two fronts: (1) a quick follow-up when firms are behind schedule as to the reasons for such lag and the

measures necessary to overcome it and (2) a similar follow-up when firms are meeting their schedules as to what they require to exceed them.

Even though the goal of 160 hours be considered too difficult to achieve, a considerable improvement in the present level of plant utilization can nevertheless be expected. Moreover, no time must be lost in bringing about this objective. With the country at war, we must become a war arsenal.

---

<sup>a</sup> The rate of plant utilization is measured by the ratio of total man-hours to the number of men on the first shift. The theoretical limit is 168 hours per week per plant.

NOTE: Analysis of the aircraft industry based on data taken from Wright Field Report; for the other industries, based on data provided by Bureau of Labor Statistics.

## PRICES THE GOVERNMENT PAYS

The development of an index of the Government's "cost of spending" is now imperative for far-sighted budgetary policy. There are indications at the present time, when an increasing share of the national output is being purchased by the Federal Government, that a growing portion of the expenditure for these purchases is being absorbed by price rises. Fragmentary data on Army and Navy subsistence and clothing costs, for instance, indicate that the Government may be contending with price rises substantially above those which are shrinking the purchasing power of private consumers.

Per capita subsistence costs in the Civilian Conservation Corps, which probably show the same trend as those in the Army and the Navy, rose over 30 percent during the year ending August 1941. This is more than double the percentage increase in the retail cost of food (as indicated by the food component of the Bureau of Labor Statistics cost of living index) during the same period. The percentage rise in subsistence costs was over a third greater than the rise in wholesale food prices, taking the Bureau of Labor Statistics wholesale price index as a guide. Important military food items such as wheat, flour, lard, potatoes, and ham registered price increases ranging from 35 to 50 percent, according to the Navy.

Government clothing costs increased substantially during the year ending August 1941. The average cost of clothing purchased by the Quartermaster Corps rose about 24 percent, which was more than twice the percentage rise in the retail cost of clothing of male urban workers, and somewhat more than the 22 percent increase in the wholesale market price of textiles. While one item reported by the Quartermaster Corps--rubber clothing--showed an eight percent decline in price, increases were as high as 43 percent for cotton outerclothing and 32 percent for cotton underclothing. The Navy reported that towels had increased as much as 90 percent in price and part wool blankets, 20 percent.

Information on price rises for airplanes, ships, tanks, other important munitions items, and public construction is much more fragmentary than that on food and clothing. No continued and comprehensive attempt has ever been made to collect price data. These data are difficult to obtain because of constant changes in contract specifications. However, unless better information is obtained regarding the prices the Government pays and current changes in these prices, the development of adequate guides to changes in the "cost of Government spending" will be difficult.

## DEFENSE PROGRESS SERIES

Defense Legislation

The Third Supplemental National Defense Appropriation Act, 1942, 1943, just approved by the President, includes \$9,874 million for defense purposes, and raises the total defense program in the United States to \$78,212 million. The table below analyzes this Act by agencies charged with spending the funds and by the principal objects for which the money will be used. The effect of this appropriation on the total previous program is also indicated.

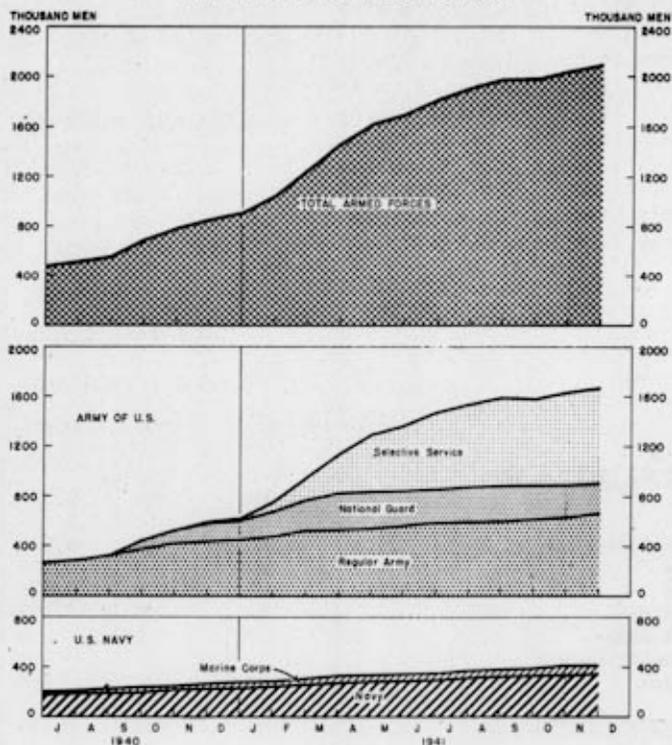
The authorized strength of the Navy has been increased by 150 thousand tons in a bill just signed by the President. This authorization represents a five per cent increase in the tonnage of the Navy but carries no direct cash appropriation.

Hours and Earnings

Defense industries continued to expand operations through the extension of working hours in October. Three strategic defense industries

	War	Navy	Other Agencies	Total 3rd Supplemental	Enacted Program, Nov. 30, 1941	Total Including 3rd Suppl.
	(Million dollars)					
<b>TOTAL</b>	7,374	1,705	795	9,874	68,338	78,212
<b>TOTAL MUNITIONS PROD. &amp; DEF. CONSTR.</b>	6,788	1,705	584	9,077	57,248	66,325
<b>TOTAL MUNITIONS PRODUCTION</b>	5,540	1,370	10	6,920	44,273	51,193
Airplanes	779	950	0	1,729	13,167	14,896
Ordnance	3,778	120	0	3,898	13,451	17,349
Naval ships	0	300	9	309	8,537	8,846
Merchant ships	0	0	0	0	3,481	3,481
Other munitions and supplies	983	0	1	984	5,637	6,621
<b>TOTAL DEFENSE CONSTRUCTION</b>	1,248	335	574	2,157	12,975	15,132
Industrial facilities	388	0	78	466	7,843	8,309
Posts, depots, etc.	860	335	196	1,391	4,490	5,881
Housing, non-military	0	0	300	300	642	942
<b>TOTAL NON-MUNITIONS</b>	586	0	211	797	11,090	11,887
Stockpile	0	0	0	0	1,631	1,631
Agricultural commodities	0	0	0	0	3,043	3,043
Pay, subsistence, & travel	450	0	106	556	3,696	4,252
Miscellaneous	136	0	105	241	2,720	2,961
<b>ENACTED PROGRAM AS OF NOV. 30, 1941</b>	24,605	17,691	26,042	-	68,338	-
<b>TOTAL PROGRAM, INCLUDING 3rd SUPPLEMENTAL APPROPRIATION ACT</b>	31,979	19,396	26,837	-	-	78,212

UNITED STATES ARMED FORCES



which reported average hours of more than 50 hours per week per wage earner were machine tools (51.8 hours), machine tool accessories (51.3 hours), and firearms (50.4 hours). The only notable decline in average hours worked per week from mid-September to mid-October occurred in brass, bronze and copper products, where raw materials have not been available in sufficient quantity to fill orders for the production of civilian goods. (For graphs, see page XV).

Earnings advanced in defense industries as well as in the durable goods group as a whole in October. The increases in weekly earnings

during the month were as high as 3.1 percent for foundry and machine shop products and 3.2 percent for explosives. The average increase for durable goods was 2.9 percent. Brass, bronze, and copper products was the only industry showing a decline in weekly earnings. Although increases prevailed in hourly earnings in defense industries, they were not as high relatively as in weekly earnings. The greatest increase in hourly earnings among the defense industries was 2.7 percent for explosives, while the average increase for the durable goods group during the month was 1.2 percent. Blast furnaces, steel works, and rolling mills showed a slight decline in average hourly earnings.

● UNITED STATES ARMED FORCES

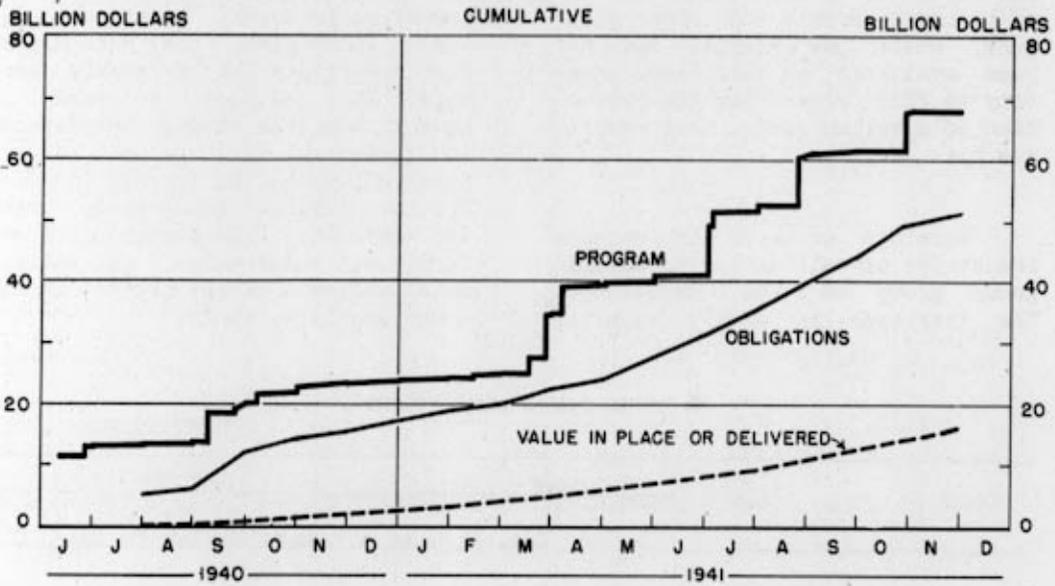
	1940		1941			
	June 30	Dec. 31	June 30	Sept. 30	Oct 31	Nov. 31
	(in thousand men)					
<b>ARMED FORCES ON ACTIVE DUTY</b>						
<b>TOTAL</b>	468	896	1,810	1,977	F 2,046	2,091
<b>ARMY - TOTAL</b>	268	621	1,462	1,587	F 1,643	1,677
Regular	265	426	510	535	F 555	591
Nat'l. Guard in Fed. Serv.	-	156	284	273	F 249	233
Reserve Officers	3	22	61	79	F 82	84
Selective Service Trainees	-	17	607	700	F 757	769
<b>NAVY - TOTAL</b>	172	227	293	328	339	348
Regular	151	186	221	236	239	242
Reserve	7	24	53	69	76	81
Coast Guard	14	17	19	23	24	25
<b>MARINE CORPS - TOTAL</b>	28	48	55	62	64	66

<sup>F</sup> Preliminary

<sup>F</sup> Revised data

● Graph appears on opposite page.

TOTAL DEFENSE PROGRAM



## DEFENSE PROGRESS SERIES

## TOTAL UNITED STATES DEFENSE PROGRAM

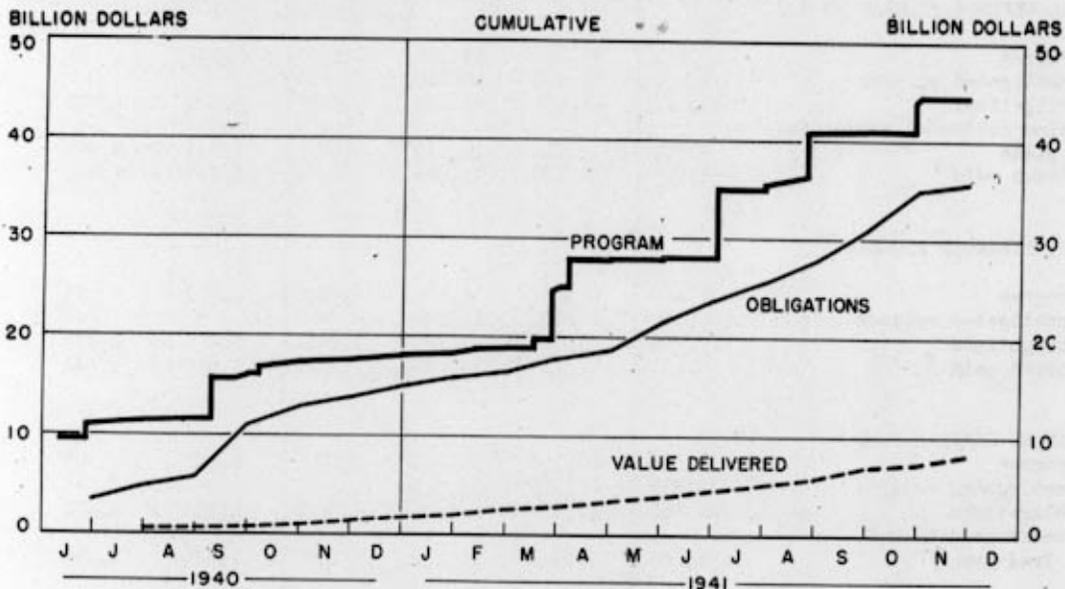
FINANCIAL PROGRAM SUMMARY	Cumulative 6/11/40 through			Monthly		
	End 1st full year 6/30/41	End of October, 1941	End of November, 1941	October, 1940	October, 1941	November, 1941
(Million dollars)						
● TOTAL DEFENSE PROGRAM IN U.S. <sup>a</sup>						
Program	41,131	68,252	68,338	2,553	6,135	86
Unobligated balance	9,450	18,590	16,840	-	-	-
Obligations	31,681	49,662	51,498	2,359	5,329	P 1,836
Value delivered and/or in place	8,701	P 14,814	P 16,779	475	1,731	P 1,965
Checks paid <sup>d</sup>	8,503	14,129	P 15,803	491	P 1,737	P 1,674
U. S. FINANCED PROGRAM <sup>b</sup>						
Program	37,446	64,483	64,566	2,015	6,135	83
Unobligated balance	9,450	18,590	16,840	-	-	-
Obligations	27,996	45,893	P 47,726	1,811	5,280	P 1,833
Checks paid <sup>d</sup>	6,430	11,721	P 13,299	312	P 1,657	P 1,578
TREASURY GENERAL FUND <sup>c</sup>						
Program	34,638	60,156	60,219	1,803	6,135	63
Unobligated balance	7,978	17,356	15,943	-	-	-
Obligations	26,660	42,800	P 44,276	1,760	4,984	P 1,476
Checks paid by U.S. Treasury <sup>d</sup>	6,080	11,010	12,448	297	1,526	1,438
MUNITIONS PROD. & DEFENSE CONSTRUCTION						
Program	36,671	57,120	57,248	1,762	3,676	128
Unobligated balance	7,188	12,370	P 11,077	-	-	-
Obligations	29,483	44,750	P 46,171	2,354	4,870	P 1,421
Value delivered and/or in place <sup>e</sup>	6,945	P 11,670	P 13,185	360	P 1,300	P 1,515
Value not delivered nor in place	22,538	33,080	P 32,986	-	-	-
NON-MUNITIONS ITEMS, TOTAL						
Program	4,460	11,132	11,090	791	2,459	-42
Unobligated balance	2,262	6,220	P 5,763	-	-	-
Obligations	2,198	4,912	P 5,327	5	459	P 415
Checks issued by agencies <sup>e</sup>	1,756	P 3,144	P 3,594	115	P 431	P 450

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

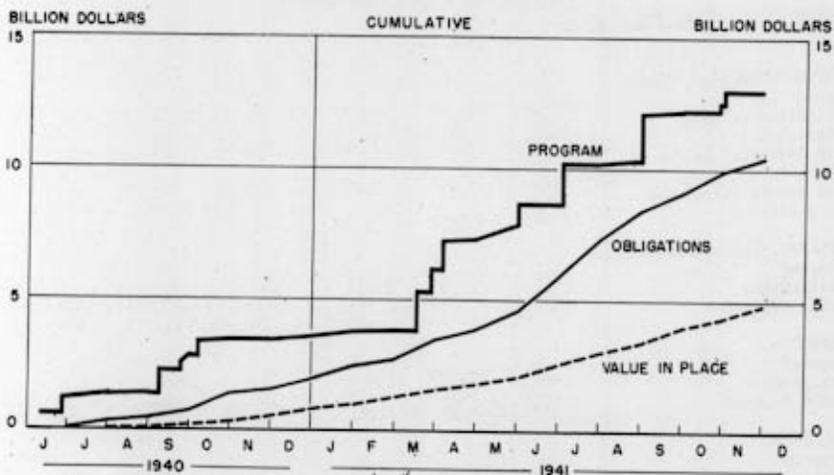
<b>● MUNITIONS PRODUCTION, TOTAL</b>						
Program	28,024	44,181	44,273			
Unobligated balance	4,491	9,337	8,618	1,192	3,298	P 92
Obligations	23,533	34,844	35,655	1,801	3,749	P 811
Value delivered and/or in place *	4,440	7,290	8,275	235	825	P 985
Value not delivered nor in place	19,093	27,554	27,380	-	-	-
<b>AIRPLANES, PARTS &amp; ACCESSORIES</b>						
Program	8,481	13,174	13,167			
Obligations	7,281	11,045	11,725	397	655	P -7
Value delivered	1,010	1,735	1,980	809	1,383	P 680
				50	215	P 245
<b>ORDNANCE</b>						
Program	7,780	13,330	13,451			
Obligations	5,418	9,921	9,594	199	1,553	121
Value delivered	700	1,280	1,510	359	2,128	-327
				30	180	P 230
<b>NAVAL SHIPS</b>						
Program	6,654	8,235	8,537			
Obligations	6,452	7,505	7,545	21	110	302
Value delivered and/or in place	960	1,590	1,780	191	142	P 40
				55	160	P 190
<b>MERCHANT SHIPS</b>						
Program	1,766	3,805	3,481			
Obligations	1,484	2,251	2,270	10	857	-324
Value delivered and/or in place	190	320	385	16	132	P 19
				10	50	P 65
<b>OTHER MUNITIONS AND SUPPLIES</b>						
Program	3,343	5,637	5,637			
Obligations	2,898	4,122	4,521	565	123	0
Value delivered	1,580	2,365	2,620	426	-36	399
				90	220	P 255

Table continued on following page.

For footnotes see page opposite page X.

● Graph appears on opposite page.

### DEFENSE CONSTRUCTION



DEFENSE PROGRESS SERIES  
 TOTAL UNITED STATES DEFENSE PROGRAM

FINANCIAL PROGRAM	Cumulative 6/11/40 through			Monthly		
	End of full year 6/30/41	End of October, 1941	End of November, 1941	October, 1940	October, 1941	November, 1941
(Million dollars)						
<u>BREAKDOWN OF DEFENSE CONSTRUCTION</u>						
● DEFENSE CONSTRUCTION, TOTAL (LAND, BLDGS., EQUIP.)						
Program	8,647	12,939	12,975	570	378	36
Unobligated balance	2,697	3,033	2,459	-	-	-
Obligations	5,950	9,906	10,516	553	1,121	P 610
Value in place	2,505	P 4,380	P 4,910	125	P 475	P 530
Value not in place	3,445	P 5,526	P 5,606	-	-	-
INDUSTRIAL FACILITIES (LAND, BLDGS., EQUIP.)						
Program	5,305	7,826	7,843	322	381	17
Obligations	3,050	5,547	5,951	360	688	P 404
Value in place	960	P 1,960	P 2,240	30	P 250	P 280
INDUSTRIAL FACILITIES BUILDINGS ONLY						
Program	1,607	2,829	n.a.	-	203	n.a.
Value in place	575	1,286	n.a.	-	181	n.a.
POSTS, DEPOTS, STATIONS						
Program	2,850	4,471	4,490	98	-3	19
Obligations	2,625	3,950	4,135	158	392	P 185
Value in place	1,430	P 2,150	P 2,360	95	P 190	P 210
HOUSING, NON-MILITARY						
Program	492	642	642	150	0	0
Obligations	275	409	430	35	41	P 21
Value in place	115	P 270	P 310	0	P 35	P 40
<u>BREAKDOWN OF CLASSES OF NON-MUNITIONS</u>						
NON-MUNITIONS, TOTAL						
Program	4,460	11,132	11,090	791	2,459	-42
Unobligated balance	2,262	6,220	5,763	-	-	-
Obligations	2,198	4,912	5,327	5	459	P 415
Checks issued by agencies	1,756	P 3,144	P 3,594	115	P 431	P 450
STOCKPILE						
Program	983	1,631	1,631	102	0	0
Obligations	470	910	960	23	55	P 50
Checks issued by agencies	192	340	P 390	11	45	P 50
AGRICULTURAL & MISC. EXPORTS (DEFENSE AID)						
Program	1,250	3,043	3,043	0	0	0
Obligations	109	790	879	0	148	P 89
Checks issued by agencies	5	248	P 368	0	119	P 120

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

F Revised

P Preliminary

- <sup>a</sup> 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.
- <sup>b</sup> 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.
- <sup>c</sup> 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.
- <sup>d</sup> 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.
- <sup>e</sup> 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.
- <sup>f</sup> 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.
- <sup>g</sup> 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			Monthly		
	End 1st full year 6/30/41	End of October, 1941	End of November, 1941	October, 1940	October, 1941	November, 1941
<u>NON-MUNITIONS (CONT'D)</u>						
(Million dollars)						
<u>PAY, SUBSISTENCE &amp; TRAVEL</u>						
<u>Army Military</u>						
Program	944	2,563	2,563	505	1,949	0
Obligations	934	1,684	P 1,834	52	146	P 150
Checks issued	696	1,210	P 1,355	37	140	P 145
<u>Navy Military</u>						
Program	376	804	963	2	0	159
Obligations	334	490	P 552	29	29	P 62
Checks issued	388	548	P 588	39	40	P 40
<u>Civilian Payroll</u>						
Program	32	170	170	28	16	0
Obligations	32	117	P 127	3	4	P 10
Checks issued	356	574	P 639	23	60	P 65
<u>MISCELLANEOUS NON-MUNITIONS</u>						
Program	875	2,921	2,720	154	494	-201
Obligations	319	921	P 975	-102	77	P 54
Checks issued by agencies	119	224	P 254	5	27	P 30
<u>BREAKDOWN BY AGENCIES</u>						
<u>AGENCIES INCLUDED IN TREASURY GENERAL FUND</u>						
<u>U. S. ARMY</u>						
Program	13,135	24,606	24,605	1,377	0	-1
Obligations	11,404	20,598	21,205	1,039	3,746	P 607
Checks paid by U. S. Treasury	3,636	6,209	6,913	134	785	704
<u>U. S. NAVY</u>						
Program	12,308	17,627	17,691	85	113	64
Obligations	11,182	P 14,681	15,102	667	708	421
Checks paid by U. S. Treasury	2,217	3,791	4,232	150	442	441
<u>DEFENSE AID</u>						
Program	7,000	12,985	12,985	-	5,985	0
Allocations	5,177	6,784	P 8,321	-	315	P 1,537
Obligations	2,458	P 4,826	P 5,162	-	340	P 336
Checks paid by U. S. Treasury	21	456	654	-	192	198
<u>U. S. MARITIME COMMISSION</u>						
Program	969	2,668	2,668	0	-2	0
Obligations	886	1,635	P 1,644	6	132	P 9
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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n.a. Not Available

R Revised

P Preliminary

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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)						
AGENCIES INCLUDED IN TREASURY GENERAL FUND (CONT'D)						
OTHER U. S. AGENCIES						
Program	1,226	2,270	2,270	341	39	0
Obligations	730	1,060	1,163 <sup>P</sup>	48	58	103 <sup>P</sup>
Checks paid by U. S. Treasury	162	460	529	3	86	69
ADDITIONAL AGENCIES INCLUDED IN U. S. FINANCED PROGRAM						
R. F. C. AND SUBSIDIARIES						
Program	2,808	4,327	4,347	212	0	20
Obligations	1,336	3,093	3,450	51	296	357
Checks issued by R. F. C.	350	711 <sup>P</sup>	851	15 <sup>P</sup>	131 <sup>P</sup>	140 <sup>P</sup>
ADDITIONAL INCLUDED IN TOTAL DEFENSE PROGRAM						
FOREIGN ORDERS						
Program (orders)	3,685	3,769	3,772	538	49	3
Obligations	3,685	3,769	3,772	538	49	3
Checks issued by Purchasing missions	2,073	2,408 <sup>P</sup>	2,504	179	80	96 <sup>P</sup>

## OTHER DEFENSE INDICATORS

VALUE OF FACIL. ON APPLIC. FOR	CERT. OF	NECESSITY	(Million dollars)			
Total	1,424	2,384	n.a.	-	-	n.a.
Approved, private funds	829	1,046	n.a.	-	340	n.a.
Approved, public funds	201	234	n.a.	-	5	n.a.
Disapproved	7	14	n.a.	-	3	n.a.
Pending	387	1,090	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	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		1941		October	
	July	January	September	October		
(Thousand workers)						
DEFENSE EMPLOYMENT						
Private, 18 major indus.	1,660	2,038 <sup>P</sup>	2,670 <sup>P</sup>	2,733 <sup>P</sup>		
Private, contracts, pub. constr.	13	448	435	500		
Public	117	171	234	248		
Total direct defense	1,790	2,657 <sup>P</sup>	3,339 <sup>P</sup>	3,481 <sup>P</sup>		

<sup>P</sup> Revised data                      <sup>P</sup> Preliminary                      n.a. Data not Available  
 For footnotes see opposite page.

## DEFENSE PROGRESS SERIES

## DEFENSE EQUIPMENT INDEXES

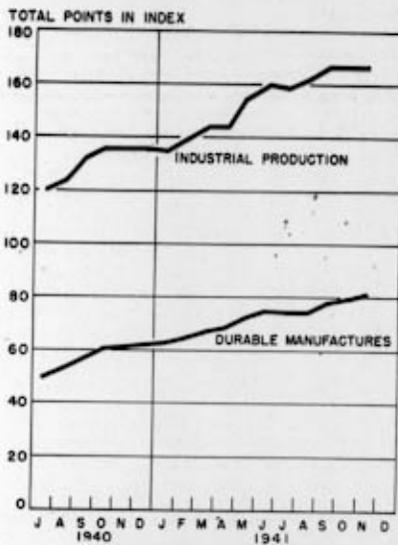
	Airplanes		Combat Vehicles		Army-type Ordnance		Ammunition		Major Combat Ships		Merchant Ships	
	SCHED. AS OF	ACTUAL AS OF	SCHED. AS OF	ACTUAL AS OF	SCHED. AS OF	ACTUAL AS OF	SCHED. AS OF	ACTUAL AS OF	SCHED. AS OF	ACTUAL AS OF	SCHED. AS OF	ACTUAL AS OF
Average monthly production FY 1942-100												
<b>MONTHLY PRODUCTION RATE DURING:</b>												
1940												
July		16	a	7	e	14	b	11		27		9
December		26								38		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		84		22	91	109		63
November	74	63	88	91	88	84	88	88	88	88	88	88
December	83		104		88		81		82		82	83
1942												
January	83		128		121		101		108		110	110
February	111		128		127		128		88		128	128
March	127		132		138		148		118		144	144
June	147		188		148		204		128		181	181
September	173		188		142		211		148		188	188
December	188		37		122		288		137		148	148
Av. monthly prod. FY 1942		100		100		100		100		100		100
Peak month		188 (12/42)		188 (8/42)		158 (7/42)		288 (12/42)		148 (11/42)		181 (7/42)
<b>TOTAL CUMULATIVE PRODUCTION TO:</b>												
Total production FY 1942 = 100												
1940												
July 31		1				-				2		1
December 31		8		4		7				16		6
1941												
March 30		16		6		13		9		27		12
June 30		27		12		22		11		42		19
September 30		41		28		38		15		61		28
October 31		46		36		44		17	61	70		33
November 30	88	51	88	44	88		81		88		88	88
December 31	88		84		88		88		88		88	88
1942												
January 31	87		88		70		34		88		88	88
February 28	78		78		81		88		88		88	88
March 31	87		88		88		88		102		88	88
June 30	128		127		138		118		138		118	118
September 30	188		178		188		188		187		188	188
December 31	288		308		188		278		204		188	188
Total production FY 1942		100		100		100		100		100		100
<b>Production requirements, Nov. 1</b>												
Financed	211		217		225		250		242		218	218
Pending	8		203		2107		270		84		84	84
Ordered to November 1	303		214		221		228		242		218	218
To be ordered November 1	8		3		12		174		4		4	4

<sup>a</sup> Average July 1, 1940 - Dec. 31, 1940.  
<sup>c</sup> April 30, 1941.

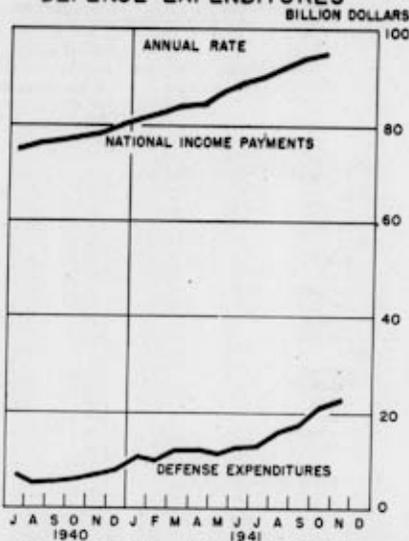
<sup>b</sup> Average July 1, 1940 - April 30, 1941.  
<sup>d</sup> As of November 1, 1941.

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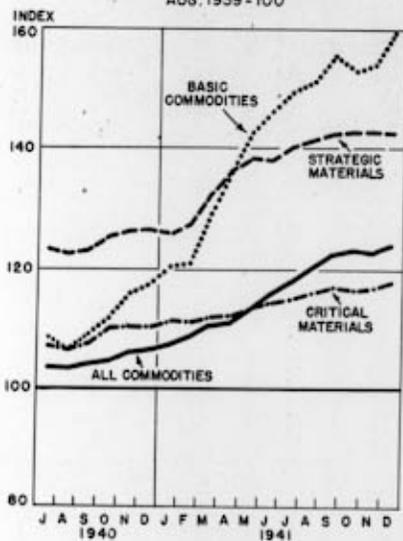
INDUSTRIAL PRODUCTION



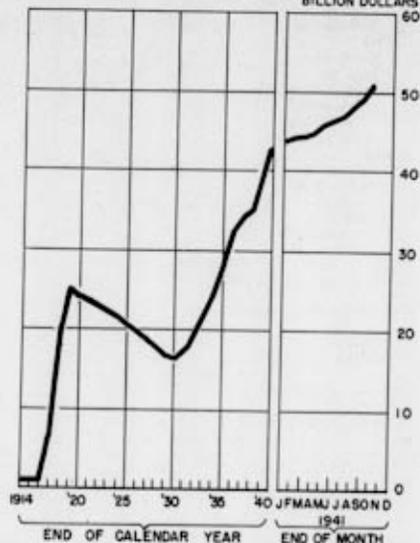
NATIONAL INCOME & DEFENSE EXPENDITURES



WHOLESALE PRICES  
AUG. 1939=100



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



## DEFENSE PROGRESS SERIES

## ECONOMIC ACTIVITY RELATED TO DEFENSE

The series on these pages 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				Week	Ending
	July	January	October	November	Dec. 6	Dec. 13	
<b>FED. RES. BD. PROD. INDEXES</b>							
	(Unadjusted indexes 1935-39 = 100)						
Total industrial production	120	135	167	P 167			
Durable manufactures	131	166	210	P 212			
Nondurable manufactures	111	118	142	P 142			
Minerals	121	113	137	P 133			
<b>BUR. FOR. &amp; DOM. COM. MFRS.</b>							
(Indexes)							
<b>ORDERS, SHIPMENTS, INVENTORIES</b>							
New orders, total (1/39=100)	127	176	P 192				
Shipments, total (1/39=100)	117	148	P 203				
Inventories, " (12/31/38=100)	109.2	120.8	P 142.6				
Durable (12/31/38=100)	111.9	129.7	P 155.2				
Nondurable (12/31/38=100)	106.4	111.2	P 129.0				
<b>BLS. PRICE INDEXES</b>							
	(Indexes)						
Strategic Materials (8/39=100)	123.6	126.1	143.0	P 143.1	143.0	142.9	
Critical Materials (8/39=100)	107.5	111.7	116.7	P 116.6	116.8	118.1	
Basic Commodities (8/39=100)	108.5	120.5	153.1	154.4	156.4	159.4	
Machine tools (8/39=100)	108.7	114.6	119.4	119.7	-	-	
All commodities (1926=100)	77.7	80.8	92.4	92.5	92.2	93.1	
<b>TRANSPORTATION &amp; ELECTRIC POWER</b>							
	(Averages)						
<b>Freight cars</b>							
Loadings (thous. per week)	706	684	914	864	833	807	
Unloads for export (dly.)	1,502	1,352	1,885	1,704	1,705	1,711	
Surplus, total (thous. dly.)	133	110	44	61	67		
Boxcars	57	43	19	28	27		
Coal cars	47	42	11	18	24		
Power prod. (mil. kwh. wkly.)	2,731	3,080	3,439	P 3,302	3,369	3,431	
<b>NATIONAL INCOME</b>							
	(Billion dollars, annual rate)						
Total income payments	75.2	81.7	P 94.9				
<b>FEDERAL DEBT</b>							
	(Billion dollars, end of month)						
Net public debt	41.5	43.9	50.9	52.7			
<b>EMPLOYMENT</b>							
	(Thousand workers)						
Total civil nonagricultural	35,904	37,142	P 40,749				
Total WPA employment	1,655	1,890	1,040	1,056	1,063	1,060	
Defense			Confidential data. See page XI.				
Deep-sea merchant vessels	51	49	50				
<b>UNEMPLOYMENT (WPA ESTIMATE)</b>							
	(Million workers)						
Number of unemployed	9.3	7.6	3.9	3.9			

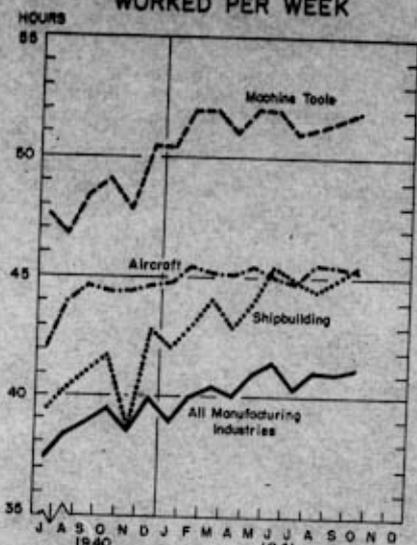
† Revised data.

P Preliminary data.

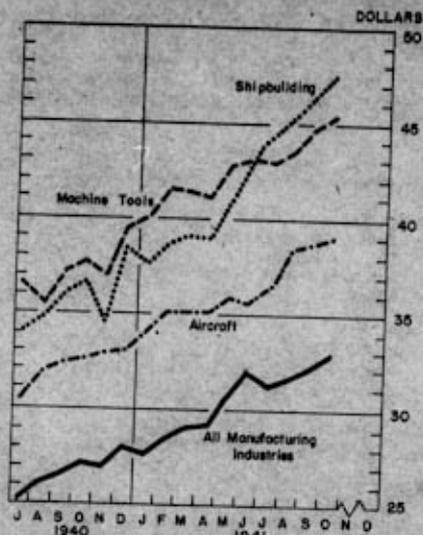
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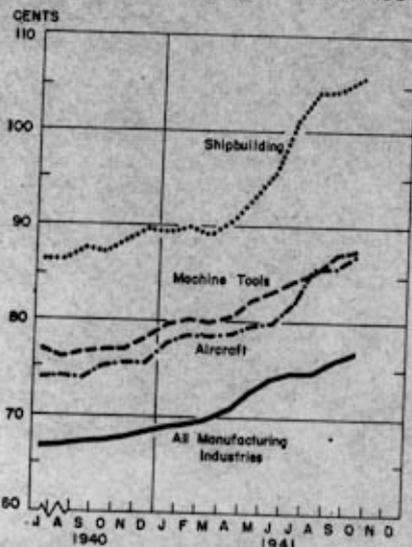
AVERAGE HOURS WORKED PER WEEK



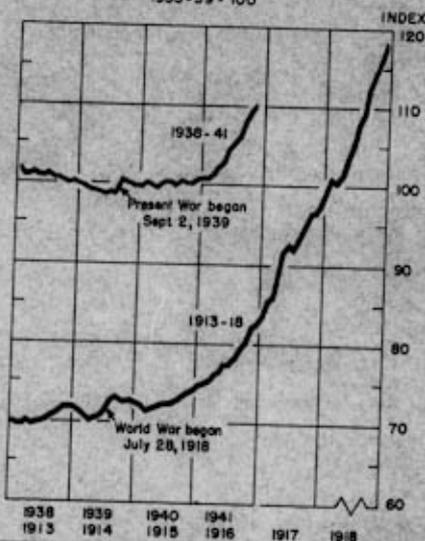
AVERAGE WEEKLY EARNINGS



AVERAGE HOURLY EARNINGS



COST OF LIVING 1935-39 = 100



## DEFENSE PROGRESS SERIES

## ECONOMIC ACTIVITY RELATED TO DEFENSE

	1940		1941		
	July	January	October	November	
● BLS COST OF LIVING INDEX	100.3	100.8	(1935-39 = 100)		
			109.4	110.2	
● AVERAGE HOURS WORKED PER WEEK			(Hours)		
All manufacturing industries	37.3	39.0	41.1		
Durable goods	37.9	40.6	42.9		
Nondurable goods	36.7	37.3	39.1		
Machine tools	47.5	50.4	51.8		
Aircraft	42.0	44.7	45.2		
Shipbuilding	39.3	42.0	45.4		
● AVERAGE HOURLY EARNINGS			(Cents)		
All manufacturing industries	66.7	68.9	77.0		
Durable goods	72.7	75.8	85.3		
Nondurable goods	61.5	62.0	68.0		
Machine tools	76.8	79.7	87.4		
Aircraft	73.8	77.6	86.9		
Shipbuilding	86.2	89.3	105.4		
● AVERAGE WEEKLY EARNINGS			(Dollars)		
All manufacturing industries	25.25	27.71	32.89		
Durable goods	28.52	31.90	37.97		
Nondurable goods	21.87	22.64	26.10		
Machine tools	36.45	40.15	45.47		
Aircraft	30.48	34.13	39.21		
Shipbuilding	34.03	37.69	47.54		

<sup>r</sup> Revised data.

● Graph appears on opposite page.

P Preliminary data.

n.a. Data not available.

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**DEFENSE  
PROGRESS**

**CONFIDENTIAL ▶**

NUMBER 67

DECEMBER 24, 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



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ASSISTANT CHIEF & EDITOR

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## BRIEFS OF CONTENTS

Page

- PRODUCTION IN FIVE INDUSTRIES basic to the war effort in Japan proper is about one-tenth as great as production in similar United States industries. Accumulated stocks of coal and petroleum may be sufficient to tide Japan over for a year or so, but supplies of other basic materials for capacity munitions production will have to come from territories outside her present sphere of influence. 1
  
- THE TAX BURDEN OF BRITAIN AND CANADA remains significantly higher than ours, in spite of the heavier taxation imposed in the United States under the Revenue Act of 1941. Even in the second and third years of large scale arms production programs, roughly half of central Government expenditures are being met by taxation in all three countries. Under the pressure of heavy armament expenditures, each of these countries has placed increased reliance on individual income and succession taxation. 5
  
- DEFENSE PROGRESS SERIES. Ammunition production rose during November to 32 in terms of the weighted production rate index. This was 45 percent greater than the October rate. Production of army-type guns fell during the month; the weighted index was 71, 13 points below the October high. Employment in 18 major private defense industries was 2.7 million during November, 68 percent more than in July 1940. I

## PRODUCTION IN FIVE BASIC JAPANESE INDUSTRIES

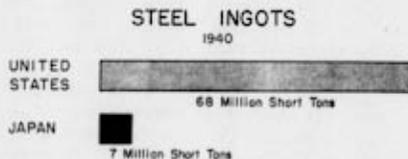
PRODUCTION IN FIVE INDUSTRIES BASIC TO THE WAR EFFORT IN JAPAN PROPER IS ABOUT ONE-TENTH AS GREAT AS PRODUCTION IN SIMILAR UNITED STATES INDUSTRIES. ACCUMULATED STOCKS OF COAL AND PETROLEUM MAY BE SUFFICIENT TO TIDE JAPAN OVER FOR A YEAR OR SO, BUT SUPPLIES OF OTHER BASIC MATERIALS FOR CAPACITY MUNITIONS PRODUCTION WILL HAVE TO COME FROM TERRITORIES OUTSIDE HER PRESENT SPHERE OF INFLUENCE.

C current production of steel, coal, petroleum, electricity, and machinery, five industries basic to Japanese munitions output, is greatly inferior to production by the same industries in the United States. In 1940, the output of three of these industries in Japan approximated but one-tenth the output of similar industries in this country. Accumulated Japanese stocks of two of these—coal and oil—are not likely to be in excess of one or two years supplies, even though measures for encouraging extensive production and accumulation were enforced as early as 1937.

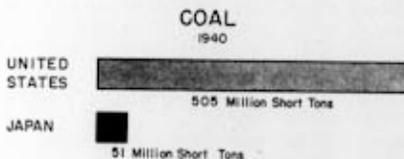
With the stoppage of imports from the United States, British Empire countries, and the Dutch East Indies, the sources of many vital materials were closed to Japan. The Japanese have imported iron ore, tin, and rubber from British Malaya; and iron ore, manganese, and manila fiber from the Philippines. The Netherlands East Indies were a rich source of rubber, petroleum, lumber, bauxite, tin, manganese, and fibers. In addition, China was a source of tungsten and other strategic metals. The weakness of the production potential of the basic industries of Japan proper therefore remains vitally significant only so long as

her control of these territories can be prevented, and it is in this light that the following analyses should be appraised.

Steel. In 1940, operating at near capacity, steel ingot production of Japan proper was about 7 million short tons, approximately 10 percent as large as United States production. An ambitious Five-Year Plan undertaken in 1937, envisioned an expansion of steel output to 10 million tons annually from Japan proper and Manchukuo by 1942. Operating under strict governmental control and encouraged by aids such as tax exemptions and priorities, output of the Japanese iron and steel industry rose steadily during the period 1937-40. However, in spite of her increased domestic production and an increase in Manchukuo production from 2 to 2.5 million tons annually, it does not appear that the goal of the program can be attained.



Coal. Coal production in Japan proper does not exceed 10 percent of total coal production in this country. Japan has, in addition, regularly depended upon Manchukuo and North China for about 4 million tons which includes her major supply of coking coal essential to heavy industries. Although coal stock accumulation was begun at the outbreak of the Sino-Japanese War, total stocks at the present time cannot be adequate to meet much more than a year's demand, even if these stocks have not been tapped since 1937 and if total coal consumption is being held down to the pre-war level of some 40 million tons annually.

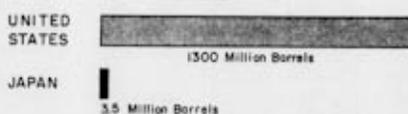


Petroleum. Japanese domestic crude oil production in the period of 1937-40 was equivalent to about 10 percent of her normal demand. Meager domestic petroleum deposits have made necessary heavy imports of crude oil from other countries, notably from the United States and the Netherlands Indies. From 1937 to 1939 imports from the United States averaged about 17 million barrels of crude yearly, equivalent to some 60 percent of Japan's crude oil requirements; in the year ending September 1941 imports were only 7.6 million barrels. Even though there should be increased imports from Japan's immediate sphere of control she will have to depend for her supply mainly upon accumulated stocks. Reserve

stocks have been estimated at 50 to 75 million barrels or about one and one-half years' supply under ordinary conditions. Hydrogenation of coal and intensive exploitation of oil shale in Manchukuo has been progressing and may ease the pressure upon oil stocks to some extent.

Refining capacity has been considerably increased in Japan since 1937 but the bulk of dependence for refined production still falls upon imports and stocks.

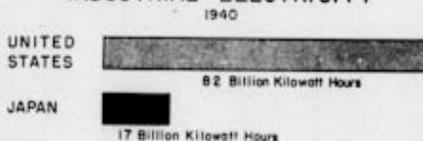
#### CRUDE OIL



Electricity. Electric power capacity of Japan proper in 1940 was estimated in the neighborhood of eight million kilowatts as against 50 million kilowatts in this country. In 1940, electricity generated for industrial uses in Japan was about 20 percent of the quantity generated for similar uses in America.

Electricity production fell in 1939, from the 1938 record high of around 19 billion kilowatt hours to an estimated 15 billion kilowatt hours. By 1940 it had recovered to

#### INDUSTRIAL ELECTRICITY

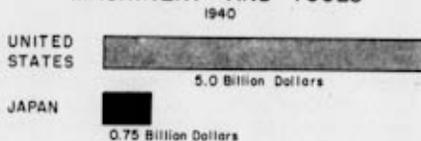


a level still several billion kilowatt hours below 1938. This was due not only to the coal stringencies referred to, but also to a severe drought that had extremely adverse effects upon hydro-electric output during 1939 and early 1940,

Machinery and Tools. The proportion of heavy industry to all industry in Japan has risen impressively in the past five years. Machinery and tools production, however, has not increased rapidly enough to release the Japanese economy from reliance on substantial imports of these commodities. The extent of this dependence upon the United States is evidenced by the fact that two-thirds of all Japanese machinery and tools imports in 1939, in terms of value, came from this nation. At current exchange rates, the estimated value of domestic out-

NOTE: Previous articles on the Japanese economy appeared in Issues 51 and 54 of Defense Progress. The estimates of production in the five industries presented here for the period 1937-40 have been prepared by

### MACHINERY AND TOOLS



put of machinery and tools in Japan was slightly in excess of 10 percent of that of the United States in 1940. Although production rose during the first two years of the China Incident period, machinery and tool value-output declined from nearly four billion yen in 1938 to about 3.5 billion yen in 1939. The decline carried through most of 1940 due to the coal and power tightness.

the Economic Analysis Branch, Bureau of Research and Statistics. Official data relating to these industries have not been published by the Japanese Government since 1937.

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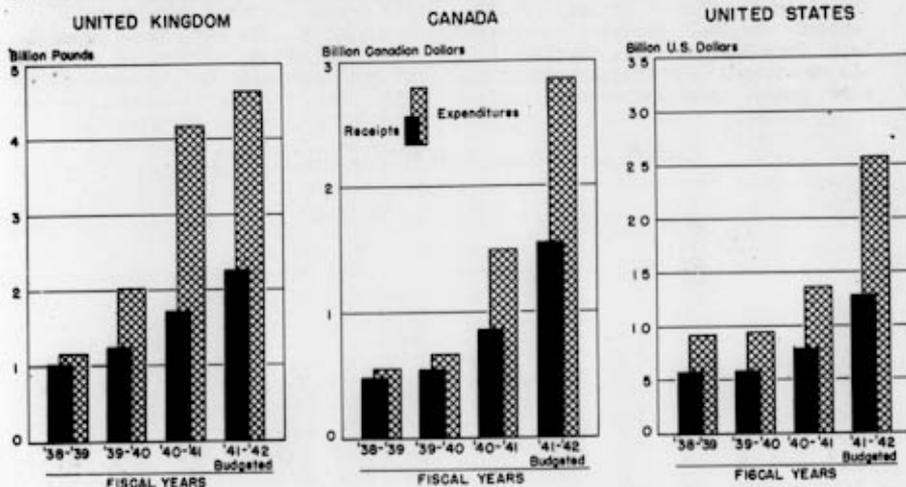
## THE TAX BURDEN IN THE UNITED STATES, THE UNITED KINGDOM, AND CANADA

THE TAX BURDEN OF BRITAIN AND CANADA REMAINS SIGNIFICANTLY HIGHER THAN OURS, IN SPITE OF THE HEAVIER TAXATION IMPOSED IN THE UNITED STATES UNDER THE REVENUE ACT OF 1941. EVEN IN THE SECOND AND THIRD YEARS OF LARGE SCALE ARMS PRODUCTION PROGRAMS, ROUGHLY HALF OF CENTRAL GOVERNMENT EXPENDITURES ARE BEING MET BY TAXATION IN ALL THREE COUNTRIES. UNDER THE PRESSURE OF HEAVY ARMAMENT EXPENDITURES, EACH OF THESE COUNTRIES HAS PLACED INCREASED RELIANCE ON INDIVIDUAL INCOME AND SUCCESSION TAXATION.

Heavy expenditures for arms production have greatly altered the public accounts of the three largest democracies, the United States, the United Kingdom, and Canada. Fiscal year 1938-39 covered the last full year of peace for all three, although rearmament expenditures in the United Kingdom already amounted to about one-third of her national budget. Fiscal year 1941-42,

covers a period ending two and a half years of war for the United Kingdom and Canada and two years of defense efforts in the United States. Between fiscal 1938-39 and fiscal 1941-42, total central government expenditures rose strikingly in each of the three countries. Central government receipts also increased to a marked degree in each, as Chart 1 indicates. <sup>b</sup>

CHART 1 - CENTRAL GOVERNMENT RECEIPTS AND EXPENDITURES



One measure of the comparative burden of tax receipts in different countries is the relationship of governmental receipts to national income. This "burden" for the United Kingdom, Canada, and the United States, both for central government receipts and for total receipts of all governmental units--central, state or provincial, and local is shown in Chart 2. Although receipts of the noncentral governmental units have changed relatively little during the past four years, they are necessarily included in this comparison because of differences in the form of government in the three countries; to obtain a correct picture of the total tax burden requires that comparison be made of the total receipts of all governmental units.

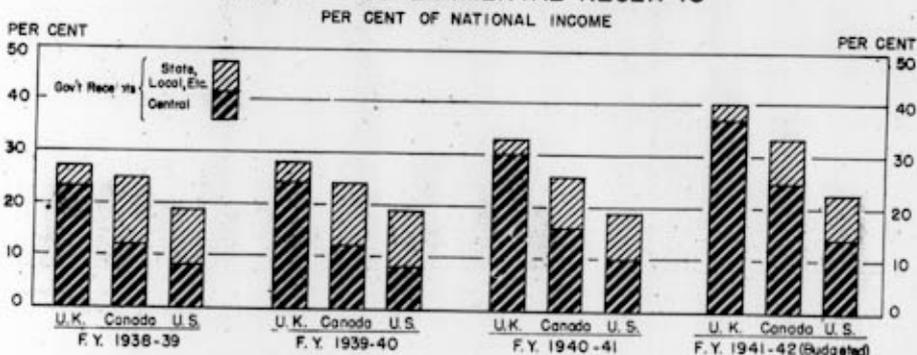
Total British national and local government receipts have risen during the four-year period, 1938-39 to 1941-42, from 27 percent to 40 percent of the national income; total Canadian Dominion, provincial, and municipal government receipts have risen from 26 percent to 33

percent; and United States Federal, state, and local receipts have risen from 19 percent to 23 percent of the national income.

Thus, in spite of recent legislation, the total tax burden in the United States in the current fiscal year will amount to only about half of the present British tax burden. In all three countries the tax burden, measured in terms of the national income, is much heavier in the current fiscal year than four years ago, while the relative tax burden as between the three democracies remains much the same--heaviest in Great Britain, next heaviest in Canada, and lightest in the United States.

During large scale arms production programs, a more significant measure than receipts for assessing the burden of governmental activities upon the national economy is the size of total governmental expenditures. The way those expenditures are met in varying proportions of tax receipts and borrowings is important chiefly as it changes the

CHART 2 - GOVERNMENTAL RECEIPTS



distribution of the burden of total expenditures among the members of the community. During wartime, however, the ratio of expenditures (or receipts) to national income may give a distorted picture because under these conditions a nation may to a considerable extent "live on its capital." This is especially true, for example, of the British situation in the fiscal years 1940-41 and 1941-42.

Before war began, total governmental expenditures (central, state or provincial, and local) represented almost the same percentage of national income--27 to 30 percent--in Britain, Canada, and the United States. In 1939-40, British governmental expenditures began to rise so sharply that they were equivalent to about 75 percent of current national income in 1940-41 and about 80 percent in 1941-42. It has been officially estimated, however, that an amount equal to nearly 20 percent of the British national income in calendar year 1940 was obtained for the war effort by "living on capital." Such "disinvestment" rose sharply in the last half of calendar 1940 and was estimated at equal to 30 percent of current national income in the last quarter of that year; largely by reason of Defense Aid assistance from the United States, British "living on capital" will not rise much above this rate in 1941-42. A significant percentage of war expenditures is financed, therefore, by large scale liquidation of foreign assets, by using up stocks of goods, and by failure to replace and maintain domestic capital equipment. Accordingly, an amount equivalent to slightly over half of the current national income remains available for civilian purposes in Britain.

Canadian governmental expenditures (Dominion, provincial, and local) rose sharply in 1940-41 to nearly 40 percent of national income and will reach more than half in 1941-42. Canada, likewise, has to some extent been "living on capital," thus ameliorating somewhat the pressure on the civilian share of the national income. In the United States, where "disinvestment" does not yet play a significant role, total governmental expenditures (Federal, state, and local) remained at the same ratio to national income for the first three fiscal years, but in 1941-42 will rise to slightly more than 35 percent.

The measurement of relative tax (or expenditure) burdens as between various countries in terms of a percentage of the national income is not a wholly satisfactory measure, although for most purposes no better one is available. The fact that per capita national income stands at different levels in the various countries constitutes the most serious shortcoming of this form of measurement. Differences in the amount of governmental services rendered and, especially in wartime, in the degree to which rationing, subsidies, and other such measures are used in the different countries, likewise affect the relative real standards of living in a manner which is not reflected in the figures of national income.

Under the requirements of meeting heavy armament expenditures, each of the three countries has taken steps to increase receipts both by imposing new taxes and by increasing the rates of existing taxes. In addition, the rising levels of economic activity, accompanying the arms

programs and reflected in rising national income figures, have brought larger yields from existing taxes.

It is significant that under wartime conditions, each of these democratic countries has turned increasingly towards progressive individual income and death taxes. This aspect of the comparative tax picture will be analyzed in a future article.

<sup>a</sup> British and Canadian fiscal years run from April 1 to March 31, and United States fiscal years from July 1 to June 30 of the next calendar year. Comparison is here made of the United States fiscal

year overlapping nine months of the British and Canadian fiscal year.

<sup>b</sup> Figures for receipts and expenditures of central governments are based on official data for fiscal years 1938-39 to 1940-41. For the fiscal year 1941-42 official budget forecasts have been used. These figures have been adjusted in order to put them on a comparable basis with respect to social security tax collections and payments. Figures for state or provincial and local receipts and expenditures are estimates based on most recent official figures and trends.

## DEFENSE PROGRESS SERIES

Production of Ammunition In November 1941.

Production of ammunition during November increased 45 percent over October according to the weighted index of monthly production <sup>a</sup>. The November index reached 32 compared with an index of 22 during October, and a scheduled index, based upon November 1 schedules of 44. The increase over October was most marked for field artillery ammunition (the index rose from six to 22) and for ammunition for airplane cannon (77 to 101). Output of anti-aircraft ammunition increased over October but is still very low, November production being less than half the amount scheduled. Production of aircraft cannon ammunition in November was the only type for which the index was ahead of November 1 schedule.

At the end of November, the weighted index of cumulated production was 20. The index of financed production requirements was 417, of which about 70 per cent (285 points in the index) had been ordered. During November there was an increase of 10 percent in the amount on order as measured by the weighted indexes.

Production of Army-Type Guns, November 1941

During November the weighted index <sup>a</sup> of monthly production of army-type guns was 71. This was 13

points below the previous high of 84 recorded during October, and only 83 percent of the schedule for November established on November 1, 1941. The only major category showing an increase in output over October was airplane armament. Production of this type of armament continued the upward trend which has existed since the start of the year and the index was within two points of scheduled output for the month. Indexes of production of all other types of guns decreased from October. A contributing factor in the decline was the shorter working period resulting from an unusual number of Saturdays, Sundays and holidays in the month.

As may be seen from the chart on page XVII, on December 1, 1941 the weighted index of total cumulated production of army-type guns stood at 50, compared with financed production requirements of 272. Orders increased five percent during the month of November, and by December 1 almost all of the financed requirements had been ordered.

Pending Legislation

\$450 million are appropriated for Federal Works Agency defense housing and community facilities in a bill now awaiting the President's signature.

Employment in Private Defense Industries, November, 1941

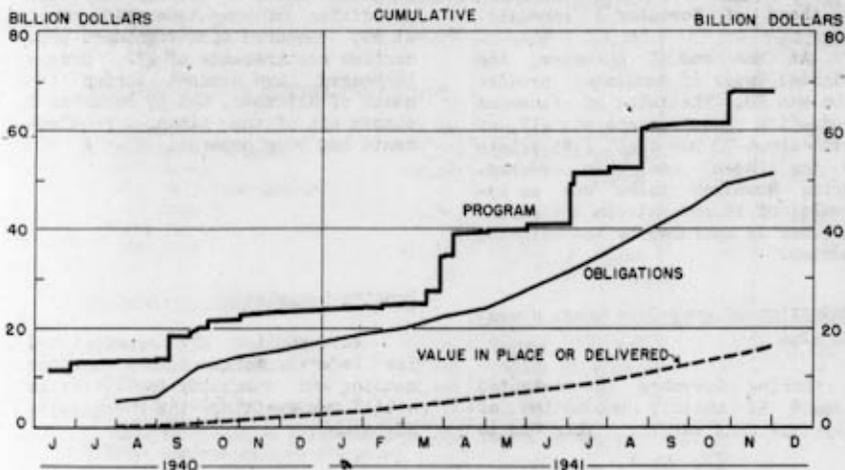
Employment in 18 selected private defense industries in November 1941 was 2,780,900, sixty-eight percent higher than at the beginning of the defense program in July 1940. The number of workers in 16 of these industries has been increasing steadily. Brass, bronze and copper and smelting and refining have shown declines since late in the summer of 1941, largely due to shortages of raw materials for the production of civilian goods.

Employment in the aero engines, aircraft, ammunitions, explosives, and shipbuilding industries about trebled in the first 17 months of the defense program while only five industries--aluminum, blast furnaces, steel works, etc., brass, bronze and copper, smelting and refining, and optical goods--showed increases of less than 50 percent.

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

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TOTAL DEFENSE PROGRAM



## DEFENSE PROGRESS SERIES

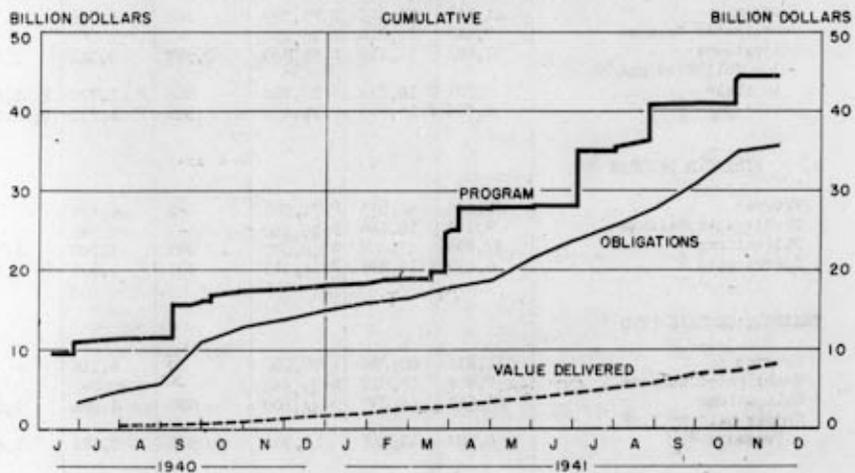
## TOTAL UNITED STATES DEFENSE PROGRAM

FINANCIAL PROGRAM SUMMARY	Cumulative 6/11/40 through			Monthly		
	End 1st full year 6/30/41	End of November 1941	December 15, 1941 h	November 1940	October 1941	November 1941
(Million dollars)						
TOTAL DEFENSE PROGRAM IN U.S. <sup>a</sup>						
Program	41,131	68,405	P 78,279	308	6,551	87
Unobligated balance	9,450	16,946	P 26,450	-	-	-
Obligations	31,681	51,459	P 51,829	1,307	5,341	1,797
Value delivered and/or in place	8,701	P 16,779	P 17,794	608	P 1,770	P 1,925
Checks paid <sup>d</sup>	8,503	P 15,803	P 16,863	567	P 1,737	P 1,674
U. S. FINANCED PROGRAM <sup>b</sup>						
Program	37,446	64,633	P 74,507	-2	6,490	84
Unobligated balance	9,450	16,946	P 26,450	-	-	-
Obligations	27,996	47,687	P 48,057	997	5,280	1,794
Checks paid <sup>d</sup>	6,430	P 13,299	P 14,313	391	P 1,657	P 1,578
TREASURY GENERAL FUND <sup>c</sup>						
Program	34,638	60,286	70,160	0	6,116	64
Unobligated balance	7,978	16,049	P 25,553	-	-	-
Obligations	26,660	44,237	P 44,607	980	4,984	1,437
Checks paid by U. S. Treasury <sup>d</sup>	6,080	12,448	13,382	379	1,526	1,438
MUNITIONS PROD. & DEFENSE CONSTRUCTION						
Program	36,671	57,315	P 66,392	299	4,025	129
Unobligated balance	7,188	11,250	P 19,996	-	-	-
Obligations	29,483	46,065	P 46,396	1,191	4,878	1,315
Value delivered and/or in place <sup>e</sup>	6,945	P 13,185	P 13,950	495	P 1,340	P 1,475
Value not delivered nor in place	22,538	P 32,880	P 32,446	-	-	-
NON-MUNITIONS ITEMS, TOTAL						
Program	4,460	11,090	P 11,887	9	2,526	-42
Unobligated balance	2,262	5,696	P 6,454	-	-	-
Obligations	2,198	5,394	P 5,433	116	463	482
Checks issued by agencies <sup>e</sup>	1,756	P 3,594	P 3,844	113	P 430	P 450

Table continued on following page. For footnotes see Page XII.

● Graph appears on opposite page.

MUNITIONS PRODUCTION



## DEFENSE PROGRESS SERIES

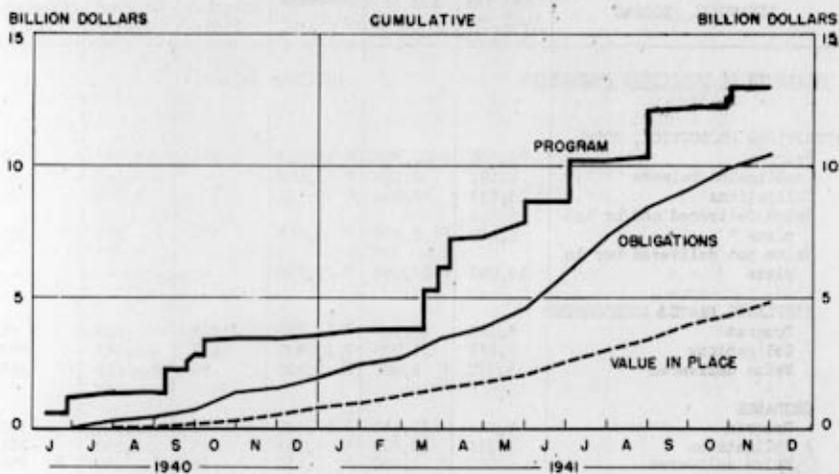
## TOTAL UNITED STATES DEFENSE PROGRAM

FINANCIAL PROGRAM	Cumulative 6/11/41 through			Monthly		
	End 1st full year 6/30/41	End of November 1941	December 15, 1941 h	November 1940	October 1941	November 1941
<b>BREAKDOWN OF MUNITIONS PRODUCTION</b>						
(Million dollars)						
<b>MUNITIONS PRODUCTION, TOTAL</b>						
Program	28,024	44,329	P 51,249	303	3,337	90
Unobligated balance	4,491	8,585	P 15,408	-	-	-
Obligations	23,533	35,744	P 35,841	940	3,756	900
Value delivered and/or in place *	4,440	P 8,275	P 8,815	305	P 825	P 985
Value not delivered nor in place	19,093	P 27,469	P 27,026	-	-	-
<b>AIRPLANES, PARTS &amp; ACCESSORIES</b>						
Program	8,481	13,167	P 14,896	183	645	-8
Obligations	7,281	11,738	P 11,837	438	1,383	693
Value delivered	1,010	P 1,980	P 2,110	60	P 215	P 245
<b>ORDNANCE</b>						
Program	7,780	13,451	P 17,349	67	1,614	121
Obligations	5,418	9,609	P 9,563	245	2,130	-312
Value delivered	700	P 1,510	P 1,650	55	P 180	P 230
<b>NAVAL SHIPS</b>						
Program	6,654	8,537	P 8,846	-	101	-23
Obligations	6,452	7,548	P 7,590	101	142	43
Value delivered and/or in place	960	P 1,780	P 1,885	65	P 160	P 190
<b>MERCHANT SHIPS</b>						
Program	1,766	3,537	P 3,537	2	849	0
Obligations	1,484	2,328	P 2,328	2	132	77
Value delivered and/or in place	190	P 385	P 425	10	P 50	P 65
<b>OTHER MUNITIONS AND SUPPLIES</b>						
Program	3,343	5,637	P 6,621	51	128	0
Obligations	2,898	4,521	P 4,523	154	-31	399
Value delivered	1,580	P 2,620	P 2,745	115	P 220	P 255

Table continued on following page. For footnotes see Page XII.

● Graph appears on opposite page.

### DEFENSE CONSTRUCTION



## DEFENSE PROGRESS SERIES

## TOTAL UNITED STATES DEFENSE PROGRAM

	Cumulative 6/11/40 through			Monthly		
	End 1st full year 6/30/41	End of November 1941	December 15, 1941 <sup>h</sup>	November 1940	October 1941	November 1941
BREAKDOWN OF DEFENSE CONSTRUCTION (Million dollars)						
DEFENSE CONSTRUCTION, TOTAL (LAND, BLDGS., EQUIP.)						
Program	8,647	12,986	P 15,143	-4	688	39
Unobligated balance	2,697	2,665	P 4,588	-	-	-
Obligations	5,950	10,321	P 10,555	251	1,122	P 415
Value in place	2,505	P 4,910	P 5,135	190	P 515	P 490
Value not in place	3,445	P 5,411	P 5,420	-	-	-
INDUSTRIAL FACILITIES (LAND, BLDGS., EQUIP.)						
Program	5,305	7,854	P 8,320	-4	691	18
Obligations	3,050	5,763	P 5,994	108	689	216
Value in place	960	P 2,240	P 2,375	35	P 265	P 265
INDUSTRIAL FACILITIES, BUILDINGS ONLY						
Program	1,607	n.a.	n.a.	n.a.	303	n.a.
Value in place	575	n.a.	n.a.	n.a.	181	n.a.
POSTS, DEPOTS, STATIONS						
Program	2,850	4,490	P 5,881	0	-3	21
Obligations	2,625	4,135	P 4,137	112	392	185
Value in place	1,430	P 2,360	P 2,425	155	P 215	P 185
HOUSING, NON-MILITARY						
Program	492	642	942	0	0	0
Obligations	275	423	424	31	41	14
Value in place	115	P 310	P 335	0	P 35	P 40
BREAKDOWN OF CLASSES OF NON-MUNITIONS						
NON-MUNITIONS, TOTAL						
Program	4,460	11,090	P 11,887	9	2,526	-42
Unobligated balance	2,262	5,696	P 6,454	-	-	-
Obligations	2,198	5,394	P 5,433	116	463	P 482
Checks issued by agencies	1,756	P 3,594	P 3,844	113	P 430	P 450
STOCKPILE						
Program	983	1,631	P 1,631	0	60	0
Obligations	470	960	P 960	20	55	50
Checks issued by agencies	192	P 390	P 440	9	P 45	P 50
AGRICULTURAL & MISC. EXPORTS (DEFENSE AID)						
Program	1,250	3,043	P 3,043	-	1,949	0
Obligations	109	930	P 930	-	148	140
Checks issued by agencies	5	P 368	P 428	-	119	P 120

Table continued on following page. For footnotes see Page XII.  
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

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- <sup>g</sup> Report on checks paid by the Treasury for the account of the Maritime Commission makes allowance for receipts credited to the Construction Loan Fund.
- <sup>h</sup> Program includes funds provided in the Third Supplemental National Defense Appropriation Act of December 17, 1941.

## 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 November 1941	December 15, 1941 h	November 1940	October 1941	November 1941
(Million dollars)						
<b>NON-MUNITIONS (CONT'D)</b>						
<b>PAY, SUBSISTENCE &amp; TRAVEL f</b>						
Army Military						
Program	944	2,563	3,013	0	0	0
Obligations	934	1,834	P 1,834	57	146	150
Checks issued	696	P 1,355	P 1,425	40	P 140	P 145
Navy Military						
Program	376	963	963	0	0	159
Obligations	334	552	581	30	29	62
Checks issued	388	P 588	P 608	31	P 40	P 40
Civilian Payroll						
Program	32	170	276	0	16	0
Obligations	32	127	P 127	4	4	NO
Checks issued	356	P 639	P 674	26	P 60	P 65
<b>MISCELLANEOUS NON-MUNITIONS</b>						
Program	875	2,720	P 2,961	9	501	-201
Obligations	319	991	P 1,001	5	81	70
Checks issued by agencies	119	P 254	P 269	7	P 26	P 30
<b>BREAKDOWN BY AGENCIES</b>						
<b>AGENCIES INCLUDED IN TREASURY GENERAL FUND</b>						
U. S. ARMY						
Program	13,135	24,605	31,979	0	0	0
Obligations	11,404	21,002	P 21,002	446	3,746	404
Checks paid by U. S. Treasury	3,636	6,913	7,413	196	785	704
U. S. NAVY						
Program	12,308	17,691	19,396	0	113	64
Obligations	11,182	15,102	15,471	483	560	421
Checks paid by U. S. Treasury	2,217	4,232	4,482	169	442	441
DEFENSE AID						
Program	7,000	12,985	12,985	-	5,985	0
Allocations	5,177	9,199	10,511	-	315	2,415
Obligations	2,458	5,256	P 5,256	-	488	430
Checks paid by U. S. Treasury	21	654	780	-	192	198
U. S. MARITIME COMMISSION						
Program	969	2,735	2,735	0	0	0
Obligations	886	1,721	P 1,721	0	132	86
Checks paid by U. S. Treasury (net)	44	120	133	3	21	26

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

## FOOTNOTES

## DEFENSE PROGRESS SERIES

See Opposite Page

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n.s. Not Available

F Revised

P Preliminary

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## 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 November 1941	December 15, 1941 h	November 1940	October 1941	November 1941
(Million dollars)						
<u>AGENCIES INCLUDED IN TREASURY GENERAL FUND (CONT'D)</u>						
OTHER U. S. AGENCIES						
Program	1,226	2,270	P 3,065	0	18	0
Obligations	730	1,156	P 1,157	51	58	96
Checks paid by U. S. Treasury	162	529	574	11	86	69
<u>ADDITIONAL AGENCIES INCLUDED IN U. S. FINANCED PROGRAM</u>						
R. F. C. AND SUBSIDIARIES						
Program	2,808	4,347	P 4,347	-2	374	20
Obligations	1,336	3,450	P 3,450	17	296	357
Checks issued by R. F. C.	350	P 851	P 931	12	P 131	P 140
<u>ADDITIONAL INCLUDED IN TOTAL DEFENSE PROGRAM</u>						
FOREIGN CRIERS						
Program (orders)	3,685	3,772	P 3,772	310	61	3
Obligations	3,685	3,772	P 3,772	310	61	3
Checks issued by Purchasing Missions	2,073	P 2,504	P 2,550	176	P 80	P 96

OTHER DEFENSE INDICATORS

VALUE OF FACIL. ON APPLIC. FOR CENT. OF NECESSITY (Million dollars)						
Total	1,424	n.a.	n.a.	-	340	n.a.
Approved, private funds	829	n.a.	n.a.	-	52	n.a.
Approved, public funds	201	n.a.	n.a.	-	5	n.a.
Disapproved	7	n.a.	n.a.	-	3	n.a.
Pending	387	n.a.	n.a.	-	280	n.a.
<u>DEFENSE HOUSING</u>						
(Number of dwelling units)						
Fund allocations	110,298	145,655	146,485	n.a.	4,692	4,133
Constr. contracts awarded	78,820	120,976	121,101	n.a.	11,970	5,835
Construction completed	21,768	65,186	69,272	n.a.	9,300	10,302

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

## FOOTNOTES

## DEFENSE PROGRESS SERIES

See Opposite Page

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available for immediate obligation.

n.a. Not Available

F Revised

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## DEFENSE PROGRESS SERIES

## ECONOMIC ACTIVITY RELATED TO DEFENSE

	1940	1941				
	July	January	October	November		
DEFENSE EMPLOYMENT		(Thousand workers)				
Private, 18 major industr.	1,660	2,038	2,733	2,781		
Private contracts, pub. const.	13	448	500			
Public	117	171	248			
Total direct defense	1,790	2,657	3,481			
Selected defense industries		(Indexes 1939-100)				
Firearms	164.0	241.4	421.2	447.1		
Ammunitions	144.6	245.8	413.0	420.7		
Explosives	142.5	176.6	453.4	466.1		
LABOR DISPUTES IN PLANTS WITH IMPORTANT DEFENSE CONTRACTS						
Number strikes in progress	n.a.	13	P 26	24		
Workers involved (thousand)	n.a.	26	P 32	20		
Man days idle (thousand)	n.a.	146	P 192	108		

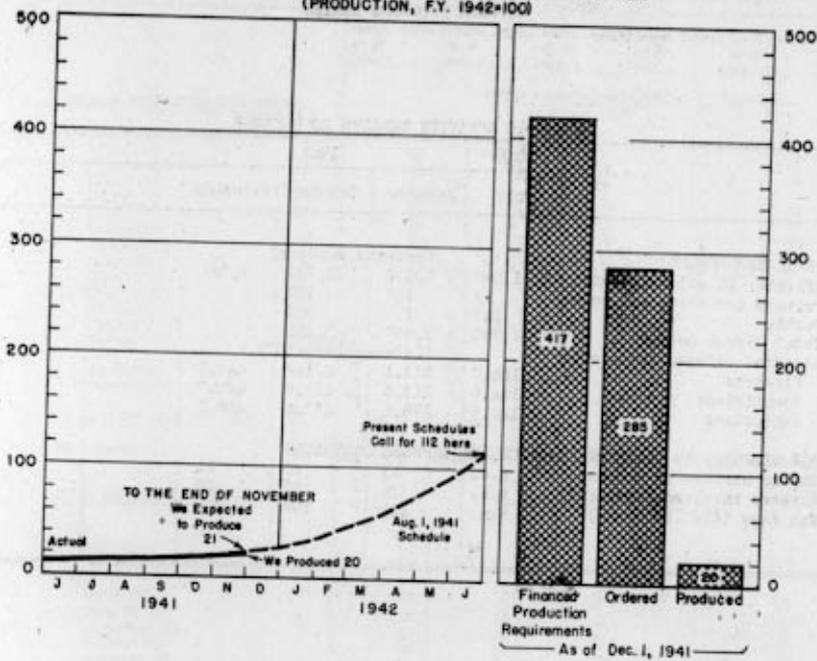
† Revised data

P Preliminary data.

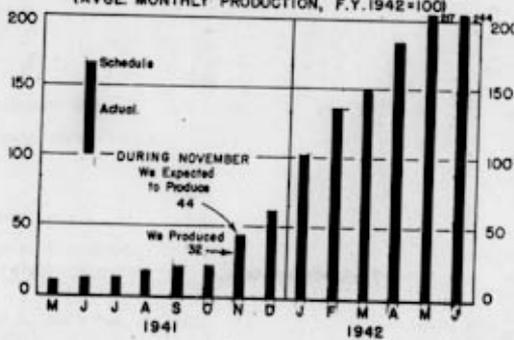
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AMMUNITION

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



INDEX OF PRODUCTION DURING MONTH  
(AVG. 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. ACTUAL AS OF NOV. 1	SCHED. ACTUAL AS OF OCT. 1	SCHED. ACTUAL AS OF AUG. 1			
Average monthly production FY 1942-100						
1940						
July	16	a { 7	a { 14	b { 11	27	9
December	26				38	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	84	22	71	63
November						
December	76	91	71	32	98	80
1942						
January	82	124	92	41	82	82
February	88	128	121	101	109	110
March	111	138	127	123	98	126
June	127	132	128	148	115	144
September	147	158	148	244	128	161
October	172	185	142	311	148	155
December	185	21	122	395	137	168
Av. monthly prod. FY 1942	100	100	100	100	100	100
Peak month	185 (12/42)	221 (8/42)	158 (7/42)	395 (12/42)	169 (11/42)	161 (7/42)
Total cumulative production to:						
Total production FY 1942 = 100						
1940						
July 31	1		-		2	1
December 31	8	4	7		16	6
1941						
March 30	16	6	13	9	27	12
June 30	27	12	22	11	42	19
September 30	41	28	38	15	61	28
October 31	46	36	44	17	70	33
November 30	52	44	50	21	80	39
December 31	58	54	60	25	78	47
1942						
January 31	67	64	70	34	85	55
February 28	77	76	81	45	83	60
March 31	87	80	88	58	103	70
June 30	127	127	128	122	132	112
September 30	163	173	168	185	157	158
December 31	204	205	199	274	247	195
Total production FY 1942	100	100	100	100	100	100
Production requirements, Dec. 1						
Financed	211	217	272	117	412	421
Pending	8	245	110	73	P.A.	P.A.
Ordered to December 1	209	214	264	280	412	421
To be ordered as of December 1	8	2	8	132		0

Army-type guns graph appears on page XVII. Ammunition graph appears on page XIV.

<sup>a</sup> Average July 1, 1940 - Dec. 31, 1940.  
<sup>c</sup> April 30, 1941.

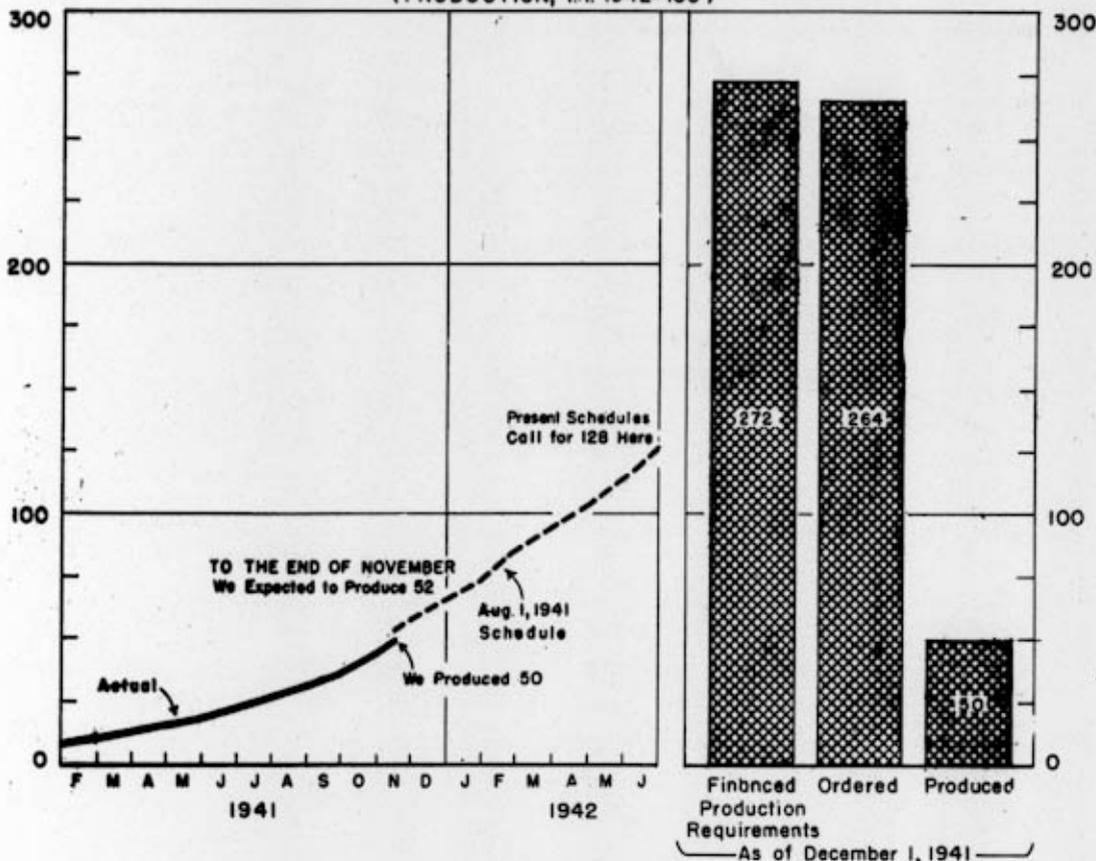
<sup>b</sup> Average July 1, 1940 - April 30, 1941.  
<sup>d</sup> As of November 1, 1941.

N.A. Data not available

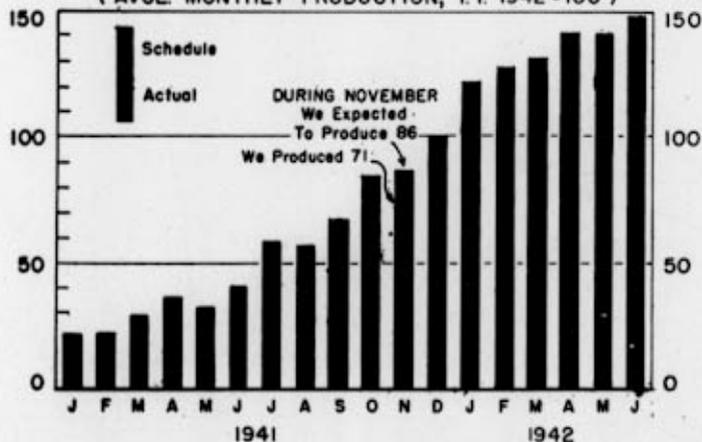
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### ARMY-TYPE GUNS

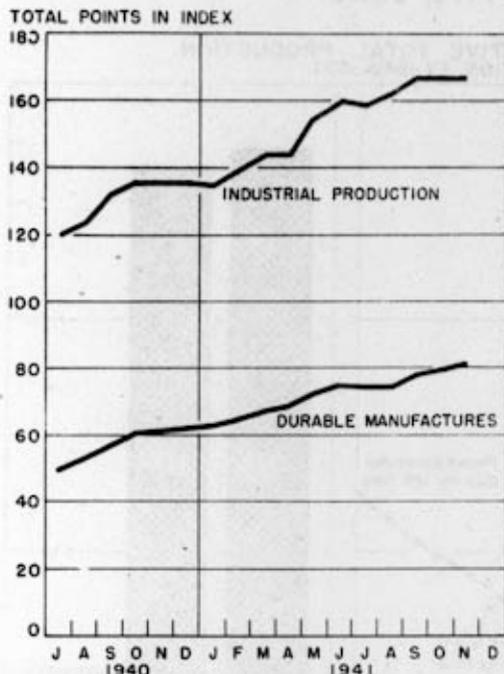
INDEX OF CUMULATIVE TOTAL PRODUCTION  
(PRODUCTION, F.Y. 1942=100)



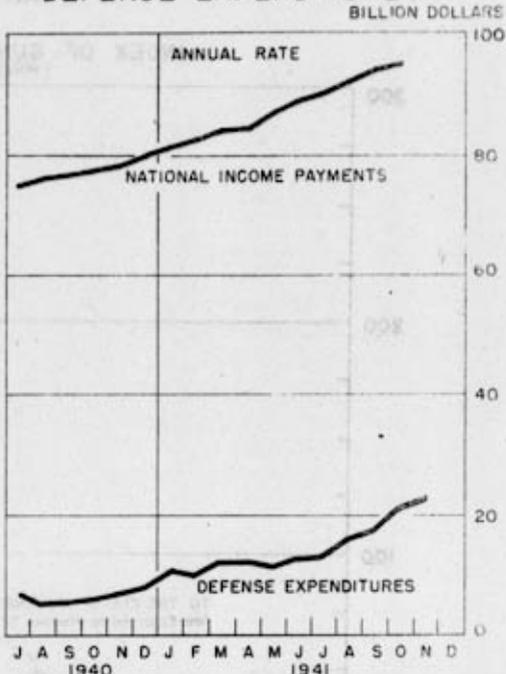
INDEX OF PRODUCTION DURING MONTH  
(AVG. MONTHLY PRODUCTION, F.Y. 1942=100)



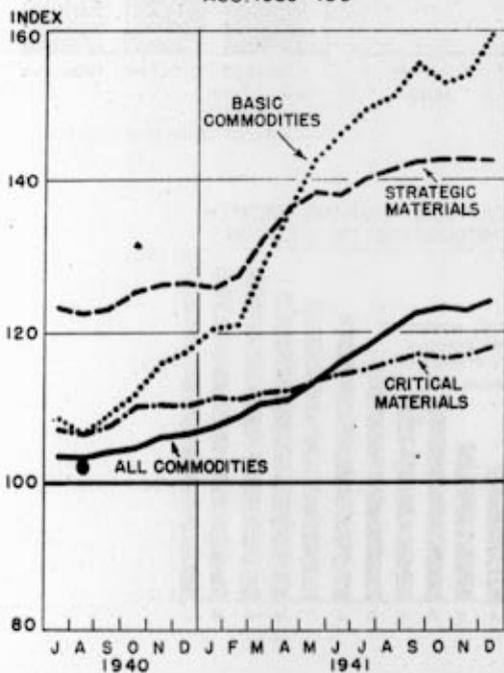
INDUSTRIAL PRODUCTION



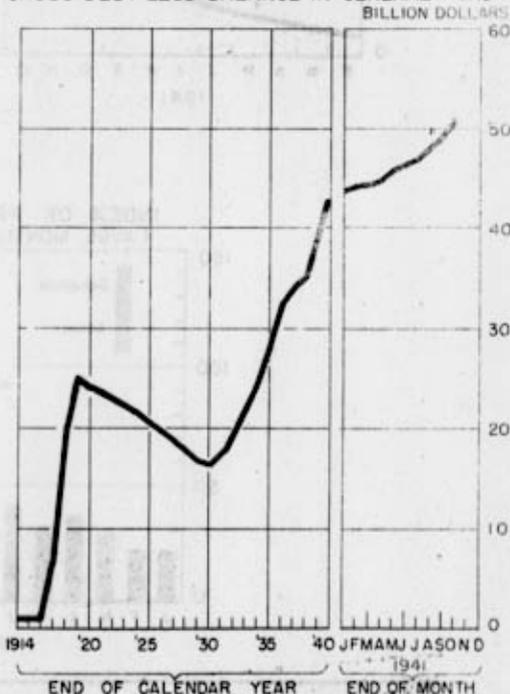
NATIONAL INCOME & DEFENSE EXPENDITURES



WHOLESALE PRICES  
AUG. 1939 = 100



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



## ECONOMIC ACTIVITY RELATED TO DEFENSE

The series on these pages 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				Week Ending	
	July	January	October	November	Dec. 13	Dec. 20	
● <b>FED. RES. BD. PROD. INDEXES</b>		(Unadjusted indexes 1935-39 = 100)					
Total industrial production	120	135	167	P 167			
Durable manufactures	131	166	210	P 212			
Nondurable manufactures	111	118	142	P 142			
Minerals	121	113	137	P 133			
<b>BUR. FOR. &amp; DOM. COM. MFRS. ORDERS, SHIPMENTS, INVENTORIES</b>		(Indexes)					
New orders, total (1/39=100)	127	176	P 192				
Shipments, total (1/39=100)	117	148	P 203				
Inventories, "(12/31/38=100)	109.2	120.8	P 142.6				
Durable (12/31/38=100)	111.9	129.7	P 155.2				
Nondurable (12/31/38=100)	106.4	111.2	P 129.0				
● <b>BLS PRICE INDEXES</b>		(Indexes)					
Strategic Materials (8/39=100)	123.6	126.1	143.0	143.1	142.9	143.1	
Critical Materials (8/39=100)	107.5	111.7	116.7	116.6	118.1	118.9	
Basic Commodities (8/39=100)	108.5	120.5	153.1	154.4	159.4	158.6	
Machine tools (8/39=100)	108.7	114.6	119.4	119.7	-	-	
All commodities (1926=100)	77.7	80.8	92.4	92.5	93.1		
<b>BLS COST OF LIVING INDEX</b>	100.3	100.8	109.4	110.2			
<b>TRANSPORTATION &amp; ELECTRIC POWER</b>		(Averages)					
Freight cars							
Loadings (thous. per week)	706	684	914	864	807		
Unloads for export (dly.)	1,502	1,352	1,885	1,704	1,711	1,664	
Surplus, total (thous. dly.)	133	110	44	61			
Boxcars	57	43	19	28			
Coal cars	47	42	11	18			
Power prod. (mil. kwh. wkly.)	2,731	3,080	3,439	3,378	3,431		
● <b>NATIONAL INCOME</b>		(Billion dollars, annual rate)					
Total income payments	75.2	81.7	94.9				
● <b>FEDERAL DEBT</b>		(Billion dollars, end of month)					
Net public debt	41.5	43.9	50.9	52.7			
<b>EMPLOYMENT</b>		(Thousand workers)					
Total civil nonagricultural	35,904	37,142	P 40,749				
Total WPA employment	1,655	1,890	1,040	1,056	1,060		
Defense		Confidential data. See page XIII					
Deep-sea merchant vessels	51	49	50				
<b>UNEMPLOYMENT (WPA ESTIMATE)</b>		(Million workers)					
Number of unemployed	9.3	7.6	3.9	3.9			

† Revised data.

● Graph appears on opposite page.

P Preliminary data    n.s. Data not available



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## ECONOMIC ACTIVITY RELATED TO DEFENSE

	1940		1941	
	July	January	October <sup>F</sup>	November
<b>EMPLOYMENT IN 18 MAJOR PRIVATE DEFENSE INDUSTRIES (Indexes 1939-100)</b>				
All eighteen industries	123.3 <sup>F</sup>	151.4	203.0	206.0
Blst. furn., st. wks., etc.	116.7	128.7	145.0	145.2
Foundry & mach. shop prod.	114.8	137.5	173.1	174.2
Electr. mach., app. & supp.	115.3	143.8	187.8	188.0
Smelting and refining	112.7	124.0	128.4	127.0
Brass, bronze, copper prod.	114.5	151.5	170.1	166.4
Aluminum manufactures	121.2	146.5	157.6	157.9
Machine tools	155.6	189.4	239.6	243.4
Machine tool accessories	139.7	167.7	246.9	251.2
Abrasives	112.1	150.7	193.7	192.9
Screw-machine products	115.9	156.9	207.9	210.7
Airframes	222.2	355.7	647.7	680.8
Aero-engines	299.2	434.1	830.3	918.0
Shipbuilding	138.7	195.8	401.0	426.9
Firearms				
Ammunition	Confidential data. See page XIII			
Explosives				
Optical goods	111.9	138.1	177.1	182.8
Instruments	115.7	147.9	218.1	221.9

<sup>F</sup> Revised data<sup>P</sup> Preliminary data

n.s. Data not available.

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**DEFENSE  
PROGRESS**

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NUMBER 68

DECEMBER 31, 1941

Office of Production Management  
BUREAU OF RESEARCH & STATISTICS

STACY MAY, CHIEF

# DEFENSE PROGRESS

Issued to The President

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# DEFENSE PROGRESS

## REVIEWS OF CONTENTS



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STATISTICS • STACY MAY, CHIEF

ECONOMIC ANALYSIS BRANCH  
MORRIS A. COPELAND, CHIEF

LESTER S. KELLOGG,  
ASSISTANT CHIEF & EDITOR

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**BRIEFS OF CONTENTS**Page

- IT IS PROPOSED TO STEP UP THE PRESENT 1942 SCHEDULE of munitions production and defense construction from \$27 billion to \$40 billion. A \$40 billion program would mean that by the end of 1942 more than half of our national income would be devoted to the war effort. This would make our effort nearly on a par with the British and German war effort. 1
  
- OUTPUT OF PRINCIPAL ARMY-TYPE GUNS SCHEDULED FOR delivery by June 30, 1942 was increased by only \$235 million during the four months ending November 30. During this period net new orders placed totaled a billion and a half. During the same four months net new orders for combat vehicles totaled half a billion, but total output scheduled for delivery by July 1, 1942 increased approximately \$100 million. 5
  
- THE BLOCKADE IN THE PACIFIC has increased the difficulty of obtaining strategic and critical materials. Latin America may be an alternative source for manganese and tungsten but cannot replace Far Eastern areas as a supplier of rubber, manila, and tin. 7
  
- DEFENSE PROGRESS SERIES I

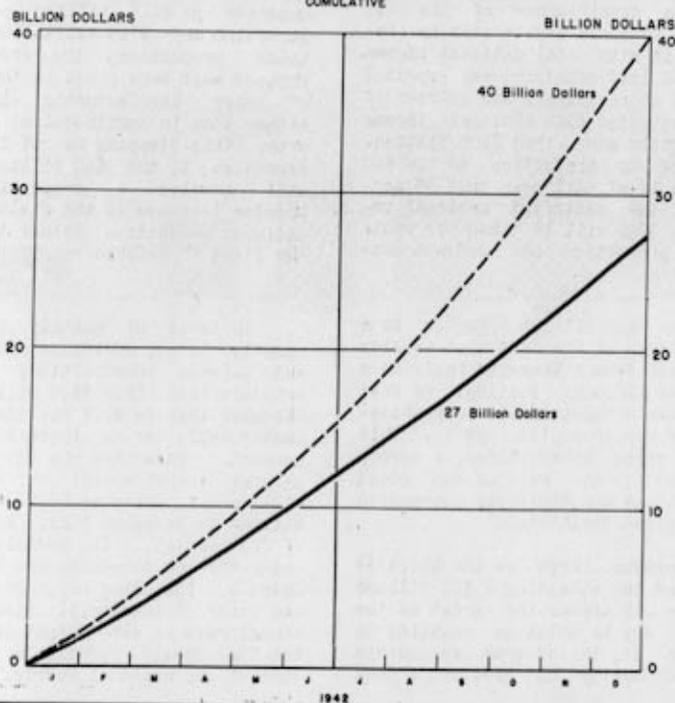
## STEPPING UP 1942 PRODUCTION SCHEDULES

IT IS PROPOSED TO STEP UP THE PRESENT 1942 SCHEDULE OF MUNITIONS PRODUCTION AND DEFENSE CONSTRUCTION FROM \$27 BILLION TO \$40 BILLION. A \$40 BILLION PROGRAM WOULD MEAN THAT BY THE END OF 1942 MORE THAN HALF OF OUR NATIONAL INCOME WOULD BE DEVOTED TO THE WAR EFFORT. THIS WOULD MAKE OUR EFFORT NEARLY ON A PAR WITH THE BRITISH AND GERMAN EFFORT.

**T**he coming of war makes necessary a rapid stepping up of schedules for munitions production and defense construction. Present sched-

ules call for a total of \$27 billion in calendar year 1942. <sup>a</sup> This estimate is exclusive of pay, subsistence, travel, Defense Aid Agricultural purchases, and stockpiles.

CHART I - OLD AND NEW 1942 SCHEDULES  
FOR MUNITIONS PRODUCTION AND DEFENSE CONSTRUCTION  
EXCLUSIVE OF PAY, SUBSISTENCE, TRAVEL, AGRICULTURAL PRODUCTS & STOCKPILE  
CUMULATIVE



The revision in the schedules of munitions production and defense construction for 1942 which has been proposed involves the stepping up of the 1942 program to \$40 billion. This \$40 billion program of munitions represents an increase of \$13 billion, or 48 percent over the previously established 1942 schedules. These munitions production and defense construction estimates may be compared with an actual output of \$12 billion for the calendar year 1941, and an annual rate of \$18 billion during December, 1941. The old and revised schedules for calendar year 1942 are compared in Chart 1.

The significance of the increased schedule may be seen by comparing it with total national income. The old 1942 schedule was expected to take approximately one quarter of the estimated 1942 national income of slightly more than \$100 billion. Stepping up production to the \$40 billion level will mean that 38 percent of the estimated national income in 1940 will be taken for munitions production and defense construction.

The \$40 billion program is a recognition of the fact that we have now moved from a Near-War basis to a full War Economy footing. We must now make a fundamental reorganization of our production system. This means, among other things, a speedy increase in the rate of war plant utilization and wholesale conversion of civilian facilities.

However, large as the increase involved in attaining a \$40 billion program may appear and great as the effort may be which is required to realize it, the program represents proportionately no greater effort

and, in fact, a somewhat smaller effort than the current British and German war effort. Even when allowance is made for pay, subsistence, and other nonindustrial items, that part of national income going to war purposes under the new schedule will mean no more than 45 percent for the year 1942, as compared with a current British and German war effort of upwards of 50 percent.

It is to be noted that the old production schedule calls for \$6 billion in construction and \$21 billion in munitions production. It is to be stressed that as compared with 1941 production, which amounted to \$4.5 billion of construction and \$7.5 billion of munitions production, the great increases must take place in the field of heavy manufacturing industry rather than in construction. Moreover, this stepping up of the 1942 schedules to the \$40 billion level will involve a proportionately greater increase in the field of munitions production rather than in the field of defense construction.

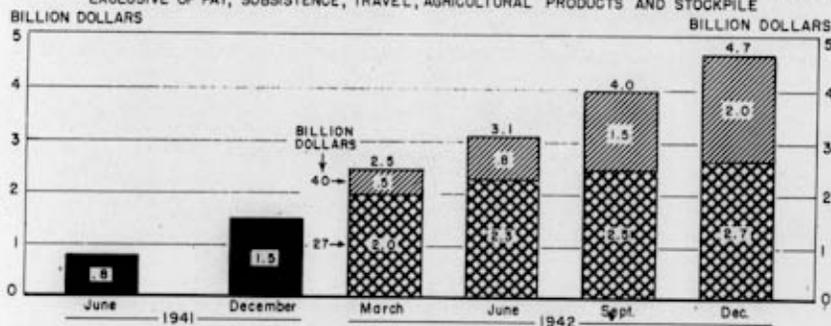
In terms of monthly rates of output, i. e., munitions production and defense construction, the old schedule rose from \$1.5 billion in December 1941 to \$2.7 billion in December 1942, or an increase of 80 percent. Under the new \$40 billion program the rise will be from \$1.5 billion in December 1941 to \$4.7 billion in December 1942, or a rise of 213 percent. The monthly rates under the two schedules are shown in Chart 2. Including pay, subsistence, and other nonindustrial items, the annual rate of war output in December 1942 should approximate 55 percent of our national income.

The \$40 billion program still falls short of the production levels required for the military strategy of 1943. We need even more planes, tanks, guns, ships, and other materiel. This makes urgent the need to achieve at least a \$40 billion program since the postponement of war production now means the postpone-

ment of victory later. Success now on the economic front is essential for victory in the future.

<sup>a</sup> This estimate is to be found in "Forecast II of Munitions Production and Defense Construction", Defense Progress, No. 64, December 5, 1941, pp. 1-6.

CHART-2 MONTHLY RATES OF MUNITIONS PRODUCTION AND DEFENSE CONSTRUCTION UNDER OLD AND NEW 1942 SCHEDULES  
EXCLUSIVE OF PAY, SUBSISTENCE, TRAVEL, AGRICULTURAL PRODUCTS AND STOCKPILE



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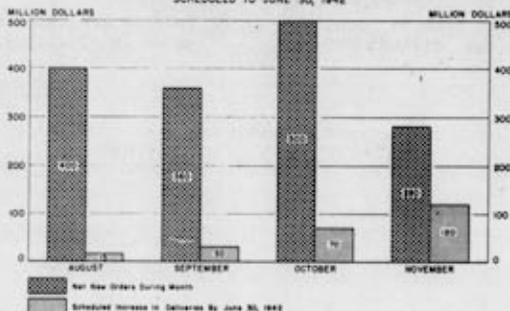
## ORDERS AND DELIVERIES OF ARMY-TYPE GUNS AND COMBAT VEHICLES

OUTPUT OF PRINCIPAL ARMY-TYPE GUNS SCHEDULED FOR DELIVERY BY JUNE 30, 1942 WAS INCREASED BY ONLY \$235 MILLION DURING THE FOUR MONTHS ENDING NOVEMBER 30. DURING THIS PERIOD NET NEW ORDERS PLACED TOTALED A BILLION AND A HALF. DURING THE SAME FOUR MONTHS NET NEW ORDERS FOR COMBAT VEHICLES TOTALED HALF A BILLION, BUT TOTAL OUTPUT SCHEDULED FOR DELIVERY BY JULY 1, 1942 INCREASED APPROXIMATELY \$100 MILLION.

Between August 1 and December 1, 1941 orders for principal Army-type guns increased approximately \$1,540 million. At the same time the value of cumulative scheduled deliveries to June 30, 1942 increased \$235 million. During the same period orders for principal types of combat vehicles increased from \$1,150 million to \$1,650 million, while scheduled deliveries in-

creased by about \$110 million. Charts 1 and 2 compare net new orders in each recent month with the increases in deliveries scheduled during the immediate future for guns and combat vehicles respectively. It is evident from these charts that the major portions of new orders have been for increases in deliveries in the distant future, rather than during the next six months. In-

CHART 1 - ARMY-TYPE GUNS  
NET NEW ORDERS AND INCREASES IN TOTAL DELIVERIES  
SCHEDULED TO JUNE 30, 1942



asmuch as almost all recent new orders for combat vehicles were placed during the month of October, it is not possible to obtain any indications as to whether the situation is improving. In the case of guns, the relationship between new orders and immediate deliveries is steadily improving.

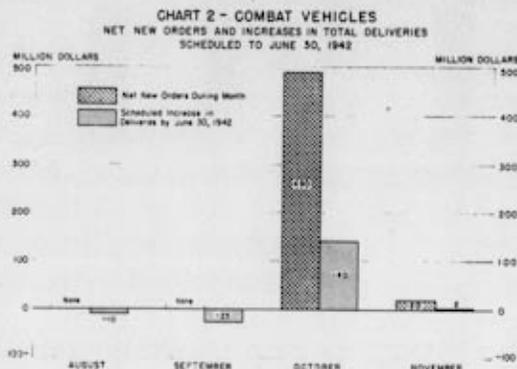
The indicated comparison between new orders and immediate increases in deliveries understates somewhat the extent to which the new contracts were used to step up current schedules. Schedules are revised each month and so reflect new orders for early delivery less decreases in expected deliveries established under earlier contracts.

It is important to see that new orders are used to increase current deliveries rather than to continue schedules into the distant future.

Admittedly it is not possible to step up deliveries as rapidly as orders, particularly in the case of the heavier guns and vehicles, but recent reports on plant utilization in the ordnance industry <sup>a</sup> indicate a potential further increase in output of 15 percent or more above present schedules through fuller plant utilization.

The Second and Third Supplemental National Defense Appropriation Acts (and the pending Fourth Supplement) carry provisions for substantial additional funds for the procurement of ordnance; with the nation now on a war footing, there is need to make certain that procurement and production are stepped up as fast as possible.

<sup>a</sup> Defense Progress, Number 64, December 19, 1941, pp. 1-6.



## LATIN AMERICA AS A SOURCE OF VITAL WAR MATERIALS

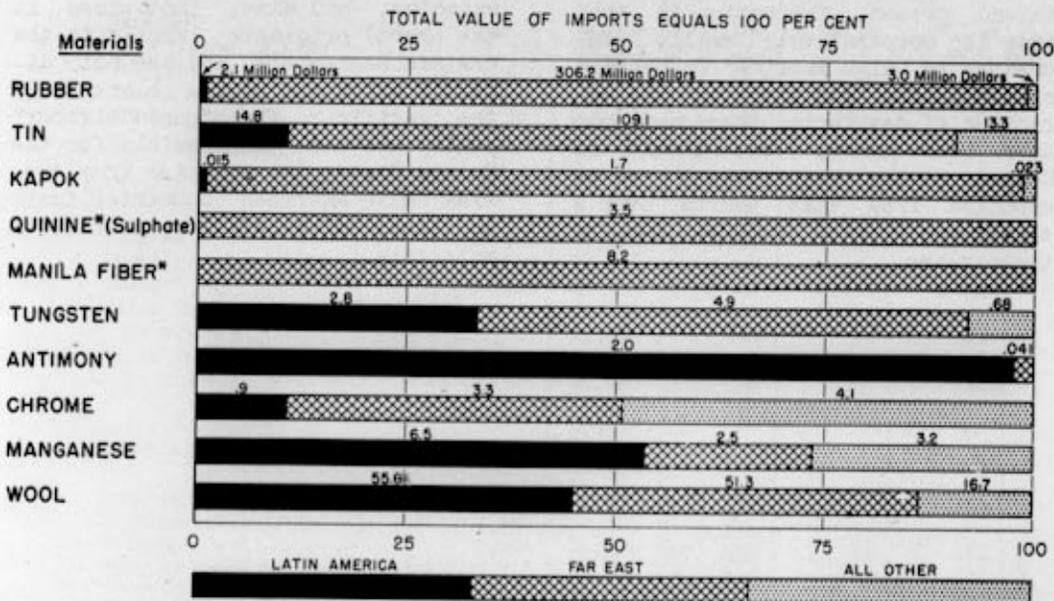
THE BLOCKADE IN THE PACIFIC HAS INCREASED THE DIFFICULTY OF OBTAINING STRATEGIC AND CRITICAL MATERIALS. LATIN AMERICA MAY BE AN ALTERNATIVE SOURCE FOR MANGANESE AND TUNGSTEN BUT CANNOT REPLACE FAR EASTERN AREAS AS A SUPPLIER OF RUBBER, MANILA, AND TIN.

The war and blockade in the Pacific, which have cut off supplies of a dozen or more vital defense materials from that area, have focused attention on Latin American countries as alternative sources of supply. The Export-Import Bank has been assisting Western Hemisphere countries in the development of their resources for the past several years through loans. Latin American countries are playing

an increasingly significant part in supplying war materials.

The war in the Pacific calls for a stepping up of production schedules for 1942 which will increase the total requirements for many raw materials. The supply situation with respect to many war materials does not seem to justify current optimistic press statements that "The materials problem is

VALUE OF UNITED STATES IMPORTS OF 10 WAR MATERIALS ORIGINATING IN LATIN AMERICA AND THE FAR EAST



licked." As insurance against threatened attacks on ocean shipping in the South Atlantic, all available supplies of strategic and critical materials, from whatever source, ought to be brought into the United States as quickly as the shipping facilities will permit.

The preceding chart shows the proportion of value of imports of 10 strategic and critical materials originating both in the Pacific areas and Latin America, for the first three quarters of 1941.

The chart shows that imports of kapok, manila fiber, quinine, rubber, and tin, have largely originated in the Pacific area. These materials are seriously affected by the Pacific blockade. Only small quantities have been obtained from Latin America and present production in that area is comparatively small. Increases in Latin American production seem possible and steps in the direction of developing these resources have been taken, but little of United States requirements can be expected from that source over a short run period such as two or three years.

A second group of imported basic war materials, antimony, chrome, manganese, tungsten, and wool, originating both in the Pacific area and Latin American countries, is less seriously affected by the blockade. From one-third to more than half of the United States imports of these materials come from Latin America, and other areas outside the present blockade. Provision has been made for the production and acquisition of larger proportions of United States requirements from Latin American countries. The prospects for increased production seem more hopeful for these materials.

United States imports of a third group of strategic and critical materials, including bauxite, copper, cotton linters, iodine, cattle hides, mercury, quartz crystal, quebracho extract, sodium nitrate, vanadium, and zinc, (not shown in the chart) originate largely in the Western Hemisphere and are not directly affected by the blockade in the Pacific. The "good-neighbor" policy has made it possible for the United States to purchase from several Latin American countries their surpluses of strategic and critical materials.

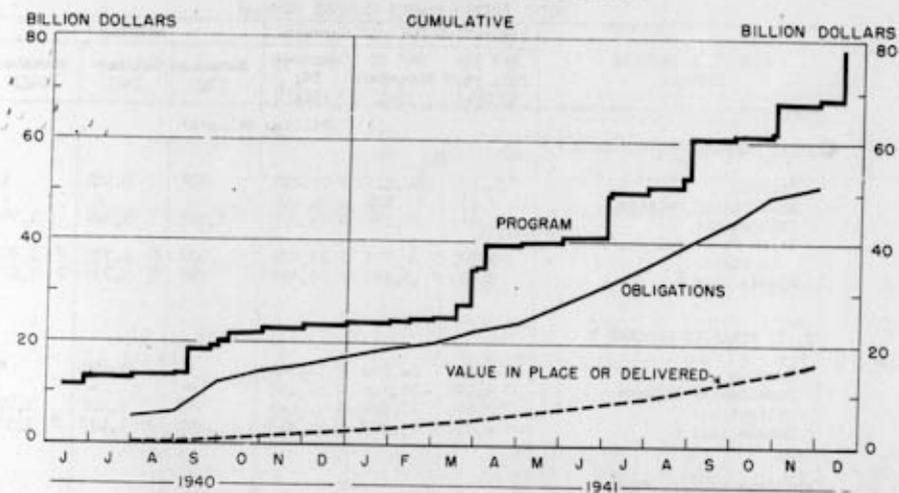
## DEFENSE PROGRESS SERIES

## TOTAL UNITED STATES DEFENSE PROGRAM

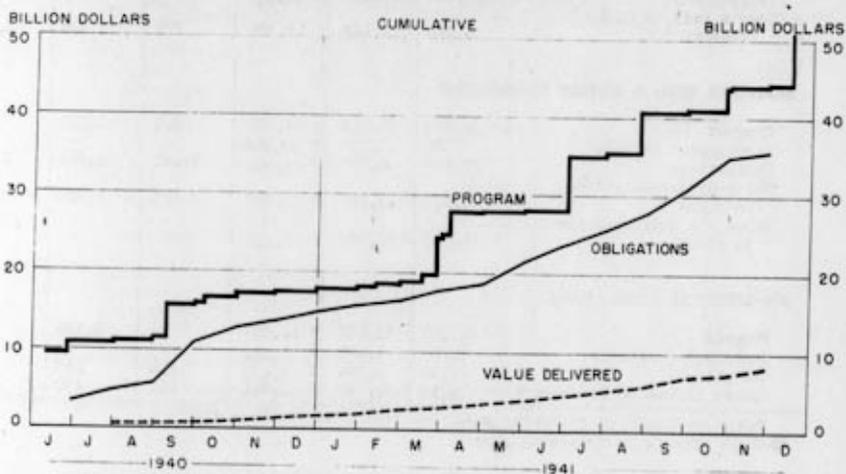
FINANCIAL PROGRAM SUMMARY	Cumulative 6/11/40 through			Monthly		
	End let full year 6/30/41	End of November 1941	December 15, 1941 <sup>h</sup>	November 1940	October 1941	November 1941
(Million dollars)						
● TOTAL DEFENSE PROGRAM IN U.S. <sup>a</sup>						
Program	41,131	68,405	P 78,279			
Unobligated balance	9,450	16,946	P 26,450	308	6,551	87
Obligations	31,681	51,459	P 51,829	-	-	-
Value delivered and/or in place	8,701	P 16,779	P 17,794	1,307	5,341	1,797
Checks paid <sup>d</sup>	8,503	P 15,803	P 16,863	608	P 1,770	P 1,925
				567	P 1,737	P 1,674
U. S. FINANCED PROGRAM <sup>b</sup>						
Program	37,446	64,633	P 74,507			
Unobligated balance	9,450	16,946	P 26,450	-2	6,490	84
Obligations	27,996	47,687	P 48,057	-	-	-
Checks paid <sup>d</sup>	6,430	P 13,299	P 14,313	997	5,280	1,794
				391	P 1,657	P 1,578
TREASURY GENERAL FUND <sup>c</sup>						
Program	34,638	60,286	70,160			
Unobligated balance	7,978	16,049	P 25,553	0	6,116	64
Obligations	26,660	44,237	P 44,607	-	-	-
Checks paid by U. S. Treasury <sup>d</sup>	6,080	12,448	13,382	980	4,984	1,437
				379	1,526	1,438
MUNITIONS PROD. & DEFENSE CONSTRUCTION						
Program	36,671	57,315	P 66,392			
Unobligated balance	7,188	11,250	P 19,996	299	4,025	129
Obligations	29,483	46,065	P 46,396	-	-	-
Value delivered and/or in place <sup>e</sup>	6,945	P 13,185	P 13,950	1,191	4,878	1,315
Value not delivered nor in place	22,538	P 32,880	P 32,446	495	P 1,340	P 1,475
				-	-	-
NON-MUNITIONS ITEMS, TOTAL						
Program	4,460	11,090	P 11,887			
Unobligated balance	2,262	5,696	P 6,454	9	2,526	-42
Obligations	2,198	5,394	P 5,433	-	-	-
Checks issued by agencies <sup>e</sup>	1,756	P 3,594	P 3,844	116	463	482
				113	P 430	P 450

Table continued on following page. For footnotes see Page VIII.  
 ● Graph appears on following page.

### TOTAL DEFENSE PROGRAM



### MUNITIONS PRODUCTION



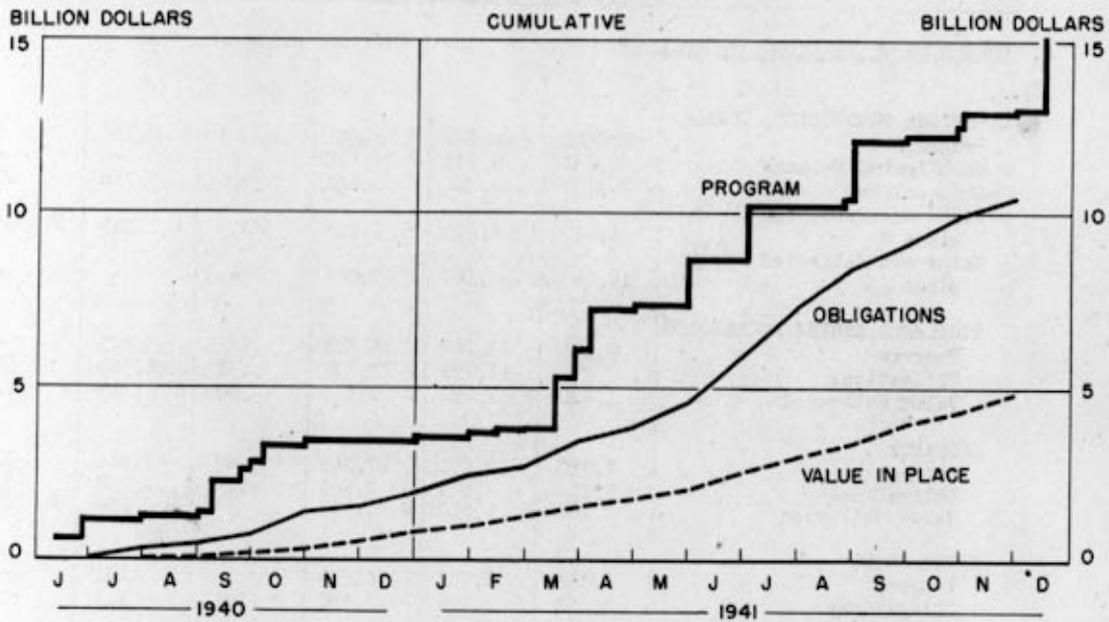
DEFENSE PROGRESS SERIES

TOTAL UNITED STATES DEFENSE PROGRAM

FINANCIAL PROGRAM	Cumulative 6/11/40 through			Monthly		
	End 1st full year 6/30/41	End of November 1941	December 15, 1941 h	November 1940	October 1941	November 1941
<b>BREAKDOWN OF MUNITIONS PRODUCTION</b>						
	(Million dollars)					
<b>MUNITIONS PRODUCTION, TOTAL</b>						
Program	28,024	44,329	P 51,249	303	3,337	90
Unobligated balance	4,491	8,585	P 15,408	-	-	-
Obligations	23,533	35,744	P 35,841	940	3,756	900
Value delivered and/or in place *	4,440	P 8,275	P 8,815	305	P 825	P 985
Value not delivered nor in place	19,093	P 27,469	P 27,026	-	-	-
<b>AIRPLANES, PARTS &amp; ACCESSORIES</b>						
Program	8,481	13,167	P 14,896	183	645	-8
Obligations	7,281	11,738	P 11,837	438	1,383	693
Value delivered	1,010	P 1,980	P 2,110	60	P 215	P 245
<b>ORDNANCE</b>						
Program	7,780	13,451	P 17,349	67	1,614	121
Obligations	5,418	9,609	P 9,563	245	2,130	-312
Value delivered	700	P 1,510	P 1,650	55	P 180	P 230
<b>NAVAL SHIPS</b>						
Program	6,654	8,537	P 8,846	-	101	-23
Obligations	6,452	7,548	P 7,590	101	142	43
Value delivered and/or in place	960	P 1,780	P 1,885	65	P 160	P 190
<b>MERCHANT SHIPS</b>						
Program	1,766	3,537	P 3,537	2	849	0
Obligations	1,484	2,328	P 2,328	2	132	77
Value delivered and/or in place	190	P 385	P 425	10	P 50	P 65
<b>OTHER MUNITIONS AND SUPPLIES</b>						
Program	3,343	5,637	P 6,621	51	128	0
Obligations	2,898	4,521	P 4,523	154	-31	399
Value delivered	1,580	P 2,620	P 2,745	115	P 220	P 255

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

DEFENSE CONSTRUCTION



DEFENSE PROGRESS SERIES

TOTAL UNITED STATES DEFENSE PROGRAM

	Cumulative 6/11/40 through			Monthly		
	End 1st full year 6/30/41	End of November 1941	December 15, 1941 <sup>h</sup>	November 1940	October 1941	November 1941
<u>BREAKDOWN OF DEFENSE CONSTRUCTION</u> (Million dollars)						
<b>DEFENSE CONSTRUCTION, TOTAL (LAND, BLDGS., EQUIP.)</b>						
Program	8,647	12,986	P 15,143	-4	688	39
Unobligated balance	2,697	2,665	P 4,588	-	-	-
Obligations	5,950	10,321	P 10,555	251	1,122	415
Value in place	2,505	P 4,910	P 5,135	190	P 515	P 490
Value not in place	3,445	P 5,411	P 5,420	-	-	-
<b>INDUSTRIAL FACILITIES (LAND, BLDGS., EQUIP.)</b>						
Program	5,305	7,854	P 8,320	-4	691	18
Obligations	3,050	P 5,763	P 5,994	108	689	216
Value in place	960	P 2,240	P 2,375	35	P 265	P 265
<b>INDUSTRIAL FACILITIES, BUILDINGS ONLY</b>						
Program	1,607	n.a.	n.a.	n.a.	303	n.a.
Value in place	575	n.a.	n.a.	n.a.	181	n.a.
<b>POSTS, DEPOTS, STATIONS</b>						
Program	2,850	4,490	P 5,881	0	-3	21
Obligations	2,625	4,135	P 4,137	112	392	185
Value in place	1,430	P 2,360	P 2,425	155	P 215	P 185
<b>HOUSING, NON-MILITARY</b>						
Program	492	642	942	0	0	0
Obligations	275	423	424	31	41	14
Value in place	115	P 310	P 335	0	P 35	P 40
<u>BREAKDOWN OF CLASSES OF NON-MUNITIONS</u>						
<b>NON-MUNITIONS, TOTAL</b>						
Program	4,460	11,090	P 11,887	9	2,526	-42
Unobligated balance	2,262	5,696	P 6,454	-	-	-
Obligations	2,198	5,394	P 5,433	116	463	482
Checks issued by agencies	1,756	P 3,594	P 3,844	113	P 430	P 450
<b>STOCKPILE</b>						
Program	983	1,631	P 1,631	0	60	0
Obligations	470	960	P 960	20	55	50
Checks issued by agencies	192	P 390	P 440	9	P 45	P 50
<b>AGRICULTURAL &amp; MISC. EXPORTS (DEFENSE AID)</b>						
Program	1,250	3,043	P 3,043	-	1,949	0
Obligations	109	930	P 930	-	148	140
Checks issued by agencies	5	P 368	P 428	-	119	P 120

Table continued on following page. For footnotes see Page VIII.

● 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.s. Not Available

F Revised

P Preliminary

- <sup>a</sup> 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.
- <sup>b</sup> 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.
- <sup>c</sup> 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.
- <sup>d</sup> 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.
- <sup>e</sup> 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.
- <sup>f</sup> 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.
- <sup>g</sup> Report on checks paid by the Treasury for the account of the Maritime Commission makes allowance for receipts credited to the Construction Loan Fund.
- <sup>h</sup> Program includes funds provided in the Third Supplemental National Defense Appropriation Act of December 17, 1941.

## 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 November 1941	December 15, 1941 h	November 1940	October 1941	November 1941
NON-MUNITIONS (CONT'D)						
(Million dollars)						
PAY, SUBSISTENCE & TRAVEL f						
Army Military Program	944	2,563	3,013	0	0	0
Obligations	934	1,834	P 1,834	57	146	190
Checks issued	696	P 1,355	P 1,425	40	P 140	P 145
Navy Military Program	376	963	963	0	0	159
Obligations	334	552	581	30	29	62
Checks issued	388	P 588	P 608	31	P 40	P 40
Civilian Payroll Program	32	170	276	0	16	0
Obligations	32	127	P 127	4	4	10
Checks issued	356	P 639	P 674	26	P 60	P 65
MISCELLANEOUS NON-MUNITIONS						
Program	875	2,720	P 2,961	9	501	-201
Obligations	319	991	P 1,001	5	81	70
Checks issued by agencies	119	P 254	P 269	7	P 26	P 30
BREAKDOWN BY AGENCIES						
AGENCIES INCLUDED IN TREASURY GENERAL FUND						
U. S. ARMY Program	13,135	24,605	31,979	0	0	0
Obligations	11,404	21,002	P 21,002	446	3,746	404
Checks paid by U. S. Treasury	3,636	6,913	7,413	196	785	704
U. S. NAVY Program	12,308	17,691	19,396	0	113	64
Obligations	11,182	15,102	15,471	483	560	421
Checks paid by U. S. Treasury	2,217	4,232	4,482	169	442	441
DEFENSE AID Program	7,000	12,985	12,985	-	5,985	0
Allocations	5,177	9,199	10,511	-	315	2,415
Obligations	2,458	5,256	P 5,256	-	488	430
Checks paid by U. S. Treasury	21	654	780	-	192	198
U. S. MARITIME COMMISSION Program	969	2,735	2,735	0	0	0
Obligations	886	1,721	P 1,721	0	132	86
Checks paid by U. S. Treasury (net)	44	120	133	3	21	26

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

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## 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 November 1941	December 15, 1941 h	November 1940	October 1941	November 1941
(Million dollars)						
<u>AGENCIES INCLUDED IN TREASURY GENERAL FUND (CONT'D)</u>						
OTHER U. S. AGENCIES						
Program	1,226	2,270	3,065	0	18	0
Obligations	730	1,156	P 1,157	51	58	96
Checks paid by U. S. Treasury	162	529	574	11	86	69
<u>ADDITIONAL AGENCIES INCLUDED IN U. S. FINANCED PROGRAM</u>						
R. F. C. AND SUBSIDIARIES						
Program	2,808	4,347	P 4,347	-2	374	20
Obligations	1,336	3,450	P 3,450	17	296	357
Checks issued by R. F. C.	350	P 851	P 931	12	P 131	P 140
<u>ADDITIONAL INCLUDED IN TOTAL DEFENSE PROGRAM</u>						
FOREIGN ORDERS						
Program (orders)	3,685	3,772	P 3,772	310	61	3
Obligations	3,685	3,772	P 3,772	310	61	3
Checks issued by Purchasing Missions	2,073	P 2,504	P 2,550	176	P 80	P 96
<u>OTHER DEFENSE INDICATORS</u>						
VALUE OF FACIL. ON APPLIC. FOR CERT. OF NECESSITY (Million dollars)						
Total	1,424	n.s.	n.s.	-	340	n.s.
Approved, private funds	829	n.s.	n.s.	-	52	n.s.
Approved, public funds	201	n.s.	n.s.	-	5	n.s.
Disapproved	7	n.s.	n.s.	-	3	n.s.
Pending	387	n.s.	n.s.	-	280	n.s.
DEFENSE HOUSING (Number of dwelling units)						
Fund allocations	110,298	145,655	146,485	n.s.	4,692	4,133
Constr. contracts awarded	78,820	120,976	121,101	n.s.	11,970	5,835
Construction completed	21,768	65,186	69,272	n.s.	9,300	10,302

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## DEFENSE PROGRESS SERIES

## ECONOMIC ACTIVITY RELATED TO DEFENSE \*

	1940	1941				
	July	January	October	November		
DEFENSE EMPLOYMENT						
		(Thousand workers)				
Private, 18 major industr.	1,660	2,038	2,733	2,781		
Private contractors, pub. const.	13	448	500			
Public	117	171	248			
Total direct defense	1,790	2,657	3,481			
LABOR DISPUTES IN PLANTS WITH IMPORTANT DEFENSE CONTRACTS						
Number strikes in progress	n.e.	13	P 26	P 24		
Workers involved (thousand)	n.e.	26	P 32	P 20		
Man days idle (thousand)	n.e.	126	P 192	P 108		

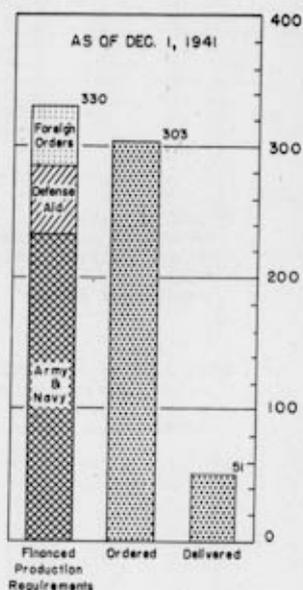
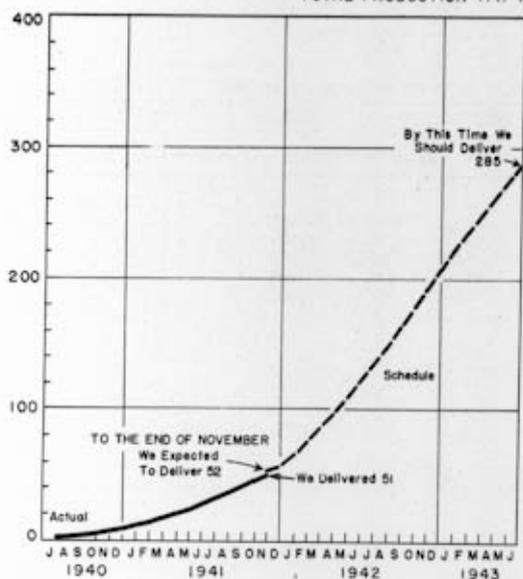
\* Revised data

P Preliminary data.

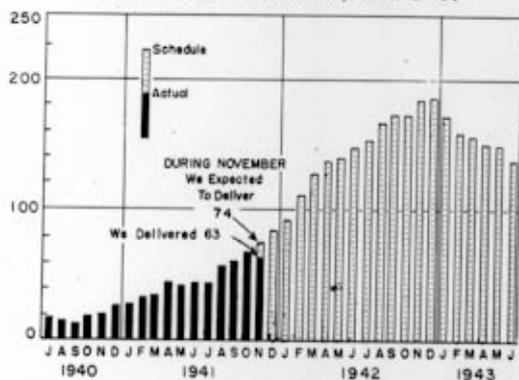
n.e. Data not available.

### MILITARY AIRPLANES

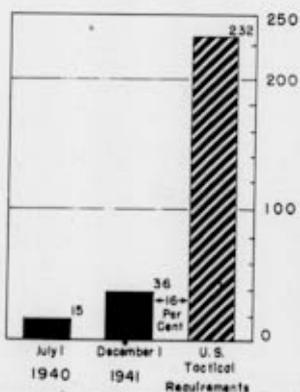
INDEX OF CUMULATIVE TOTAL PRODUCTION  
TOTAL PRODUCTION F.Y. 1942=100



INDEX OF PRODUCTION DURING MONTH  
AVG. MONTHLY PRODUCTION, F.Y. 1942=100



U.S. INVENTORIES



DEFENSE PROGRESS SERIES  
DEFENSE EQUIPMENT INDEXES

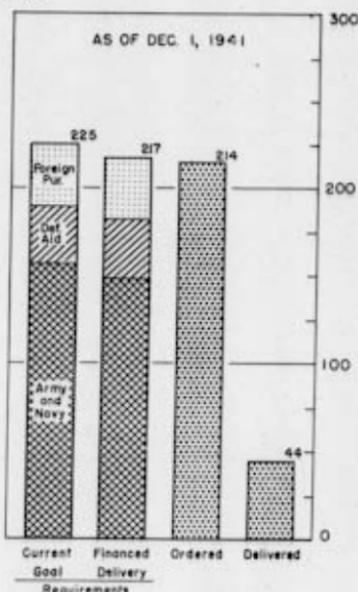
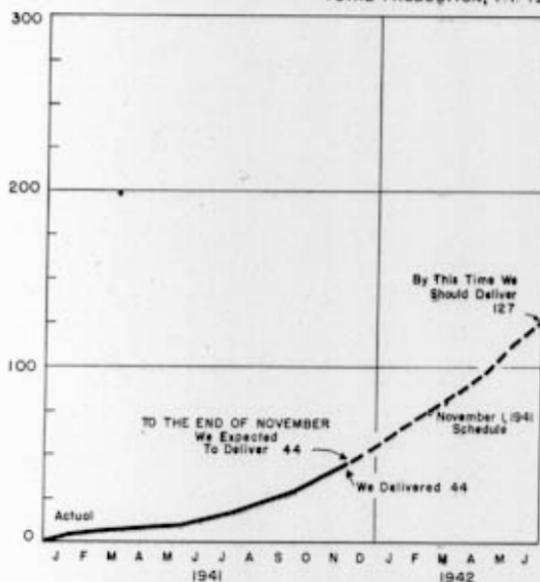
	Airplanes ●		Combat Vehicles ●		Army-type Guns		Ammunition		Major Combat Ships ●		Merchant Ships ●	
	BOHEB. AS OF NOV. 1	ACTUAL	BOHEB. AS OF NOV. 1	ACTUAL	BOHEB. AS OF NOV. 1	ACTUAL	BOHEB. AS OF NOV. 1	ACTUAL	BOHEB. AS OF OCT. 1	ACTUAL	BOHEB. AS OF MAR. 1	ACTUAL
<u>MONTHLY PRODUCTION RATE DURING:</u>												
Average monthly production FY 1942=100												
1940												
July		16	a		a		b			27		9
December		26		7		14		11		38		18
1941												
March		34		11		30				44		F 25
June		45		31		41		13		55		F 24
September		61		73		67		20		87		F 33
October		68		95		84		22	71	109		F 49
November	74	63	96	91	86	71	44	32	98	109	80	74
December	83		124		99		61		82		93	
1942												
January		93		126		121		101		109		110
February		111		126		127		135		98		126
March		127		137		138		149		115		144
June		147		168		148		244		126		161
September		173		185		142		311		148		155
December		185		37		122		396		137		148
Av. no. prod. FY 1942		100		100		100		100		100		100
Peak month		185 (12/42)		195 (8/42)		158 (7/42)		396 (12/42)		169 (11/42)		161 (7/42)
<u>TOTAL CUMULATIVE PRODUCTION TO:</u>												
Total production FY 1942 = 100												
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		F 18
September 30		41		28		38		15		61		F 25
October 31		46		36		44		17	61	70		F 29
November 30	52	51	44	44	52	50	21	20	69	79	39	35
December 31	59		54		60		26		76		47	
1942												
January 31		67		65		70		34		85		56
February 28		76		75		81		46		93		67
March 31		87		86		92		58		103		79
June 30		122		127		128		112		133		119
September 30		163		173		166		185		167		158
December 31		208		205		199		274		204		196
Total production FY 1942		100		100		100		100		100		100
Prod. requirements, Dec. 1												
Financed	330		217		272		417		452		321	
Pending	6		245		110		73		0		0	
Ordered to December 1	303		214		264		285		452		n.s.	
To be ordered as of Dec. 1	27		3		8		132		0		n.s.	
<u>INVENTORIES</u>												
July 1, 1940		15		d 7		n.s.		d 22		277		282
December 1, 1941		36		25		n.s.		23		337		275

Graphs appear on pages XII, XV, XVI, and XVII. n.s., Data not available  
 \*Average July 1, 1940-Dec. 31, 1940.      †Average July 1, 1940-April 30, 1941      ‡April 30, 1941  
 †July 1, 1941

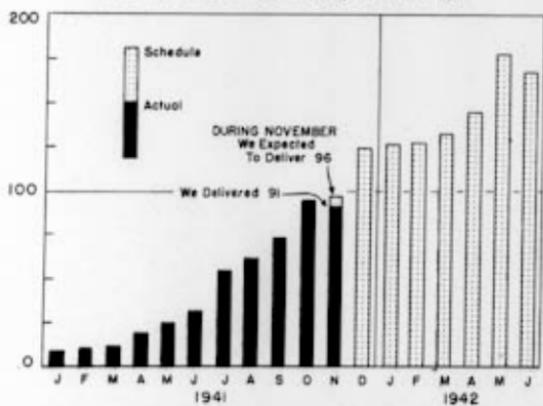
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**COMBAT VEHICLES**

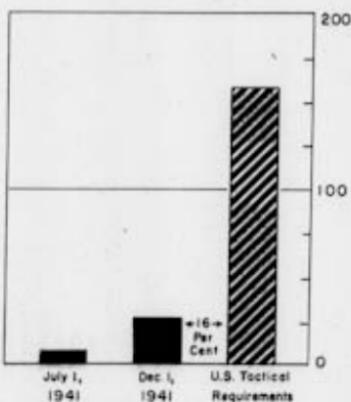
INDEX OF CUMULATIVE TOTAL PRODUCTION  
TOTAL PRODUCTION, F.Y. 1942=100



INDEX OF PRODUCTION DURING MONTH  
AVG. MONTHLY PRODUCTION, F.Y. 1942=100

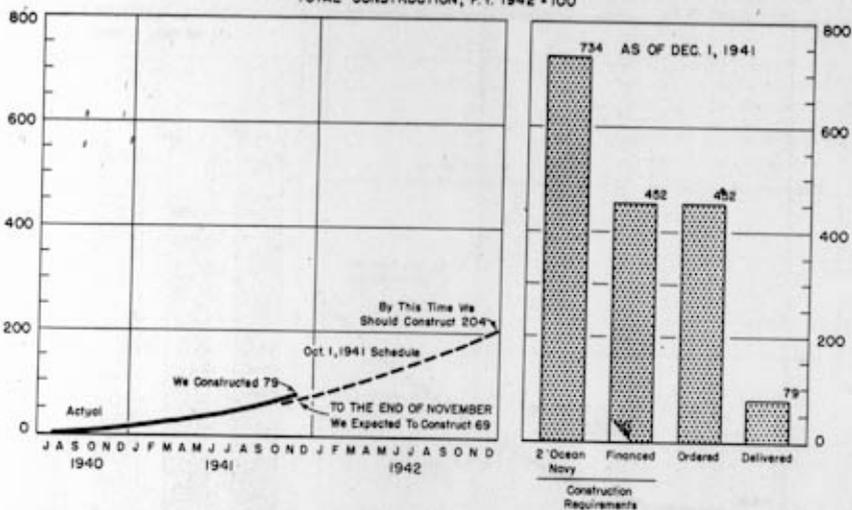


U.S. INVENTORIES

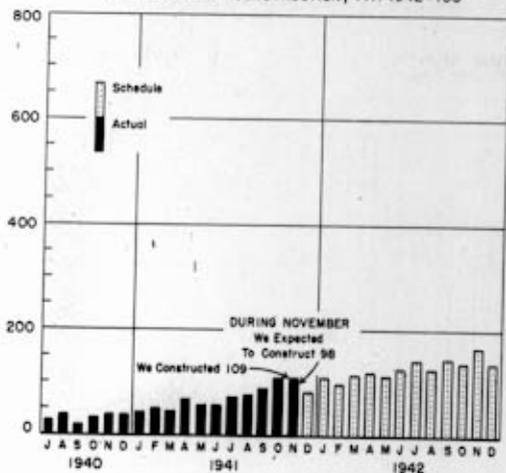


MAJOR COMBAT SHIPS

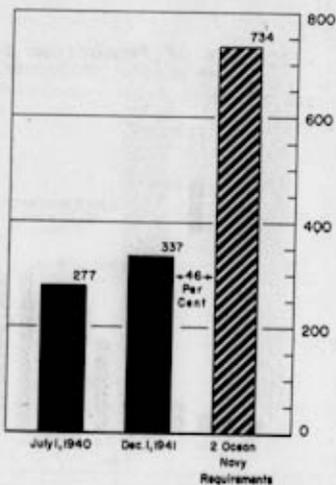
INDEX OF CUMULATIVE TOTAL CONSTRUCTION  
TOTAL CONSTRUCTION, F.Y. 1942 = 100



INDEX OF CONSTRUCTION DURING MONTH  
AVG. MONTHLY CONSTRUCTION, F.Y. 1942 = 100

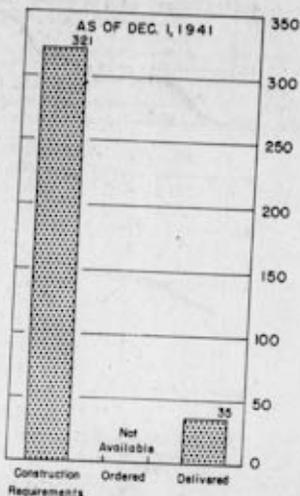
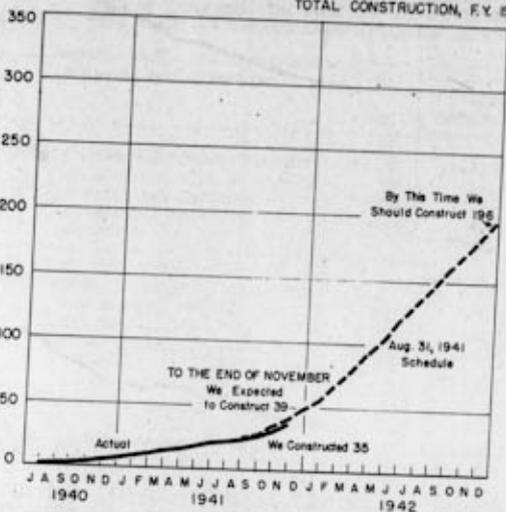


U.S. INVENTORIES

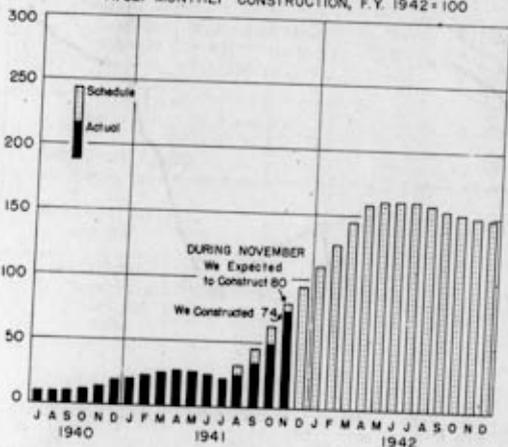


MERCHANT SHIPS

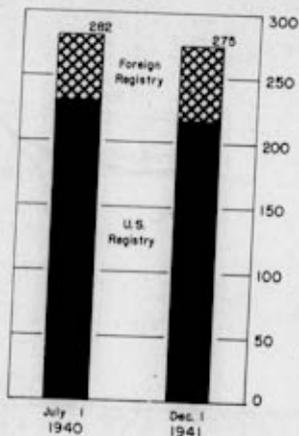
INDEX OF CUMULATIVE TOTAL CONSTRUCTION  
TOTAL CONSTRUCTION, F.Y. 1942 = 100



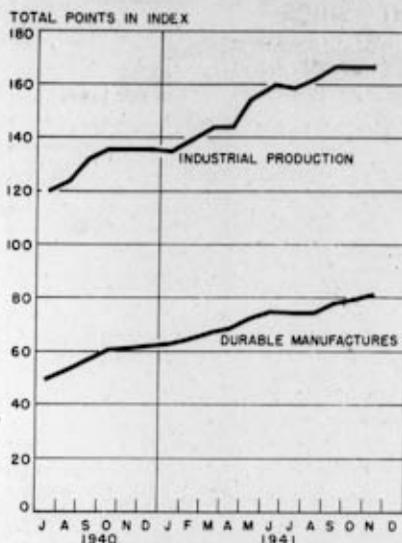
INDEX OF CONSTRUCTION DURING MONTH  
AVG. MONTHLY CONSTRUCTION, F.Y. 1942 = 100



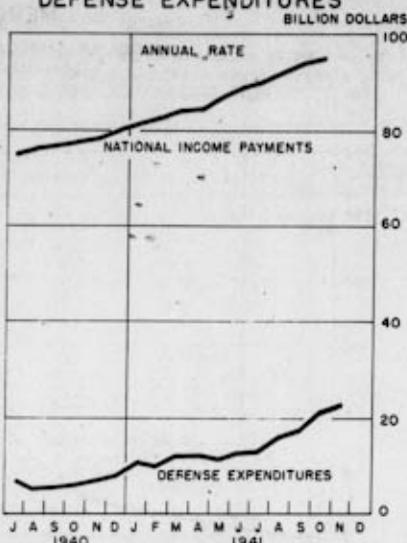
U.S. INVENTORIES



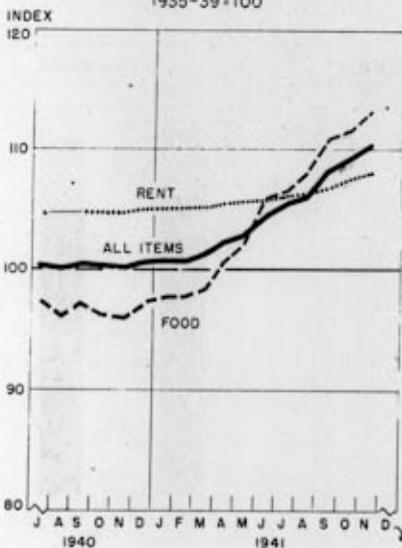
INDUSTRIAL PRODUCTION



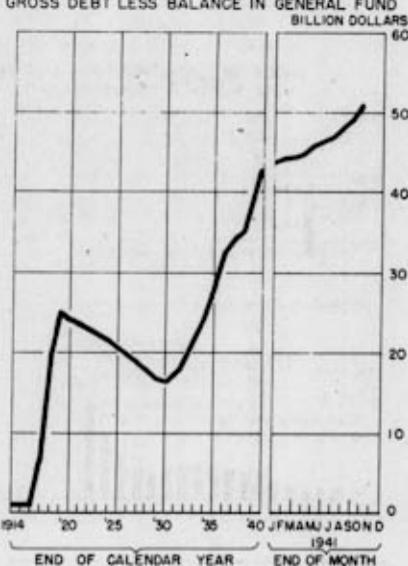
NATIONAL INCOME & DEFENSE EXPENDITURES



COST OF LIVING  
1935-39=100



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



## ECONOMIC ACTIVITY RELATED TO DEFENSE

The series on these pages 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				Week Ending	
	July	January	October	November	Dec. 20	Dec. 27	
(Unadjusted indexes 1935-39 = 100)							
<b>FED. RES. HD. PROD. INDEXES</b>							
Total industrial production	120	135	167	P 167			
Durable manufactures	131	166	210	P 212			
Nondurable manufactures	111	118	142	P 142			
Minerals	121	113	137	P 133			
<b>BUR. FOR. &amp; DOM. COM. MFRS. ORDERS, SHIPMENTS, INVENTORIES</b>							
(Indexes)							
New orders, total (1/39=100)	127	176	193	P 211			
Shipments, total (1/39=100)	117	148	203	P 202			
Inventories <sup>a</sup> (1939av.mo.=100)	F 112.2	r 121.8	F 148.3	P 151.6			
Durable (1939av.mo.=100)	F 113.9	r 132.5	F 166.2	P 167.1			
Nondurable(1939av.mo.=100)	F 110.7	r 112.5	F 132.7	P 138.0			
<b>BLS PRICE INDEXES</b>							
(Indexes)							
Strategic Materials(8/39=100)	123.6	126.1	143.0	143.1	143.1	143.2	
Critical Materials(8/39=100)	107.5	111.7	116.7	116.6	118.9	118.9	
Basic Commodities (8/39=100)	108.5	120.5	153.1	154.4	158.6	158.7	
Machine Tools (8/39=100)	108.7	114.6	119.4	119.7	-	-	
All commodities (1926=100)	77.7	80.8	92.4	92.5	94.0	94.0	
(1935-39 = 100)							
<b>BLS COST OF LIVING INDEX</b>	100.3	100.8	109.4	110.2			
<b>TRANSPORTATION &amp; ELECTRIC POWER</b>							
(Averages)							
Freight cars							
Loadings (thous. per week)	706	684	914	864	799		
Unloads for export (dly.)	1,502	1,352	1,885	1,704	1,805	1,652	
Surplus, total(thous.dly.)	133	110	44	61	64		
Boxcars	57	43	19	28	24		
Coal cars	47	42	11	18	25		
Power prod. (mil.kwh,wkly.)	2,731	3,080	3,439	3,378	3,449		
<b>NATIONAL INCOME</b>							
(Billion dollars, annual rate)							
Total income payments	75.2	81.7	94.9				
<b>FEDERAL DEBT</b>							
(Billion dollars, end of month)							
Net public debt	41.6	43.9	50.9	52.7			
<b>EMPLOYMENT</b>							
(Thousand workers)							
Total civil nonagricultural	35,904	37,142	40,776	P 40,693			
Total WPA employment	1,655	1,890	1,040	1,056	1,055	1,046	
Defense			Confidential data. See page XIII				
Deep-sea merchant vessels	51	49	50	49			
<b>UNEMPLOYMENT (WPA ESTIMATE)</b>							
(Million workers)							
Number of unemployed	9.3	7.6	3.9	3.9			
<sup>a</sup> Revised data			<sup>P</sup> Preliminary data	n.s.	Data not available		
<sup>b</sup> Graph appears on opposite page.							

## DEFENSE PROGRESS SERIES

## ECONOMIC ACTIVITY RELATED TO DEFENSE

	1940	1941				Week Ending	
	July	January	October	November	Dec. 20	Dec. 27	
LABOR DISPUTES							
PLANTS WITH IMPORTANT DEFENSE CONTRACTS		Confidential data. See Page XI.					
ALL INDUSTRIES							
Number strikes in progress	390	340	P 710	P 540			
Workers involved (thous.)	83	109	P 365	P 350			
Man days idle (thous.)	529	660	P 1,960	P 1,450			

P Preliminary data

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