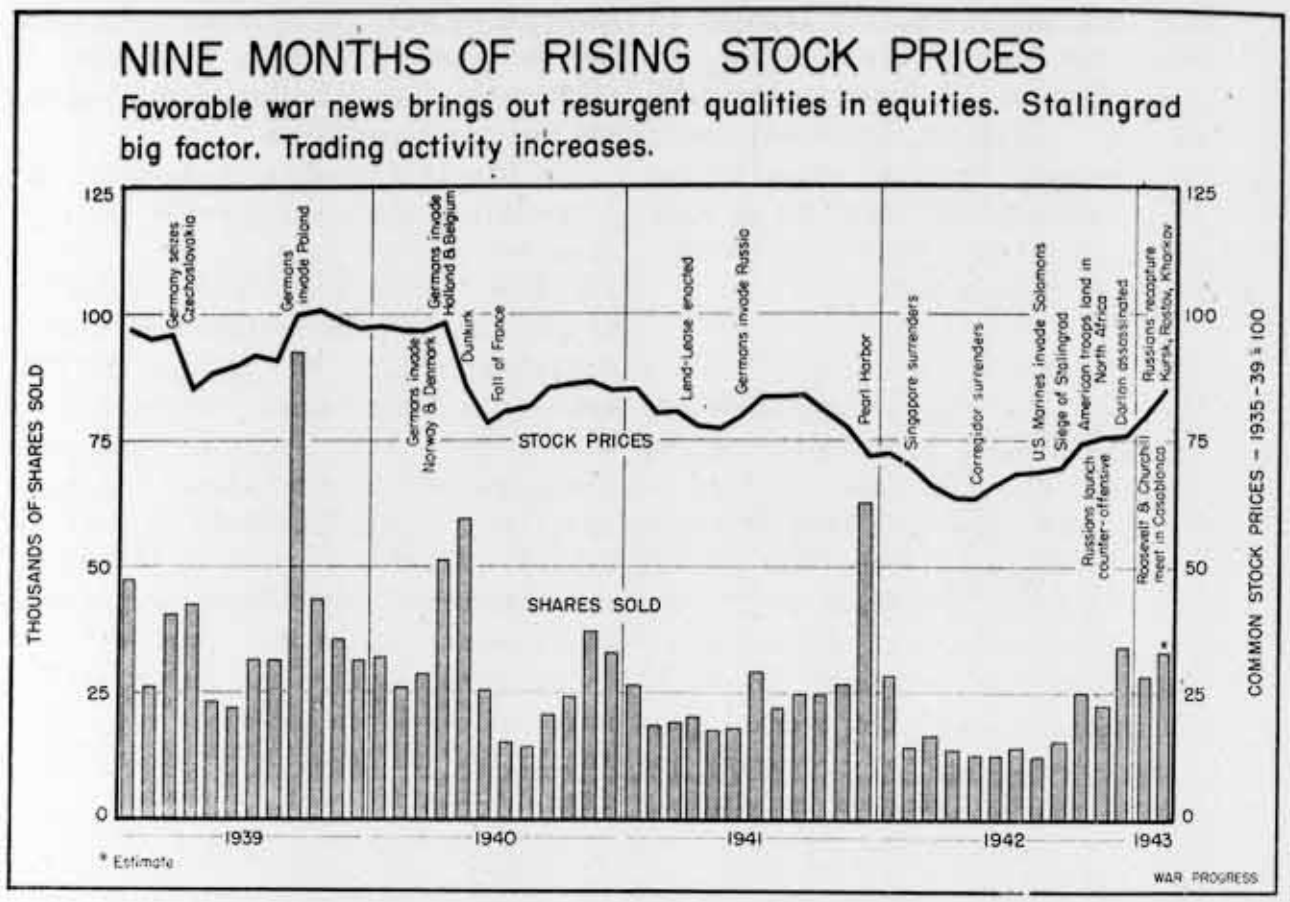


schedules this year. In short, scheduling, to be effective, must be total.

But Army scheduling has definitely changed this year: the Controlled Materials Plan now specifies allotments of raw materials; and though CMP is still working incompletely, Army procurement personnel have better ways to find out how much steel, copper, and aluminum, they can count on to meet their ASP objectives. Thus, materials are now being taken into account in fixing month-by-month quotas. That, in itself, is a definite step toward realism--as the closer-to-the-mark output figures for January and February suggest.

"REALISTIC" IS THE WORD

And the importance of that step must be reckoned in terms of what it means to output as a whole. Since the American economy has shifted from one of abundance to one of scarcity, the problem in 1943 is to get maximum output of planes, tanks, guns, and ships out of a limited supply of steel or copper; bearings, valves, or heat exchangers; and manpower. And for that it is necessary to distribute the steel, the valves, and the manpower on a realistic plant-by-plant, end-product-by-end-product basis. As a corollary, it is necessary to avoid major discrepancies in actual production; such discrepancies imply inefficient allocation of materials, components, and manpower--in short, wastage and underutilization of resources at a time when full utilization is the sine qua non of accomplishing 1943's $83,000,000,000 munitions-and-construction job.

The answer is realistic, overall month-by-month scheduling--that is, scheduling of production in patterns which claimant agencies really intend to realize.

The President

WAR PROGRESS

Confidential
(British Secret)

Third-Quarter CMP Allotments
Airplane Output in April

Scorecard on Merchant Shipping

Number 138

May 7, 1943

CMP's Round 2: History Repeats

Overbidding by claimant agencies persists, and requests are again cut sharply. Reduced 3rd-quarter allotments – especially carbon steel – force program revisions.

THE CONTROLLED MATERIALS PLAN is running true to the experience pattern of the British iron and steel distribution scheme. It took time for claimant agencies in Great Britain to cut their requests for materials down toward the available supply. And that history is repeating over here.

In the first round of CMP, requests were well in excess of the supply. And again, in the second round, requests for third-quarter allotments overtopped supply by substantial margins--13% for aluminum, 38% for carbon steel, and 61% for copper foundry products, as the following table shows:

	-Requests-	
Steel:*	Total	As % of Supply
Carbon.....	20,341,647	138%
Alloy.....	3,201,326	128
Copper base alloy:**		
Sheet & strip.....	1,289,716	118
Rod, bar, wire.....	328,718	129
Tubing & pipe.....	104,834	121
Copper products:**		
Brass mill.....	167,540	140
Wire mill.....	313,569	133
Foundry.....	508,629	161
Aluminum:**		
All shapes.....	745,498	113

*Short tons
**1,000 lbs.

To bring demand within range of supply, the Requirements Committee has made sharp reductions in third-quarter requests: 11% in the case of aluminum, 30% in the case of copper foundry products, as follows:

	-Allotments-	
Steel:*	Total	As % of Requests
Carbon.....	15,550,000	76%
Alloy.....	2,630,024	82
Copper base alloy:**		
Sheet & strip.....	1,096,035	85
Rod, bar, wire....	261,916	79
Tubing & pipe.....	85,915	81
Copper products:**		
Brass mill.....	130,900	78
Wire mill.....	252,265	81
Foundry.....	351,120	70
Aluminum:**		
All shapes.....	660,447	89

*Short tons
**1,000 lbs.

Despite these sharp reductions, allotments still exceed supply. As in the preceding round, a policy of deliberate overallotment was adopted as a means of keeping steel, copper, and aluminum facilities operating throughout the quarter at capacity.

HOW INFLATION HELPS

Under CMP rules, manufacturers may not place orders with suppliers if their inventories exceed a 60 days' supply; the inflation in allotments, however, permits manufacturers not so highly inventoried to make up the difference in placing orders. The overallotment also helps offset possible cancellation in orders due to changes in programs.

Readjustments of the Requirements

Committee's allotments will be made on June 1. But it is unlikely that additional requests will lead to major changes, for, by and large, the broad reductions now made in requests for all categories must be maintained to assure a balance between the output of controlled materials and demand.

TRIMMING PROGRAMS TO SIZE

As a result of overbidding and the subsequent cuts, all claimant agencies will be forced to re-examine their production programs and revise them downward to conform to their reduced allotments. In this regard, carbon steel--as the basic ingredient of almost all military end products--is the controlling controlled material. When a claimant agency's request for carbon steel is altered downward, not only must its program be changed, but its allotments in complementary and secondary materials must be reduced as a matter of technical necessity. (However, to the extent that a claimant agency has included a contingency reserve in its request, the impact of a Requirements Committee cut is softened.)

Such reductions are difficult to make --no pat statistical formula exists for cutting copper so much if carbon steel is cut so much, and so on. To determine such complementary cuts, each claimant agency must first determine which of its programs are to be reduced and how much; then those reductions must be translated into complementary metals. But CMP has not quite reached the stage of such routinized control whereby a cut in carbon steel can accurately and immediately be translated into a cut in programs and schedules and then into a cut in complementary materials.

CARBON-STEEL CUT

In all, the total allotment of carbon steel was 24% below requests; for every 100 tons requested, only 76 are available; that gives some indication of the degree of rearranging which will have to take place in claimant agency programs and schedules.

MILITARY GETS MOST

Cuts in individual allotments ranged from as low as 1% for the National Housing Agency (homes for war workers) to as much as 46% for the Office of Defense Transportation. As in the second quarter, 42% of all carbon steel was assigned to military claimants. "B" products, a large portion of which go into military end products, get 28% of all allotments; and more than 10% has been meted out to export claimants. The allotment of carbon steel, by claimant agencies, follows (in short tons):

	Allotments	% of Total
Military claimants:	6,480,000	41.7%
Aircraft.....	180,000	1.2
Army.....	2,900,000	18.6
Navy.....	1,300,000	8.4
Maritime.....	2,100,000	13.5

IN THIS ISSUE:

	Allotments	% of Total
Export claimants:	1,600,000	10.3
OLLA.....	1,040,000	6.7
BEW.....	190,000	1.2
Canada.....	370,000	2.4
Nonmilitary claimants:	2,305,000	14.8
Agriculture.....	25,000	0.2
OCS.....	275,000	1.8
Facilities.....	270,000	1.8
NHA.....	35,000	0.2
PAW.....	325,000	2.1
ORD.....	31,000	0.2
ODT.....	1,200,000	7.7
OWU.....	144,000	0.9
Other:	4,965,000	31.9
MRO reserve.....	600,000	3.9
"B" products.....	4,365,000	28.1
Grand total.....	15,550,000*	100.0

*Includes free steel reserve, 200,000 tons.

In carbon steel the overallotment was about 5%. (In the preceding quarter it was 11%.) Despite the overallotment, all but three claimant agencies--Agriculture, Office of the Rubber Director, and MRO (reserve for maintenance, repair, and operating supplies) --were cut below allotments in the second quarter. This is partly because, in the second quarter, the overallotment was greater, and also because the actual steel supply had been overestimated.

BY SPECIAL REQUEST

Special influences lifted requests in this round. Thus, Lend-Lease argued that shipping prospects were better in the coming quarter, warranting a big increase in its carbon-steel allowance. It asked for a boost of 45% over the preceding allotment; similarly seasonal requirements for tin plate for canning lifted requirements.

Military claimants fared comparatively well, as is to be expected, getting above 90% of their second-quarter allotment; however, in terms of requests, the Navy was cut 15% and the Maritime Commission 24%. In many cases, components and complementary items were factors in reductions in allotments. Thus, when it was found that the productive capacity for ammunition components was less than the program for finished ammunition, the allotment for carbon steel was accordingly reduced. This partly explains the 15% cut in the Army's request.

The Office of Defense Transportation asked for a big boost in its allocation--arguing that increased freight and passenger traffic made necessary new rolling stock. But because ODT is a fair-sized claimant (allotment, 1,200,000 short tons) and because of the overall need to cut demand, the request was denied. Similarly, the Petroleum Administrator for War's request was cut 31%. It was felt that the demand for additional oil-well drilling could be postponed for one more quarter.

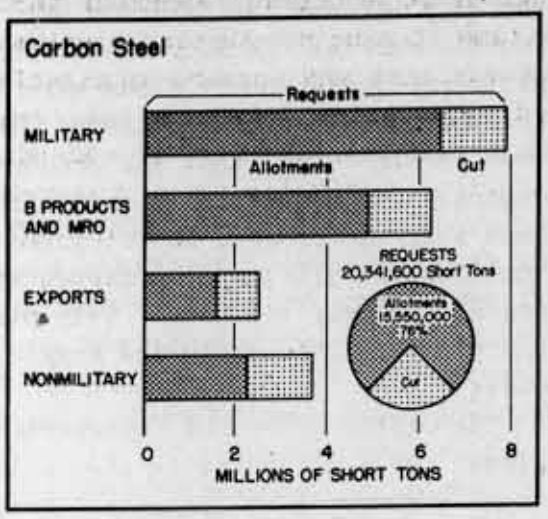
OCS CUT BACK

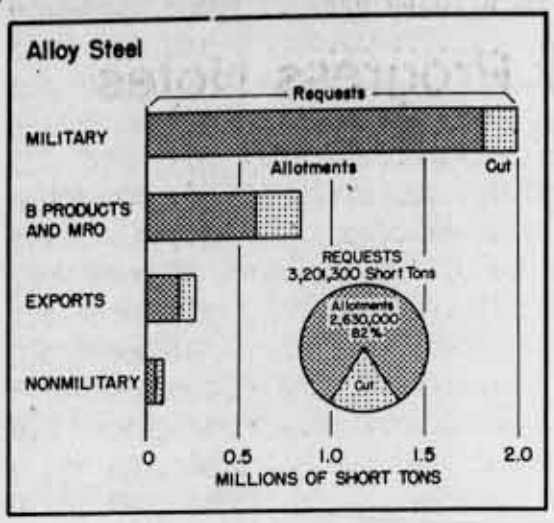
In all, the eight civilian, or nonmilitary, claimants received 15% of the carbon-steel allotments. And only two --the Office of Civilian Supply and the Facilities Bureau--were cut back sharply under the second quarter. However, as the following table indicates, the combined civilian agency requests were cut 37%, on the average:

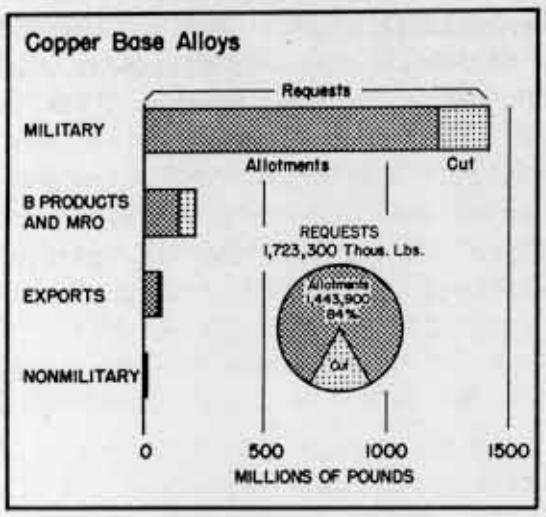
	-Allotments- As % of Requests	3rd quarter as % of 2nd quarter
Mil. claimants:		
Aircraft.....	91%	99%
Army.....	85	93
Navy.....	85	100
Maritime.....	76	95

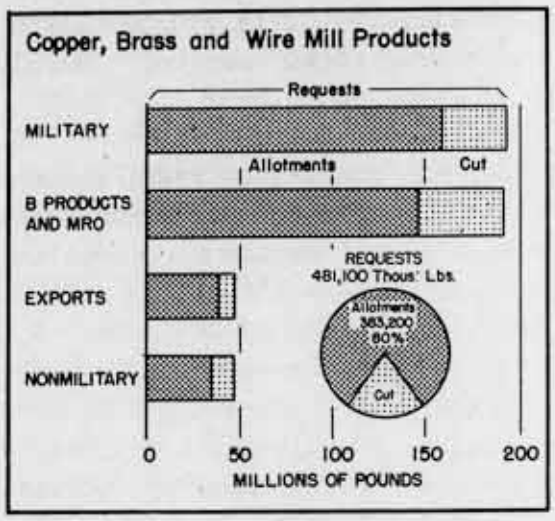
THIRD QUARTER CMP

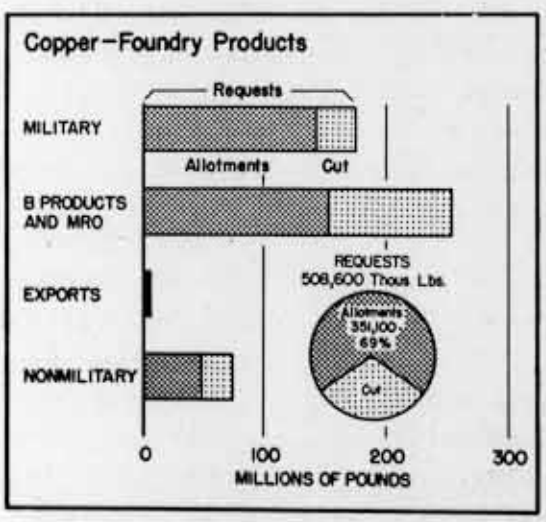
What the claimants asked for; what the Requirements Committee allotted.

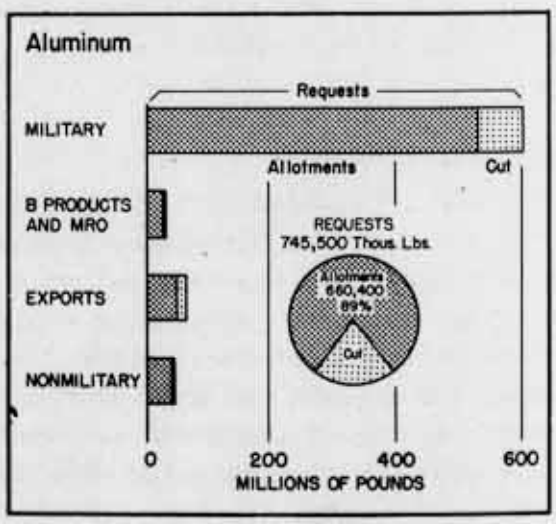












WAR PROGRESS

	-Allotments- As % of Requests	3rd quarter as % of 2nd quarter
Export claimants:		
OLLA.....	61%	89%
BEW.....	69	96
Canada.....	77	87
Nonmil. claimants:		
Agriculture.....	62	100
OCS.....	76	83
Facilities.....	79	75
NHA.....	99	97
PAW.....	69	97
ORD.....	84	119
ODT.....	54	96
OWU.....	79	99
Other:		
MRO reserve.....	88	111
"B" products.....	77	91
Grand total.....	76	95

One particular aspect of the proposed third-quarter allotments raises the question whether a fair balance between end-product programs and allotments to "B" components has been established. The information for arriving at reasonably balanced relationships between "A" and "B" product needs has not yet been developed--especially since "B" products are largely scheduled independently of "A" items. The cuts in "B" products will, therefore, require careful watching, and if underallotments of materials to "B" components should develop and seriously interfere with end-product output, claimant agencies are authorized to provide additional materials from their own aggregate allotments. But there is also the other possibility that, in view of the sharp cutbacks in some end-item programs, the corresponding "B" allotments will prove too high.

A definite effort has now been made to clarify the "B" product area. Each industry division receives a lump-sum allotment of controlled materials for suballotment to the various products within its jurisdiction--the Automotive Division, for example, receives 232,000 tons of carbon steel. Then the division's own committee--composed of representatives of all claimant agencies--determines the suballotment for, say, auto accessories and replacement parts and assigns quotas of such accessories and parts to the several claimants. Once these quotas have been established, claimants are not allowed to purchase more than their quota permits. This procedure forces the claimants to define their requirements and to commit themselves accordingly; it prevents the most aggressive and most authoritative buyers from buying up most of the available new supply, leaving other claimants in the lurch.

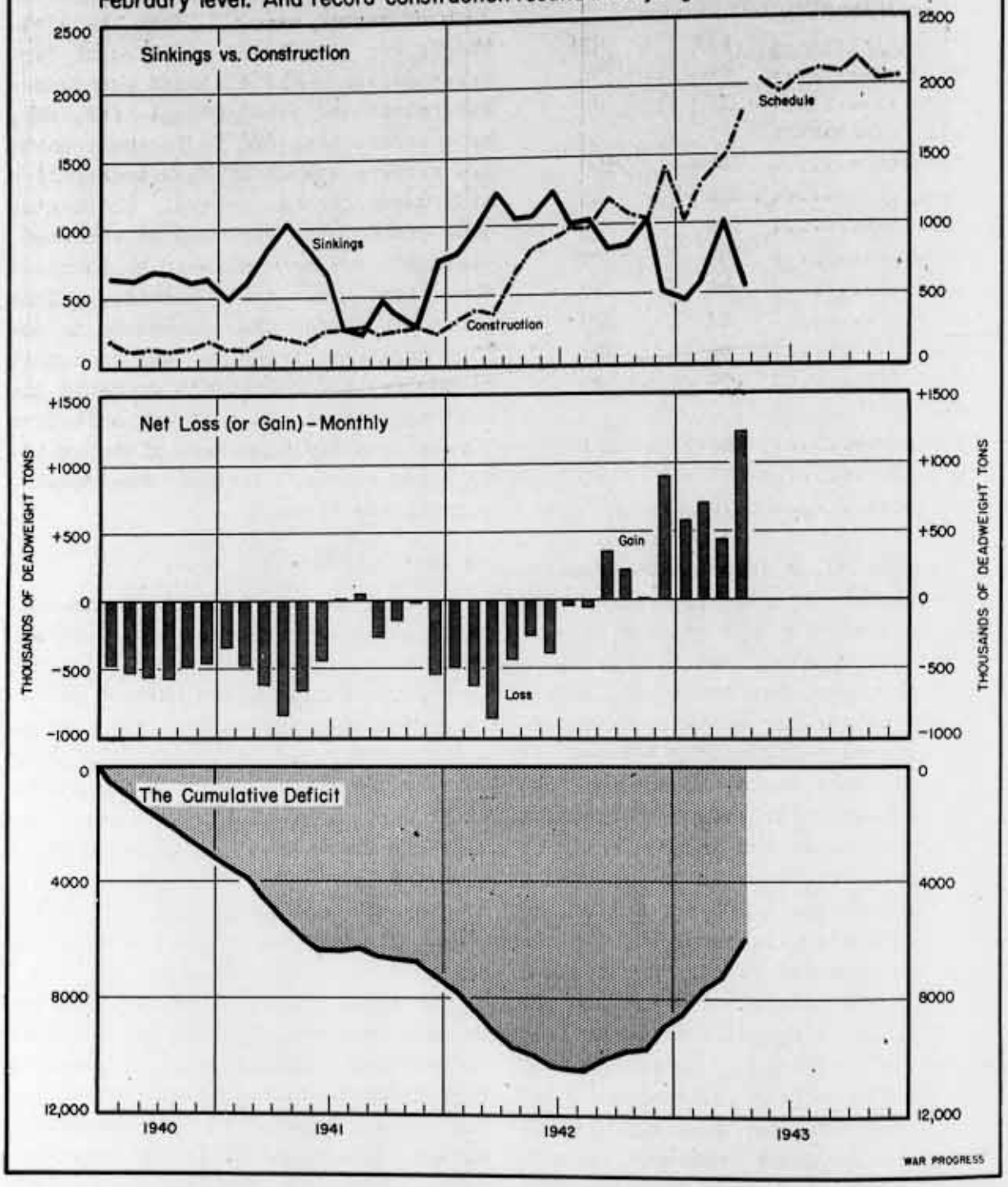
ADVANCE ALLOTMENTS

Another new development stands out. Major claimant agencies have been authorized to make advance allotments, up to 100% of their third quarter allowance, for delivery in the three subsequent quarters. This makes the third quarter the base period for allotments until June, 1944. For instance, the Navy now knows that, for three quarters ahead, it can count on a quarterly allowance of 1,300,000 tons of carbon steel, 370,000 tons of alloy steel, and so forth.

Increases above fixed volumes can be made, however, through (1) possible increases in supplies or (2) possible reductions in future allotments to the claimants, such as to the Facilities Bureau, because of declining construction. Briefly, the freeze of third-quarter allotments means that major claimants no longer will have to worry about minimum allotments; the fight will be for additions only.

SCORECARD ON MERCHANT SHIPPING

Sinkings of United Nations vessels drop markedly in April, to low December-February level. And record construction results in major gains in vessels afloat.



THE NET GAIN OF 1,250,000 DEADWEIGHT TONS IN UNITED NATIONS MERCHANT VESSELS LAST MONTH WAS THE HIGHEST YET RECORDED, EXCEEDING THE PREVIOUS PEAK OF 900,-000 TONS SCORED IN DECEMBER. APRIL RESULTS REDUCE THE CUMULATIVE DEFICIT TO THE LOWEST LEVEL IN TWO YEARS. CONSTRUCTION, AT 1,800,000 TONS, PASSED THE MARCH PEAK BY 300,000 TONS, AND LOSSES WERE DOWN TO THE LOW DECEMBER-FEBRUARY LEVELS. AT APRIL'S RATE OF ADDITIONS, THE CUMULATIVE DEFICIT IN UNITED NATIONS SHIPPING WILL BE WIPED OUT BY AUTUMN.

Bombers Lift April Plane Output

Though smaller aircraft lag, cutting numerical gain to 3% over March, "Forts" and "Liberators" have record month, and rise in terms of airframe weight is 10%.

IN APRIL, 6,403 airplanes were accepted, an increase of 202--3% over March.

However, in terms of airframe weight the gain was 10%, largely due to the expansion of bomber production, particularly heavy bombers. Output of big bombers was the third in a string of new record highs.

SHORT OF SCHEDULE

Nevertheless, the overall total in April fell 15% short of the 8-L schedule on a weighted basis (which takes account of the greater amount of materials going into bombers as compared with fighters, trainers, etc.). April results, by types of planes, follow:

	April Acceptances as % of	
	Mar.	8-L Sched.
Total planes.....	110%	85%
Combat planes.....	112	85
Bombers (including flying boats).....	113	84
2-engined fighters (Army).....	63	77
1-engined fighters (Army).....	110	87
1-engined fighters (Navy).....	149	89
Reconnaissance (Navy).....	85	82
Service combat.....	106	91
Transport.....	108	93
Communication.....	59	56
Trainers.....	102	83

April production was disappointing in the light of the high acceptances of the first 10 days of the month, which exceeded those of the like period in March by 294 planes. During the next 10 days, acceptances fell 81 units below the comparable March interval; and in the final third, the month-to-month decline was 11 units.

BOMBERS NEARLY MAKE 8-L

Last month's bright spot was acceptance of 627 four-engined heavy bombers contrasted with 529 in March, only 5% fewer than expected under 8-L. The pioneer plants--Boeing in Seattle and Consolidated in San Diego--turned out 56% of this total; the remainder was manufactured by five newer plants. The number of 4-engined heavy bombers accepted from each of the seven producing plants is shown below:

Boeing (Seattle).....	190
Consolidated (San Diego)....	162
Consolidated (Fort Worth)...	40
Douglas (Long Beach).....	85
Douglas (Tulsa).....	3
Ford (Willow Run).....	95
Vega (Burbank).....	52

All of the heavy bombers accepted in April were of the Fortress or Liberator type; none of the new long-range machines was accepted, although four were scheduled.

NAVY BOMBERS STALLED

Twin-motored patrol bombers met only 61% of April expectations—89 planes instead of 146. An important factor in the poor showing here has been the accumulation of approximately 100 unaccepted Mariners in the yard at Glenn L. Martin's Baltimore plant. These planes require

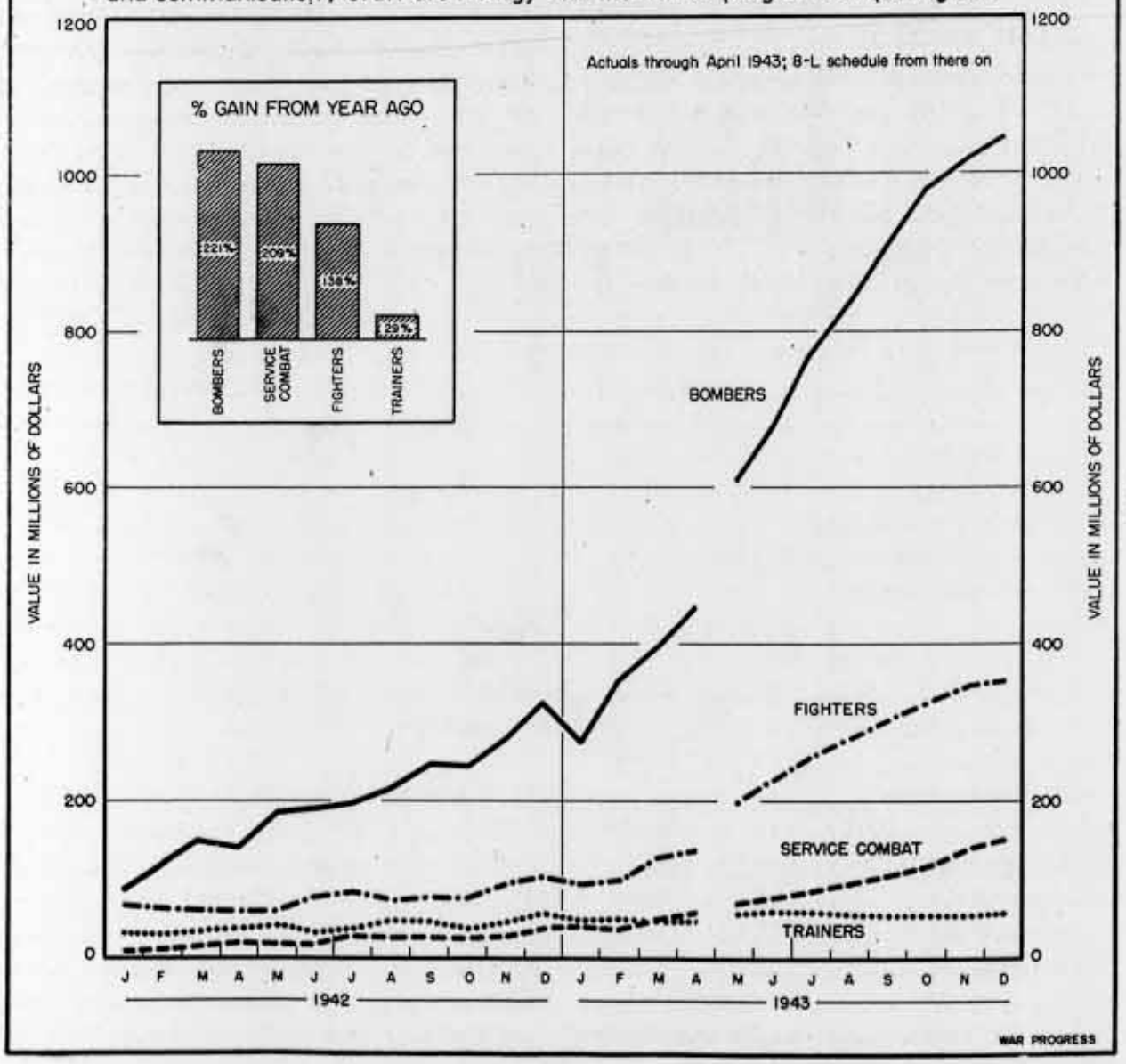
some reworking before they are accepted by the Navy.

Medium and light 2-engined bomber production was impressive. The 560 mediums accepted in April fell 39 units--7%--short of expectations, while the lights came within a plane of making schedule: 284 versus 285. As usual, 1-engined light bombers--involving many new models and design changes--lagged far behind schedule, acceptances of 537 machines running 44% under April expectations.

Acceptances of 1-engined army fighters totaled 1,201 planes, 90% of the April schedule. Bell turned out 511 Airacobras, against a goal of 518, but no P-63s (improved Airacobras with 2-stage Allison engines) came through; acceptances of 180 Thunderbolts at Republic's Farmingdale (N.Y.) plant hit the 8-L bull's-eye, but the Evansville (Ind.) plant was 23 units, or 31%, away

ACCENT ON COMBAT PLANES

Bombers dominate program; fighter plane output up; service combat (transport and communication) craft are rising; and the trainer program is tapering off.



KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program—Checks paid (millions of dollars)	2,112	1,452	1,611	1,196	827
War bond sales (millions of dollars)	720	413	201	271	136
Commodity prices (August 1939=100)					
28 Basic commodities	176.2	176.4	177.1	169.6	167.0
Controlled	162.8	162.7	162.6	162.0	161.5
Uncontrolled	210.4	211.3	214.3	188.7	181.7
Petroleum:					
Total carloadings	56,833	56,191	54,730	52,052	55,174
Movement of cars into the East	29,770	29,757	26,886	25,069	17,570
East coast stocks for civilian use (1940-41=100 Seas. Adj.)	26.3	r27.7	30.5	57.9	n.a.
Total stocks of residual fuel oil (thousands of barrels)	66,991	67,455	67,483	79,066	79,169
Exports (no. of freight cars unloaded for export Friday, excl. grain)					
Atlantic Coast ports	1,673	1,816	1,713	1,284	1,329
Gulf Coast ports	376	370	363	313	409
Pacific Coast ports	1,149	1,080	1,045	911	454
Unused steel capacity (% operations below capacity)	1.8	0.0	0.4	0.4	1.4
Department store sales (% change from a year ago)	-5	+29	-7	+15	+8

n.a. not available. r Revised.

from its 75-plane schedule. North American fell 59 units, or 33%, short of its schedule of 180 Mustangs. The first Mustang with a 2-stage Merlin engine was accepted in April; this more powerful and higher-altitude plane will also be assembled in England next year.

GRUMMAN FIGHTERS AHEAD

In the navy fighter class, Grumman's new F6F--a second edition of the Wildcat, for which the Navy has high expectations--was ahead of schedule. But production of the Corsair, the Navy's other high-powered fighting plane, continued to lag, partly because two new manufacturers (Brewster and Goodyear) fell far behind schedule.

Although heavy 4-engined transport acceptances exceeded expectations, Curtiss' twin-motored heavy-cargo Commando met only 40% of its rapidly increasing schedule. Neither of the two new plywood transports--the C-76 Caravan and the as-yet-unnamed C-62--came through in April. (The Caravan is one of the most heavily subcontracted planes in production today--76%.)

The small gain in overall numerical acceptances last month is largely explained by the lag in smaller aircraft such as 1-engined light transports, communications planes, and basic trainers. All of these--which carry low preference ratings--were off sharply from March levels. And if these three types had met schedules, the April total would have been raised by an additional 333 units, thus bringing the month-to-month gain to 535 planes instead of 202.

NEW SCHEDULE DEMANDS

On a weighted basis, total acceptances in April were 15% lower than 8-L, but the showing was pretty much in line with past performance: March was 12% below schedule, February 13%, and January 16%. The new tentative 8-M schedule calls for about 7,500 planes in May, down 1,000 from 8-L. But to meet even this reduced schedule will require a numerical gain of 17% over April.

Oil for the Eastern Seaboard

Shipping continues tight though new pipelines will help. Future civilian supply hinges on effectiveness of gas rationing and extent of military needs.

RATIONING has cut gasoline consumption on the Eastern seaboard by 25% from a year ago, heavy fuel oil by 45%, and light fuel oil and kerosene by 15%. Even so, "A" gasoline coupons had to be devalued again.

The main reason is shipping. Deliveries are so far below normal that in recent weeks even the diminished rate of consumption has been outrunning new supply--in the case of gasoline by 4% (some 17,000 barrels a day); light fuel oil and kerosene by 8% (some 42,000 barrels a day). Heavy fuel oil, however, has been "breaking even."

SHORT SUMMER STOCKS

For gasoline the current deficit is particularly serious because at this time of year stocks are usually built up to meet heavy summer demands. For fuel oil, consumption normally exceeds daily new supply at the end of winter. But now any drain, regardless of its normality, places a burden on shipping.

Reduced deliveries plus fairly steady inroads by the Army and Navy on the Eastern seaboard's supplies are reflected in the sharp reduction of petroleum stocks in the past year:

	March '43 (Barrels)	% Below March '42
Gasoline.....	12,900,000	-41%
Heavy fuel oil	3,200,000	-53
Light fuel oil & kerosene...	4,900,000	-48

Underlying this situation is the fact that the East, which consumes from 30% to 50% of the nation's petroleum products, must "import" 90% of its requirements from other parts of the country. Normally--as in 1940--some 92% of all petroleum products shipped into the region come by tanker, the remainder by pipeline, tank car, and barge. Hence, interruption of tanker transportation was bound to endanger the East's supply.

Such interruptions began as far back as May, 1941, when one-seventh of the tanker fleet supplying the Atlantic seaboard was diverted to the British serv-

TIMETABLE ON OIL RATIONING

THE FOLLOWING is the timetable on gasoline and fuel oil rationing:

May 15, 1942--Beginning of emergency gasoline rationing in the Eastern seaboard states.

July 22, 1942--"Coupon" rationing of gasoline in East.

October 22, 1942--Beginning of fuel-oil rationing in the Atlantic seaboard states.

November 22, 1942--Value of "A" gasoline coupons reduced from four to three gallons.

December 1, 1942--Nationwide gasoline rationing goes into effect in order to conserve rubber.

December 17, 1942--Sale of gasoline forbidden in 17 eastern states.

December 21, 1942--Sale of gasoline resumed. Value of "B" and "C" coupons reduced from four to three gallons.

March 22, 1943--Period covered by "A" coupons doubled, thus in effect reducing their value from 3 to 1.5 gallons.

Lend-Lease Up 48%

Record March exports of over $700,000,000 are three times the volume of a year ago. Sharp step-up in shipments to British Empire absorbs bulk of monthly gain.

IN MARCH, lend-lease exports reached the record total of $712,000,000. This was 48% above February's $480,000,000 and over three times the volume of a year ago.

Military items (ordnance and stores, aircraft, combat, and other vehicles) comprised 49% of the total as against only 45% in February. The proportion of agricultural shipments declined from 23% to 21% and industrial products (including watercraft) from 32% to 30%. But all categories increased in volume, as follows (in millions):

	Mar.	Feb.	% Gain
Ordnance	$119.2	$ 89.1	33.8%
Aircraft	85.3	58.1	46.8
Combat & other vehicles	142.8	67.9	110.3
Watercraft	36.3	20.0	81.5
Agric. products	152.3	111.2	37.0
Indus. products	175.7	133.8	31.3

Almost the entire spurt between February and March was accounted for by the increase of shipments to the British Empire (from $296,000,000 to $501,000,000). Large-scale shipments to Egypt were resumed, even though the British Eighth Army is being partially supplied from the west. Exports to French Morocco, begun in February, jumped 270%, but Algerian shipments remained at the same level, as the following table indicates:

	Mar.	Feb.	% Change
	(in millions)		
United Kingdom	$298.0	$205.0	+48%
U.S.S.R.	187.4	166.7	+12
Egypt	74.0	14.7	+380
Australia & New Zealand	$ 35.8	32.6	+10
India	27.9	14.0	+100
Iran & Iraq	10.9	11.0	-1
Union S. Africa	9.0	4.0	+125
French Morocco	8.5	2.3	+270
Algeria	3.6	3.6	nil
Nigeria	2.3	0.1	+2200
China	1.6	0.8	+100
Turkey	1.3	1.2	+8
Gold Coast	0.6	3.0	-80

About $43,000,000 of combat and other vehicles were sent to the British Isles in March, almost three times the average in the previous six months. (Altogether, the United States exported over 1,000 tanks in March--35% of the total monthly production.) Foodstuffs and industrial products, however, still constitute the bulk of shipments to the British Isles.

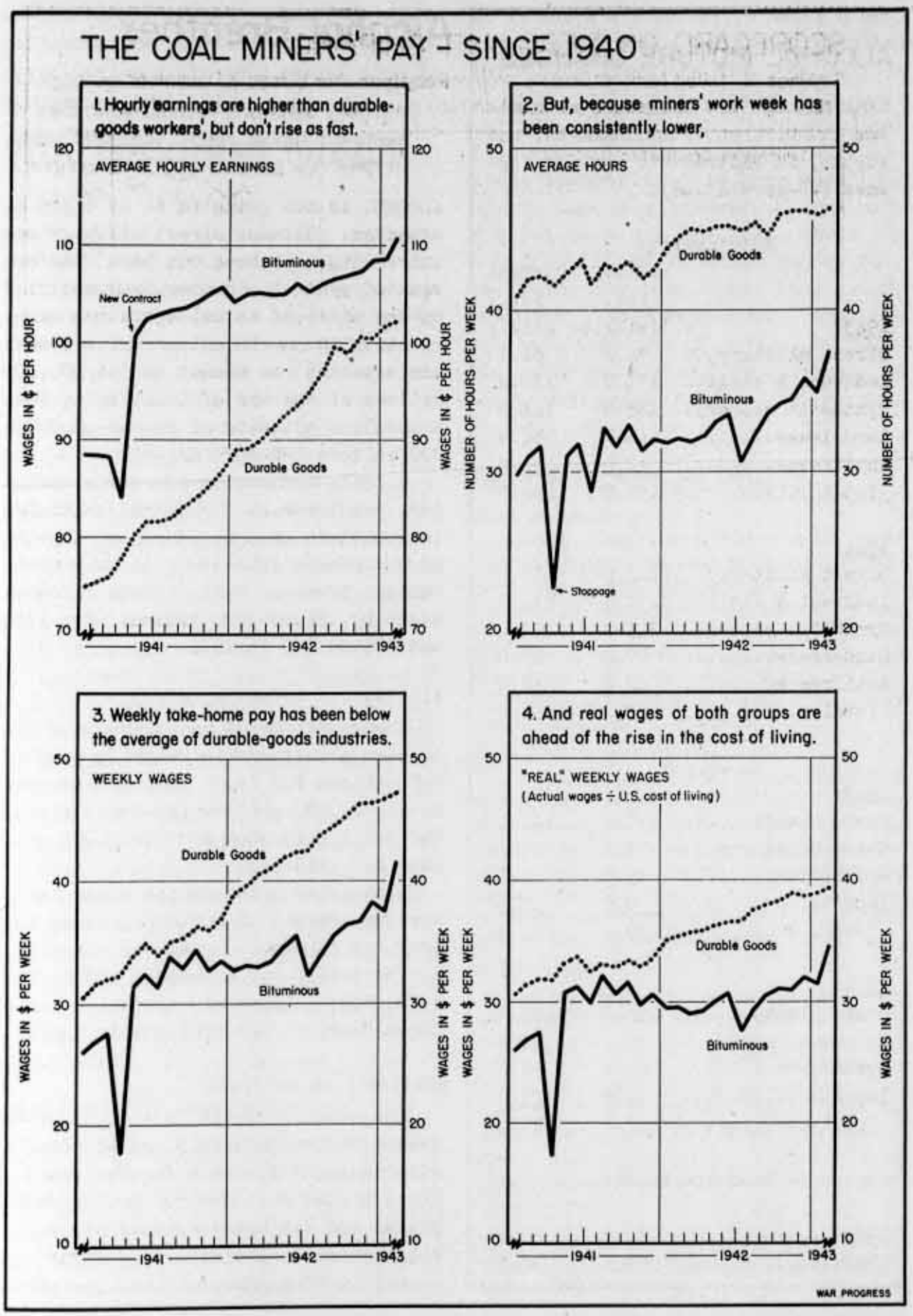
FOOD AND SHIPS TO RUSSIA

The volume of food and industrial items (including watercraft) going to Russia is constantly increasing. Currently they are running at the rate of $49,000,000 and $68,000,000 per month respectively. Export items to Russia in March included six large merchant vessels, 22 Diesel engine locomotives, over 700 ordnance carriers, about 1,500 scout cars, a large number of trucks, and some 75 fighter planes. Tank exports to the U.S.S.R. were negligible.

CIVILIAN STUFF TO AFRICA

The flow of goods to the civilian population of French North Africa is also increasing sharply. It includes all kinds of raiment for men, women, and children, cotton cloth (including over 5,000,000 pounds of remnants), laundry supplies, and important foods like milk products and cereals.

THE COAL MINERS' PAY - SINCE 1940



ALCOHOL PICTURE CHANGES

HERE ARE the new estimates of alcohol production, requirements, and stocks, in contrast to earlier figures (WP-Apr9'43,p8):

	Earlier Est.	Current Est.
	Requirements	
1943:	(million gals.)	
Direct military...	94.8	61.1
Indirect & civil..	131.7	132.2
Synthetic rubber..	138.6	144.5
Lend-lease.....	44.7	54.9
Antifreeze.....	42.0	42.0
Total.....	451.8	434.7
1944:		
Direct military...	114.0	81.6
Indirect & civil..	132.0	132.0
Synthetic rubber..	315.0	272.4
Lend-lease.....	50.4	63.6
Antifreeze.....	42.0	42.0
Total.....	653.2	591.6
	Supply	
1943:		
Grain plants.....	337.0	340.1
Molasses plants...	78.1	68.4
Synthetics.....	55.9	54.1
Imports.....	9.4	12.3
Total.....	480.4	474.9
1944:		
Grain plants.....	484.2	472.2
Molasses plants...	50.4	45.6
Synthetics.....	61.2	60.0
Imports.....	12.0	15.6
Total.....	607.8	593.4
	Year-End Stocks	
1943.....	84.9	92.4
1944.....	39.5	94.2

Alcohol Breather

Requirements eased as result of cutback in military uses and revised estimates of synthetic rubber needs. Year-end stocks in 1944 now put at 94,000,000 gallons.

ALCOHOL is not going to be as tight as expected. Because direct military requirements have been cut back and estimated synthetic rubber needs modified on the basis of actual operating experience of two new butadiene units, stocks are expected to amount to 94,000,000 gallons at the end of 1944, as against a previous estimate of around 40,000,000 gallons (WP-Apr9'43,p8).

Biggest change occurs in direct military requirements. Lowered schedules in smokeless-powder production—together with sharper efficiency in the powder-making process—will reduce alcohol needs by 34,000,000 gallons for 1943 and 32,000,000 in 1944.

NET DROP IN BUTADIENE NEEDS

Though estimated requirements of butadiene plants have increased by 6,000,000 gallons for 1943, they are lowered by 43,000,000 gallons for 1944, yielding a net reduction of 37,000,000 gallons for 1943-44.

Lend-lease needs, on the other hand, have been raised 10,000,000 gallons for 1943 and 13,000,000 gallons for 1944, as the result of a Russian order for 2,700,000 gallons of alcohol a month for at least a year and probably longer.

CONSTRUCTION DEFERRED

The overall result is a 17,100,000-gallon reduction in 1943 and 61,600,000 gallons in 1944; as a further result, plans to construct five new grain alcohol plants and one molasses-to-grain alcohol conversion project were deferred.

And barring problems that might arise

in corn supply, waste disposal, or transportation (WP-Apr9'43,p9), the alcohol situation now seems much easier than it appeared a month ago.

War Progress Notes

IN COPPER, IT'S LABOR

WHAT MAKES critical metals critical? In steel, capacity limitations of existing facilities hold down desired increases in production; in the case of aluminum, fabricating facilities and the flow of bauxite imports are the troublesome factors. But in copper--it's labor. Right now, copper output could be raised 5,500 tons monthly, or 66,000 tons a year, without any new plant construction, if 2,500 more men could be put to work mining it. In other words, a 6% addition to the labor force would return a 6% increase in production--estimated domestic output of copper in 1943 is 1,100,000 tons.

Manpower is a perennial problem in copper mines (WP-Aug7'42,p7) because the normal turnover of labor is about 100% annually. The draft intensified this difficulty, and last October the Army had to release 2,800 miners to the copper mines. The halt in gold mining in that same month diverted 1,500 men to the copper and other nonferrous mines, and more recently, draft deferments, the "job freeze," and the employment of women for surface jobs at the mines have helped matters some. But manpower still spells the difference between supply and requirements in United Nations copper.

DOUBLE PLAY IN MINERS' PAY

ALTHOUGH wages of coal miners have stood pat for two years--under the wage contract reached in 1941--the hourly earnings of workers in the coal mines have been higher than that of durable-goods workers. However, miners usually put in 35 hours a week--seven hours a day, five days a week--whereas in durable-goods industries, the work week runs to 46 hours. It is this difference in working time (including overtime premiums) that explains why workers in durable-goods industries take home more pay (chart, page 11). However, if coal miners put in a six-day week, their pay envelope will run to around $45 or $46, including overtime. And this alone would boost their incomes into line with the take-home pay of workers in durable-goods industries. Any increase in hourly wage rates would be just so much in addition.

REPORTS ON REPORTS

Gains and Losses

Domestic Transportation (confidential; pp. 14) reports that petroleum movement by rail reached a record high in March. Carloadings as a whole, below previous year's level, are expected to rise. But present car and locomotive supply offers no guarantee of unrestricted passenger and freight service.
(U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce)

Too Much Because of Too Little

A Review of Facilities and Construction (confidential; pp. 22) points out that up to the end of 1942 expenditures on war plant construction and equipment were almost equal to expenditures on munitions; it notes that, because of the short material supply, many plants cannot be fully utilized, hence recommends closer scrutiny of additional projects.
(War Production Board, Document No. 215)

Soft But Tough

Silk and Rayon (confidential; pp. 22) states that 850,000 pounds of silk and nylon will be salvaged and turned into powder bags, parachutes, etc. Rayon assumes an ever-increasing importance; one-third of the current output is destined for war uses. Efforts are made to curtail civilian consumption by eliminating many of the 1,500 constructions of satins, crepes, etc.
(U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce)

[This record is an attempt to select from the many documents coming to the attention of WAR PROGRESS those studies which would be of most interest to readers. The list is by no means comprehensive, and no attempt has been made to evaluate reports for accuracy. Whether reports are available depends on the policy of each individual agency.]

SELECTED MONTHLY STATISTICS

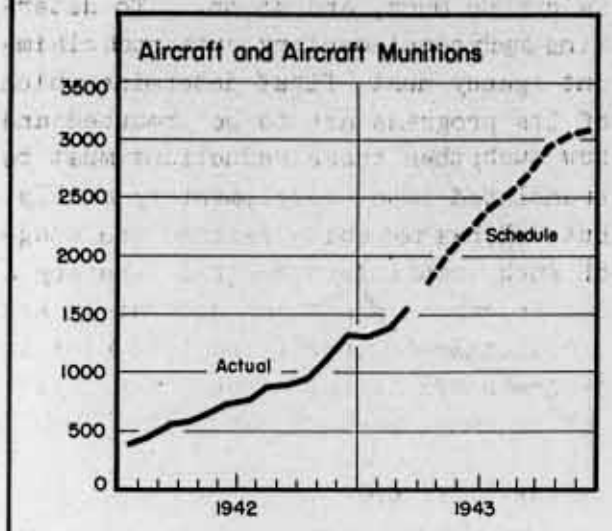
Federal Finance - Income - Labor Force - Labor Turnover

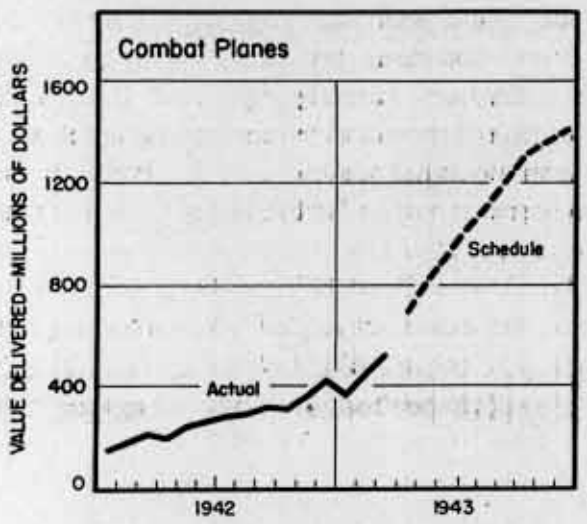
	Latest * Month	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
FEDERAL FINANCE (GENERAL FUND)							
Expenditures - Total (billion dollars)	7.5	7.3	6.1	5.9	3.7	.7	.7
War	7.0	6.7	5.8	5.5	3.2	.1	-
Nonwar	.5	.6	.3	.4	.5	.6	.7
Revenues - Total	1.5	5.2	1.0	.6	.7	.2	.3
Income Taxes	1.0	4.7	.4	.2	.3	-	-
Other	.5	.5	.6	.4	.4	.2	.3
War Bond Sales	1.5	.9	.9	.9	.5	-	-
"E"	1.0	.7	.6	.6	.3	-	-
"F" and "G"	.5	.2	.3	.3	.2	-	-
Net Debt	117.2	111.3	108.6	88.0	62.1	37.0	33.2
INCOME PAYMENTS - TOTAL (million dollars)	p11,211	10,443	r10,748	10,453	8,796	5,786	5,996
Salaries and Wages	p7,911	7,754	r7,620	7,082	6,002	3,705	3,837
Manufacturing, mining, agriculture, constr.	p6,143	6,045	r5,972	5,824	5,036	2,987	3,195
Government	p1,757	1,694	r1,629	1,228	891	530	484
Military	p835	793	740	483	202	35	31
Nonmilitary	p922	901	r889	745	689	495	453
Other	p11	15	19	30	75	188	158
Other income payments	p3,300	p2,689	r3,128	3,371	2,794	2,081	2,159
Income payments, annual rate (adjusted for seasonal, billion dollars)	p137.8	135.0	r132.1	119.5	107.0	69.1	73.0
LABOR FORCE - TOTAL (millions)	52.1	52.0	52.3	54.0	53.7	n.a.	n.a.
Employment	51.2	51.0	50.9	52.4	50.7		
Male	36.0	35.8	35.9	38.1	37.8		
Female	15.2	15.2	15.0	14.3	12.9		
Unemployment	.9	1.0	1.4	1.6	3.0	n.a.	n.a.
LABOR TURNOVER IN MFG. INDUSTRIES (rate per hundred employees)							
All Manufacturing:							
Accessions	8.32	7.87	8.28	9.15	6.99	3.34	4.74
Separations - Total	7.69	7.04	7.11	8.10	5.36	3.18	3.20
Quits	5.36	4.65	4.45	5.19	3.02	0.82	1.43
Military Separations	1.12	1.23	1.26	1.48	0.63	-	-
Aircraft:							
Quits	4.75	3.71	3.86	4.72	3.70	2.26	2.09
Military Separations	1.41	1.66	1.70	2.41	.85	-	-
Shipbuilding:							
Quits	7.11	5.90	6.98	6.66	4.27	0.73	2.05
Military Separations	1.70	1.84	1.80	2.39	0.64	-	-

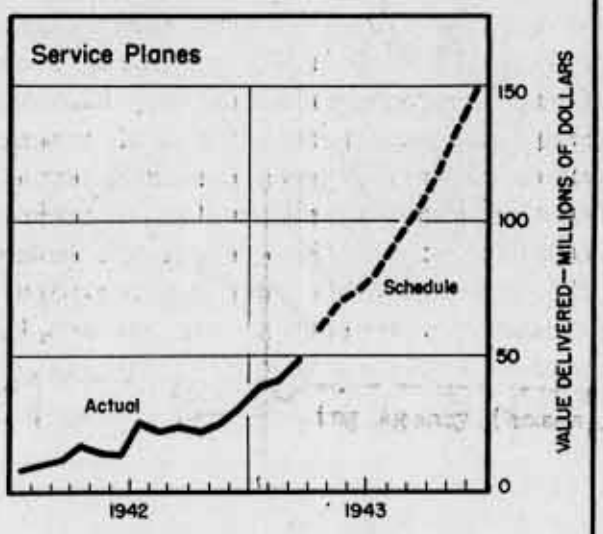
*April: Income Payments and Labor Turnover, March.
n.a. Not available. p Preliminary. r Revised.

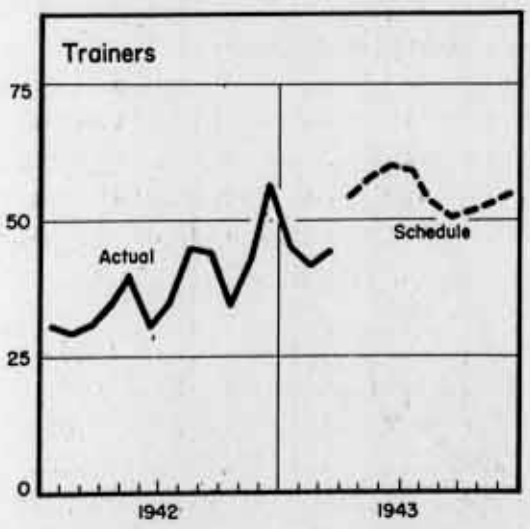
PRODUCTION PROGRESS

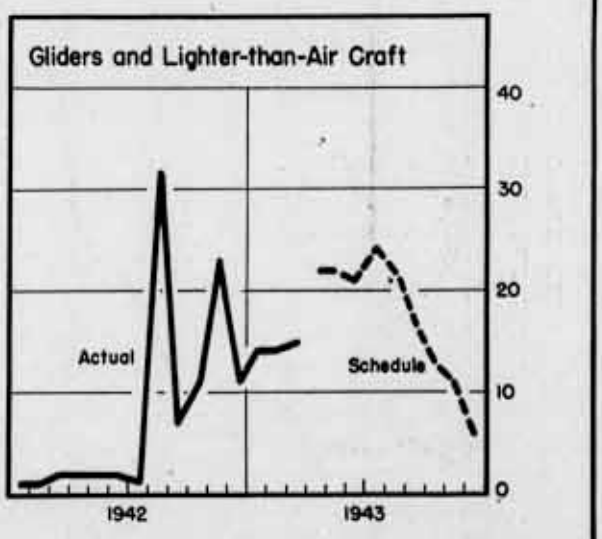
Aircraft and Aircraft Munitions











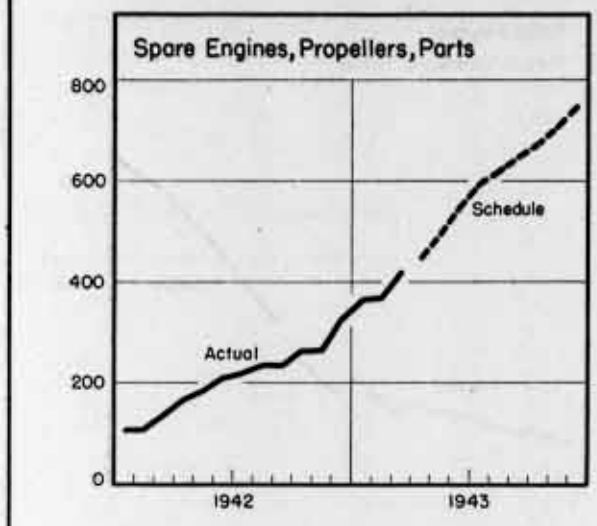
Schedules as of April 1.

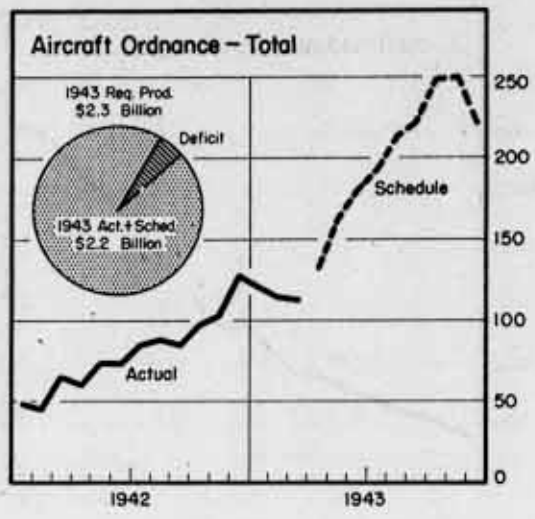
WAR PROGRESS

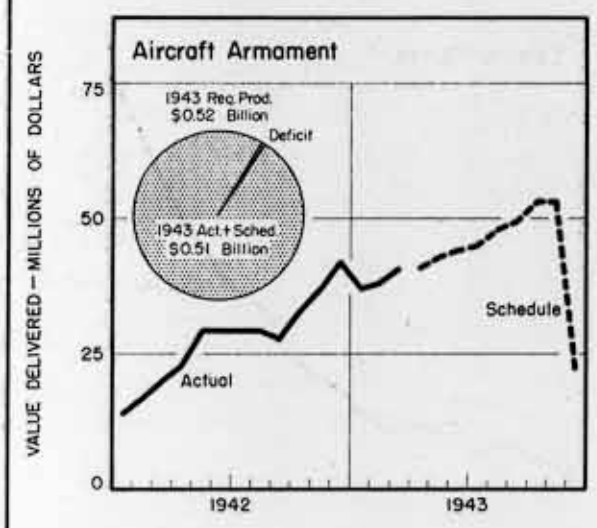
CONFIDENTIAL

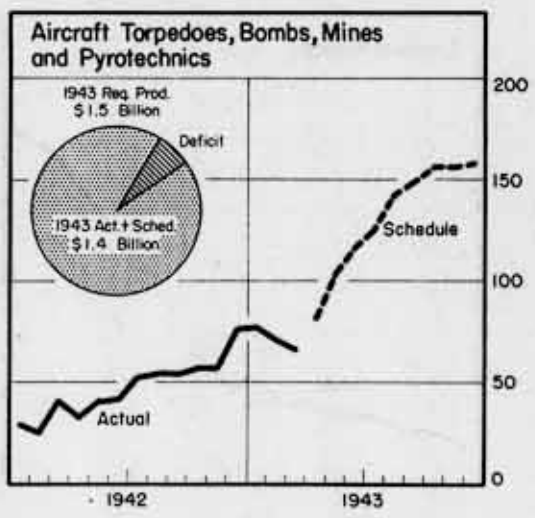
PRODUCTION PROGRESS

Aircraft and Aircraft Munitions (continued)









VALUE DELIVERED – MILLIONS OF DOLLARS

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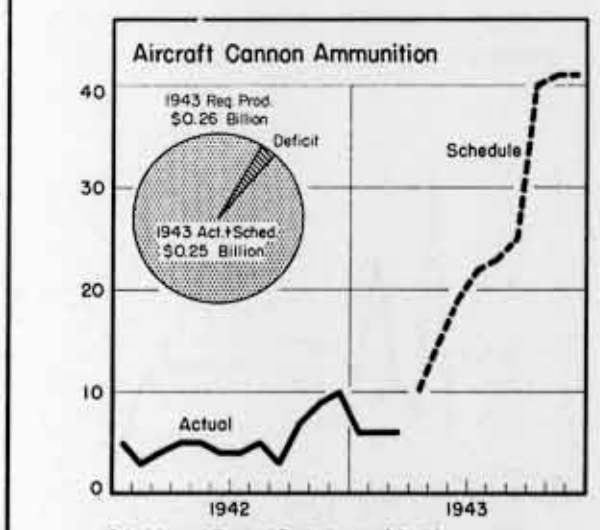
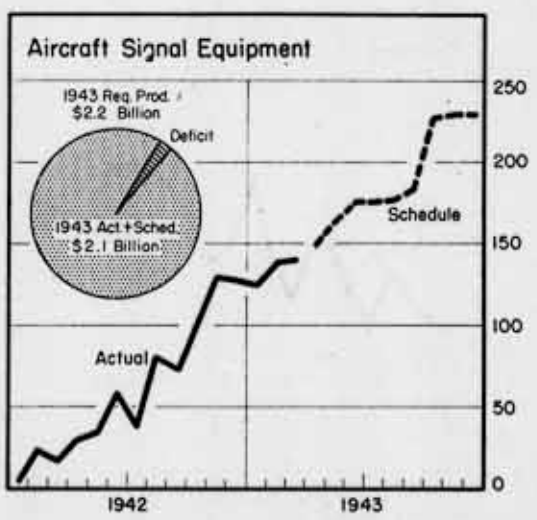




Schedules and Required Production as of April 1.

WAR PROGRESS

WAR PROGRESS

Confidential
(British Secret)

April War Output Up 4%, Reflects Closer Scheduling Outlook for '44

Number 139 May 14, 1943

Better Balanced Gains in April

Munitions output – up 6% over March – comes within 6% of schedule, and divergencies among individual items are less marked. Construction down as planned.

WAR OUTPUT passed the $6,000,000,000-a-month mark in April. At $6,075,000,000 (preliminary), munitions production and war construction were up 4% over March. Munitions alone--at $4,960,000,000 (also preliminary)--were up 6%.

More significant than those month-to-month gains, however, is the developing statistical evidence that procurement agencies are getting their production programs under better control. Deviations from schedules are narrowing.

Whereas in January munitions output fell short of schedules by a full 10%, last month the deviation was only 6%. The same is true of the total--munitions plus war construction. Indeed, in both categories, the lag behind schedule has decreased each month this year, as follows:

	-Lag Behind Schedule-	
	Mun. & Cons.	Munitions
January.....	10%	12%
February....	8	9
March.....	6	7
April.....	5	6

Such a bulk comparison, of course, conceals large surpluses and deficits in individual items. Thus, for example, this month's 66% excess in 2.36-inch antitank ("bazooka") rockets would tend to cancel out a 56% deficit in command radios for tanks for the month.

These individual deviations, in the long run, are the critical factors in determining the degree of efficiency in production planning. By tying up materials, manpower, and machines, excess output of one item can actually be the cause of a deficit in another item.

However, the mere fact that the deficits are getting smaller--that actual production is getting closer to schedule--carries the suggestion that individual programs generally are coming closer to their individual targets.

This is borne out by some preliminary analyses. In the last year, the average actual quarterly deviation from schedules of a group of aircraft armament items declined from 21% of schedule to 3%; in ammunition for small arms and infantry weapons, the average quarterly deviation from schedule declined from 18% to 12%. (A more detailed examination of these data will appear shortly in War Progress.)

MODEST RISES—MOSTLY

April production, in all major munitions groups, surpassed March, but only by moderate percentages, except for:

1. Ground signal (including ground-to-air) equipment, which went a third over March and missed schedule by barely 1%.
2. Aircraft ordnance, 20% ahead of March and 5% ahead of schedule.

Major factor here was the 57% increase in April output of big aerial bombs. This is the more noteworthy since the program has been revised downward (WP-Apr2'43,p6).

The improving performance of ground army munitions, relative to schedules, extended into April. Production, at $1,100,000,000, was up 6% over March

and right on the April schedule (table, page 3). However, two lags behind schedule stand out: 17% in antiaircraft ammunition and 14% in small arms and infantry weapons. This last was heavily weighted by production difficulties in .30-caliber carbines which were off 33% from schedule, 21% from March.

FLYING TANKS DELIVERED

Combat vehicles again were close to schedule and reached the highest level since the church-steeple peak in December (chart, page 4). After months of delay, the first "flying tanks" were delivered; out of a schedule of 15, seven 7½-ton air-borne Marmon-Herrington T9s were completed. From now on the schedule moves rapidly to more than 100 a month. Armored cars, except for scout cars, continued to run sharply below the production plan.

Artillery, wheeled and self-propelled, ran 7% and 6% ahead of March and 3% and 4% respectively ahead of schedule.

Ammunition, as a whole, met schedule (1% over) and bettered March by 4%. Declines in ammunition for artillery and tank guns and for antiaircraft weapons were offset by an 8% rise in small-arms-and-infantry-weapons ammunition (3% over schedule). An outstanding performance here was the production of 582,000 rounds of the 2.36-inch antitank rocket, used in the so-called bazooka gun. This represented a 143% increase over March and was 66% beyond schedule. This is an instance of a desirable excess over schedule. Large-scale production developed ahead of expectations. Another important jump was in portable flame throwers--1,200 were produced as against only 20 in March. They surpassed schedule by 9%.

The overall commentary to be made on April ground army production is that it was plodding rather than spectacular. Gains over March, except for bombs, bazooka rockets, flame throwers, and a few other items here and there, were moderate. Declines, except for carbines and certain ammunition items, also were generally limited. The same applies to departures from schedule.

AIRCRAFT DOMINANT FACTOR

As usual, a dominant factor in the month-to-month gain for munitions as a whole was aircraft and related items, output of which amounted to $1,677,000,000, or 28% of total war production during the month. This performance was 10% ahead of March, 7% short of schedule.

Airplanes alone, valued at $682,000,000, ran 11% ahead of March but lagged 15% behind schedule. From now on, the monthly shortage is likely to be reduced, as a result of the pending cutback in the 1943 program (WP-May7'43,p7).

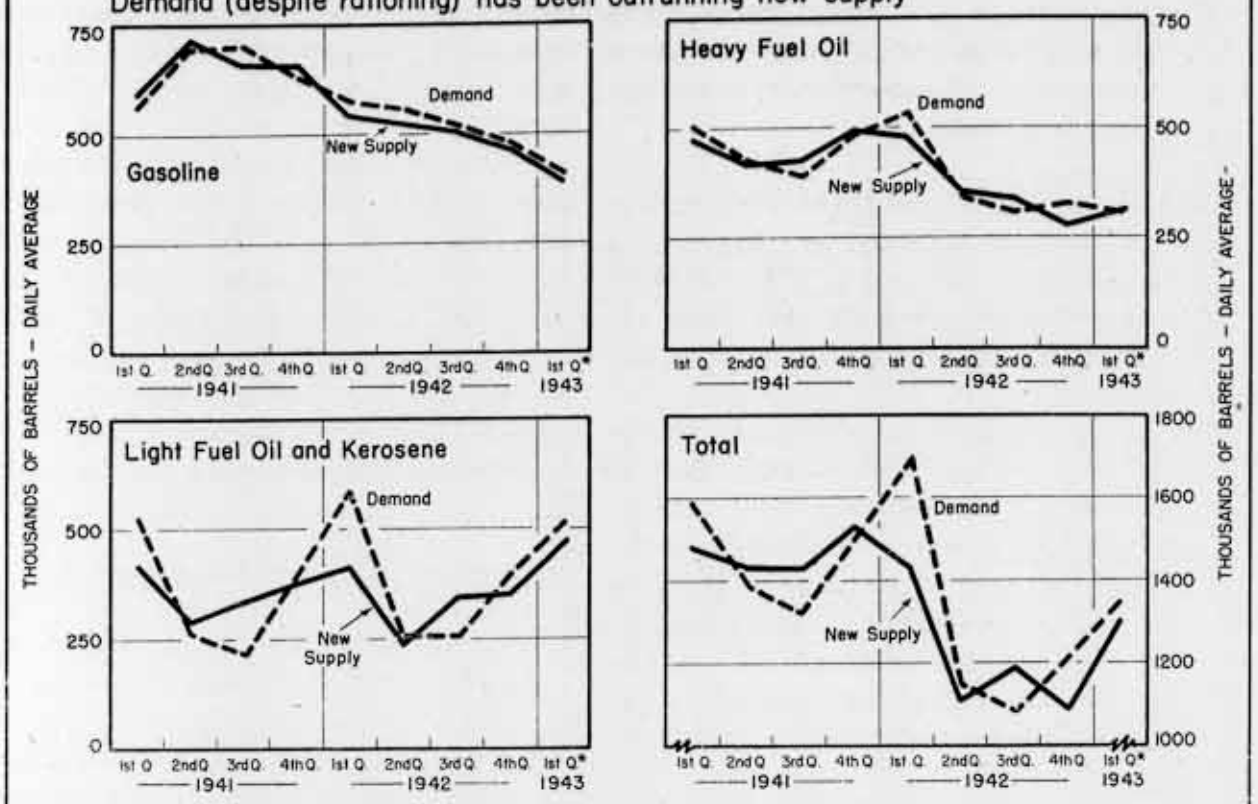
Other aircraft results were: aircraft signal equipment, up 12% and 5% behind schedule; airplane spares and parts, up 9% and 2% above schedule.

Actual work done on naval vessels and equipment (including army types) amounted to more than $1,000,000,000. This was 6% higher than value put in

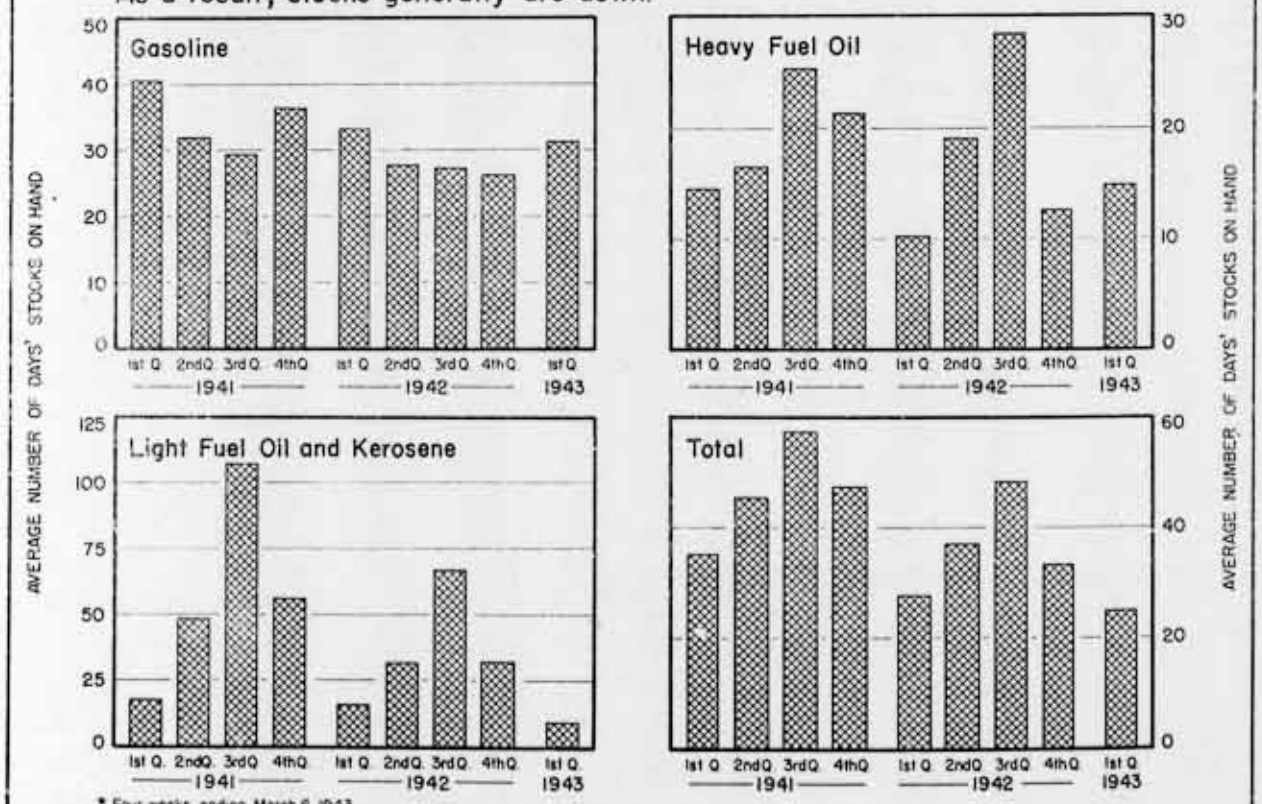
IN THIS ISSUE:

THE EAST'S PETROLEUM SITUATION

Demand (despite rationing) has been outrunning new supply



As a result, stocks generally are down.



* Four weeks ending March 6, 1943

Note: Stocks on hand as of end of quarter except 1st quarter 1943 which is as of March 6.

WAR PROGRESS

PRODUCTION PROGRESS—Preliminary

Value delivered or put in place—millions of dollars.

	April Preliminary	March Actual	% Change	April Schedule*	% Change April Prelim. vs. Schedule
TOTAL MUNITIONS AND WAR CONSTRUCTION	6,075	5,820	+4	6,405	-5
TOTAL MUNITIONS	4,960	4,663	+6	5,290	-6
Aircraft and Aircraft Munitions	1,677	1,530	+10	1,795	-7
Airplanes	682	617	+11	802	-15
Aircraft Ordnance	136	113	+20	129	+5
Aircraft Signal Equipment	142	127	+12	149	-5
Other (spares, equip. and maintenance, etc.)	717	673	+7	715	0
Ground Army Munitions	1,088	1,029	+6	1,091	0
Combat Vehicles and Equipment	322	314	+3	320	+1
Guns and Equipment(a)	307	297	+3	316	-3
Army Ammunition	342	330	+4	337	+1
Ground Signal Equipment	117	88	+33	118	-1
Naval and Army Vessels and Equipment	1,052	990	+6	1,114	-6
Merchant Vessels	330	308	+7	361	-9
Miscellaneous Munitions	813	806	+1	929	-12
WAR CONSTRUCTION	1,115	1,157	-4	1,115	†

* As of April 1. (a) Artillery and equipment; anti-aircraft guns and equipment; small arms and infantry weapons. † Schedule used for preliminary.

place in March, though it fell 6% behind the April schedule.

The value of actual deliveries for naval vessels was unchanged during the month, but in tonnage a marked drop was recorded--152,000 tons (excluding conversions) as against 184,000 in March. The April schedule called for deliveries of almost 199,000 tons.

MAJOR AND MINOR VESSELS

At 66,000 tons, deliveries of major combat ships fell 30% behind March, though only 8% behind schedule. Deliveries included the 27,000-ton aircraft carrier "Yorktown"; a heavy cruiser of 13,400 tons; 10 destroyers out of 11 scheduled; and four submarines out of six scheduled.

Minor combat vessels fell 26% behind schedule on a tonnage-delivered basis, though running 65% ahead of March. The destroyer escort vessel program--so frequently called laggard--perked up. Ten were delivered as against eight scheduled; this is a logical subsequence of the high value put in place during March (WP-Apr20'43,p7).

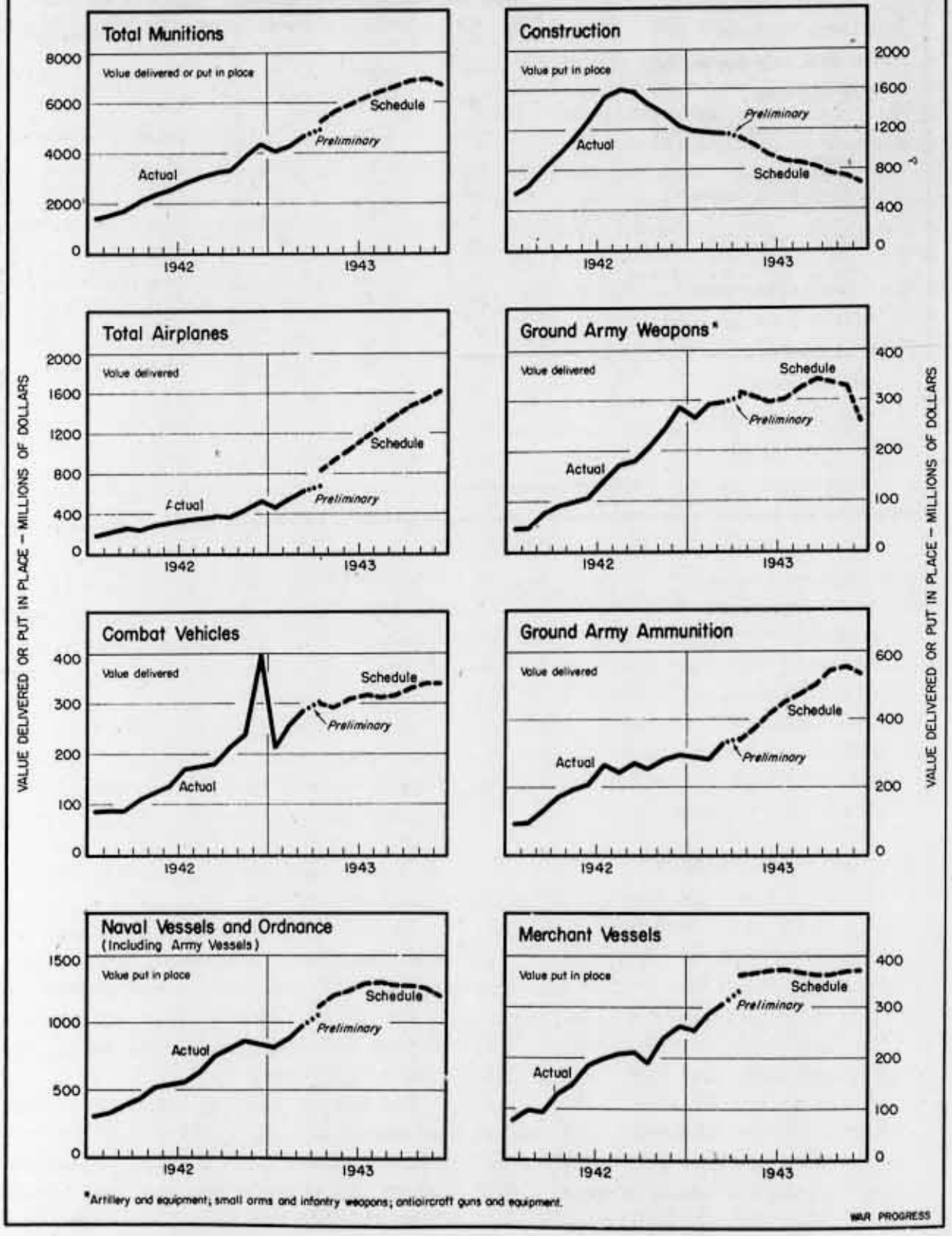
Among other antisubmarine type vessels, subchasers dropped only 2% below schedule, and were up 61% over March; minesweeper deliveries also were up sharply--57%--but the schedule called for a much sharper gain, and the deficit from forecast here was 24%.

In all, the antisubmarine group, despite the above-schedule DE performance, was 26% off schedule. Nondelivery of 10 out of 11 gunboats (corvettes), all of them building in Canadian yards, was a heavy influence.

The lag in landing craft production was unusual. Deliveries fell 40% behind March and 36% behind schedule. Though the program is destined to decline, the lag behind schedule has never

APRIL OUTPUT 5% BELOW SCHEDULE, TOPS MARCH PEAK

Construction is falling as planned; combat vehicles reach best level since December high; all other major groups are at new records.



*Artillery and equipment; small arms and infantry weapons; antiaircraft guns and equipment.

WAR PROGRESS

run as high as 36%. In March, production fell less than 2% short.

Production of merchant ships continued to rise in April. Deliveries totaled 149 vessels of 1,600,000 deadweight tons, exceeding March tonnage by 7% and the first-of-the-month schedule by 4%.

Major type merchant ships in April again generally exceeded expectations; 110 Liberty ships were delivered, seven more than March and one ahead of schedule. The average building time for Liberties delivered during April was down to 57 days against 59 in March and 62 in February; however, this was still four days behind the record set in January. April delivery of 15 standard-type cargo ships also topped schedule.

TANKERS IN STRIDE

The tanker part of the Maritime Commission program finally hit full stride, with completion of 13 tankers--exactly on schedule. Building time for April-delivered tankers was down to 205 days, compared with 215 in March; but this too was still under the February record of 184 days.

Of the total Maritime Commission program, only the minor and military types lagged--as they had done before. Some 10 minor types were produced (four coastal cargo ships, three coastal tankers, and three concrete barges) against a schedule of 12; and five military types, compared with a schedule of seven.

On the whole, the merchant shipbuilding program is recovering from the January and February setbacks. And if average monthly production can be maintained at around 1,800,000 tons--200,000 tons above April--the year's goal of nearly 20,000,000 tons will be met.

Estimated government-financed construction of industrial plants, war housing, barracks, camps, etc. during April was $1,115,000,000, down 4% from the preceding month. This continues the downward direction begun after September, 1942, when total war construction reached a monthly peak of $1,598,000,000.

The building of industrial facilities (aircraft and ordnance plants, etc.) continued down last month. But contrary to the general trend, machinery and equipment deliveries were up moderately. Beginning this month, however, machinery and equipment for industrial facilities is scheduled to begin the first in a series of declines which will cut the April total more than 60% by the end of 1943.

What has happened to construction is a foreshadowing of what will happen to other programs. New industrial facilities constituted initial equipment for America's industrial machine to do the job of turning out munitions. Camps, barracks, bases, and depots for the armed forces constituted a form of initial equipment for training troops. And now the actual initial equipment for the Army and Navy--the tanks, guns, ships--is approaching a peak. Last month, for example, artillery production reached a high point. No month in 1943 or 1944 is scheduled to come up to the April level.

Other programs are scheduled to reach peaks at various times this year--for example, the naval program in August. However, since naval construction has been lagging, the probability is that the high will be pushed into 1944. But in any event, it is clear that production emphasis is shifting from initial, or capital equipment, items to expendable items such as ammunition; or to programs in which initial equipment still has room for expansion, such as airplanes. That's what the outlines of 1944 programs, now available, clearly indicate (page 6).

Contours of 1944 Production

The total program will rise next year – with munitions up as much as 20% – but peak will come early, and the rate of output slacken. Emphasis on "expendable" items.

THE BEGINNINGS of a 1944 munitions and war construction program are at hand. By no means have all procurement agencies spelled out their requirements; nor have month-by-month schedules of production been worked up. In most groups, only half-yearly delivery totals are available, and even in groups in which monthly data are available, programs are subject to change and are frequently incomplete.

But certain facts emerge:

1. Munitions and war construction in 1944 are slated to reach $90,000,000,000, one-seventh more than this year.

2. Construction is scheduled to drop sharply to $5,850,000,000, or to about half of this year's expected total.

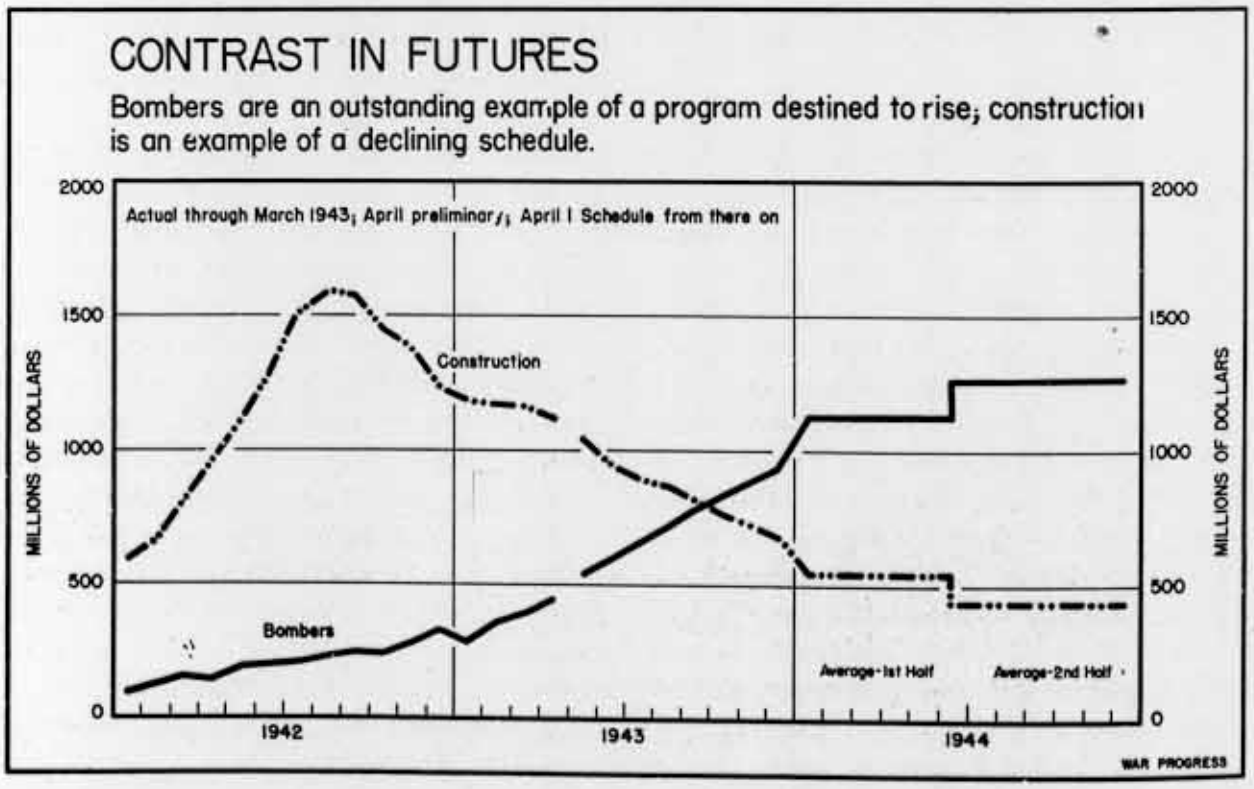
3. Munitions, alone, will be up about one-quarter above this year.

Even though 1944 is a bigger total year than 1943, munitions plus war construction would tend to reach a plateau toward the end of 1943. If April's 6% lag behind schedule persists throughout the year, then a carryover of part of this year's requirements into 1944 will be inevitable. In that case, the monthly peak in 1944 would be higher than now scheduled.

SECOND-HALF DIP

The current outline for 1944 calls for an average monthly output during the first half of $7,550,000,000 a month and slightly less in the second half, as against this year's scheduled high of around $7,500,000,000 (chart, page 8).

Munitions, alone, are scheduled to reach a high in November, 1943, at around $6,800,000,000. That would compare with



UPS AND DOWNS FOR 1944

Schedules now shaping up call for some sizeable gains over this year; also some big drops

UP MORE THAN 50%
- Service combat planes
- Ammunition for artillery & tank cannon
- Bombers
- Combat airplanes
- Aircraft spares
- Pursuits, fighters, & naval reconnaissance planes
- Antiaircraft ammunition

UP 30 TO 49%
- Ammunition for small arms, infantry weapons, & mortars
- Battleships, cruisers, & carriers

UP 20 TO 29%
- Submarines
- Naval antiaircraft & dual purpose guns, 5 inch & under
- Naval guns & fire-control equipment
- Naval surface-fire ammunition
- Aircraft armament
- Naval armor

UP 10 TO 19%
- Tankers, ocean-going
- Dry cargo vessels, ocean-going
- Merchant vessels
- Aircraft equipment & maintenance
- Naval gun ammunition
- Naval antiaircraft & dual-purpose ammunition
- Naval torpedoes, depth charges, mines, etc.
- Trainer planes

UP 1 TO 9%
- Major combat vessels
- Clothing & personal equipment
- Armored cars, scout cars, & carriers
- Miscellaneous munitions
- Self-propelled artillery

DOWN 1 TO 9%
- Aircraft torpedoes, bombs, mines, etc.
- Automotive vehicles & equipment
- Aircraft ammunition

DOWN 10 TO 19%
- Tank cannon
- Combat vehicles
- Combat vehicle signal equipment

DOWN 20 TO 29%
- Tanks
- Antiaircraft guns and equipment - Army
- Aircraft cannon ammunition
- Aircraft signal equipment
- Wheeled artillery
- Small arms & infantry weapons
- Destroyers

DOWN 30 TO 49%
- Naval vessels
- Miscellaneous fire-control equipment
- Destroyer escort vessels (DE)
- Transports, landing vessels, Army auxiliaries
- Troop housing, including barracks, etc.
- Aircraft fields, bases, hangars, etc.
- Minor combat vessels
- Antisubmarine vessels

DOWN MORE THAN 50%
- Auxiliary aircraft carriers (escorts)
- Army auxiliary vessels
- Miscellaneous minor naval combat vessels
- Minecraft (layers & sweepers)
- Coastguard cutters
- Army landing vessels
- Gliders & lighter-than-air craft

WAR PROGRESS

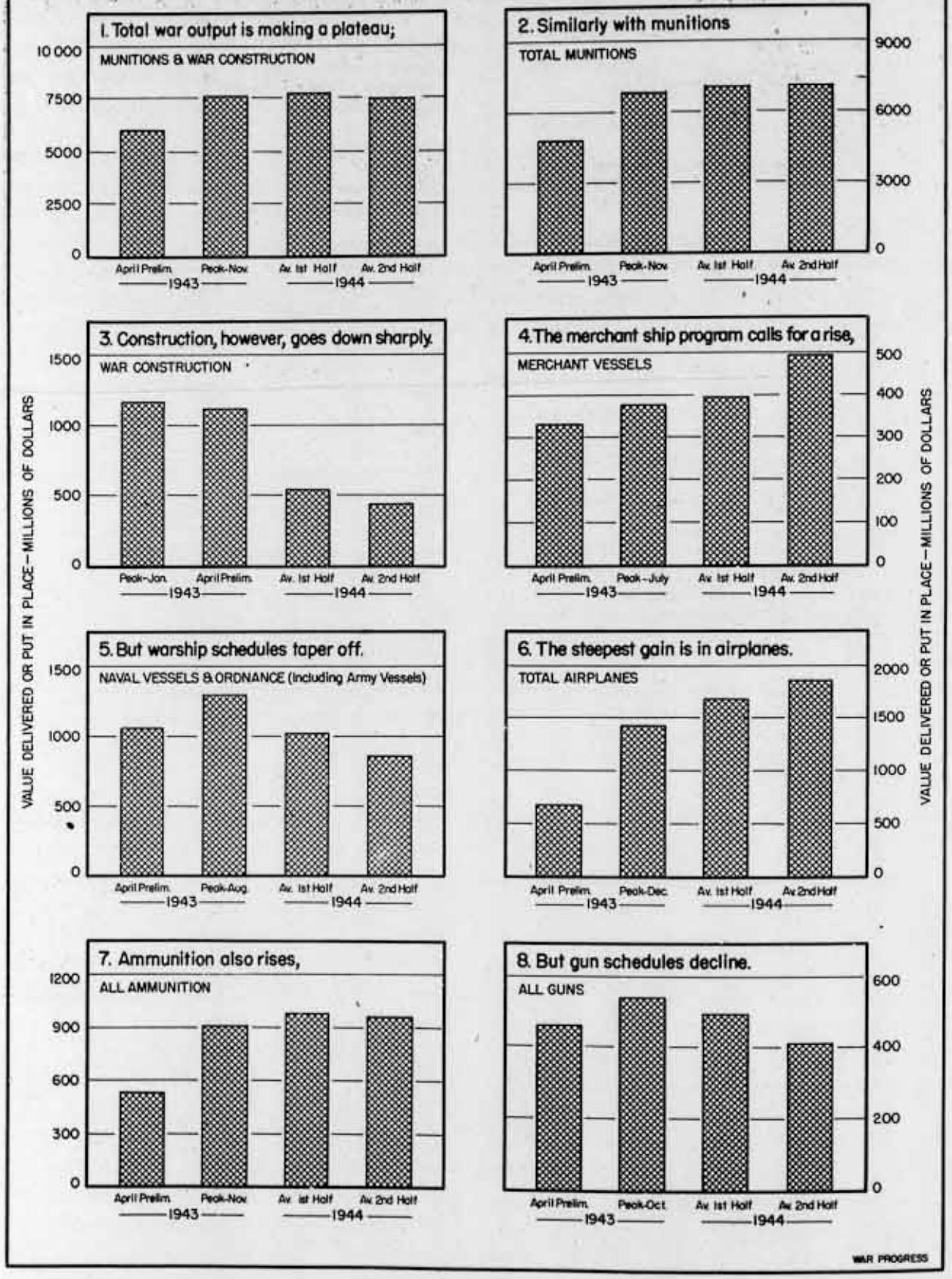
a monthly average of $7,100,000,000 in the first half of 1944 and with slightly less than that in the second half.

Construction, which reached its peak in September, 1942, at $1,598,000,000, and is now down to $1,100,000,000, is slated to drop in the second half of 1944 to a monthly average of $436,000,000. Nor may this total be reached if the policy of rigorous screening of all construction projects, both new and old, yields substantial results in hoped-for eliminations.

Contrasting with construction is the airplane program, which is destined to rise steadily and steeply--especially bombers (chart, page 6).

Some suggestion that the overall program is attaining maturity can be gleaned by the shifts in emphasis. Thus, the gun program declines next year. Its peak is to be reached in October, 1943. On the other hand, ammunition rises considerably over this year's level. Thus, the relative importance of the capital equipment items drops while the importance of so-called expendable items increases. (Later on, the civilian-type

WHAT'S IN STORE FOR 1944



KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program—Checks paid (millions of dollars)	1,462	2,112	1,452	1,922	744
War bond sales (millions of dollars)	577	720	182	96	162
Wholesale prices (1926=100)					
All commodities	p103.7	p103.5	p103.5	99.7	98.6
Farm products	p124.8	p124.3	p124.3	109.8	104.0
Foods	p109.4	108.7	107.9	102.9	99.3
All other than farm products and foods	p 96.9	p96.9	p96.7	95.7	95.8
Petroleum:					
Total carloadings	57,762	56,833	56,988	51,666	56,451
Movement of cars into the East	31,058	29,770	29,449	24,766	19,926
East coast stocks for civilian use (1940-41=100 Seas. Adj)	25.5	26.3	28.8	58.3	n.a.
Total stocks of residual fuel oil (thousands of barrels)	67,577	66,991	67,185	78,487	79,593
Exports (no. of freight cars unloaded for export Friday, excl. grain)					
Atlantic Coast ports	2,003	1,673	1,617	1,222	1,457
Gulf Coast ports	400	376	340	356	452
Pacific Coast ports	1,124	1,149	1,072	961	518
Unused steel capacity (% operations below capacity)	0.6	1.8	1.2	0.4	0.4
Department store sales (% change from a year ago)	+12	-5	+28	+20	+6

n.a. not available. p **Preliminary**

requirements for an army of occupation --locomotives, freight cars, pumps, pipe, generating equipment, etc.—may increase sharply.)

Next year differs from this year in one significant characteristic. Total munitions and war construction started off 1943 at slightly above $5,000,000,000 a month; next year munitions and war construction will start off above $7,000,000,000.

RECEDING RATE OF OUTPUT

Thus, the job this year was to boost output. Next year, even though the yearly total will run 14% higher than this year, there will be a slackening off in the rate of war output, according to present programs.

But that won't make the planning job easier; rather it emphasizes the urgency of selective determination of what must be produced and when.

A comparison of 1943 and 1944 programs by major groupings follows:

	1944*	1943	Change
	(in billions)		
Total mun., const.	$90.3	$79.4	+14%
Total munitions...	84.4	68.1	+24
Aircraft, etc.....	40.9	25.5	+60
(a) Airplanes*...	21.5	11.3	+90
(b) Ordnance.....	2.2	2.2	0
(c) Signal equip.	1.6	2.1	-24
(d) Spares, maintenance, etc.	15.6	9.9	+58
Ground army mun...	16.0	14.3	+12
(a) Combat vehicles, etc....	3.5	3.9	-10
(b) Guns & equip.	3.0	3.6	-17
(c) Army amm.....	8.3	5.1	+63
(d) Ground signal equip.....	1.2	1.7	-29
Naval vessels, etc.	11.7	13.7	-15
Merchant vessels..	4.9	4.2	+17
Misc. munitions...	10.9	10.4	+5
War construction..	5.9	11.3	-48

* All 1944 figures subject to revision

On a monthly basis, two major groups

are scheduled to rise into 1944: aircraft and merchant ships.

Naval ships may not reach a peak until 1944, even though the present schedule calls for a high in August; deliveries and value put in place have lagged fairly consistently here, so that a big carryover of work into 1944 is probable. Antisubmarine vessels, according to schedule, go down. And this is the big factor in reducing the Navy total for next year.

ACCENT ON NEW ITEMS

Among subgroups, ammunition and radar equipment will make peaks next year. Indeed, items of recent development will assume ascending importance. And many of these have not even been definitively programmed, let alone scheduled. However, the Army has made requests of Congress for $1,600,000,000 for production of items still in the developmental stage.

Unshackling Silver

War uses step up industrial demands, but a shortage impends unless legislation is passed that will pry loose a portion of U.S. Treasury's record stocks.

U.S. SILVER STOCKS today amount to 3,300,000,000 ounces; this is the largest single accumulation in world history. But this silver is not for consumption. And though requirements for industrial uses and export this year come to the comparatively small total of 269,000,000 ounces--8% of the hoard--a shortage of 107,000,000 ounces impends.

The paradox is a legal one: Bulk of the silver stock is bottled up in the U.S. Treasury, and until it can be legislated out, industrial consumers must depend on newly mined domestic silver or imports.

Here is what the silver income-and-outgo account for 1942-43 looks like:

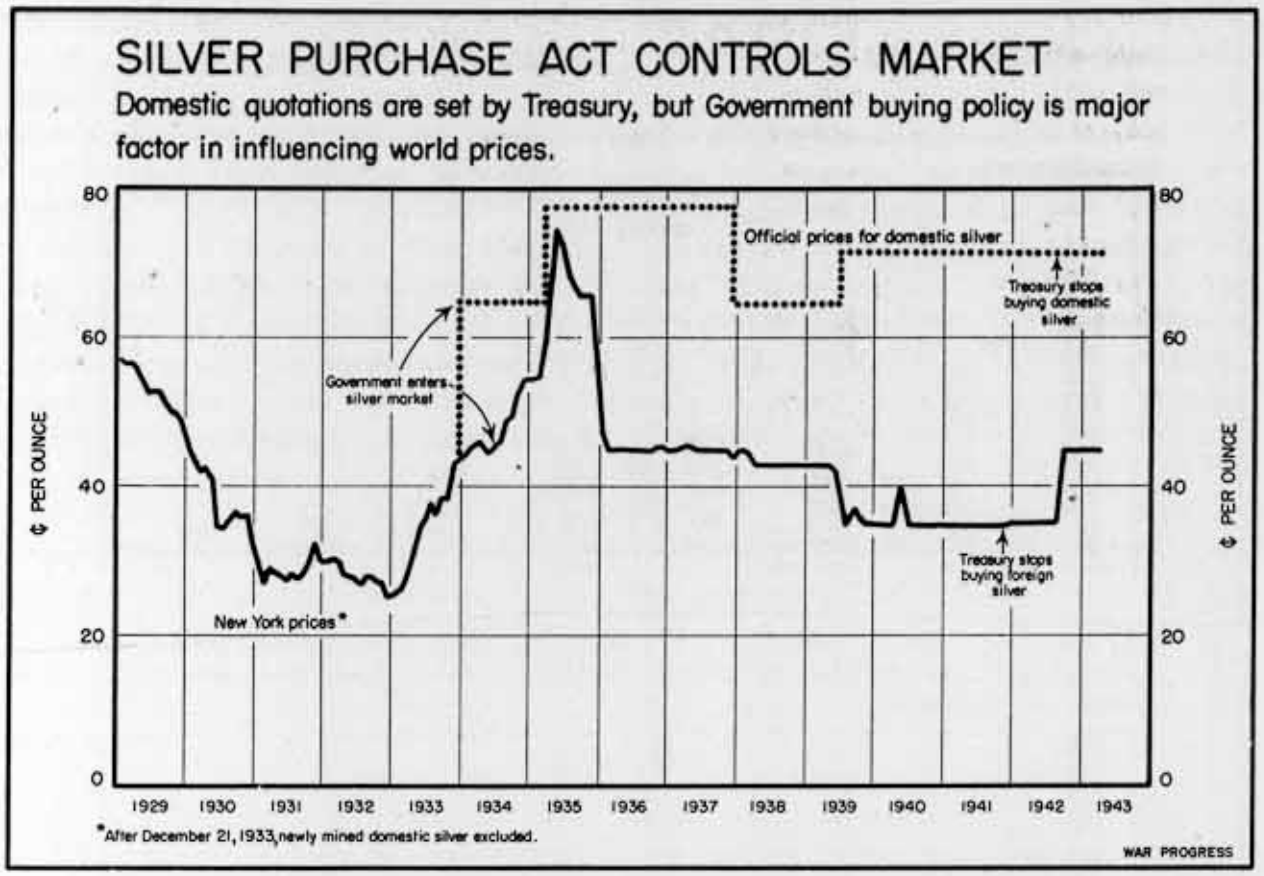
	1942	1943
	(million ozs.)	
Supply		
Domestic output.....	54.5	45
Imports.....	108.1	70
Scrap, reserve & Treasury "ordinary"	45.9	47
Total.....	208.5	162
Requirements		
Essential uses.....	47.7	139
Nonessential uses...	72.8	30
Foreign needs.....	15.9	50
Total.....	136.4	219
Emergency potential.....		50
Possible total.....		269
Indicated deficit.....		107

Some of the Treasury's 3,300,000,000-ounce store has been released for war work: 245,000,000 ounces to the Army for war uses; 1,000,000,000 ounces have been made available for WPB on the stipulation that the silver will be returned to the Treasury after the war. But up to now, only 560,000,000 ounces have been "borrowed" on this basis, for such nondissipative uses as bus bars, transformer windings, and so on. And the remaining 440,000,000 ounces is not available for such consumptive uses as soldering, brazing, etc.

DOING DOUBLE DUTY

So legislation is pending to make the silver now out on loan do double duty. Not only would it substitute for copper in bus bars, etc., but also it would serve as backing for U.S. silver certificates in circulation. Such action would automatically release an equivalent amount of silver--560,000,000 ounces--for other uses. It is also proposed that some of the "free" silver be made available for consumptive uses.

If the legislation is passed, the



prospective 1943 deficit would be wiped out, and enough silver would be assured to see us through a fairly long war. And silver has shown that it can do an important war job: replacing copper and other metals in such uses as electric contact points, torpedo parts, and aviation bearings; also--possibly--substituting for aluminum in transmission line wire.

War Progress Notes

BUYING DOWN, COLLECTIONS UP

DWINDLING STOCKS at retail outlets continue to be reflected in year-to-year declines of the FRB index of outstanding installment accounts receivable. At the end of March, department, furniture, and jewelry store volume was around 55% of like 1942 levels, while that of household appliance stores was only a third of the March, 1942, total, as follows:

Retail Stores	March '43	March '42
Department	54	102
Furniture	57	101
Household appliance	32	96
Jewelry	54	98

At the same time, the ratio of collections during the month to accounts receivable at the beginning of the month rose some 50%, as follows:

Retail Stores	March '43	March '42
Department	31	22
Furniture	19	13
Household appliance	18	13
Jewelry	29	19

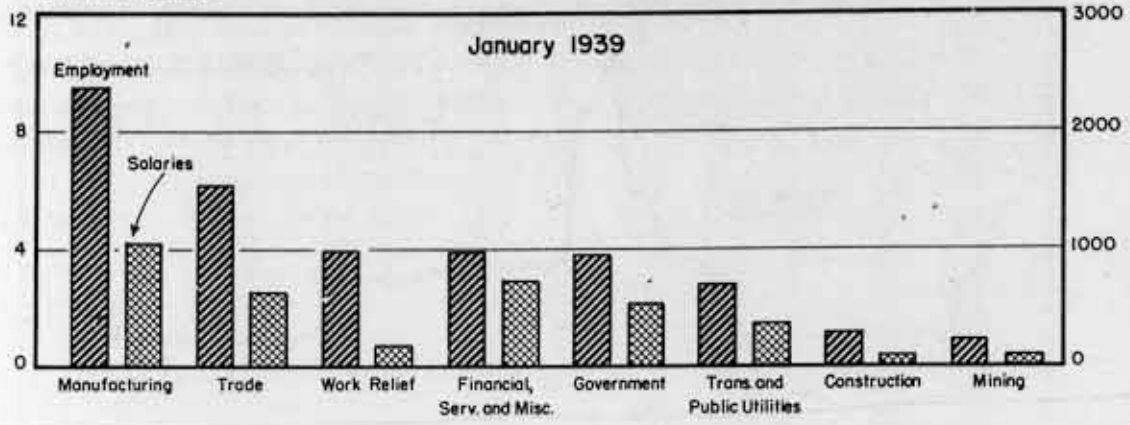
This reflects the increased flow of cash to consumers, as compared with a year ago.

THE FLEET GROWS

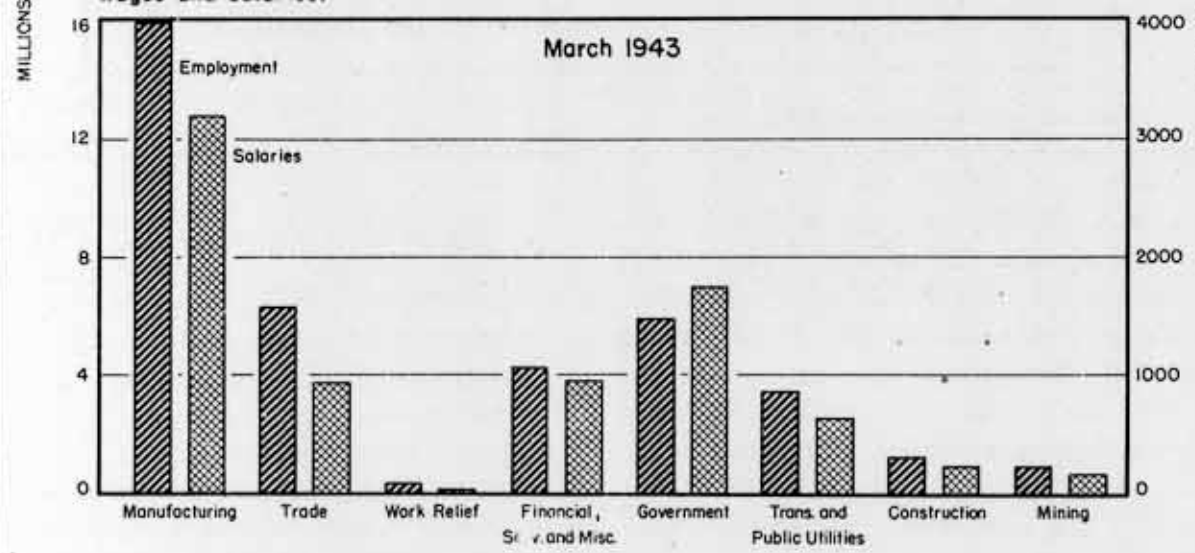
THE UNITED STATES built 61 major combat ships in the first four months of 1943,

WHO GETS WHAT SHARE OF WAGES AND SALARIES

In January, 1939, manufacturing led all nonagricultural groups in income and employment. Trade was second in employment, third in wages and salaries; work relief third in employment, sixth in income.



By March, 1943, basic shifts had taken place. Manufacturing held its own, but trade had dropped to fourth in income, and work relief virtually vanished. Government moved to second place in wages and salaries.



Percentage shares of the total shape up like this:

INDUSTRY GROUP	1939		1943		% CHANGE IN RELATIVE SHARE OF EARNINGS 1939-1943
	% OF EMPLOYMENT	% OF SALARIES AND WAGES	% OF EMPLOYMENT	% OF SALARIES AND WAGES	
MANUFACTURING	29.5	28.5	41.4	40.4	+ 1
TRADE	19.1	17.0	16.4	11.7	−20
WORK RELIEF	12.3	5.1	.8	.1	−70
FINANCIAL, SERVICE, & MISC.	12.1	19.2	11.1	12.4	−30
GOVERNMENT	12.1	14.3	15.6	22.2	+20
TRANS. & PUBLIC UTILITIES	8.6	10.6	9.0	8.0	−28
CONSTRUCTION	3.6	2.6	3.5	3.0	+19
MINING	2.7	2.7	2.2	2.2	0

WAR PROGRESS

ice. However, efforts were made to meet this loss by speeding up tanker shipments and pooling tanker, terminal, and storage facilities. Increased shipments by rail also lifted "imports": tank-car deliveries of all petroleum products to the East jumped in 1941 from 5,000 barrels to 98,000 barrels a day.

By the end of 1941 the daily flow of petroleum products to the Atlantic Coast states--at 1,575,000 barrels a day--was 7% higher than at the beginning. At the same time, suppliers were restricting their station deliveries, and consumption was curtailed by closing gasoline stations at 7 p.m. The net result of boosting shipments and limiting consumption was a fairly comfortable supply-demand relationship at the end of the year.

TANKERS QUIT COASTAL RUN

The impact of Pearl Harbor, however, upset this balance. Not only were a considerable number of tankers sunk off the Atlantic Coast in the late winter and spring of 1942, but tankers were needed for overseas service. Since December, 1941, the tanker fleet carrying oil to the East Coast has been reduced (in tonnage) by 88%.

And now, supplies largely come by rail. With the help of the government --which first allowed advances in the price of gasoline and fuel oils (to offset the increased cost of rail haulage vis-a-vis tankers) and later assumed the extra cost itself--tank-car deliveries of all petroleum products to the Atlantic seaboard states rose from 98,000 barrels a day at the end of 1941 to an average of 806,000 barrels in the third quarter of 1942. This assured the East of at least half its normal gasoline requirements and two-thirds of the oil needed for essential heating, power, and transportation services.

6,000 AIRPLANES PER MONTH

ACCEPTANCES of 3,525 military airplanes during the first 20 days of this month were 5% greater than in the comparable period of February, although 4% below the calculated interim schedule based on 8-L.

If past patterns hold, acceptances for all of March should exceed 6,000 planes. This would be well over the previous highs of 5,489 in December and 5,452 in February. However, output will probably fall short of the 8-L schedule which calls for 6,793 planes in March.

On an airframe weight basis, the 20-day gain is 6% above February, but 7% below the calculated schedule.

Heavy bombers were 9% ahead of schedule for the 20 days. Trainers also were ahead of schedule.

Meanwhile, efforts were made to expand other methods of transportation. In the spring of 1942, construction was started on several minor pipelines as well as on the major 24-inch ("Big Inch") line designed to carry oil from east Texas to Norris City, Ill., and thence (upon completion of the second section, which was started later) to the New York and Philadelphia refinery districts. (The Supplies, Priorities, and Allocations Board had denied steel for this project in the previous October.)

Moreover, additional pumping stations were installed on existing lines; pipeline flows were reversed so as to bring crude oil and gasoline eastward. Direct pipeline deliveries have consequently tripled since the end of 1941, rising from 60,000 barrels to about 175,000 barrels a day currently.

In dealing with the petroleum crisis in the second half of 1942, emphasis was

far offsetting the announced loss of seven destroyers, one cruiser, and one submarine in the same period. The net gain was 52 ships.

The chief expansion was in aircraft carriers. With the delivery of the "Yorktown" and "Lexington" (27,000 tons each), and the smaller "Belleau Wood," "Independence," and "Princeton" (10,000 tons each), the number of carriers jumped to nine. One new battleship, the "Iowa" (45,000 tons), a heavy cruiser, the "Baltimore" (13,000 tons), and two light cruisers, the "Mobile" and "Birmingham" (10,000 tons each), were also added to the fleet, bringing the total to 21 battleships and 41 cruisers. This compares with pre-Pearl Harbor strength of 7 aircraft carriers, 17 battleships, and 37 cruisers.

Destroyer and submarine units also increased substantially in the first four months of the year, as the following table shows:

	-Ships On Hand- 12/31/42	4/30/43	Net Gain*
Battleships.....	20	21	1
Aircraft carriers	4	9	5
Cruisers.....	39	41	2
Destroyers.....	223	255	32
Submarines.....	133	145	13
Total.....	419	471	52

*Deliveries minus losses

GOVERNMENT WORKERS LEAD

BACK in January, 1939, the group of workers engaged in financial, service, and related occupations received higher incomes per worker than any other group. Simply put, this group comprised 12% of all nonagricultural employees, but received 19% of all wages and salaries (chart, page 12). First position since then has shifted to government (state, federal, etc.) workers, who today constitute 16% of all employees and receive 22% of all wages and salaries.

An index of the relative share of earning power per government employee (% of total salaries and wages ÷ % of total employees) would today come out to 142, as against 118 in 1939. An interesting commentary on this shift is that so many workers from financial institutions have come to Washington to join the war effort. Change in employee earning power since 1939 is as follows:

	Index of Income per Employee* 1939	1943	Rank 1939	1943
Finance, etc.	158	112	1	2
Trans. & pub. util.	123	89	2	5
Government	118	142	3	1
Mining	100	100	4	3
Manufacturing	97	98	5	4
Trade	89	71	6	7
Construction.	72	86	7	6
Work relief..	42	13	8	8

* % of salaries and wages ÷ % of employees.

REPORTS ON REPORTS

Deficient Production

Lumber (confidential; pp. 12) points out that, on first-quarter comparison, production this year lagged 13% behind 1942. A substantial increase over current output is needed to meet essential requirements alone; other uses face severe curtailment. (U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce)

Supplies to Fight U. S.

War Materials Position of the Asiatic Axis (confidential; pp. 11) gives a summary of Japan's supply situation. Foodstuffs and raw materials range from fair to good; but textiles (excluding silk) and most industrial products are tight. The situation in manpower, railroads, and electric power is considered fair.
(Board of Economic Warfare, Enemy Branch)

Fate of Fats

Fats and Oils (confidential; pp. 17) expects fish-oil production to rise because of a release

of vessels formerly taken over by the Navy. Canners and butchers now sell the fats with meat cuts to avoid being hit too severely by the ceiling price on meat; hence fats, instead of going into soap production, end up in garbage pails.
(U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce)

Germany's "Just Price"

Price Control in Nazi Germany (unclassified; pp. 59) discusses technical aspects and basic principles of price regulation under Hitler. As "rationing of supply and commandeering of production" develop, "any price system becomes bearable, however abstruse."
(Office of Price Administration, Division of Research, Foreign Information Branch)

Marks for OPA Boards

Some Verdicts on Local War Price and Rationing Boards (confidential; pp. 11) lists the response to a survey on efficiency, fairness, understanding, etc., of OPA's field organization. Approval and appreciation are general, particularly among businessmen. Shortcomings are blamed on "Washington."
(Office of War Information, Bureau of Special Services)

[This record is an attempt to select from the many documents coming to the attention of WAR PROGRESS those studies which would be of most interest to readers. The list is by no means comprehensive, and no attempt has been made to evaluate reports for accuracy. Whether reports are available depends on the policy of each individual agency.]

SELECTED MONTHLY STATISTICS

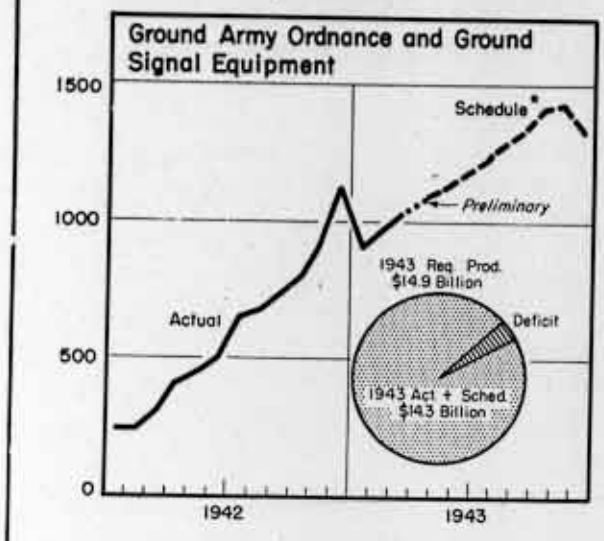
Hours and Earnings—Food Production

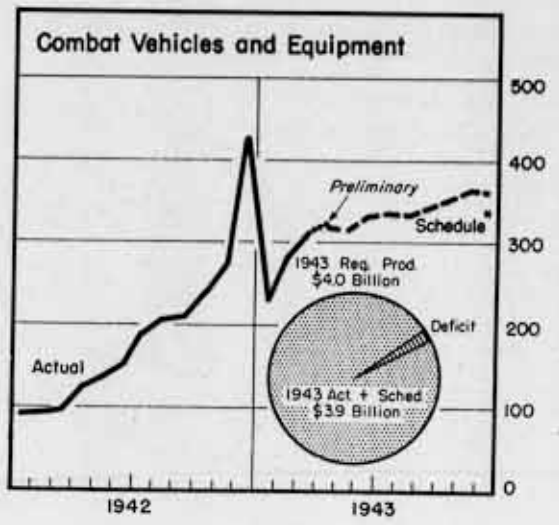
	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
AVERAGE HOURLY EARNINGS (Cents)							
All Manufacturing Industries	p93.4	92.4	91.9	89.2	81.1	63.2	n.a.
Durable Goods	p103.0	102.0	101.7	99.7	89.9	69.7	n.a.
Nondurable Goods	p78.2	77.4	76.8	74.3	69.6	58.2	n.a.
Bituminous Coal Mining	p112.2	111.3	108.5	106.5	106.2	88.4	78.6
Metalliferous Mining†	p 94.9	94.7	94.1	90.6	86.5	69.3	68.1
AVERAGE HOURS PER WEEK							
All Manufacturing Industries	p44.8	44.5	44.2	42.4	42.7	37.6	n.a.
Durable Goods	p46.4	46.2	45.9	44.6	45.0	37.2	n.a.
Nondurable Goods	p42.5	42.6	41.8	39.7	40.1	37.8	n.a.
Bituminous Coal Mining	p38.3	37.0	34.7	33.5	31.6	26.5	33.8
Metalliferous Mining†	p43.7	43.6	43.3	43.2	44.4	40.2	45.0
FOOD PRODUCTION:							
DAIRY PRODUCTS (million pounds)							
Butter, creamery	140.1	s	s	s	135.9	142.6	121.1
Cheese	74.3				93.7	51.0	45.7
Evaporated Milk	252.9				339.5	179.8	153.3
ANIMAL FATS (million pounds)**	210.0				258.8	167.0	131.8
MEATS-TOTAL (including lard, million pounds)	1,490.0				1,345.0	1,067.0	1,006.0
Beef and veal	534.1				545.8	439.6	453.7
Lamb and mutton	64.8				73.4	63.4	53.8
Pork, including lard	891.5				725.3	563.7	498.8
Lard	136.4				132.1	96.1	76.6
POULTRY AND EGGS							
Eggs (millions)	6,727.0				5,992.0	5,042.0	2,029.0
Poultry (receipts at 5 principal markets, million pounds)	9.5	s	s	s	23.1	16.2	18.6

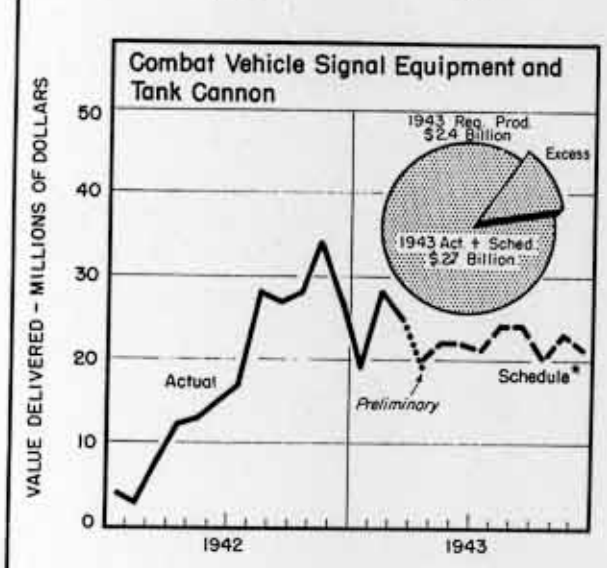
*March; Poultry and Egg production, April. **Figures for year ago, 1939, and 1937 represent first quarter averages.
† Figures prior to July, 1942, not strictly comparable with later data. n.a. Not available. p. Preliminary.
s. Seasonal influences invalidate month-to-month comparisons.

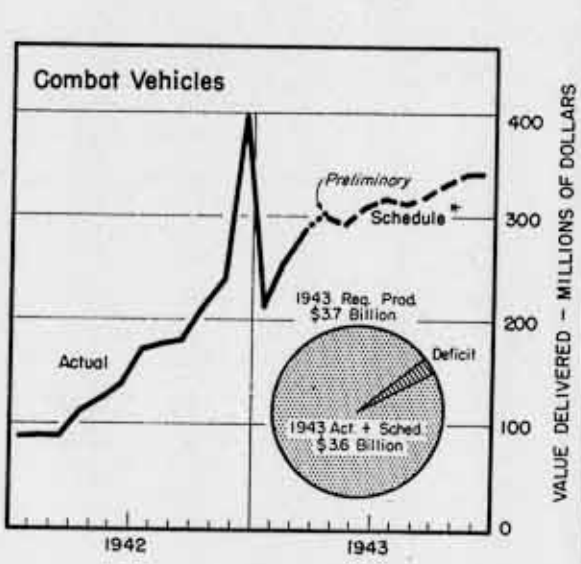
PRODUCTION PROGRESS

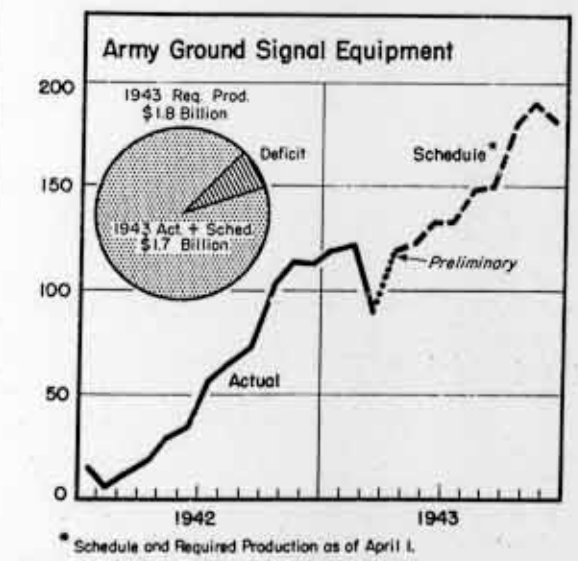
Ground Army Munitions

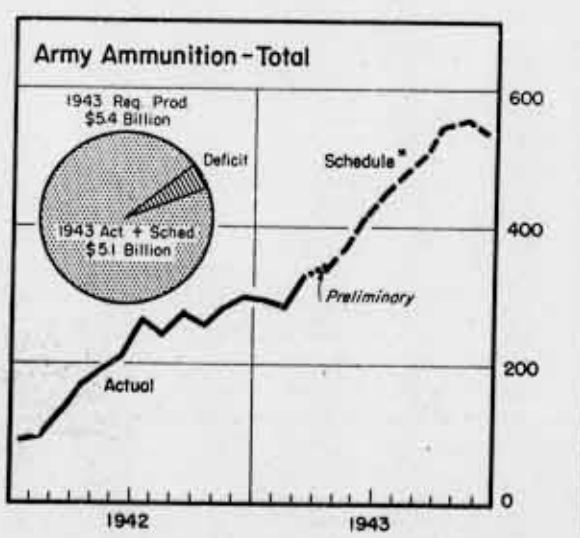










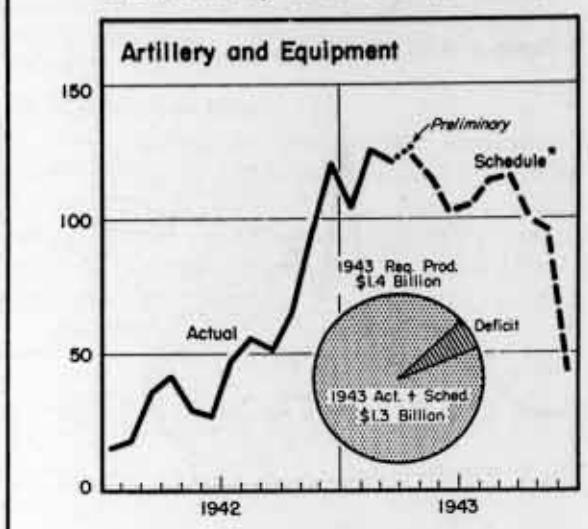


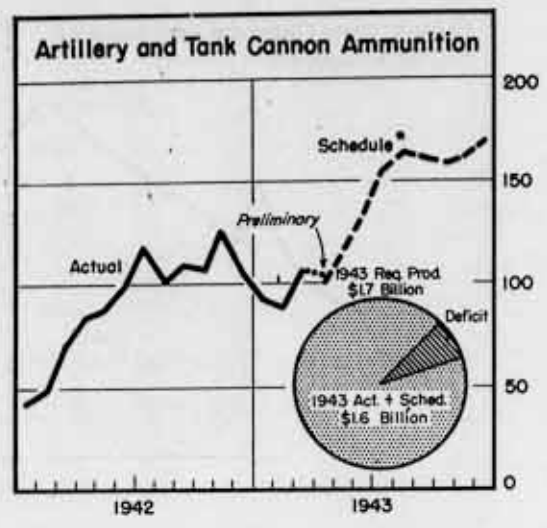
* Schedule and Required Production as of April 1.

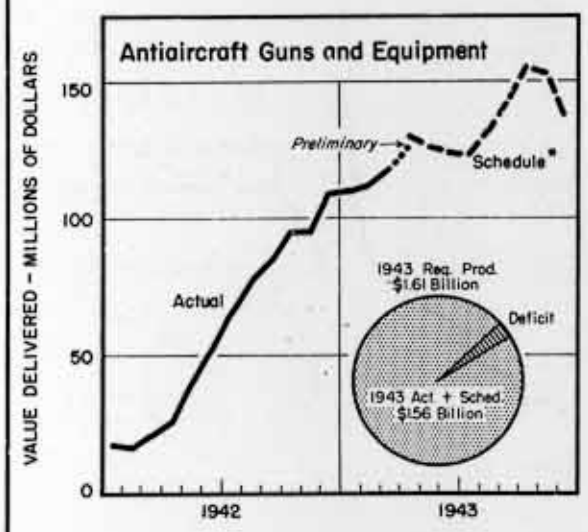
WAR PROGRESS

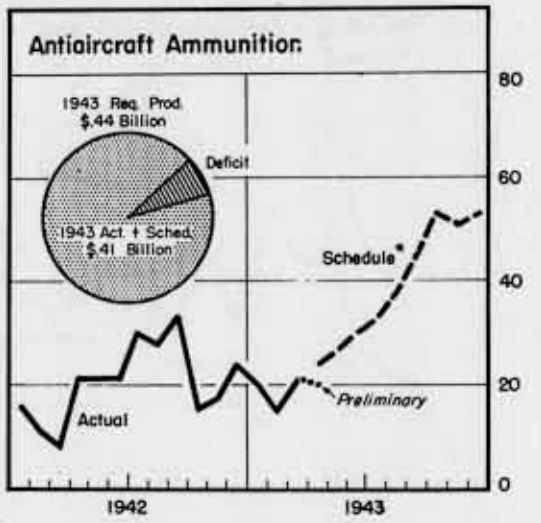
PRODUCTION PROGRESS

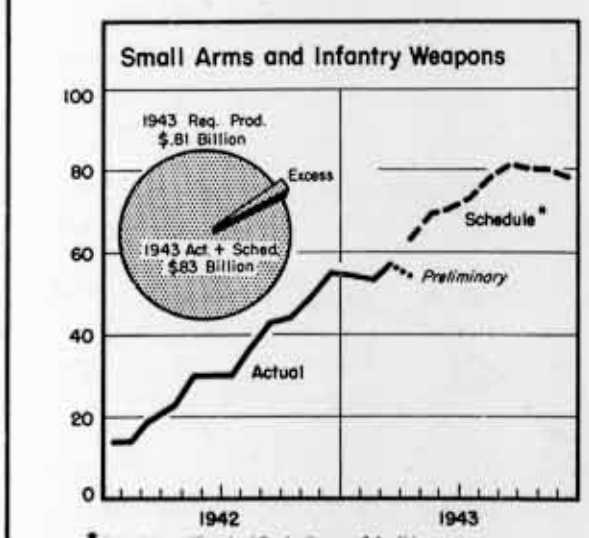
Ground Army Munitions (Continued)

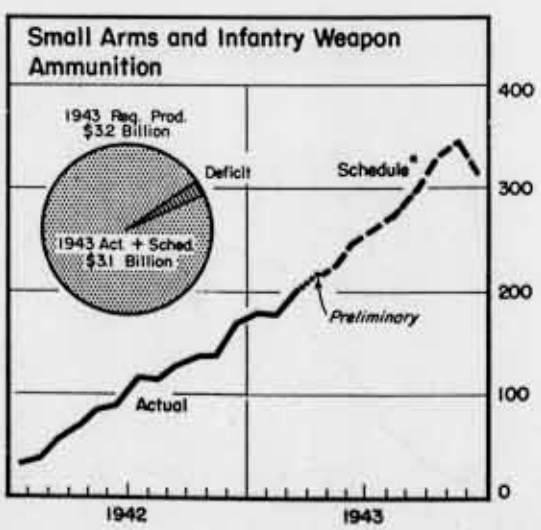












* Schedule and Required Production as of April 1.

WAR PROGRESS

The President

1

WAR PROGRESS

Confidential
(British Secret)

Cutback in the Plane Program.
Planning Combined Production

Number 140

May 21, 1943

"Working" 8-L vs. Original 8-L

Plane schedule for 1943—cut 10% numerically, 14% by weight—tailored to actual first-quarter results. Composition by types virtually unchanged.

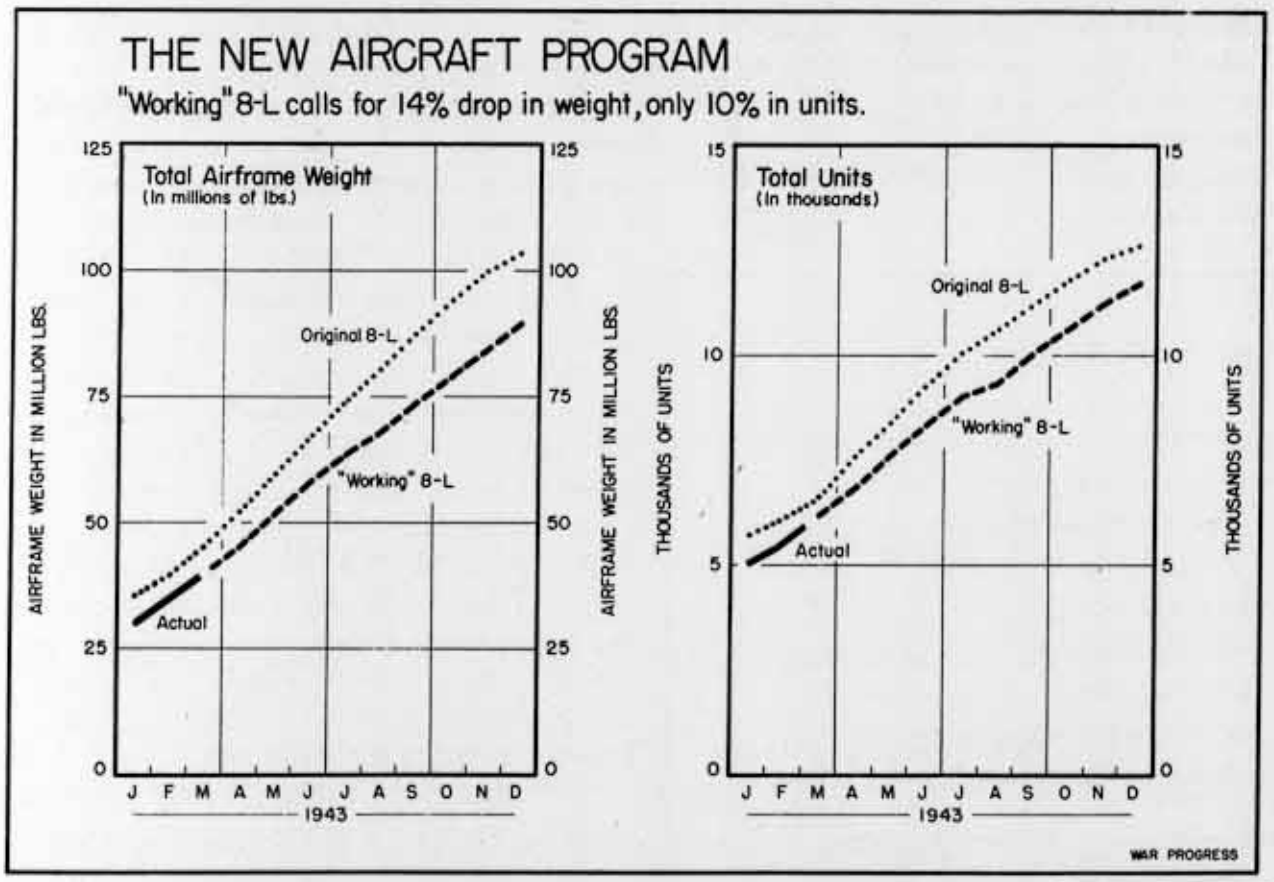
A TENTATIVE REVISION of the 8-L airplane schedule for 1943 has been completed. It brings the program closer into line with (1) the actual accomplishment of recent months and (2) the availability of raw materials. A plant-by-plant checkup of the schedule is now under way to determine whether individual manufacturers will be able to turn out the planes assigned to them—in terms of labor and facilities as well as raw materials.

Known interchangeably as "working" 8-L and as 8-M, the new schedule calls for production of 101,277 planes this year (excluding special aircraft: target, rotary wing, etc.), a 10% decline from the 112,115 planes in the original 8-L adopted in November, 1942. (During the first quarter, the numerical lag behind the original 8-L was 9.6%.)

DROP IN WEIGHT

Because big planes have been cut to a greater extent than smaller ones, the reduction on an airframe weight basis was greater—14%. (This was just about the production lag behind original 8-L in the first quarter.) In dollar value, the 1943 cut amounts to 15%—almost the same as on a weight basis.

A type-by-type analysis of the cut for 1943 (units and weight) follows:



	% Reduction Units	Weight
Total airplanes	-10%	-14%
Combat	-13	-14
Bombers	-15	-14
Fighters	-9	-10
Naval reconnaissance ..	-39	-39
Service combat	-1	-25
Transport	Nil	-26
Communication	-1	-1
Trainers	-6	-7

Numerically, the drop in this year's program comes to 10,838 planes. Of this, the lag in actual production during the first four months of the year accounts for 1,761 planes. For 1943 as a whole, the decline is concentrated in the combat group, as the following table shows:

	"Working" 8-L	Decline from Original 8-L
Total airplanes	101,277	10,838
Combat	64,413	9,396
Bombers	34,653	6,163
Fighters	29,136	2,832
Naval recon..	624	401
Service combat	13,146	63
Transport ...	8,306	9
Communication	4,840	54
Trainers	23,718	1,379

IN THIS ISSUE:

Parenthetically, because of a less-than-expected attrition rate for trainers in service, a further cut in the trainer group is possible later in the year.

The new schedule has plenty of upward slope, as the chart on page 1 indicates. From an actual output of 6,403 planes last month, production is slated to rise to a monthly average of more than 11,000 in the final quarter of the year. Under original 8-L, a monthly average of 12,000 planes was scheduled for the closing quarter of 1943.

Working 8-L lowers 1943 expectations for Flying Fortresses and Liberators only 6%—from 11,023 ships to 10,384. But the long-range heavy bomber is slashed 38%, with schedules pushed back in all plants. None of these machines—which are twice the weight of a Flying Fort—was accepted in the first four months this year; nine are slated for May and June, compared with 18 under the original schedule.

DIVE BOMBERS LAG

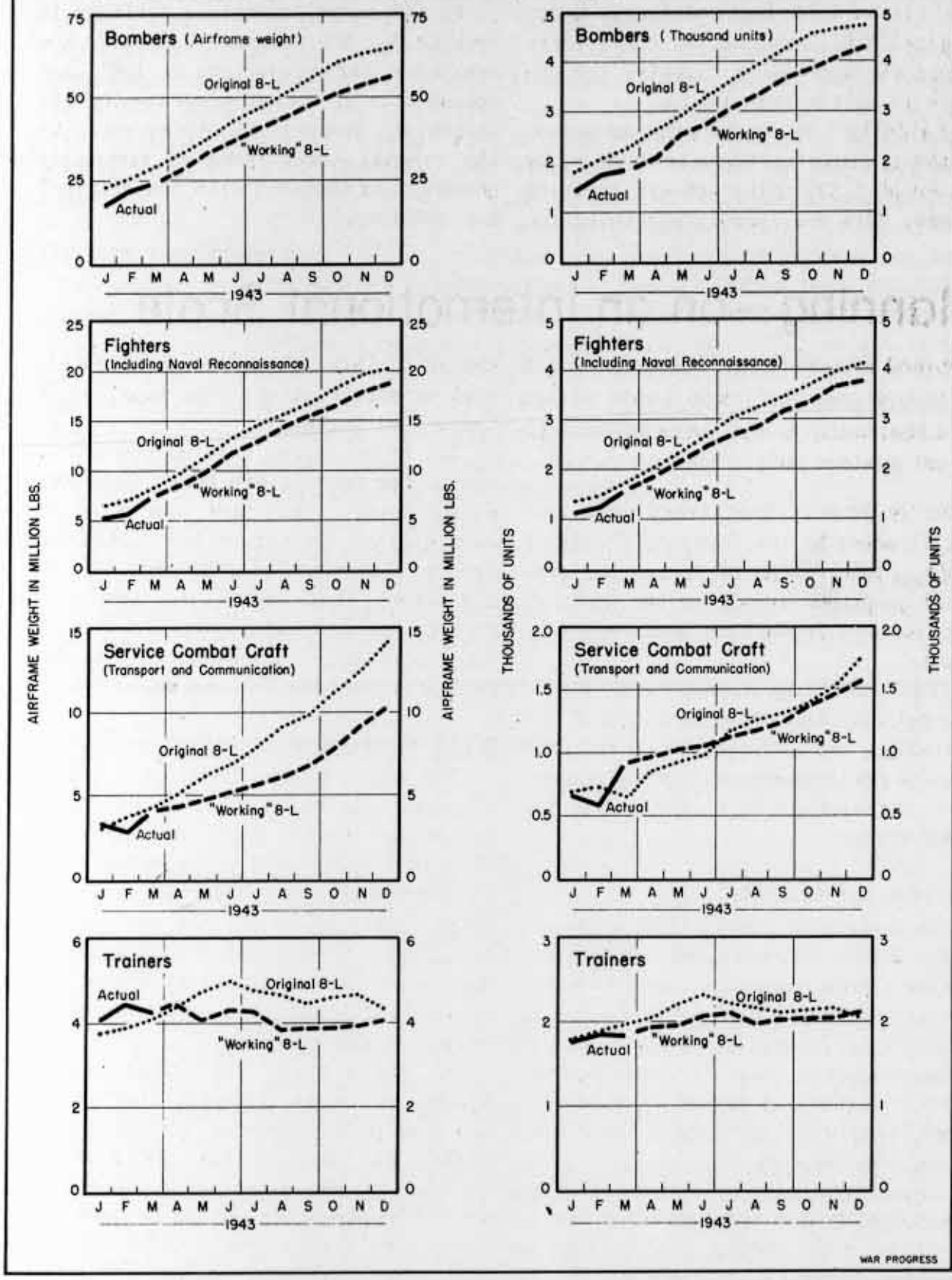
Persistent lags in one-engined light bomber production—due largely to many new models and design changes—prompted a 26% reduction in this schedule: from 14,875 units to 11,401 units. Also, the Army has found less use for this type of dive bomber.

The overall reduction in the fighter plane schedule for 1943—9% in number, 10% on a weight basis—is chiefly in the newer models: The Northrop P-61 drops from 379 units to 77; the Curtiss P-60 from 282 to 74; the improved Airacobra (P-63) from 3,621 to 615—although this was more than offset by increases in the original, or P-39, model; the Thunderbolt from 5,056 to 4,811; and the Corsair from 3,982 to 2,642.

In transports, the decline in numbers is slight—only 9 units, or a fraction

LOWER PRODUCTION SIGHTS FOR AIRPLANES

Service combat craft show the greatest drop in weight; bombers are next.



WAR PROGRESS

of 1%—but the reduction in weight is substantial: 26%. This reflects a drop of 1,713 heavy and medium transports and a net rise of 1,696 light machines. Under original 8-L, one out of every three transport planes was a "light"; the new ratio is better than 1-to-2.

A sidelight on the changed composition of the transport program is supplied by the cut of 1,379 units—6%—in training planes. This was largely accounted for by reclassification of all Cessna advanced trainers to twin-engined light transports.

By and large, numerical declines in working 8-L are spread evenly over the remaining three quarters of 1943, and composition of the new program—the relation of bombers, fighters, etc., to the overall total—remains virtually unchanged as compared with the original 8-L schedule.

Planning—on an International Scale

Combined Production and Resources Board suggests who shall supply what—tries to balance U.S.-U.K. programs so as to get maximum United Nations output.

AMERICAN AND BRITISH military operations are directed by the Combined Chiefs of Staff. Integration of Anglo-American-Canadian production is in the hands of the Combined Production and Resources Board.

Organized last June, the CPRB is charged with the responsibility of coordinating American and British resources so as to get the maximum volume of planes, guns, and ammunition to the United Nations armies.

NATIONAL DIFFERENCES

Three factors govern CPRB's job:

1. Armies are recruited on a national basis. Hence munitions are procured on a national—not combined—basis. Thus, the United States and British services make up their own requirements and are hesitant to depend on other nations for crucial portions of their supplies (WP-Jan29'43,p1).

2. Accordingly, production programs are geared to the manufacturing facilities of each country rather than to combined capacity. (However, in the case of Britain, the armed services always expect to obtain some supplies in the United States.)

3. By and large, British countries, except for Canada, are heavy importers of munitions. They must make constant requisitions on the United States and Canada, the surplus producers, and to the extent that such claims seem warranted, American and Canadian facilities and raw materials are diverted from domestic production to exports.

OTHER AGENCIES IMPLEMENT

The work of the CPRB is not always traceable directly into end products—particular planes, guns, or ships. The CPRB is a policy and programming body. It depends on other agencies—the Combined Chiefs of Staff, the War Production Board, the British Ministry of Production, the Canadian Department of Munitions and Supply, etc.—for implementation of its programs.

At the start of the board's operations, it became apparent that before the combined resources of the United States and Great Britain could be coordinated it was necessary to determine what these resources should be used for—how many planes, guns, tanks, and of what types must be produced. This fo-

cused attention on the need for assembling the requirements of the U.S. and British armed forces into a combined program. Such a program could then be translated into materials requirements —into tons of steel and copper, pounds of aluminum, number and types of facilities required, volume of tonnage for carrying supplies to war theatres, and so on.

MEASURING REQUIREMENTS

To this end, the CPRB last fall brought together the combined navy, army, air forces, maritime, and export programs, as well as requirements for construction and nonmilitary goods, and had them broken down into requirements for basic metals. The results showed that in terms of raw materials alone—ignoring manpower and production facilities—both the American and British requirements were far too big. To produce all the munitions and essential items embraced by the original 1943 military programs, the U.S. and the United Kingdom would have needed considerably more copper, steel, and aluminum than was going to be available.

This conclusion was passed on to the Combined Chiefs of Staff, which in turn passed the findings on to the U.S. and British Chiefs of Staff. At the same time, the War Production Board had made an estimate of feasible production, recommending a cutback in the U.S. munitions and war construction program for 1943 from $92,500,000,000 to about $80,000,000,000. As a result of this concerted examination of the U.S. production potential, the U.S. Joint Chiefs of Staff ordered revisions in the army and navy programs, cutting total munitions and war construction for 1943 to about $83,000,000,000.

MANPOWER U.K. KEY

In the United Kingdom the problem was slightly different. The supply of manpower determines how much British

FUSING THE U.S.-U.K. WAR EFFORTS

FIVE MAJOR BOARDS have been set up to coordinate the Anglo-American war effort: (1) The Combined Chiefs of Staff supervises the overall distribution of war supplies and acts as a liaison between the British and American Chiefs of Staff and those of other United Nations. (2) The Combined Raw Materials Board plans "the best and speediest development, expansion, and use of the raw material resources under the jurisdiction or control" of the United States and Great Britain (WP-Dec4'42,p9). (3) The Combined Shipping Adjustment Board attempts to fuse the work of the War Shipping Administration and the British Ministry of Transport so as to obtain the maximum utilization of available merchant vessels. (4) The Combined Food Board formulates plans for the most expeditious use of the food resources of the United Nations, with emphasis on the British Empire and the United States. (5) Finally, the Combined Production and Resources Board endeavors to integrate the production facilities and resources of the United States and the British Empire.

Roughly, these are the functions of the five boards. In practice, their work overlaps. This article discusses the work of the Combined Production and Resources Board.

placed on curtailment of consumption. Rationing of gasoline and fuel oil was instituted, and nonessential uses were discouraged. However, rationing did not at first materially decrease gasoline consumption. Demand (excluding exports) on refineries and terminals dropped by 85,000 barrels a day between July and August, but then increased contraseasonally by an average of 32,000 barrels a day between August and November.

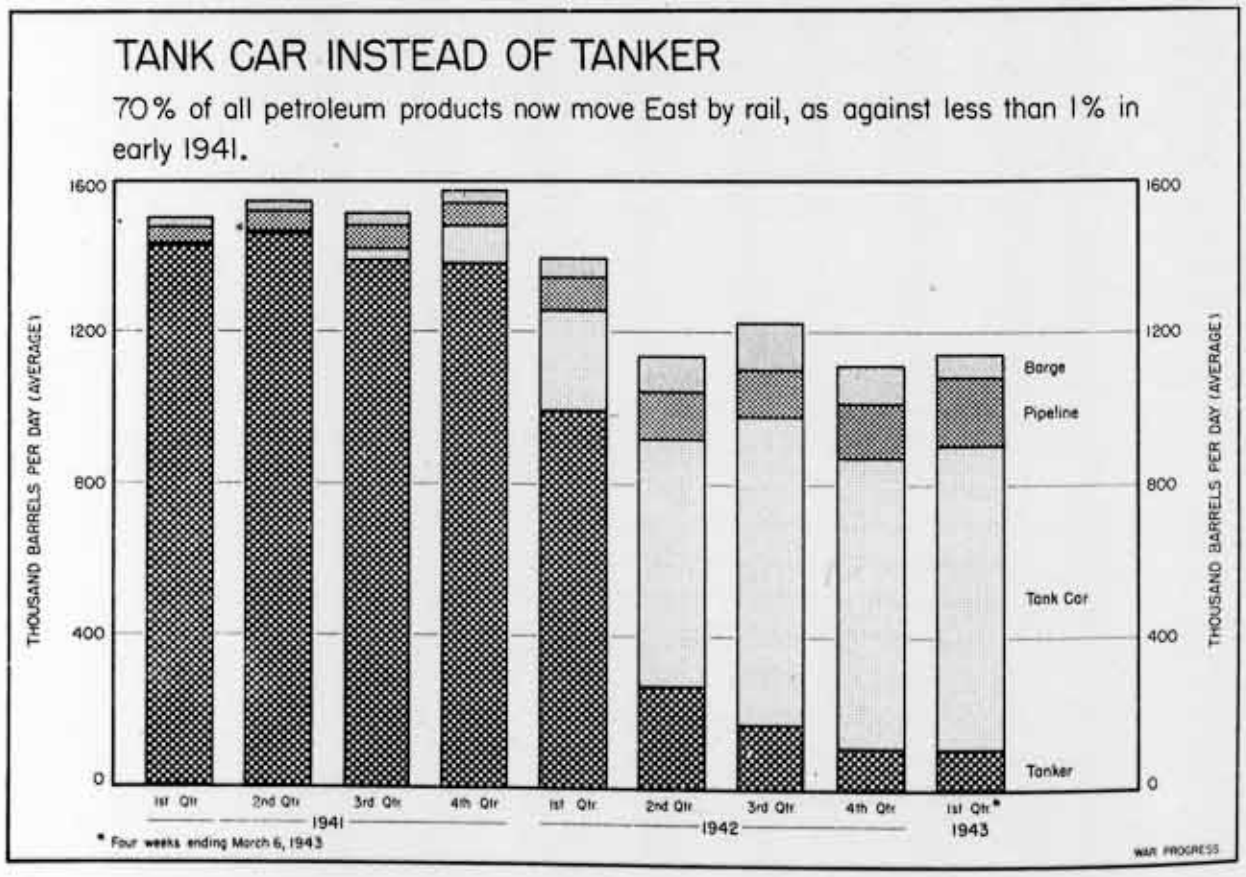
Because of this and sudden military requisitions of East Coast gasoline for the North African expedition, the value of "A" ration coupons was cut in November, and of "B" and "C" coupons the following month. Subsequently, the issuance of coupons, particularly for bulk deliveries to commercial consumers, was tightened up.

In the case of fuel oil, essential industrial consumers were not curtailed. But others had to get along during the past winter with about 75% of their normal supplies. Also, there were delays in deliveries, resulting in temporary discomforts. In time, however, special emphasis was placed on the shipment of fuel oil in preference to gasoline, and finally a government order was issued on January 21, 1943, forbidding the movement of gasoline in tank cars to the East Coast.

TANK CARS REACH LIMIT

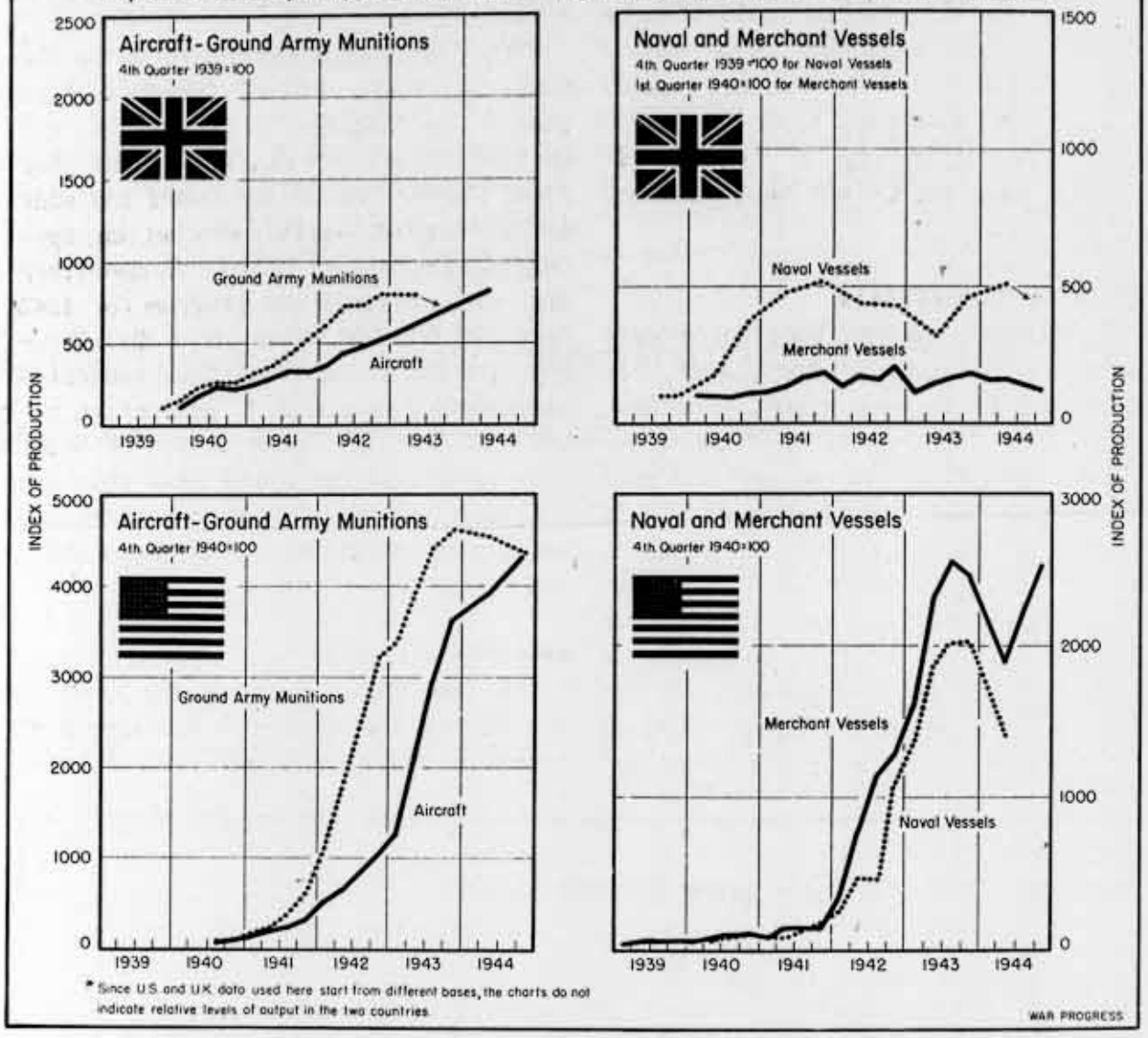
At present, the ceiling in rail deliveries has probably been reached. Some 77,000 tank cars are engaged in service to or within the Atlantic seaboard--constituting 73% of all tank cars carrying oil in the United States. Altogether, tank cars are bringing in 70% of the East's daily shipments; tankers and barges, 15%; and pipelines, 15% (chart, page 12).

Pipeline deliveries are expected to increase as projects now contemplated,



MATURITY IN MUNITIONS – U.S. AND U.K.*

Expansion of output approaches limits – programs, except for aircraft, are peaking out.



* Since U.S. and U.K. data used here start from different bases, the charts do not indicate relative levels of output in the two countries.

WAR PROGRESS

DURING THE EARLY DAYS OF THE WAR PROGRAM—FIRST IN GREAT BRITAIN, AND LATER IN THE UNITED STATES—ALL MUNITIONS WERE SHORT: PLANES, TANKS, GUNS, RIFLES, ETC. THE ORDER OF THE DAY WAS TO GET FACTORIES TO TURN OUT WHAT THEY COULD, AS FAST AS THEY COULD. ALMOST ANY MUNITIONS WOULD DO—ADJUSTMENTS COULD BE MADE LATER.

THAT PHASE OF WAR PRODUCTION IS HISTORY. THOUGH MUNITIONS OUTPUT, PARTICULARLY IN THE UNITED STATES, IS STILL CLIMBING, THE RATE OF CLIMB IS NOT SO RAPID AS FORMERLY. IN BRITAIN, SUCH MAJOR PROGRAMS AS MERCHANT VESSELS AND GROUND ORDNANCE ALREADY HAVE REACHED MATURITY, ACCORDING TO PRESENT SCHEDULES. THE NAVAL SHIP PEAK MAY BE REACHED EARLY NEXT YEAR.

THE AMERICAN PATTERN IS SIMILAR, THOUGH MATURITY COMES LATER. MERCHANT SHIP DELIVERIES (NOT VALUE IN PLACE) WILL REACH A PEAK IN THE THIRD QUARTER OF THIS YEAR; ORDNANCE AND NAVAL SHIPS SOMEWHAT LATER. THE AIRCRAFT PROGRAM, AS IN BRITAIN, RISES STEADILY, ONLY MORE SO.

THE IMPLICATIONS ARE THESE: AT LAST, LIMITS OF MANPOWER, MATERIALS, COMPONENTS, AND FACILITIES ARE BEING APPROACHED. MOREOVER, A LARGE PORTION OF THE EQUIPMENT REQUIREMENTS OF THE ARMED FORCES OF BOTH COUNTRIES HAVE BEEN MET. NO LONGER WILL ANY TYPE OF MUNITIONS DO. TO MEET STRATEGIC WAR NEEDS AT THIS STAGE REQUIRES SELECTIVE PRODUCTION ON A COMBINED ANGLO-AMERICAN BASIS.

plants can produce, hence how much raw materials they need. The British had to apportion their reserves of manpower between the armed forces and war production. To this end, the Minister of Production had to make the most accurate assessment possible of what portion of British requirements would be obtained in 1943 from the United States. After getting reasonably definite commitments, the British apportioned their own manpower. Taking account of this factor, plus operational experience, they began to cut their munitions program. This is still going on.

SCHEDULES REVIEWED

The revised American and British munitions schedules, as well as the requirements and supply of steel, copper, and aluminum, are kept under constant review by the CPRB. Monthly reports are issued on combined production, so that national decisions can be based on better, though by no means complete, knowledge of the combined position. And, even if requirements still exceed estimated production potentials, the balance between national programs, as well as between parts of the programs, has been greatly improved.

In addition to keeping tab on overall requirements and productive capacity, the CPRB is called on to solve specific problems. For example, last January the Combined Chiefs of Staff asked the board to explore the possibilities of increasing the combined escort vessel program. CPRB's recommendations led to the acceleration of the corvette program in Canada and the United Kingdom. The board also recommended the establishment of a Combined Shipbuilding Committee by the Combined Chiefs of Staff. This committee has been set up and is serving as a central coordinating body for standardizing the design of both escort and merchant ships built in the United States, United Kingdom, and Canada.

More recently, the CPRB, in collaboration with the Munitions Assignment Board, prepared a study of bomb production and requirements in the United Kingdom and United States. As a result, both the British and American air forces subsequently reduced their bomb programs,

MIDMONTHLY PLANE TALLY

AIRPLANE acceptances in the first 15 days of May rose 4% over the like period a month ago: from 2,819 units to 2,925. However, the gain in dollar value was 11%—reflecting the dominance of bombing planes.

Bombers were up 16%, the largest numerical increase of any main group. A feature here was the comeback in one-engined dive and torpedo bombers, which jumped some 69% over the first 15 days of April (179 units to 303). Flying Fortresses and Liberators rose from 299 units to 319, or 7%. For the first time at midmonth, Liberator acceptances ran ahead of "Forts," largely due to rapidly expanding production at Ford's Willow Run plant.

Total fighter planes declined 5%, all accounted for by army models; navy fighters increased 20%.

Trainers were off only two units —884 compared with 886. But because fewer heavier models were turned out, dollar value was down around 14%.

Transports were unchanged at 273.

"Working" 8-L calls for 7,586 planes in May, some 11% fewer than in the original 8-L schedule. Yet, to meet even this lowered schedule, the increase in acceptances during the final 16 days must exceed the normal end-of-the-month rise.

thus releasing materials for other essential purposes.

The CPRB has also helped to conserve the dwindling United Nations stockpile of crude rubber by programming the production of articles using rubber in the three countries. These programs have guided the allocation of rubber by the Combined Raw Materials Board, the War Production Board, and the Ministry of Production. The rubber situation is also reviewed by CPRB every quarter.

LOOKS INTO TRANSPORT

The CPRB has investigated motor transport. Last year, combined production of motor trucks, trailers, and motorcycles amounted to 1,400,000 units, with the U.S. accounting for two-thirds of the total, Britain for 19%, and Canada for 15%. Combined requirements for 1943 exceed 1942 production by a substantial margin, with the excess almost entirely on the British side. The United Kingdom would like to obtain a great number of vehicles this year from the United States, but only about one-fifth of those requested have been programmed for the British. Since the scheduling of the desired additional units would necessitate the diversion of large amounts of steel, copper, aluminum, and rubber from other munitions programs, the CPRB has refrained from making any recommendations concerning an increase in U.S. programmed production. This problem, it felt, should be decided by the Combined Chiefs of Staff.

SUGGESTIONS ON SHIPPING

The CPRB did, however, recommend that the flow of components (engines, transmissions, crankcases, tires, etc.) to the big Ford plant at Dagenham, England, be maintained. It also suggested that trucks and other motor vehicles sent abroad be packed in a completely knocked-down condition, with components unassembled, so as to save shipping space. This will require the building of additional assembly facilities at various foreign ports, and the CPRB has recommended that the U.S. allocate the requisite materials.

The board also set forth a policy, which was approved by the Combined Chiefs of Staff, for providing the spare parts necessary to maintain the several hundred thousand American-type buses, passenger cars, and trucks in the British Commonwealth deemed essential to the war effort but no longer in production in the U.S. It recommended that specified amounts of replacement parts per vehicle be allowed annually for certain military vehicles, light and heavy nonmilitary trucks, and essential passenger cars (like the 93 Buicks in Gibraltar). Spares for heavy trucks built prior to 1934 and for light trucks and cars made before 1936 will not be manufactured. Many of these recommendations have already been put into effect.

CIVILIAN GOODS PHASE

In the future, a primary function of the CPRB will be to plan the combined output of nonmilitary goods—medical supplies, agricultural machinery, textiles, shoes, leather, etc.—essential not only to the economies of the United Nations but for the rehabilitation of the occupied and liberated countries.

The CPRB has formed a Non-Military Supplies Committee whose purpose is (1) to see that the resources used for the production of civilian goods be kept down to the minimum necessary for the successful prosecution of the war; (2) to recommend how much production capacity should be kept going in each country; and (3) to suggest who should supply which materials and end products.

This part of the CPRB's program is still in the initial stages, but several specific problems have been attacked. Thus, the Textiles Subcommittee has begun to collect data for all non-Axis countries on the production, requirements, and inventories of textile goods and textile machinery. This study has already thrown up important problems, like the overall tire fabric shortage which is receiving immediate attention.

CHECKING ON TEXTILES

The committee's aims are to keep the textile industry from contracting too sharply and also to concentrate it on essential production. The British have found that their textile industries were overcurtailed, with the result that too many skilled workers had been lost to war industries and to the services. The CPRB therefore suggested that the United States take action to prevent a similar occurrence, and just recently the War Manpower Commission, at the urging of the War Production Board, has declared textile workers essential to the war effort.

The CPRB Non-Military Supplies Committee is also investigating the requirements and production possibilities of medical supplies in the non-Axis world. Apart from the necessity of increasing production of certain scarce medical supplies, its chief concern is to build up stockpiles in strategic areas to combat possible epidemics of malaria (most of the battlefronts are in the world's malaria belt); typhus (now smoldering in the Middle East, Russia, Poland, and Spain), yellow fever, cholera, dysentery, etc. The chief problems are shortages of quinine and atabrin (used as specifics for malaria), sulfanilamide, antityphus vaccines, dental burrs, sterilizers, and microscopes.

EXCHANGING TECHNIQUES

In addition to investigating general and specific problems and issuing monthly reports on combined munitions production, the CPRB, together with the

KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program-Checks paid (millions of dollars)	1,595	1,462	1,462	1,254	894
War bond sales (millions of dollars)	131	577	195	166	136
Wholesale prices (1926=100)					
All commodities	p103.8	p103.7	p103.5	100.1	98.5
Farm products	p125.7	p124.8	p124.4	110.7	104.3
Foods	110.2	p109.4	108.4	103.0	98.2
All other than farm products and foods	p96.9	p96.9	p96.8	96.1	95.9
Petroleum:					
Total carloadings	58,870	57,762	57,392	51,689	56,353
Movement of cars into the East	31,148	31,058	29,809	25,145	20,287
East coast stocks for civilian use (1940-41=100 Seas. Adj.)	27.1	25.5	28.1	58.0	n.a.
Total stocks of residual fuel oil (thousands of barrels)	67,311	27,577	67,007	77,868	79,593
Exports (no. of freight cars unloaded for export Friday, excl. grain)					
Atlantic Coast ports	2,104	2,003	1,834	1,236	1,607
Gulf Coast ports	380	400	326	292	601
Pacific Coast ports	1,202	1,124	1,061	1,025	406
Unused steel capacity (% operations below capacity)	1.4	0.6	0.9	1.3	0.8
Department store sales (% change from a year ago)	+16	+12	+15	+13	+5

n.a. not available. p Preliminary

Combined Raw Materials Board, arranges for the exchange of technical missions, like the Hook mission which studied the British system of steel allocation, prototype of CMP (WP-Oct23'42,p1), and the recent British metallurgical mission to the United States. The board is also taking steps to promote a fuller interchange of information on production techniques and methods.

LONDON COMMITTEE

Headquarters of the CPRB are in Washington, but there is a London Committee which deals with those aspects of the board's work than can be most conveniently handled in London, especially where detailed examination of United Kingdom production is concerned. The London Committee has three primary functions: (1) It makes recommendations on proposed adjustments in the British programs in accordance with CPRB combined planning, particularly with regard to the requirements of the American forces in the United Kingdom; (2) it serves as a means by which preliminary consideration can be given in London to combined production problems arising from the work of the British Joint War Production Staff; and (3) it acts as a link between the CPRB and the Commonwealth Supply Council and other authorities on questions affecting the resources and production of British countries other than Canada and the United Kingdom. The London Committee has a subcommittee on conservation which examines opportunities for economizing on scarce metals —for instance, the salvaging of petrol cans (steel drums) in battle areas.

CPRB's next big job is to help integrate the 1944 munitions programs. The original equipment of the British ground forces (ordnance, signal equipment, and military vehicles) will be largely completed by the middle of 1943; that of the American ground forces about a year later. At the same time, the need for aircraft and naval and merchant ships will stay at peak levels, while the demand for transportation and utility equipment as well as for agricultural machinery may jump sharply—because of requirements at home and in the occupied countries.

These changes in requirements will affect the different countries in different ways. Ordnance, signal equipment, and military vehicles comprise about one-fifth of the 1943 U.S. munitions production program, one-third of the United Kingdom program, and one-half the Canadian program. For example, Canadian plants will be hardest hit by the reduced needs for ground army munitions; but as a corollary, a large proportion of Canadian facilities will be released for the manufacture of other types of war and essential products.

SWITCHING FACILITIES

It is CPRB's express function to see that through overall planning such facilities are used, whenever possible, so as (1) to obtain maximum United Nations output of war and other essential products and (2) to minimize industrial dislocations in Canada, Great Britain, and the United States. Thus, many of the facilities that will be released from ordnance manufacture can be converted to other munitions, or to essential nonmilitary products. For example, some British tank factories could return to the manufacture of railway equipment or trucks. And Canadian or American plants now making small arms could produce parts for farm machinery or possibly components for airplanes or ships.

In order to utilize combined resources fully throughout the change-over period, CPRB has begun to assemble the Anglo-

American munitions programs for 1944. When this is completed, the board will be able, along with other American and British agencies, to undertake the job of planning the switching of facilities —here, in Canada, and in Great Britain.

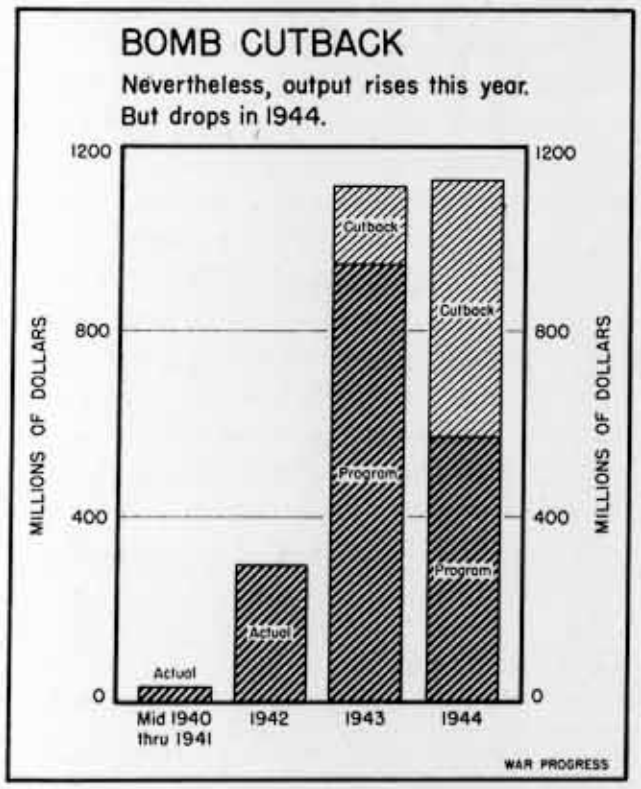
Bombs Cut One-Third

Requirements slashed 15% this year, 50% in 1944. Reflects lessons learned in combat—planes cannot drop as much tonnage as formerly estimated.

REVISED ARMY SUPPLY PROGRAM requirements for air bombs prescribe a one-third cut in 1943-44 output—from $2,248,000 to about $1,521,000. Total bomb tonnage is cut from 4,532,000 to 2,626,300. Result: some 1,165,000 tons of steel "saved" for other purposes; likewise more than 1,000,000 tons of explosives.

Largest cuts—both absolutely and relatively—occur in 1944; output next year drops almost 50% to around $573,000,000. This year's requirement is brought down 15% to around $948,000,000.

The cutbacks are concentrated in general purpose bombs. Fragmentation, incendiary, and other chemical bomb programs are not changed.



RANGE OF REDUCTIONS

Cuts range from 6% in the 250-pound general-purpose bomb to 54% for the quarter- and half-ton GP bomb. The half-ton semi-armor-piercing bomb is cut back 35%. Item-by-item decreases (in order of percentage reductions) follow:

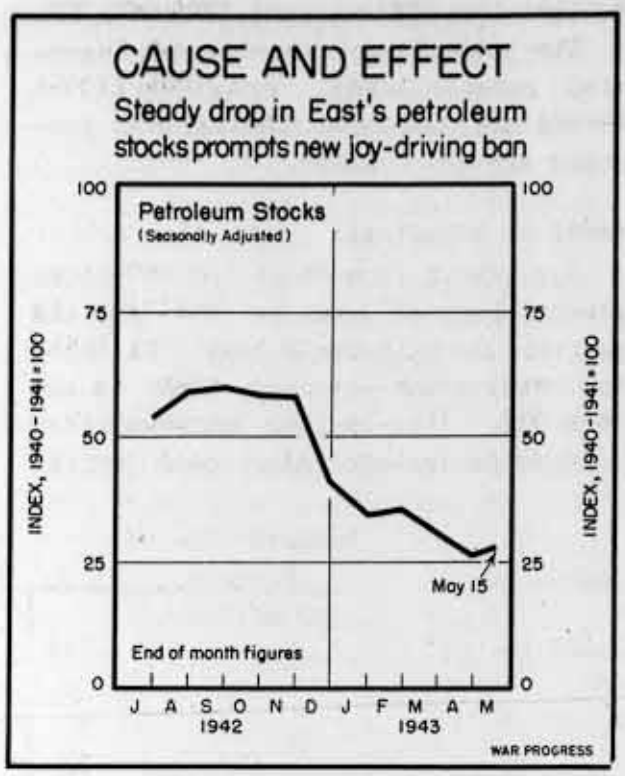
Bomb	Revised '43-'44 Program (in millions)	% Cut
1,000 lb. GP	$52	54%
500 " "	66	54
2,000 " "	279	51
100 " "	175	39
1,000 " SAP	123	35
250 " GP	90	6
Other bombs	734	0
Total	$1,521	32%

The reduction reflects two things: (1) the cutback in the 1943 bomber program; (2) operational experience—battlefield results suggest that bombers cannot make as many sorties as originally figured.

War Progress Notes

THE SPRINGFIELD SNIPER

NOW in production is a variation of an old infantry weapon—the "Sniper." It's a Springfield rifle (M1903A4) with a built-in mount for a telescopic sight. The gun is made ready for action by slipping the sight into the mount. (Heretofore, Yank sharpshooters have been using a detachable mount.) Production began in February—82 guns—and cumulative output through April was 1,995 units. For May alone, schedules call



for 2,000 of the weapons. The "Sniper" program totals 26,995 units, all of which are expected to be turned out this year.

THE WHY OF NO-PLEASURE DRIVING

LAST NOVEMBER, the index of East Coast petroleum stocks for civilian use stood at 58.5% of the 1940-1941 level; since then, it has declined steadily, and today the index is around 27—in spite of successive cuts in gas rations. Further strictures on supply, incidentally, will result from midwestern floods which have damaged the "Big Inch" pipeline in Arkansas and disrupted rail transportation facilities (chart, above).

FREIGHT TRAFFIC RISE

TOTAL COMMODITY transportation in the first quarter of 1943—shipments by rail, motor truck, air, waterway, and pipeline—was 20% above that of the same quarter in 1942, the Department of Commerce Index reveals, but such traffic for the entire year is not expected to exceed last year's record high by more than 12%. After all, transport equipment of most types is now being utilized at capacity, and diminishing rates of gain are forecast for transportation, just as they are for industry, as the U.S. gets closer to the peak of its war effort. Thus, estimated gains for the year for all types of carriers are considerably below first-quarter increases, as the following table shows:

	% Change Over 1st Quarter (actual)	% Change, Full-year Over 1942 (est.)
Rail.....	25%	11%
Motor truck..	23	15
Air.....	82	50
Water-borne..	-38	-5
Pipeline.....	11	12

BOTTLENECK WITHIN A BOTTLENECK

Pickup in the production of forging machinery and equipment—it will rise approximately 30% in the third quarter of this year—eases a bottleneck in aluminum forging capacity which has, in turn, impeded plane production (WP-Nov-27'42,p2). Various aluminum forgings for airplanes have been short because fabricators couldn't secure enough forging presses, hammers, and rolls. And this problem stemmed back to the inability of plants making this type of equipment to get sufficient quantities of the heavy steel castings required for the production and assembly of forging units. But now, improved scheduling of steel castings is channeling output into spots where it is critically needed —and forging equipment for aluminum fabricators has a high priority.

RECASTING THE INDEX

BACK in March the Bureau of Labor Statistics hung out the "Closed for Alterations" sign on its Cost of Living In-

dex while its compilers went to work on revisions which would reflect the effect of rationing, disappearance of low-priced lines, etc. (WP-Apr30'43,p10). Now it makes a belated appearance (Selected Monthly Statistics, page 13) and shows an overall increase of 1.5% over February—sharpest rise since September, 1941—with food up 2.8%, clothing, 1.1%. But these data do not reflect the results of the President's "hold the line order, the OPA roll-backs, and many specific dollars-and-cents ceilings since enforced. Neither, indeed, will the April data—available in about two weeks—reflect these changes to any appreciable extent. The index, in short, won't catch up with the current events until May data are compiled.

RUBBER PROGRESS REPORT

CONSTRUCTION work on synthetic rubber plants totaled $42,000,000 in the first three months of the year, a 121% rise over the final three months of 1942. At the same time, machinery and equipment deliveries rose 283%—from $29,000,000 to $111,000,000. Synthetic rubber led all other facilities programs in gains.

SELECTED MONTHLY STATISTICS

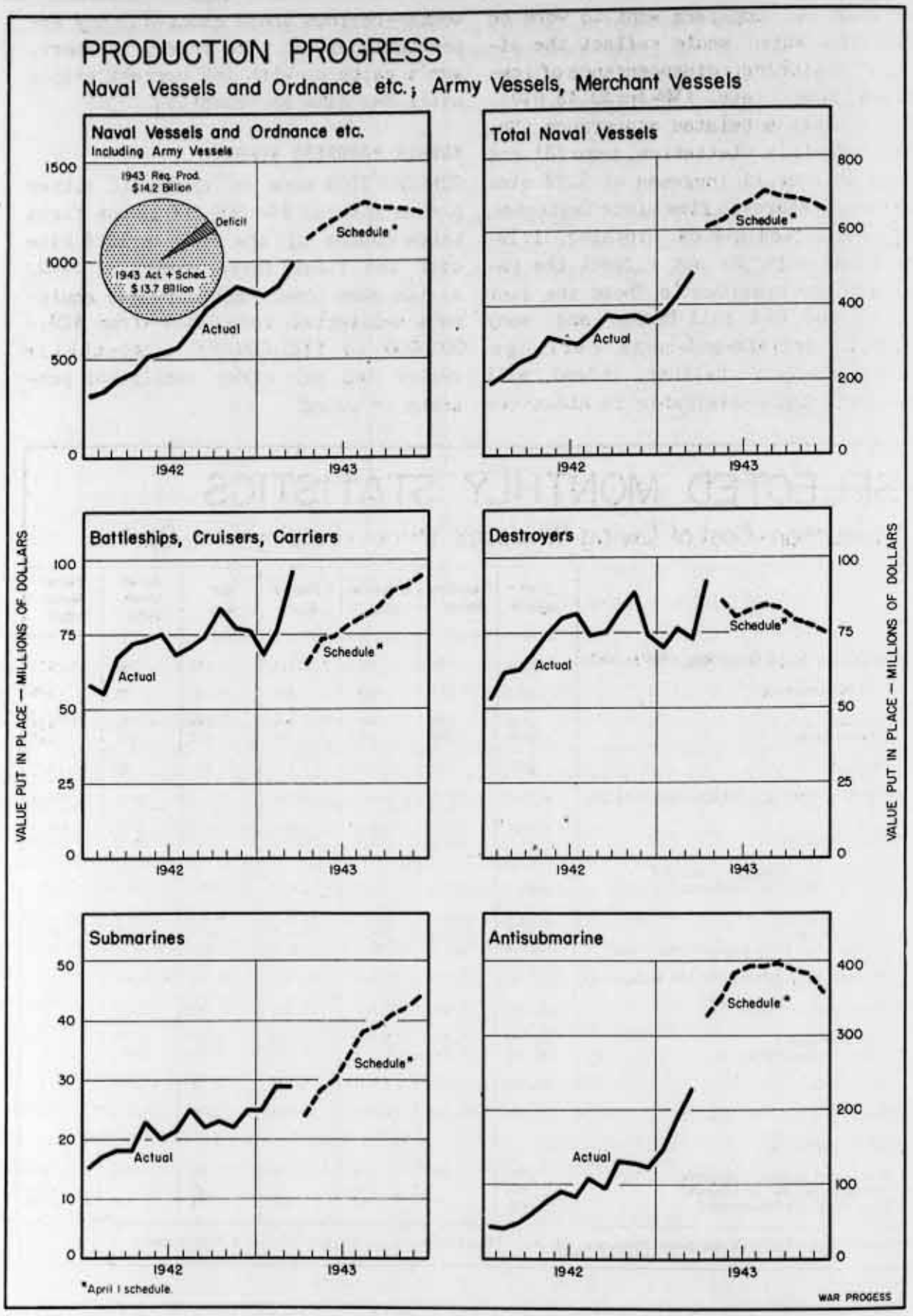
Production-Cost of Living-Wholesale Prices-Employment-Strikes

	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
PRODUCTION INDEX-INDUSTRIAL (1935-39=100)†	p201	199	197	195	172	98	121
Total Manufactures	p215	212	211	205	181	99	124
Durable	p300	296	292	276	234	97	137
Nondurable	p146	144	145	148	138	101	113
Minerals	p124	124	122	134	126	88	105
COST OF LIVING-ALL ITEMS (1935-39=100)	p122.8	121.0	120.7	117.8	114.3	99.1	101.8
Food	p137.4	133.6	133.0	126.6	118.6	94.6	105.0
Other than food	p115.3	114.5	114.3	113.2	112.1	101.5	100.2
WHOLESALE COMMODITY PRICES ALL COMMODITIES (1926=100)	p103.7	p103.4	102.5	100.0	98.7	76.2	88.0
Farm Products	p123.9	p122.8	119.0	109.0	104.5	63.7	92.2
Food Products	p108.4	p107.4	105.8	103.4	98.7	68.6	85.5
Other than farm products and foods	p96.6	p96.5	96.2	95.5	95.6	80.5	86.5
NONAGRIC.EMPLOYMENT-TOTAL (thousands)	p38,341	38,184	37,958	38,478	35,908	28,924	n.a.
Manufacturing - Total	p15,963	15,958	15,551	15,313	14,019	9,787	
Durable goods	p9,482	9,415	9,305	8,682	7,598	4,296	
Nondurable goods	p6,481	6,543	6,546	6,631	6,421	5,491	
Government	p5,929	5,924	5,837	5,672	4,856	3,939	
Other	p16,449	16,252	16,270	17,493	17,033	15,198	n.a.
LABOR DISPUTES							
Number of strikes in progress	p300	240	225	400	320	349	760
Workers involved (thousands)	p75	48	100	90	80	65	n.a.
Man-days idle (thousands)	p230	170	450	450	450	618	3,289

*April; Cost of Living and Labor Disputes, March. †Unadjusted. n.a. Not available. p Preliminary.

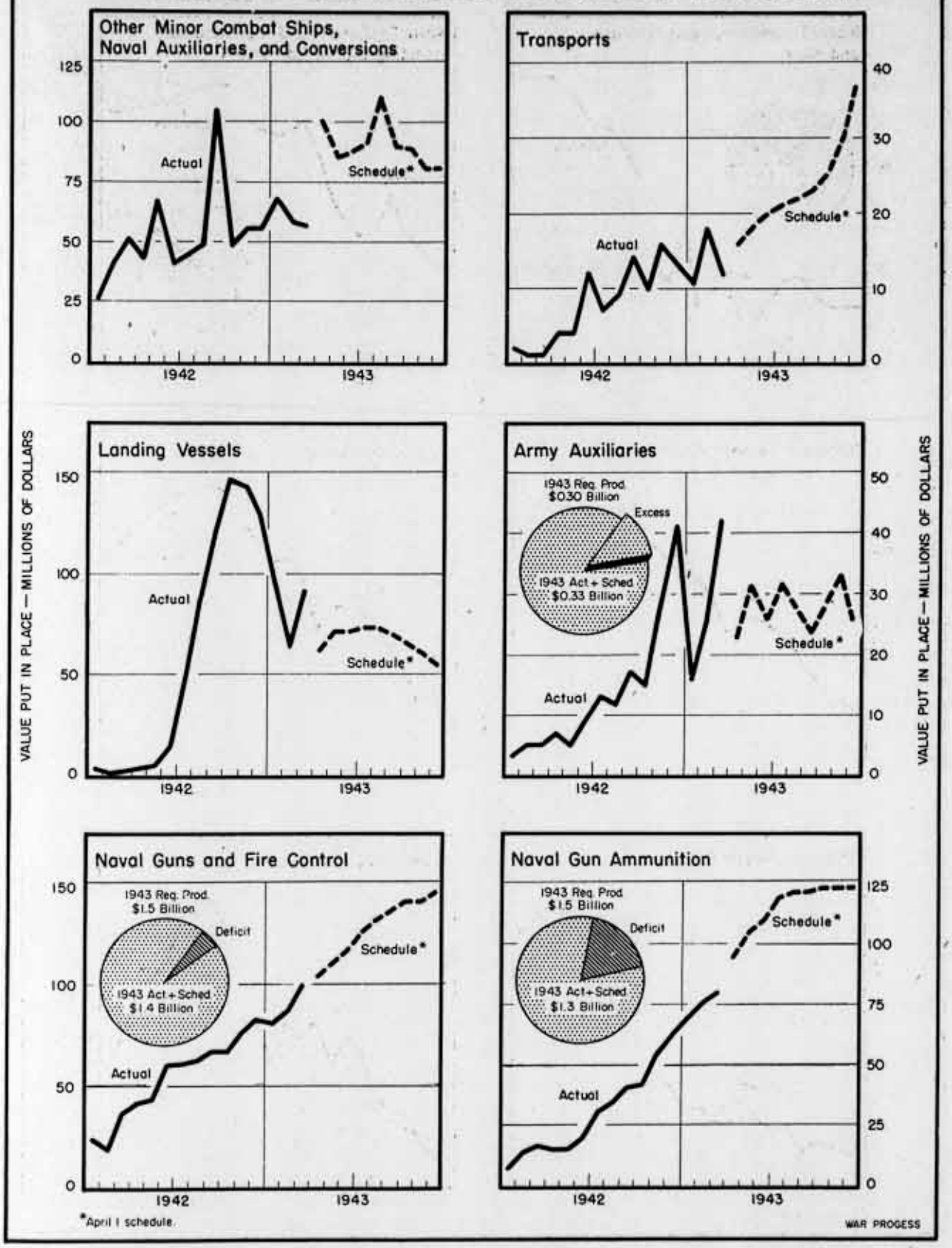
PRODUCTION PROGRESS

Naval Vessels and Ordnance etc.; Army Vessels, Merchant Vessels



PRODUCTION PROGRESS

Naval Vessels and Ordnance etc; Army Vessels, Merchant Vessels (continued)



CONFIDENTIAL

AUSTRALIAN IMPORTS LEAD

IT USED TO be that Great Britain, Germany, and France were big exporters to the United States. But these days, excluding the Western Hemisphere, Australia is the big shipper of goods here, as the following table of monthly U.S. imports indicates:

	Nov.-Dec. Average
Australia.....	$30,600,000
United Kingdom....	20,800,000
Union of S. Africa	7,300,000
India.....	5,600,000
Belgian Congo.....	4,700,000
U.S.S.R.....	2,800,000
Switzerland.....	2,700,000

Wool accounts for 90% of U.S. imports from Australia.

or actually under construction, are brought to completion, especially a 20-inch line parallel to the "Big Inch" (which is already in use as far as Norris City) into the East Coast. Barge movements of petroleum destined for the East should also increase as boats now being built become available for the Great Lakes, Mississippi and Ohio rivers, and intracoastal waterways. (Barges are used to fill gaps between pipelines and rail terminals.)

Basically, therefore, the future supply of petroleum for civilian use on the East Coast will depend on three factors: (1) by how much present overland and inland waterway shipments can be increased; (2) what proportion of available supplies will be requisitioned for military operations; and (3) how successful rationing is in cutting nonessential consumption. Since none of these can be measured exactly at the present moment, the Atlantic seaboard's petroleum situation remains unpredictable.

Replacement Basis

Cutting-tool shipments exceed new orders for third month in row, thus eating into backlogs. Industry approaches time when new purchases will be largely for maintenance.

IN JANUARY, shipments of cutting tools by manufacturers totaled $33,000,000. This was 52% above a year ago, but 7% below December's all-time high.

For the third month in a row, January shipments, at $29,335,000, exceeded incoming orders, thus whittling down the backlog on manufacturers' books to $127,800,000--the lowest level since last July (chart, page 14). This indicates that tooling up for war production is probably almost completed, and industry is approaching a point at which new orders will primarily meet replacement needs. (Cutting tools wear out faster than usual when operated long hours at high speeds and heavy feeds.)

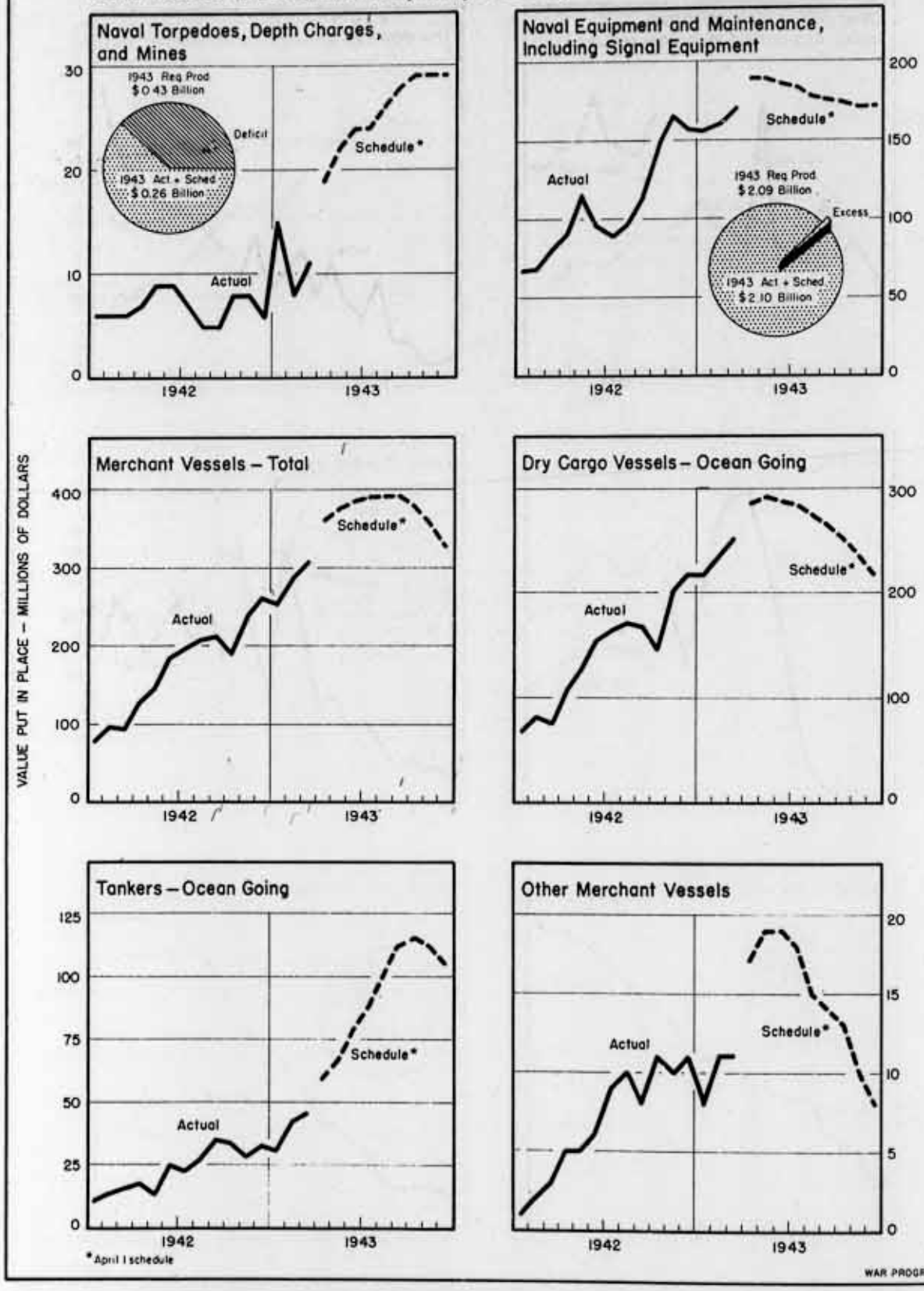
Existing unfilled orders are equivalent to 3.9-months' production at the January rate (compared with 6.4 months for machine tools). But the backlog for certain types, such as dies and broaches, is much higher--as the following table shows:

	Orders On Hand	Months to Complete
Dies.....	$ 2,400,000	7.7
Broaches.....	8,000,000	6.1
Taps.....	13,900,000	4.1
Milling cutters	32,000,000	4.0
Twist drills..	22,800,000	3.9
Reamers.....	9,200,000	3.6
Turning, planer & shaping tools	14,800,000	3.0
Chasers.....	3,900,000	2.8
Miscellaneous.	20,770,000	4.1

Since there is inadequate manufacturing capacity to meet demands for all

PRODUCTION PROGRESS

Naval Vessels and Ordnance etc; Army Vessels, Merchant Vessels (continued)



The President

WAR PROGRESS

Confidential
(British Secret)

Natural Gas—a Critical Fuel

The Versatile Destroyer

Number 141

May 28, 1943

Wartime Quirk in Natural Gas

In furnishing fuel to war plants, industry can't "interrupt" service as in peacetime. Thus, supplies to critical areas must be increased—and that takes steel

NATURAL GAS is so traditionally cheap and abundant in the United States that it's taken for granted. Yet natural gas supplies 10% of the energy annually required in this country (as against 53% for coal, 26% for petroleum).

Under the pressure of wartime exigencies, natural gas, like so many other things, is no longer cheap and abundant. In such highly industrialized sections as the Appalachian area and the Central States, supplies are critically low and must be brought in from flush-production fields, especially Texas and Louisiana.

INTERRUPTIBLE CONTRACTS

Since 1940, overall demand has increased 25%. If this were not wartime, this increase might not be such a critical problem. In ordinary times, the natural gas industry customarily operates below potential peak requirements. What happens is this: Gas is sold to industrial customers on an interruptible contract basis; they are permitted to consume all the gas they want during the summer when domestic heating loads are nil, but it is agreed that service can be switched off during periods of peak heating in the winter. At such times these industries either turn to stand-by facilities (coal or oil) or close down altogether.

But today, the nation cannot afford to permit a plant engaged in essential war production to shut down. Moreover, shifting to a substitute fuel—even if it's available—is not always desirable in wartime. Gas is an excellent fuel for almost any type of operation, but it is essential when accurate and even temperatures are needed, such as in heat-treating steels for armor plate, tank tracks, bomb casings, airplane parts, etc.

A QUESTION OF STEEL

To bring the natural gas industry up to peak-load capacity would require the installation of about 2,000,000 tons of steel pipe, not to mention compressors and other scarce components and materials.

So the problem in natural gas has been to get the most out of existing transmission facilities—to stretch them as close to capacity as the limited use of critical materials would allow. And up to now, WPB has held the construction of new plant or line capacity to the bare minimum—has frankly taken considered risks with "tide-over" programs in view of the urgent steel requirements for direct munitions. This policy involves:

1. *Storage of gas, in off-peak periods, at or near the markets:* A good example was the appropriation, last fall, of the Playa Del Ray oil field near Los Angeles for gas storage. By installing a compressor station and a 3½ mile interconnecting pipeline, a major part of the expected deficiency in the Los Angeles area will be averted.

(In the Appalachian area, approximately 24,000,000,000 cubic feet of gas moves through storage each year.)

2. *Coordination, or pooling of transmission systems:* This is easier said

than done. Reserves of individual companies are not clearly known. Hence, it is not possible to call on Company A to help out Company B with stated quantities of gas. Moreover, for competitive reasons, voluntary integration arrangements are difficult to consummate—especially where disparities in rates are found within the same area. Thus, Company A may be directed to draw on the surplus of Company B at B's prevailing rate, say 12¢ per 1,000 cubic feet. But Company A's own rate to its customers may be only 6¢ per 1,000 cubic feet!

3. *Curtailment:* Limitation Order L-31, issued in February, 1942, provides authority for curtailing natural-gas deliveries.

MIDCONTINENT CRISIS

Last winter's crisis in the midcontinent area typifies, to some extent, the war problem in natural gas. Cities Service Gas System, principal supplier of natural gas to the state of Kansas, northern Oklahoma, and western Missouri, had total deliverability of about 475,000,000 cubic feet per day, as against estimated peak-day requirements of over 630,000,000 cubic feet. A deficiency of at least 155,000,000 cubic feet was therefore indicated.

Under normal circumstances, this differential would not be regarded as a deficiency at all. The system had consumers with oil-and-coal stand-by equipment capable of replacing 225,000,000 c.f. of gas a day. But getting the coal or oil was a special problem. (Fuel-oil stocks in the area were low, and the acute eastern seaboard shortage at the time made conservation of supplies imperative. Solid fuels were also critical in the area.)

COORDINATION PROGRAM

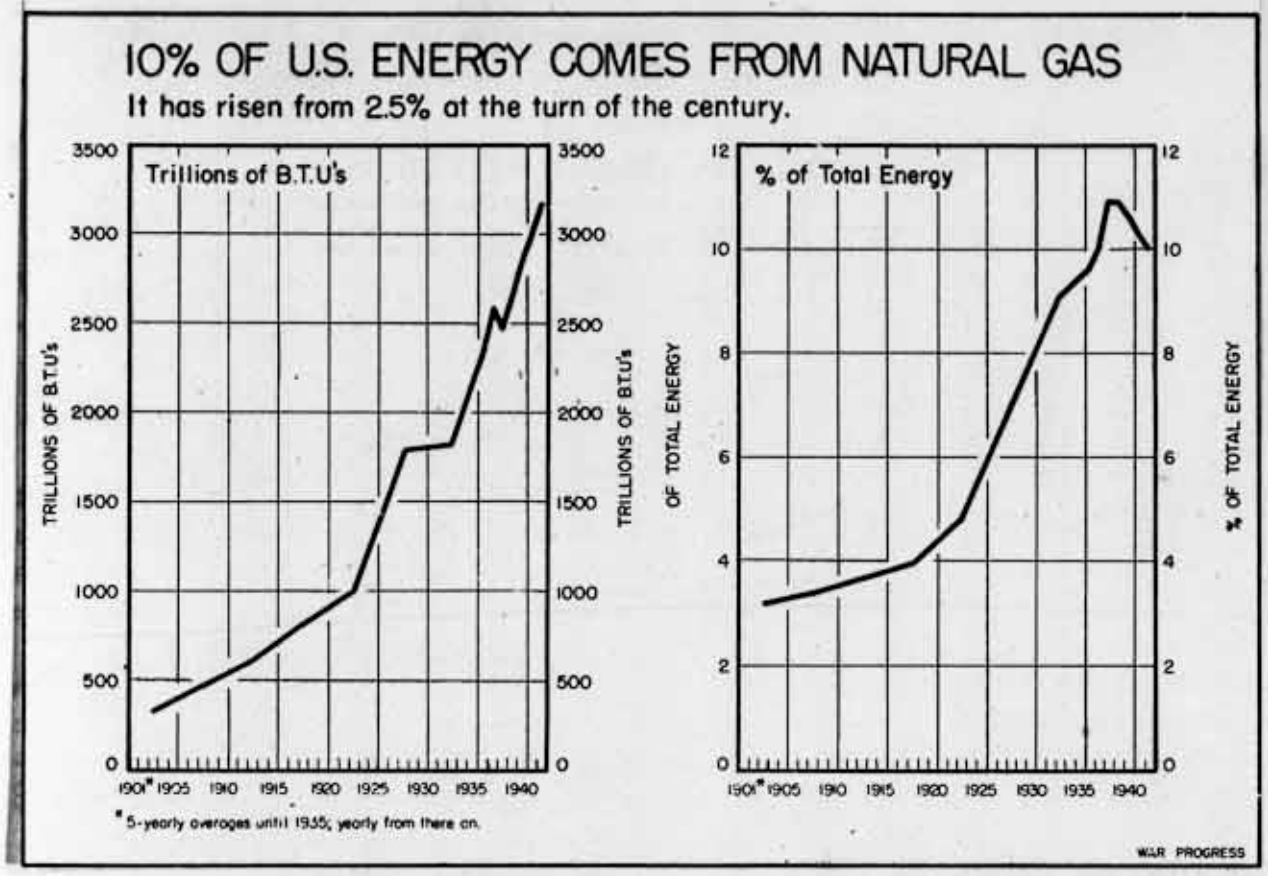
To meet the problem, the Natural Gas Division of the Office of War Utilities proposed to make available to Cities Service the surplus gas of a half-dozen major Middle West pipeline companies, and a score or more distribution systems, including those serving Chicago, Detroit, and Minneapolis. Should a shortage arise then, it would be met, so far as possible, by contributions from the surpluses of all the other systems in the unit.

Against the possibility that pooling of surpluses alone would not meet all deficiencies, WPB worked out a sort of double-entry system of curtailment and intersubstitution for the entire area whereby a sufficiency of coal stocks in the Chicago and Detroit areas, for example, could in effect be used to meet fuel requirements in Kansas or Oklahoma.

ORDER OF CURTAILMENT

Because coal stocks in the midcontinent area, while scarce, were not so tight as oil—and not so urgently required for military purposes—customers with coal stand-by facilities would be curtailed, if necessary, and gas deliveries to oil refineries would be inter-

IN THIS ISSUE:



rupted before any other users of oil stand-by plants were curtailed (the refineries could resort to their own oil stocks with no transportation problem involved). And finally, a system of priorities was worked out whereby customers with oil stand-by plants would be curtailed according to essentiality. Such industries as cement manufacturers, brickmakers, breweries, etc., would be interrupted before war plants.

BASIS FOR MASTER PLAN

In actual practice, the program was never activated down to these final details. Aided by a favorable turn in the weather, the midcontinent area pulled through the winter without widespread curtailment of war production as a result of gas shortages. But the groundwork was laid for fitting natural gas into a comprehensive, integrated plan of control for the nation's fuels—if and when such a master plan is required.

Next winter's problems in natural gas, however, can't be solved without the expenditure of some steel. In the midcontinent area, for example, the peak-day deficiency will jump to around 265,000,000 cubic feet unless additional supplies are made available. So OWU has recommended a new line, extending approximately 240 miles for the first year, from the Hugoten field eastward across Kansas. It will require about 47,000 tons of large-sized pipe and compressors totaling 8,000 horsepower, and will bring about 140,000,000 c.f. of gas per day additional into the shortage area.

APPALACHIAN AID

And in the Appalachian area, arrangements have been made to pipe in approximately 50,000,000 c.f. of additional gas per day to meet the requirements of war-work centers like Cleveland, Youngs-

town, and Buffalo. This program involves:

1. "Looping" certain sections of the Panhandle Eastern Pipeline which originates in Texas. Cost: 41,000 tons of large pipe; 15,800 compressor hp. (Looping can develop an impressive increase in gas deliverability at a relatively small cost of steel; it loops or doubles a line at its furthermost extension, the point at which the effectiveness of the operation is greatest. This year's looping project on the Panhandle line permits the deferment of a proposal to construct a new major pipeline from southern fields which would use at least 200,000 tons of steel. For the winter of 1944-45, however, a new transmission line from the Gulf is regarded as necessary to safeguard supply to the Appalachian area.)

2. Construction of a new 120-mile line across Ohio connecting with Panhandle near Akron. Cost: 20,800 tons of pipe; no compressors.

3. Rearrangement and reinforcing of certain transmission lines to increase supplies to northwestern Pennsylvania and western New York.

MINIMUM 1943-44 PROGRAM

In addition to the outlays mentioned, miscellaneous minor projects and repairs in both the Eastern and Western areas —for compressors, interconnections, new line, etc.—call for around 95,000 pipe tons and 36,000 compressor hp. In all, the 1943-44 program totals around 216,000 tons of steel pipe and 81,000 compressor hp.

That's the minimum cost in critical materials estimated as necessary to keep war industries in operation this coming winter insofar as natural gas needs are concerned. And it's predicated on plans for further utilization of existing facilities by the methods indicated—storage, coordination, curtailment, etc.—and also for creating new capacity by (1) developing new production areas (wildcatting) and (2) accelerating progressive drilling in existing fields.

Versatile Destroyers

They can convoy, scout, supply, or fight in full-scale naval action. Navy program—emphasizing the 2,200-ton type—will outstrip all other fleets.

THE DESTROYER was designed in the 1890s, primarily to protect battleships and cruisers from fast-moving torpedo boats (forerunners of the modern PTs). Since then the destroyer has become one of the most versatile units of the fleet.

In full-scale naval action or in a task force, the destroyer acts as a protecting screen for battleships, cruisers, and aircraft carriers. It is also used for convoying, minelaying, patrol, and scouting purposes, and—as during the Guadalcanal campaign—to carry supplies.

As a multipurpose unit, the destroyer naturally takes high rank in major ship tonnage, along with battleships, cruisers, aircraft carriers, and submarines. Thus, the present navy construction program (authorized and unauthorized), which began in July, 1940, and reaches beyond 1945, calls for 426 destroyers aggregating 850,000 tons, or about 20% of major combat-ship tonnage.

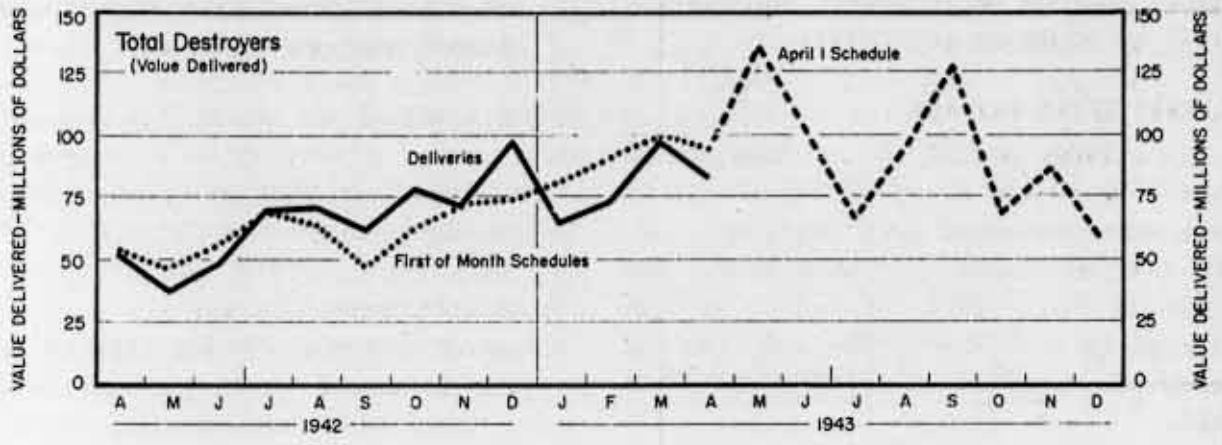
LARGER TYPES FAVORED

Today the United States is concentrating on large destroyers of 2,100-to-2,200 tons displacement. The first units of this class were delivered last June, and altogether 29 were completed in 1942, or about four per month. Schedules were usually met.

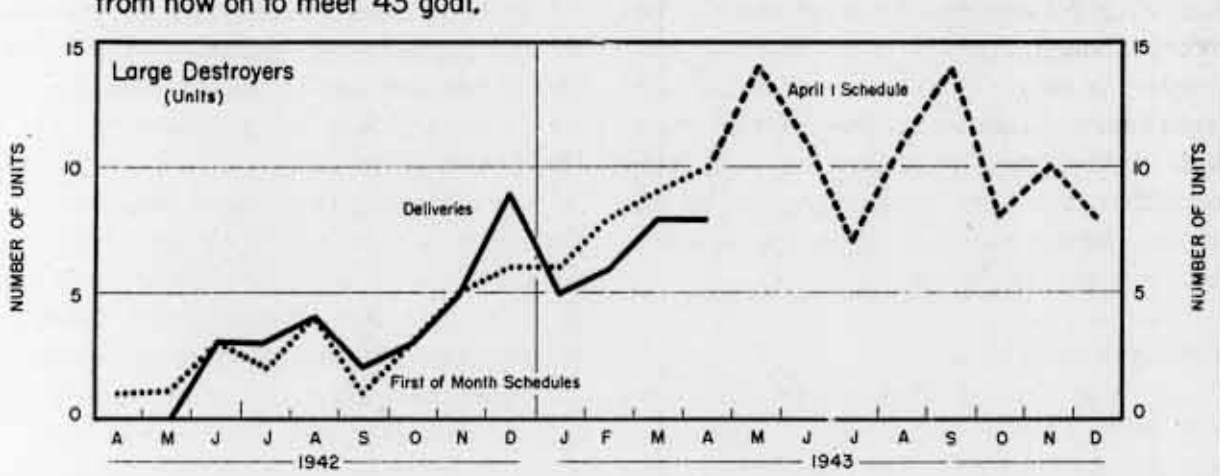
This year, 110 large destroyers are scheduled for completion, an average of

DESTROYER PROGRAM UP TO SCHEDULE

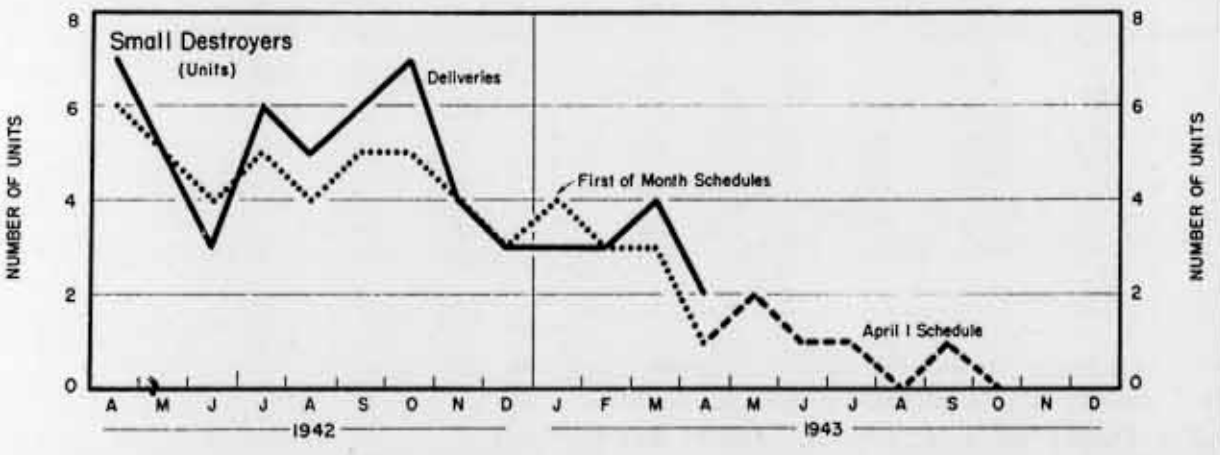
Value of total deliveries has met expectations from April, 1942, to the present time.



Large destroyers have run 5% behind schedule, and completions must rise sharply from now on to meet '43 goal.



The small destroyer program is now nearing completion; deliveries have been 12% ahead of forecast.



WAR PROGRESS

nine and a fraction per month. Through April, however, 27 out of 33 scheduled had been delivered, or about seven a month. But an average of about 10 per month from now on is needed to meet the 1943 schedule as of April 1.

LARGER TYPES FAVORED

The large destroyer is supplanting the 1620-30-ton ship; 52 of the 1620-30s were delivered last year, and only 16 are scheduled for this year. The last of this class is due to be completed in September. The 1500-ton and 1200-ton types are not being built at all.

There's a saying in the Navy that it takes many months to build a destroyer but only 30 seconds to sink one. However, though lightly armored, the destroyer is heavily armed, carrying torpedo tubes, five-inch, 38-caliber guns, and antiaircraft batteries. It compensates for its lack of armor by its speed, being able to make up to 37-39 knots under pressure.

TOPS ALL NAVIES

At the end of last month, the Navy had 256 destroyers on hand. Announced losses totaled 26. By July, 1944, the destroyer fleet is expected to increase to 394 ships (without allowing for further losses). Large types will preponderate, as follows:

Type	Number
1,200 ton.....	52
1,500-1,630 ton.....	141
1,850 ton.....	12
2,100-2,200 ton.....	189
Total.....	394

This will constitute by far the largest destroyer fleet in the world, probably larger than that of all other nations combined.

Diamonds into Dies

Starting almost from scratch two years ago, the U.S. has developed sufficient production of small diamond dies to meet demands of radar, telescopic sights, etc.

IN THE SPACE of two years, the U.S. has built up an industry which took generations to develop in Europe—diamond dies, indispensable in the manufacture of radar, telescopic sights, and other precision instruments of war.

Such instruments (radar especially) require wires of extraordinary fineness—much finer than a human hair—which have a constant diameter. The only way to acquire this perfect roundness and close tolerances down to sizes as small as 3/10,000ths of an inch is to draw the wires through diamond dies.

THREE-MAN FORCE

When France fell in 1940, the U.S. had only a limited output (hand-manufactured by three Frenchmen residing in this country). Yet today domestic production of diamond dies is equal to a demand 28 times as great as prewar needs, as follows:

Diamond Dies .0015" & Smaller
(Number of Dies)

Year	Output	Consumption
1943.....	27,000	24,000
1942.....	7,723	8,613
1941.....	956	861

That is not the whole story, however. Back in 1941, the government had a small stockpile—about 3,000 dies; moreover, imports have been coming in. Result: Stocks in the U.S. are equivalent to about a half year's consumption.

Creation of the new industry was achieved by the larger-sized diamond diemakers of the U.S., aided by the then-

active Office of Production Management and the British Diamond Die Controller. A British automatic diamond-drilling machine was imported, along with available data explaining its use and operation, and with that nucleus, the Americans went on to build their own improved machines and train their own cutters to operate them.

The achievement is all the more remarkable when it is considered that it takes from 130 to 200 hours to drill a .0015-inch hole in one diamond. Moreover, in making the smallest-sized dies, the needle is so fine that it has almost no rigidity, yet must drill the hardest mineral in the world. Thus far, domestic dies have been found to wear out faster than European dies—though standards are being steadily improved under WPB sponsorship through the National Bureau of Standards—but the quantity of domestic dies on hand and in production compensates for their relative shortness of life.

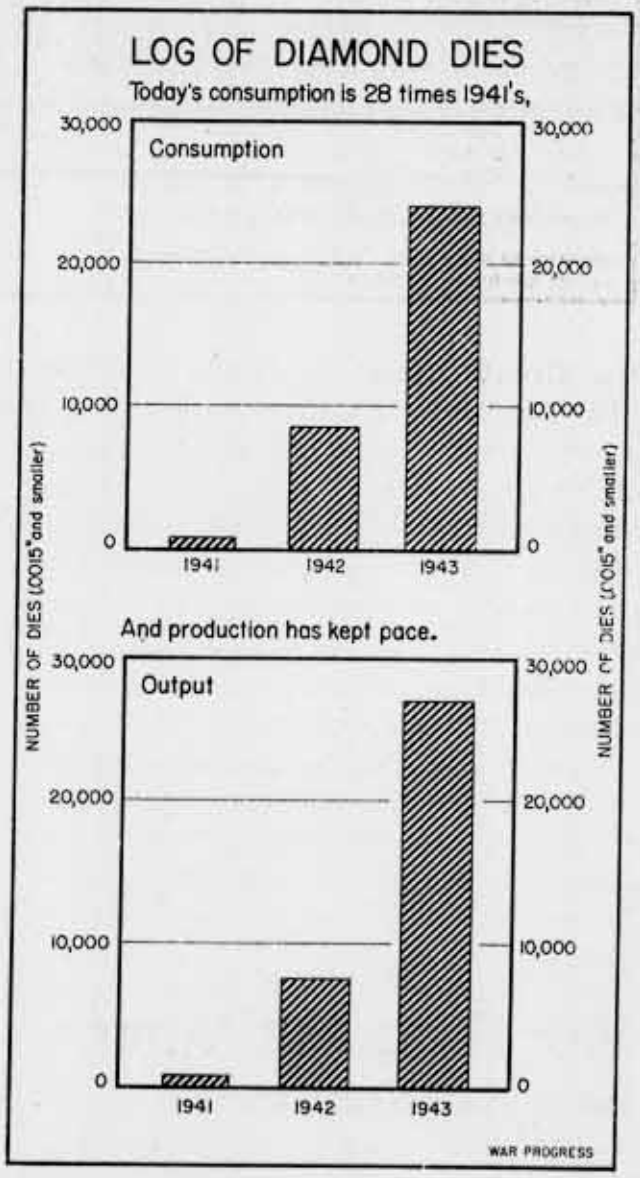
SUFFICIENCY OF DIAMONDS

Problems in securing adequate supplies of diamonds for making dies are negligible. Only 0.5% of the annual usage of industrial diamonds in the U.S. is required for dies, and the entire world output of diamonds is controlled by the United Nations. More than 95% is mined in Africa under the aegis of the Diamond Corporation, London, and agreements exist to furnish the U.S. with adequate supplies. In addition, the British have arranged to set up a stockpile of 11,500,000 carats in Canada for United Nations use. Moreover, Brazil's entire output—about 300,000 carats—is sold to the U.S.

Today the U.S. government stockpile is in excess of 5,000,000 carats; industrial consumers and processors have stocks in the neighborhood of 9,000,000 carats, and recent imports are almost matching current comsumption:

Year	Imports	Consumption	Year-End Stocks
	(in 000s of carats)		
1943...	11,500	12,000	13,100
1942...	11,200	6,400	13,600
1941...	6,900	3,500	8,800

Consumption of industrial diamonds,



COMBINED 1941-1942 CONSUMPTION OF SMALL DIAMOND DIES (9,500) EXCEEDED DOMESTIC OUTPUT (8,700). BUT IMPORTS FROM GREAT BRITAIN AND UNOCCUPIED FRANCE ENABLED THE UNITED STATES TO BUILD UP A STOCKPILE OF SOME 13,000 DIES BY THE END OF 1942.

KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program-Checks paid (millions of dollars)	1,557	1,595	1,452	1,420	791
War bond sales (millions of dollars)	205	131	413	182	148
Wholesale prices (1926=100)					
All commodities	p103.8	p103.8	p103.4	100.1	98.7
Farm products	p125.8	p125.7	p123.9	110.9	104.8
Foods	110.3	110.2	108.5	103.3	99.1
All other than farm products and foods	p96.9	p96.9	p96.8	96.1	95.9
Petroleum:					
Total carloadings	59,300	58,870	56,191	52,793	57,264
Movement of cars into the East	31,743	31,148	29,757	25,675	21,295
East coast stocks for civilian use (1940-41=100 Seas. Adj.)	26.8	27.1	27.7	58.5	n.a.
Total stocks of residual fuel oil (thousands of barrels)	67,717	67,311	67,455	77,012	79,296
Exports (no of freight cars unloaded for export Friday, excl. grain)					
Atlantic Coast ports	2,433	2,104	1,816	1,190	1,667
Gulf Coast ports	388	380	370	316	645
Pacific Coast ports	1,260	1,202	1,080	944	421
Unused steel capacity (% operations below capacity)	0.7	1.4	0.0	1.7	0.4
Department store sales (% change from a year ago)	+20	+15	+29	+30	-2

n.a. not available. p. preliminary.

has almost quadrupled since 1941. Demand for bonded diamond wheels used in grinding extra-hard and brittle metals and nonmetals is up very sharply—diamond wheel production almost tripled in 1942—and there has been a steady rise in the use of diamond-set tools, diamond-core drills for mining, etc. Also, the use of diamond dust for polishing and drilling has increased.

Indeed, while industrial diamonds were a by-product of gem diamond mining before the war, these relationships have been reversed, and may continue so after the war because of increasing commercial uses.

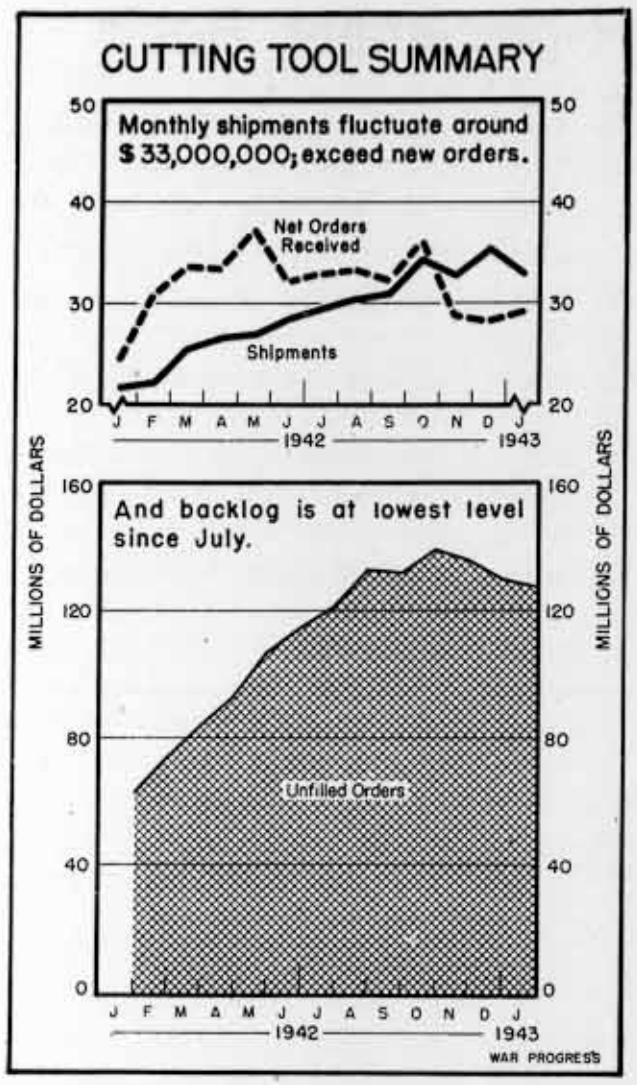
War Progress Notes

PUBLIC vs. PRIVATE DEBT

BACK IN 1916, just prior to the entry of the United States into the first World War, the debt of the federal government and its agencies was only $1,200,000,000 as against $72,300,000,000 for debts of state and local governments, long and short-term debt of commercial and industrial enterprises, and farm and real estate mortgages—in other words, 1.6% of the total of $73,500,000,000. Today (December, 1942) the federal debt stands at $94,600,000,000 out of a total of $223,900,000,000—42.3%. The story of this debt epitomizes U.S. economic history in the past 26 years.

COST OF WAR

By 1919, the federal debt had risen to $25,600,000,000, an increase of more than 2,000%, directly traceable to the financial cost of the war. The private debt (corporate and noncorporate) and the obligations of state and local governments had also increased, but not nearly to the same extent. From 1919 on, the trends of public (federal, state, and local) and private debt separated. The public debt held about even until 1930, but the private debt, due to the huge expansion which occurred in the 1920s, rose to its all-time peak in 1929—$142,000,000,000. Interestingly, dur-



tools as well as a shortage of alloy steels, plants are not permitted to obtain more tools than their needs warrant. Also, users are urged to lengthen the life of tools by (1) greater care in handling them and (2) employing improved methods of sharpening the cutting edges and attaching the cutting tip to the tool shank.

War Progress Notes

STEEL ANOMALY

INGOT STEEL production for the three months ended January 31, 1943, was up 121,000 tons from the previous three months, but shipments (finished, semi-finished, castings, and some ingots) were down 263,000 tons. The explanation is that U.S. mills today are rolling and fabricating an increasing proportion of alloy and high-grade carbon steels. This means less steel, more scrap.

Loss in cropping, shearing, chipping, and otherwise processing ordinary carbon steel into finished products is roughly 30%; scrap loss in alloy and high-grade carbon steel is 40%; in the case of face-hardened armor plate (an alloy steel), the scrap actually runs to 60% of the ingot.

And as the trend toward quality steels continues (WP-Mar12'43,p6), the more "home" scrap will result in the steel mills.

WHAT'S IN A NAME

WHEN THE BRITISH DECIDED to simplify and standardize on a war wedding ring, getting a name was a stumper. "Utility Wedding Ring" was too unromantic, "Victory Ring" too Shavian. Finally adopted: the simple, uncornotative "Standard."

91 FOR 100

BECAUSE 100 OCTANE aviation gasoline is scarce, it has been suggested that 91 octane be substituted in military planes wherever practicable outside of actual combat zones--trainers, aircraft based in the Continental U.S., patrol aircraft, etc. But such planes would still carry some 100 octane grade which would be cut in only on takeoffs or in other circumstances where full horsepower is needed.

REPORTS ON REPORTS

Farm Income

In the four-year period from 1939 to 1942, farm prices increased four times as much as total cost per unit of output, according to *Farm Prices, Farm Costs and Farm Production* (unclassified; pp.30). The survey, giving detailed statistics by major farm types, concludes that current farm price-cost relationships are equal to the best on record. (Office of Price Administration, Division of Re-

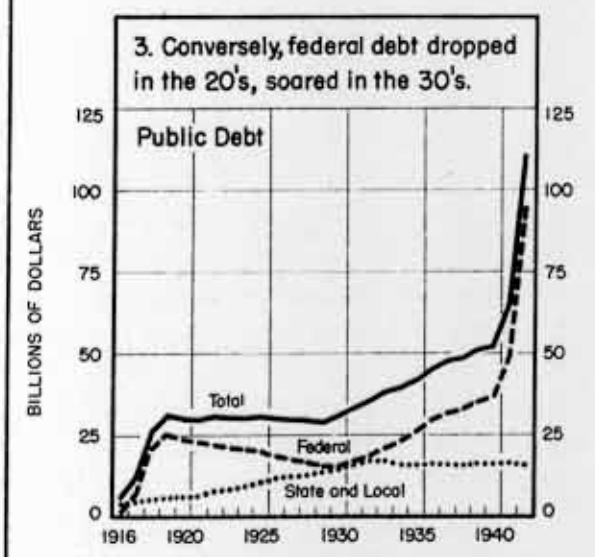
ing this period, state and local debt moved like the private debt—it rose, due to an increase in the variety of activities of local governments (road building, etc.), but the decline in federal debt more than offset this rise.

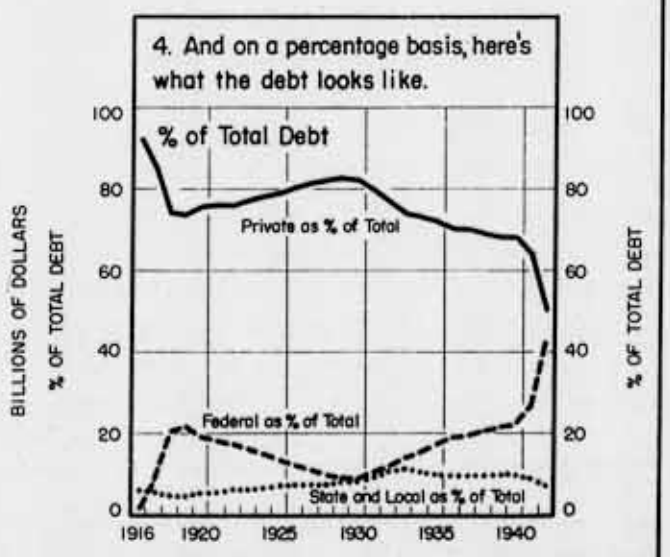
The depression of 1929 reversed these trends. Banks began calling in loans, corporations and individual firms could not and would not expand. The result was that the private debt declined steadily until 1936, at which point it remained fairly constant, showing in fact a slight upward trend until 1942. Then, mainly as a result of labor and material shortages, funds which normally would have gone into expansion, raising the private debt, were instead applied to the refunding of indebtedness, causing a slight drop from $116,500,000,000 to $113,500,000,000.

The public debt, on the other hand,

DIVERSE TRENDS IN PUBLIC AND PRIVATE DEBT

Federal obligations outstanding reach an all-time high; but private indebtedness is 20% below 1929 peak.





WAR PROGRESS

having fallen steadily until 1930, now turned upward. Federal, state, and local governments went into debt to offset the effects of the depression. At first, it was the state and local governments which started various relief projects (with federal grants), and for a short time, state and local debt increased, then held steady. But in 1932 the federal government began its own projects—RFC, PWA, CWA, etc. During this period, the federal debt rose steadily, until 1940, when it comprised 22.1% of the total net outstanding debt, barely topping the 1919 peak of 22%. After that, war expenditures took up where recovery expenditures left off.

COST IN COAL

BITUMINOUS COAL figures tell their own story. From February down to the week ended April 17, output was 2,000,000 short tons or better per week. Then, in the week ended April 24, output declined to 1,973,000 tons (the wage dispute was certified to WLB on April 24). The following week—61,000 miners reported out—production fell further to 1,595,000 tons; rose to 1,695,000 in the week ended May 8 (the week of the truce). For the week ended May 15, output was back to normal—2,025,000. Interim loss: some 737,000 tons.

AXIS ALUMINUM

BASED ON RECENT INFORMATION, U.S. estimates of 1943 aluminum output in German-controlled Europe total 575,000 tons, around 60% of it from Germany itself.

Production of aluminum in the U.S. this year is expected to be more than twice this figure—some 1,200,000 tons.

SILVER FOR TIN

USE OF a silver-tin-lead solder in bonding the side seam of cans may save 3,000 tons of tin this year, 5,400 tons next year, and ultimately perhaps as much as 7,000 tons annually. That, against this year's estimated requirements of 70,000 tons of tin. (Back in 1941, tin consumption ran to 136,000 tons.)

The usual tin-lead solder used in joining cans at the side takes about 40% tin; the silver-tin-lead solder now being used requires only from 3% to 5% tin, 2.5% silver, and the rest lead. Incidentally, at the current price of 45¢ an ounce for foreign silver (WP-May 14'43,p11), the silver solder can be used profitably for industrial purposes.

This year, about 40% of all cans made will be bonded at the side seam with the silver solder, and next year perhaps 70%. Potential maximum is 90%. (Some especially constructed cans for ether, etc., cannot use silver solder.)

PRONOUNCED COKE-SAH-GEESE

THIS YEAR, the Bureau of Reclamation of the Department of Interior is planting 60 acres to kok-saghyz, the dandelion which is the Soviet's chief source of domestic natural rubber. Kok-saghyz was first planted in the United States last summer, with seeds imported from Russia. The aim in current plantings is to secure an additional supply of seed and to harvest a small portion of the crop for experimental processing.

The main advantage of kok-saghyz is that it can be harvested and processed in a single year, compared with several years for guayule, the other possible U.S. source of natural rubber. In Russia, land planted to kok-saghyz increased from about 900,000 acres in 1937 to an estimated 2,000,000 acres in 1942. The average yield in Russia is about 0.46 pounds of rubber to the acre. The yield of the American variety is expected to be somewhat greater, owing to selective breeding.

REPORTS ON REPORTS

Raw Materials Are Not Enough

Japan's War Economy—1943 (confidential; pp. 91) discusses Japanese raw materials, industrial and shipping facilities, and manpower. Shortages of shipping and processing capacity prevent Japan from turning potential into actual supplies.
(Board of Economic Warfare, Enemy Branch)

Prospect for Shoes

Leather (confidential; pp. 23) states that, though military and most civilian requirements are still being met, reduced domestic production of hides (black-market slaughter) and declining imports (low shipping priority) threaten a shortage of footwear. Possibility: government purchase and slaughter of 5,000,000 cattle for its own account.
(U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce)

What Makes Sammy Run (Away)

The Treatment of Absenteeism (confidential; pp. 40) analyzes the absence records of 1800 workers in 18 plants in six different industries. Absenteeism is most prevalent among married women, jobholders of less than 24 months' standing, and new residents in the community. Remedies suggested by employees themselves attest to other causes: dislike of the work and the company's promotion policy, objections to health and safety conditions, etc.
(Office of War Information, Bureau of Special Services)

No Shortage of Buyers

Apparel (confidential; pp. 27) reports shortages in materials, labor, fuel, etc., in the clothing industry. Orders far exceed acceptances. The increased allowance of new wool for civilian fabrics may help some, but the ban on cuffs and vests for double-breasted suits will continue.
(U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce)

Tapping a Labor Reserve

Employment of Women in War Work (confidential; pp. 29), a study of 329 plants in 10 war industries, reports that women constitute 5% of shipyard workers, 46% of workers in small-arms ammunition plants. Within industries there are wide variations. In artillery ammunition, for example, some plants employ no women, while others employ women for three out of every four jobs.
(War Production Board, Statistics Division)

[This record is an attempt to select from the many documents coming to the attention of WAR PROGRESS those studies which would be of most interest to readers. The list is by no means comprehensive, and no attempt has been made to evaluate reports for accuracy. Whether reports are available depends on the policy of each individual agency.]

SELECTED MONTHLY STATISTICS

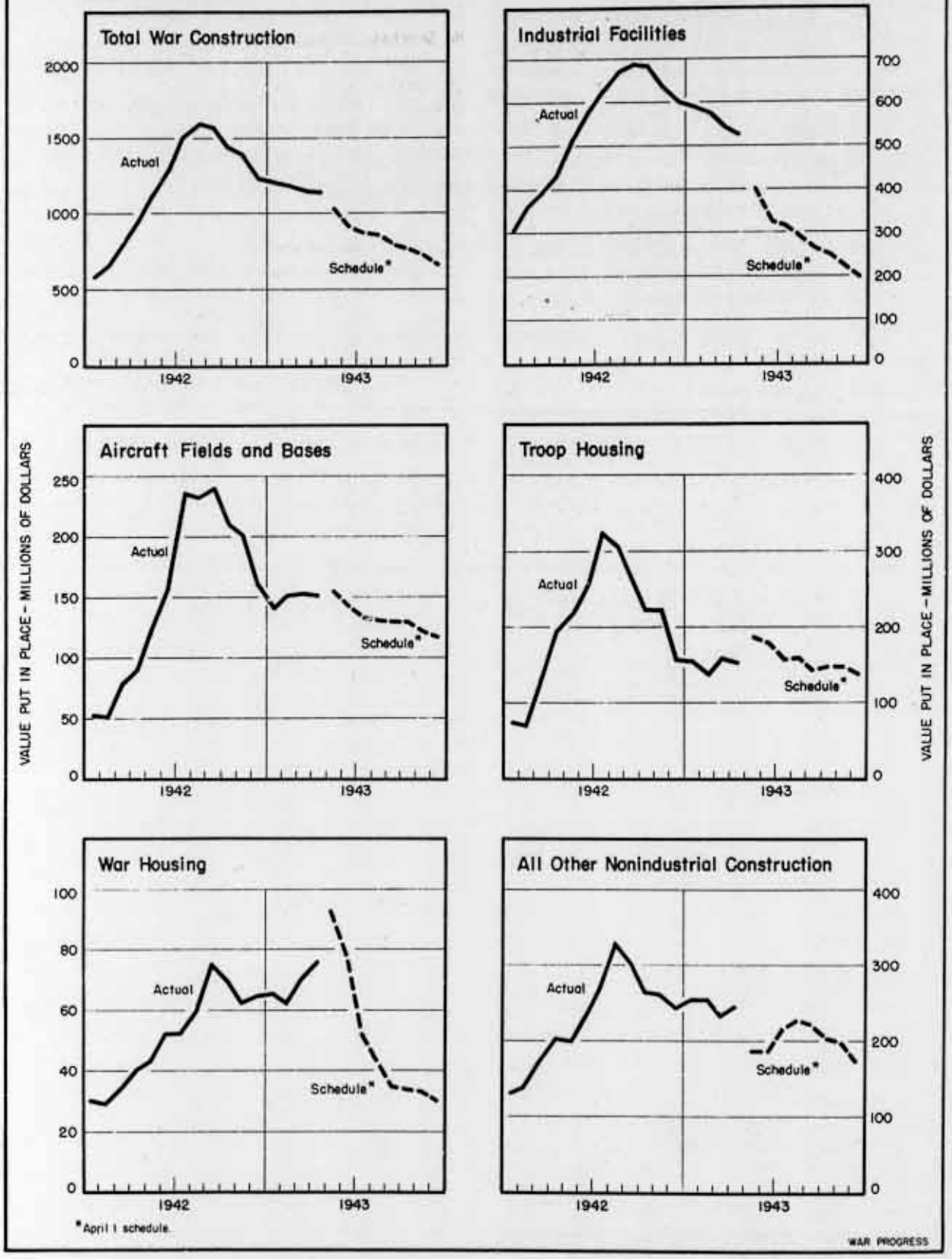
Labor Force – Strikes – Retail Sales – Transportation

	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
LABOR FORCE - TOTAL (millions)	53.0	52.1	52.0	54.5	54.2	n.a.	n.a.
Employment	52.1	51.2	51.0	52.8	51.6		
Male	36.2	36.0	35.8	37.5	38.4		
Female	15.9	15.2	15.2	15.3	13.2		
Unemployment	0.9	0.9	1.0	1.7	2.6	n.a.	n.a.
LABOR DISPUTES							
Number of strikes in progress	p445	300	240	320	405	431	785
Workers involved (thousands)	p205	5	48	66	85	426	n.a.
Man-days idle (thousands)	p675	230	170	325	375	4,902	3,377
RETAIL STORE SALES - TOTAL (million dollars)	p5,194	5,430	r4,516	5,257	4,592	3,478	3,613
Durable goods	p879	824	664	874	860	877	1,044
Nondurable goods	p4,315	4,256	r3,852	4,384	3,733	2,601	2,569
TRANSPORTATION - COMMODITY AND PASSENGER (1935-39=100)†	p203	201	187	198	157	98	115
Commodity	p195	193	178	195	159	98	118
Passenge	p230	227	217	207	148	98	107

*Labor Force, May; Labor Disputes & Retail Sales, April; Transportation, March. †Unadjusted. n.a. not available. p Preliminary. r Revised.

PRODUCTION PROGRESS

War Construction



The President

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WAR PROGRESS

Confidential
(British Secret)

Airplane Output in May
Screening Facilities: Another Effort
Scorecard on Merchant Shipping

Production Progress Tables

Number 142 **June 4, 1943**

Planes Pass 7,000-a-Month Mark in May

Gain over April is 10%—both in units and in weight—but output falls 7% shy of new 8-L schedule. Heavy bombers only 2% under schedule, army fighters down sharply.

AIRPLANE ACCEPTANCES in May crossed the 7,000 mark for the first time. At 7,015 planes, they were up 10% over April.

Measured by airframe weight, output was up 10% also—48,600,000 pounds against 44,200,000 pounds.

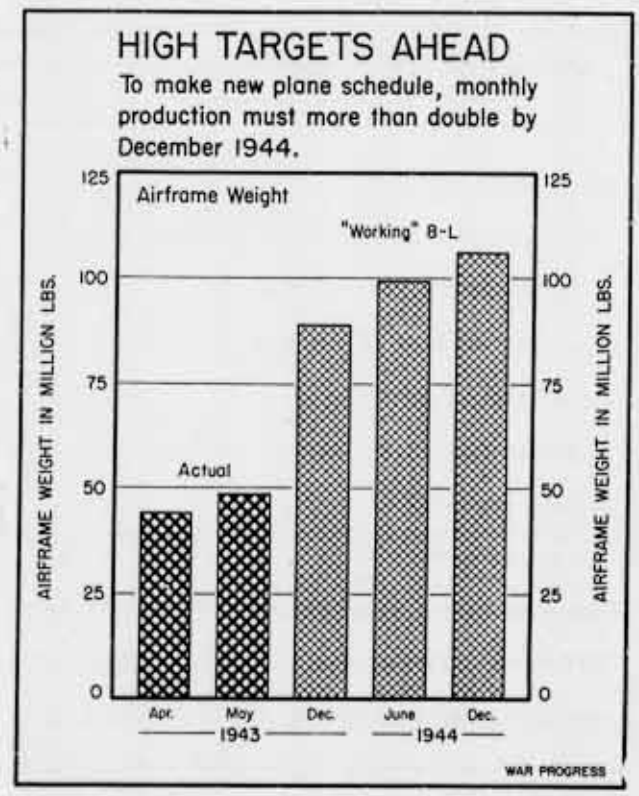
The effect of the reduced airplane schedule—working 8-L—was apparent. On an airframe weight basis, the May performance was only 7% short of the schedule. April was 15% under original 8-L.

May's 10% gain over April duplicates the April increase over March and suggests the difficulties ahead in meeting schedule (chart, this page). An average gain of 12% per month is required if the airframe weight called for in December of this year is to be achieved. After December, however, the production curve is due to rise less rapidly, as the chart on page 4 shows. Thus, the big job in plane production is this year.

Bombers did exceptionally well last month—only 2% off schedule. Army fighter production lagged behind April as well as schedule. Here's how May—by types of planes—stacks up against April and the first-of-the-month working 8-L schedule:

	May Acceptances as % of April	May Acceptances as % of New 8-L
Total planes	110%	93%
Combat planes	113	93
Bombers (including flying boats)	118	98
2-engined fighters (Army)	69%	41%
1-engined fighters (Army)	97	81
1-engined fighters (Navy)	118	92
Reconnaissance (Navy)	93	81
Service combat	102	94
Transport	99	94
Communication	204	104
Trainers	89	93

Again, 4-engined heavy bombers were outstanding. Acceptances of 705 Liberators and Flying Fortresses ran 78 planes ahead of April and fell only 16 units short of schedule. However, results in individual plants were mixed.



Douglas (Long Beach) was 8% ahead of schedule with 80 Flying Forts instead of 74.

Boeing (Seattle), Consolidated-Vultee (San Diego and Fort Worth), and Vega (Burbank) were exactly on schedule.

Douglas (Tulsa) fell 25% behind, producing 15 "Forts" instead of 20; Ford was 8% short—115 Liberators instead of 125.

North American (Dallas) failed to turn out any Liberators in May.

Because of engineering difficulties, no long-range heavy (super) bombers were accepted in May, although four were scheduled.

LIGHT BOMBERS SCORE

Light 2-engined bomber production continued to score heavily; acceptances totaled 331 planes, 8% higher than planned for. And one-engined light bombers snapped out of their April slump: 798 were accepted, 14% more than scheduled. Most of the credit for this increase goes to Douglas' El Segundo plant which turned out 376 Dauntless dive bombers—the Navy's ace Jap-destroyer—against a schedule of 250. Last month, because of a shift to an improved Dauntless model, El Segundo fell 100 units behind expectations.

As a rule, army fighters were down. As an instance, only 84 Lightnings (P-38s) were produced against 122 last month, and a schedule of 200. Two factors were mainly responsible for this poor showing: (1) loss of time involved in changing over to a mechanized assembly line, and (2) shortages of certain critical materials and components. However, Republic's two plants producing the Thunderbolt (P-47) turned in an on-schedule performance—340 planes. This plane made its combat debut over the European continent early in May. The Warhawk (P-40) was also on schedule.

Some 400 navy fighters were accepted —6% behind schedule, but 18% ahead of April. Goodyear has just started turning out the Corsair and is lagging behind the production plan; but Chance-Vought—the parent producer—came close to making the goal. Grumman turned out 150 Wildcat II's, 25 fewer than scheduled, while General Motors' Linden plant went ahead of schedule on the Wildcat I by about 10%.

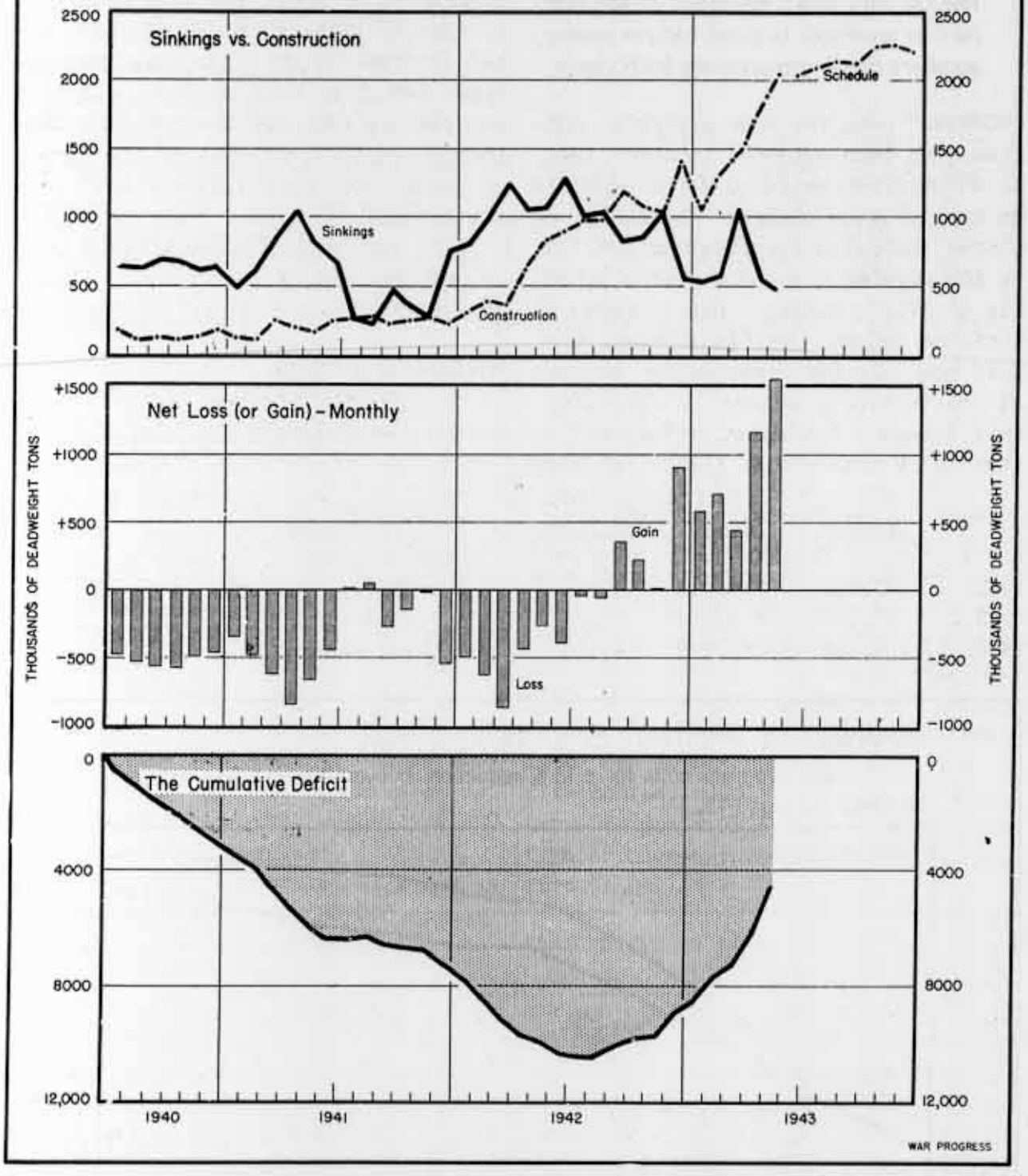
HEAVY TRANSPORTS LAG

In heavy transports, both the 4-engined and 2-engined types fell short of expectations—25% and 23% respectively. Only six Liberator Freighters (converted B-24s) were produced compared with a schedule of 10 ships; it was the first behind-schedule month this year. Twin-engined medium transport planes exceeded schedule by 2% (208 units against 204). In this group, only one of the plywood transport planes has reached the acceptance stage, although several of the two types (the C-76 Caravan and the unnamed C-62) have been scheduled. This typifies the difficulties involved in getting new models into production.

IN THIS ISSUE:

SCORECARD ON MERCHANT SHIPPING

Sinkings of United Nations vessels lowest since November, 1941. Construction again hits new high, rising to more than 2,000,000 deadweight tons.



WITH 1,500,000 DEADWEIGHT TONS OF SHIPPING (NET) ADDED TO THE UNITED NATIONS MERCHANT FLEET LAST MONTH, THE CUMULATIVE DEFICIT IN TONNAGE IS NOW BACK TO WHERE IT WAS IN MARCH, 1941. MORE THAN TWO YEARS OF AXIS MARAUDINGS ON THE HIGH SEAS (AROUND 19,000,000 TONS SUNK) HAVE BEEN WIPED OUT. SIGNIFICANTLY, THIS IS TRADITIONALLY THE SEASON WHEN SINKINGS ARE SUPPOSED TO RISE, YET LOSSES IN MAY WERE THE LOWEST SINCE PEARL HARBOR. AT MAY'S RATE, THE DEFICIT WOULD BE LIQUIDATED IN THREE MONTHS.

"8-L" in '44: More of the Same

Cutback in next year's plane program proportionate with 1943 revision. In addition, further emphasis is given heavier planes; bombers dominate program both years.

"WORKING" 8-L, the new aircraft program, has been extended to cover 1944. It offers fresh evidence of the emphasis on heavier type planes. The number of planes scheduled for 1944, at 127,164, is 30% greater than this year's schedule of 97,704 planes. But in terms of airframe weight, the 1944 increase over this year is 64% (excluding special aircraft—target planes, rotary wing, Navy drones). A tabular picture of the increasing size of U.S. planes follows:

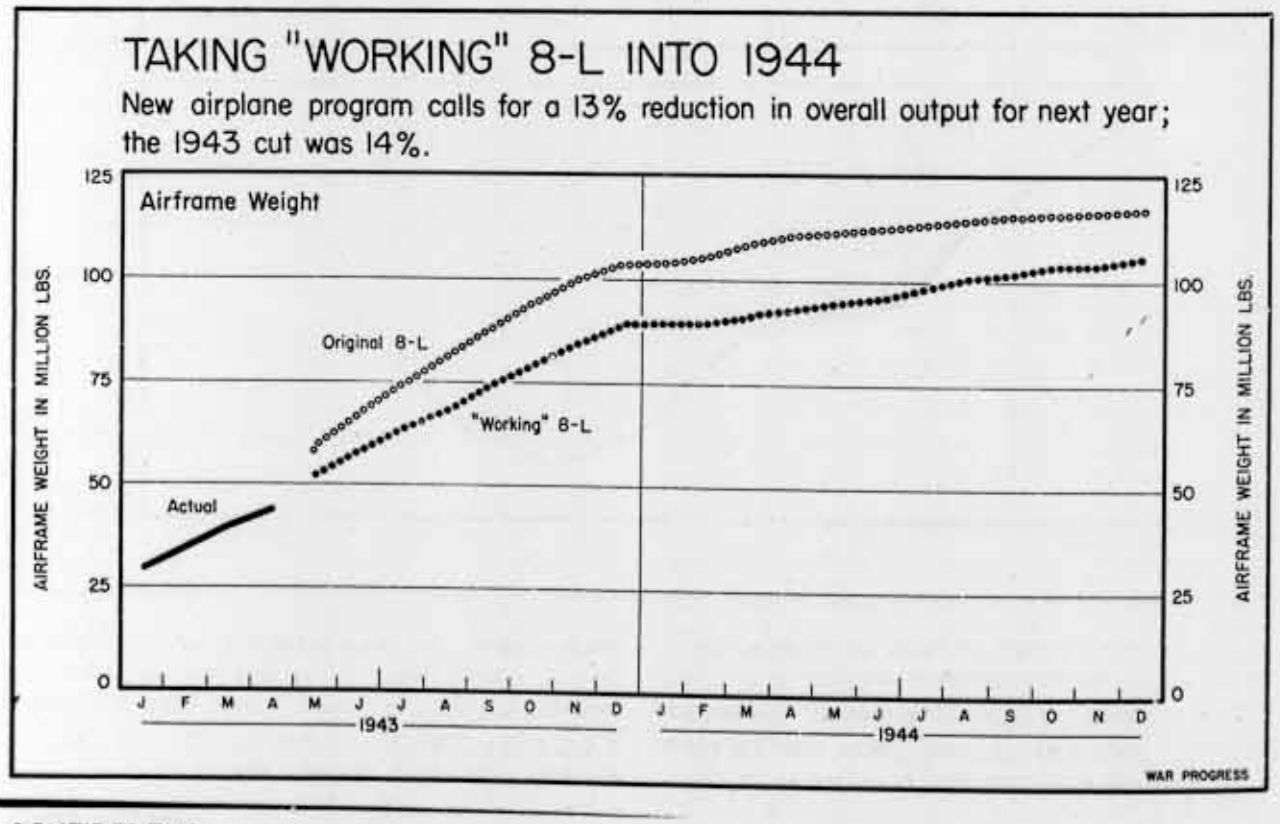
	Number	Airframe Weight Total (000 lbs.)	Per Plane
1942....	47,674	216,400	4,540
1943....	97,704	710,725	7,274
1944....	127,164	1,168,422	9,188

The cutback in the tentative 1944 program is of about the same magnitude as that of 1943 (WP-May21'43,p1). Total airframe weight this year was reduced 14% from original 8-L; the 1944 decrease is 13%. But the parallel ends there. In 1943, the cut in the number of planes was only 10%; for next year the reduction is 16%. This is due to a heavy cutback in schedules for trainer and communication planes (chart, page 6).

MEASURE OF CUTBACK

Comparison of the working 8-L schedule with original 8-L for 1944 follows:

	% Reduction Units	Weight
Total airplanes.....	-16%	-13%
Combat.....	-13	-12
Bombers.....	-13	-13
Fighters.....	-11	- 9
Naval reconn.....	-44	-15



KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program-Checks paid (millions of dollars)	1,932	1,557	2,112	1,139	804
War bond sales (millions of dollars)	277	205	720	211	149
Wholesale prices (1926=100)					
All commodities	p104.0	p103.8	p103.5	100.1	98.8
Farm products	p126.7	p125.8	p124.3	110.8	106.0
Foods	110.7	110.3	108.7	103.6	99.4
All other than farm products and foods	p96.9	p96.9	p96.9	96.1	95.9
Petroleum:					
Total carloadings	54,081	59,300	56,833	51,527	55,135
Movement of cars into the East	28,708	31,793	29,770	25,146	22,141
East coast stocks for civilian use (1940-41=100 Seas. Adj.)	25.7	26.8	26.3	57.3	n.a.
Total stocks of residual fuel oil (thousands of barrels)	67,682	67,717	66,991	77,796	79,690
Exports (no. of freight cars unloaded for export Friday, excl. grain)					
Atlantic Coast ports	2,396	2,433	1,673	924	1,827
Gulf Coast ports	354	388	376	239	408
Pacific Coast ports	1,274	1,260	1,149	962	543
Unused steel capacity (% operations below capacity)	1.6	0.7	1.8	1.7	0.7
Department store sales (% change from a year ago)	+42	+21	-5	-1	-12

n.a. not available. p. preliminary.

	% Peduction	
	Units	Weight
Service combat....	- 8%	-14%
Transport.....	- 1	-14
Communication....	-29	-20
Trainers.....	-41	-40

Numerically, the cutback in the 1944 schedule over the original 8-L is 23,462 planes. Trainers alone are cut about 8,000 to 14,633 (actually 5,500 under the 1943 schedules).

The new 1944 schedule calls for an overall gain of nearly 30,000 planes, with the emphasis on bombers:

	1943	1944
Total airplanes.....	97,704	127,164
Combat.....	64,306	92,754
Bombers.....	34,641	50,353
Fighters.....	29,054	41,719
Naval reconn.....	611	682
Service combat.....	13,243	19,777
Transport.....	8,588	15,931
Communication.....	4,655	3,846
Trainers.....	20,155	14,633

Month-by-month reductions in airframe weight are sharper in the earlier quarters than in the latter part of the year. January weight, for example, was cut 16%; December, only 7%. This is mainly because schedules of new models—Curtiss' SB2C, Consolidated-Vultee's TBY, Bell's P-63, etc.—have been pushed forward into the future anywhere from two to five months. And, in the fourth quarter, Grumman's XF7F, a two-engined navy fighter, comes into production for the first time.

SOME MODELS TO CEASE

On the other hand, certain planes now in production are slated to fade out of the picture in '44. Army dive-bomber schedules have been cut deeply—5,000 of a programmed 6,300 being eliminated—and after May, production of these types will cease. Production of P-60s will also halt early in 1944.

Although airplane weight as a whole goes up gradually throughout 1944 (chart, page 4), the number of planes reaches

search, Price Analysis and Review Branch)

Benzene Derivatives

Dimethylaniline (confidential; pp.24), used primarily in the preparation of explosives and dyes, and *Diphenylamine* (confidential; pp.36), used in the manufacture of smokeless powder, antioxidants for rubber and livestock drugs, are in sufficient supply at the present time. They are, however derived from the critically short one- and two-degree benzene on which the synthetic rubber and aviation gasoline programs have first call. The reports show the present use of the chemicals and explore the possibilities for further economies.
(War Production Board, Office of Civilian Supply, Chemicals Branch)

Critical Components

Estimated requirements of critical components, past and potential supply, are given in the *Critical Components Data Book* (confidential; pp.84). Abstracts, to be revised as new data become available, now cover 28 products, and additional abstracts are in preparation. This information is compiled for use by policy-making officials in the War Production Board and procurement agencies.
(War Production Board, General Statistics Staff)

Laws of Occupation

Laws and decrees promulgated by Germany in 10 subjugated European countries are compiled in *Key Laws, Decrees and Regulations Issued by the Axis in Occupied Europe* (restricted; pp.418). Provisions imposed range from economic and administrative controls to the confiscation of property and the conscription of labor.
(Board of Economic Warfare, Blockade and Supply Branch, Reoccupation Division)

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SELECTED MONTHLY STATISTICS

Production

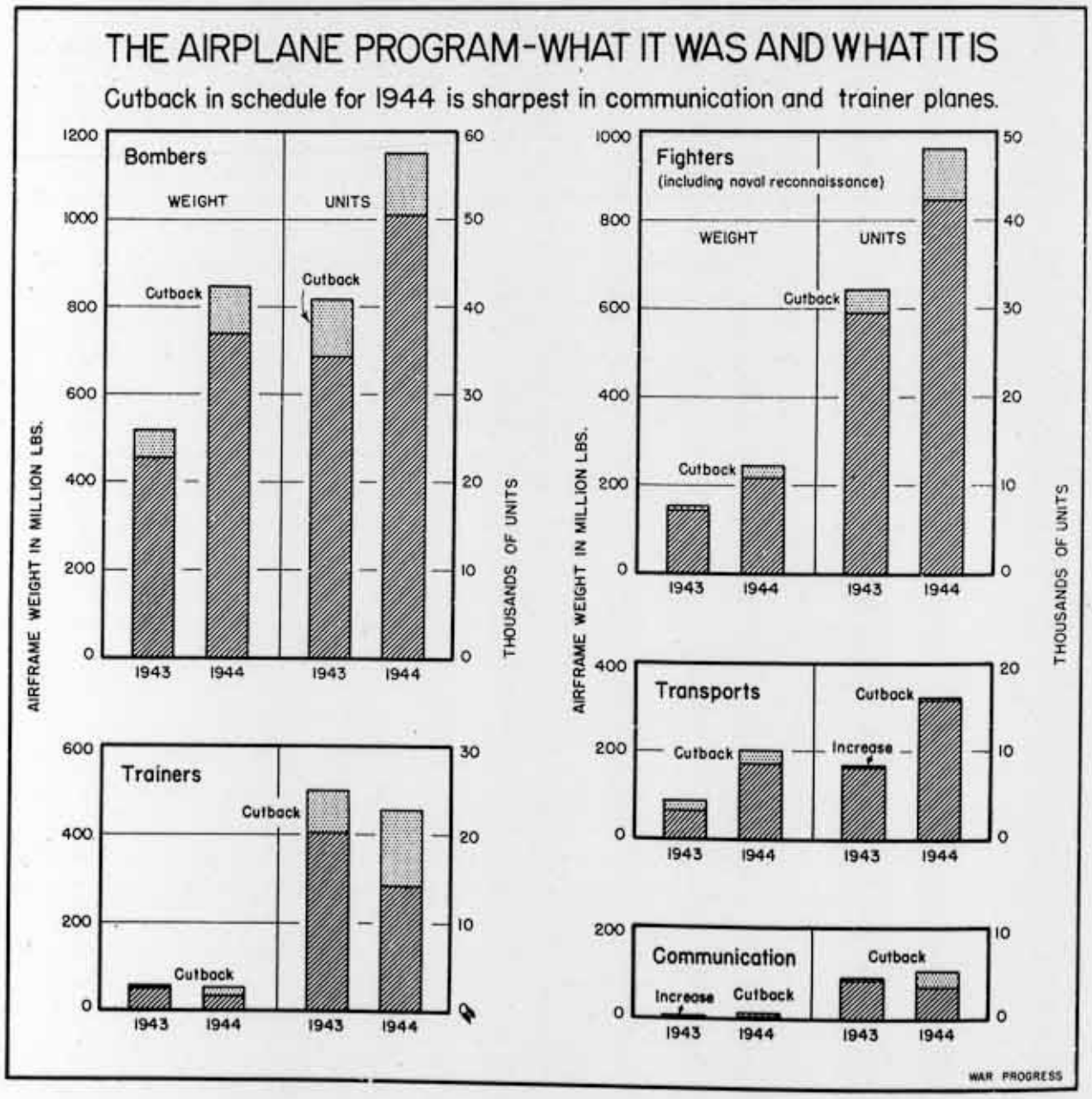
	Latest Month *	Preceding Month	2 Months Ago	3 Months Ago	Year Ago	Same Month 1939	Same Month 1937
PRODUCTION INDEX — INDUSTRIAL †	p198	194	193	187	167	99	115
Total Manufactures	p211	208	206	196	175	98	117
Durable	p295	287	283	260	221	94	125
Nondurable	p143	143	145	144	138	102	111
Minerals	p122	117	120	136	125	102	107
FOOD PRODUCTION:							
DAIRY PRODUCTS (million pounds)							
Butter, creamery	122.9	s	s	s	119.8	130.7	108.0
Cheese	60.2				69.9	41.7	39.6
Evaporated Milk	203.8				313.5	131.3	119.1
ANIMAL FATS (million pounds) ⓘ	263.6				258.8	167.0	131.8
MEATS-TOTAL (including lard, million pounds)	1,632.0				1,728.0	1,202.0	1,109.0
Beef and veal	523.0				605.0	425.6	469.6
Lamb and mutton	71.2				68.8	61.1	69.6
Pork, including lard	1,037.9				1,053.8	715.2	570.2
Lard	178.5				203.3	125.5	90.4
POULTRY AND EGGS							
Eggs (millions)	4,577.0				3,836.0	3,124.0	924.0
Poultry (receipts at 5 principal market., million pounds)	19.0	s	s	s	18.6	16.9	17.3

* January; Poultry and Eggs and Industrial Production, February. †Unadjusted. ⓘFigures for year ago, 1939 and 1937 represent quarterly averages. s Seasonal influences invalidate month-to-month comparisons. p Preliminary.

a peak early in the year. Indeed, two out of every three individual plane schedules (each plane in each plant is counted as a schedule) level off late in 1943 or 1944. Examples of this are Boeing (Seattle) on the Flying Fortress; North American (Kansas City) on the Mitchell; Douglas (Santa Monica) on the Boston; Lockheed (Burbank) on the Lightning.

Significant shifts show up in the schedules for particular plants. Willow Run's peak month for bomber production has been raised to 500 (it was 405). This ties in with the completion of Ford's subassembly program. Consolidated's Fort Worth plant shifts from the production of Liberators during 1944 to the B-32 long-range heavy bomber. And Consolidated-Vultee, Nashville, stops production on A-35s and will make Boston A-20s.

Dropping the P-60s enables Curtiss' Buffalo plant to boost production of the efficient C-46 "Commando" transport. Last fall this plane, though ranking



exceptionally high in cargo-carrying efficiency, was scheduled to constitute less than 12% of the weighted total production of medium and heavy cargo planes; the Douglas DC-3, on the other hand, with perhaps only one-quarter of the Commando's rated cargo-carrying efficiency, was scheduled for 63% of cargo-carrier production in 1943-44 (WP-Sep25'42,p1). The share of the Commando has now been almost doubled—to 22.5% of the total cargo-transport program.

Screening Facilities: Another Effort

New committee established to find ways and means of curtailing construction through utilization of the plants and machinery freed by program cutbacks.

THIS YEAR, total construction in the United States is expected to approximate $7,600,000,000—43% less than in 1942. Of that amount, some $3,300,000,000 is in the direct military, or "command," category; it consists of airfields, barracks, hospitals, warehouses, etc., and is not subject to screening by the War Production Board. But the $4,300,-000,000 remainder—war plants, housing, community facilities, etc.—is. And that, alone, involves almost 2,500,000 tons of steel and 37,000 tons of copper. Include $2,700,000,000 of machinery for equipping industrial facilities, and the amount of steel rises to about 4,-100,000 tons; of copper, to around 110,-000 tons.

WHEN A LITTLE MEANS A LOT

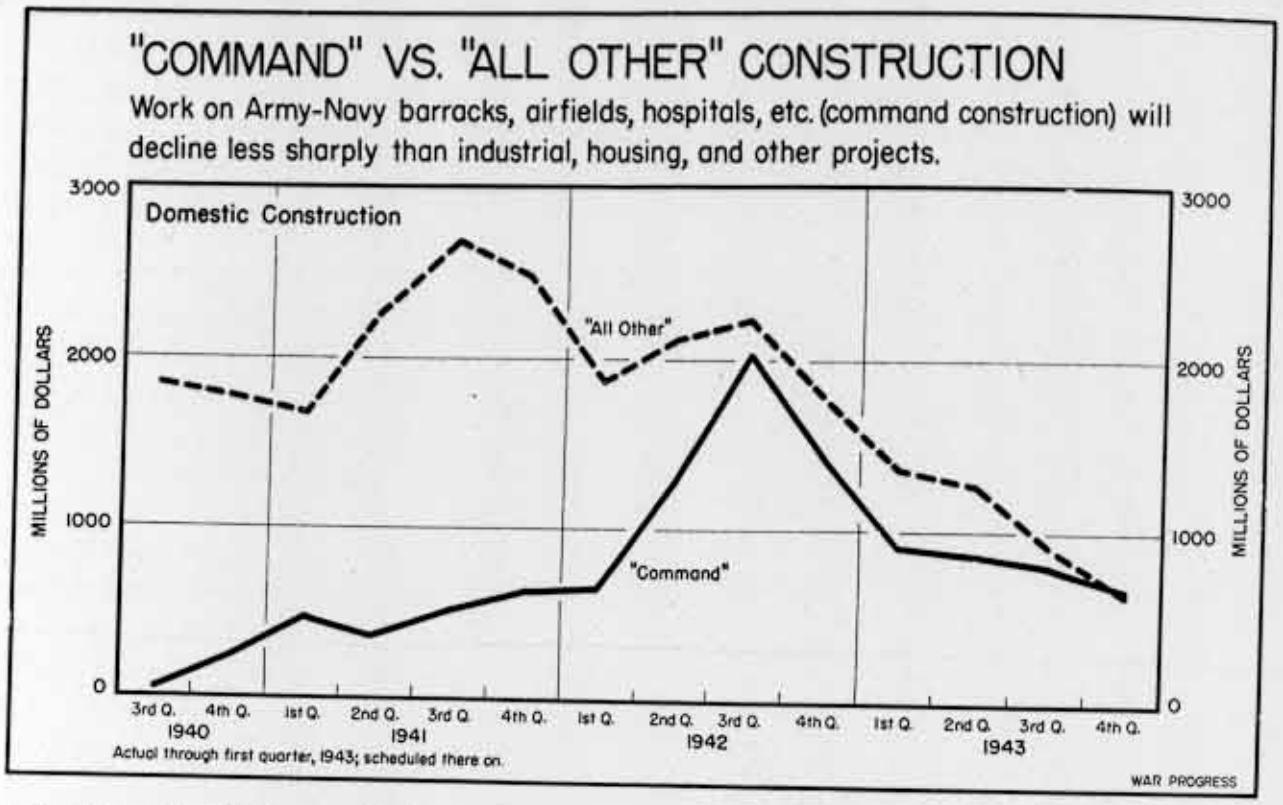
Percentagewise, these totals are small against the estimated new supply of 60,000,000 tons of finished steel and 3,300,000 tons of copper in 1943. But small amounts are significant in these days. Plants have already been forced to slow down or close for lack of critical metals. Indeed, so great is the demand for steel, copper, and aluminum that third-quarter requests under CMP exceeded estimated supply by wide margins.

That the U.S. economy wouldn't be able to supply enough basic materials to satisfy overall demand—construction as well as munitions—was realized as far back as October, 1941, when the Supply, Priorities and Allocations Board announced that critical materials should not be used in nonessential construction. But it took six months (to April, 1942) before Order L-41 was issued as a step toward implementing this policy; it was designed to restrict the flow of materials to nonessential building. Six months after that—in October, 1942—the War Production Board set up the Facility Clearance Board and the Facility Review Committee specifically to review nonmilitary construction.

MILITARY EXEMPTED

This review was not complete—understandably. Direct military (command) projects—presumably determined by strategic considerations—were largely exempt from screening by WPB. These constituted around a third of all construction in 1942.

Today's problem is different from that of a year ago. In those days, construction was still around its peak levels. War programs were still expanding; strategical needs for new kinds of weapons were constantly calling for additional plants and machinery. Moreover, the urgency of getting things started was so great that projects frequently were undertaken without regard



for the materials available. But toward the end of 1942, WPB studies made it clear that U.S. resources could not support the then-existing program for munitions and war construction.

EFFECT OF A.S.P. CUT

Subsequently, the Joint Chiefs of Staff made a cut in the overall program for 1943—from more than $90,000,000,000 to about $80,000,000,000. The Army Supply Program, alone, was reduced 25%.

This freed many types of ordnance plants. Paradoxically, at the same time that plants were closing, requests for new facilities kept coming in. In the first quarter of this year, for example, roughly $800,000,000 of new projects were authorized.

NEW SCREENING COMMITTEE

To meet this paradox, the War Production Board has just reorganized the Facilities Bureau and established a new body: the Industrial Facility Committee, consisting of representatives of the Army, Army Air Forces, Navy, Bureau of Aeronautics, Maritime Commission, and WPB. Its job is to screen all requests for new plant and machinery —to see that no additional capacity is authorized unless the work cannot be done by existing facilities.

NONINDUSTRIAL PROJECTS

Also established is a Non-Industrial Facility Committee whose chief task is to screen mining projects, consumer goods projects (food processing, textile, agricultural development, etc.), and governmental projects (roads, hospitals, sewers, etc.). In addition to WPB, Maritime Commission, and the armed services, members of this committee include representatives of the Office of Civilian Requirements and the National Housing Agency.

Again, command construction (including overseas) is not subject to review. However, when the Army and the Navy submit their requests for steel and

copper under the Controlled Materials Plan, their projects are subject to an indirect, overall check.

The nature of the work ahead for the new organization has already been indicated. Last November, as contracts for combat vehicles, artillery, ammunition, signal service equipment, etc., were canceled, hundreds of plants were booked with orders from the aircraft and antisubmarine vessel programs. Specifically:

Gun shops were converted to make aircraft landing gear.

Tank-engine builders were put into aircraft-engine output.

Army gun machinery was switched over to navy gun production.

Tank fabricating facilities were used for aircraft framework.

Ammunition plants were turned over to the production of aircraft engine parts and precision instruments.

Facilities to build recoil mechanisms for cannon were adapted to manufacture of struts for aircraft landing gear.

MACHINE-TOOL CONVERSION

But the job of "adapting" industrial plants goes farther than the mere shuffling of facilities among the makers of munitions end products. It goes down, also, to the manufacturers of machinery.

Take the case of the machine-tool industry, where unfilled orders are down from a peak of $1,117,000,000 last July to around $700,000,000 today: Gisholt Company is producing steel valves; Warner & Swasey is tooling up to make aircraft-engine parts; Bullard Company, auxiliary turbines; Cincinnati Milling, parts for turbines and airplane propellers, as well as aircraft-control mechanisms. As backlogs decline even further, more of this type of work will be placed with toolbuilders, thus relieving the pressure for new expansions (WP-Apr30'43,p1).

Not all of this adaptation will be to weapons such as guns, ships, and planes. Some will be to civilian-type goods, some to special types of machinery still needed in the war program.

TANKS TO LOCOMOTIVES

Three railway-equipment companies building tanks (American Locomotive, Baldwin, and Lima Locomotive) will again concentrate on the manufacture of locomotives. Increased requirements for buses and trucks will be easier to realize with the freeing of facilities from combat-vehicle output. Several heavy-machine shops, formerly working on big guns, have been shifted to the production of machinery for the aluminum program.

Already, all orders for new machine tools (except those for command projects and for military use overseas) are being screened against available tools and facilities. One of the allied problems here is to see that necessary replacements of worn-out machine tools are available. This is particularly important because many machines are working longer hours than were customary in peacetime. And taking a tip from private industry, it is planned to set up regional warehouses so that available used machines can be inspected by prospective users. (The first such warehouse will open in Detroit.)

THREE CHECKS ESTABLISHED

To make the new method of screening effective, the following procedures have been set forth:

1. All inventories of vacant structures and idle machines will be centralized within WPB's reorganized Facilities Bureau.

2. By July, 1943, all claimants

must present estimates of additional facilities needed for 1944.

3. Every major facility project scheduled for completion after October 1, 1943, will be reviewed to re-establish its essentiality.

SUPEREXPEDITING EFFORT

Substantially, this is another attempt to do what has been tried before: to coordinate war production with facilities so as to cut down on the brick-and-mortar use of materials and manpower. But whereas previous efforts were primarily directed at eliminating construction projects, the new organization will concentrate on developing new capacity by using existing plant and equipment. In a sense, this will be a superexpediting job by men who have been specializing in this work.

However, the scope of the committee's operations is, to a certain extent, predetermined. Three-quarters of the war industrial facilities program has already been completed—$10,600,000,000 out of $14,400,000,000. And certain green-light programs (synthetic rubber, high-octane gasoline, etc.) will go ahead at full speed.

SOME "MUST" CONSTRUCTION

Furthermore, some new construction in wartime is inevitable. As battle experience and strategy create the need for new weapons, they also create the need for new facilities. Thus, the emphasis on long-range heavy bombers calls for at least some new construction and equipment. (Larger planes require more production space, greater hangar area, longer runways, etc.)

But the new organization, by utilizing existing facilities wherever possible, will not only save materials and manpower but also—and this is all-important to strategy—time.

Record Lend-Lease

APRIL lend-lease shipments, including planes flown to their destinations, totaled $779,000,000. This was a new record, though only 0.5% above March. But it topped February by almost 50%.

Exports of tanks and other vehicles rose 41% between March and April; shipments of industrial products increased 17%; other lend-lease groups were off:

	April	March	% Change
	(millions)		
Ordnance.....	$112.2	$119.2	- 6%
Aircraft*.....	125.5	149.4	-16
Tanks, veh....	201.1	142.8	+41
Watercraft....	12.5	36.3	-66
Agric. prod...	121.6	152.3	-20
Industrial prod	206.4	175.7	+17
Total	$779.3	$775.7	+0.5%

*Including flyaways

Lend-lease aid to the United Kingdom continues to increase sharply. April exports, at $355,000,000, were 15% above March and over 70% above February. Shipments to other parts of the British Empire declined by 22%—from $230,000,000 to $181,000,000—between March and April, while the volume going to Russia—$211,000,000—was about the same.

REPORTS ON REPORTS

Hitler's Railroads

Railway Resources in Axis Europe (secret; pp. 158) analyzes the railway systems of all Axis-controlled countries, giving characteristics of construction, size and organization, condition of tracks, vulnerable points, etc. Conclusion: While rolling stock in general is not kept in good condition, disrepair has not prevented Germany from meeting all military and economic burdens on transportation. The study is accompanied by maps showing selected railroad objectives in each country. (Office of Strategic Services, Research and Analysis Branch)

Beneficiary of Chlorine

Carbon Tetrachloride (confidential; pp. 32)

points out that temporary surpluses of chlorine, necessary in the preparation of carbon tetrachloride, insure a sufficient supply of carbon tetrachloride to more than meet minimum essential requirements. Productive capacity of chlorine must be maintained to meet sudden chemical-warfare demands, but it is difficult to store in quantity, so the carbon tetrachloride industry benefits from consistent current production.
(War Production Board, Office of Civilian Supply)

Men and Materials Wanted

Early this year, the Office of War Information attempted to determine the attitudes of smaller manufacturers (employers of one to 125 persons). *Smaller Manufacturing Plants and Wartime Production* (unclassified; Part I, pp. 25; Part II, 66 tables) gives the results of interviews with officials of 3,446 plants. Most manufacturers found labor and materials their chief problems; only 19% worried about the problem of obtaining war orders.
(Office of War Information, Bureau of Special Services, Surveys Division)

Plastics' Progress

In spite of labor and raw-materials shortages, production totals of the plastics materials industry continue to mount. *Plastics Materials* (confidential; pp. 10) states that while the major part of the output of the industry goes for direct and indirect military needs, civilian uses such as transportation, communications, medicinal needs, etc., will be met.
(Department of Commerce, Bureau of Foreign and Domestic Commerce)

[This record is an attempt to select from the many documents coming to the attention of WAR PROGRESS those studies which would be of most interest to readers. The list is by no means comprehensive, and no attempt has been made to evaluate reports for accuracy. Whether reports are available depends on the policy of each individual agency.]

SELECTED MONTHLY STATISTICS

Cost of Living — Income Payments — Federal Finance

	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
COST OF LIVING — ALL ITEMS (1935–39=100)	p124.1	122.8	121.0	119.0	115.1	99.0	102.1
Food	p115.6	115.3	114.5	113.5	112.9	101.5	100.6
Other than food	p140.6	137.4	133.6	129.6	119.6	94.2	105.1
INCOME PAYMENTS — TOTAL (million dollars)	p11,161	11,222	10,443	10,782	8,913	5,716	6,081
Salaries and Wages	p8,038	7,918	7,754	7,327	6,182	3,690	3,903
Manufacturing, mining, agriculture, construction	p6,267	6,173	6,045	5,932	5,177	2,981	3,261
Government	p1,764	1,734	1,694	1,369	937	530	486
Military	p831	810	793	547	239	35	33
Nonmilitary	p933	924	901	822	698	495	453
Other	p7	11	15	26	68	179	156
Other income payments	p3,123	3,304	2,689	3,455	2,731	2,026	2,178
Income payments, annual rate (adjusted for seasonal, billion dollars)	p139.0	137.6	135.0	122.8	109.7	68.2	73.4
FEDERAL FINANCE (GENERAL FUND)							
Expenditures — Total (billion dollars)	7.4	7.5	7.3	6.4	4.0	.7	.5
War	7.1	7.0	6.7	6.1	3.6	.1	-
Nonwar	.3	.5	.6	.3	.4	.6	.5
Revenues — Total	1.5	1.5	5.2	.6	.6	.3	.3
Income Taxes	1.0	1.0	4.7	.2	.2	-	.1
Other	.5	.5	.5	.4	.4	.3	.2
War Bond Sales	1.3	1.5	.9	.7	.6	-	-
"E"	1.0	1.0	.7	.5	.4	-	-
"F" and "G"	.3	.5	.2	.2	.2	-	-
Net Debt	123.2	117.2	111.3	93.0	65.8	37.4	33.5

*Federal Finance, May; Cost of Living and Income Payments, April. p Preliminary.

PRODUCTION PROGRESS

General Summary (Value of production, in millions dollars)

		Total Program	Total Munitions & Construction	Total Munitions	Total War Construction (Govt Financed)	Miscel. Munitions	
Valuation of Actual Production	1942						1942
	1st Quarter Avg.	2,790	2,328	1,648	681	453	1st Quarter Avg.
	2nd Quarter Avg.	4,233	3,554	2,440	1,114	629	2nd Quarter Avg.
	3rd Quarter Avg.	5,557	4,780	3,223	1,557	735	3rd Quarter Avg.
	October	5,864	4,997	3,548	1,449	770	October
	November	6,223	5,323	3,943	1,380	855	November
	December	6,574	5,595	4,370	1,225	896	December
	1943						1943
	January	6,227	5,249	4,045	1,204	853	January
	February	6,515	5,456	4,274	1,182	836	Febuary
	March	6,942	5,817	4,662	1,155	882	March
	April	7,320	6,137	4,989	1,148	977	April
Valuation of Schedules	May		6,481	5,457	1,024	991	May
	June		6,707	5,799	908	974	June
	July		6,984	6,112	872	965	July
	August		7,219	6,366	853	949	August
	September		7,362	6,570	792	959	September
	October		7,467	6,703	764	959	October
	November		7,496	6,774	722	922	November
	December		7,357	6,701	656	860	December
	1942 Actual	56,400	47,902	33,793	14,109	7,974	1942 Actual
1943 Actual plus Schedule			79,732	68,452	11,280	11,127	1943 Actual plus Schedule
1943 Required Production			80,781	69,501	11,280	10,999	1943 Required Production
1943 Actual plus Schedule as % of Required Production			98.7	98.5	100.0	101.2	1943 Actual plus Schedule as % of Required Production

		Combat Munitions (a)	Aircraft & Aircraft Munitions	Ground Army Munitions (b)	Naval Vessels, Ordnance, & Equip. (Incl. Army Aux.)	Merchant Vessels & Maintenance	
Valuation of Actual Production	1942						1942
	1st Quarter Avg.	1,195	515	279	300	100	1st. Quarter Avg.
	2nd Quarter Avg.	1,811	740	475	431	164	2nd Quarter Avg.
	3rd Quarter Avg.	2,488	953	728	587	220	3rd Quarter Avg.
	October	2,778	1,038	822	713	205	October
	November	3,088	1,161	911	753	263	November
	December	3,474	1,323	1,118	747	286	December
	1943						1943
	January	3,192	1,290	896	723	283	January
	February	3,438	1,374	955	792	317	Febuary
	March	3,780	1,526	1,021	893	340	March
	April	4,012	1,649	1,066	919	378	April
Valuation of Schedules	May	4,466	1,860	1,097	1,094	415	May
	June	4,825	2,057	1,184	1,157	427	June
	July	5,147	2,238	1,259	1,215	435	July
	August	5,417	2,388	1,339	1,250	440	August
	September	5,611	2,551	1,375	1,242	443	September
	October	5,744	2,650	1,418	1,240	436	October
	November	5,852	2,767	1,445	1,224	416	November
	December	5,841	2,843	1,408	1,201	389	December
	1942 Actual	25,819	10,148	7,296	6,169	2,206	1942 Actual
1943 Actual plus Schedule		57,325	25,193	14,463	12,950	4,719	1943 Actual plus Schedule
1943 Required Production		58,502	25,540	14,760	13,483	4,719	1943 Required Production
1943 Actual plus Schedule as % of Required Production		98.0	98.6	98.0	96.0	100.0	1943 Actual plus Schedule as % of Required Production

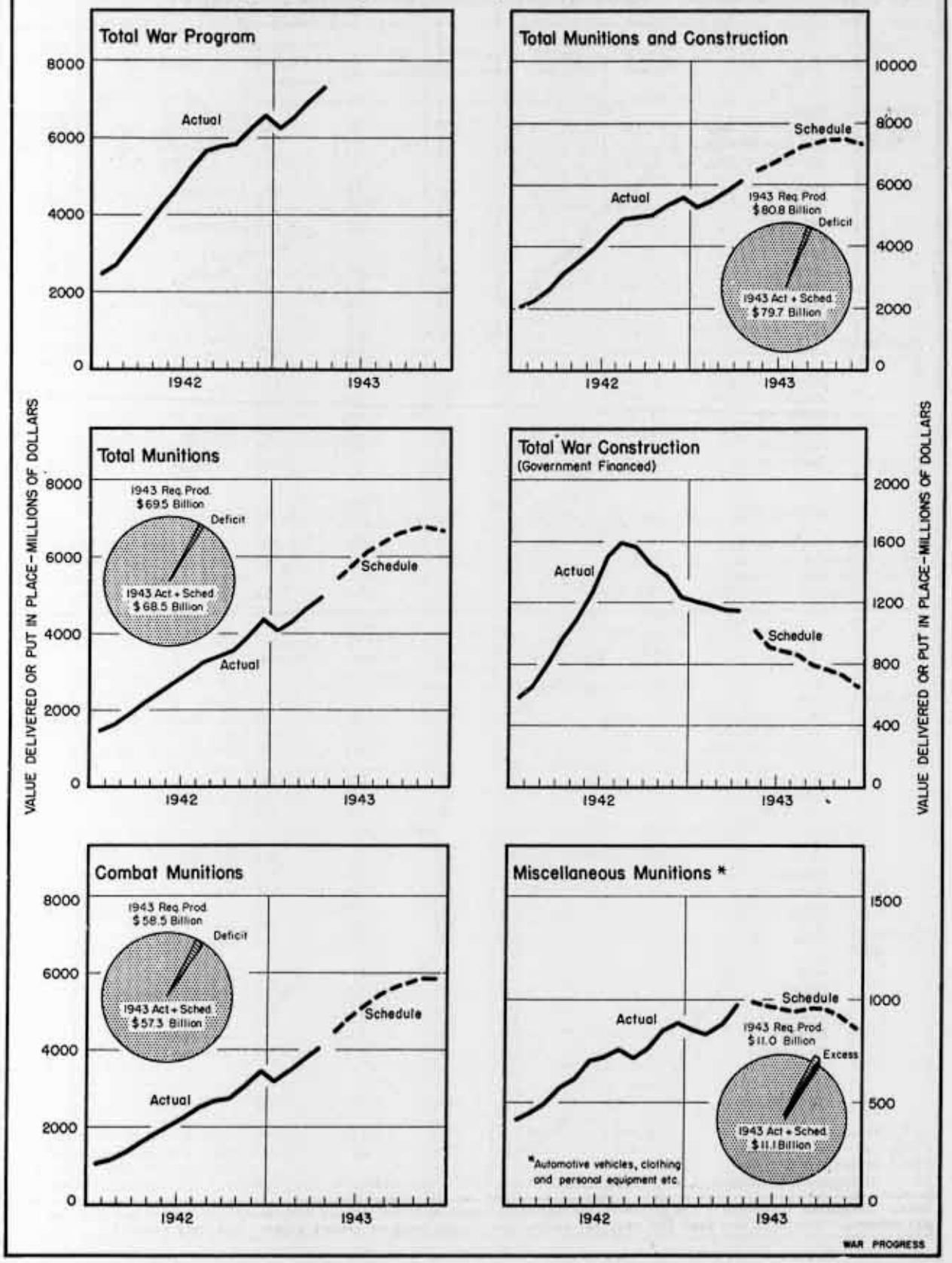
Valuation of Actual Production

Valuation of Schedules

Note: May 1 schedules for aircraft munitions, ground army munitions, and other army items; April 1 for all others. Schedules are used for required production in aircraft and aircraft spares, navy vessels, and war construction. Figures incorporate latest revisions for 1942 and 1943. (a) Aircraft and aircraft munitions; ground army munitions; naval vessels, ordnance, and equipment; army auxiliaries; merchant vessels and maintenance. (b) Ground army ordnance, signal and related equipment.

PRODUCTION PROGRESS

General Summary—Munitions, Construction, Miscellaneous.



PRODUCTION PROGRESS

Aircraft-Ordnance (Value of production, in millions of dollars)

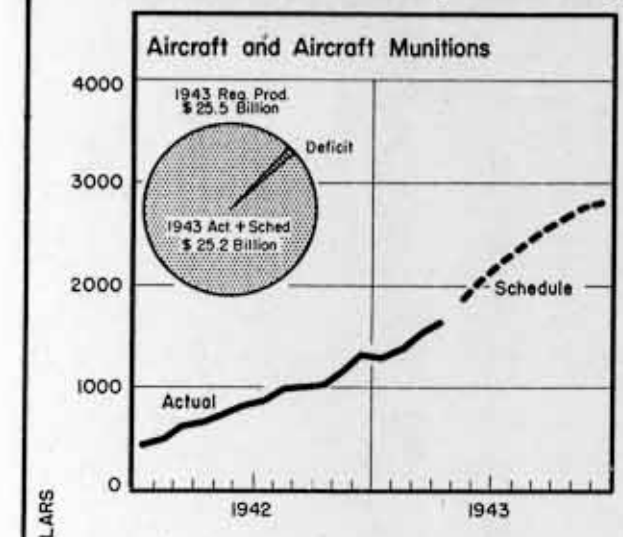
		Combat Planes	Aircraft Armament	Aircraft Ammunition	Artillery & Equipment	Artillery & Tank Cannon Ammunition		
Valuation of Actual Production	1942 1st Quarter Avg.	180	19	34	21	48	1942 1st Quarter Avg.	Valuation of Actual Production
	2nd Quarter Avg.	233	29	46	31	81	2nd Quarter Avg.	
	3rd Quarter Avg.	294	30	62	55	102	3rd Quarter Avg.	
	October	313	34	68	69	101	October	
	November	368	39	69	95	122	November	
	December	421	41	90	121	105	December	
	1943						1943	
	January	361	38	88	105	95	January	
	February	442	38	80	123	87	February	
	March	513	41	76	120	107	March	
	April	575	42	91	126	95	April	
Valuation of Schedules	May	701	42	96	110	112	May	Valuation of Schedules
	June	790	42	129	108	126	June	
	July	875	45	159	106	136	July	
	August	951	47	179	113	155	August	
	September	1,040	47	195	115	163	September	
	October	1,118	47	151	111	169	October	
	November	1,188	53	120	100	171	November	
	December	1,251	22	113	95	178	December	
	1942 Actual	3,221	349	653	603	1,020	1942 Actual	
1943 Actual plus Schedule		9,805	504	1,477	1,332	1,594	1943 Actual plus Schedule	
1943 Required Production		9,805	516	1,700	1,355	1,743	1943 Required Production	
1943 Actual plus Schedule as % of Required Production		100.0	97.7	86.9	98.3	91.4	1943 Actual plus Schedule as % of Required Production	

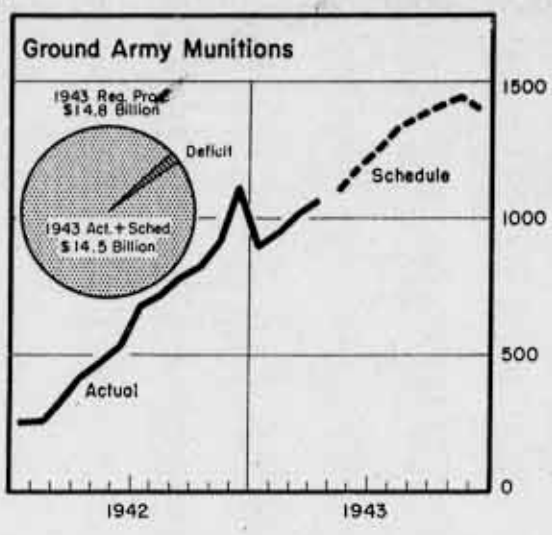
		Antiaircraft Guns & Equip.	Antiaircraft Ammunition	Small Arms & Infantry Weapons	Small Arms & Infantry Weapon Ammunition	Combat Vehicles		
Valuation of Actual Production	1942 1st Quarter Avg.	19	12	17	42	105	1942 1st Quarter Avg.	Valuation of Actual Production
	2nd Quarter Avg.	42	22	30	81	147	2nd Quarter Avg.	
	3rd Quarter Avg.	79	32	39	121	209	3rd Quarter Avg.	
	October	96	15	46	136	226	October	
	November	96	17	51	137	243	November	
	December	112	23	56	164	396	December	
	1943						1943	
	January	119	21	56	175	206	January	
	February	119	16	56	171	251	February	
	March	124	20	60	192	282	March	
	April	131	25	58	206	293	April	
Valuation of Schedules	May	126	24	60	227	291	May	Valuation of Schedules
	June	129	27	68	247	311	June	
	July	126	39	73	277	323	July	
	August	137	35	78	311	326	August	
	September	142	54	83	330	306	September	
	October	145	57	86	335	319	October	
	November	152	51	84	329	337	November	
	December	136	53	82	318	338	December	
	1942 Actual	722	254	410	1,169	2,249	1942 Actual	
1943 Actual plus Schedule		1,586	422	844	3,118	3,583	1943 Actual plus Schedule	
1943 Required Production		1,615	439	784	3,110	3,583	1943 Required Production	
1943 Actual plus Schedule as % of Required Production		98.2	96.1	107.7	100.3	100.0	1943 Actual plus Schedule as % of Required Production	

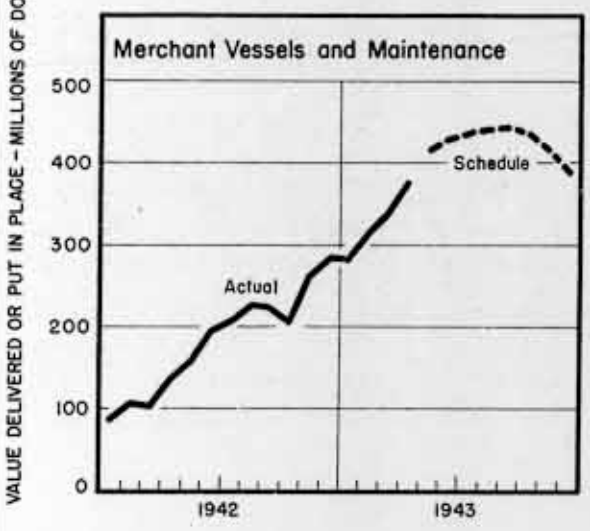
Note: Schedules as of May 1 for aircraft and aircraft munitions, and ground army munitions; as of April 1 for all others. Schedules are used for required production in the case of combat planes, and navy vessels.

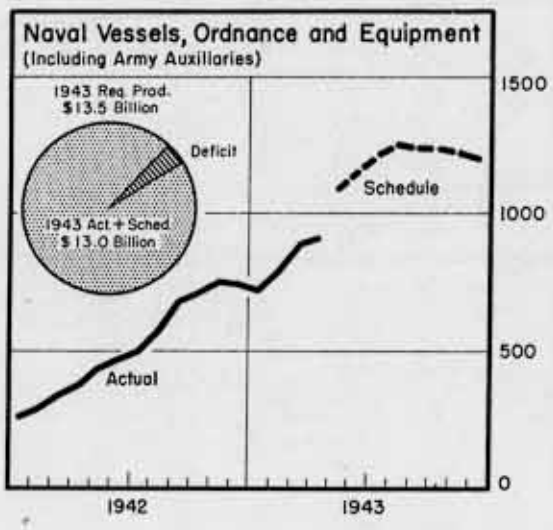
PRODUCTION PROGRESS

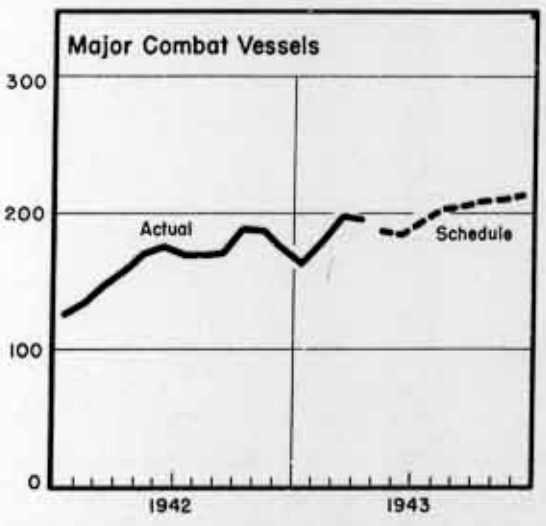
Selected Items – Aircraft, Ground Army, Ships

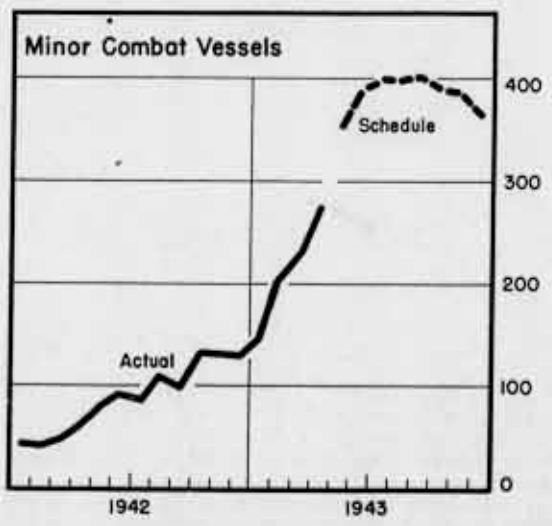












WAR PROGRESS

CONFIDENTIAL

PRODUCTION PROGRESS

General Summary (Value of production, in millions of dollars)

		Total Program	Total Munitions & Construction	Total Munitions	Total Construction	Miscel. Munitions		
Valuation of Actual Production	1942						1942	Valuation of Actual Production
	1st Quarter Avg.	2,715	2,253	1,568	685	410	1st Quarter Avg	
	2nd Quarter Avg.	4,116	3,437	2,319	1,118	573	2nd Quarter Avg.	
	3rd Quarter Avg.	5,364	4,587	3,041	1,546	662	3rd Quarter Avg.	
	October	5,713	4,846	3,397	1,449	663	October	
	November	6,089	5,189	3,836	1,353	723	November	
	December	6,562	5,583	4,367	1,216	812	December	
	1943						1943	
	January	6,173	5,145	4,018	1,127	726	January	
	February	6,420	5,361	4,254	1,107	719	February	
Valuation of Schedules	March		6,239	5,041	1,198	954	March	Valuation of Schedules
	April		6,503	5,384	1,119	941	April	
	May		6,818	5,746	1,072	958	May	
	June		7,036	6,047	989	974	June	
	July		7,225	6,300	925	980	July	
	August		7,337	6,460	877	955	August	
	September		7,548	6,716	832	945	September	
	October		7,566	6,808	758	905	October	
	November		7,563	6,883	680	877	November	
	December		7,555	6,959	596	853	December	
	1942 Actual		46,450	32,385	14,065	7,133	1942 Actual	
	1943 Schedule		81,896	70,616	11,280	10,787	1943 Schedule	
	1943 Req. Prod.		82,560	71,280	11,280	10,660	1943 Req. Prod.	
1943 Schedule as % of Req. Prod.			99.2	99.1	100.0	101.2	1943 Schedule as % of Req. Prod.	

		Combat Munitions (a)	Aircraft & Aircraft Munitions	Ground Army Munitions (b)	Naval and Army Vessels & Equip.	Merchant Vessels		
Valuation of Actual Production	1942						1942	Valuation of Actual Production
	1st Quarter Avg.	1,158	456	268	343	90	1st Quarter Avg	
	2nd Quarter Avg.	1,746	646	456	490	154	2nd Quarter Avg.	
	3rd Quarter Avg.	2,380	839	689	646	206	3rd Quarter Avg.	
	October	2,734	934	804	805	191	October	
	November	3,113	1,103	909	861	240	November	
	December	3,555	1,325	1,122	847	261	December	
	1943						1943	
	January	3,292	1,308	909	820	255	January	
	February	3,535	1,392	991	865	287	February	
Valuation of Schedules	March	4,087	1,651	1,008	1,086	342	March	Valuation of Schedules
	April	4,443	1,813	1,121	1,153	356	April	
	May	4,788	2,039	1,177	1,211	361	May	
	June	5,073	2,225	1,231	1,254	363	June	
	July	5,320	2,408	1,274	1,277	361	July	
	August	5,505	2,554	1,307	1,284	360	August	
	September	5,771	2,725	1,410	1,269	367	September	
	October	5,903	2,875	1,419	1,239	370	October	
	November	6,006	3,000	1,432	1,201	373	November	
	December	6,106	3,110	1,449	1,175	372	December	
	1942 Actual	25,252	9,185	7,074	6,951	2,042	1942 Actual	
	1943 Schedule	59,829	27,100	14,728	13,834	4,167	1943 Schedule	
	1943 Req. Prod.	60,620	27,378	14,852	14,283	4,167	1943 Req. Prod.	
1943 Schedule as % of Req. Prod.		98.7	99.0	99.1	97.3	100.0	1943 Schedule as % of Req. Prod.	

Note: Schedules as of March 1 for aircraft and aircraft munitions, ground army munitions, and other army items; as of Feb. 1 for all others. Schedules are used for required production in the case of aircraft and spares, navy vessels, and war construction. Figures incorporate latest revisions for both 1942 and 1943. (a) Includes aircraft and aircraft munitions, ground army and ground signal equipment; naval, army, and merchant vessels; excludes miscellaneous munitions. (b) Ground army ordnance and ground signal equipment.

PRODUCTION PROGRESS

Ships-Construction-Miscellaneous (Value put in place, in millions of dollars)

	Battleships Cruisers & Carriers	Destroyers	Submarines	Antisubmarine Vessels	Transports (Navy & Maritime)	
Valuation of Actual Production — 1942 1st Quarter Avg	60	59	17	43	1	1942 1st Quarter Avg
2nd Quarter Avg	73	75	20	83	6	2nd Quarter Avg
3rd Quarter Avg	71	77	23	96	10	3rd Quarter Avg
October	84	82	23	130	12	October
November	77	88	22	128	15	November
December	75	74	25	126	13	December
1943 January	68	70	25	144	11	1943 January
February	76	76	29	205	18	February
March	96	73	29	229	12	March
April	85	83	27	273	15	April
Valuation of Schedules — May	73	86	28	349	18	May
June	74	80	30	383	20	June
July	78	82	34	393	21	July
August	81	84	38	392	22	August
September	84	83	39	395	23	September
October	89	79	41	386	25	October
November	91	77	42	383	30	November
December	94	75	44	359	37	December
1942 Actual	850	876	249	1,031	92	1942 Actual
1943 Actual plus Schedule	989	948	406	3,891	252	1943 Actual plus Schedule
1943 Required Production	989	948	406	3,891	252	1943 Required Production
1943 Actual plus Schedule as % of Required Production	100.0	100.0	100.0	100.0	100.0	1943 Actual plus Schedule as % of Required Production

	Landing Vessels	Industrial Facilities	Aircraft Fields & Bases	Clothing & Personal Equip	Automotive Vehicles & Equip	
Valuation of Actual Production — 1942 1st Quarter Avg	2	352	61	98	134	1942 1st Quarter Avg
2nd Quarter Avg	7	512	124	142	184	2nd Quarter Avg
3rd Quarter Avg	84	662	236	178	211	3rd Quarter Avg
October	150	681	211	191	184	October
November	143	635	201	204	187	November
December	130	600	160	214	209	December
1943 January	80	588	141	221	173	1943 January
February	67	577	151	208	181	February
March	91	542	152	227	204	March
April	49	526	151	207	222	April
Valuation of Schedules — May	71	403	155	202	241	May
June	71	321	142	212	249	June
July	73	316	133	202	271	July
August	73	294	131	188	277	August
September	70	263	130	183	291	September
October	64	249	130	181	293	October
November	60	223	122	203	270	November
December	54	198	117	202	204	December
1942 Actual	702	6,492	1,832	1,864	2,168	1942 Actual
1943 Actual plus Schedule	823	4,500	1,655	2,436	2,876	1943 Actual plus Schedule
1943 Required Production	823	4,500	1,655	2,375	3,055	1943 Required Production
1943 Actual plus Schedule as % of Required Production	100.0	100.0	100.0	102.6	94.1	1943 Actual plus Schedule as % of Required Production

Note: Schedules as of May 1 for clothing and personal equipment, and automotive vehicles and equipment. As of April 1 for all others. Schedules are used for required production in all cases except clothing and personal equipment, and automotive vehicles and equipment.

The President

1

WAR PROGRESS

Confidential
(British Secret)

May Production—
And What Remains to Be Done

Number 143 June 11, 1943

42% of '43 is Gone—64% to Go

Production in May levels off; pace must quicken during last seven months if full-year requirements for munitions and war construction are to be realized.

WAR OUTPUT suffered a minor relapse last month. Though munitions, alone, were up slightly—2%—to $5,080,000,000 (preliminary), this was more than offset by a large, but scheduled, drop in war construction. And total munitions and war construction, at $6,100,000,000, were down 1%. (Later revisions conceivably could convert this small minus into a small plus.)

REPEAT APRIL LAG

In terms of meeting schedule, the May performance was identical with that of April. Munitions and war construction lagged 5% behind forecast; munitions alone were 6% short.

May results typify the uncertainty of month-to-month war output. Though schedules still call for steady monthly increases, apparently the economy—working at top speed—cannot grind out such steady increases regularly. Production will rise fairly steadily for a stretch of months—materials flow smoothly, assembly lines operate easily, and strikes are inconsequential—and then a cluster of operating snags interrupt the trend.

IRREGULAR PATTERN OF GAINS

That happened last year. Though gains were recorded in every month, they were extremely erratic, ranging from a high of 19% in March to a low of 0.5% in October. Seemingly, that irregularity is occurring again this year (and may occur increasingly as we near the production peak), as the following record of month-to-month gains indicates:

	Munitions	Mun. & Const.
Jan. to Feb....	+6%	+4%
Feb. to Mar....	+9	+7
Mar. to Apr....	+7	+6
Apr. to May....	+2	-1

From now on, the average monthly gain over May should be comparatively modest percentagewise—around 4%. But dollarwise it's a different story. Total munitions and war construction will have to advance from May's $6,100,000,000 to about $7,500,000,000 in November to keep up with 1943 schedules. And pushing up from a $6,000,000,000-a-month level to a $7,500,000,000-month—with materials and labor tight and most of the slack taken out of the economy—is an imposing task. Small gains from the current high level will come much harder than larger gains from the much lower base of, say, a year ago.

GROUND TO MAKE UP

The nature of the 1943 production pattern is suggested by five months' results: 42% of the year has elapsed and 36% of the required munitions production and war construction has been realized. That leaves 64% to go. Whereas the first five months averaged 7% of the year's output per month, the last seven months will have to average 9%. May's output amounted to less than 8% of the year's total. These percentage figures look small, but on a dollar basis they assume their true proportion; they mean that output during the rest

of '43 will have to average $1,300,000,000 per month more than production in May.

For total munitions, 33% of required output has been realized—leaving 67% to go (chart, page 4).

HOW VARIOUS ITEMS STAND

One of the most advanced major programs is construction. Requirements here are on the decline, and more than half the 1943 work has been done. In contrast, airplanes have completed only 27% of the newly revised schedule, and output from now on must average better than 10% per month of '43 requirements, as against the 5% average from January through May. And among individual items, the percentages of accomplishment so far show even greater extremes with respect to elapsed time—42%—viz.:

Item	% of Goal to Date
Bomb clusters (6-bomb type)	47%
Thompson submachine guns...	45
Medium tanks.....	42
Field howitzers, 105mm.....	40
Liberty cargo vessels.....	40
Destroyers.....	40%
Field guns, 155mm.....	39
A.C. machine guns, .50 cal.	36
Infantry radios.....	36
Flying Fortress & Mitchell bombers.....	32
Medium armored cars.	31
Field artillery radios.....	31
Garand rifle .30 cal.....	29
1000-lb. HE bombs.....	27
Lockheed "Lightning" fighters.....	24
HE ammunition for 105mm. howitzers.....	21
Gen. communications radio..	20
Tankers.....	19
500 lb. HE bombs.....	18
Air-borne bombing radar....	16
Carbines, .30 cal.....	13
Destroyer escort vessels...	12
Frigates.....	0

Undoubtedly many items will attain or even overshoot their current requirements for the year. But present indications are that a substantial proportion—notably in the ammunition, aircraft, and antisub programs—will fall short of present requirements. And the overall inference is that when the year is done, the aggregate goal of $81,000,000,000 for munitions and war construction will not be realized. Indeed, at present only about $80,000,000,000 of this requirement has been scheduled out.

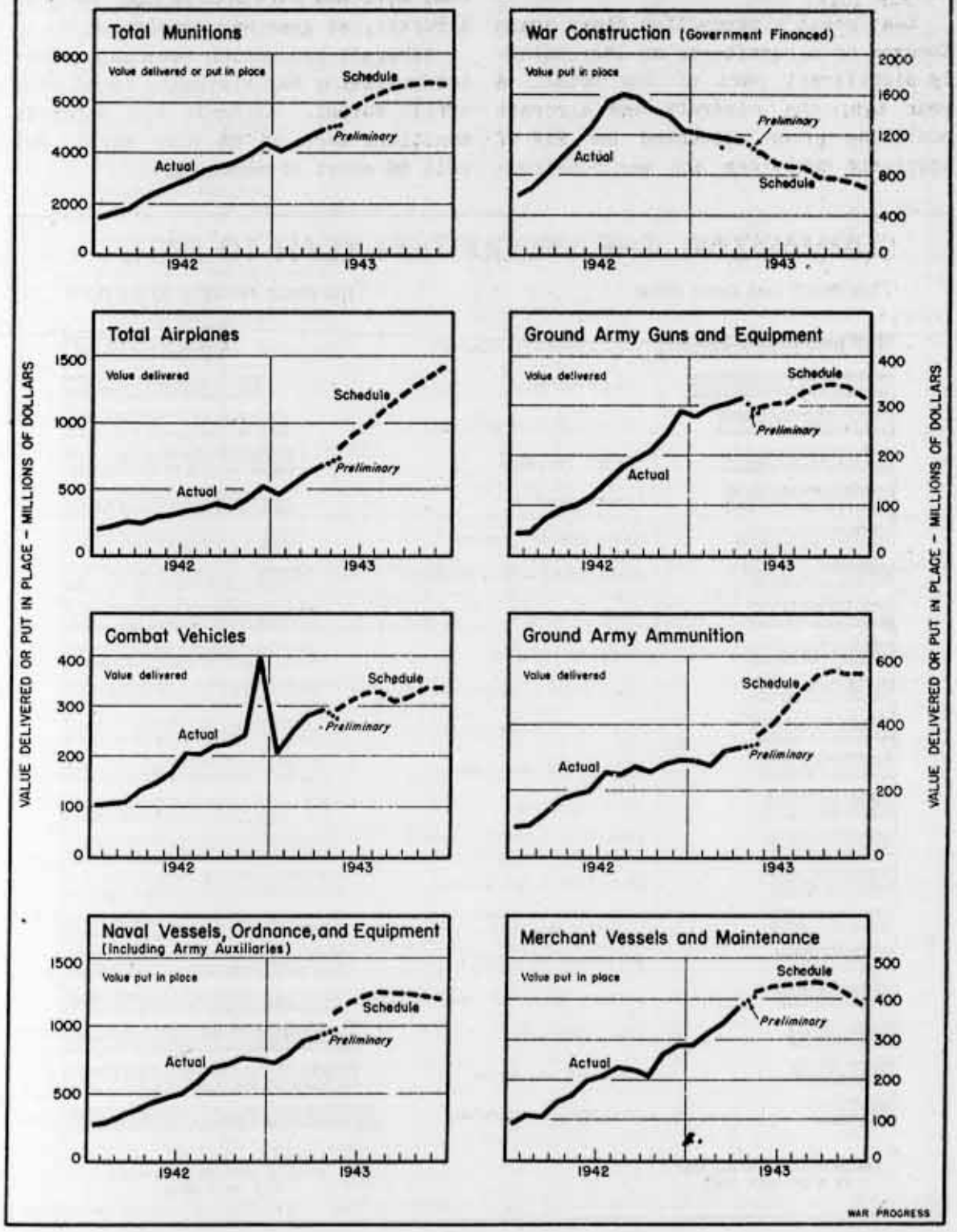
MAY MISS BY 5%

And the record of lags behind schedules since the start of the year suggests that the future lags are not apt to run much lower than 5% for munitions and war construction, and 6% for munitions alone. On that basis, 1943 munitions and war construction would reach around $77,000,000,000; similarly, mu-

IN THIS ISSUE:

MAY WAR OUTPUT LEVELS OFF; 5% BEHIND SCHEDULE

Drop in war construction offsets a small gain in total munitions. Aircraft, ships, ground army guns and equipment, etc. lag behind first-of-month schedule.



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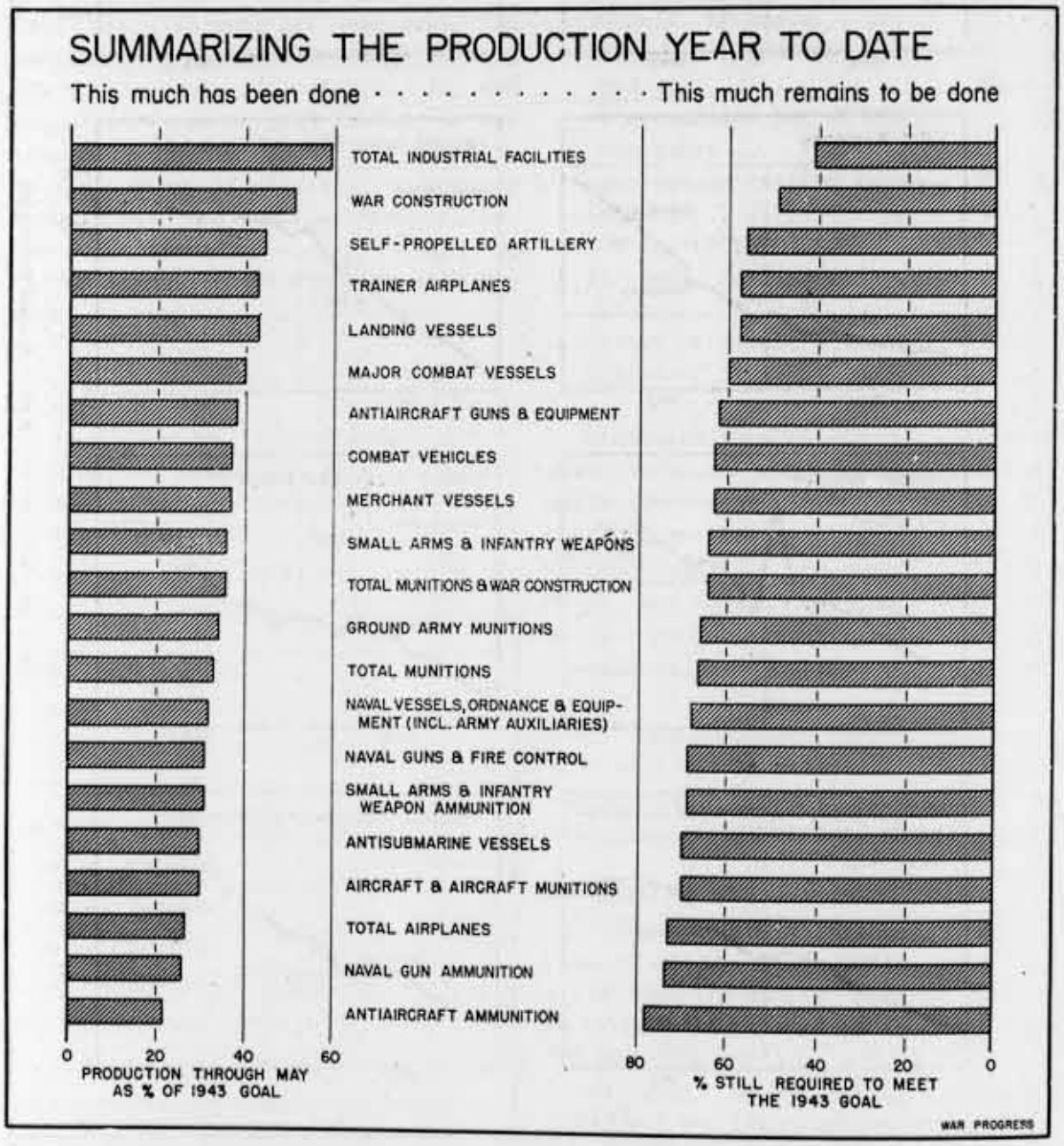
nitions will amount to perhaps $66,000,000,000 as against the $68,500,000,000 schedule and the $69,500,000,000 goal.

Aircraft

Last month's production story again focuses on aircraft—as an increasingly significant part of the total. A year ago, the aircraft and aircraft munitions group accounted for 21% of aggregate munitions and war construction; last month, at $1,755,000,000, it was 29%; and, by the end of this year, aircraft will come close to 40% of total schedules. Thus it will become more and more true to say, "As goes aircraft, so goes war production."

Aircraft production was a major factor in lifting May virtually level with April output. Aircraft and aircraft munitions were up 6% over April, but fell 5% short of schedule.



PRODUCTION PROGRESS — Preliminary

Value delivered or put in place — millions of dollars.

	May Preliminary	April Actual	% Change	May Schedule*	% Change May Prelim. vs. Schedule
TOTAL MUNITIONS AND WAR CONSTRUCTION	6,100	6,137	- 1	6,422	- 5
TOTAL MUNITIONS	5,080	4,989	+ 2	5,402	- 6
Aircraft and Aircraft Munitions	1,755	1,649	+ 6	1,856	- 5
Airplanes	746	683	+ 9	807	- 8
Aircraft Ordnance	134	133	+ 1	134	0
Aircraft Signal Equipment	143	143	0	153	- 7
Other (spares, equipment and maintenance, etc.)	732	690	+ 6	762	- 4
Ground Army Munitions	1,011	1,066	- 5	1,097	- 8
Combat Vehicles and Equipment	303	315	- 4	313	- 3
Guns and Equipment (a)	287	315	- 9	296	- 3
Army Ammunition	336	326	+ 3	363	- 7
Ground Signal Equipment	85	110	-23	125	-32
Naval Vessels, Ordnance and Equipment (incl. Army Auxiliaries)	976	919	+ 6	1,031	- 5
Merchant Vessels and Maintenance	403	378	+ 7	427	- 6
Miscellaneous Munitions	935	977	- 4	991	- 6
WAR CONSTRUCTION (Government Financed)	1,020	1,148	-11	1,020	†

* As of May 1. (a) Artillery and equipment; anti-aircraft guns and equipment; small arms and infantry weapons. † Schedule used for preliminary.

Airplane acceptances were up 9% on a dollar bases—10%, as previously reported, in numbers and airframe weight (WP-June4'43,p1).

Other aircraft items equaled or bettered April with actual results showing: Aircraft signal equipment the same, but 7% behind schedule; airplane ordnance, up 1% and on schedule; airplane spares and parts, up 7% but 5% behind schedule.

Naval Ships

About $975,000,000 of work (preliminary estimate) was done on naval vessels in May, including naval ordnance and equipment as well as auxiliary ships built for the Army. This exceeded the value put in place in April by 6%, but was 5% behind the schedule.

Tonnage actually delivered was the highest on record: 198.500 displacement tons (excluding conversions) compared with 157,000 in April and 186,000 in March. However, May 1 schedules called for the delivery of 234,000 tons.

All groups of naval vessels failed to come up to schedule, with landing craft—unlike the previous month (WP-May14'43,p3)—making the best and auxiliaries the worst showing:

	Deliveries (Tons)	% Change from April	% Behind Schedule
Major combats	70,400	+6%	-17%
Minor combats	51,100	+65	-15
Landing craft	48,800	+48	-8
Auxiliaries*.	28,200	-8	-23
Total	198,500	+23%	-15%

*Including transports.

Major additions to the fleet last month were the 27,000-ton aircraft car-

KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program - Checks paid (millions of dollars)	1,604	1,932	1,462	1,348	840
War bond sales (millions of dollars)	117	277	576	184	154
Wholesale prices (1926=100)					
All commodities	p103.9	p104.0	p103.7	100.1	98.7
Farm products	p126.3	p126.7	p124.8	110.6	105.6
Foods	110.6	110.7	109.4	103.3	99.7
All other than farm products and foods	p96.9	p96.9	p96.9	96.1	95.9
Petroleum:					
Total carloadings	54,267	54,081	57,762	51,342	55,135
Movement of cars into the East	28,886	28,706	31,058	25,358	22,141
East coast stocks for civilian use (1940-41=100 Seas. Adj.)	25.6	25.7	25.5	53.3	n.a.
Total stocks of residual fuel oil (thousands of barrels)	67,210	67,682	67,577	75,219	79,806
Bituminous Coal:					
Production (thousands of short tons, daily average)	1,967	1,936	1,595	2,149	2,086
Exports (no. of freight cars unlooded for export Friday, excl. grain)					
Atlantic Coast ports	2,314	2,396	2,003	1,144	1,606
Gulf Coast ports	340	354	400	431	541
Pacific Coast ports	n.a.	1,274	1,124	1,021	501
Unused steel capacity (% operations below capacity)	2.5	1.6	0.6	1.4	0.7
Department store sales (% change from a year ago)	+1	+43	+12	+10	+7

n.a. not available. p. preliminary.

rier "Bunker Hill," the 11,000-ton carrier "Cowpens," and 13 destroyers. Only four of the eight submarines scheduled were delivered, and the light cruiser "Oakland" is still incomplete. Altogether, May major combat ship deliveries ran 6% ahead of the previous month in tonnage.

In the minor combat group, 16 destroyer escort vessels were delivered, six more than in April, but four behind schedule. Three auxiliary aircraft carriers were scheduled and delivered. The gunboat program, however, being built in Canadian yards, was again delayed. Four were due but none was delivered; 11 were scheduled as of the first of the month and only one was delivered. This helped to pull the minor group 15% below schedule.

Landing-craft production also spurted last month—765 units totaling 48,800 tons were delivered, against 684 vessels aggregating 33,000 tons in April. However, some 53,000 tons were scheduled, leaving a deficit of 8%. It is significant at this time, when there is so much invasion talk, that landing-craft production will be increased considerably in 1944 (page 7).

Merchant Ships

The upward trend of merchant shipbuilding continued in May Delivery of 1,786,000 deadweight tons (173 ships) was 11% above April and equaled an annual rate of 21,400,000 tons.

For the second time in a row, deliveries exceeded schedules—by 3% last month, 4% in April. Liberties again set the pace with the delivery of 120 units, 10 more than the previous month and three ahead of schedule. Average building time for these ships was whittled down a bit further, from 57.2 days in April to 56.7 days in May.

Completion of 15 ocean-going tankers not only set a new high for this program, but was two ahead of schedule. Twenty minor-type vessels (13 coastal cargo ships, one coastal tanker, four ore carriers, one concrete barge, and one wooden barge) were delivered, totaling 108,000 deadweight tons. This was a major gain—almost 200% above April—though 8% behind schedule.

Military types (tank-landing ships) likewise increased—six were delivered, compared with four in April; however, on a tonnage basis, this was 12% behind schedule. There was a 12% decline (in tonnage) in the delivery of standard type ocean-going freighters.

Army Ordnance

Ground army munitions remained above the billion-dollar-a-month mark first attained in December and reattained in March and April, but lagged 8% behind schedule and 5% behind April. Each of four major groups—guns, ammunition, combat vehicles, and signal equipment—were behind the May forecast (table, page 5).

Ammunition was above April—3%.

The ammunition showing would have been even better except for a sharp drop in antiaircraft ammunition; as an example, only 374,000 rounds of the 40mm. high-explosive shell were loaded in May, compared with 2,296,000 rounds in April. Moreover, ammunition for the 2.36-inch antitank rocket (bazooka) gun did an about-face—from 712,000 rounds in April, when it was 66% above schedule and 143% ahead of March, to 237,000 rounds in May, or 44% below schedule.

M-4s DOWN AS PLANNED

In the combat vehicle group, the M-4 medium tank continued to decline according to plan, but medium tank chassis for the 105mm. howitzer and the 3-inch gun

REVISION IN NAVAL PROGRAM

THE NAVY has raised its sights again: In a tentative building program developed for the purpose of estimating materials requirements for 1944, the dollar value of next year's deliveries of all naval ships is scheduled and planned at $8,600,000,000, as against $7,400,000,000 called for in the May 1 schedule—an increase of 16%. On the basis of work done, the new schedule represents a still larger margin of increase—$8,150,000,000 in 1944 against the May 1 goal of $6,200,000,000, or 32%. Large parts of the increases have not been fully authorized.

Major emphasis is on landing craft, which account for 96% of the expansion in total value of deliveries in 1944; next year's deliveries are now put at $1,100,000,000, compared with $205,000,000 in the old schedule—an increase of over 400%. In terms of scheduled value to be put in place, the landing craft rise is 670%.

In no other important categories are deliveries increased spectacularly by the new schedule. There is no change, for example, in destroyer deliveries, although work done in 1944 is to rise from nearly $700,000,000 to over $1,000,000,000, an augury of an increase in scheduled deliveries in 1945. The value of deliveries of destroyer escort vessels shows some increase—$2,900,000,000 over $2,800,000,000, nearly 5%; work done will increase 19%.

In terms of the total program—from July 1, 1940, through 1947—the new schedule raises the U.S. outlay for naval ships from $25,000,000,000 to $32,000,000,000, or 27%.

exceeded expectations. Production of the 7½-ton air-borne tank (T-9) jumped to 35 in May, compared with an initial output of seven in April, but the May schedule called for 50. Light tanks, including 260 M-5s (the Cadillac-engine-powered dual-control job with hydramatic drive) were right on schedule with 735 units. Heavy tanks (M-6s) were also on schedule; with three of the 60-tonners turned out.

Self-propelled artillery, a declining program, war generally below April but ahead of schedule. May marked completion of the 57mm. half-track anti-tank-gun program. All of these guns were for international aid. As a rule, wheeled artillery also was down, but the 155mm. field howitzer provided an exception: the 95 units turned out were 70% ahead of April, 19% higher than schedule, and a record for this piece of medium field artillery.

BOFORS BELOW APRIL

In antiaircraft guns, the Bofors 40mm. was 8% below both schedule and the April level—1,144 units against 1,230. The 37mm. antiaircraft gun dropped 24% below April—which was in keeping with the production pattern for all guns of this size. Production of this particular piece is slated to wind up in November. The rapidly rising 4.7-inch mobile antiaircraft gun program came in on schedule; 30 were produced as against three in April and one in March. Production of the .50 caliber antiaircraft machine gun was also on schedule: 2,575 units.

Small arms and infantry weapons made 93% of their schedule; individual items turned in a mixed performance: Machine guns met expectations; carbines were 9% below schedule (151,000 vs. 165,000); Springfield rifles were 20% below the production plan (54,082 instead of 68,000); but Garand rifles rose 3% above April and topped schedule to reach a new monthly high of 94,310.

Signal Equipment

In the highly complex and often-shifting signal equipment field, in which unit costs range from as little as $100 to as much as $100,000 per set, Army production was disappointing. Several new ground radar sets did not come into quantity production, as expected, and important air-borne sets—SCR-522 and RC-103—ran far behind schedule.

Poorest overall showing was in ground signal items, which constitute about one-third of the year's signal program; they ran 23% behind April and 32% behind schedule. Air-borne items (40% of the program) did better. Production equaled April, but a 7% gain was called for in the schedule.

Not all items, of course, lagged badly. The air-borne radar—SCR-695—ran 6% ahead of plan; the ground-to-air detector and ranging device—SCR-270—was only 3% behind.

NAVAL RADAR IMPROVES

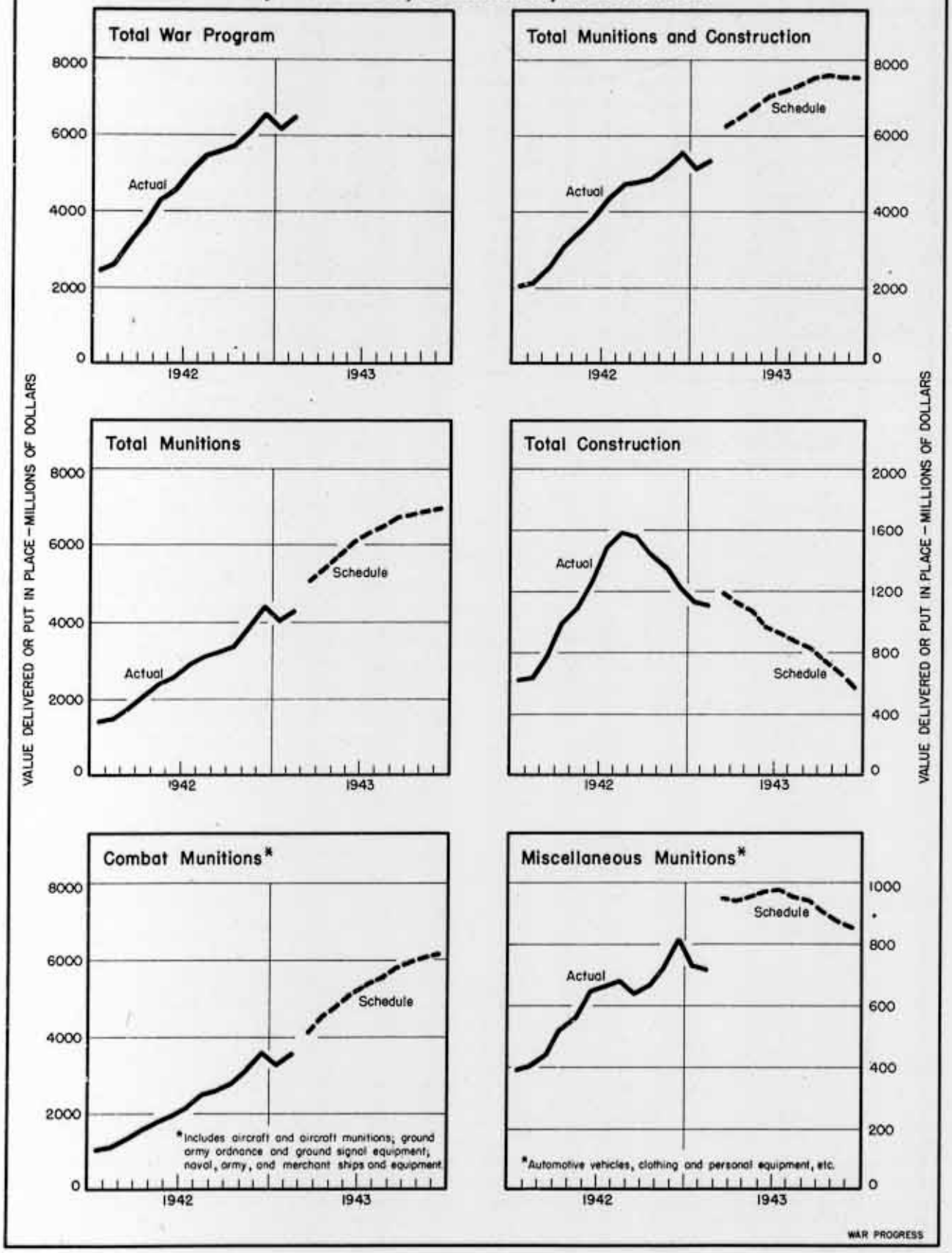
Output of army radar equipment of all kinds lagged far less behind April than did the output of nonradar items. But, contrariwise, radar items lagged farther behind schedule than did nonradar:

Item	% Change of May Output from April	Schedule
Radar signal equip...	- 7%	-23%
Fire control radar.	-26	-16
Other radar items..	+ 4	-25
Nonradar signal equip	-12	-16

Naval radar equipment has shown improvement relative to its first-of-the-month schedules. Output in November lagged 58% behind forecast, in January 31%, and today the lag is running between 10% and 15%.

PRODUCTION PROGRESS

General Summary — Munitions, Construction, Miscellaneous



WAR PROGRESS

Getting Our Bearings

Lacking prewar imports of essential jewel bearings for plane instruments, radar, etc., U.S. moved quickly to conserve supplies. Also developed own processes and facilities.

IN APRIL, 1942, 110,000 carats of synthetic sapphire were rushed by plane from England to help meet requirements of the American jewel-bearing makers.

In January of this year, a motorcyclist from the Philadelphia plant of Bendix Aviation Corporation met the evening train from Perth Amboy, N.J., every day to pick up jewels finished that day by the Moser Jewel Company and rush them to Bendix in time for work by the night shift.

HAND-TO-MOUTH STAGE

These two incidents characterize an 18-month period when manufacturers of aircraft instruments, radio and radar equipment, and fire-control devices did not know where their next day's supply of jewel bearings was coming from. About 120 jewel bearings go into the panel of the average military plane; navigation watches used in PT boats have 21 jewels.

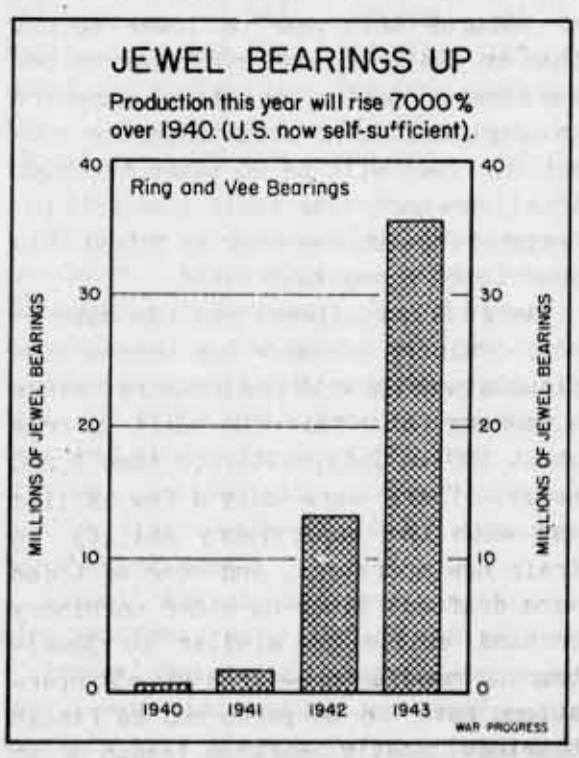
Jewel bearings are essential in extremely sensitive and accurate instruments because they can resist friction, vibration, and changes in climatic conditions. Because of their hardness, ruby and sapphire are best for use in "ring" and "vee" bearings. Sapphire is most commonly used.

WE MISS THE SWISS

In July, 1940, this country was 97% dependent on Europe for its jewel-bearing supply. Moreover, the United States had no productive facilities for synthetic sapphire and only the limited output of natural sapphire from two mines in Montana. In addition, exports from neutral Switzerland were greatly hampered by Axis regulations and in June, 1941, were virtually stopped when mail exports were halted. However, large reserves had been accumulated by three American watch manufacturers and one maker of instrument jewels. To conserve this supply, the Miscellaneous Minerals Division of the War Production Board, in cooperation with the Army and Navy Munitions Board, initiated the following measures:

(1) All jewel bearings were put under full allocations with shipment and use limited to the monthly schedules of the division. Use of large ring bearings was prohibited in all except military and railroad watches. Stocks previously earmarked for civilian watch use were reworked to fit the specifications of aircraft-instrument makers.

(2) The Defense Plant Corporation gave Bulova Watch Company an order to make enough machinery for 7,680,000 ring jewels and 4,320,000 vee jewels per year. DPC also helped finance the ex-



pansion of facilities of 10 jewel-bearing manufacturers; two other manufacturers who financed their own equipment were aided by certificates of necessity and high priorities. At the same time, DPC subsidized these manufacturers by agreeing to purchase their entire output for 1943 (later extended through 1944) at cost plus a fair profit and even provide working capital where it was necessary.

(3) A hard glass vee bearing was developed for use in small electrical instruments, and now comprises 75% of total vee bearings.

(4) Construction of production facilities was begun for large-scale manufacture of synthetic sapphire under a new American process.

START OF U.S. SAPPHIRE

The synthetic sapphire plants were completed in May, 1942, and output has since been adequate for all needs (production in 1943 is estimated at 30,000,000 carats). In addition, Montana mines may produce as much as 4,000,000 carats of natural this year (a lower output than in 1942, because synthetic is being substituted for the natural sapphire in many uses). And while sapphire output in 1943 will be 20 times the 1940 total, new machining facilities will increase ring- and vee-bearing output this year to 40 times 1940 total.

Aside from equipment and raw materials, training of labor has been a continuous problem with the industry, since a working force had to be built up from about 100 in July, 1941, to some 2,200 today. There were only a few skilled men with the supervisory ability to train new operators, and some of these were drafted. Since no other machinery or hand skills are similar to jewel-bearing manufacture—from 40 to 70 operations have to be performed to finish bearings, mostly less than 1/16th of an inch in diameter—many new workers grow discouraged during training and quit. Moreover, in some plants, wages were frozen at low levels; these companies could not compete for labor with other industries. The industry has experimented successfully with handicapped persons and retired workers. Women, incidentally, comprise 85% of the industry's working force today.

DOMESTIC OUTPUT ADEQUATE

By such measures and with the aid of renewed imports in 1942, the industry managed to scrape through on a hand-to-mouth basis over the past two years—in only two instances was an entire day's operation of a jewel-bearing consumer halted. Then in March, 1943, domestic production equaled requirements for the first time. And, from now on, it is expected that supply will continue to be adequate.

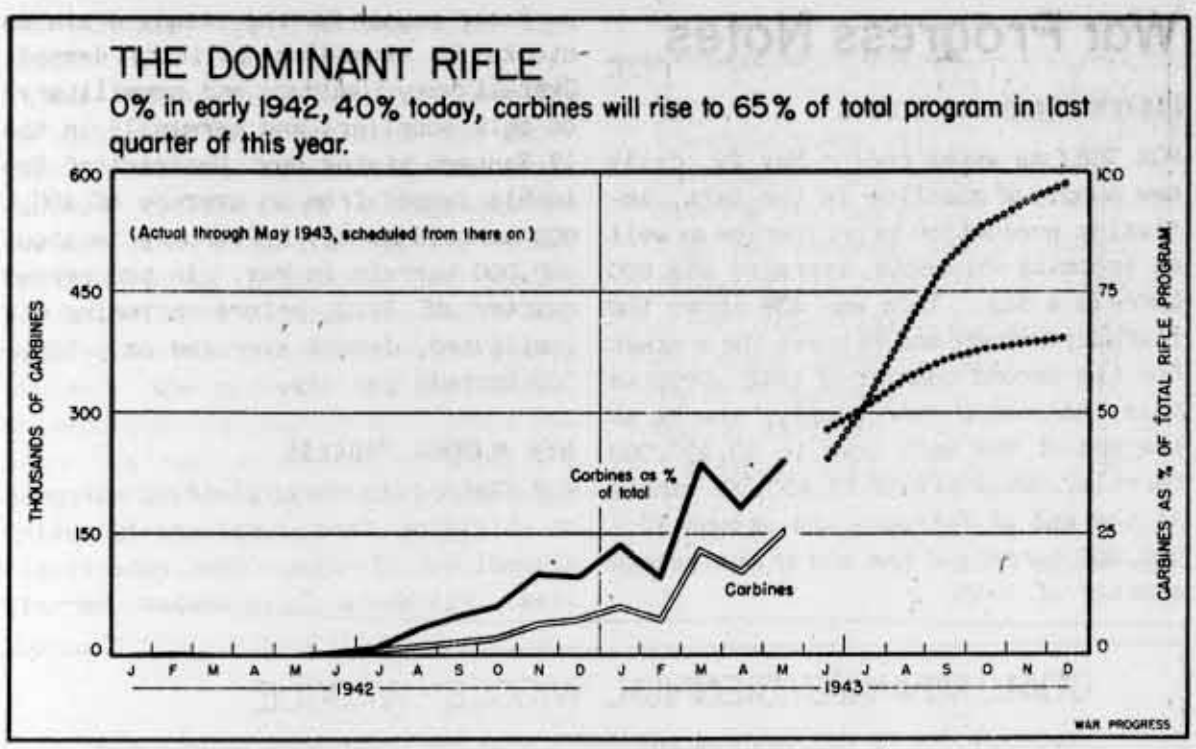
Comeback in Carbines

Adaptation of old Indian-fighter weapon fills needs of today's mobile, surprise warfare. From 7% of U.S. rifle output in 1942, it jumps to 53% this year.

IT WAS BACK in October, 1940, that Army Ordnance was ordered to develop a firearm with the following characteristics: (1) weight not to exceed five pounds, including sling; (2) range effective up to 300 yards; (3) semiautomatic firing. A year later, after having tested a dozen or so models submitted by various gunmakers, the Army chose a Winchester .30-caliber carbine.

EASY TO HANDLE

Until that decision, the carbine was obsolete equipment—a relic of Indian-fighting days, though production continued until the early 1900s. But mobile



surprise warfare has brought it back. Today ammunition bearers, communication specialists, engineers, artillery and tank personnel, members of heavy machine-gun and mortar teams, and officers need an easily handled weapon with more range than a pistol or revolver. The carbine, which is five pounds lighter and 7½ inches shorter than the Garand rifle, was the answer. (Paratroopers are equipped with a special carbine having a folding stock.)

MAJOR ONE-MAN WEAPON

Because of its wide utility, the carbine is becoming one of the major weapons in the rifle program. From 7% of total output of rifles in 1942, the proportion is scheduled to jump this year to 53% (65% in the last quarter).

The new carbines were first produced in quantity during June of last year, and, by the end of 1942, production had reached a 40,000-a-month rate.

So far this year, production has been erratically up, then down, with deviations from schedule varying from -1% in January to +27% in March:

	Production	Schedule	Deviation
January....	58,162	58,600	-1%
February...	41,045	93,800	-56
March.....	129,005	101,200	+27
April.....	102,555	153,000	-33
May.....	150,691	165,000	-9
Total.....	481,908	571,600	-16%

From now on during 1943, production is slated to rise steeply—to some 590,000 monthly in December. The full year's schedule calls for some 3,600,000 carbines as against A.S.P. required production of 3,800,000. Back in February, required production was 4,500,000. The program, incidentally, drops swiftly in the first half of 1944 to around 200,000 per month.

Almost 90% of last year's carbines were manufactured by the Inland Division of General Motors, although three other plants were in production. Four more manufacturers are now in the picture.

War Progress Notes

EASTERN GASOLINE STOCKS

FOR THE four weeks ending May 29, daily new supply of gasoline in the East, including production by refineries as well as incoming shipments, averaged 569,000 barrels a day. This was 43% above the February average and 9% above the average for the second quarter of 1942. Despite this increasing new supply, stocks at the end of May were down to 10,400,000 barrels, compared with 13,400,000 barrels at the end of February and around 15,600,000 barrels at the end of the second quarter of 1942.

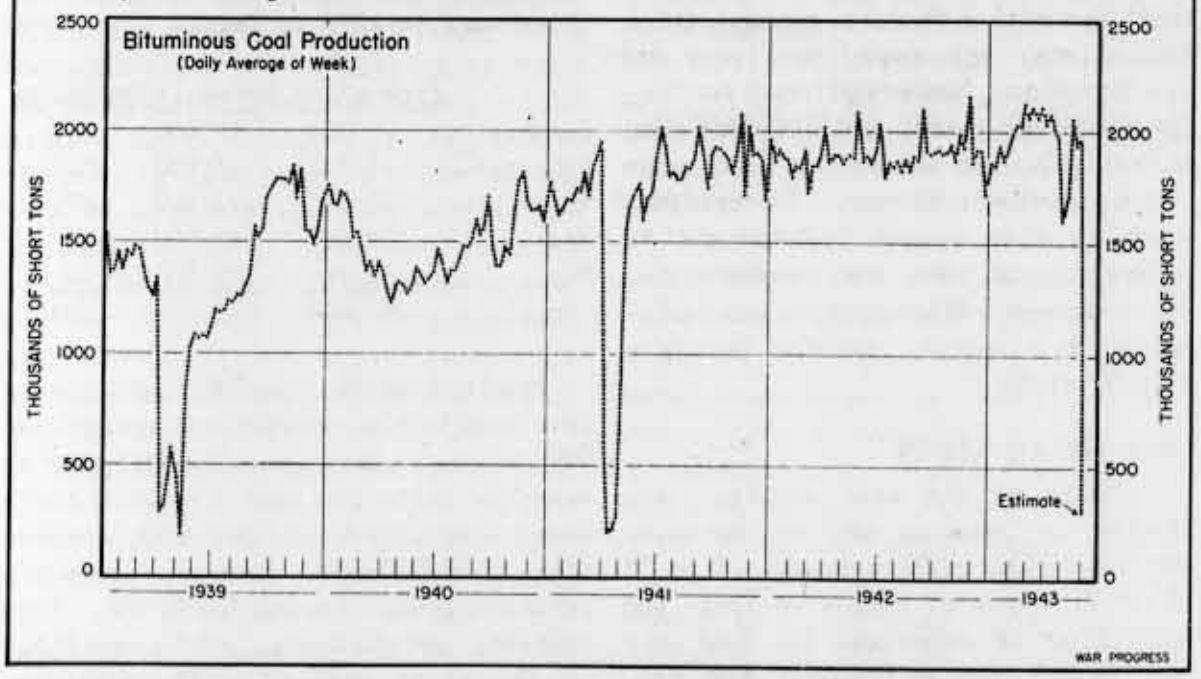
Basic reason for the steady drain on stocks is expanding military demand. Overall demand (military and nonmilitary) on bulk suppliers and terminals in the 17 Eastern states and District of Columbia jumped from an average of 400,000 barrels per day in February to about 600,000 barrels in May. In the second quarter of 1942, before rationing was instituted, demand averaged only 560,000 barrels per day.

NEW ALCOHOL PROCESS

FOR YEARS, farm chemurgists have dreamed of utilizing farm surpluses by making alcohol out of them. Obstinate realities: (1) Where is a market for all

COAL MINING'S BIENNIAL WIGGLE-WAGGLE

Production has its two-year ups and downs when the United Mine Workers and operators negotiate a new contract.



COAL MINING IN THE UNITED STATES TODAY BEARS A METAPHORICAL RESEMBLANCE TO ERIE COMMON ON THE NEW YORK STOCK MARKET IN THE SIXTIES. IN THOSE DAYS, IT WAS SAID IN WALL STREET ABOUT THE SANCTIMONIOUS DANIEL DREW: "DANIEL SAYS 'UP'—ERIE GOES UP. DANIEL SAYS 'DOWN'—ERIE GOES DOWN. DANIEL SAYS 'WIGGLE-WAGGLE'—IT BOBS BOTH WAYS." COAL MINING, THE CHART SHOWS, HAS ITS BIENNIAL UPS, DOWNS, AND WIGGLE-WAGGLES. THE CURRENT COAL STRIKE IS ESTIMATED TO HAVE COST THE COUNTRY 60,000 TONS OF STEEL; 12 BLAST FURNACES TO DATE HAVE HAD TO BE BLOWN OUT BECAUSE OF LACK OF COKE; AND THE RESULTANT SHORTAGE OF PIG IRON HAS FORCED A HALT IN THE OPERATIONS OF SEVERAL OPEN-HEARTH FURNACES.

that alcohol? (2) How reduce its high cost?

War solved the first problem—the synthetic rubber process can use 250,000,000 gallons of alcohol annually. And now a Department of Agriculture chemist seems to have solved the second by discovering a process for making alcohol which eliminates the use of expensive barley malt and simultaneously extracts the protein from the grain. Eliminating the barley malt alone reduces the cost of alcohol by about 10¢ a gallon; the protein recovered can bring 5¢ a pound as livestock feed, and up to 30¢ a pound as human food. It is extracted from the grain at the rate of 3 pounds of protein per gallon of alcohol.

The protein by-product has such potential value that eventually alcohol may become the "by-product" of the protein recovery process. This would make grain alcohol as cheap as molasses or synthetic alcohol, thus creating (1) a permanent market for surplus wheat and (2) tremendous implications for the synthetic rubber, motor fuel, and chemical industries.

Apart from these postwar implications, the new process can at once speed up grain alcohol distillation.

IDLE MINES

AS OF MAY 1, U.S. coal stocks amounted to 49 days' supply, or 78,665,000 tons. On average, steel plants (37 days' supply), Class I railroads (37 days'), and by-product coke ovens (39 days') are worse off than other industrial users. Moreover, these average figures don't indicate the fact that some companies or plants within these groups have even smaller stocks. Thus, there are reports that shutdowns will be witnessed if the strike continues for a week or two. Some steel mills are particularly vulnerable (page 12).

Here's how the major consumers of coal stood as of May 1:

User	Days' Supply
Electric power util.....	108
By-product coke ovens.....	39
Steel & rolling mills.....	37
Coal gas retorts.....	81
Cement mills.....	50
Other industrial.....	66
Railroads Class I.....	37
Total industrial...	56
Retail dealers.....	21
Average Supply.....	49

A day of idleness in the coal mines costs about 2,250,000 tons of bituminous coal.

REPORTS ON REPORTS

Point of View

Worker's Reactions to Absenteeism (confidential; pp. 17) states that 59% of the workers gave illness as the reason for their own absences, but attributed only 42% of their fellow workers' absences to the same cause. This memorandum is part of a study of 1,800 workers in 18 war plants, the findings of which are tabulated in *Absenteeism* (confidential; pp. 42). "Acts of God"—severe illness, death in the family, extremely bad weather, etc.—accounted for 60% of the absences studied; "the system"—plant and community conditions—20%, while 16% were due to the workers' own fault.
(Office of War Information, Bureau of Special Services)

Paint Problems

Linseed oil, the principal drying oil used in the paint industry, is doubling as a food. *Paint and Varnish* (confidential; pp. 10) states that the scarcity of this and other driers, solvents, casein, and resins continues critical.

Fish-oil supply has suffered from lack of of manpower and the diversion of many of the larger fishing boats to auxiliary naval uses.
(Department of Commerce, Bureau of Foreign and Domestic Commerce)

Who Understands Rationing?

Women over 40 have more difficulty with food rationing than younger women; those with grammar school education, more than high school and college graduates; farm women, more than city dwellers. Those are the findings of *Problems of Food Rationing* (confidential; pp. 10), which is based on 500 interviews. (Office of War Information, Bureau of Special Services)

[This record is an attempt to select from the many documents coming to the attention of WAR PROGRESS those studies which would be of most interest to readers. The list is by no means comprehensive, and no attempt has been made to evaluate reports for accuracy. Whether reports are available depends on the policy of each individual agency.]

SELECTED MONTHLY STATISTICS

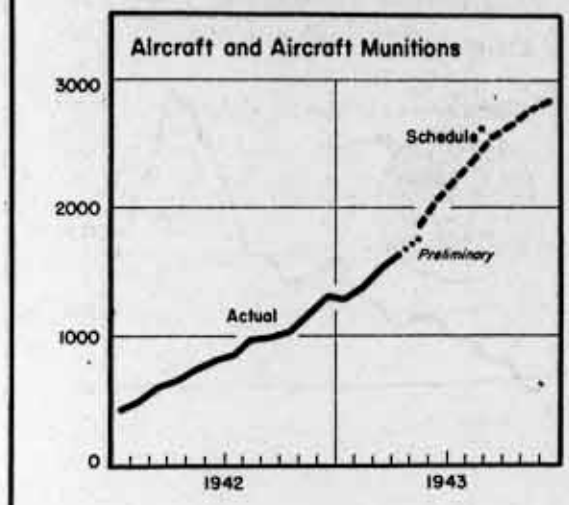
Federal Employment – Labor Turnover – Food Production

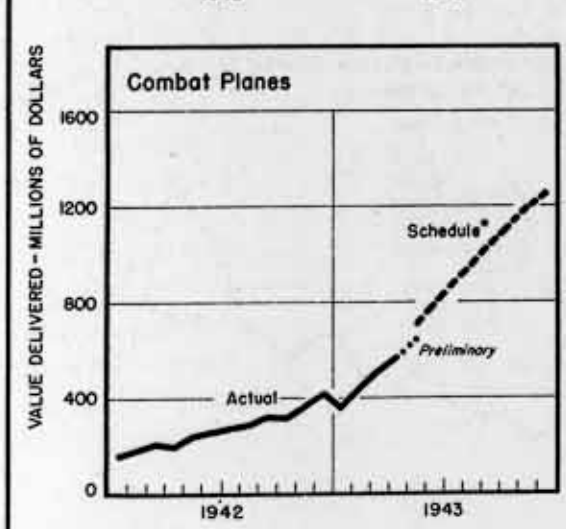
	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
FEDERAL CIVILIAN EMPLOYMENT (thousands)	p3,072	3,026	2,977	2,741	2,093	893	865
War	p2,239	2,234	2,192	1,880	1,226	n.a.	n.a.
War Department	p1,391	1,394	1,374	1,190	722		
Navy Department	p631	619	600	531	401		
Other War Agencies	p217	221	218	159	103		
Nonwar	p833	792	785	861	867	n.a.	n.a.
LABOR TURNOVER IN MFG. INDUSTRIES (rate per hundred employees)							
All Manufacturing:							
Accessions	7.43	6.32	7.67	8.69	7.12	2.93	4.04
Separations-Total	7.54	7.69	7.04	7.91	6.12	3.46	3.09
Quits	5.41	5.36	4.65	4.65	3.59	0.76	1.38
Military Separations	0.87	1.12	1.23	1.71	0.68	n.a.	n.a.
Aircraft:							
Quits	4.62	4.75	3.71	4.41	3.79	1.41	2.04
Military Separations	0.84	1.41	1.66	2.82	0.74	n.a.	n.a.
Shipbuilding:							
Quits	6.30	7.11	5.90	5.39	4.29	0.72	1.32
Military Separations	1.45	1.70	1.84	2.60	0.72	n.a.	n.a.
FOOD PRODUCTION:							
DAIRY PRODUCTS (million pounds)							
Butter, creamery	150.2				149.6	147.5	131.4
Cheese	83.6				105.9	58.3	52.3
Evaporated Milk	285.5				358.4	203.9	185.0
ANIMAL FATS (million pounds)**	223.4				233.2	168.0	115.0
MEATS-TOTAL (including lard, million pounds)	1,384.0				1,376.0	955.0	957.0
Beef and veal	466.9				566.2	390.6	443.7
Lamb and mutton	64.1				68.3	50.5	54.2
Pork, including lard	853.3				741.8	513.2	458.7
Lard	132.8				126.9	85.6	68.3

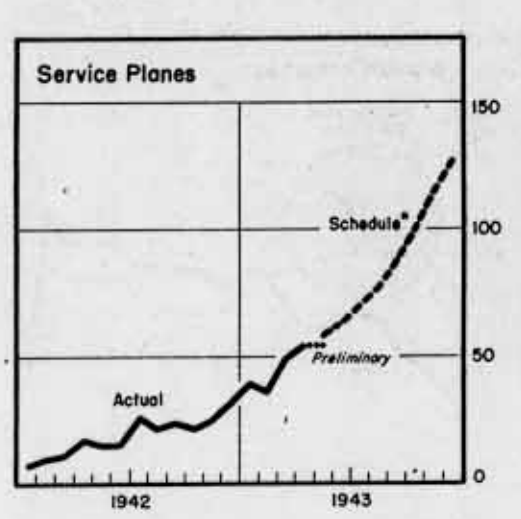
*April. **Figures for year ago, 1939, and 1937 represent second-quarter averages. n.a. Not available.
p Preliminary. e Seasonal influences invalidate month-to-month comparisons.

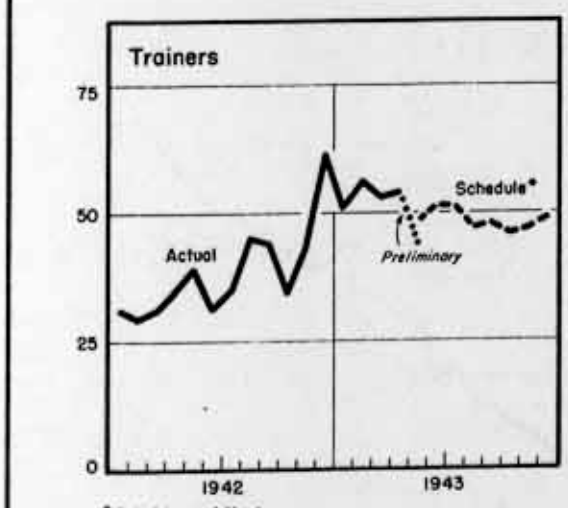
PRODUCTION PROGRESS

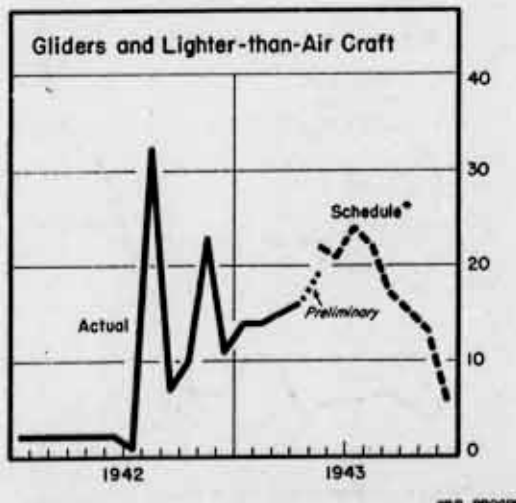
Aircraft and Aircraft Munitions









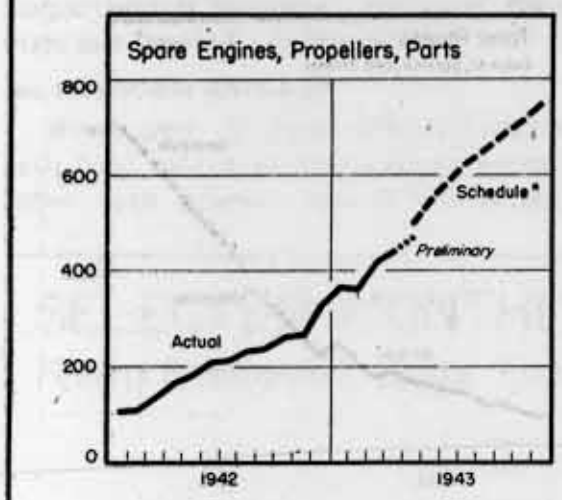


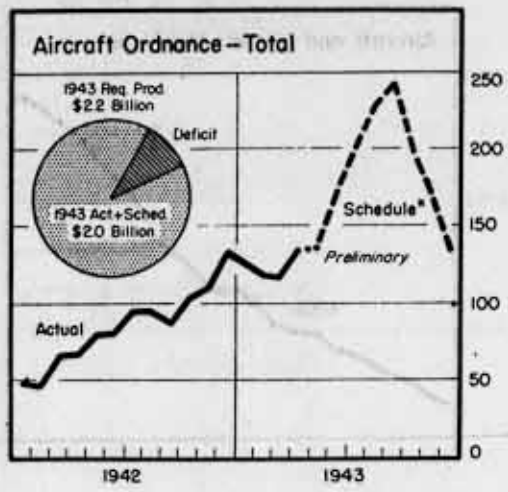
* Schedule as of May 1.

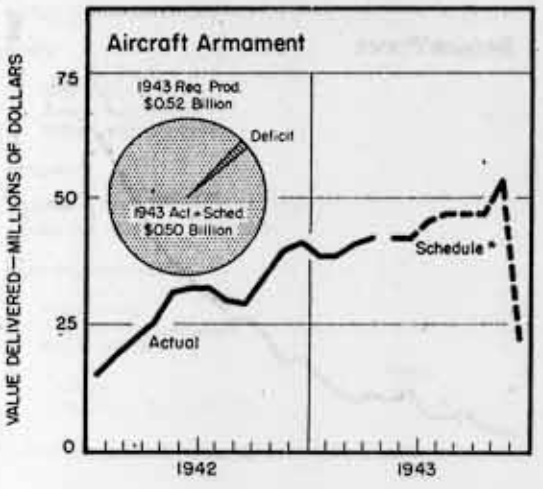
WAR PROGRESS

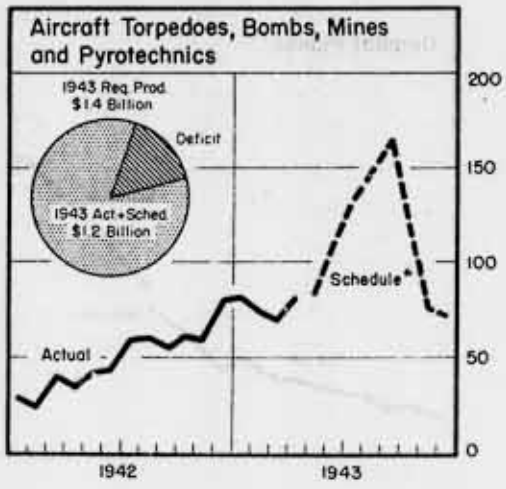
PRODUCTION PROGRESS

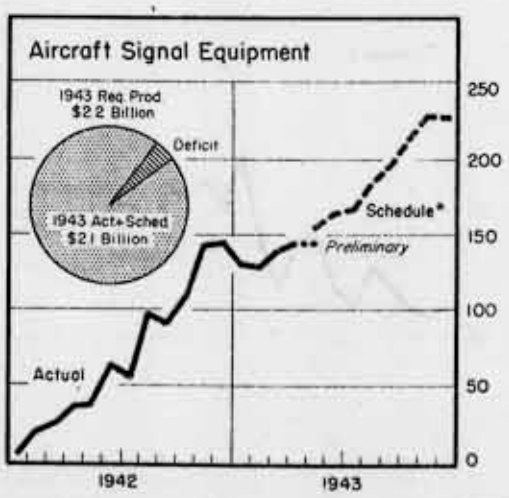
Aircraft and Aircraft Munitions (continued)











*Schedule and Required Production as of May 1.

WAR PROGRESS

The President

WAR PROGRESS

Confidential
(British Secret)

How the Army Schedules

Production Progress Tables

Number 132

March 26, 1943

PRODUCTION PROGRESS

Aircraft-Ordnance (Value of production, in millions of dollars)

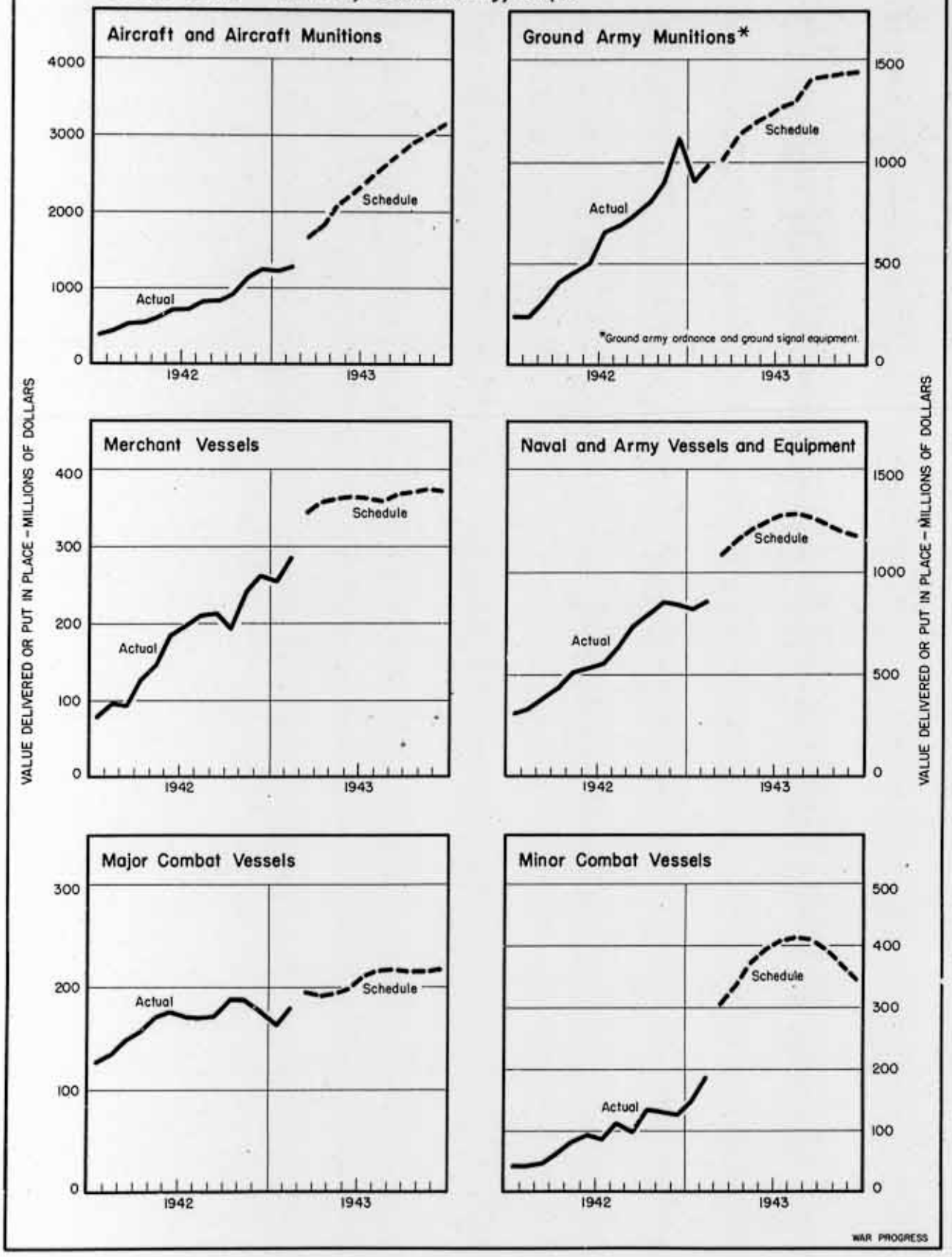
	Combat Planes	Aircraft Armament	Aircraft Ammunition	Artillery & Equip.	Artillery & Tank Cannon Ammunition	
Valuation of Actual Production						Valuation of Actual Production
1942 1st Quarter Avg.	180	17	36	23	54	1942 1st Quarter Avg.
2nd Quarter Avg.	233	27	43	33	90	2nd Quarter Avg.
3rd Quarter Avg.	294	29	57	52	110	3rd Quarter Avg.
October	313	33	64	66	107	October
November	368	37	66	97	126	November
December	425	42	86	121	106	December
1943 January	366	37	83	104	93	1943 January
February	450	38	73	124	85	February
Valuation of Schedules						Valuation of Schedules
March	600	42	72	120	89	March
April	692	42	97	140	112	April
May	796	44	131	131	128	May
June	897	45	143	123	147	June
July	1,013	47	141	115	167	July
August	1,108	51	150	114	175	August
September	1,201	52	167	107	165	September
October	1,297	44	173	94	165	October
November	1,351	42	182	85	166	November
December	1,392	40	188	78	168	December
1942 Actual	3,227	330	623	607	1,102	1942 Actual
1943 Schedule	11,163	524	1,600	1,335	1,660	1943 Schedule
1943 Req. Prod.	11,163	516	1,835	1,328	1,744	1943 Req. Prod.
1943 Schedule as % of Req. Prod.	100.0	101.6	87.2	100.5	95.2	1943 Schedule as % of Req. Prod.

	Antiaircraft Guns & Equip.	Antiaircraft Ammunition	Small Arms & Infantry Weapons	Small Arms & Infantry Weapon Ammunition	Combat Vehicles	
Valuation of Actual Production						Valuation of Actual Production
1942 1st Quarter Avg.	18	12	16	42	88	1942 1st Quarter Avg.
2nd Quarter Avg.	39	21	28	81	124	2nd Quarter Avg.
3rd Quarter Avg.	76	30	37	118	176	3rd Quarter Avg.
October	95	15	44	135	212	October
November	95	17	49	138	239	November
December	109	24	55	168	399	December
1943 January	110	20	54	179	211	1943 January
February	115	29	54	178	255	February
Valuation of Schedules						Valuation of Schedules
March	118	22	61	183	293	March
April	128	27	67	206	318	April
May	127	29	69	221	334	May
June	124	29	71	246	345	June
July	127	25	75	265	346	July
August	133	25	78	283	352	August
September	143	51	81	333	348	September
October	140	52	79	329	359	October
November	138	54	79	329	372	November
December	136	55	78	331	386	December
1942 Actual	698	245	388	1,163	2,015	1942 Actual
1943 Schedule	1,539	418	846	3,083	3,919	1943 Schedule
1943 Req. Prod.	1,626	452	802	3,182	3,738	1943 Req. Prod
1943 Schedule as % of Req. Prod.	94.6	92.5	105.5	96.9	104.8	1943 Schedule as % of Req. Prod.

Note: Schedules as of March 1 for aircraft and aircraft munitions, ground army munitions, and other army items; as of Feb. 1 for all others.

PRODUCTION PROGRESS

Selected Items — Aircraft, Ground Army, Ships



PRODUCTION PROGRESS

Ships-Construction-Miscellaneous (Value put in place, in millions of dollars)

		Battleships, Cruisers & Carriers	Destroyers	Submarines	Antisub-marine Vessels	Transports (Army, Navy)		
Valuation of Actual Production	1942						1942	Valuation of Actual Production
	1st Quarter Avg.	60	59	17	43	1	1st Quarter Avg.	
	2nd Quarter Avg.	73	74	20	77	7	2nd Quarter Avg.	
	3rd Quarter Avg.	71	77	23	96	10	3rd Quarter Avg.	
	October	84	82	23	131	10	October	
	November	77	88	22	127	16	November	
	December	76	74	25	124	13	December	
	1943						1943	
	January	68	70	25	146	11	January	
	February	77	76	28	187	18	February	
Valuation of Schedules	March	85	84	26	295	23	March	Valuation of Schedules
	April	79	86	27	328	26	April	
	May	78	87	29	363	28	May	
	June	78	89	32	388	28	June	
	July	81	92	37	400	29	July	
	August	83	92	40	408	30	August	
	September	85	89	42	405	29	September	
	October	89	84	42	390	25	October	
	November	92	80	43	370	21	November	
	December	97	76	45	346	19	December	
	1942 Actual	850	875	249	1,031	93	1942 Actual	
	1943 Schedule	992	1,005	416	4,026	287	1943 Schedule	
	1943 Req. Prod.	992	1,005	416	4,026	287	1943 Req. Prod.	
1943 Schedule as % of Req. Prod.		100.0	100.0	100.0	100.0	100.0	1943 Schedule as % of Req. Prod.	

		Landing Vessels	Industrial Facilities	Aircraft Fields & Bases	Clothing & Personal Equip.	Automotive Vehicles & Equip.		
Valuation of Actual Production	1942						1942	Valuation of Actual Production
	1st Quarter Avg.	2	360	61	68	127	1st Quarter Avg.	
	2nd Quarter Avg.	7	524	122	98	171	2nd Quarter Avg.	
	3rd Quarter Avg.	85	662	233	117	196	3rd Quarter Avg.	
	October	146	684	214	109	174	October	
	November	143	641	188	107	179	November	
	December	129	606	146	106	207	December	
	1943						1943	
	January	95	543	135	110	189	January	
	February	64	500	161	111	202	February	
Valuation of Schedules	March	66	519	189	198	248	March	Valuation of Schedules
	April	57	480	160	201	272	April	
	May	54	435	150	209	280	May	
	June	60	390	138	213	278	June	
	July	60	350	136	198	291	July	
	August	51	315	135	177	281	August	
	September	46	285	133	198	254	September	
	October	38	256	120	196	232	October	
	November	34	228	109	194	230	November	
	December	32	199	94	194	227	December	
	1942 Actual	702	6,569	1,795	1,171	2,044	1942 Actual	
	1943 Schedule	657	4,500	1,660	2,199	2,984	1943 Schedule	
	1943 Req. Prod.	657	4,500	1,660	2,147	2,963	1943 Req. Prod.	
1943 Schedule as % of Req. Prod.		100.0	100.0	100.0	102.4	100.7	1943 Schedule as % of Req. Prod.	

Note: Schedules as of March 1 for aircraft and aircraft munitions, and other army items; as of Feb. 1 for all others.

The President
1

WAR PROGRESS

Confidential
(British Secret)

M-293—The Missing Link

Number 133

April 2, 1943

Link Between CMP and End Products

Order M-293 institutes overall control over components and other choke-point items. By untangling orderboards of manufacturers, it has already speeded production.

ABOUT A YEAR AGO, American industry took such items as valves, bearings, boilers, fans, pumps, amplidynes, etc. for granted. There was plenty of production to meet the existing output of tanks, planes, guns, and ships. And so critical components, as a major production problem, were just a gleam in the farsighted man's eye.

There are the cases of jewel bearings, used in precision instruments, and of land turbines, used in power plants, steel mills, synthetic rubber plants, etc. Back in March, 1942, the War Production Board formally started to schedule production and allocate deliveries of these products. A month later, demands for certain types of compressors became a choke point and these were taken in hand. About the same time, formal efforts were made to direct the flow of machine tools to urgent munitions programs—although unofficial allotment of tools had been undertaken as early as October, 1941.

PIECEMEAL APPROACH

But the components problem was tackled piecemeal. In the early days, the more pressing problem was raw materials. It was not until last summer and fall that the full magnitude of the components bottleneck was realized. Many plants were forced to close down for want of components as well as of raw materials, though materials were cited as the principal cause.

The problem came into sharp focus during the past four months or so, when the destroyer escort, synthetic rubber, and high-octane gasoline programs competed for boilers, compressors, heat exchangers, valves, pumps, instruments, and other intermediate products (WP-Feb 5'43,p1). It was around this time also that the Controlled Materials Plan forced claimant agencies--the Army, Navy, Maritime Commission, etc.—to consider their requirements for components in relation to end products.

PILE-UPS IN BIG PLANTS

In many cases, capacity has not been short, yet deliveries have been held up. Orders have tended to accumulate with the big-name organizations. And for an understandable reason. The most natural thing for a purchasing agent to do was to call on companies such as General Electric, Ingersoll-Rand, Timken Roller Bearing, Crane, and Babcock & Wilcox. The result was that some plants were booked to ship more than they could ever hope to turn out within a specified period, while others were booked below capacity.

For example, 10% of the electrical equipment companies received 75% of the orders. In one particular direct-current motor, a large builder was equipped to produce about 220 per month, yet was being called on to ship more than 1,500 within 90 days. At the same time, a smaller manufacturer was turning out only 60 such motors a month on a capacity of more than 100.

Moreover, unsynchronized orders and deliveries have tied up components, raw materials, and end products. As an in-

stance of what has happened in a good many items, consider a specific order for electric motor controls for oil purification systems on a number of destroyer escort vessels: 10 were needed last December, but 140 had been delivered--enough to cover requirements until September, 1943; at the same time, requirements for signal-light controls were covered only to January. Not only were man-hours and materials imprisoned in these 140 motor controls, but capacity had been given up to making them when it might have been devoted to control equipment for signal lights, thus getting a better balance within the DE program itself.

FANS WITHOUT MOTORS

Last June, when several thousand ventilating fans were contracted for, the complementary motors weren't ordered until the following September although deliveries were needed in October, the very next month. So, as the motorless fans came off the assembly line, they were delivered to a warehouse instead of the end product.

IN THIS ISSUE:

Catching up with the components problem has been a gradual process. During 1942, WPB formally allocated output of only a handful of components, among which were land turbines, compressors, heat exchangers, jewel bearings, power boilers, and turbo-blowers. In the closing months of the year, however, the components problem became so acute that unofficial scheduling arrangements were started in fans and blowers, electric motors and generators, electric motor control equipment, and several other intermediate products.

OVERALL SCHEDULING NEEDED

But such isolated, uncoordinated controls were not enough. Prompt utilization of condensing turbines, for instance, depends on synchronized shipments of condensers, pumps, motors, and electric motor controls. Hence the need for overall scheduling.

And that is what the War Production Board will start on next month, with General Scheduling Order M-293; it requires all manufacturers of 47 major groups of components (table, page 4) to submit monthly operating reports covering backlogs, new orders, deliveries, cancellations, etc. However, dovetailed scheduling is not an initial objective. That will take time. The immediate goal is to get maximum output by freezing certain manufacturers' order boards.

RESHUFFLING DELIVERIES

Heretofore, production lines have frequently been interrupted, with a net loss of output. For even if a manufacturer established his own plan of deliveries, an expediter might appear with an insistent demand for shipment of a particular component, higher-rated orders might come through, or a special directive giving the green light to a special program might be issued from

KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program - Checks paid (millions of dollars)	1,308	1,374	1,431	1,308	684
War bond sales (millions of dollars)	204	185	273	196	113
Commodity prices (August 1939 = 100)					
28 Basic commodities	176.7	176.3	176.0	169.4	166.7
Controlled	162.5	162.4	162.5	161.2	162.0
Uncontrolled	212.8	211.7	210.6	190.0	178.9
Nonferrous metal scrap	119.2	119.2	117.5	115.8	132.5
Textile scrap	176.5	176.0	172.2	171.2	175.7
Petroleum carloadings (no. of tank cars)					
Total	54,791	53,791	52,239	54,644	
Movement into East	26,181	26,390	26,592	28,557	14,453
Exports (no. of freight cars unloaded for export Friday)					
Atlantic Coast ports	1,643	1,637	1,406	1,354	1,947
Gulf Coast ports	362	393	448	271	470
Pacific Coast ports	939	960	883	829	407
Unused steel capacity (% operations below capacity)	0.5	0.9	1.8	2.7	1.2
Department store sales (% change from a year ago)	-3	-2	+26	+5	+25

Washington. Result: One program might get what it needed while a dozen other programs, components for which might be almost completed, would be delayed.

FROZEN "X" ITEMS

To eliminate such interruptions to orderly operations, General Scheduling Order M-293 designates 19 specific groups of so-called "X" components, as follows:

Aluminum forgings
Circuit breakers
Compressors
CO2 extinguishers
Crankshafts
Diesel engines
Diesel fuel injection equipment
Electrical test equipment (production)
Fans & blowers
Gasoline engines (except aircraft)
Heat exchangers
Magnetos (except aircraft)
Marine reduction gears
Motor control equipment
Power boilers
Pressure vessels
Pumps (fluid power systems)
Turbines
Turbo-blowers

Once a delivery schedule for an "X" component is received by WPB's appropriate industry division, it is frozen --notwithstanding directives, rules, regulations, or preference ratings which other orders may bear. (Certain urgent projects in the synthetic rubber and high-octane programs are the only present exceptions.) Expediters will now have to get special treatment from Washington.

SUPERCRITICAL "Y" LINE

Order M-293 also sets up a list of supercritical, or "Y," components in which productive capacity is—or threatens to become--unusually tight. This consists of machetes and specific types of compressors, heat exchangers, power boilers, electrical test equipment, and

turbo-blowers--six components in all.

Delivery schedules of such products are also frozen. But more than that, WPB supervises the placement of orders. For example, if a shipyard wants to buy a compressor from Ingersoll-Rand, it must first receive a specific authorization to do so. Here the purpose is to distribute orders among plants so that jamming will be avoided.

Placing machetes on the "Y" list is a special case: This year, the United

47 VARIETIES OF CRITICAL COMPONENTS

FORTY-SEVEN GROUPS of components are on the current critical WPB list; these are subdivided into 110 subgroups and these, in turn, cover more than 200 individual items. The valve group, for example, consists of three subgroups: steel, iron, and bronze; and each of these breaks down into specific types such as turbine valves, safety and relief valves, compressed gas and cylinder valves, etc. In addition to intermediate products, the critical list includes items which are not strictly components--carbon dioxide extinguishers and woodworking tools, for instance--but which are, or threaten to become, choke-point items. The list has been altered considerably since WPB began to study the components problem (WP-Jan8'43,p8) and is subject to change. The 47 main-group components follow:

Aircraft engine accessories
Aircraft engine gears
Aluminum forgings
Air-borne oxygen equipment
Automotive engine mounted accessories
Ball & roller bearings
Circuit breakers
Coaxial cable
Combat measuring instruments
Compressors
Conveying machinery
Carbon dioxide extinguishers
Crankshafts
Diesel fuel injection equipment
Diesel & natural gas engines
Electric motors & generators
Electrical test equipment (production)
Fans, blowers & exhausters
Fixed capacitors
Flexible couplings
Gasoline engines (except aircraft)
Heat exchangers
Heavy forged tools
Hydraulic parts (aircraft actuating cylinders)
Industrial pumps
Industrial type instruments
Jewel bearings
Machine tools
Magnetos (except aircraft)
Marine & industrial gears
Mechanics' hand service tools
Metal cutting tools
Motor control equipment
Parker-type fittings
Pipe fittings
Plugs & connectors
Power boilers
Precision measuring tools
Pressure vessels
Resistors
Transformers
Turbines
Turbo-blowers & turbo-exhausters
Vacuum tubes
Valves
Welding rods & electrodes
Woodworking tools

States may be called on to turn out almost 9,000,000 machetes (compared with around 1,500,000 in 1941) to fill its own and United Nations requirements. The machete is not a component in the strictest sense. It is an oversized knife used (1) for clearing jungle growth, (2) for agricultural purposes, and (3) as a weapon in hand-to-hand combat--the Fighting French have asked for approximately 2,000,000. Several U.S. plants produce machetes, but only one--the Collins Company in Connecticut--is well known. Consequently, if uncontrolled at the outset, orders would pile up in its plant while other plants were underutilized.

RELIEVING CHOKE POINTS

General Scheduling Order M-293 is flexible. Whenever monthly reports indicate that certain components or end items are becoming choke points, they can be added to the list under "X" or "Y" control. Moreover, since M-293 authorizes such broad measures as rescheduling, reallocation, redistribution, and cancellation of orders, it makes possible the unravelment of the present tangle on the books of components manufacturers in general, hence systemization of overall output.

Indeed, in cases where scheduling principles have been in effect, tangible results have already been realized:

EXAMPLE IN COMPRESSORS

In compressors, rescheduling released capacity which could be devoted to immediately urgent requirements. By dint of phoning, pavement-pounding, coaxing, and cajoling, WPB's Compressor Section determined actual delivery dates from all claimant agencies and managed to squeeze the equivalent of an extra 30 days output in a year, without upsetting end-product delivery schedules.

Deliveries of heat exchangers for a large synthetic rubber plant were pushed forward three months by transferring $350,000 of orders from an overloaded producer to one that was operating below capacity.

SUCCESS IN SUBCONTRACTING

By subcontracting, the fan-and-blower industry was able to boost its production of fans and blowers between 100% and 300% and also augment the output of other components such as hydraulic couplings, marine turbines, and heavy machine tools.

A three-months' delay in the opening of a lens-making plant was avoided by urging the management to accept a compressor from a smaller company.

By using a portion of compressor-building facilities, as freed by the completion of contracts, the production of Diesel engines and power plants was increased.

Rearrangement of orders within 90% of the electric motor control industry made it possible to drop plans for building new facilities, thus saving time, materials, and manpower.

CLOSING THE PRODUCTION GAP

But the above represent only accomplishments in individual instances; they only begin to suggest the potential gains to be derived from the integrated, overall scheme of action into which M-293 is destined to develop.

Essentially, the General Scheduling Order is the means for synchronizing the flow of steel, copper, aluminum, and other materials into heat exchangers, compressors, valves, etc., and thence into tanks, guns, planes, ships, and other end products. In short, it is the much-needed link which closes the production chain between the Controlled Materials Plan and finished munitions.

Blockbusters for Berlin, Tokyo

Program—emphasizing 500-4,000 pounders—is fast approaching maturity and levels out this year. Tonnage is 6.8 times airframe weight of bombers produced.

FROM JULY 1, 1940, through December 31, 1941, U.S. bomb production amounted to $37,000,000; last year, production came to $390,000,000, or more than 10 times the preceding 18-month total. This year, though production is scheduled to rise anew, the rise is not so great—something more than 150% to $1,000,000,000. Even this gain is not assured, since the 1943 bomb program may be modified. The present schedule flattens out in the last six months of this year to around $90,000,000 to $100,000,000 a month.

BOMBS AHEAD OF PLANES

But there is no flattening out in the schedule for bomber plane production. Plane manufacturers more than tripled their 1940-41 bomber output during 1942, against a tenfold increase for bombs. And while bomber production is scheduled to more than triple again this year—to $8,500,000,000—production of bombs does little more than double.

Main reason for this varying relationship is that plans for making bombs, and the accompanying tooling up of plants, matured earlier than plans and plants for large-scale manufacture of the far more complicated bombers.

FIVE MAJOR DIVISIONS

The bomb program breaks down into five major divisions: general-purpose (demolition), armor-piercing, fragmentation, chemical, and depth bombs—each with its particular function. The general-purpose bomb dominates the program; it bursts into large irregular fragments, has a heavy blast effect. Ordinarily it is used against military installations, fortifications, gun emplacements, factories, and other solid structures. Where penetration of objective is desired, these bombs are fitted with a delayed-action nose fuse. Others float down close to earth on parachutes and explode while still in the air. This yields maximum concussion over a wide area, collapsing walls and stunning or killing personnel.

BIGGER BOMBS LEAD

The trend in general-purpose bombs is definitely toward blockbusters (chart, page 7). Between July, 1940, and the end of 1941, demolition bombs worth $34,000,000 were produced in this country. Of these, almost three-quarters were the smaller bombs (under 500 pounds). But last year only 46% of the $256,000,000 demolition-bomb output was in the under-500-pound category, while 54% came in the 500-4,000-pound range. And this year a full 87% of the $560,000,000 schedule will consist of one-quarter to two tonners.

Armor-piercing bombs, fitted with especially tough steel noses and in sizes from 500 to 1,600 pounds, are used principally against armored naval vessels and heavy concrete installations such as the German submarine berths at Lorient and Brest. Production of armor-piercing and semiarmor-piercing bombs did not start in this country until the first quarter of last year and amounted to only 7½% of the value of total bomb production for the full year. The proportion this year will rise to 13%.

About 5% of the total bomb schedule this year will be in fragmentation bombs, against 2½% in 1942. Fragmentation bombs

Cutting Ordnance to Fit the Steel, Etc.

Army has developed new techniques to direct raw materials and critical components into most urgent end products. March 1 schedule realistic step.

THE MARCH 1 Army ordnance schedules for 1943 set a record. For the first time, production--scheduled at $14,800,000,000--just about matches requirements, and in many items schedules and requirements coincide.

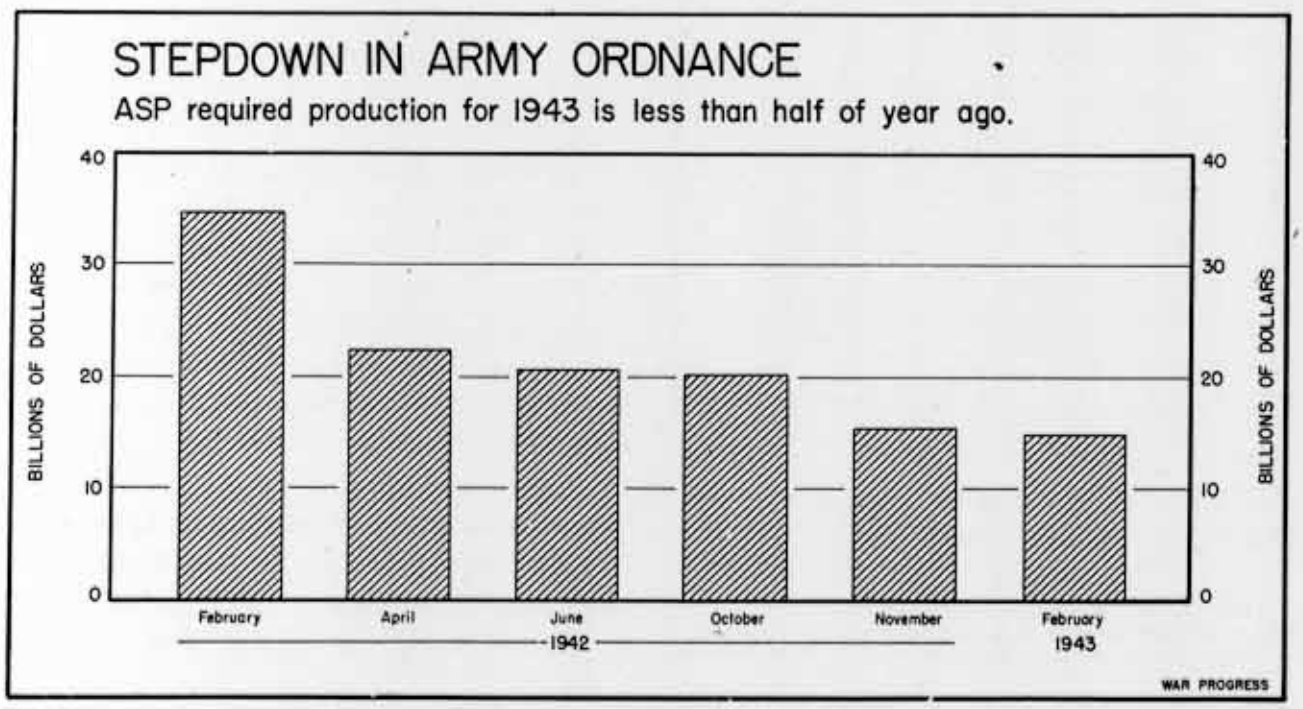
True, some major categories, such as combat vehicles, exceed the full-year goal (chart, page 3); and other items, such as ammunition, are below the 1943 quota set forth in the latest revision of the Army Supply Program. And in individual items, the plus and minus signs are even greater. Some of these deviations are deliberately on the up side --to get a head start for 1944. However, some adjustments must still be made to get closer fit all along the line.

These new schedules are important, too, because they bid fair to approach actual output more closely than did any previous sc' dules. In the past, total monthly production of ordnance has deviated from first-of-the-month scheduled value by as much as 10%--hardly a close fit. Smaller margins of discrepancy seem likely in the future. Indeed, a foretaste of the future is at hand.

PRODUCTION HUGS SCHEDULE

In December, the Army cut schedules to fit raw materials known to be available. Result, actual production was only 3% under schedule. Similarly, last month the final production figure for ground ordnance and signal equipment ran only 4% over. In other words, production hugged the schedule, and vice versa.

Getting the schedule and production to fit was no overnight attainment for the Army. Ever since the war production drive began--back in July, 1940, following the fall of France--the Army Service

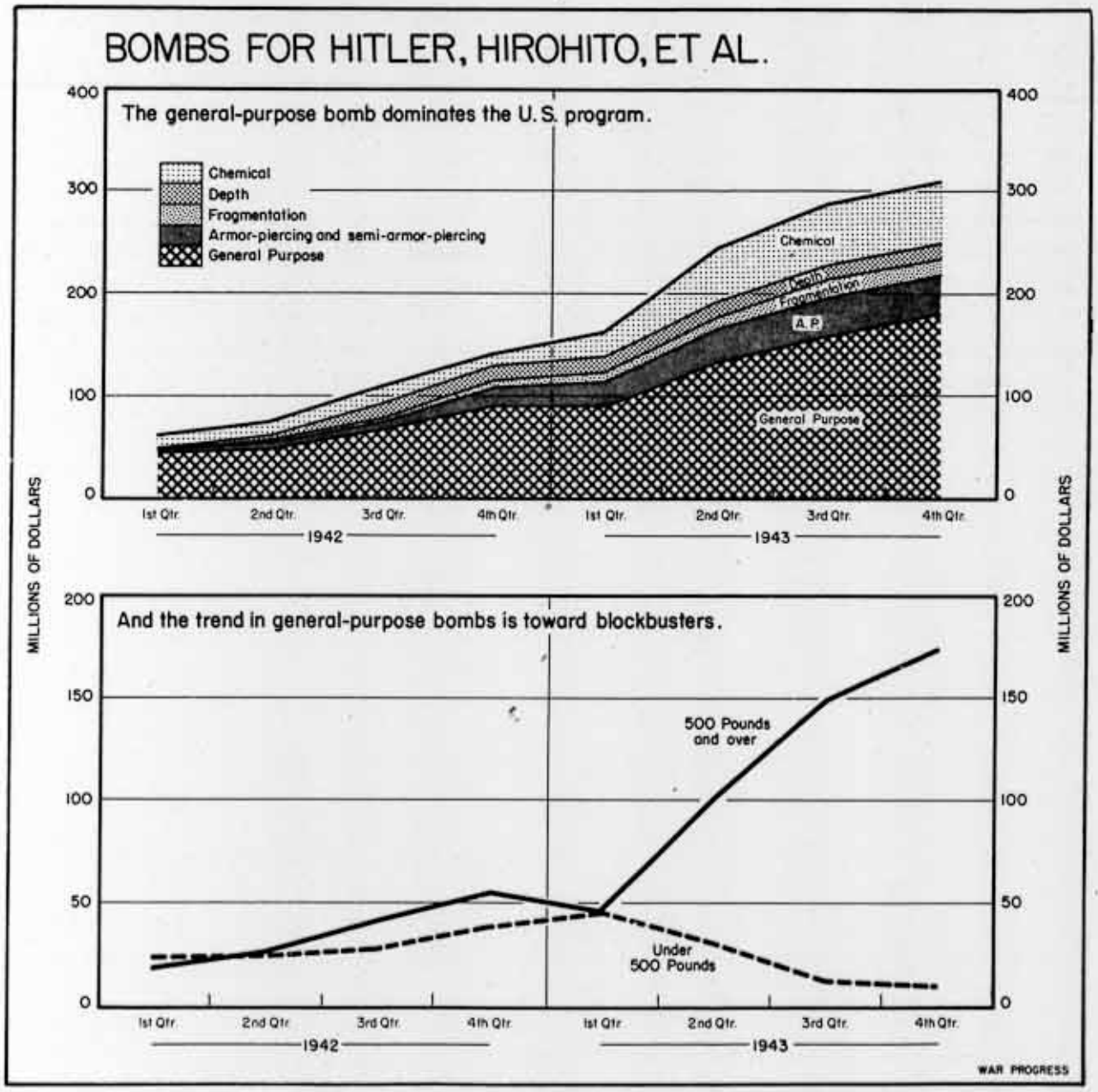


are dropped either singly or in clusters. They are comparatively light in weight, burst into many small pieces on detonation, and are used mainly against personnel and grounded aircraft.

INCENDIARIES, SMOKE, GAS

Incendiary bombs are far and away the most important of the chemical bombs. (Magnesium, thermite, and oil are the burning agents.) Production of incendiaries got under way comparatively early in the bomb program, and though output this year will be up some 250%, incendiaries will occupy a less important proportional position in the 1943 total program than in the previous year. Chemical bomb production, including smoke and gas bombs as well as incendiaries, will rise from 15% of the total bomb program in 1942 to 20% this year.

Depth bombs, carried by Navy patrol planes and blimps, have been made for the Navy since before Pearl Harbor. Schedules for both the 650-pound and 325-pound depth bombs have already reached peaks,



but actual output has been exceeding schedule by wide margins.

Last year the United States produced 69% (in tonnage) of the combined U.S.-British Empire output of bombs. Most of the rest came from the United Kingdom; however, the dominions and colonies are beginning to attain large-scale production, but are still concentrating largely on smaller sizes. The United Kingdom produces a wide range of general-purpose demolition bombs, including the world's biggest to date--a 6 tonner.

45 TONS PER BOMBER

During 1942, United Kingdom bomb tonnage produced was 4.3 times as great as the airframe weight of bomber output; 25 tons of bombs were manufactured for every bomber turned out. In the U.S., bomb tonnage was 6.8 times as great as bomber tonnage produced, while 45 tons of bombs were made for every bomber manufactured, and the trend is sharply upward. If allowance is made for lend-lease deliveries of bombs and bombers to the United Kingdom and Russia, the American bomb-to-bomber ratio is even greater.

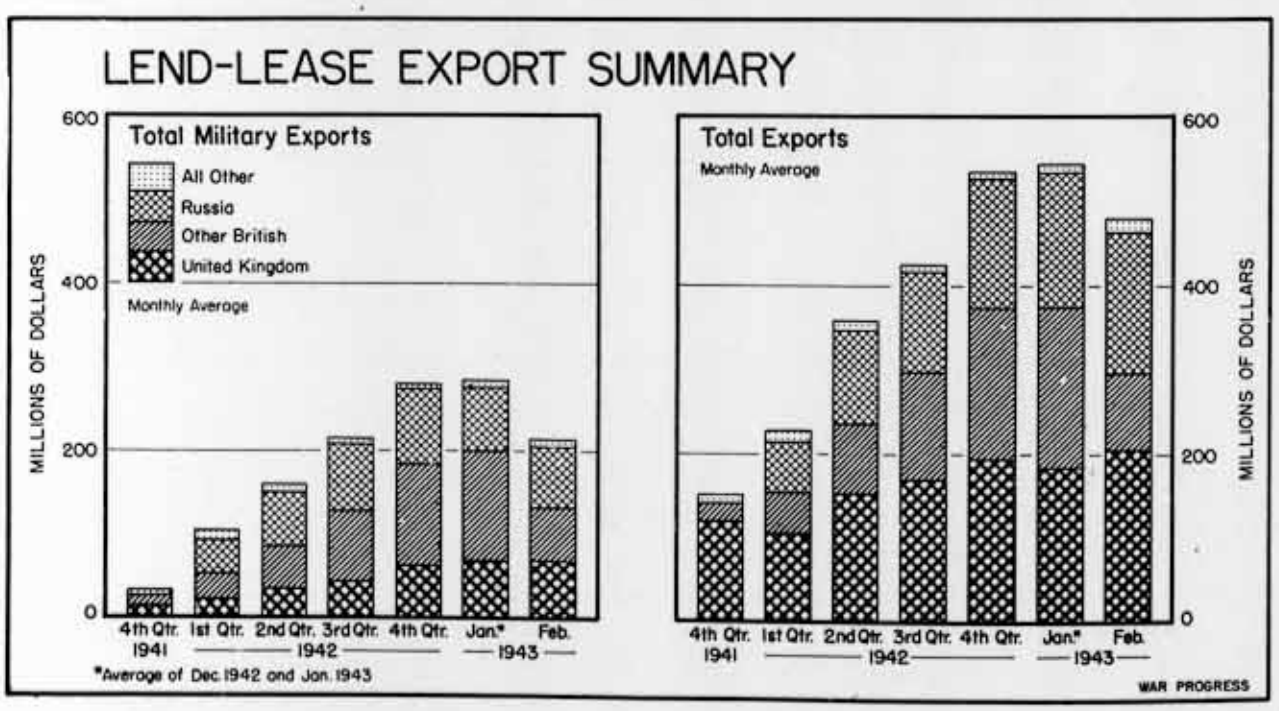
Lend-Lease Dips

February shipments 2% under daily average of recent months but cargoes to Great Britain and Russia rise. Proportion of agricultural goods increases sharply.

LEND-LEASE SHIPMENTS in February (shortest month of the year) totaled $480,000,000. On a daily basis, this was only about 2% below the $540,000,000 average of the previous four months.

In February, the proportion of military exports (guns and ammunition, aircraft, tanks, and other combat vehicles) dropped to 45%, the lowest level since June. Agricultural shipments (food and nonfood), however, jumped from 17% in December and January to 23% in February. The proportion of industrial goods and watercraft was relatively unchanged.

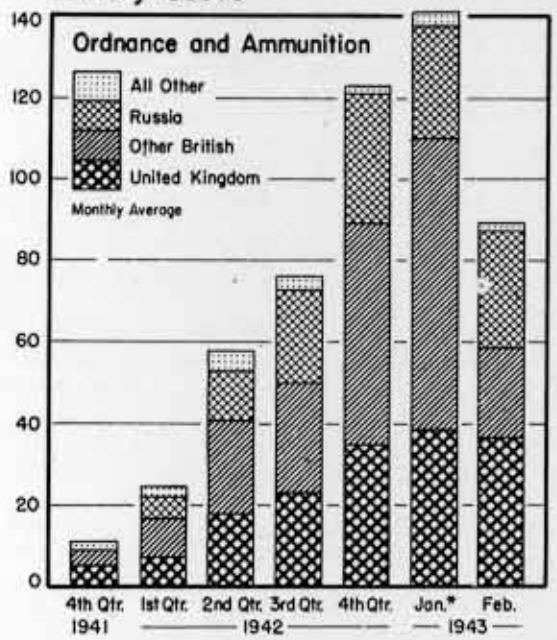
February was also marked by sharp changes in the destination of lend-lease exports. Shipments to Egypt--the supply base for General Montgomery's army--declined from an average of $62,400,000 in December and January to only $14,700,000, in February, while exports to



WHERE THE LEND-LEASE SHIPMENTS GO

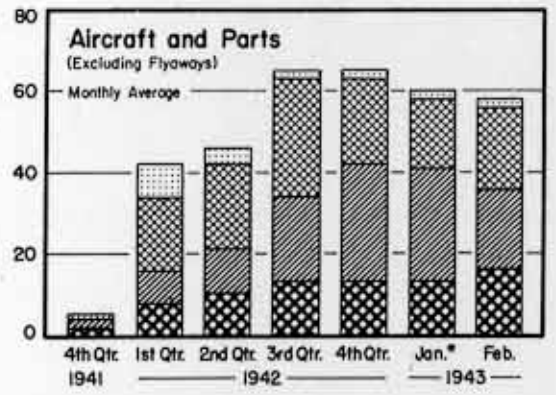
Military Goods

Ordnance and Ammunition

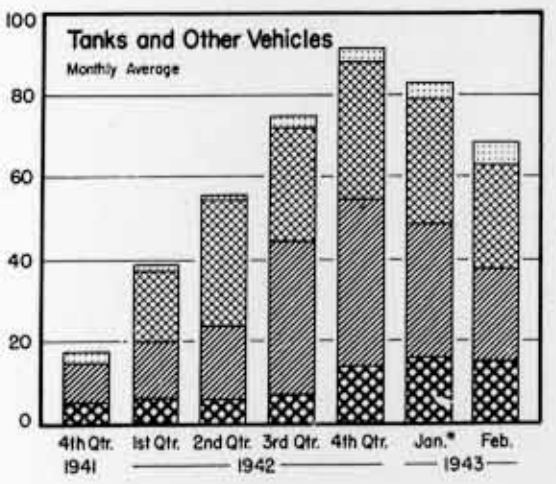


Aircraft and Parts

(Excluding Flyaways)



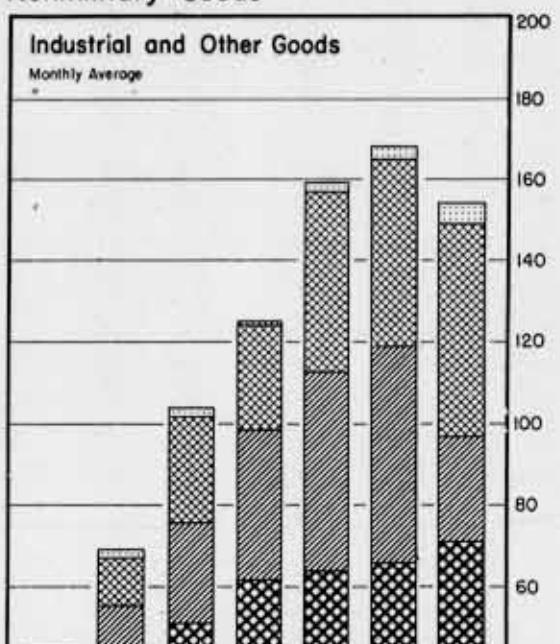
Tanks and Other Vehicles



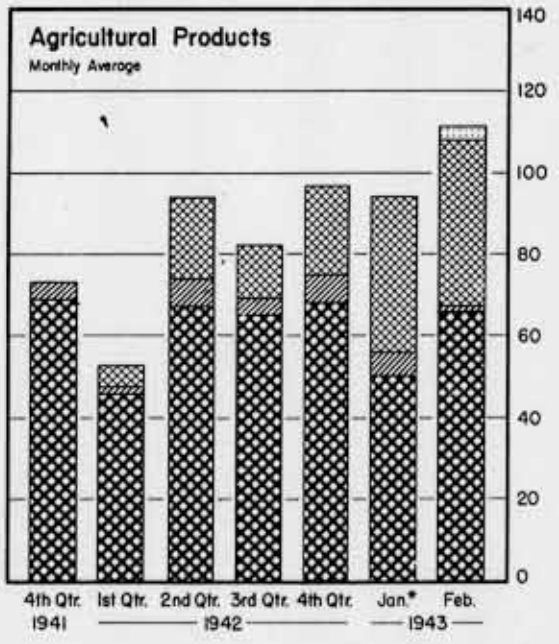
MILLIONS OF DOLLARS

Nonmilitary Goods

Industrial and Other Goods



Agricultural Products



MILLIONS OF DOLLARS

* Average of Dec. 1942, and Jan. 1943.

WAR PROGRESS

India and Ceylon fell from $43,900,000 to $14,000,000. Cargoes destined for the United Kingdom increased about 11% (in dollar value) and those going to Russia 5%, as the following table shows:

	Feb.	Dec.-Jan. Average	% Change
	(million dollars)		
United Kingdom	$205.4	$184.8	+ 11%
Russia.....	166.7	159.2	+ 5
Australia & New Zealand..	32.6	39.2	- 17
Egypt.....	14.7	62.4	- 77
India & Ceylon	14.0	43.9	- 68
Iran & Iraq...	11.0	18.0	- 39
Brazil.....	6.0	2.8	+114
Union S. Africa	4.0	9.6	- 58
Algeria.....	3.5	nil	
Gold Coast....	3.0	0.34	+890
French Morocco	2.3	nil	
Belgian Congo.	1.5	1.2	+ 25
Turkey.....	1.2	1.9	- 37
China.....	0.8	0.7	+ 14

About $36,600,000 of foodstuffs and $48,000,000 of industrial products were shipped to Russia in February--more than in any previous month--while munitions exports, at $73,000,000, were slightly below the January and December average. Nonmilitary items also continue to account for the bulk of cargoes going to the British Isles.

In February, lend-lease aid was extended for the first time to Algeria and Morocco. Destined almost entirely for the civilian population, shipments included essential foodstuffs (flour, sugar, tea, milk products), tobacco, wearing apparel, including several thousand pairs of secondhand shoes; medical supplies, soap, grass seeds, etc.

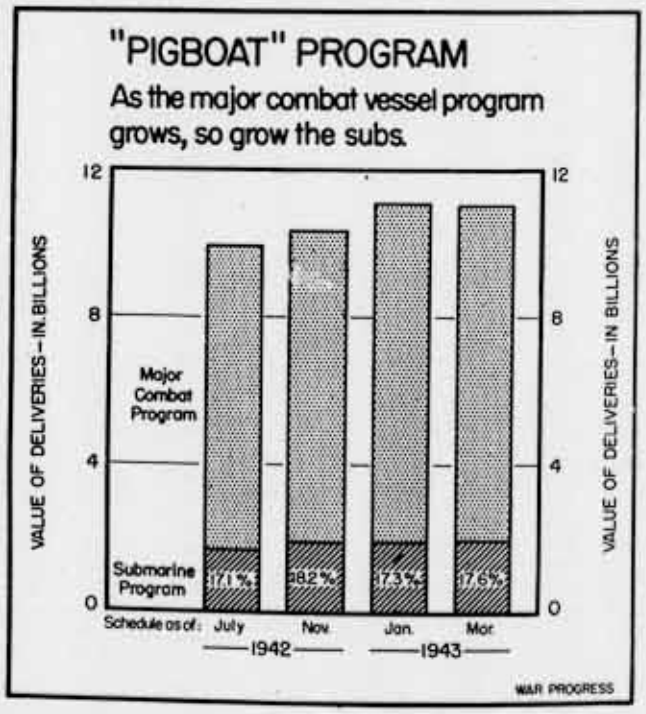
Shipments to Brazil--which consist chiefly of aircraft, tanks, and other munitions--are at a record level of $6,000,000 a month.

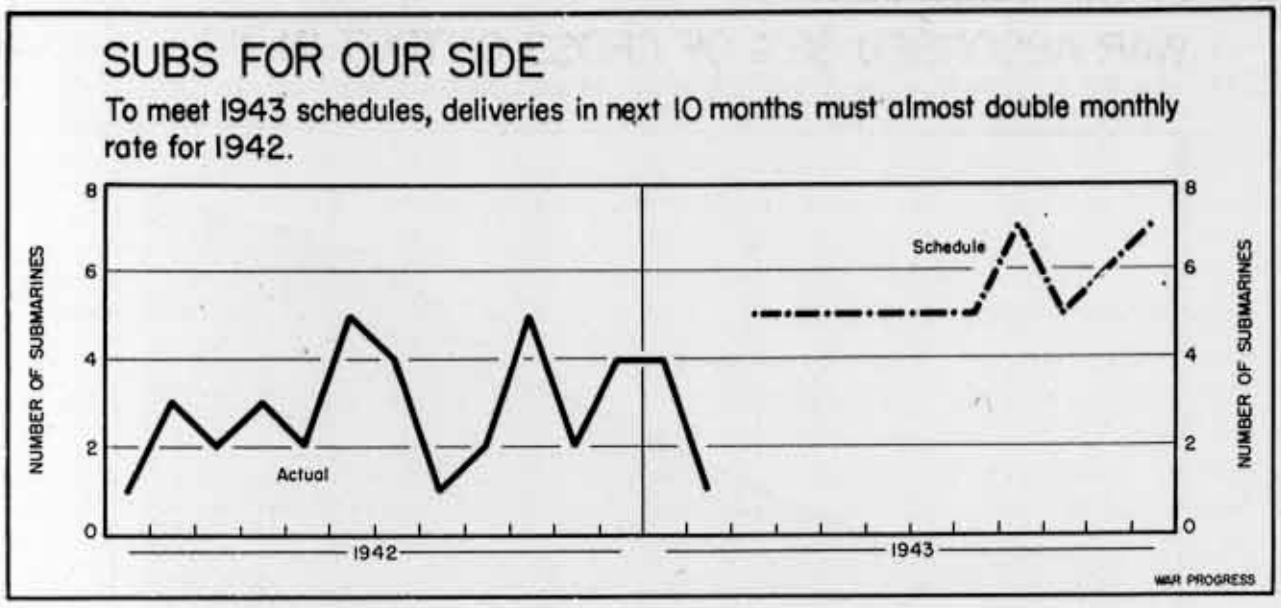
Sub Conscious

Our pigboat program keeps to an even keel, expanding relatively with the growth of the fleet. Deliveries have consistently met and sometimes bettered schedules.

IN ITS RACE to build ships that fight off German subs (WP-Feb5'43,p5), the U.S. Navy has not neglected its own undersea power. A year ago, total construction schedules called for 110 subs. Now that program has been more than tripled--and, unlike most expanding programs, deliveries have consistently equaled and sometimes bettered schedules.

Strategic developments have not made necessary any abrupt changes in the requirements for submarines as they have in the case of aircraft carriers, landing craft, and escort vessels. Expansion, rather, has about kept pace with the naval program as a whole. For example, in April, 1942, the submarine program was 10% of the dollar value of the total major combat vessel program (which includes battleships, cruisers, destroyers, and aircraft carriers, as well as subs) and





this proportion rose to 18% in the following August. But that was not because of a relative increase in submarines in the program; rather, it was due to a cutback in the plans for building battleships. In November, the sub program held at 17% of total major combat vessels, and in January, 1943, the ratio was still 17%.

DOUBLING DELIVERIES

In 1942 the Navy received 34 subs—more than double the deliveries in the 18 preceding months--and, in 1943, schedules call for almost twice the number of subs completed in 1942.

The program is not designed to vie with the Axis submarine program--particularly Germany's--as the strategical problems of the opponents are totally different. Axis targets are few and far between on Atlantic waters, whereas the main Allied supply lines are the sea lanes from the U.S. to England, Africa, and Russia.

In an effort to send her subs prowling in packs over an area as large as the Atlantic itself, Germany has diverted the major share of her shipbuilding resources into the production of submarines, and it is believed that she is currently turning out perhaps five times as many subs a month as the U.S. delivers. These are thought to be mostly smaller type ships displacing from 500 to 750 tons, although some larger ships--1,000 to 1,600 tons--are produced for the German undersea fleet, mainly for the purpose of supplying and repairing the smaller subs at sea.

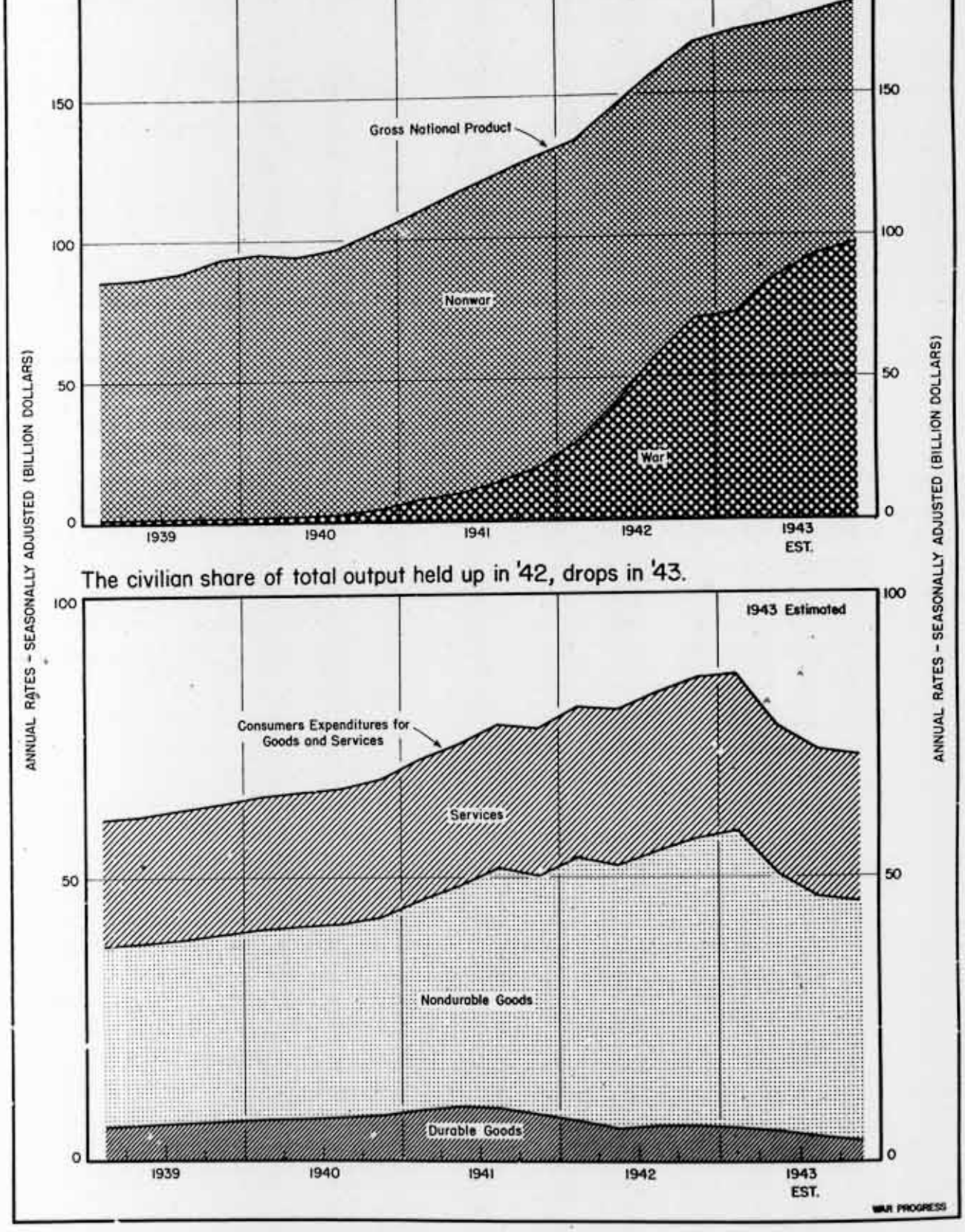
The United States, on the other hand, is concentrating on the production of a submarine that displaces about 1,525 tons. In the years between the wars, the Navy experimented with a number of types of undersea craft ranging from the S-type boats of about 800 tons up to the large, mine-laying subs of. 2,700 tons and more, but the ship currently being produced has dominated the program since 1941. Diesel powered, it is equipped with ten 21-inch torpedo tubes, and mounts two machine guns and an antiaircraft gun.

TOLL OF JAP SHIPS

American submarines have concentrated on the Pacific in this war—surface ships have kept the Atlantic comparatively clear--and have torpedoed an impressive

WAR ABSORBED 32% OF GROSS OUTPUT IN '42

It is expected to rise to 50% or so this year.



The civilian share of total output held up in '42, drops in '43.

volume of Japanese tonnage. Navy communiques to date reveal the sinking of 26 combatant ships (including three cruisers and 15 destroyers) and 112 noncombatant ships—tankers, transports, cargo, etc. In addition, probable sinkings were reported of 9 combatant ships (including an aircraft carrier) and 12 noncombatant ships. And 39 other Jap ships were damaged—a grand total of 196 telling hits by U.S. submarines.

War Progress Notes

WAR'S SHARE OF U.S. OUTPUT

THE 1943 MOVEMENT of iron ore down the Great Lakes is getting off to a bad start. By mid-April last year, about 3,500,000 gross tons of ore had been carried down the lakes toward blast and open-hearth furnaces. But this year—with ice floes the worst in a decade—ore may not begin moving until that date. And the 1943 goal is the greatest ever—95,000,000 tons, or 3,000,000 more than in 1942.

However, there's a cushion against this seeming 6,500,000-ton handicap. First, a 24,000,000-ton stockpile has been built up; second, carrying capacity of ore boats has been lifted by about 4,500,000 tons a season. But when the lakes are free, traffic will be brisker than ever, barring unusual fogs or storms.

ICEBOUND ORE

DURING 1942, about 32% of all American energies went into war. This year the total will be higher—50%, perhaps more.

Those percentages do not represent the full magnitude of the increase in war production, inasmuch as the total output of the nation will be rising, as the chart on page 12 makes clear.

Despite the increasing proportion of war production this year, civilian expenditures on goods and services are still much higher than in prewar years. In 1942, expenditures on consumers' nondurable goods more than made up for the drop in expenditures on durables, such as automobiles, refrigerators, washing machines, and so on. Moreover, even the durable-goods drop last year and this year does not reflect a decline in civilian standards of living. For, at the beginning of 1942, the use of automobiles, refrigerators, and other such conveniences was higher than ever before, and consumers continued to use them throughout the year, even though they could not purchase new ones. Measured in terms of actual use, 1942 consumption of durable goods was higher than 1941.

REPORTS ON REPORTS

Wehrwirtschaft

How the German Army prepared for use and exploitation of economic resources is traced in *The War Economics and Armament Office of the German High Command* (confidential; pp.35). The report shows how officer-economists and groups of specialists attached to army units are trained to supervise industrial operations in occupied territories.
(Board of Economic Warfare, Blockade and Supply Branch, Reoccupation Division)

Paper Shortage

The supply of paper is short and further restrictions of civilian uses, particularly of newsprint, may be necessary, according to *Pulp and Wood* (confidential; pp.21), a study of pulpwood, wood pulp, paper, and paper products.
(U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce)

Benzene Program

A program for the allocation of benzene and motor benzol for indirect military and civilian uses for 1943 is discussed in *Benzene* (confidential; pp. 39). With a 65% reduction of unrestricted civilian requirements accomplished, the current supply-demand balance for benzene is regarded as satisfactory, provided imports do not fall below schedule.
(War Production Board, Office of Civilian Supply, Chemicals Branch)

Export Prices

Export Price Indices (confidential; pp.12) shows that controls have halted the upward movement

of export prices but have not brought them below the high levels of mid-1942. This study, to be supplemented by others, indicates the need for closer scrutiny of export licenses in some fields—textiles, for instance.

(Office of Price Administration, Office of Export-Import Price Control)

[This record is an attempt to select from the many documents coming to the attention of WAR PROGRESS those studies which would be of most interest to readers. The list is by no means comprehensive, and no attempt has been made to evaluate reports for accuracy. Whether reports are available depends on the policy of each individual agency.]

SELECTED MONTHLY STATISTICS

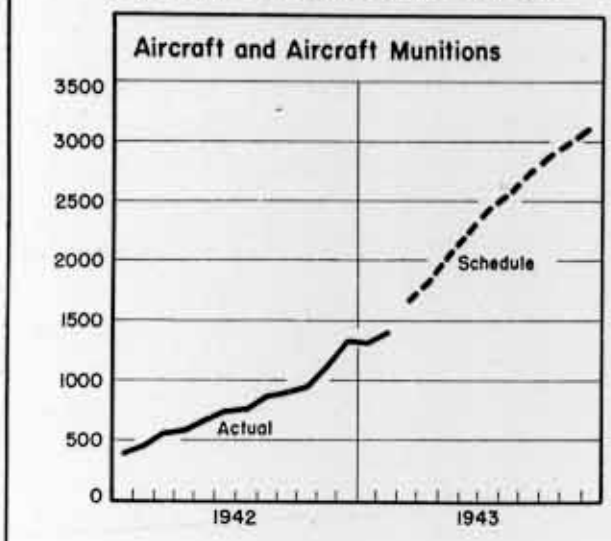
Income Payments-Hours and Earnings-Employment-Sales-Consumer Expenditures

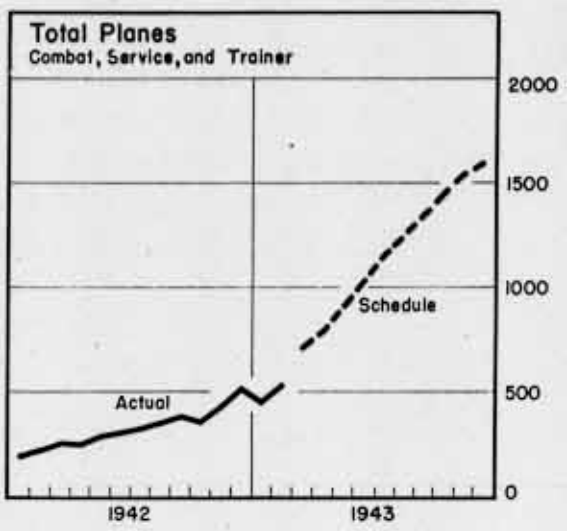
	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
INCOME PAYMENTS – TOTAL (million dollars)	p1042.8	r10,725	11,524	9,571	8,094	5,309	5,459
Salaries and Wages	p7,756	r7,602	7,635	6,894	5,806	3,644	3,709
Manufacturing, mining, agriculture, constr.	p6,045	r5,959	6,084	5,767	4,914	2,937	3,072
Government	p1,696	r1,624	1,528	1,092	820	525	476
Military	p793	r740	673	446	178	35	30
Nonmilitary	p903	r884	855	646	642	490	446
Other	p15	19	23	35	72	182	161
Other income payments	p2,672	r3,123	3,889	2,677	2,288	1,665	1,750
Income payments, annual rate (adjusted for seasonal, billion dollars)	p134.9	r131.8	130.1	118.2	105.7	68.7	71.7
AVERAGE HOURLY EARNINGS (cents)							
All Manufacturing Industries	91.8	90.7	90.5	85.6	80.1	65.5	n.a.
Durable goods	101.5	100.4	100.5	94.9	89.0	69.6	n.a.
Nondurable goods	76.8	76.2	75.6	72.5	68.8	58.3	n.a.
Bituminous Coal Mining	108.6	108.5	107.3	105.3	105.1	88.4	79.4
Metalliferous Mining†	94.1	93.1	92.6	89.4	85.1	68.9	64.5
AVERAGE HOURS PER WEEK							
All Manufacturing Industries	44.2	44.4	44.0	42.6	41.7	36.7	n.a.
Durable goods	45.9	46.1	46.1	44.8	43.8	36.4	n.a.
Nondurable goods	41.8	42.1	41.3	39.8	39.2	37.0	n.a.
Bituminous Coal Mining	34.8	35.7	34.4	30.5	31.3	26.5	30.6
Metalliferous Mining	43.3	44.0	44.2	42.3	43.3	40.4	43.2
NONAGRIC EMPLOYMENT–TOTAL (thous)	p37,995	37,862	38,942	37,802	35,062	28,524	n.a.
Manufacturing – Total	p15,898	15,743	15,684	14,980	13,693	9,671	
Durable goods	p9,332	9,178	9,050	8,374	7,312	4,197	
Nondurable goods	p6,566	6,565	6,634	6,606	6,381	5,474	
Government	p5,851	5,689	5,811	5,323	4,692	3,940	
Other	p16,246	16,430	17,447	17,499	16,677	14,913	n.a.
RETAIL STORE SALES–TOTAL (million dollars)	p4,525	4,468	r5,962	4,615	3,843	2,793	2,795
Durable goods	p664	654	944	846	694	623	672
Nondurable goods	p3,861	3,814	r5,017	3,769	3,149	2,170	2,122
CONSUMER EXPENDITURES (million dollars)	p6,800	8,325	r7,195	r6,526	6,393	4,672	n.a.
Goods	p4,405	5,951	r4,820	4,224	4,143	2,780	n.a.
Services	p2,395	2,374	r2,375	r2,301	2,250	1,892	n.a.

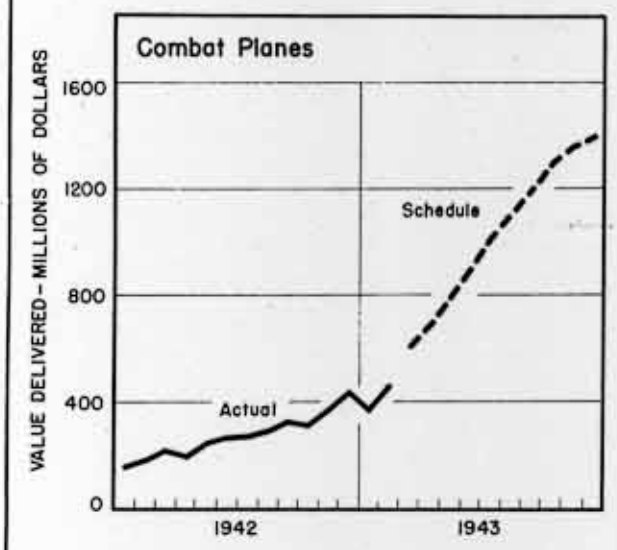
* February, except for Hours and Earnings and Consumer Expenditures, January. † Figures prior to November, 1942 not strictly comparable with later data. n.a. Not available. p Preliminary. r Revised.

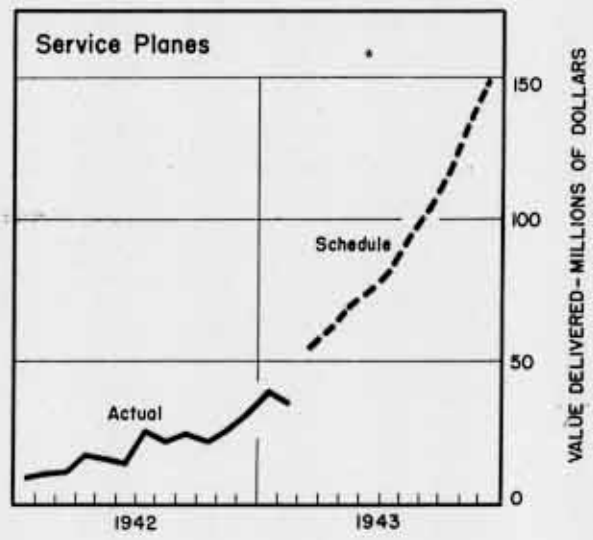
PRODUCTION PROGRESS

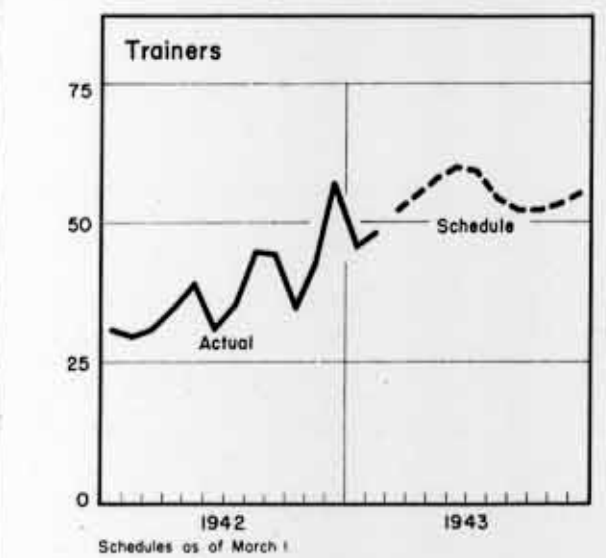
Aircraft and Aircraft Munitions



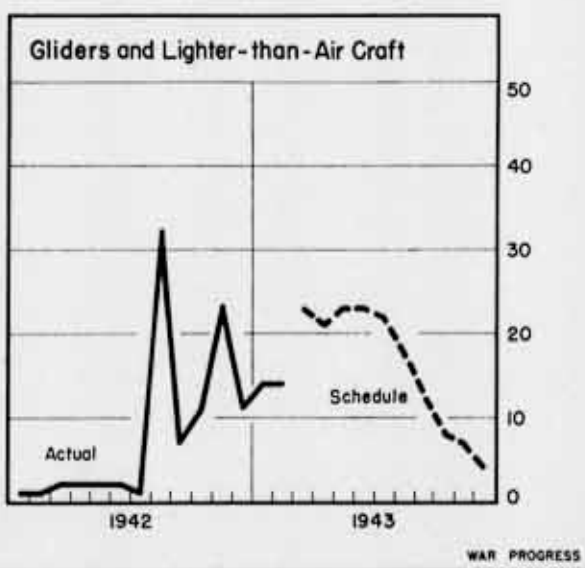








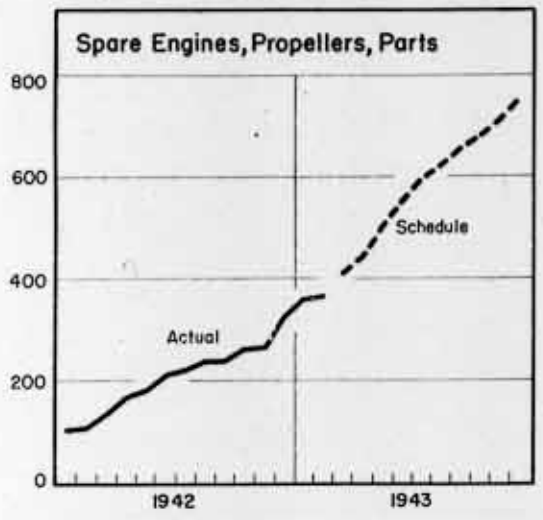
Schedules as of March 1

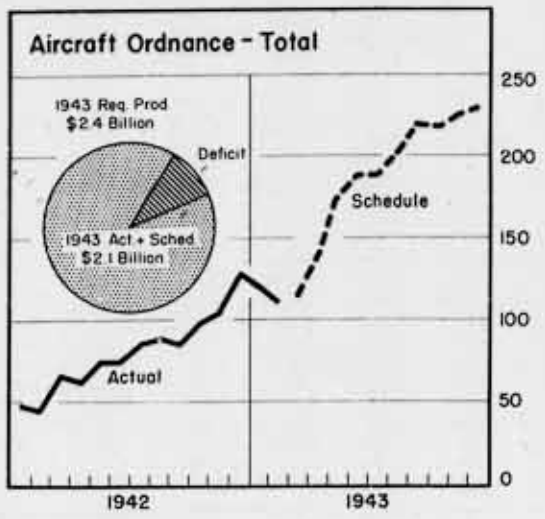


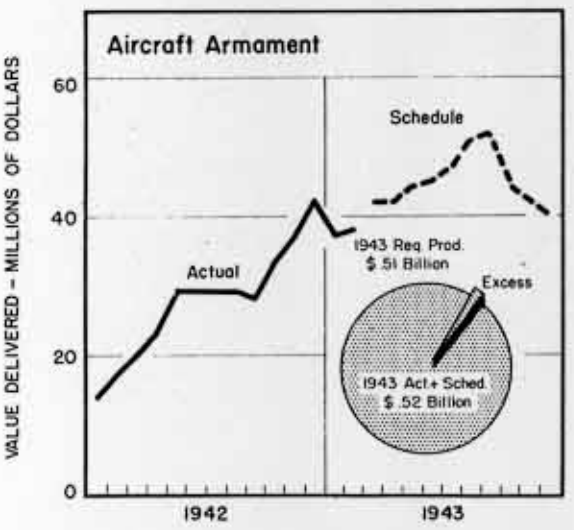
WAR PROGRESS

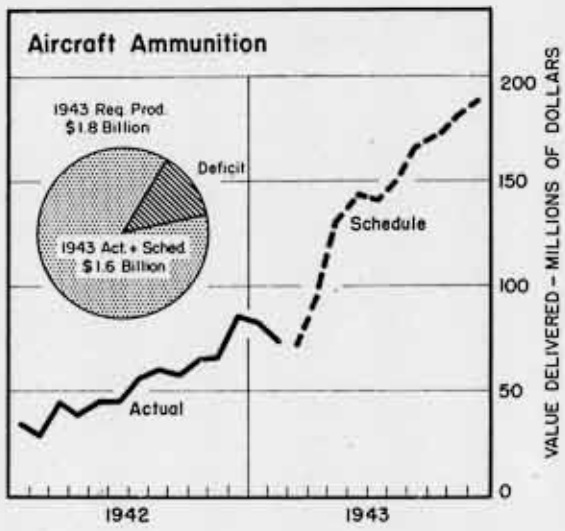
PRODUCTION PROGRESS

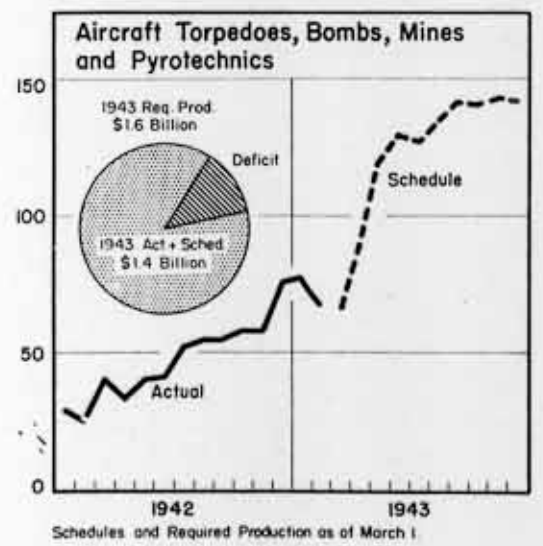
Aircraft and Aircraft Munitions (Continued)

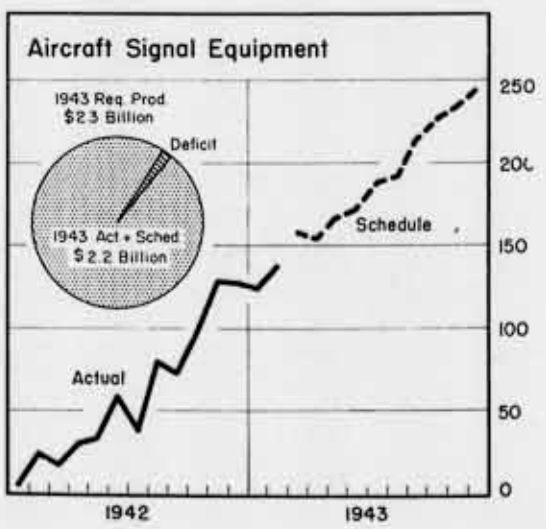












Schedules and Required Production as of March 1

WAR PROGRESS

Forces (formerly the Services of Supply) have grappled with the problems of programming, scheduling, and procuring half a million items, ranging from tooth powder to tanks. Trials and errors were inevitable in such a vast task--planning contracts, checking specifications, etc. But out of those trials and errors have come new techniques and a feel for the job.

WHEN SCHEDULES WERE SIMPLE

At first, scheduling was a comparatively simple matter because the program was comparatively small and American industry had plenty of spare capacity. Scheduling then was just a matter of persuading a manufacturer to take a contract (and it took persuading in those days). As soon as the contract was signed and delivered and unless there was reason to believe that subcontracted parts would not be available, it was considered a schedule: so many guns or so many rounds of ammunition to be delivered per month.

Later on, other factors entered. The overall war program grew. A big Army and a two-ocean Navy were needed. Existing facilities weren't big enough any more. New contracts couldn't be placed until new plants had been built, so contracts for additional industrial facilities had first to be placed. Scheduling now had to consider a new factor: When will new plants begin producing? But still, scheduling was largely a matter of finding out who would make what and when he would start delivering.

Finally, during 1942, the overall program got so big that the immense primary resources of the country fell short: not enough materials were being produced to fill all needs. It became necessary to whittle down the 1943 overall objective for all procurement agencies from some $95,000,000,000 to about $83,000,000,000. And the Joint Chiefs of Staff cut back the program to levels for which materials and facilities seemed sufficient.

THE TIME, PLACE—AND MATERIAL

However, to attain even the reduced program is a big task, requiring intensive scheduling to see that the right materials reach the right place at the right time. It requires, as an instance, a rise in munitions and war construction from February's $5,400,000,000 to about $8,000,000,000 in December. And if copper is tied up in an ammunition plant's inventories when it is needed on the assembly line for wiring tanks or planes, the overall production goal will be that much more difficult to attain. Similarly, if overproduction of a certain type of gun ties up steel for another type of gun, production goes wide of the mark again. Unbalanced production prevents getting the most out of available supplies. That's axiomatic.

Thus, scheduling during 1943 requires metering the flow of materials and parts so that they arrive where they're needed, when they're needed. The ideal would be to have aluminum sheets in a railroad

IN THIS ISSUE:

The President

WAR PROGRESS

Confidential
(British Secret)

Roundup of War Production—March and First Quarter

Scorecard on Merchant Shipping

Number 134

April 9, 1943

March Output Up 10% Over February

15% gain in airplane acceptances is big factor in munitions rise. Peak of program now in sight, calls for 5% average gain per month to December.

MUNITIONS PRODUCTION during March continued along at the February pace. The value delivered or put in place was up 10% to nearly $4,700,000,000 (preliminary); however, the gain was influenced by the greater number of days in March than in February.

Construction continued its downward course after the minor rise of last month (page 4). This is part of the broad-gauged plan to reduce the volume of materials and man-hours going into factories, barracks, homes, etc. The net effect was to bring down the monthly gain for munitions production and war construction as a whole ($5,800,000,000) to 7% (table, page 5).

STEEP-CLIMB PHASE OVER

March adds to the month-by-month accumulation of evidence that the steep-climb phase of the war effort is over. The tentatively scheduled 1943-1944 peak in munitions output and war construction is reached this coming December--at $7,500,000,000. That compares with $5,800,000,000 last month. The rise called for between March and this December is only 4% per month; and in munitions, a 5% monthly gain is needed to reach the $6,950,000,000 scheduled in December. That also is the present peak in the munitions program.

These overall comparisons tend to understate both the magnitude and nature of the job ahead. Although the overall $83,000,000,000 program for 1943 is generally judged to be feasible, the fact remains that the U.S. economy has become taut, that individual programs are competing for manpower, machinery, materials, and critical components. And programs, which are of recent development and which have steep increases during 1943, will have to get special emphasis if they are to be achieved. Among these are destroyer escorts, radar, and bombers.

STIFF SCHEDULES FOR BOMBERS, DE'S

For example, deliveries of heavy bombers must rise at an average monthly rate of 23% from March to December if the present 8-L schedule remains unchanged.

As to destroyer escort vessels, the called-for average monthly gain is 11% on a value-put-in-place basis. But on a delivery basis, the monthly increase would have to be 111%. (A great deal of work has already been done on ships to be delivered. That explains the difference in percentages.)

At the other extreme, as the table on page 3 shows, are merchant ships, tanks, and major combat vessels, required increases in which run to only 2% per month to reach the year's peak. To a certain extent, the percentage rise called for suggests the degree of difficulty in meeting schedules; on that basis, the merchant ship or tank schedule should be easier to achieve than, say, the radar, destroyer escort, or bomber programs.

PLANES PACE UPSWING

Military airplane production was a major factor in March's 10% overall munitions gain over February. Acceptances,

at 6,201 planes, were 14% higher than in February.

And since production is running to heavier models (trainers constitute a decreasing proportion of the total) the increase was even greater both on an airframe weight and a value basis--15%. On a daily average basis, however, the March record is less striking--200 planes per day in March against February's 195.

Again the 8-L schedule proved too difficult. On a value basis, March production fell 13% behind the plan. And the schedule gets no easier. As it is now set up, the production plan calls for an average monthly rise of 18% between now and the December peak. Yet, last year, when the national economy was not as taut as it is today, the gain from January to December averaged only 10% per month. The difficulty of the 1943 stepup is recognized. And the 8-L schedule is in process of revision.

FIGHTERS UP, TRAINERS DOWN

Fighters, as a group, scored a major month-to-month gain, 30%--and trainers were down 5%, largely because 250 two-engined Cessnas were switched over to light-transport use. The net result was to boost the service-combat gain sharply, as the following table (on a value basis) shows:

	March Acceptances as % of	
	Feb.	8-L Schedule
Total planes.....	115%	87%
Combat planes....	116	87
Bombers.....	112	86
Fighters.....	130	91
Service combat...	137	91
Trainers.....	91	84

Acceptances of 4-engined bombers last month passed the 500 mark, and this in itself conveys a suggestion of the pace of the production upswing. When the bomber assembly plan was first developed in July, 1941, it was not expected that 500 bombers a month would be produced until June of this year.

Two ultra-heavy, long-range bombers were scheduled to come off the assembly lines last month, but none was accepted. This is in accord with experience. Initial delivery dates usually tend to be optimistic. And March performance bears this out. As usual, the lag behind schedule was greatest in new models.

"AIRACOBRAS" ON THE BEAM

Fighters as a group fell only 9% behind schedule, but the Bell "Airacobra" exceeded schedule by 1%, the Curtiss "Hawk" by 3%, the 2-engined Lockheed "Lightning" by 16%. The Republic "Thunderbolt" fell some 14% short, though production in the plants of the parent company bettered schedule.

FOR THE NAVY

Naval ships and equipment were up only 3% in terms of value put in place and were 18% under schedule.

In terms of tonnage of vessels actu-

IN THIS ISSUE:

ally delivered, March was just about up to the February level, but 15% behind forecast. The major combat group hit a new high, exceeding by almost 50% the previous peak—November, 1942. This was due largely to the delivery of the "Iowa," first 45,000-ton battleship to pass from the construction to the outfitting stage.

CARRIER DELIVERED

Also delivered during the month, were one 10,000-ton aircraft carrier and 10 destroyers. Expected, but undelivered during the month, was a 13,000-ton heavy cruiser. As a result of this delay, deliveries of major combat ships fell 20% short of schedule.

Minor types of naval vessels did poorly again. Antisub vessels lagged behind schedule and did not better their February deliveries. Four DE boats were delivered, against a first-of-the month forecast of six. As of February 1, there were 25 scheduled for February and March. Only seven have been delivered to date. No corvettes came through, though four were scheduled for delivery from Canadian yards.

Bright spot in the seagoing picture

TO GAIN THE 1943 PEAKS.....

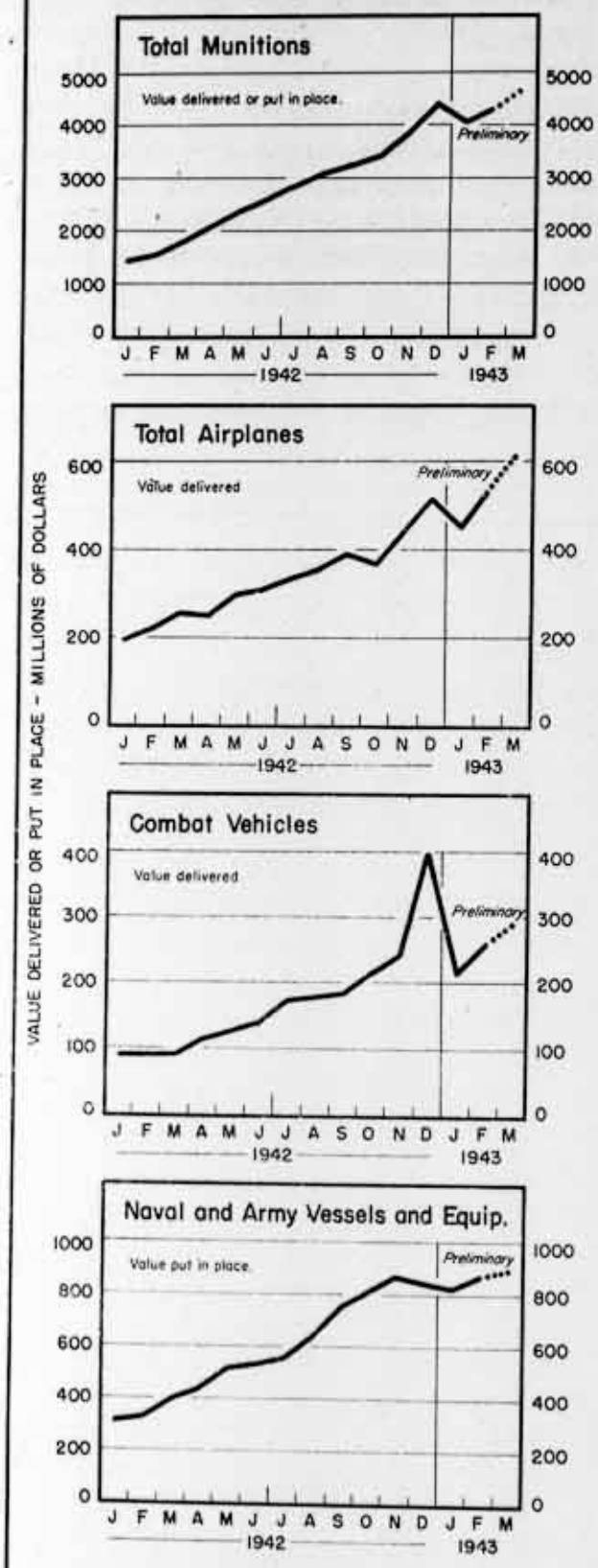
THE STEEP-CLIMB PHASE of the war program is over, as munitions and war construction prove. Last year the average monthly gain from March to the December peak was 13%; from March this year to the scheduled peak in December, only 4% per month is called for.

However, in individual groups and items the rates of gain from now to the peak month of the year (it's December in most cases) vary widely as the following table--ranged in order of magnitude of required gain--indicates:

Group	% Average Monthly Gain Required	Peak
Carbine M1 & M1A1....	43%	Oct.
Aircraft sig. equip., ground-to-air, except radar.....	42	Oct.
Aircraft radar, ground-to-air.....	37	Oct.
Service combat planes	23	Dec.
Heavy bombers.....	23	Dec.
Fighter planes.....	20	Dec.
Total airplanes.....	18	Dec.
Artillery & tank amm.	16	Aug.
Air-borne sig. equip., except radar.....	15	Oct.
Air-borne radar.....	12	Oct.
Aircraft ordnance....	12	Dec.
Destroyer escorts....	11	Nov.
Naval & army vessels & equipment.....	9	Aug.
Ground signal equip..	8	Dec.
Small arms & infantry weapons.....	7	Sep.
Army ammunition.....	7	Dec.
Small arms ammunition	6	Dec.
Total munitions.....	5	Dec.
Total munitions & construction.....	4	Oct.
Ground army munitions	4	Dec.
Tankers.....	4	Aug.
Combat vehicles.....	4	Dec.
Merchant vessels.....	2	Nov.
Tanks.....	2	Oct.
Major combat vessels.	2	Oct.

TOTAL WAR OUTPUT IN MARCH AT ALL-TIME HIGH

And all major groups except combat vehicles and construction pass previous peaks.



*Artillery and equipment; small arms and infantry weapons; antiaircraft guns and equipment.

WAR PROGRESS

in March were merchant vessel deliveries, which broke all previous records with 145 vessels and four tugs, one of ocean-going variety. Around 1,500,000 tons deadweight, deliveries were 300,000 tons ahead of February and 500,000 tons ahead of January. Moreover, deliveries ran at an 18,000,000-ton-a-year rate, not far from the required production of 20,000,000 tons for the entire year 1943, and the 21,500,000-ton schedule for 1944. In terms of value put in place, the performance would show a 10% increase over February, but would be 8% under schedule.

FOR THE GROUND ARMY

Ground army munitions exceeded February by 8% and schedules by 6%. Considerable variations from schedule occurred in individual items. Ammunition went up rather sharply over February and schedule; guns and equipment dropped slightly below on both; ground signal and related equipment passed schedule by 7% but fell 15% below February; and combat vehicles, on the other hand, were 12% over February but slightly under schedule.

SHIFT IN SIGNAL ITEMS

Among combat vehicles, armored cars came back from the sharp February decline, running 8% over schedule and about 550% over February. Small arms production proceeded on its even way, 1% over schedule and well over February. Carbines more than trebled their February mark and beat schedules substantially.

As part of a planned shift in production, army ground signal and related equipment was held down and dropped 15% below February, though it ran 7% above schedule. Aircraft signal items (airborne and ground-to-air), given the green light, went up 3% over February, but nevertheless fell 9% below schedule;

PRODUCTION PROGRESS — Preliminary

Value delivered or put in place — millions of dollars.

	March Preliminary	February Actual	% Change	March Schedule*	% Change Mar. Prelim. vs. Schedule
Total munitions and construction	$5,800	$5,423	+ 7	$6,159	- 6
Total munitions	4,682	4,253	+10	5,041	- 7
Combat munitions (a)	3,821	3,534	+ 8	4,087	- 7
Aircraft and related munitions	1,549	1,392	+11	1,651	- 6
Ground Army munitions (b)	1,066	991	+ 8	1,008	+ 6
Naval and Army vessels and equipment	890	864	+ 3	1,086	-18
Merchant vessels	316	287	+10	342	- 8
Combat planes	522	450	+16	600	-13
Service combat planes	49	36	+37	54	-9
Aircraft ordnance	110	111	- 1	114	- 4
Combat vehicles	286	255	+12	293	- 2
Guns and equipment (c)	312	303	+ 3	309	+ 1
Army ammunition	348	292	+19	294	+18
Ground signal equipment	120	141	-15	112	+ 7

* As of March 1. (a) Fighting Items: Aircraft and aircraft munitions; ground army ordnance and ground signal equipment; naval, army, and merchant vessels and equipment. (b) Ground army ordnance and ground signal equipment. (c) Tank cannon; artillery and equipment; antiaircraft guns and equipment; small arms and infantry weapons.

KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program - Checks paid (millions of dollars)	1,611	1,308	1,516	1,253	692
War bond sales (millions of dollars)	201	204	152	243	126
Commodity prices (August 1939 = 100)					
28 Basic commodities	177.1	176.7	176.7	169.9	167.2
Controlled	162.6	162.5	162.4	161.3	162.0
Uncontrolled	214.3	212.8	213.2	191.4	181.0
Nonferrous metal scrap	119.2	119.2	117.5	115.8	132.5
Textile scrap	173.9	176.5	172.6	171.4	176.0
Petroleum carloadings (no. of tank cars)					
Total	54,730	54,791	52,475	55,788	54,056
Movement into East	26,886	26,181	25,870	27,851	15,742
Exports (no. of freight cars unloaded for export Friday)					
Atlantic Coast ports	1,713	1,643	1,327	1,317	1,823
Gulf Coast ports	363	362	459	304	434
Pacific Coast ports	1,045	939	1,003	787	306
Unused steel capacity (% operations below capacity)	0.4	0.5	0.9	1.4	2.8
Department store sales (% change from a year ago)	-7	-3	+14	+2	+22

to date, ground signal production comes to 26% of 1943 requirements, aircraft items to only 15%.

Radar signal items, as a group, were off 16% from February as well as from schedule. The three major divisions of radar equipment performed as follows:

	March deliveries as % of	
	Feb.	Schedule
Air-borne radar.....	149%	102%
Ground-to-air radar..	53	73
Antiaircraft radar...	69	72

THE MARCH QUARTER

Preliminary figures for March rounded out the first quarter's totals for 1943 and, in comparison with the final quarter of 1942, showed a slight gain--4%--in total munitions plus construction. Munitions alone rose 12% while construction values dropped. These comparisons, however, are distorted to the extent that the high year-end December totals represented borrowing from January output.

Biggest single gainer among major groups was aircraft and related munitions, up 26%. Within aircraft, the pacemaker was service combat planes, up 56%. Combat planes as a group gained 21%. Ground army munitions were up 5%, and ground signal equipment, up 2%, just about held its own in terms of daily output. Army ammunition jumped 11%, guns and equipment, 16%.

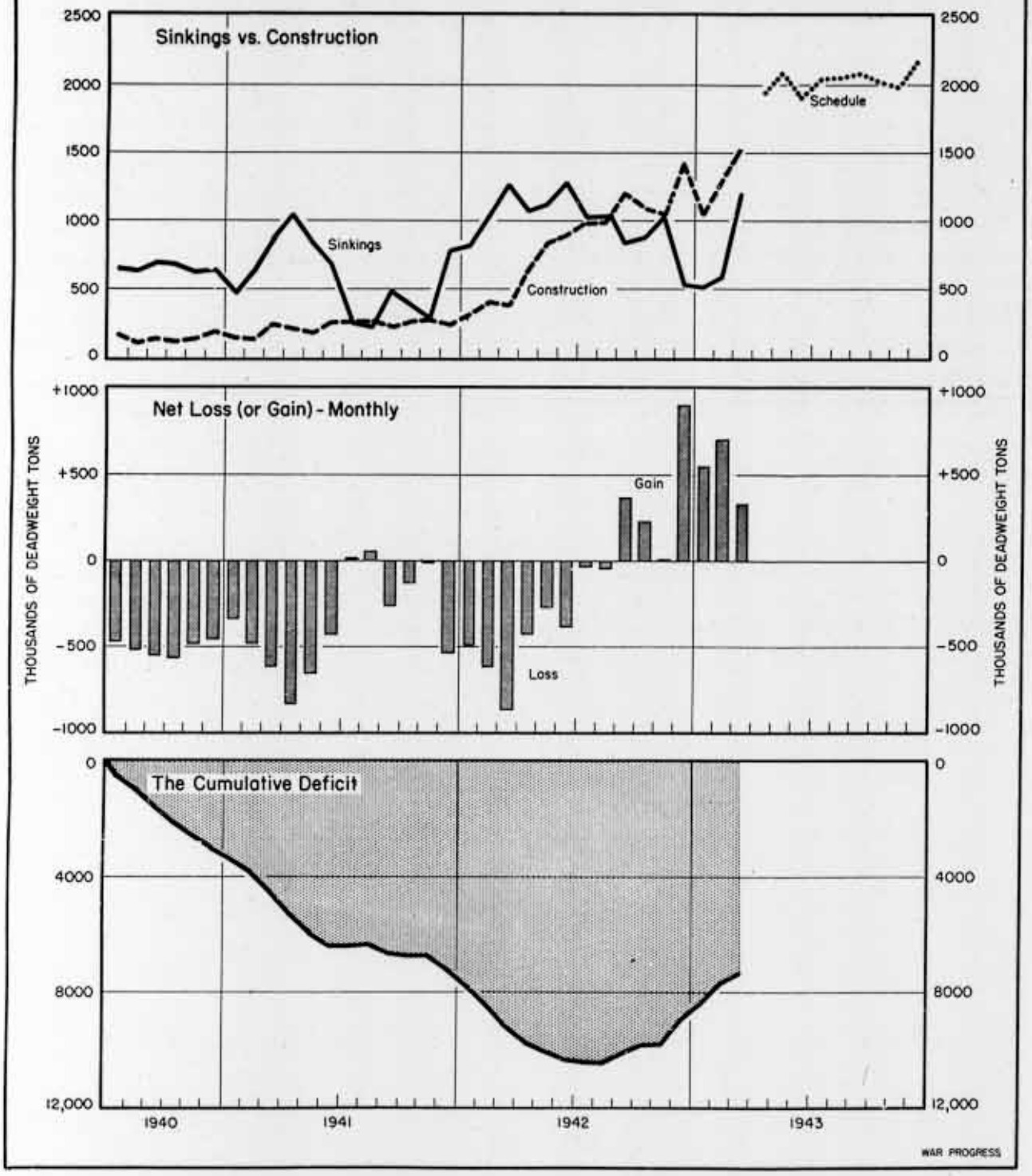
COMBAT VEHICLES OFF 1%

Among vessels, merchant ships were up 24%, reflecting the new tempo of production in many yards producing for the Maritime Commission. Vessels for the Navy and Army, plus equipment, showed a 2% rise. Sole decrease in the major groups came in combat vehicles, down 1% --this largely because of an extraordinary December peak.

Among individual munitions groups, quarter-to-quarter gains ranged all the way from a 150% increase for carbines to a 37% decrease for nonradar ground signal equipment.

SCORECARD ON MERCHANT SHIPPING

Toll of United Nations ships rises steeply, approaching sinkings of last spring; but record construction pulls down cumulative loss to lowest level since Pearl Harbor.



IN MARCH, THE AXIS SANK ABOUT TWICE AS MUCH MERCHANT SHIPPING AS IN FEBRUARY AND ONLY SLIGHTLY LESS THAN IN MARCH A YEAR AGO. AGAINST THIS, UNITED NATIONS CONSTRUCTION WAS THE HIGHEST IN HISTORY AND OFFSET SINKINGS BY MORE THAN 300,000 TONS. BUT THERE'S MORE TO THE BATTLE OF SHIPPING THAN THAT—WITH EACH SHIP SUNK, A CREW MAY BE LOST AND A CARGO IS LOST. THOUGH LAST MONTH A FEW DESTROYER ESCORT VESSELS WERE BUILT IN U.S. YARDS, UNITED NATIONS TOP ANTI-SUBMARINE STRENGTH IS STILL SOME MONTHS AWAY.

Revolution in Alcohol

War forces switch from molasses to grain. But farmers are holding back on corn, and alcohol stocks may not be up to rubber program needs.

WAR has worked a revolution in the production of alcohol. Previous to Pearl Harbor, 70% of U.S. commercial alcohol was made from molasses, 23% from petroleum or gas synthetics, and only 6% from grain. Now the pattern of processing methods is reversed. This year only 16% of the alcohol will come from molasses; 12% from oil or gas synthetics, and 72% from grain. And, in 1944, more than 80% of U.S. alcohol will be produced from grain; only 8% from molasses (chart, page 9). What happened was this:

1. War needs for alcohol (explosives, mustard gas, synthetic rubber, lend-lease, etc.) scaled up requirements sharply--from 225,800,000 gallons in 1942 to 451,800,000 gallons in 1943--as the following table shows:

Requirements	1942	1943	1944
	(million gallons)		
Direct military....	51.5	94.8	114.0
Indirect & civilian.	120.2	131.7	132.0
Synthetic rubber...	---	138.6	315.0
Lend-lease.....	24.6	44.7	50.4
Antifreeze.....	29.5	42.0	42.0
Total.....	225.8	451.8	653.2

And in order to push output up to those levels, the country was forced to convert its beverage distilleries--plants making gin and whiskey--to alcohol.

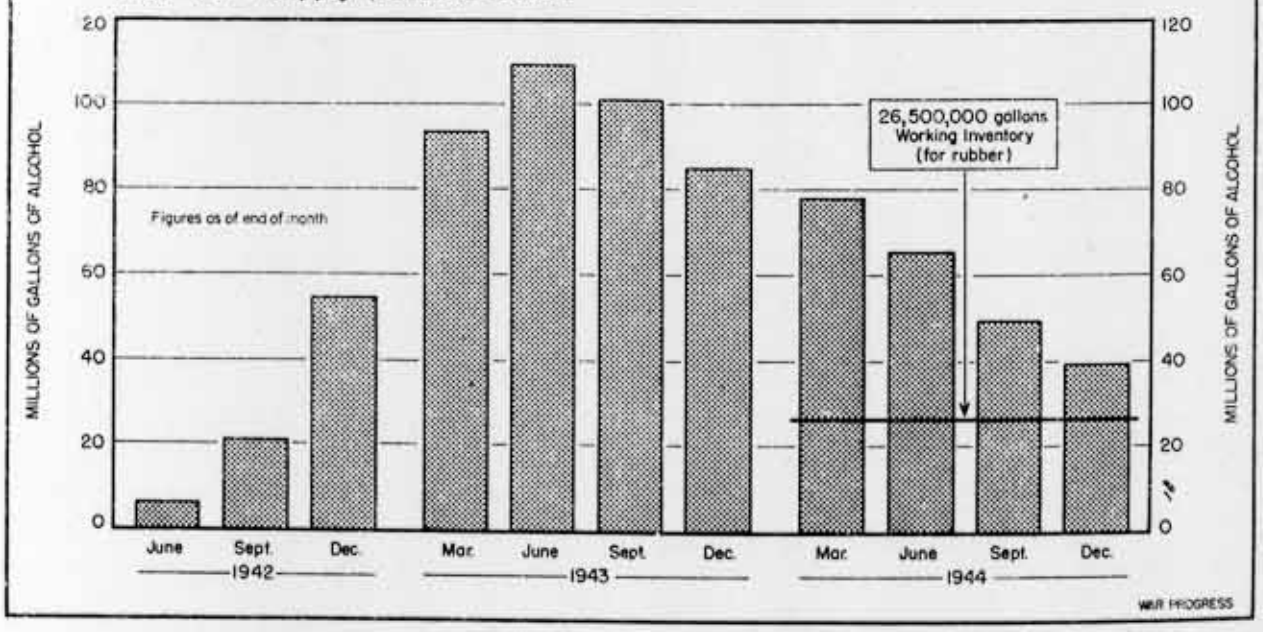
2. A shortage of tankers cut down molasses imports from the West Indies, and East Coast alcohol plants using molasses are converting to grain.

3. New plants being built to produce alcohol for the synthetic rubber program will also use grain rather than petroleum.

This alcohol revolution--this shift from molasses to grain--creates a demand for 135,000,000 bushels of corn and wheat this year, and 200,000,000 bushels in

THE GOVERNMENT STOCKPILES ALCOHOL

Rubber Reserve Corp. and Defense Supplies Corp. plan to build up inventories to meet 1944 supply-demand deficit.



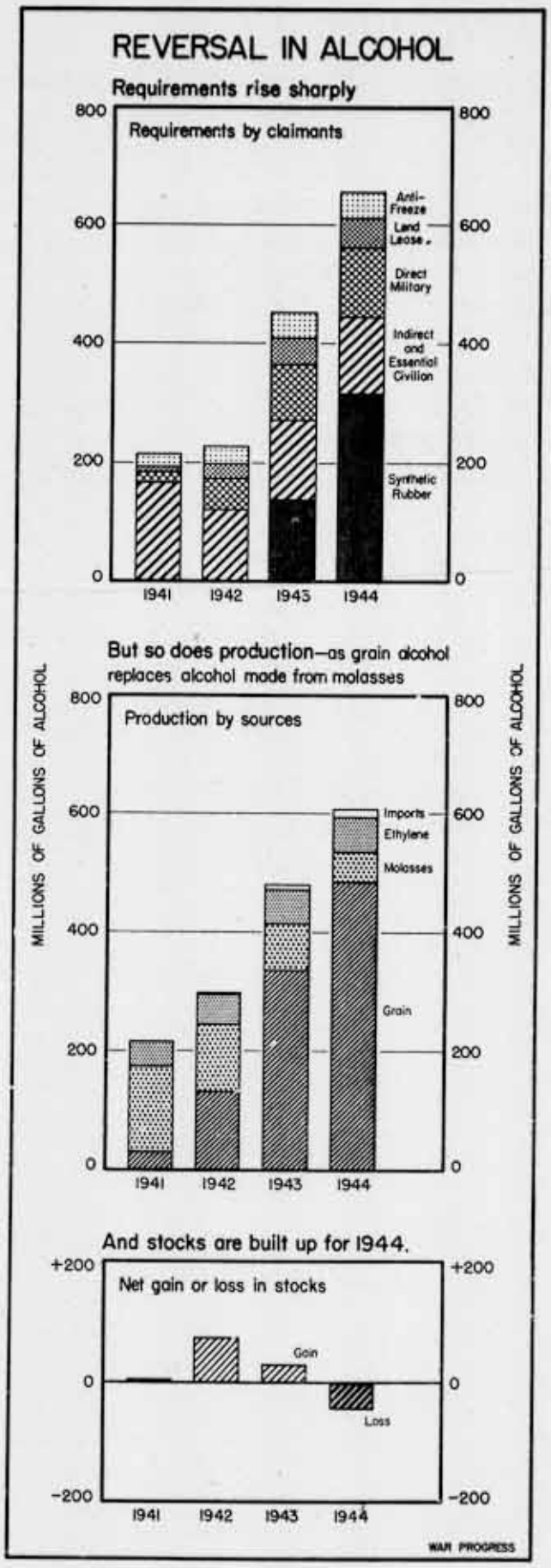
1944 (roughly 2.5 gallons of alcohol can be made from a bushel of grain). But corn presents a problem. Farmers are currently withholding corn from the distillers because pending legislation might lift corn prices, and because the current favorable corn-hog ratio makes it profitable to feed corn to hogs.

CORN STOCKS SHORT

The problem is particularly acute as distillers' corn stocks average only eight days' supply. Nor has a complete substitution of wheat proved practicable. An acceptable mix is 50% corn and 50% wheat, or perhaps 60% corn and 40% wheat. Using wheat exclusively would (1) reduce alcohol production; (2) require frequent clearing of distilling equipment clogged by the glutinous mass that wheat creates. And distilling waste from wheat cannot successfully be fed to cattle (as corn-wheat waste is during the nongrazing seasons) without supplementary additions of vitamin materials, and therefore presents a question of disposal. Granular wheat flour would return a higher alcohol yield, but no method has yet been developed for effective recovery of livestock feed from the stillage.

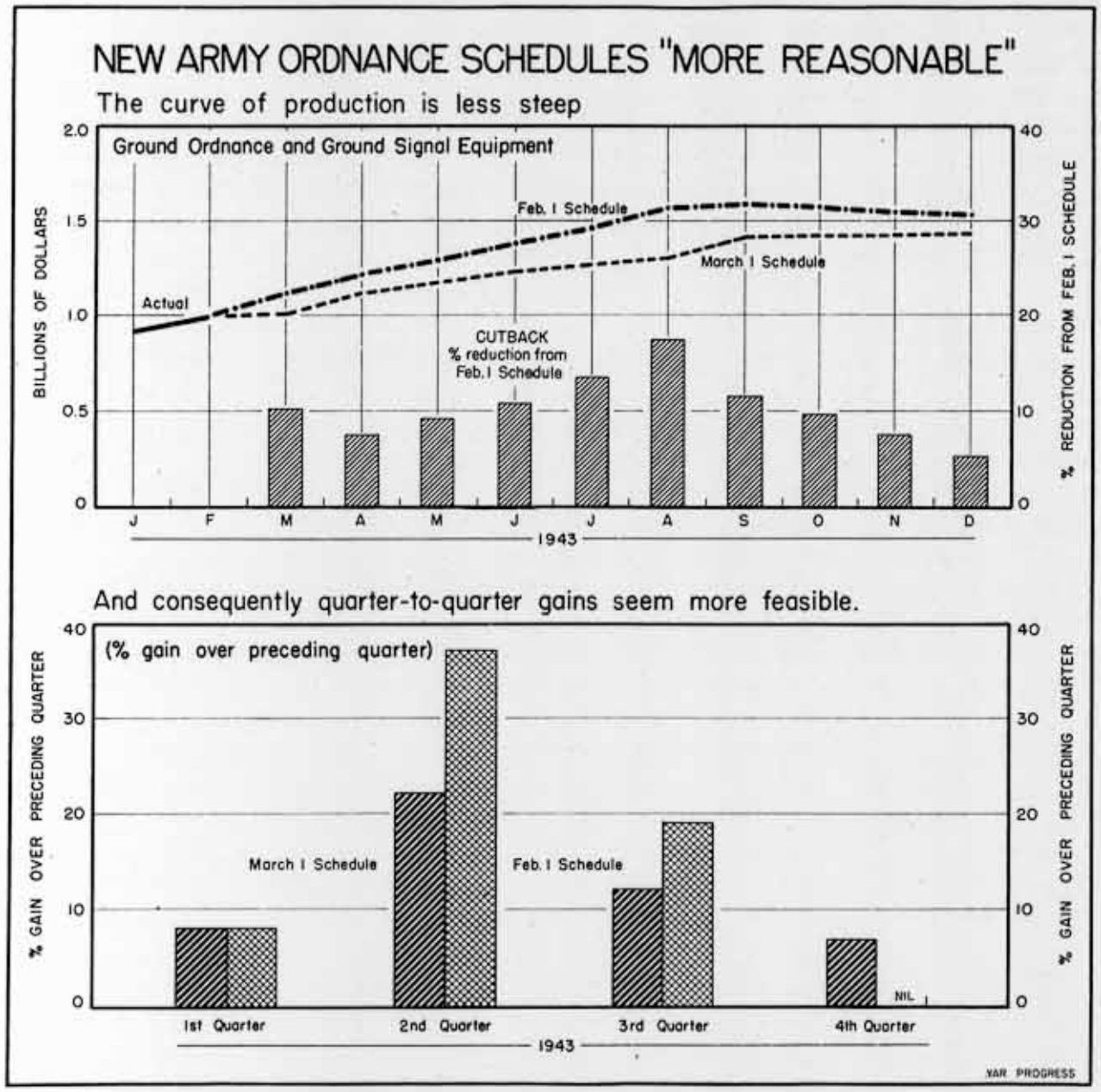
SYNTHETIC RUBBER DRAIN

With more than 70% of this year's domestic output of alcohol depending on grain, continuation of the corn squeeze could seriously disrupt the currently delicate balance between requirements and supply. Total alcohol supplies this year are estimated at 480,400,000 gallons against requirements of 451,800,000 gallons, but next year the requirements for synthetic rubber alone may consume more than half the output of alcohol, if the butadiene plants reach the more optimistic estimates of capacity. Total consumption would then exceed new



car move up to the freight door of an airplane factory at just the time the assembly line was about to run short. But such an ideal is unattainable.

The Controlled Materials Plan demands an approach to this type of synchronization. Aluminum, steel, and copper are allotted each of the various claimant agencies: the Army, Navy, Maritime Commission, Aircraft Scheduling Unit, etc. Each claimant agency then must distribute its materials so as to make its program. Since these programs are large relative to material allotments, claimants must stretch the materials taut, if programs are to be realized. And that means pro-



REVISED ARMY ORDNANCE SCHEDULES, AS OF MARCH 1, ARE A STEP TOWARD REALISM. THE RATE OF MONTHLY INCREASE CALLED FOR IN THE REVISED PRODUCTION PLAN IS MUCH MORE GRADUAL THAN IN THE FEBRUARY 1 SCHEDULE, AN ON-THE-FACE SUGGESTION OF GREATER FEASIBILITY. FURTHERMORE, THE SCHEDULE IS THE CLOSEST FIT TO ASP OBJECTIVES YET ATTAINED, IMPLYING THAT CRITICAL MATERIALS AND COMPONENTS WILL BE GOING INTO THOSE END-PRODUCTS MOST NEEDED. NOTE: REDUCTIONS FROM THE FEBRUARY 1 SCHEDULE WERE GREATEST, PERCENTAGEWISE, IN MIDYEAR.

supply by around 45,000,000 gallons.

The drain on stocks starts in August and is scheduled to continue throughout 1944. To meet it, a government stockpile was started last May. It will reach a peak of around 110,000,000 gallons by mid-summer, drop from that point to 40,000,000 in December, 1944--including one-month working inventory requirements of 26,500,000 gallons for synthetic rubber plants. And this assumes no interruption in planned output, particularly in new plant construction, and no sudden and unexpected increases in demands from mustard gas, smokeless powder, lend-lease, or civilian needs.

TRANSPORTATION PINCH

Temporary pinches may develop, too, in transportation. But the immediate problem is getting enough corn and wheat in the proper proportions to run the grain-alcohol plants at capacity.

Soil Hunger

Use of fertilizer in U.S. will hit record level this year despite diversion of nitrogen compounds to explosives. Farm prices, labor shortages spur demand.

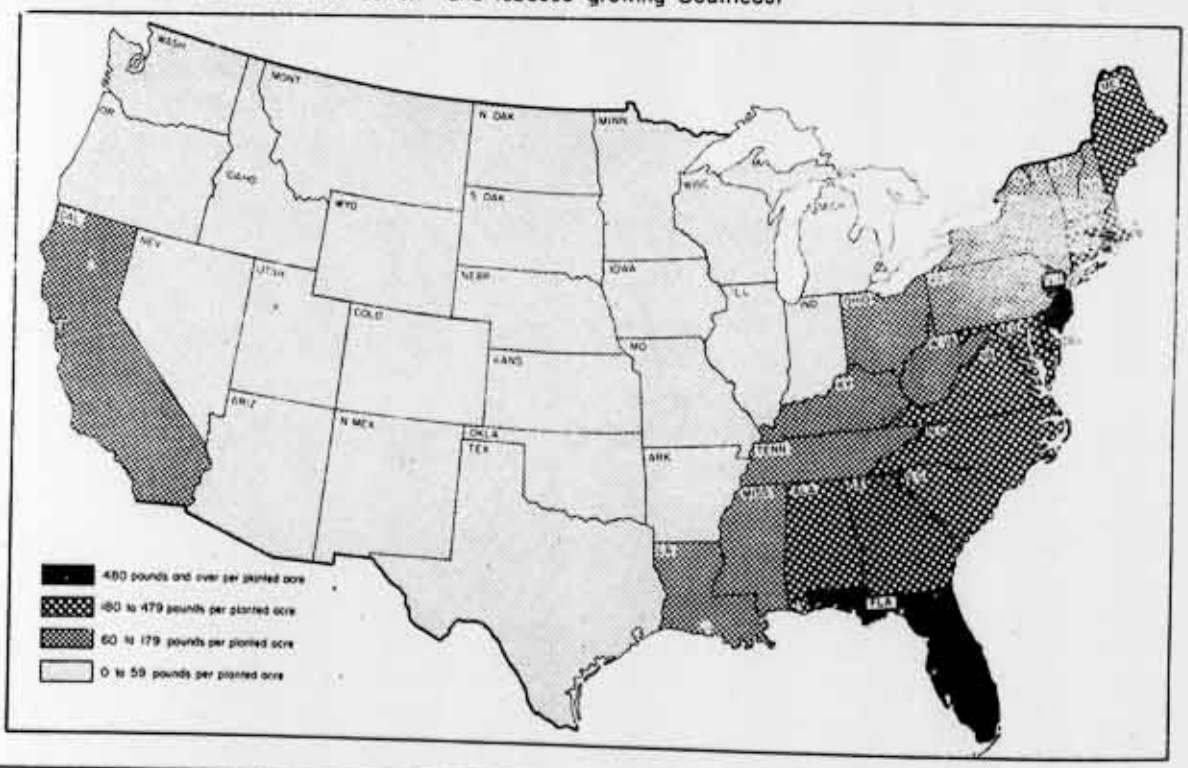
THOUGH THE WAR has halted potash imports from Germany and France and has diverted a large part of nitrogen compounds to explosives, it has not kept U.S. fertilizer use from reaching record levels.

Prospects are that this year some 2,100,000 tons of the three basic plant foods--phosphoric acid, potash, and nitrogen--will be available to replenish the land. That's 20% over the average of the past five years, and 5% above 1942. But farmers this year appear to be preparing to plant about 4% more acreage than last, so the fertilizer per acre will be about the same.

High prices and the scarcity of labor

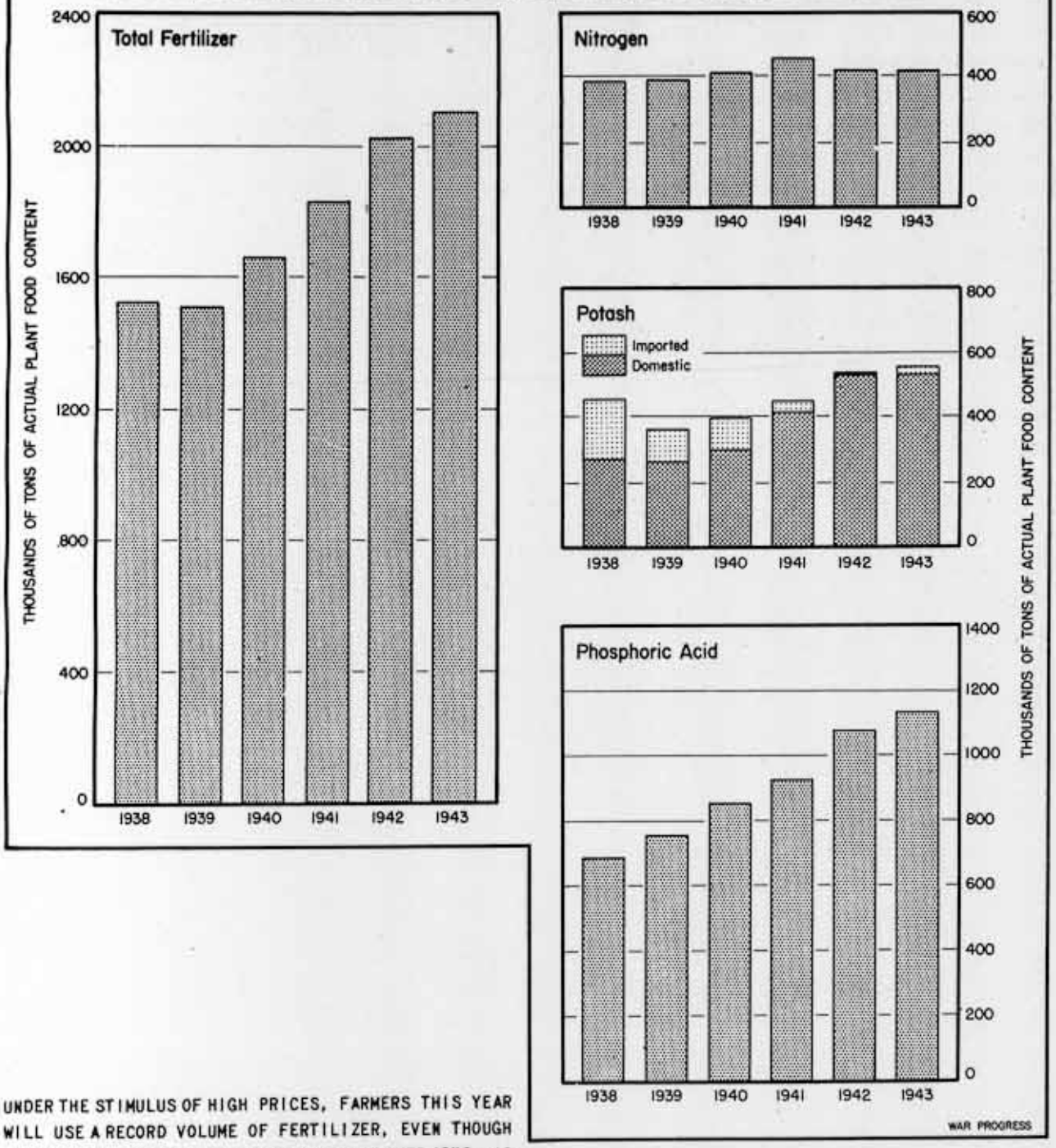
PATTERN OF FERTILIZER USE

Greatest concentration is in the cotton- and tobacco-growing Southeast



MORE FOOD FOR THE SOIL

U.S. overall supply of fertilizer ingredients is expected to increase again with phosphoric acid and potash up; nitrogen will probably equal last year's supply, but not 1941's.



UNDER THE STIMULUS OF HIGH PRICES, FARMERS THIS YEAR WILL USE A RECORD VOLUME OF FERTILIZER, EVEN THOUGH ITS NITROGEN CONTENT WILL NOT INCREASE OVER 1942. AS USUAL, GREATEST USE OF FERTILIZER WILL BE ALONG THE EASTERN SEABOARD—ESPECIALLY IN THE COTTON- AND TOBACCO-GROWING STATES (MAP, OPPOSITE). (COTTON ALONE ABSORBS ONE-FIFTH OF ALL U.S. COMMERCIAL FERTILIZER; TOBACCO, ONE-TENTH.) FLORIDA, NEW JERSEY, RHODE ISLAND—WHERE FRUITS AND VEGETABLES ARE GROWN INTENSIVELY—ARE THE HIGHEST CONSUMERS PER ACRE.

are incentives to farmers to apply fertilizer liberally; the result is that demand exceeds supply. To stretch the fertilizer supply as far as possible, the Food Production Administration has restricted the use of fertilizer for certain nonwar crops. Moreover, the formulas of mixed fertilizers which may be sold in each state have been reduced in number from as many as 300 to a maximum of 33, with attendant cuts in the proportions of nitrogen to phosphoric acid and potash. This because nitrogen is tight and the year's supply may barely equal that of 1942 (chart, page 11). The supply of nitrogen fertilizers depends on (1) how much can be spared from explosives and (2) how much nitrates are brought in from Chile.

HOME-GROWN FERTILIZER

Some soil hunger for nitrogen has been satisfied by farmers "growing their own" --planting leguminous cover crops after harvest, plowing them under before spring planting. Seed for such crops was used in unprecedented quantities last fall.

Since 1939, diversion of nitrogen to explosives and increased demands for fertilizer have put pressure on both potash and phosphoric acid. But since 1939 the supply of potash for fertilizer has gone up some 50%, domestic production from several southwestern salt deposits more than offsetting the cutoff from former European imports. Lately Soviet-shipped muriate of potash has arrived, with more to come during the year.

Supplies of phosphates also have risen about 50% since the start of the war. The problem here--as with all fertilizers--is to distribute a low-cost, high-weight product in the face of labor shortages and rising transportation costs. Commercial fertilizers include inert materials, weigh about five times as much as the soil nutrients they contain; thus this year's 2,100,000-odd tons of plant food will actually weigh about 10,500,000.

War Progress Notes

CROSSHAULING COAL

A STUDY, based on Bituminous Coal Commission data of two years ago, shows that 2% of all ton-miles of coal carried by U.S. railroads is crosshauled. (The data, though not up to the minute, undoubtedly indicates to some extent conditions of today.) If the coal had been rerouted from the nearest producing district direct to the user, as much as 1,000,000,000 ton-miles of crosshaulage might have been eliminated.

Obviously, there are great difficulties in any such zoning scheme to rearrange the movement of coal. Industrial users and householders have built up years of buying habits; and coal dealers have their long-term trade connections. Moreover, the coal-producing area nearest the consumer may not always provide the right type of coal. Railroad facilities themselves might prove a drawback to change.

Interestingly enough, only 1.5% of industrially used coal was crosshauled, as against 5.5% of domestic coal.

GERMANY'S CIVIL SERVICE

NEARLY HALF the higher officials in Germany's Civil Service have been removed --31% transferred to the army, and 15% to occupied areas. In the crisis, many officials are doing double duty as administrators of more than one county or city; the retirement age has been raised to 70, and superannuated officials have been recalled to service. Also, a number of officials have been reinstated who had been dismissed because of doubtful political reliability.

REPORTS ON REPORTS

Lumber

Consumption of lumber may have to be further restricted if current rates of production (14% behind last year) continue, according to *Lumber* (confidential; pp. 13). Factors in the decline are (1) low prices, (2) shortage of labor, (3) shortage of equipment.
(Department of Commerce, Bureau of Foreign and Domestic Commerce)

Methanol Shortage

A proposal to substitute ethyl alcohol for methanol in antifreeze is made in *Methanol* (confidential; pp. 55). Present supply of the chemical is inadequate to cover all requests for use in the manufacture of plastics, resins, etc.
(War Production Board, Office of Civilian Supply, Chemicals Branch)

Aviation Gasoline

Aviation Gasoline (confidential; pp. 13) states that high-octane gasoline will be in short supply for months to come, on the basis of production, expected requirements (8-L), and plant expansion.
(Petroleum Administration for War)

East Coast Petroleum

The East Coast petroleum outlook is still uncertain, in spite of recent alleviation of shortages, according to *Petroleum Movements into District I during the Month of February, 1943* (secret; pp. 33). Reason: Possible increases in shipments to battle zones.
(War Production Board, Division of Stockpiling and Transportation)

[This record is an attempt to select from the many documents coming to the attention of WAR PROGRESS those studies which would be of most interest to readers. The list is by no means comprehensive, and no attempt has been made to evaluate reports for accuracy. Whether reports are available depends on the policy of each individual agency.]

SELECTED MONTHLY STATISTICS

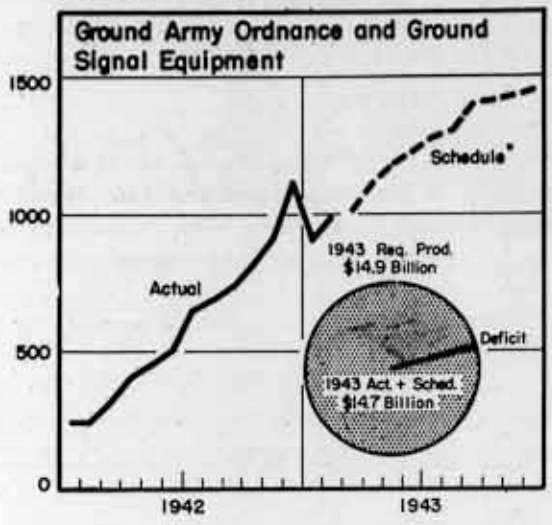
Labor Force - Federal Employment - Federal Finance

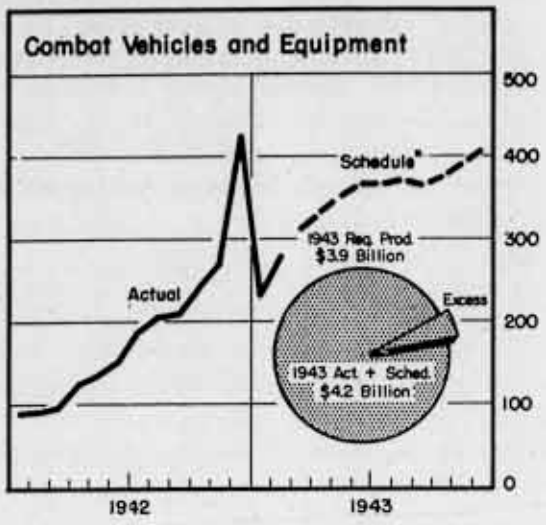
	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
LABOR FORCE - TOTAL (millions)	52.0	52.3	52.4	54.1	54.5	n.a.	n.a.
Employment	51.0	50.9	51.0	52.4	50.9		
Male	35.8	35.9	36.3	38.2	37.6		
Female	15.2	15.0	14.7	14.2	13.3		
Unemployment	1.0	1.4	1.4	1.7	3.6	n.a.	n.a.
FEDERAL CIVILIAN EMPLOYMENT (thousands)	p2,977	2,895	r2,956	2,552	1,845	883	845
War	p2,192	2,103	r2,050	1,677	990	n.a.	n.a.
War Department	p1,374	1,309	1,280	1,030	561		
Navy Department	p600	580	560	501	350		
Other War agencies	p218	214	r210	146	79		
Nonwar	p785	792	r906	875	855	n.a.	n.a.
FEDERAL FINANCE (GENERAL FUND)							
Expenditures - Total (billion dollars)	7.3	6.1	6.4	5.9	3.4	.8	.8
War	6.7	5.8	6.0	5.4	2.8	.1	-
Nonwar	.6	.3	.4	.5	.6	.7	.8
Revenues - Total	5.2	1.0	.8	2.5	3.5	.7	1.0
Income taxes	4.7	.4	.3	2.1	3.1	.5	.7
Other	.5	.6	.5	.4	.4	.2	.3
War bond sales	.9	.9	1.2	.8	.6	-	-
"E"	.7	.6	.8	.5	.4	-	-
"F" and "G"	.2	.3	.4	.3	.2	-	-
Net debt	111.3	108.6	103.3	82.2	58.9	36.6	32.9

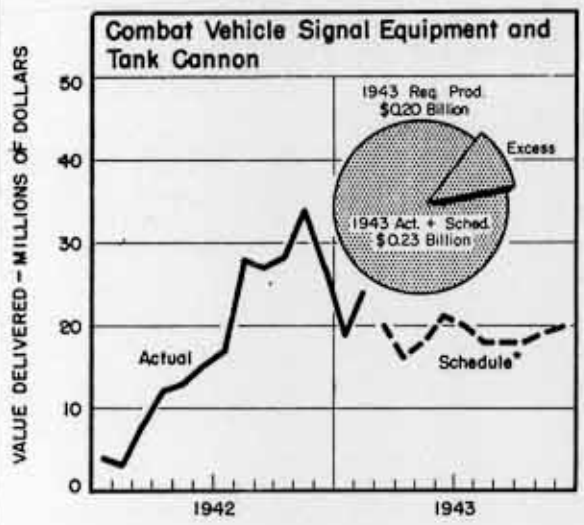
*March, except for Federal Employment, February. n.a. Not available. p. Preliminary. r. Revised.

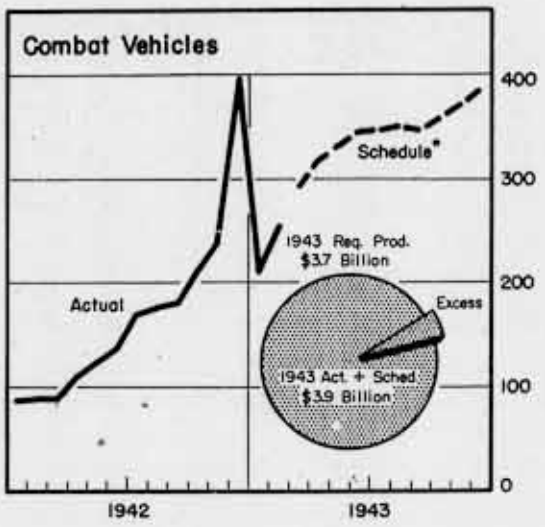
PRODUCTION PROGRESS

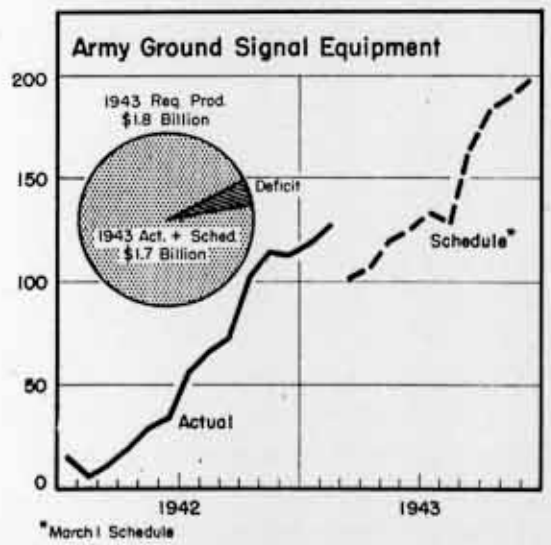
Ground Army Munitions

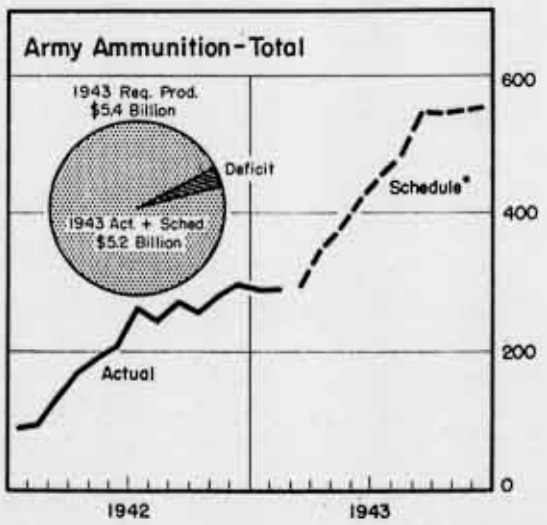










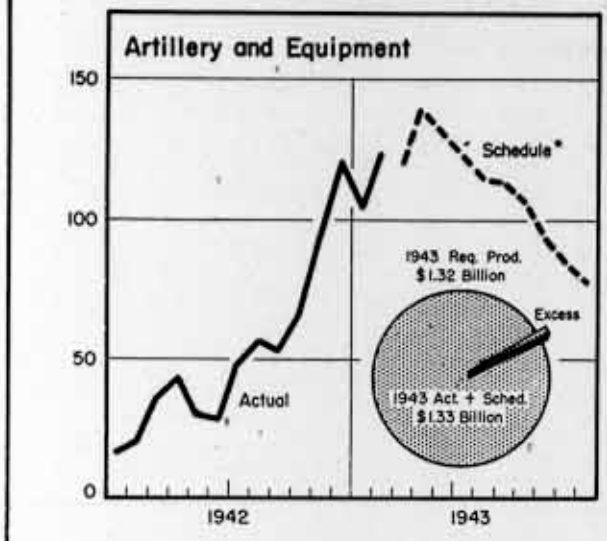


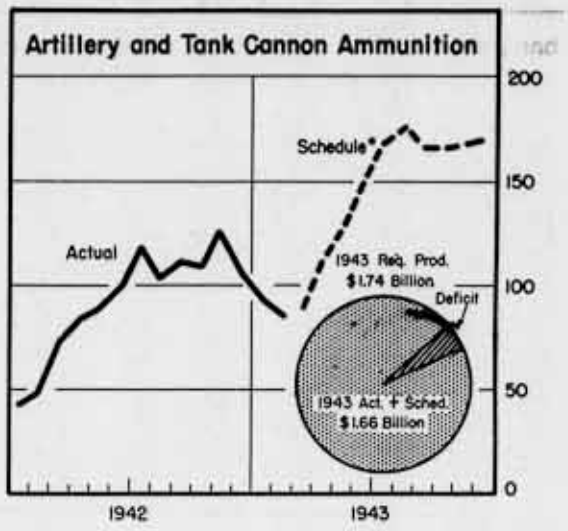
*March 1 Schedule

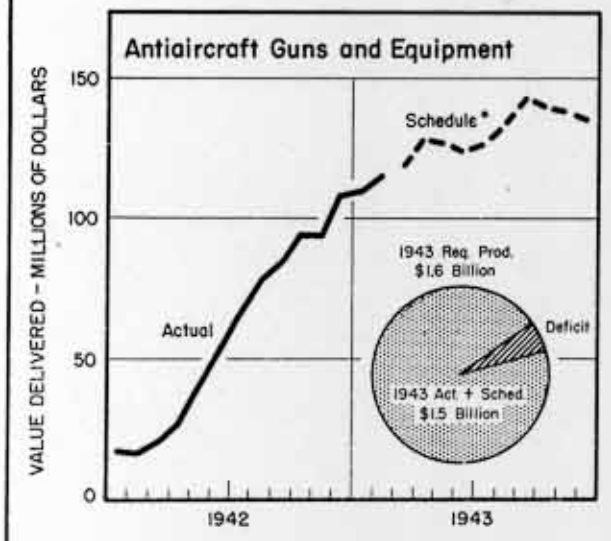
WAR PROGRESS

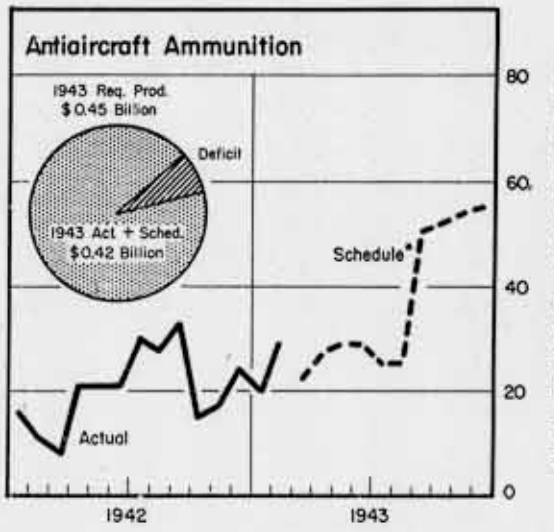
PRODUCTION PROGRESS

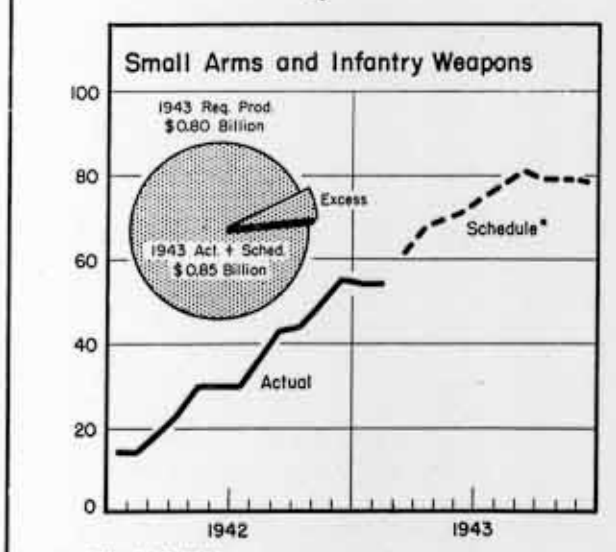
Ground Army Munitions (Continued)

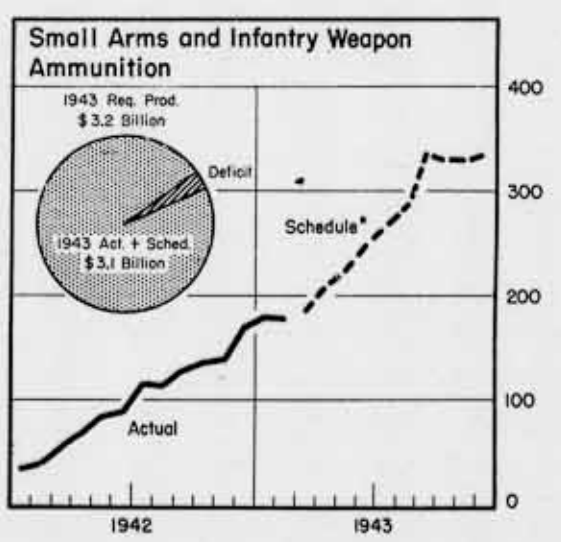










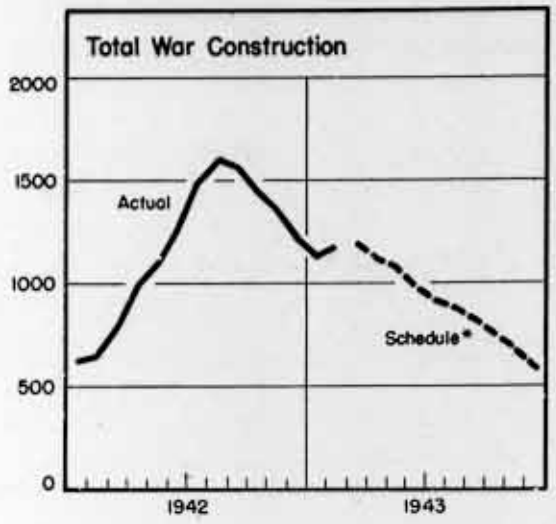


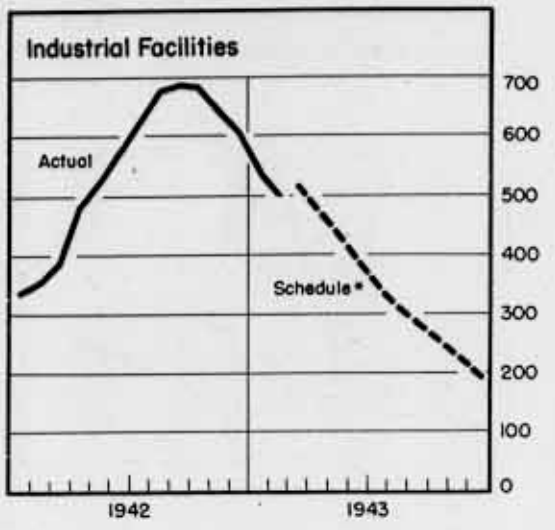
* March 1 Schedule.

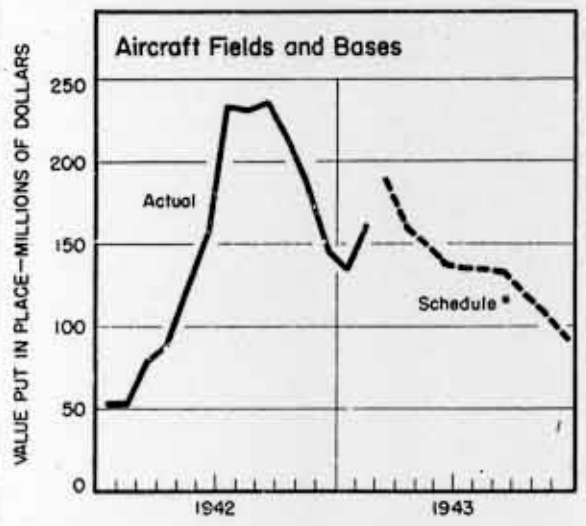
WAR PROGRESS

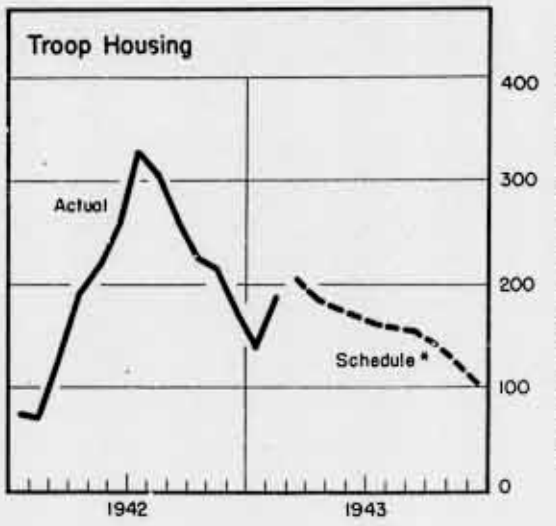
PRODUCTION PROGRESS

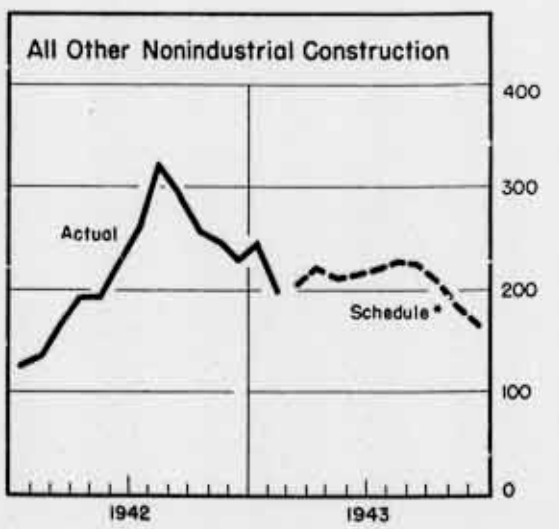
War Construction











*February 1 schedule.

WAR PROGRESS

The President
1

WAR PROGRESS

Confidential
(British Secret)

Industrial Trouble-Shooting

Number 135

April 16, 1943

Trouble-Shooters, Incorporated

Corps of engineering specialists finds a plane plant for the Navy, builds up production of stop nuts by subcontracting, now hunts labor — all to boost war output.

LAST FALL, the Navy needed a plant to build Vultee torpedo bombers. Not any plant would do. It had to be near an airport. Nor could the Navy wait six to 12 months to build and equip a new one (at an approximate cost of $15,000,000). The problem reached the War Production Board's Facilities Division. It found a plant which would just about meet specifications: the right amount of floor space, the right clearance, the right location—less than a mile from an airport, where planes coming off the assembly line could be tested.

But the plant was occupied. Mack Manufacturing Company was making combat vehicles for the Army. That, however, didn't end the quest. Facilities Division engineers scoured the vicinity, found five plants capable of housing the combat vehicle operation. Negotiations followed. Vultee started to move in, Mack out. After tooling, the Navy should be turning out Vultee torpedo bombers some time this year instead of in 1944.

SAVING TIME AND MONEY

The case is typical of how the Facilities Division saves time and money —to say nothing of manpower, machinery, and materials—by working hand-in-glove with the armed services (and from time to time with other claimant agencies) to wring the maximum utilization out of the industrial plant we already have.

In a sense, the Facilities Division is the capstone trouble-shooting agency of the war effort. Not all tough jobs come to it. The Army and Navy have their own problem solvers. But the Facilities Division is apt to get a job when, as, and if other claimant agency trouble-shooters run into a dead-end street, when the task presents special production difficulties affecting more than one agency or more than one end product. And sometimes, recognizing the complex nature of a problem at the outset, the services may not tackle it at all, but turn it over directly to the Facilities Division.

THE PERSONAL TOUCH

Since its inception back in the spring of 1942, this unit has been instrumental in diverting more than $3,000,000,000 of war contracts to existing facilities. During a 60-day period last year, for example, contracts to produce some $645,000,000 of the following components (largely for aircraft) were so diverted:

Type of Contract	Value (millions)
Engine parts.....	$ 50
Fire control equipment...	100
Hydraulic valves.....	4
Instruments.....	205
Miscellaneous plane parts	32
Magnetos & magneto parts.	23
Piston rings, valves, & fittings.....	18
Pressure vessels.....	175
Spark plugs.....	3
Supercharger impellers...	4
Small electric motors....	8
Screw machine products...	25

Basis of the Facilities Division's operations is personnel—25 top engi-

neers know the nation's plants through personal contacts (they've been in most of the big ones), through constant field work (they regularly visit them), and through special statistical reports on the individual capacities of thousands of the country's smaller metalworking concerns.

When the Army cut its ground ordnance program last November and approximately $5,000,000,000 in contracts for combat vehicles, ammunition, artillery, signal service equipment, etc., was canceled (WP-Nov27'42,p4), the Facilities Division directed $1,500,000,000 of aircraft and escort vessel business within 90 days to some 160 prime contractors and major subcontractors whose facilities had been released by the ordnance cutback.

CASE OF THE STOP NUTS

Subcontracting explorations--finding out who can do what for whom--is a big part of the Facilities Division's job. Take the case of the Elastic Stop Nut Company, maker of a patented, vibration-proof, bolt-and-screw connection used chiefly in airplanes (30,000 go into a DC-3 transport):

Late last year, the company was turning out 25,000,000 units weekly. A new plant was being built. But that wasn't enough. Another expansion--and a minimum of six months to attain it--seemed necessary. But the Facilities Division uncovered enough machine tool capacity to double the number of subcontractors to almost 150. Output of elastic stop nuts is now around 66,000,000 per week, still rising, and the increasing supply is wiping out an indicated deficit.

Where speed is all important, subcontracting has often proved the one method for avoiding long delays in the production of vital equipment. In December, 1942, the decision to winterize all combat planes suddenly jumped requirements for anti-icing equipment far above the 1,200 per month actually being turned out. The only alternative seemed to be a $250,000 machine tool expansion involving a six-to-eight months delay. The case came to the Facilities Division. By farming out parts of the bottleneck item--pumps--among two watch manufacturers and a small machine tool accessory builder, capacity for anti-icing equipment zipped up to 7,500 units monthly inside of 60 days.

UPGRADING TO FULL SKILL

The Facilities Division is always on the lookout for companies which, while already working at physical capacity, are not operating at skill capacity. The task then is to up-grade the work. For instance, General Railway Signal Company in Rochester, N.Y., was making ammunition, but neither its varied equipment nor well-trained personnel were being used to the fullest. Consequently, when the Army was trying to place a $100,000,000 contract for central fire control stations for the B-29 long-range heavy bomber, it was suggested that the ammunition work be moved out--transferred

IN THIS ISSUE:

duction must not be held up because copper is idle in Jersey City instead of being processed in Detroit, or because alloy steel is tied up in Schenectady instead of enroute to end items in Berwick.

To do this job of getting its steel or copper where it will do the most good --in terms of end products--the Army has worked out an intricate scheduling system. It is intricate because the job of programming, scheduling, and procuring hundreds of thousands of separate end products is bound, by volume alone, to be intricate. And this year the problem is complicated by new factors: labor and common components, as well as materials, are short.

SOURCE OF ALL SCHEDULES

As in the case with all schedules--the Navy's, the Maritime Commission's, the Rubber Director's, etc.--Army schedules start with decisions of the Joint Chiefs of Staff on what military operations must be undertaken, where, and when. These decisions signify certain equipment requirements.

Those for the Army are spelled out by the Army Service Forces in the Army Supply Program (ASP). ASP is Army law: each of the seven procuring services--ordnance, engineers, transport, chemical warfare, signal, quartermaster, surgeon general (medical)--has to meet its share of ASP, or explain the reason why. In short, when the ASP demands so many tanks during 1943, that's an order--unless changed or countermanded.

Thus, the tank program for 1942 originally called for 60,000 tanks of various types, but later in the year it became clear that neither facilities nor materials would be available for that many. However, until then, procurement officers tried to build up facilities to approach that level. It was an order.

Ideally, such a schedule would be 5,000 tanks per month. But since facilities were not available for that monthly rate, no such smooth flow of output could be expected. So production would be laid out on a paper schedule to fit production from existing and expected facilities--say 1,000 a month at the start of the year and 7,000 per month or even more by the end.

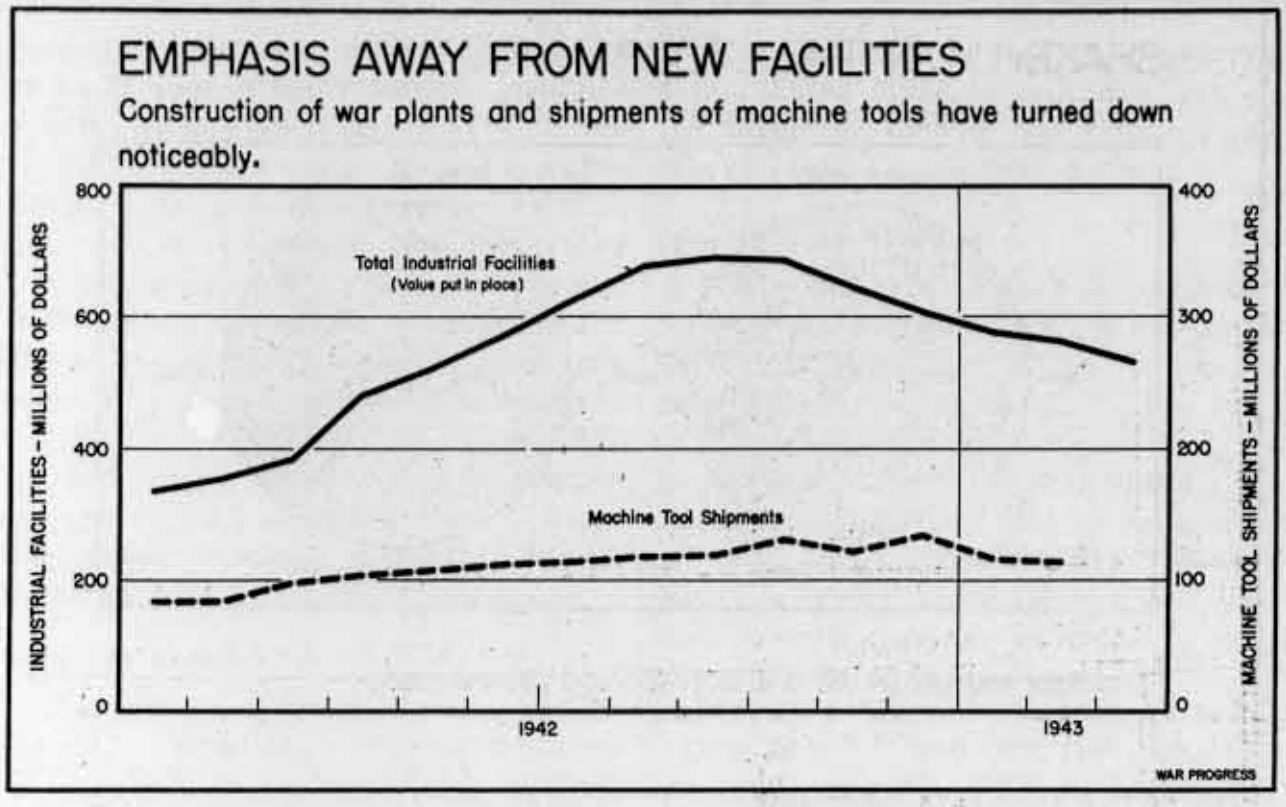
JOB OF PROCUREMENT

Getting such hypothetical schedules down to the procurement level is the next job. And for this, Army Ordnance is divided into four procurement sections: (1) Artillery; (2) Ammunition (60 caliber and up); (3) Small Arms and Ammunition; and (4) the Tank Automotive Center. It is up to each of these to see that orders are placed, that the schedules are understood and agreed to by the manufacturer, that the manufacturer delivers the munitions when expected, and that trouble spots, when they arise, are "integrated" or "expedited" out of the way.

The overall schedule for an item is broken down to a plant-by-plant basis. In tanks, for example, the Tank Automotive Center at Detroit lays out month-by-month schedules for each of the leading manufacturers: Chrysler, General Motors, Ford. Responsibility for finished tanks is lodged directly with the assembler--the "prime contractor." The "primes" pick and schedule their "subs" --and as subcontracted components become tighter, such scheduling must be more precise and stretch farther into the future.

PRIME CONTRACTOR'S RESPONSIBILITY

The primacy given prime contractors is most marked in tank production, but extends over the entire field of ordnance procurement. Ordnance relies heavily on the big automobile manufac-



IN EARLY 1942, PLANS WERE DEVELOPING TO CUT DOWN ON MATERIALS AND MACHINERY GOING INTO NEW WAR PLANTS. BY SEPTEMBER, THE VALUE OF INDUSTRIAL FACILITIES REACHED A PEAK, THEN BEGAN TO DROP; THREE MONTHS LATER, MACHINE TOOL SHIPMENTS STARTED TO DECLINE.

BY DIVERTING MORE THAN $3,000,000,000 IN CONTRACTS TO EXISTING FACILITIES SINCE LAST SPRING (THUS AVOIDING NEW CONSTRUCTION), THE FACILITIES DIVISION HELPED TO START BOTH THE NEW FACILITIES AND THE MACHINE TOOL CURVES ON THEIR DOWNWARD PATHS.

elsewhere--and the fire-control work moved in. New tools and equipment to make the conversion complete cost the government only $3,000,000, or 3% of the contract price.

CANCELING AND CONVERTING

That, however, is only part of the division's subcontracting story. By recommending cancellation of an Army Ordnance contract held by an elevator company and by having it take on a subcontract, production of general-duty amplidynes was lifted 50%. By using the machining and plating facilities of a silverware company, a shortage of steel-back sleeve bearings for the aircraft program was avoided.

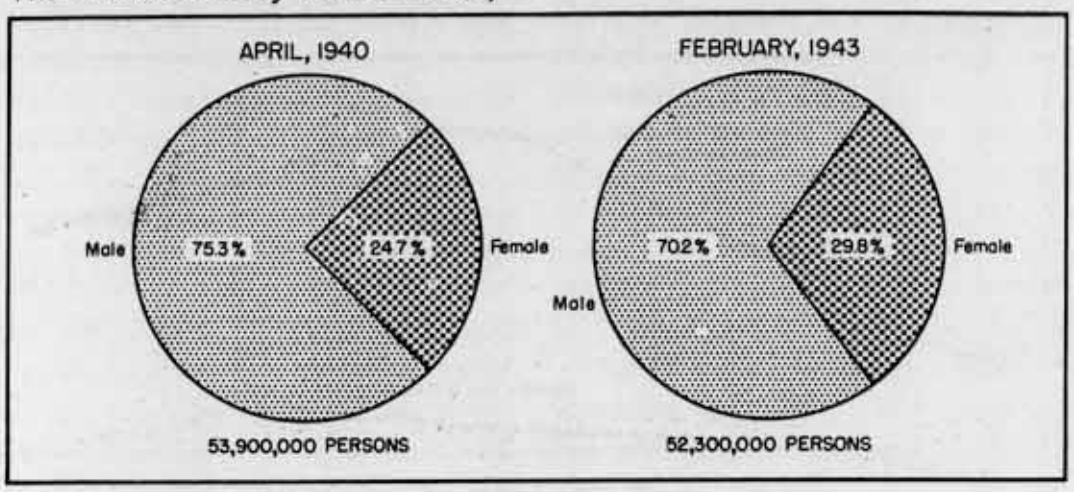
By urging a marine equipment builder to extend its submarine Diesel engine production to the remaining half of one of its plants--at the same time urging it to subcontract parts--output of submarine motors was more than doubled. By pointing the way to subcontracting at Ford's operations in Detroit, a critical labor area, only 700 new workers instead of 22,000 will be needed to double output of R-2800 (twin Wasp) airplane engines by next year--and expansion will cost $30,000,000, rather than $50,000,000.

But the work of the Facilities Division has gone beyond the reviewing of plant expansions and the pushing of subcontracting. Its staff may be called on to smash almost any bottleneck that threatens to choke a program.

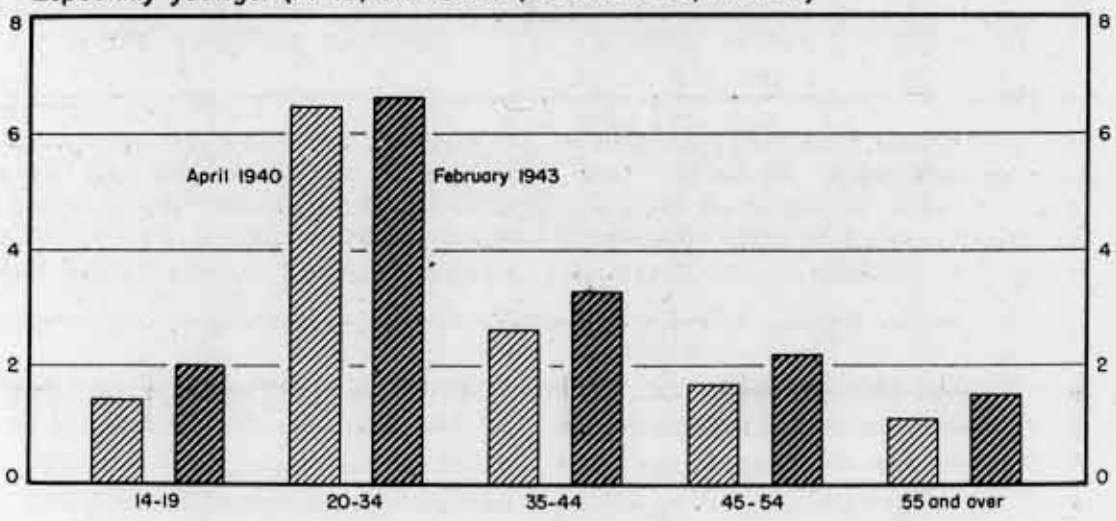
There's the case of Mesta Machine Company, which was using a portion of its

SHAKE-UP IN THE LABOR FORCE

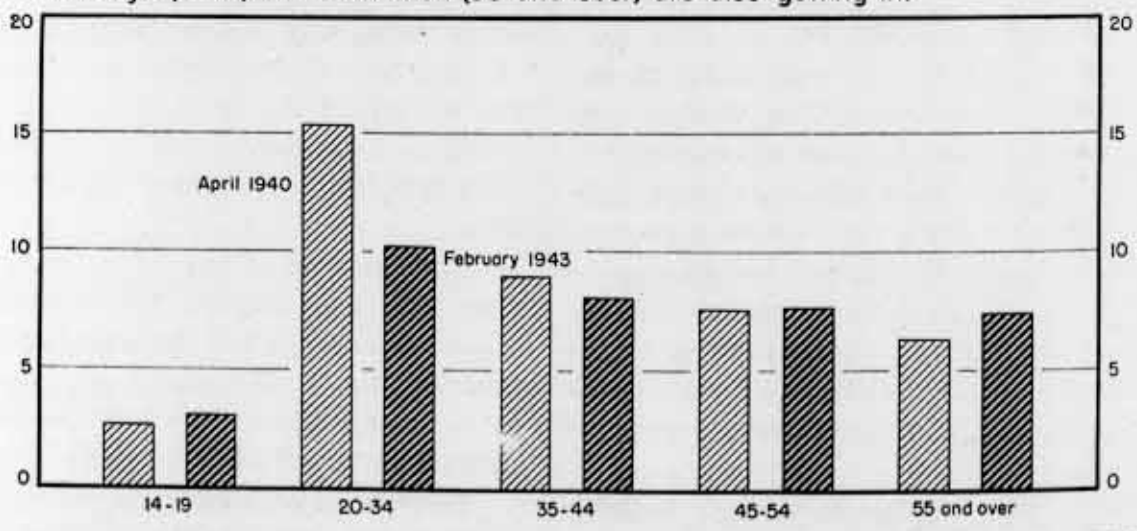
The drift is decidedly toward women,



Especially younger (14-19) and older (35 and over) women;



But boys (14-19) and older men (55 and over) are also getting in.



WAR PROGRESS

forging, casting, and machining capacity to build 16-inch coast defense guns, although it was eminently suited to the production of extrusion presses for aluminum, a major limiting factor in aircraft production today. The Facilities Division suggested deferment of the gun contract and placement of an order for six extrusion presses. The guns were deferred (without detriment to the overall war program) and the presses ordered. The consequent stepup in 1943 deliveries of presses will assure an extra 4,000,000 pounds of aluminum extrusions, enough to build some 2,000 heavy bombers.

FOUND BY PHONE

Then there's a by-no-means-exceptional instance that sounds as if it came straight out of the adventures of Mr. Blue Chip Haggerty, the Saturday Evening Post's trouble-shooter extraordinary. A month ago the Navy's Office of Procurement & Material initiated a nationwide search for a 2¼-inch Landis die head with holders for 14-thread. One of its contractors in Dallas needed it in a hurry. A Facilities Division engineer got on the telephone, located one within three hours--right in the Dallas area.

FROM POTTERY TO PEAS

Such examples of trouble-shooting can be multiplied. Right now, a six-month $5,500,000 expansion is on the way to becoming a three-month $2,000,000 job, by converting five buildings at the permanent Minnesota State Fair to the production of built-up hollow steel propellors. And just as the division steers work away from tight labor areas--the Ford-Detroit case, for example--so does it recommend contracts where labor is plentiful.

The ceramics industry, for instance, has been "slow." And when additional drying capacity for an expanding food dehydration program seemed necessary, the Facilities Division suggested an experiment: using ceramic drying kilns. Tried in the Cambridge Tile Company (Ohio) plant, it worked. And now the conversion

KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program - Checks paid (millions of dollars)	1,452	1,611	1,771	1,278	682
War bond sales (millions of dollars)	182	201	239	184	114
Commodity prices (August 1939 = 100)					
28 Basic commodities	176.5	177.1	176.4	169.6	167.2
Controlled	162.6	162.6	162.4	161.4	161.7
Uncontrolled	212.1	214.3	212.2	190.0	181.7
Nonferrous metal scrap	119.2	119.2	117.5	115.8	132.5
Textile scrap	173.1	173.9	173.7	170.9	176.3
Petroleum carloadings (no. of tank cars)					
Total	56,988	54,730	50,364	52,848	54,750
Movement into East	29,449	26,886	25,832	25,389	16,355
Exports (no. of freight cars unloaded for export Friday)					
Atlantic Coast ports	1,617	1,713	1,440	1,343	1,885
Gulf Coast ports	340	363	351	363	322
Pacific Coast ports	1,072	1,045	970	847	418
Unused steel capacity (% operations below capacity)	1.2	0.4	0.7	0.0	2.8
Department store sales (% change from a year ago)	+28	-7	+3	+26	-12

—from pottery to peas—may be extended.

Similarly, the Facilities Division has worked out a plan to take up the slack in Scranton, where consumer-goods industries have been laying off workers. The proposal is to transfer enough aircraft business—wings for the B-29 or P-47, etc.—from critical labor areas. Enough business has already been lined up to absorb all of Scranton's surplus labor.

SUPPLYING SKILLED LABOR

A new wrinkle is the actual supplying of skilled labor. A few months ago, the Lake Erie Engineering Company in Buffalo was hard put to find 25 machinists—needed for at least 90 days—to get the company over the hump on their extrusion press schedule. A three-weeks' search both in and outside the Buffalo area produced only three machinists. Asked to help, the Facilities Division tried a new tack in labor recruiting: personal appeals to business friends and associates who might be able to lend a few men each to Lake Erie Engineering for the stated period of time.

Within 24 hours, a railroad had pledged seven, an ordnance company 11. And before 10 days were out, the 18 men were in Buffalo ready to work. Shortly after, the same technique was applied when the Kohler Company of Wisconsin made a rush call for 40 machinists to get torpedo tubes out in time to meet June launchings.

NEW TASKS AHEAD

As war production soars and new bottlenecks appear, the work of the Facilities Division tends to become more varied, more complex; the present concern with manpower, for example. Indeed, the division has just been called in on a last-ditch-try to solve a special housing problem and so boost output of airplanes.

Keeping Up Chromite

Judicious stockpiling and the development of domestic mines offset the potential loss of imports; but facilities for processing ferro-chrome are tight.

WHEN WAR broke out in 1939, chromite was a critical material—99% of domestic requirements came overseas from Africa, Greece, India, the Philippines, Turkey, etc. Today, except for (1) an impending stringency in facilities needed to process the ore into ferro-chrome, and (2) the ever-present possibility that imports might be choked off, the situation in chromite is pretty well in hand, as the following table shows:

	1941	1942	1943
Supply:	(000 long tons)		
Imports.....	996	881	660
Domestic.....	13	93	200
Total supply.	1,009	974	860
Requirements:			
Metallurgical.	361	429	580
Refractory....	240	263	300
Chemical.....	114	104	116
Total needs..	715	796	996
Stocks:			
Private.....	659	544	476
Government....	320	653	585
Year-end.....	979	1,197	1,061

Even if imports failed, there is over a year's supply on hand, and U.S. mines could meet 65% of annual requirements if necessary.

Three factors account for the current favorable U.S. balance in chromite: (1) judicious stockpiling; (2) fortuitous regularity of imports; (3) a boom in domestic chromite mining (WP-July3'42,p4).

Chromite is one metal which got on a wartime footing early. The Government

began building a reserve shortly after 1939. Stocks rose from 80,000 tons on January 1, 1941, to 690,374 tons early this year and more than compensated for a modest drop in stocks in private hands.

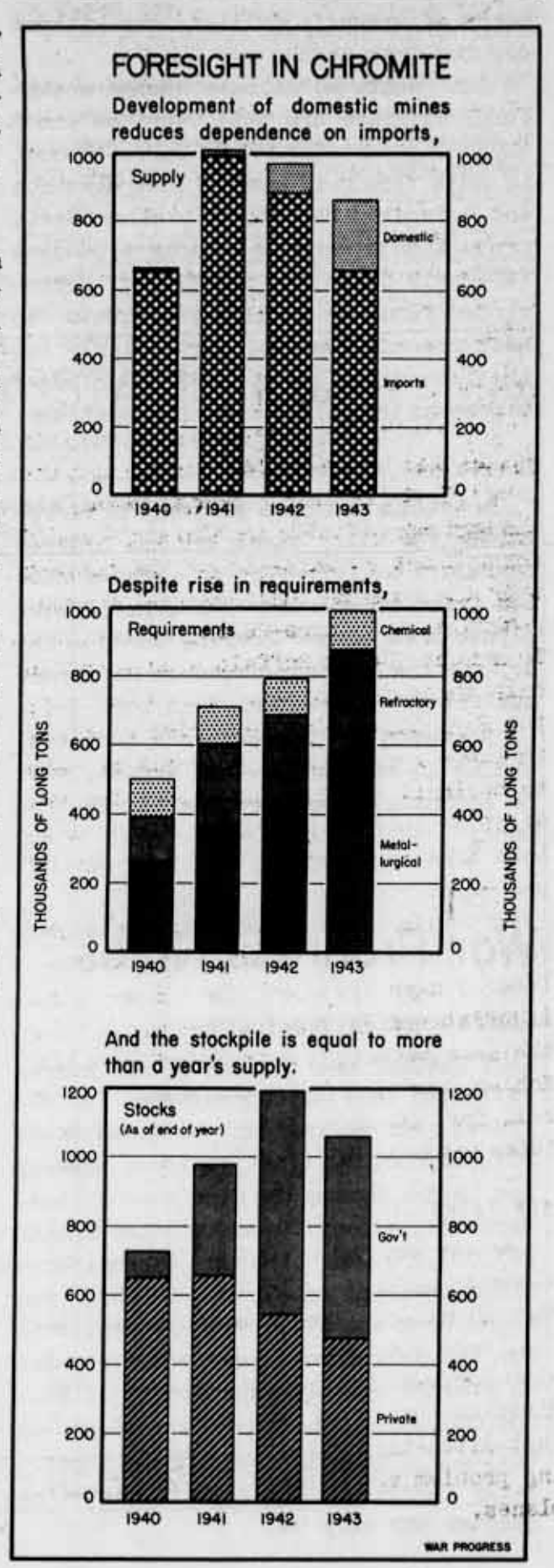
RETURN-TRIP CARGOES

Such accumulation would not have been possible were it not for the geography of the war. Because the U.S. was shipping war goods to New Caledonia, India, and the Middle East, vessels could carry back chromite from these countries and from Turkey and Africa. (A Jap invasion of New Caledonia and India, and a Nazi invasion of Turkey would have cut imports by almost 25%.) As it is, the U.S. lost its Philippine supply (26% of 1941 imports) and its Grecian supply, which ran to about 5% of prewar imports. On the other hand, the U.S. now gets chromite from Russia that used to go to Germany. (It was 10% of U.S. December imports.)

Nearest source of chromite--Cuba--has been periodically inaccessible. Because shipping space was diverted to sugar, Cuban imports of chromite fell 24% in 1942, and only a federal priorities order ended a serious shortage in refractory-type ore. (Domestic ore can't be used for refractory purposes.)

INVASION FACTOR

A contingency to consider this year is a possible Allied invasion of Europe. No doubt, it would mean the diversion of considerable shipping from Africa, and a consequent reduction in chromite pick-ups from African ports--54% of imports last year. Against this, the U.S. can fall back on its mines in Montana, Oregon, and California, which are estimated to yield perhaps 300,000 tons this year and under pressure could reach an annual rate of 675,000 tons. Domestic production at this level, plus non-African imports, could easily meet require-



ments of around a million tons without dipping into stocks.

But while we'll have enough metallurgical-grade ore this year, the pinch may be in processing it into ferro-chrome, in which form it is used to give strength and corrosion resistance to alloy steel, production of which is rapidly expanding (WP-Mar12'43,p6). Capacity of ferro-chrome furnaces is barely adequate to meet present demands, particularly for the low-carbon grade, which takes longer to process than high-carbon ferro-chrome.

CONSERVING FERRO-CHROME

To avert a possible shortage in ferro-chrome for alloy steel, WPB has ordered consumers to (1) convert to a higher carbon ferro-chrome wherever practicable, (2) use more chrome-bearing scrap in alloy-steel melts, and (3) reduce the chrome content of alloy-steel analyses.

Moreover, new ferro-chrome furnaces, coming in between now and August, will be adequate to meet foreseeable requirements.

War Progress Notes

LAGGING WAR EXPENDITURES

LAST JANUARY the Bureau of the Budget estimated that war expenditures for the fiscal year ending June 30 would reach $77,000,000,000. That goal now appears too lofty. During the nine months ended March 31, expenditures amounted to only $53,000,000,000. March expenditures alone amounted to $7,100,000,000, and to get up to the $77,000,000,000 estimate for the full fiscal year would require an average monthly expenditure of $8,000,000,000 in the current quarter—an unlikely prospect, requiring a 22% quarterly increase. The gain in the March quarter was only 9%.

SHIFTS IN THE LABOR FORCE

DESPITE MANPOWER demands of the armed forces, the civilian labor force in March of this year was only 1,900,000 below that of April, 1940—a decline of less than 4%. But its composition has changed distinctly: more women, and a rising proportion of young and old workers. The proportion of middle-aged workers, presumably the most efficient, has declined (chart, page 4).

In February of this year, workers from 14 to 19, and from the 45 and over group constituted 45.7% of the total labor force, whereas in April, 1940, they were only 38.4%. As you would expect, male workers in the 20-34 age group show a sharp decline in the labor totals —from 28.4% in April, 1940, to 19.7% today. Somewhat the same trend holds true for women. Despite a rise in proportion of all women workers from 24.6% of the total labor force in April, 1940, to 29.8% in February of this year, the 20-34 age group rose less than 1%, and women in this group now constitute only 42.3% of all female workers, compared with 48.4% two years ago. Obviously, recent female recruits for the labor force have come largely from the fairly old groups and the very young.

REPORTS ON REPORTS

Basis for Sulfa Drugs

About 90% of the current supply of *Acetanilide* (confidential; pp.23) goes into the manufacture of sulfonamides. Output of acetanilide, a benzene derivative, should be increased despite its competition with demand for cumene (aviation gasoline) and styrene (synthetic rubber).
(War Production Board, Office of Civilian Supply, Chemicals Branch)

Containers

Containers (confidential; pp.14) states that container production, already restricted by metal shortages, is further threatened. Glass container output, now at a record level, will decline if furnaces cannot be heated adequately, and fuel oil and

natural gas supplies are tight.
(U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce)

Absenteeism in War Plants

Temporary absence from work in 16 war plants does not average over 7% of total working hours, according to *Preliminary Report on Absenteeism in War Industries* (confidential; pp. 17). The problem is considered in relation to illness, type of employee, length of work week, living conditions, etc.
(Office of War Information, Surveys Division)

The 48-Hour Week

Report on Effects of the Executive Order Establishing the 48-Hour Week (confidential; pp. 30) presents estimates of the possible increases in payrolls and in labor costs from the lengthened work week. A second report will deal with the effect of these increases on profit margins and price ceilings.
(Office of Price Administration, Division of Research)

[This record is an attempt to select from the many documents coming to the attention of WAR PROGRESS those studies which would be of most interest to readers. The list is by no means comprehensive, and no attempt has been made to evaluate reports for accuracy. Whether reports are available depends on the policy of each individual agency.]

SELECTED MONTHLY STATISTICS

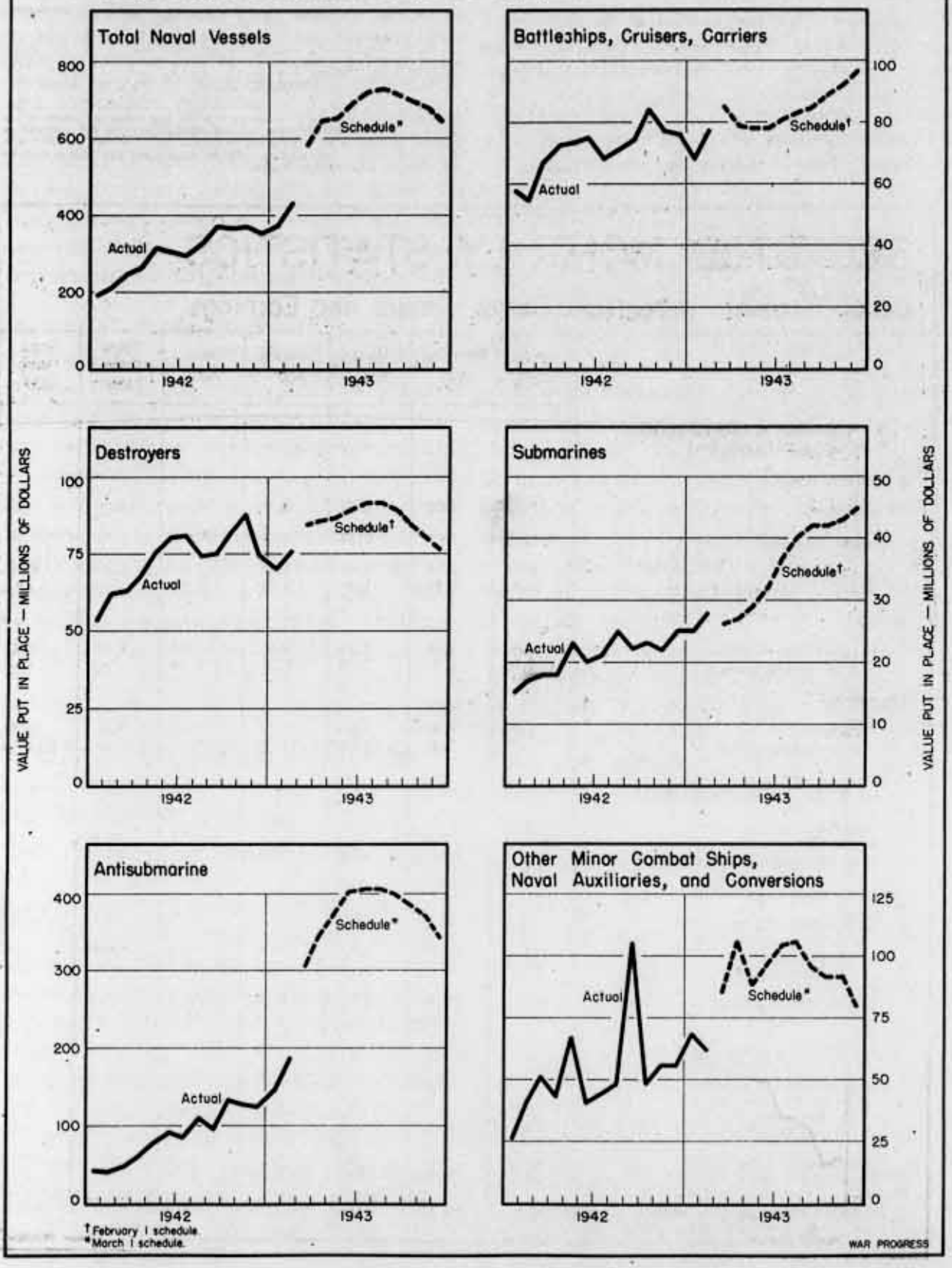
Labor Turnover – Wholesale Prices – Hours and Earnings

	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
LABOR TURNOVER IN MFG. INDUSTRIES (rate per hundred employees)							
All manufacturing:							
Accessions	7.87	8.28	6.92	7.90	6.02	3.06	4.71
Separations – Total	7.04	7.11	6.37	7.06	4.82	2.61	2.85
Quits	4.65	4.45	3.71	4.31	2.41	0.64	1.19
Military Separations	1.23	1.26	1.29	1.13	0.56	-	-
Aircraft:							
Quits	3.71	3.86	3.69	4.29	2.68	0.86	2.23
Military Separations	1.66	1.70	1.78	1.84	0.74	-	-
Shipbuilding:							
Quits	5.90	6.98	4.49	5.77	3.27	0.66	0.85
Military Separations	1.84	1.80	1.95	1.58	0.56	-	-
WHOLESALE COMMODITY PRICES ALL COMMODITIES (1926 = 100)	p103.4	p102.5	101.9	99.6	97.6	76.7	87.8
Farm Products	p122.8	119.0	117.0	107.8	102.8	66.8	94.1
Food Products	p107.4	105.8	105.2	102.4	96.1	70.2	87.5
Other than farm products and foods	p96.5	p96.2	96.0	95.5	95.2	80.4	85.5
AVERAGE HOURLY EARNINGS (Cents)							
All Manufacturing Industries	p92.4	91.9	90.7	87.0	80.3	63.1	n.a.
Durable Goods	p102.1	101.7	100.4	96.9	89.2	69.5	n.a.
Nondurable Goods	p77.4	76.8	76.2	73.0	68.9	58.2	n.a.
Bituminous Coal Mining	p110.5	108.6	108.5	106.1	105.8	88.4	79.7
Metalliferous Mining†	p94.7	94.1	93.1	91.2	86.3	69.0	65.9
AVERAGE HOURS PER WEEK							
All Manufacturing Industries	p44.5	44.2	44.4	43.0	42.4	37.3	n.a.
Durable Goods	p46.2	45.9	46.1	45.3	44.5	37.0	n.a.
Nondurable Goods	p42.0	41.7	42.1	40.2	39.9	37.5	n.a.
Bituminous Coal Mining	p37.3	34.8	35.7	32.1	31.6	27.6	31.4
Metalliferous Mining†	p43.6	43.3	44.0	43.5	44.4	39.9	43.9

* February, except for Wholesale Prices, March. Figures prior to July, 1942, not strictly comparable with later data. n.a. Not available. p Preliminary.

PRODUCTION PROGRESS

Naval, Army, and Merchant Ships and Equipment

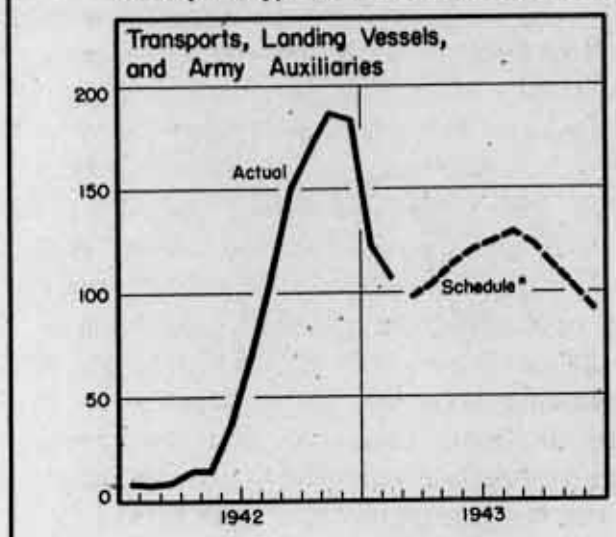


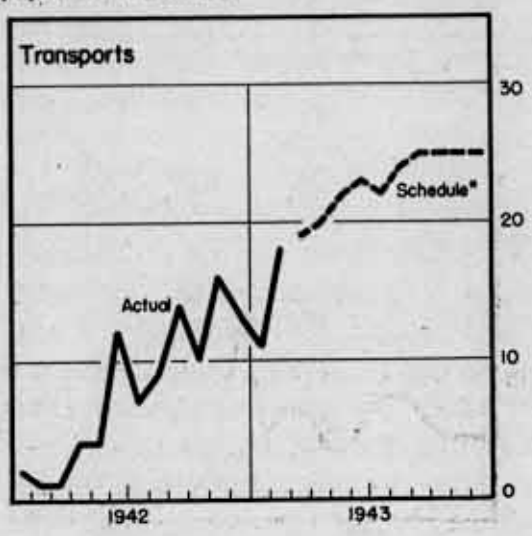
† February 1 schedule.
* March 1 schedule.

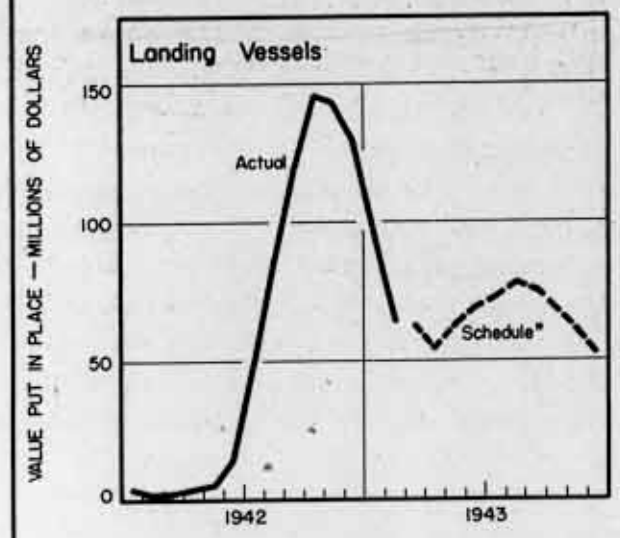
WAR PROGRESS

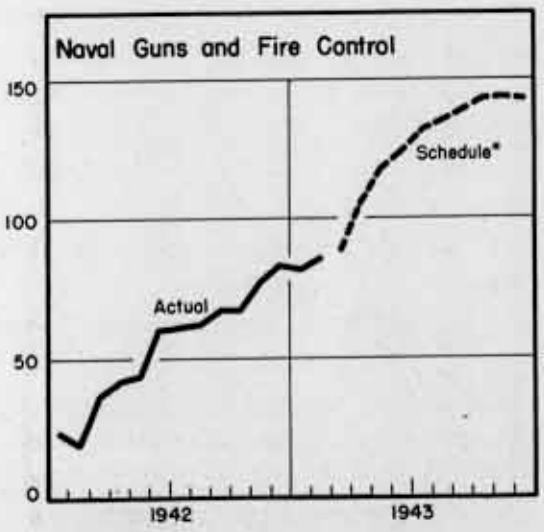
PRODUCTION PROGRESS

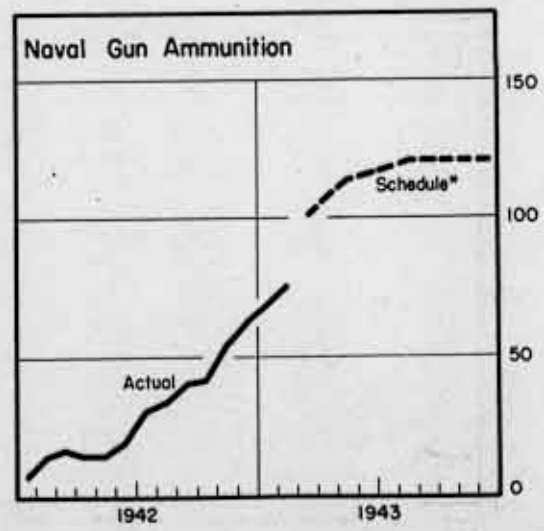
Naval, Army, and Merchant Ships and Equipment (continued)







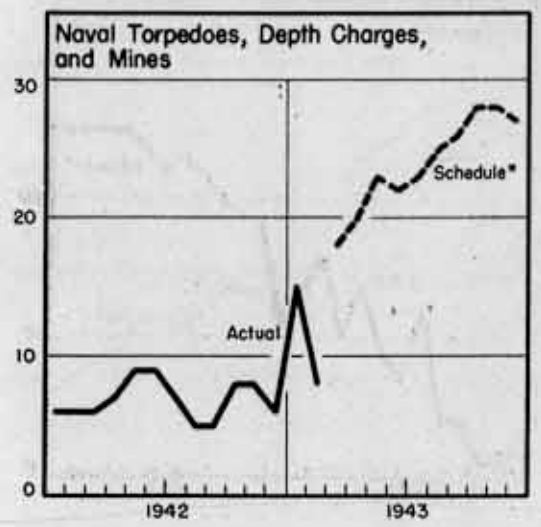


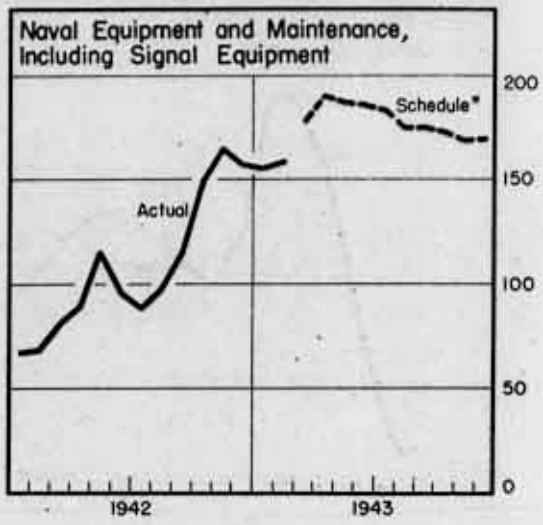


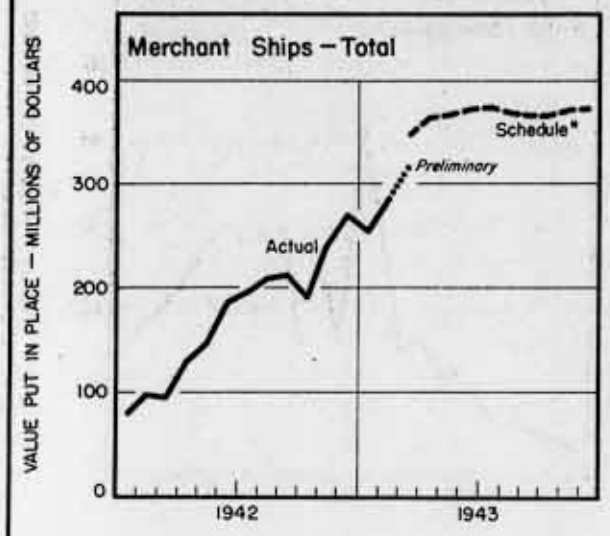
*March 1 schedule.

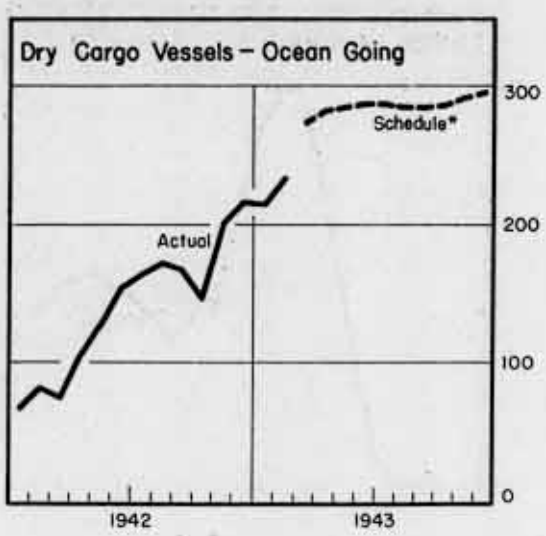
PRODUCTION PROGRESS

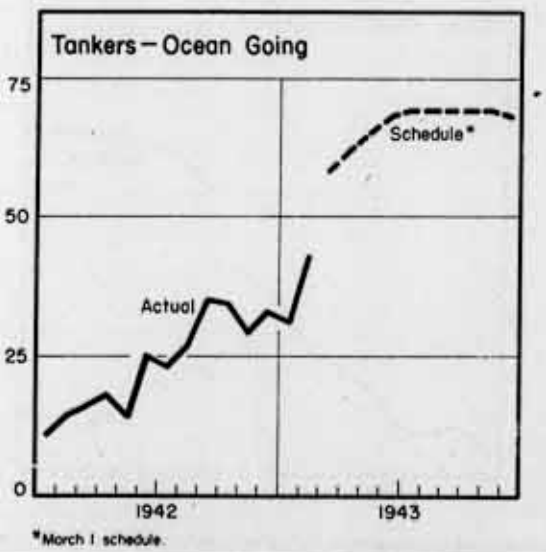
Naval, Army, and Merchant Ships and Equipment (continued)

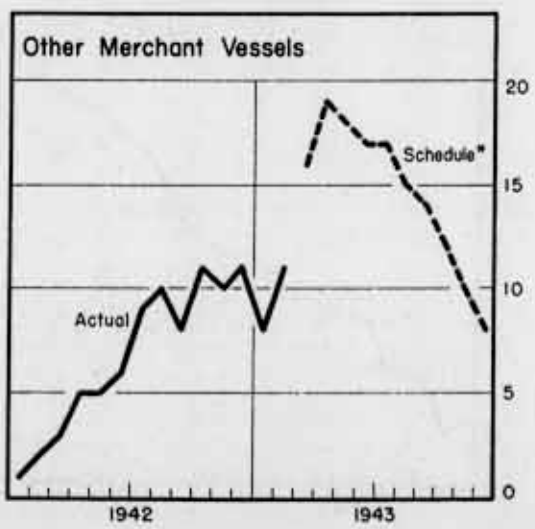










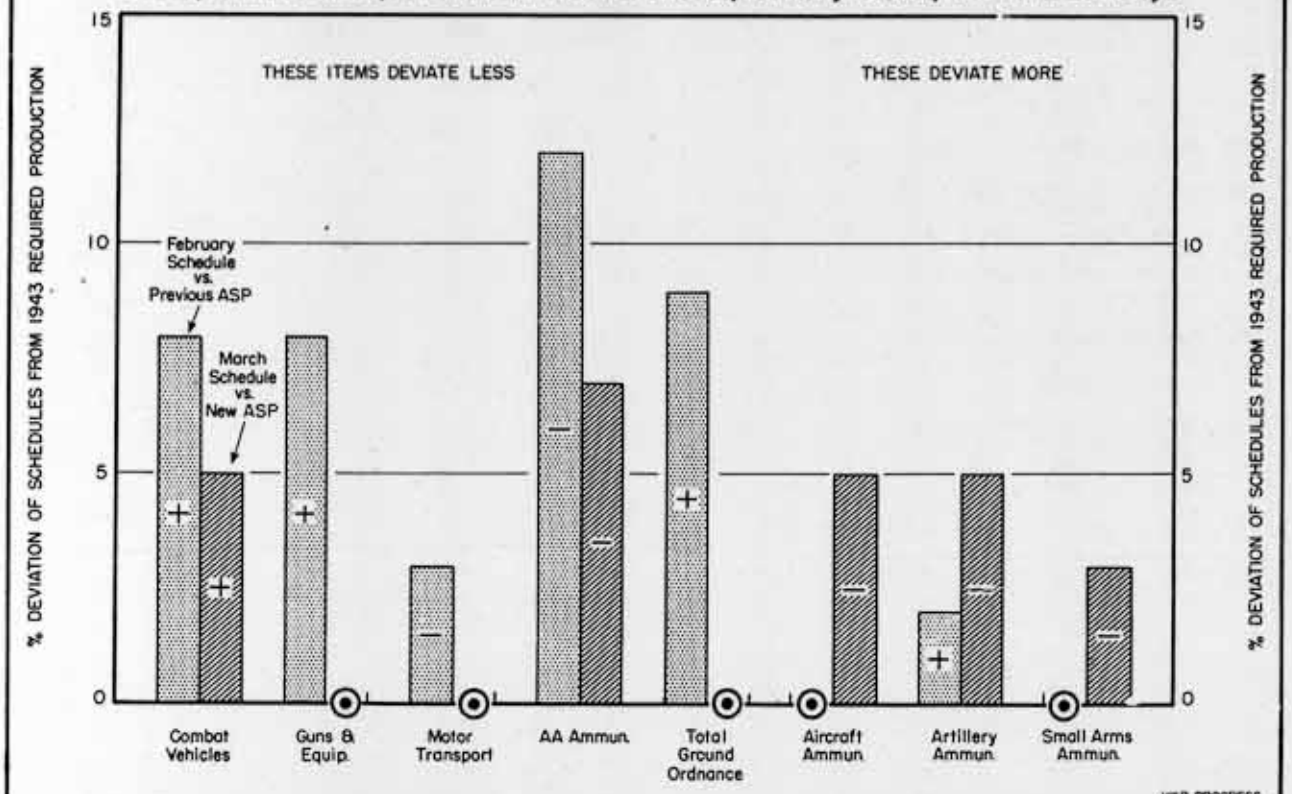


*March 1 schedule.

WAR PROGRESS

TARGETS FOR TOMORROW

New Army ground ordnance schedules and ASP objectives for 1943 achieve closer correspondence in important items. Total ordnance, formerly 9% off, now nicks bull's eye.



turers because they have had long experience in synchronizing the inflow of raw materials and parts with the outflow of finished cars. The Army's job, primarily, is to see that assigned materials are sufficient for the "primes," then leave it to them to see that subcontractors deliver on their schedules.

PLANT-BY-PLANT CHECK

However, it is not quite so easy as that. The Army must constantly check up on the activities within the plants; must constantly expedite a shipment of this or that. Moreover, critical components for tanks are a special problem all by themselves--motors, transmissions, turrets, tracks, etc.

It would not do to have manufacturers competing for scarce tracks. So Ordnance --through the Tank Automotive Center--tries to be sure (1) that track-making facilities are sufficient to equip each tank on the assembly line, and (2) that the tracks go to the "prime" tank makers that need them. This is handled through Industry Integrating Committees formed and "serviced" by the Army. In this case, the committee consists of major track manufacturers, called together to work out ways and means of maintaining production and distribution so that the scheduled deliveries are met by all their plants, not just by one or two. Members of these committees know one another's business--they're all in the same business--reciprocal arrangements are worked out, contracts reshifted, ideas and materials exchanged. If manufacturer A is short of alloy steel and manufacturer B has more than he currently needs, B turns over his excess to A. Manufacturer

WAR PROGRESS

Confidential
(British Secret)

Agriculture's War Job—An Appraisal

Tank Nemesis—The Self-Propelled Gun

Number 136

April 23, 1943

Wartime Pattern in Agriculture

Output of crops and livestock increases 20% in three years. Despite this achievement, further conversion and expansion toward maximum food yields seem possible.

ALTHOUGH ONLY 75% of U.S. food production will be available to civilians this year, Americans, especially in the lower income groups, will eat better than in any prewar year. Indeed, it is only in relation to the record high consumption of 1941 and 1942 that the civilian diet will seem wanting. (Consumption per capita is expected to run about 6% less than last year.)

This relatively high standard of diet is directly traceable to three--possibly four--successive years of increasing farm production. In 1939, when the war started, the American agricultural plant was already producing a peak volume of crops and livestock. And indexwise (1935-39=100), production has been going up ever since, as follows:

1939.....	106
1940.....	110
1941.....	113
1942.....	127
1943 (est.).	128*

*Assuming average yields on expected acreage.

Thus, in three years from 1939 to 1942, physical output of crops and livestock increased 20%, or more than in the entire period between two world wars. Such a rapid expansion was no accidental development. It goes back:

(1) To the soil conservation program of the depression era--when the planting of leguminous crops revitalized land; when an ever-normal granary policy built up large stocks of feedstuffs for fattening a record volume of livestock; when rearrangement of plantings took poor land out of cultivation; and when the development of new techniques in handling crops and livestock produced greater yields per unit of resource used.

(2) To the diligent efforts since 1940 to expand production--as in the case of peanuts, soybeans and hogs.

HOW INDEX CHANGED

Among the major farm products, all increased except tobacco, which is a nonurgent crop. And such a war necessity as oil-bearing crops, responding to direct government pressure, scored a 128% gain in the three-year period:

	1939	1942	% Change
Grand total.....	106	127	20%
Total crops.....	107	125	17
Livestock & livestock products...	106	129	22
Food grains.....	101	138	37
Feed grains.....	124	147	19
Cotton & cottonseed.....	89	100	12
Oil-bearing crops.	143	326	128
Tobacco.....	129	98	- 24
Vegetables.....	99	105	6
Meat animals.....	109	139	28
Dairy products....	102	116	14
Poultry & poultry products.....	108	128	19

Specific instances illustrate what happened. A harvest of 1,000,000,000 bushels of wheat in 1942 came from 49,500,000 acres; in previous billion-bushel

years--1919 and 1915--acreage amounted to 74,000,000 and 60,000,000 respectively.

In corn, the yield of 3,200,000,000 bushels exceeded the previous high--1920--by 100,000,000 bushels and on 10% less land (chart, page 3).

Hogs slaughtered were at a peak of 80,000,000 as against the former peak of 78,000,000 in 1940.

Cattle and calf slaughterings, at 28,000,000, were only 2,000,000 under the 1934 high, but '34 was the year in which drought forced farmers to liquidate their livestock.

This year, agricultural production may rise slightly. But cattle and calf slaughterings might top 1942 by 10%; hog production, by 25%; chickens (dressed weight), by 25%; turkeys, by 15%.

ACRES PUT TO PLOW

More acres will be put to the plow in 1943 than in any year since 1932 (chart, page 4); and overall crop production will be somewhat better balanced than before the war.

Acreage in tobacco (not an urgent item) will be 30% below 1939 and cotton (another surplus crop), 5% below. On the other hand, high-nutrient feed crops like corn and grain sorghums will be 7,500,000 acres above 1939 levels, while land devoted in the aggregate to peanuts, soybeans (for beans), dry edible beans, and dry peas will more than double prewar acreage. Soybeans will increase from 4,400,000 acres in 1939 to 12,100,000 acres; peanuts from 2,560,000 to 5,200,000 acres; dry peas from 211,000 to 677,000 acres; and dry edible beans from 1,634,000 to 2,500,000 acres.

COULD PLANT 5% MORE

Despite these record attainments, further expansion of food crops is still possible. Assuming available manpower, fertilizer, and farm equipment are provided and that farm prices are attractive enough, land under cultivation could be increased by 5%--from 367,000,000 acres (prospective 1943 plantings) to 385,000,000 acres. Plantings might also be rearranged to obtain a better balance between food and nonfood crops.

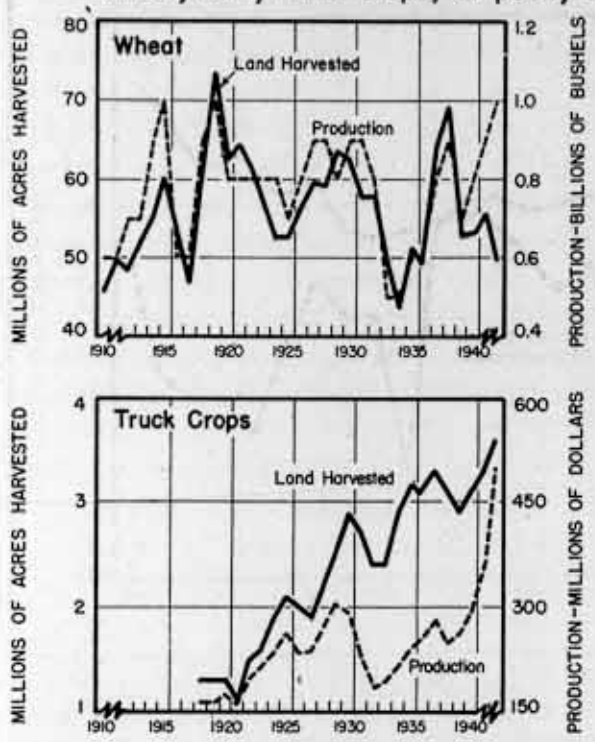
CUTTING NONURGENT CROPS

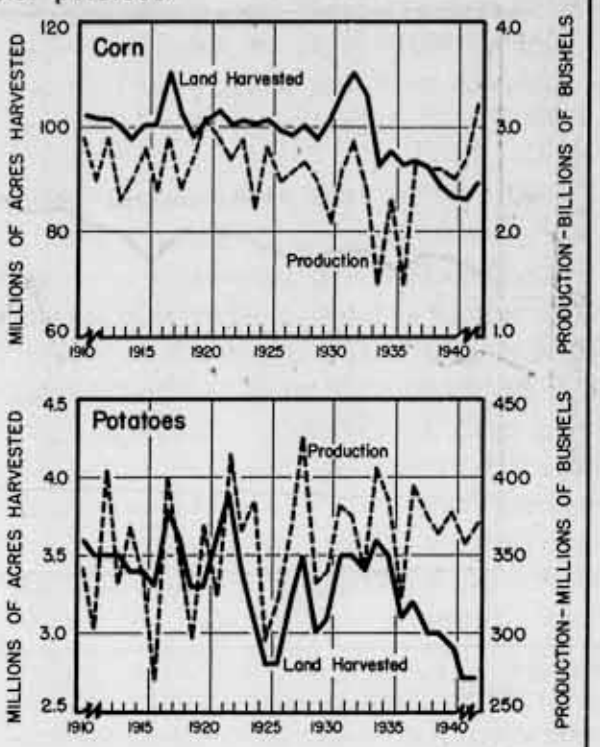
For instance, cotton land might be reduced by another 2,500,000 acres, or 10% below probable 1943 plantings, tobacco by over 360,000 acres (5%), and sugar beets by 350,000 acres (33%). (The cut in U.S. sugar output could be offset by greater imports from Cuba and Puerto Rico.) The acreage so released could then be diverted to important crops. For example, land in dry peas might be increased by 85% above 1943 plantings; dry edible beans, 110%; peanuts, 50%; vegetables for the fresh market, 50%; potatoes, 25%; wheat (for feed), 15%; and vegetables for processing, 10%. The following table indicates how acreage could be shifted. It shows last year's plantings, probable 1943 plantings, and the pattern of land use which would pro-

IN THIS ISSUE:

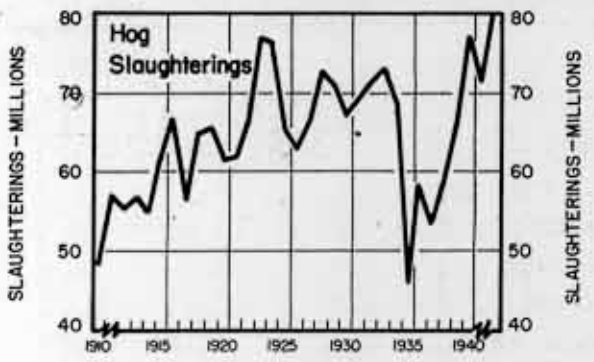
AGRICULTURE'S PAST AND PRESENT

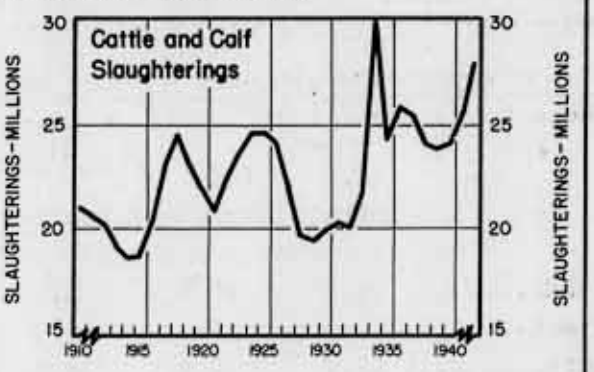
Wheat, corn, truck crops, at peak; but not potatoes.



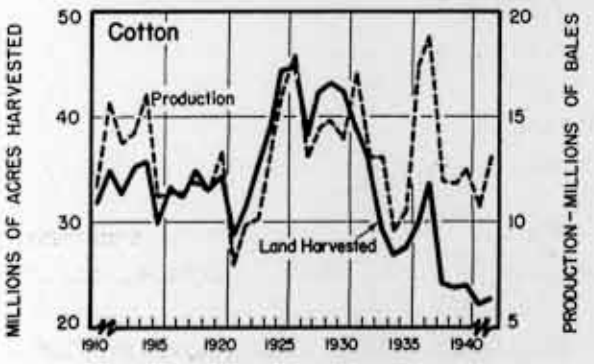


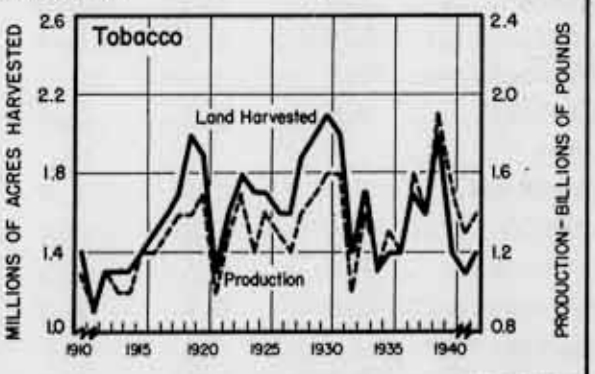
Hogs attain record levels; cattle and calves short of 1934 mark.



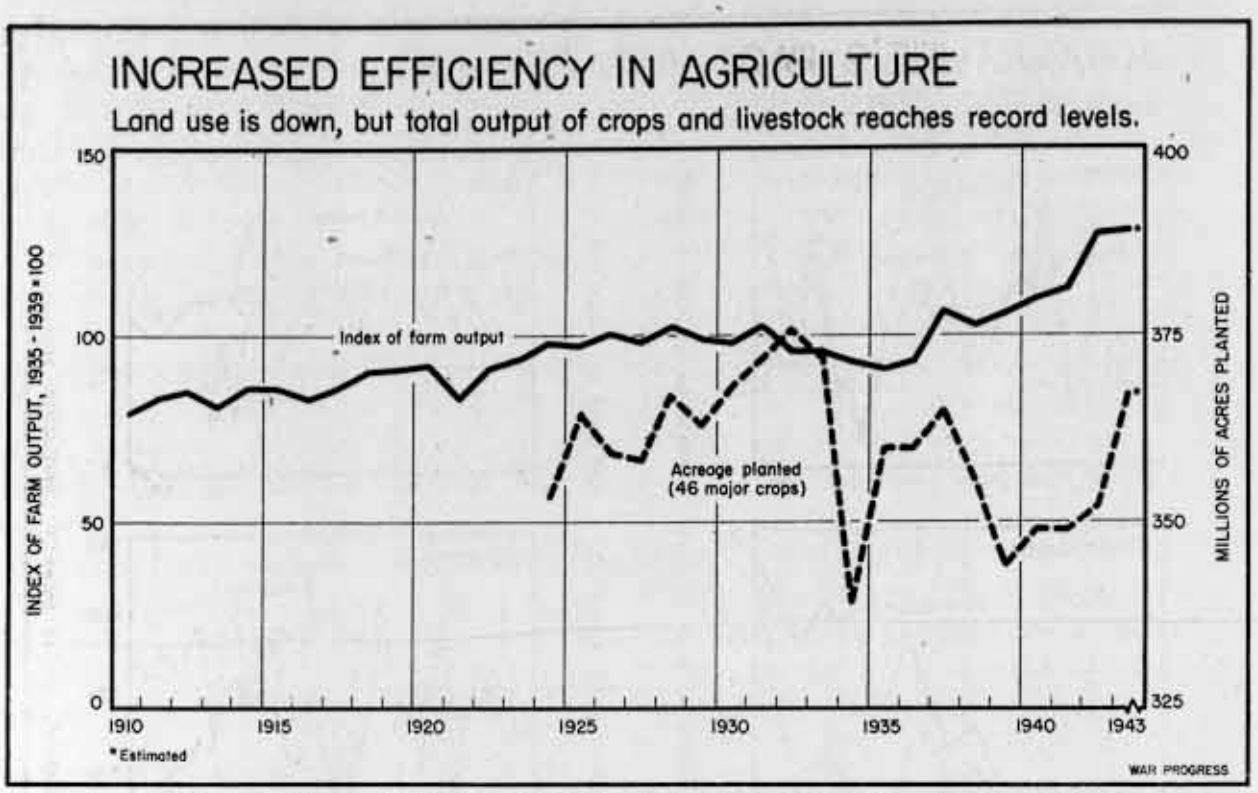


Cotton and tobacco — nonurgent crops — are down.





WAR PROGRESS



PROSPECTIVE PLANTINGS THIS YEAR (46 MAJOR CROPS) OF 367,000,000 ACRES ARE ONLY 3% HIGHER THAN THOSE OF THE MIDDLE 1920s. BUT FARM OUTPUT (FARM PRODUCE AND LIVESTOCK) HAS INCREASED MORE THAN 30%—A CLEAR-CUT INDICATION OF GREATER PRODUCTIVITY PER ACRE. MOST OF THIS INCREASE HAS TAKEN PLACE IN THE LAST FIVE YEARS, AND IS DIRECTLY TRACEABLE TO THE GREATER USE OF FERTILIZER, MORE EFFICIENT UTILIZATION OF MACHINERY, SOIL CONSERVATION, AND IMPROVED METHODS OF HUSBANDRY.

vide an approach to an ideal balance between food, feed, and fibrous crops:

	1942 Actual	1943 Indicated	Potential
	(Million acres)		
Corn.....	91.0	96.8	100.0
Wheat.....	52.5	52.5*	60.0
Oats.....	42.7	42.6	36.0
Barley.....	19.4	19.3	20.0
Flaxseed.....	4.7	6.0	6.0
Rice.....	1.5	1.5	1.5
Grain sorghums	9.8	11.5*	12.8
Potatoes.....	2.8	3.2	4.0
Sweet potatoes....	0.7	0.8	1.1
Tobacco.....	1.4	1.4	1.2
Dry beans....	2.1	2.5	5.3
Dry peas.....	0.5	0.7	1.25
Soybeans for beans.....	10.8	12.1	14.0
All tame hay.	60.2	60.3	65.0
Sugar beets..	1.0	0.74	0.7
Peanuts.....	3.7	5.2	8.0
Cotton.....	23.3	22.5	20.0
Sugar cane...	0.3	0.3*	0.3
Vegetables (fresh market)	1.7	1.7*	2.6
Vegetables (processing)	2.0	2.2*	2.4
Misc.**.....	20.0	23.1	23.1
Total for crops.....	352.0	366.9	385.3

*Goal **Rye, broomcorn, popcorn, buckwheat, hops, hemp, guayule, etc.

To attain these goals, however, farmers would not only have to concentrate

on war crops (peanuts, soybeans, potatoes, etc.), but would have to plant those things which yield the largest amount of food or feed per acre and man-hour, as, for instance, feed corn instead of oats. Likewise, in some areas, considerable land in short-staple upland cotton--especially staples under 7/8 inch, of which there is an 18-month supply--could be shifted to peanuts and soybeans. In Arizona and New Mexico, land devoted to long-staple American-Egyptian cotton might be tripled--from 155,000 acres (1942 plantings) to about 500,000.

COTTON vs. PEANUTS

Cotton, like tobacco, requires large amounts of labor and fertilizer. As American farm production is now laid out, cotton accounts for about 6% of the acreage, but requires over 20% of the labor and fertilizer devoted to all field crops in the United States. And in some areas cotton yields much less oil, oilcake, and meal than peanuts per acre of land or man-hour of labor.

Also, a large part of the acreage in tobacco--of which at the beginning of the year dealers and manufacturers in the United States and Puerto Rico had almost a three-year supply--could be shifted to soybeans, sweet potatoes, peanuts, or vegetables for canning.

LOW-VITAMIN TRUCK CROPS

The overall supply of nutrients could also be augmented by decreasing truck crops which are expensive to produce in relation to the vitamins they contain, specifically, iceberg lettuce (138,000 acres); squash, pumpkins (42,000 acres); bleached celery, cucumbers, artichokes, and eggplant (altogether 100,000 acres); or are high in water content and bulky to transport, like cantaloupes (85,000 acres) and watermelons (175,000 acres). Instead, acreage in potatoes, sweet potatoes, tomatoes, spinach, green peas, and string beans could be increased.

Also, to make the fullest use of our land resources, many acres of submarginal land now cultivated should be

KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program - Checks paid (millions of dollars)	1,462	1,452	1,374	1,070	894
War bond sales (millions of dollars)	195	182	185	164	113
Commodity prices (August 1939 = 100)					
28 Basic commodities	176.7	176.5	176.3	169.7	166.9
Controlled	162.7	162.6	162.4	162.1	161.5
Uncontrolled	212.4	212.1	211.7	188.7	181.5
Petroleum:					
Total carloadings	57,392	56,988	53,791	52,691	54,246
Movement of cars into the East	29,809	29,449	26,390	25,306	18,243
East coast stocks for civilian use (1940-1941 = 100 Seas. Adj.)	28.8	30.5	29.9	57.3	n.a.
Total stocks of residual fuel oil (thousands of barrels)	67,185	67,483	68,243	78,438	82,526
Exports (no. of freight cars unloaded for export Friday)					
Atlantic Coast ports	1,834	1,617	1,637	1,292	2,063
Gulf Coast ports	326	340	393	317	426
Pacific Coast ports	1,061	1,072	960	783	534
Unused steel capacity (% operations below capacity)	0.9	1.2	0.9	0.0	2.4
Department store sales (% change from a year ago)	+15	+28	-2	+17	+15

n.a. Not available.

abandoned and farm families resettled, even though such transfers are a complex problem, particularly in the case of farm owners.

In general, production of the following crops in the following regions could be expanded:

Corn Belt: soybeans, feed corn, barley, and alfalfa.
Southeast Cotton Belt: peanuts, sweet potatoes, soybeans, vegetables, long-staple cotton, and possibly feed crops.
High Plains of Texas and Oklahoma: grain sorghums, pinto beans, and peanuts.
Great Plains: wheat, dry beans, barley, and flax.
Irrigated Areas of the Southwest: dry beans, potatoes, alfalfa, vegetables, barley, peas, and American-Egyptian cotton.
Northwest: dry beans, potatoes, alfalfa, peas, and vegetables.
Northeast: vegetables, potatoes, and feed crops.

However, to convert American agriculture to wartime patterns, stronger incentives might be necessary than now exist. Many small farmers, unable to get bank credit, will need government loans to tide them over from planting through harvesting seasons. Price relationships will have to favor needed crops, such as livestock products, dry beans, peanuts, soybeans, canning vegetables, etc.

CONVERSION INCENTIVES

Thus, all-out conversion might require more than the bonus payments and price supports of selected products to which the government now adheres. It might be necessary for the government to offer stronger guarantees of adequate returns to growers, possibly through the medium of incentive payments for production above normal levels and through prices fixed in advance of plantings. Contracts might have to be made with farmers to purchase their output at stated prices, including guarantees against loss from crop failures and other contingencies, as is now done with wheat by the Crop Insurance Board. A farmer who knows before planting that his output will be sure to find a purchaser, and at profitable prices, can be more easily persuaded to change his practices than one who produces for a blind market.

TEACHING NEW METHODS

More education is needed, too. The Extension Service of the Department of Agriculture has been preaching to Cotton Belt farmers for years the value of leguminous crops, like cowpeas, peanuts, and soybeans, in conserving the soil. Nevertheless, many growers, especially sharecroppers, will not be able to shift to these products unless they are taught better methods of cultivation. Soybeans and peanuts are difficult to grow, and some farmers, attempting them for the first time, have had disappointing results.

For the civilian, the conversion of American agriculture, involving the curtailment of white lettuce, bleached celery, cantaloupes, asparagus, artichokes, and other fancy foods, will mean a dietary change. But such a change will hardly be as abrupt as those already forced on many people by shortages of meat, canned goods, and dairy products. Indeed, the average civilian will hardly notice the elimination of luxury items. And far from implying malnutrition, this would help to prevent dietary deficiencies now impending because of the unbalanced utilization of our agricultural resources.

Artillery Comes Back

Versatile self-propelled guns match pace of fluid warfare on the African front. Trend is toward types that can outshoot and outrun the German tank.

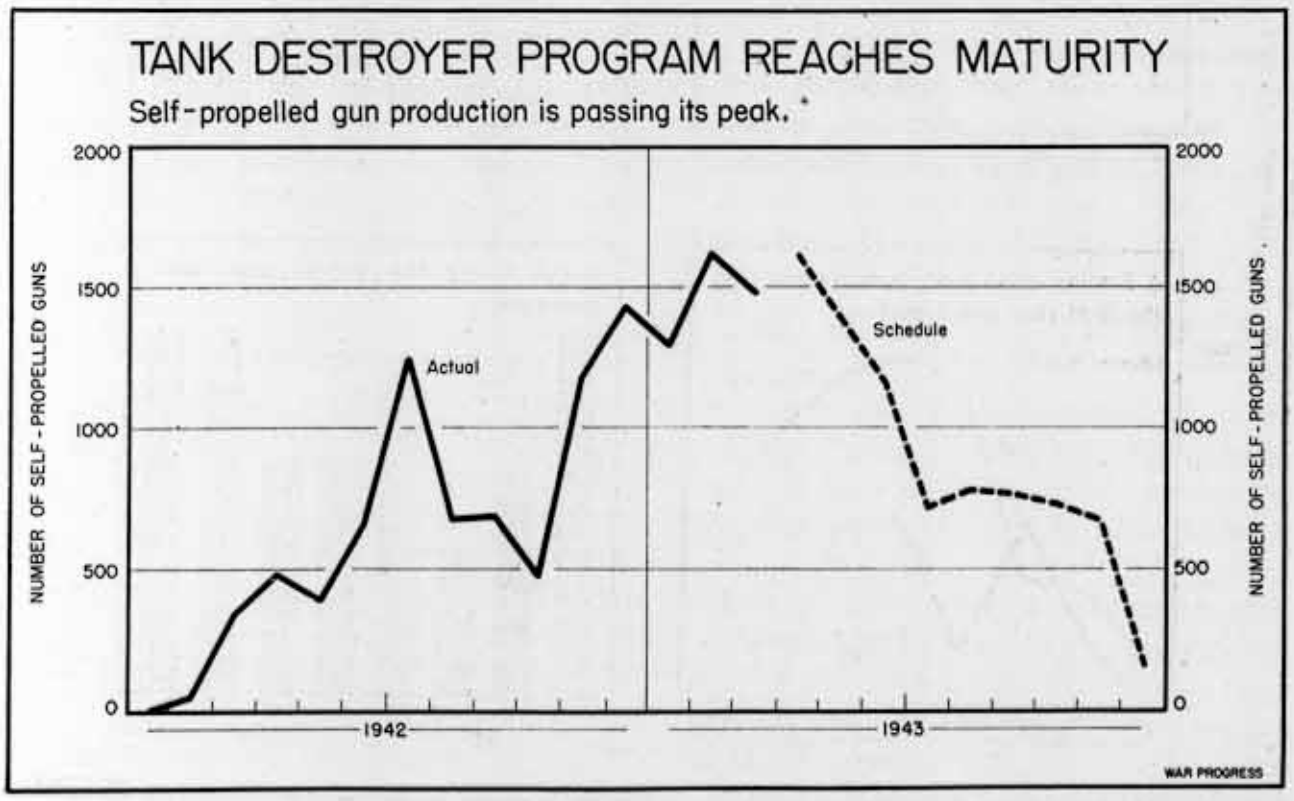
THE STORY of the self-propelled gun production program reads like the story of a great many ordnance items. There's the experimental period (after the invasion of Poland in 1939); then the rapid tooling-up phase (after the fall of France in June, 1940); the sharp rise in output follows; after that comes a cutback in the program, peak production, and finally a decline in schedules. And running throughout is the constant improvement of the instrument--making it sturdier, swifter, and more versatile in its action.

Today the self-propelled gun is one of the most publicized of American weapons. War correspondents have been poetic about its performance in Tunisia, have called it a "tank destroyer"--its official name is "howitzer or gun motor carriage." Essentially though, the SP is artillery brought up to date. It moves on its own power. It doesn't have to wait for mules and motor trucks to draw it into positions, either for attack or defense.

Experimentation with self-propelled artillery began 27 years ago in the first World War. Tractors were used to move guns across muddy French terrain. Then came the idea of using the tractor as a mount for the gun, rather than as a tow. After the war, Army Ordnance followed up the conception for a time, but gave up on it about 1925 when funds ran out and the using forces failed to approve early models.

BACK IN THE FIGHT

With the successes of the German Panzer forces in 1939, self-propelled artillery was back in the fight. In the U.S., turning point came with the Carolina maneuvers in the fall of 1941, when field tests disclosed the value of



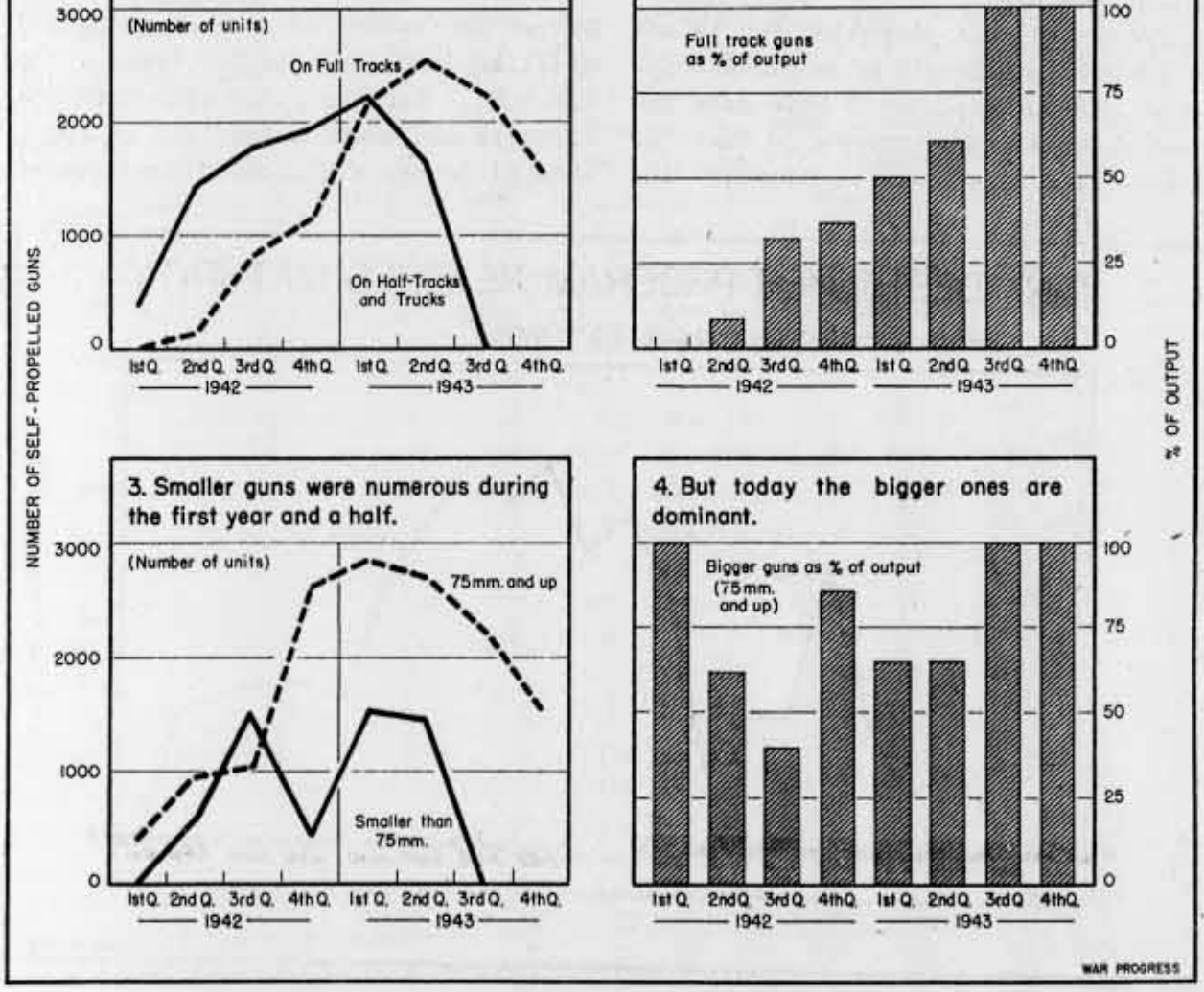
improvised SP guns in antitank warfare. And before Pearl Harbor, 50 were rushed to the Philippines where they were used against Jap landing parties and in the subsequent retreat to Bataan.

The first SPs under the present program came off assembly lines in February, 1942. These were 75mm. guns (left over from the last war) mounted on a half track--a superrugged carriage with track behind and truck wheels in front. Once the stock of 75mm. guns ran out, smaller guns were placed on the mobile mounts--the 37mm. and the 57mm. These were prevalent in the early stages of the program (chart, below). But today the trend is definitely toward more powerful guns. At the same time, by July of this year all new self-propelled guns (except for certain antiaircraft items) will be mounted on standard tank chassis.

To date, some 12,000 SPs have been delivered; and from the initial 48 turned out in February, 1942, monthly production has increased to 1,600. But, from

THE SURVIVAL OF THE BIGGEST AND THE STRONGEST

A study in the evolution of the self-propelled gun (tank destroyer).



this month on, schedules taper off rather sharply (chart, page 7), largely because March 1 adjustments cut 1943 scheduled requirements about 20% to 12,800. Nevertheless, so important is the self-propelled gun as a modern weapon, that this quarter 40% of all artillery output will travel on its own power; and 20% of all tank chassis built will be used for this purpose.

FOUR TYPES SURVIVE

All told, 10 types of self-propelled artillery have been produced in the United States; of these, four, all on tank chassis, survive in the program:

The 105mm. howitzer
The 75mm. howitzer
The 3-inch gun
The 25 pounder (equivalent to a 90mm.) built for British use

Tapering off and due to terminate by the close of the second quarter are: the 37mm. on a truck, and 57mm. on a half-track chassis, and the 75mm. gun on a half-track chassis.

No longer in the program are: the 75mm. howitzer on a half-track chassis; the 105mm. howitzer on a half-track chassis; and 155mm. guns on tank chassis, the program for which was completed last month--100 in all.

PLANE OUTPUT NEARER SCHEDULE

DURING the first 15 days of April, 2,819 airplanes were accepted, a 14% increase over the corresponding period of March. In terms of airframe weight, the gain was much greater--23%--a reflection of the excellent showing of heavy bombers, up 32%.

Production has been getting nearer the 8-L schedule. In January, acceptances fell 16% short of schedule; in February, 13%; in March, 12%. And now in April, if the first 15 days are a guide, acceptances will run only 6% to 8% below 8-L on an airframe weight basis. Here again, the effect of heavy bombers is felt; on a numerical basis, the approach to the March production requirement of 7,573 planes may not be so close. Keeping close to 8-L (now being revised downward) gets tougher later on --monthly stepups get steeper.

Incidentally, the output of Flying Fortresses continues to exceed that of Liberators, though the schedule calls for more Liberators than Forts. However, the called-for relationship may be achieved shortly. Ford's Willow Run plant has been turning out four Liberators a day, and recently turned in a five-a-day stint, in addition to subassemblies.

COUNTERS THE TANK

The importance of the self-propelled gun is that it countered the advantage of the tank. Prior to the SP, tanks could run around fixed-position artillery. And the best defense against a tank was another tank. But once artillery was put on tank chassis, the artillery became fluid as the battle front, and the tank's advantage as a mobile fortress was partially neutralized.

Nowadays, tanks to be effective have to travel with a complement of motorized artillery. In Tunisia, the Germans have had to use tanks as artillery. The wide-open terrain exposes tanks to long-range guns, and, in artillery duels, tanks have taken up fixed stations behind hills or have been dug into the sand, and have fired from such positions. Thus, tanks have been utilized as artillery.

The self-propelled gun is often sent

KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program - Checks paid (millions of dollars)	1,374	1,771	1,527	1,123	646
War bond sales (millions of dollars)	185	239	212	163	117
Commodity prices (August 1939 = 100)	176.3	176.4	175.3	168.4	166.0
28 Basic commodities	162.4	162.4	162.1	161.3	161.7
Controlled	211.7	212.2	208.3	186.2	177.5
Uncontrolled	119.2	117.5	117.5	115.8	132.5
Nonferrous metal scrap	176.0	173.7	170.7	171.2	175.7
Textile scrap					
Petroleum carloadings (no. of tank cars)	53,791	50,364	51,986	53,498	53,494
Total	26,390	25,832	26,152	27,948	13,664
Movement into East					
Exports (no. of freight cars unloaded for export Friday)	1,637	1,440	1,226	1,569	1,708
Atlantic Coast ports	393	351	398	323	450
Gulf Coast ports	960	970	980	818	297
Pacific Coast ports					
Unused steel capacity (% operations below capacity)	0.9	0.7	1.1	3.8	1.0
Department store sales (% change from a year ago)	-2	+3	+33	+5	+26

B is not moved by charity. Next month the steel track pinch may be on the other foot.

CONTOUR OF PRODUCTION

The month-by-month contour of a schedule is settled, often in advance, by the nature of the item. Thus, the schedule of an off-the-shelf item or an item which can be turned out rapidly in existing facilities, could be in a hump at the start of the year (to get it all taken care of) or could be a fairly smooth plateau--the same number each month. On the other hand, for an item on which facilities were insufficient, the contour would be very different. If requirements were urgent, plans would be laid to get new productive facilities operating as early as possible. The schedule would have to start low and end high. Here, the danger would be in overbuilding to make the program. Suppose, for instance, that about 1,200 of a particular item are needed annually, but production cannot be started until July, 1943. To make the year's goal, capacity would have to reach 200 per month, or an annual rate twice that needed for a uniform year-round flow.

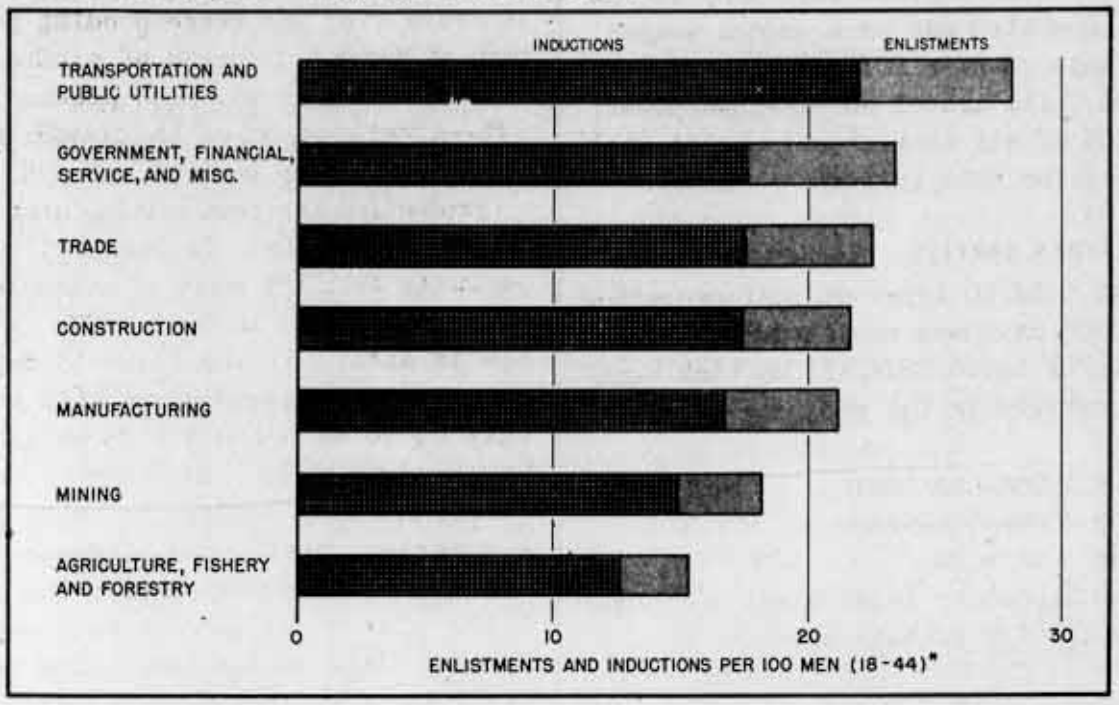
For more than 90% of all ordnance items, present production facilities are ample. That's understandable. During 1942, requirements and production goals were set high--deliberately--and plants were planned accordingly. Then, as the result of the cutback in ground army ordnance—from $32,000,000,000 for 1943, back in February of last year, to $14,-800,000,000 today--facilities that once seemed scant became ample.

NO QUESTION OF CAPACITY

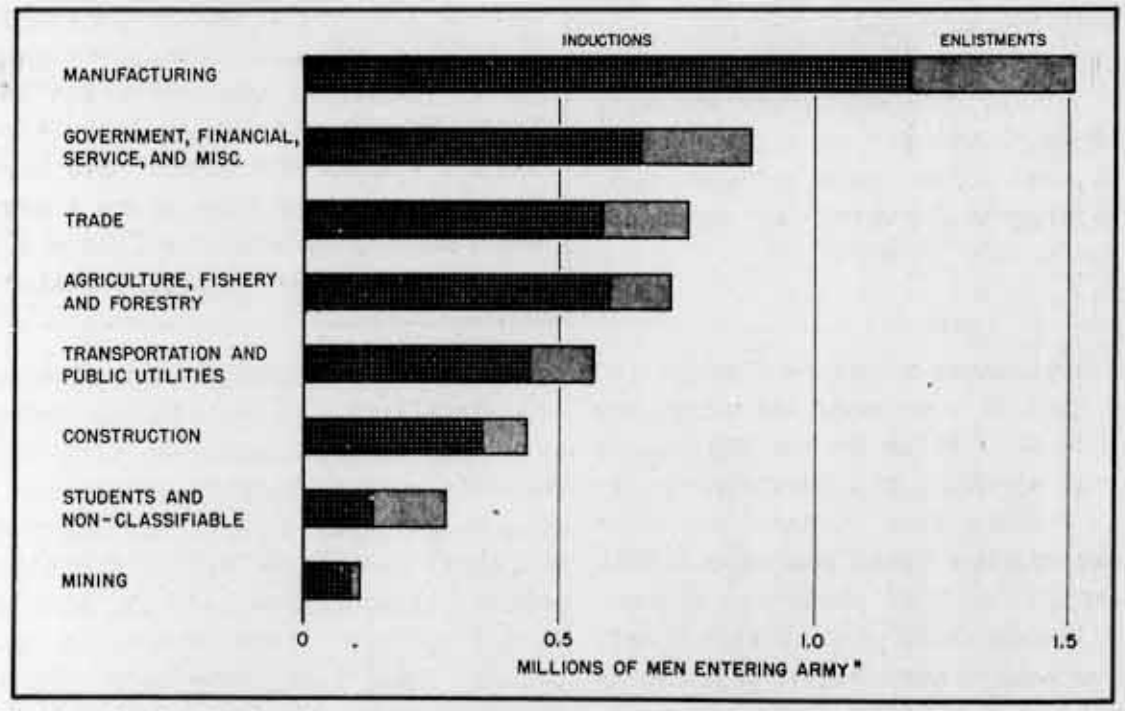
Thus, for the most part, scheduling has gone beyond the stage of "Have-we-got-enough-plant?" Indeed, Army Ordnance maintains a carefully developed month-by-month statement of productive capacity for each procurement item matched against actually scheduled production. Down the line, capacity exceeds required monthly output.

WHERE THE ARMY COMES FROM

Transportation and public utilities, government, financial, etc. yield largest proportions of their men (age 18-44); agriculture is lowest.



But the largest number is from manufacturing industries, with government, financial, service, and miscellaneous next.



* Period covered from Sept. 1940 - Dec. 1942.

on special missions to wipe out a tank force. And it is in this use that it gains its name tank destroyer. Being eight to ten tons lighter, it is speedier than the average Nazi tank; and its big guns can outrange the standard tank gun, especially since tank crews look through a periscope and cannot count on focusing accurately at distances of much more than 1,000 yards, whereas the self-propelled guns are effective at 2,000 and 3,000 yards.

In short, the self-propelled gun has brought artillery back into the fight--and as one of the most versatile ground weapons of the war. It can be used as artillery; it can move with tanks both on attack and defense; and it can be used as a special-purpose striking weapon--especially against tanks.

War Progress Notes

OIL FOR THE EAST COAST

ALTHOUGH tank-car shipments of petroleum to the East Coast are up 63.4% over a year ago, they have not overcome the sharp decline in tanker deliveries (WP-Mar26'43,p9). Consequently, stocks have been declining steadily, as the newly introduced series in Key Statistics of the Week (page 5) indicates. In the week ended April 10, East Coast stocks of all types of petroleum for civilian use reached a low of 28.8% of the 1940-41 average. In the case of total U.S. residual fuel oils (industrial fuel) decline in stocks also has been marked. They are down 19% from a year ago.

ORIGIN OF ARMY

ONE OUT OF FIVE employed men of military age (18-44) joined the Army between September, 1940, and December, 1942. The largest group--1,500,000--came from the largest industrial classification, manufacturing; 875,000 from government, finance, etc.; 752,000 from trade; 722,000 from agriculture, fishery, and forestry; and so on (chart, page 10).

Transportation and public utilities was the group hardest hit--better than one in four of its men of military age went to war. Next highest ratio was in government, finance, and service industries, with slightly less than one in four. Agriculture was lowest--about one in seven. The ratio of enlistments follows pretty much the same pattern. Transportation, etc., had the highest, and government, etc., the second highest.

UNCLE SAM'S FAMILY

IN FEBRUARY of prewar 1939, federal employees numbered 883,000. By February of this year, government employment had risen 237% to 2,977,000, and of that increase, 95% has been absorbed by the war segment of government. Actually, war employment in the government is greater than indicated, since many employees in nonwar agencies are doing war work.

REPORTS ON REPORTS

Manpower Goal

Utilization of Manpower in the United States and Great Britain (secret; pp. 10) compares British data of manpower mobilization for production and military service with U. S. progress to date and estimates that, following British precedent, our working and fighting forces could be increased by several millions over present U. S. goal of 63,000,000.
(War Manpower Commission, Bureau of Program Planning and Review)

Ammonia

Anhydrous Ammonia (confidential; pp.8) states that of the 1943 supply—used for explosives, fertilizer, metalworking, nylon, etc.—85% will be consumed for direct and indirect military requirements. Though supply has increased to 356% of 1939 volume, civilian and fertilizer uses are scheduled to decline to 45% of the prewar level.
(War Production Board, Office of Civilian Supply, Chemicals Branch)

Miscellaneous War Material

Paints and Varnish (confidential; pp. 11) reports diminishing stocks of critical raw materials (tung,

solvents, etc.) because hard and quick-drying oils meet increasing requirements in the painting of ships. Also, linseed oil is becoming tighter and its use by the industry might have to be restricted to 50% of 1940-41 consumption.
(U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce)

Civilian Economy

The Effects of World War II on the Civilian Economy (confidential; pp. 69) summarizes changes which, since 1941, have taken place in the nonmunitions sector of our economy. The study covers various aspects of national income, consumption, production, manpower, transportation, etc., and includes, where data are available, comparisons with 1938-to-1942 developments in Great Britain.
(Office of Price Administration, Division of Research)

[This record is an attempt to select from the many documents coming to the attention of WAR PROGRESS those studies which would be of most interest to readers. The list is by no means comprehensive, and no attempt has been made to evaluate reports for accuracy. Whether reports are available depends on the policy of each individual agency.]

SELECTED MONTHLY STATISTICS

Production – Strikes – Employment

	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
PRODUCTION INDEX - INDUSTRIAL †	p200	197	194	192	168	100	120
Total Manufactures	p213	211	208	202	177	100	121
Durable	p297	292	287	266	228	97	133
Nondurable	p145	145	143	150	137	103	112
Minerals	p125	123	117	137	118	100	112
FOOD PRODUCTION:							
DAIRY PRODUCTS (million pounds)							
Butter, creamery	122.0	s	s	s	118.0	124.6	103.0
Cheese	60.4				76.6	41.2	39.0
Evaporated Milk	207.2				300.0	139.7	126.5
ANIMAL FATS (million pounds) **	237.9				258.8	167.0	131.8
MEATS - TOTAL (including lard, million pounds)	1,380.0				1,271.0	927.0	903.0
Beef and veal	489.7				513.2	368.1	384.8
Lamb and mutton	63.4				61.7	58.4	54.2
Pork, including lard	826.7				696.1	500.8	464.3
Lard	137.3				128.5	85.9	72.3
POULTRY AND EGGS							
Eggs (millions)	6,462.0				5,489.0	4,624.0	1,648.0
Poultry (receipts at 5 principal markets, million pounds)	14.3	s	s	s	20.5	17.9	20.0
LABOR DISPUTES							
Number of strikes in progress	p240	p225	200	475	275	343	350
Workers involved (thousands)	p48	p100	61	100	80	88	n.a.
Man-days idle (thousands)	p170	p450	200	450	425	553	1,491
NONAGRIC EMPLOYMEMT-TOTAL (thousands)	p38,232	37,960	37,862	38,348	35,411	28,836	n.a.
Manufacturing - Total	p15,957	15,851	15,743	15,233	13,859	9,787	
Durable goods	p9,415	9,305	9,178	8,515	7,442	4,248	
Nondurable goods	p6,542	6,546	6,565	6,718	6,417	5,539	
Government	p6,003	5,839	5,689	5,520	4,794	3,940	
Other	p16,272	16,270	16,430	17,595	16,758	15,109	n.a.

* Production indexes, Poultry and Eggs production and Employment, March. All other February. †Unadjusted.
** Figures for year ago, 1939, and 1937 represent quarterly averages. n. a. Not available. p Preliminary.
s Seasonal influences invalidate month-to-month comparisons.

The President

1

WAR PROGRESS

Confidential
(British Secret)

Converting the Machine Tool Industry
Lumber – Still a Scarce Commodity
Production Progress Tables

Number 137

April 30, 1943

CONFIDENTIAL

NUMBER 137 WAR PROGRESS APRIL 30, 1943

Machine Tool Conversion Ahead

As backlogs decline, toolmakers look around for munitions work. Late-comers are first to change. Old-line companies will continue to make replacements and parts.

WHEN THE UNITED STATES first began tooling up for war, machine tool makers did not have to convert. Their job was to produce more of the same: they had to expand--which they did. Output of machine tools jumped from $200,000,000 in prewar 1939 to more than $1,300,000,000 last year. But now the industry is going through what so many other industries went through in 1940 and 1941. It's converting.

SEVERAL SWITCH OVER

Already, companies which jumped into machine tool production because of the urgent need are taking on war contracts. A small division of General Motors, for instance, has stopped manufacturing planers; Broden Construction Company has quit the boring-mill business.

And among the old-line machine tool companies, about 25 have turned part of their facilities over to production of munitions items or critical components. Thus, Warner & Swasey is making parts for Diesel engines and superchargers; Cincinnati Milling Machine and Bullard are doing auxiliary turbine work. Moreover, 25 other companies are in the process of negotiating war contracts.

PARING THE BACKLOG

Such conversions are directly traceable to declining backlogs. Unfilled orders for machine tools are down from a peak of $1,117,000,000 last July to $700,000,000 today. And further declines are in the offing. For eight months, shipments have been exceeding incoming orders, and the average backlog in the industry runs to 5.2 months on the basis of current production rates. However, that average is a composition of extremes, as the accompanying table suggests; in the case of large external cylindrical grinders, it will take 9.6 months to finish off work on the books, and that makes no allowance for new orders; on the other hand, bench and hand milling backlogs could be worked off in less than two months:

Type	No. of Months' Backlog Mar. 31, 1943
Bench & hand milling.....	1.6
Tapping & threading.....	2.8
Radial drilling.....	4.5
Surface grinders.....	4.9
Sensitive & upright drilling.....	5.0
Thread millers.....	6.1
Gear shapers.....	6.2
Planers, all types.....	6.4
Engine lathes 24" & up...	6.5
Automatic screw machine 4" & up.....	8.3
Precision boring.....	9.0
External cylindrical grinders over 20".....	9.6

The table makes clear that conversion is bound to be an irregular process. Obviously manufacturers of bench and milling machines will be looking for work sooner than makers of automatic screw machines or manufacturers of large engine lathes. But, by about September, some 60% of the facilities devoted to

machine tool manufacture ought to be available for general war work. Of the balance, some 12% will be busy on lend-lease orders; 20% on the domestic production--both for new facilities, replacements, and parts; and about 8% will be kept in reserve--for breakdowns, accidents, bombings, etc.

SMALL OUTPUT—BUT SKILLED

Conversion cannot be expected to yield a high volume of munitions output. After all, total value of machine tool output ran to $1,300,000,000 a year at the peak; and a 60% conversion would yield an estimated $800,000,000 a year (a fraction of a per cent of 1943's scheduled deliveries) in new war output. However, it's a special type of work--highly skilled and highly precise. Machine tool makers can turn to the critical components and end items requiring high technical knowledge and close tolerances. And their small output of such special items can potentially break various bottlenecks.

Because machine tool manufacturing has passed its peak as a "duration" business, tool makers are actually trying to speed up the completion of orders so as to clear facilities for war work. Thus, subcontracting among machine tool builders is a recent development: A horizontal boring-mill producer, recently caught up on his own schedules, is making grinding-machine parts for another manufacturer.

Automatic influences are working to hasten conversion. Companies with falling backlogs have requested WPB to release them from machine tool work, and WPB's redistribution of orders is freeing certain facilities for nonmachine tool work. (In such instances, the Tools Division notifies the Facilities Division, WPB, and the Army and Navy Munitions Board of the availability of these newly idle facilities.)

ACCELERATING INFLUENCES

In striving for increased utilization of existing tools (never an easy achievement), WPB's Tools Division is also accelerating the conversion process. Here the emphasis is different from a year ago. In those days, almost all machine tools were bottleneck items. Greater utilization was required to prevent ordering of new machine tools. But today machine tools generally are not bottlenecking the program as a whole. Greater utilization of existing tools would have the effect of cutting down backlogs, thus automatically speeding the release of machine tool facilities for nonmachine tool work.

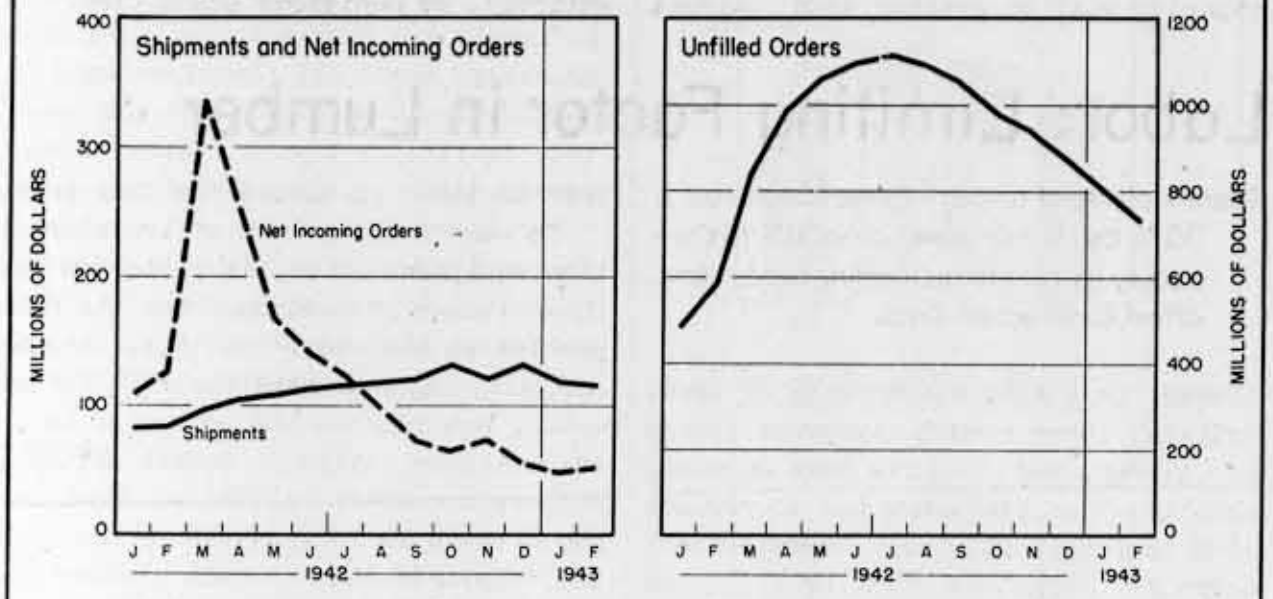
ORDER OF CONVERSION

Conversion introduces an important policy question--both war and postwar: Which companies shall be continued in business. The flow of orders and requirements for repair parts provide the answer. The trend is toward the established, old-line concerns. And the pat-

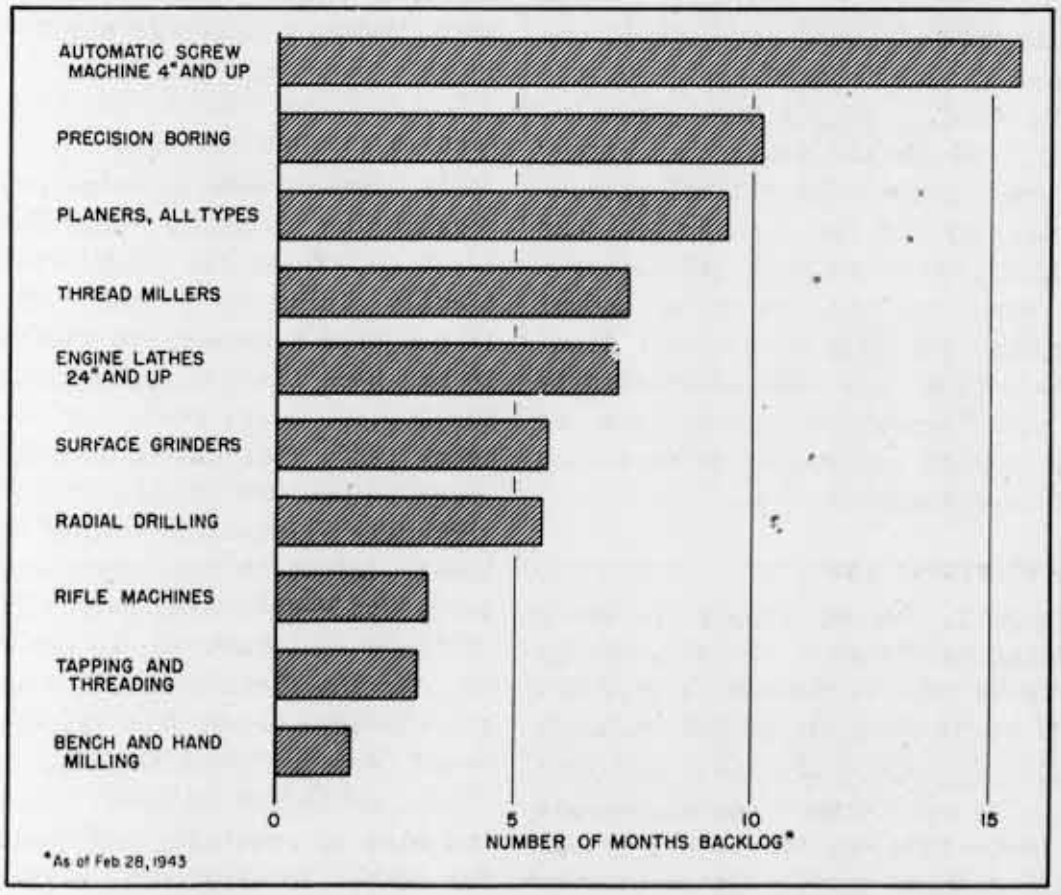
IN THIS ISSUE:

BACKGROUND FOR CONVERSION

Decline in machine tool orders, shipments, and backlogs causes makers to look for other work.



And the backlog of different types of machine tools runs from 2 to 16 months indicating an uneven pattern of conversion.



WAR PROGRESS

tern to date has been for these to maintain operations--producing new machines for new facilities, replacements, and parts. At the same time, since their capacity will be greater than current requirements, part of their shops will be turned over to munitions. That implies that the emergency producers of machine tools will convert, more or less entirely, to munitions production.

Labor: Limiting Factor in Lumber

There's plenty of timber—in the forests—but a 35% loss in manpower forces U.S. to draw heavily on inventories. Crating needs climb, offset construction drop.

LUMBER is a scarce commodity in Great Britain; there aren't any great stands of timber, and imports have declined sharply. Thus, steel has had to replace wood in pit props, cargo-truck bodies, barracks (together with brick), and other items customarily made of wood.

Lumber is also scarce in the United States; construction projects, which once substituted wood for steel, are now turning back to steel as a substitute for wood. Unlike Great Britain, however, the United States has extensive forest areas. Theoretical productive capacity of the industry is some 45,000,000,000 board feet of lumber a year, more than the country's annual consumption for well over a generation. But production has been substantially below that figure--and since the war began, demand has had to be satisfied out of inventories.

STOCKS AT RECORD LOW

Last year, the new supply of lumber (including net imports of 900,000,000 board feet) was estimated at 35,700,000,000 board feet; but demand amounted to 40,300,000,000 board feet, a 30-year peak. The difference--4,600,000,000 board feet--came out of stocks, bringing them down to the lowest point ever recorded (chart, page 5). And a further decline is slated for this year.

To some extent, lack of transportation equipment and repair parts has cut into lumber production, but the main problem is manpower. In 1941, around 140,000 loggers were working in the woods. But 1942 was the year when buckers, fallers, sawyers, choker setters, riggers, and other skilled woodsmen began to leave the forests for higher-paying shipyards and aircraft plants; the armed services also depleted labor supply; and by the end of last year, the number of loggers had declined to 110,000. Today, there are about 90,000, or 35% fewer than in 1941.

FORCING CONSUMPTION CUTS

If demand were unrestrained, 1943 consumption probably would run to at least 40,000,000,000 board feet, practically wiping out stocks. Therefore, it has been necessary to limit demand; it has been fixed at approximately 31,500,000,000 board feet, or about 20% below 1942. This cut in consumption is possible because (1) restrictions have virtually eliminated nonwar construction; (2) other uses--matches, furniture, etc.--have been cut; (3) use in military construction is scheduled to drop for the first time since the munitions program began—from 11,600,000,000 board feet to 7,900,000,000.

A particular problem this year is the rise in specialty and quality uses for lumber in airplanes, gliders, pontons, PT boats, etc. For example, air-

craft lumber requirements will jump from 18,000,000 board feet in 1942 to 95,-000,000 this year.

Though overall inventories are apparently sufficient to meet the expected drain on stocks, they are not always of the kind required for these specialty items. Nor is production of particular types of lumber always sufficient for particular needs. Thus, special grades of Douglas fir--used in place of teakwood for battleship decking and for plywood in airplanes--are especially tight; inventories were cut in half last year and are still declining.

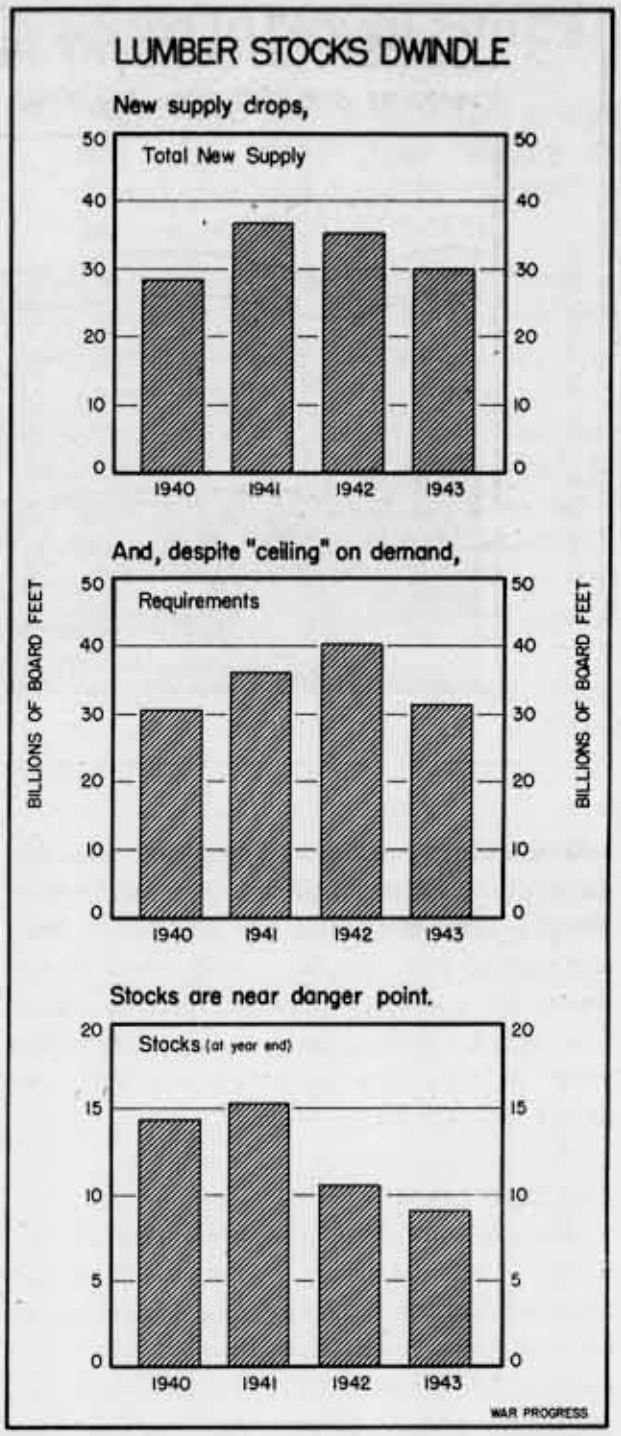
CHANGING PATTERN OF USE

But by all odds, the big shift this year is to boxing and crating, which rises from 8,800,000,000 board feet to 10,500,000,000. Container lumber now supplants construction as the major consumption category; this reflects the increasing shipments of food, munitions, and machinery overseas. Here's the estimated pattern of lumber use since 1941:

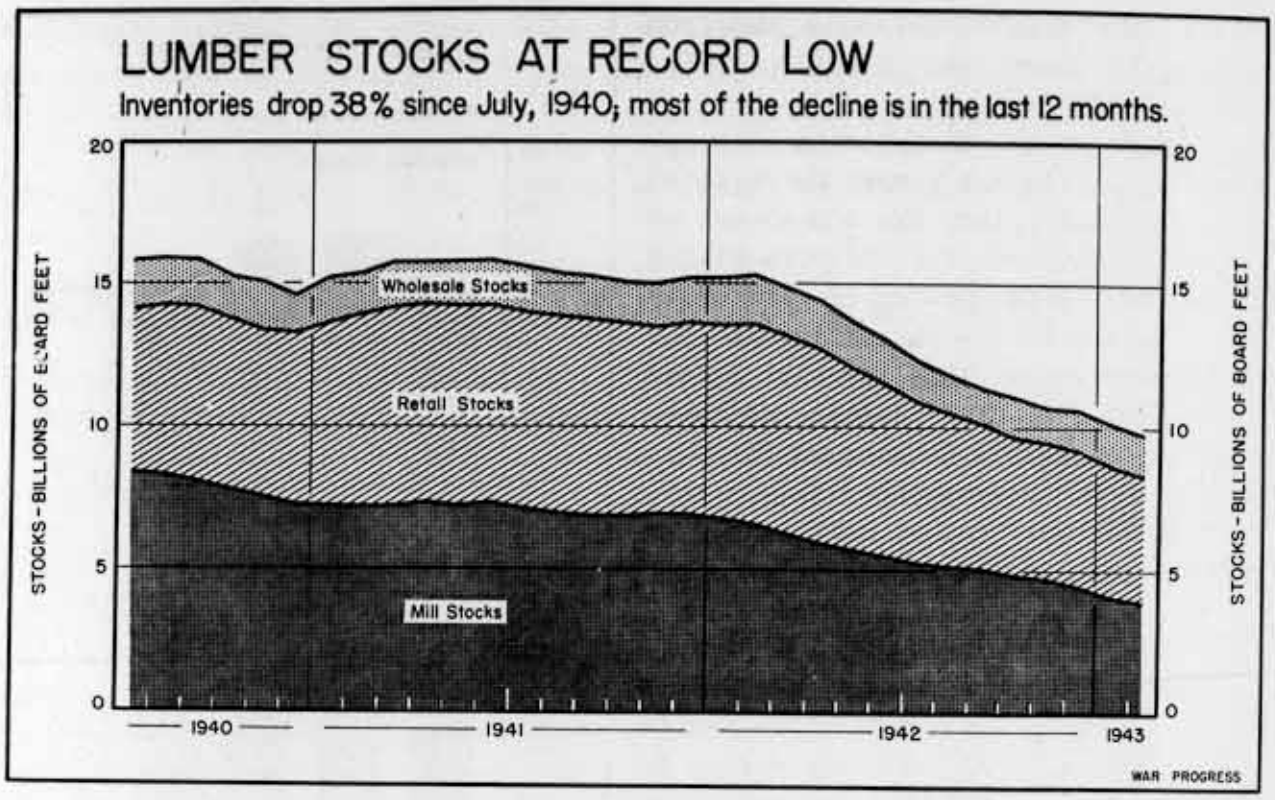
Use	1941	1942	1943
Boxing & crating.	14.7%	21.8%	33.2%
Military const...	11.9	28.9	25.0
Civilian const...	61.9	38.5	28.3
Manufactures.....	11.5	10.5	12.7
Lend-lease.....	--	0.3	0.8

Despite the planned-for drop in lumber consumption this year, sufficient output is not assured. Estimated lumber production in the first three months was approximately 20% under the like 1942 period, and new supply this year (including estimated net imports of 700,000,000 board feet) is expected to be no more than 30,000,000,000 board feet--1,500,000,000 board feet short of requirements.

And that's the minimum gap to be bridged by stocks this year. Boxing-



BACK IN 1940, LUMBER WAS A SUBSTITUTE COMMODITY—THERE WAS PLENTY OF IT. BUT DEMAND DEVELOPED SO RAPIDLY THAT BY THE END OF 1942, THE NET DRAIN ON STOCKS WAS APPROXIMATELY 4,000,000,000 BOARD FEET. THE END OF THIS DRAIN IS NOT IN SIGHT. NEW SUPPLY FOR 1943 IS ESTIMATED AT 30,000,000,000 BOARD FEET; REQUIREMENTS HAVE BEEN FIXED AT 31,500,000,000 (NOT INCLUDING SOME 500,000,000 BOARD FEET FOR OVERSEAS DUNNAGE). THUS, THE INDICATED DROP OF 1,500,000,-000 BOARD FEET THIS YEAR IS "CONSERVATIVE."



and-crating estimates do not include dunnage (lumber used to layer and anchor cargo) for overseas shipments. This may exceed 500,000,000 board feet. Moreover, on the supply side, lumber camps are still losing men, and before the year is out, the industry may not even count 90,000 loggers on its work rolls.

FREEZING LUMBERJACKS

The nationwide employment freeze may help. But to date, freezes have not been effective in keeping lumberjacks on the job. Last September, forest labor in 12 Western states--the most important lumber-producing region--was frozen: transfers to other jobs were not to be made without a "certificate of separation" from the employer. But labor-hungry war plants largely disregarded the rule; there was usually an "opening" without too many questions asked. Consequently, further attempts to offset the loss of manpower have been made.

Last February, the 48-hour week was extended to the entire lumber industry, after having been in effect for five months in the Western region. In addition, women workers were recruited. Last year, employment of women in the lumber industry increased from 20 per 1,000 to around 50 per 1,000. But women are being used almost entirely for tallying, stacking, and piling, and running machines such as planers, trimmers, and edgers. (Logging is regarded as too heavy and dangerous for them.)

BACK TO THE WOODS

So pressing has the need for lumber become, that the War Manpower Commission is now examining shipyard payrolls in order to locate some 4,000 former lumberjacks and encourage them to return to the woods. Also, a lumber salvage drive to reclaim unused and surplus stocks in a dozen Midwestern states is under consideration.

Some relief may come from substitu-

This year, therefore, the problem is to govern the flow of raw materials: to schedule allotments to prime contractors so that the total available allotment of steel, copper, aluminum, etc., to the Army is working full time in as many plants as possible. That's an on-the-ground distribution job.

WASHINGTON LIAISON

In order to do this, Army Ordnance has 13 procurement offices throughout the country, each of them staffed to represent each of the four Ordnance branches--Artillery, Ammunition, Small Arms, and Tanks. They see to it that contracts with individual manufacturers are made; that delivery dates are kept; that Washington, where the overall programming, scheduling, and procuring job is supervised, is informed immediately of what has happened--or, better, what threatens to happen.

If one manufacturer bogs down, then Washington must know, so that production can be shifted to another plant. Or if a manufacturer of a tight item can accelerate his output above scheduled levels, Washington must be so informed, so that the master schedule of planned output can be pushed up accordingly.

FINDING MORE WORKERS

Thus, the job of scheduling ultimately is a job of getting into the plants, of checking up on the inflow of parts and raw materials to individual manufacturers, of expediting wherever necessary, of finding more workers if they're needed.

Indeed, one of the tougher problems Army field men face this year will be preventing labor pinches from restricting output. As skilled workers are mustered into the services, the Army's contractors complain of manpower pinches. So a new phase of scheduling may unfold. Perhaps it will be necessary to guide the shifting of workers from plant to plant to meet the problem of getting out the required munitions.

In the last analysis, however, the Army--or any other procurement agency--cannot schedule in a vacuum. It can schedule its own materials; it can try to get its own prime contractors to meet delivery dates. But the entire U.S. economy is intertwined. Factories are busy on Navy items, Maritime Commission items, as well as Army items. There is inevitably competition to get what is needed. After all, just as the ASP is an order to an Army officer, so are Navy requirements orders to a Naval officer.

And manufacturers inevitably have to make choices--when materials are tight, facilities are cramped, or labor insufficient--as to what to produce. And schedules--of some claimant--are bound to suffer.

OVERALL JOB FOR WPB

If schedules of other claimants put an unplanned-for burden on facilities the Army expected to use, or if--for example--a sudden demand for airplane engines takes motors the Army had counted on to power tanks, actual production will fall short of schedules. Hence, Army schedules will be helped or hindered by the validity of Navy schedules, and vice versa.

Finally, scheduling depends on common components: on heat exchangers, compressors, motors, etc. And here, the claimant agencies and their contractors are all competitors for similar items. Hence, the ultimate job of scheduling components is not for one claimant versus another claimant; it is an overall job. This is now being undertaken by the War Production Board. How the WPB does its job will be a potent factor in determining whether the Army is able to meet its

tions, which have yet to be completely explored. Our capacity for turning out brick, concrete, cinder block, clay tile, and manufactured boards is generally ample; for instance: brick and tile plants are running at only 35% of capacity, Portland cement plants at 65%, and gypsum-board mills, 75%. Through wider use of these materials in residential building, war plant construction, and troop housing, it is estimated that at least 1,000,000,000 board feet of lumber could be saved this year.

NOT THE ANSWER

But substitutions won't solve the lumber shortage. In the new volume applications such as boxing and crating, shipbuilding, and aircraft, for example, the possibilities for displacing wood are limited. So, while there is sufficient timber--in the forests--lumber requirements continue to top new supply, and the deficiency must be sought from already depleted stocks.

Record in Naval Ships

Final March data show largest gain in work done – $82,000,000 over February. As a result, munitions output for the month is just short of $4,700,000,000.

SOME MINOR REVISIONS have been made in the value of war output in March. Munitions production amounted to $4,690,000,000, slightly higher than originally recorded (WP-Apr9'43,p1), and the percentage gain, at 11%, is up a bit. Munitions and war construction also moved upward slightly, but here the month-to-month increase, at 7%, was unchanged. (Production Progress tables and charts, pages 12-16.)

Though "production" of some items suffered in the revisions, the downward readjustments were more than compensated for by an upward adjustment in the value of work done on naval ships. As against the 3% gain originally recorded for naval and army ships and equipment, the revised

KEY STATISTICS OF THE WEEK

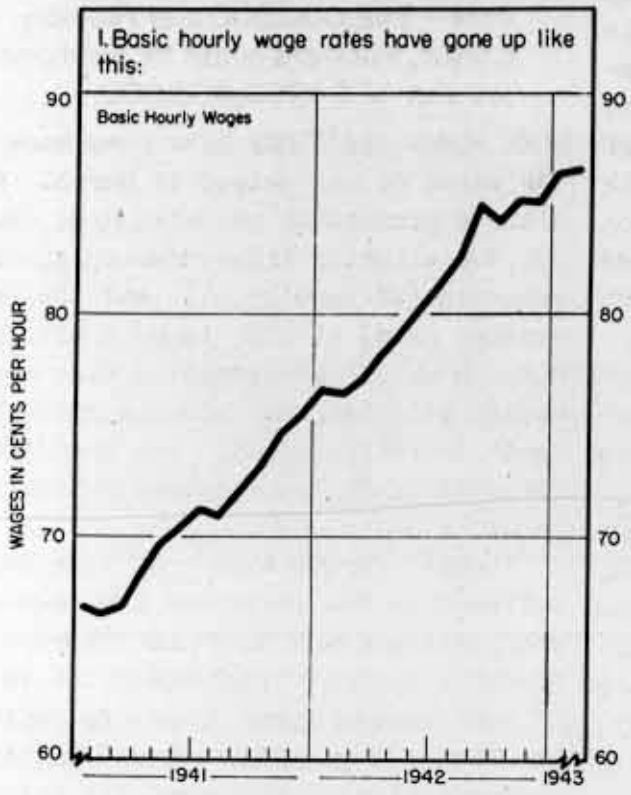
	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program – Checks paid (millions of dollars)	1,452	1,462	1,308	1,354	724
War bond sales (millions of dollars)	413	195	204	188	124
Commodity prices (August 1939 = 100)					
28 Basic commodities	176.4	176.7	176.7	169.8	167.0
Controlled	162.7	162.7	162.5	162.0	161.4
Uncontrolled	211.3	212.4	212.8	189.2	181.8
Petroleum:					
Total carloadings	56,191	57,392	54,791	54,747	55,714
Movement of cars into the East	29,757	29,809	26,181	27,675	18,651
East coast stocks for civilian use (1940-41=100 Seas. Adj.)	28.1	28.1	29.7	56.1	n.a.
Total stocks of residual fuel oil (thousands of barrels)	67,455	67,007	67,938	78,713	80,374
Exports (no. of freight cars unloaded for export Friday, excl. grain)					
Atlantic Coast ports	1,816	1,834	1,643	1,430	1,975
Gulf Coast ports	370	326	362	323	474
Pacific Coast ports	1,080	1,061	939	807	499
Unused steel capacity (% operations below capacity)	0.0	0.9	0.5	0.0	1.1
Department store sales (% change from a year ago)	+29	+15	-2	+18	+13

n.a. Not Available

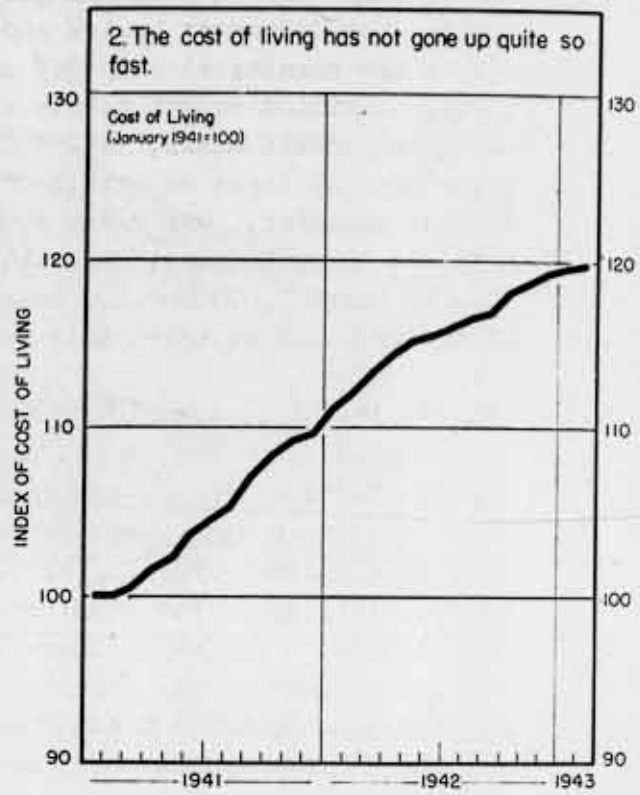
THE COST OF LIVING AND THE WEEKLY PAY ENVELOPE—THE

But most of the gain—70%—is due to a longer work week, rather than to boosts in hourly wage

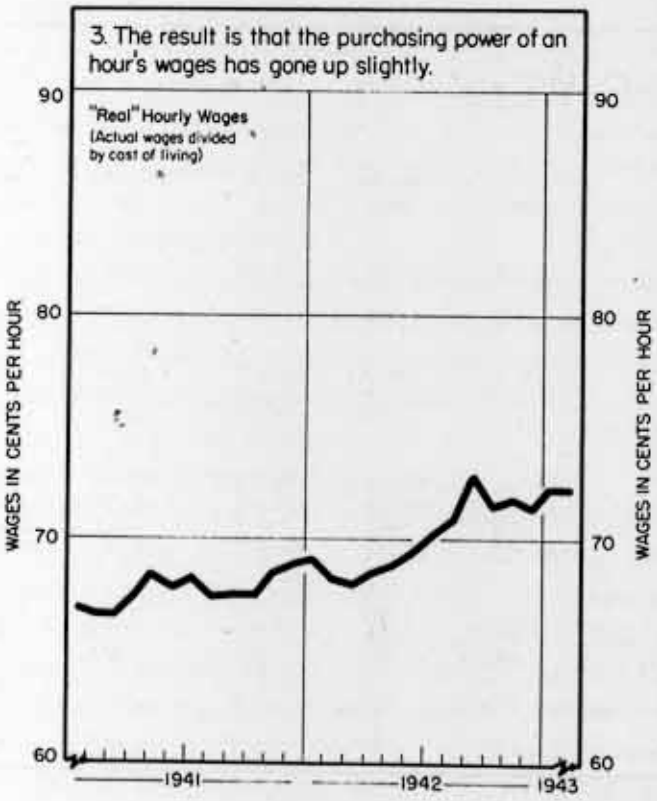
1. Basic hourly wage rates have gone up like this:



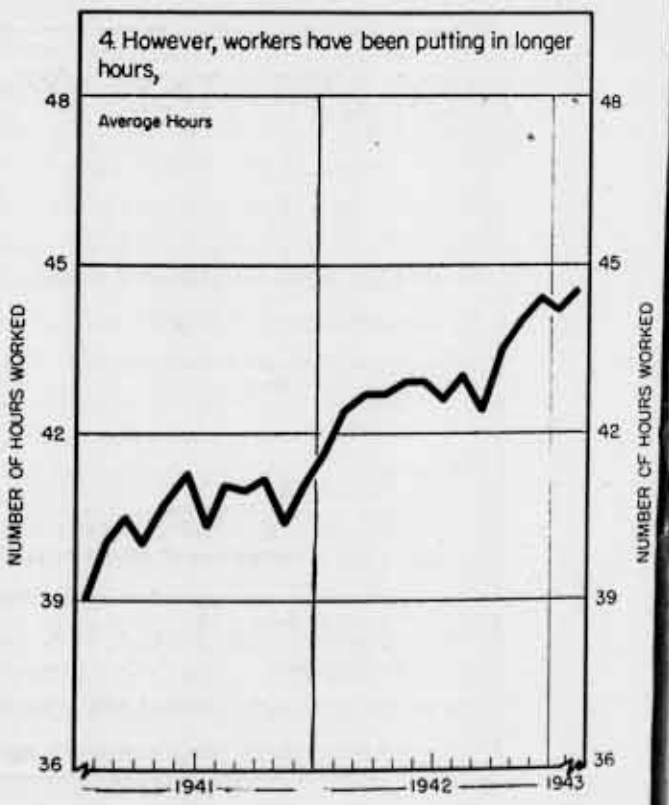
2. The cost of living has not gone up quite so fast.



3. The result is that the purchasing power of an hour's wages has gone up slightly.

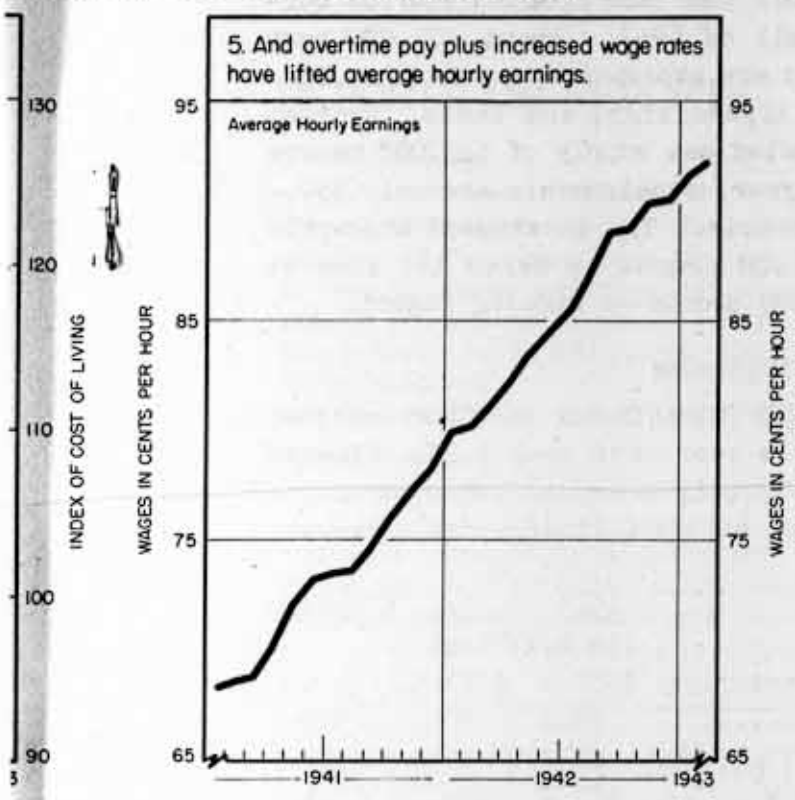


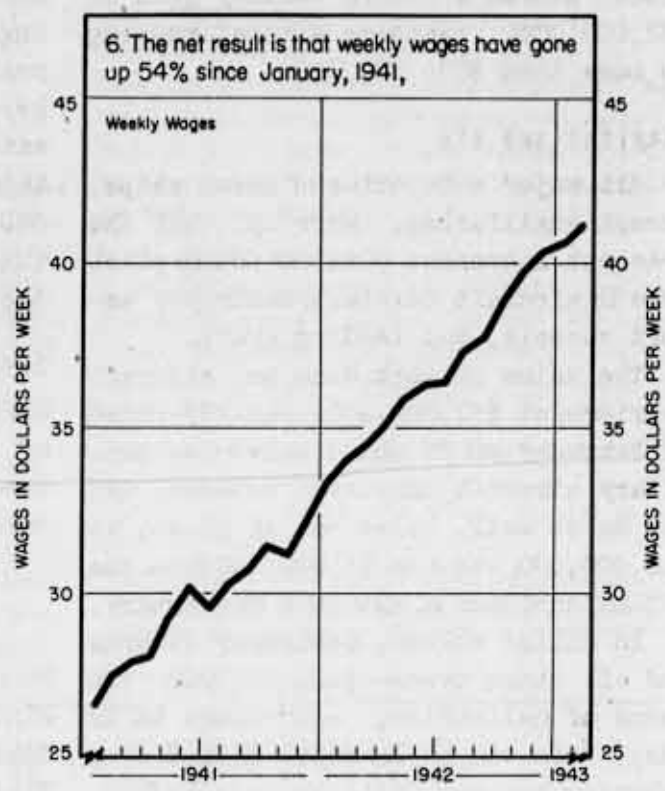
4. However, workers have been putting in longer hours,

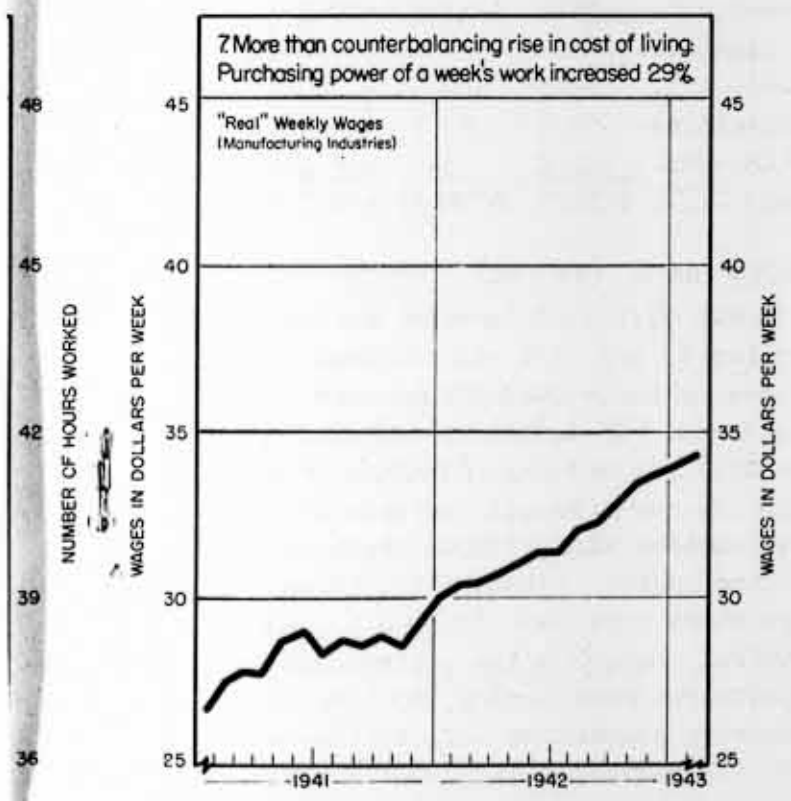


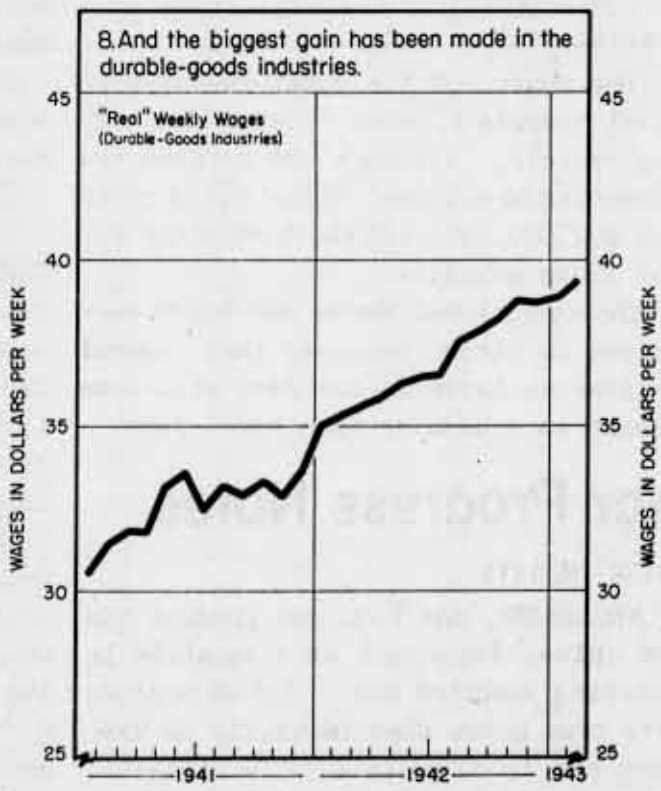
-THE WORKER IS 29% BETTER OFF THAN IN JANUARY, 1941

ly wage rates in manufacturing industries.









WAR PROGRESS

figure, which falls just short of $1,-000,000,000, is up 14% over February, but 7% under schedule. Work on naval ships alone scored a record monthly gain of $82,000,000, reaching a total running to more than $575,000,000.

CARRIERS AND DEs

All major categories of naval ships, except auxiliaries, were up, but the greatest increases in value put in place were in aircraft carriers, destroyer escort vessels, and landing craft.

The value of work done on aircraft carriers, at $52,000,000, was 27% ahead of February and 8% above schedule. Auxiliary aircraft carriers, however, did not do so well. Value put in place, at $16,000,000, was down $5,000,000 from the estimated volume of work done in February.

In dollar volume, destroyer escorts led all other types—$124,000,000 (in terms of deliveries, equivalent to 22 DEs). This was an increase of 44% over February, but not quite up to schedule.

LANDING CRAFT UPTURN

One-fourth of the total increase in naval vessels in March occurred in landing vessels, although the program was scheduled to decline. Value put in place was $92,000,000—42% above February and 46% above schedule.

The exceptional March showing in value put in place suggests that actual deliveries later in the year will come closer to schedules than heretofore.

War Progress Notes

OPIUM IMPORTS

IF NECESSARY, the U.S. can produce its own opium, important as a sedative in treating wounded men. Opium poppies have been grown experimentally in Vermont and in the State of Washington. But imports of opium, while fitful, are still sufficient to meet the demand.

In the first quarter of this year, Turkey sent 270,000 pounds of opium—13% more than came from all sources during all of 1942. About 170,000 more pounds are expected this year from Turkey, Afghanistan, and India. Against estimated new supply of 440,000 pounds this year, requirements are only 330,-000 pounds. The government stockpile (240,000 pounds on March 15) aims at 515,000 pounds—a numbing figure.

DIVIDENDS DOWN

DIVIDEND PAYMENTS for the first quarter of this year were down 6.2%. Finance was the only group to register an increase, as the following table shows:

	1943	1942	% Change
	(in millions)		
Manufacturing.	$350.8	$373.1	- 6.0%
Mining.....	25.4	28.1	- 9.6
Trade.....	44.2	52.1	-15.2
Finance.....	117.4	109.1	+ 7.6
Railroads.....	35.9	45.0	-20.2
Heat, light, power.....	99.8	102.2	- 2.3
Communications	55.6	65.7	-15.4
Miscellaneous.	12.4	15.2	-18.4
Total.....	$741.5	$790.5	- 6.2

SUSPENDED FOR ALTERATIONS

TRADITIONAL GUIDEPOST to what the wage earner has to pay for what he buys is the Bureau of Labor Statistics' Cost of Living Index. It indicates how much a dollar will buy in terms of food, clothing, and shelter by keeping tab on prices.

But wartime vicissitudes have affected the index; automobiles, tires, refrigerators have been dropped. And now, radical changes in the nation's eating habits, due to rationing, have forced a temporary suspension of the index; hence, its unavailability, until May, for Selected Monthly Statistics (page

11). Place must be made for such up-and-coming items as corn syrup, oatmeal, and hamburger, not formerly on the day-in, day-out American diet.

REPORTS ON REPORTS

Civilian Economy

Civilian Consumption and Output in the United States (confidential; pp. 199) presents a factual appraisal of (1) civilian production and services in 1942, (2) present controls of the civilian economy, and (3) pending inroads on civilian output. Expected reduction of 1943 consumer purchases: 10% to 15% below 1942.
(War Production Board, Planning Committee)

Control Problem

Leather (confidential; pp. 20) reports that tight supply of tanning materials aggravates the short position of hides and skins. With a price ceiling on meat and none on livestock, slaughtering declines and hide supplies suffer; this reduces tanner's production rates and threatens loss of skilled labor. (U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce)

Cutting Tools

The Cutting Tool Situation (confidential; pp. 7) states that February shipments of tools for cutting metals reached an all-time peak and left unfilled orders at about 3.6 times the record output. Among the 60 manufacturing plants, operations range from 50 hours to 163 hours per week, average is 104.
(War Production Board, Statistics Division, Industry and Facilities Branch)

Supply Equals Demand

Aniline (confidential; pp. 50) finds that, with a 138% increase in production over the 1940 volume, present allocation of this benzene derivative meets all essential uses: dyes, drugs, chemicals, etc. As current aniline production is below capacity, an expected rise in consumption for sulfa drugs presents no serious problem.
(War Production Board, Office of Civilian Supply, Chemicals Branch)

[This record is an attempt to select from the many documents coming to the attention of WAR PROGRESS those studies which would be of most interest to readers. The list is by no means comprehensive, and no attempt has been made to evaluate reports for accuracy. Whether reports are available depends on the policy of each individual agency.]

SELECTED MONTHLY STATISTICS

Employment – Transportation – Retail Sales – Consumer Expenditures

	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
FEDERAL CIVILIAN EMPLOYMENT (thousands)	p3,024	2,977	2,895	2,633	1,961	887	875
War	p2,235	2,192	2,103	1,765	1,097	n.a.	n.a.
War Department	p1,394	1,374	1,309	1,097	636		
Navy Department	p619	600	580	519	376		
Other War Agencies	p221	218	214	149	85		
Nonwar	p789	785	792	868	864	n.a.	n.a.
TRANSPORTATION – COMMODITY AND PASSENGER (1935-39 = 100)†	p201	187	191	193	152	97	111
Commodity	p193	178	181	190	153	97	113
Passenger	p226	217	226	202	148	97	106
RETAIL STORE SALES – TOTAL (million dollars)	p5,052	4,504	4,434	4,840	4,474	3,446	3,626
Durable goods	p822	664	651	838	804	853	979
Nondurable goods	p4,230	3,840	3,783	4,003	3,670	2,593	2,647
CONSUMER EXPENDITURES (million dollars)	p6,802	6,779	6,325	6,753	5,909	4,519	n.a.
Goods	p4,436	4,377	5,951	4,442	3,690	2,652	n.a.
Services	p2,367	2,402	2,374	2,312	2,219	1,867	n.a.

*March; Transportation and Consumer Expenditures, February. †Unadjusted. Series revised back to 1937. n. a. Not available. p. Preliminary.

PRODUCTION PROGRESS

General Summary (Value of production, in millions of dollars)

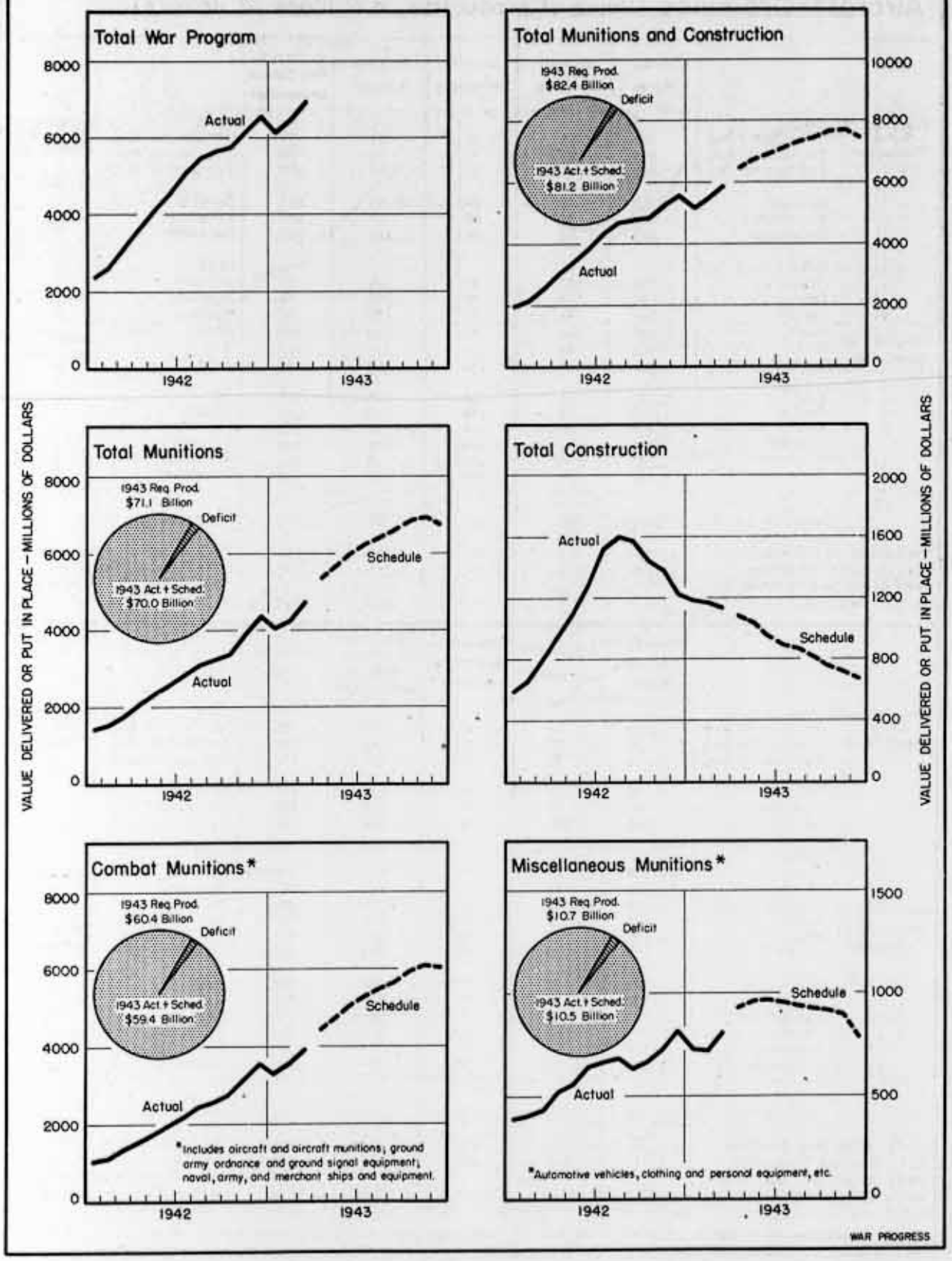
		Total Program	Total Munitions & Construction	Total Munitions	Total Construction	Miscel. Munitions	
Valuation of Actual Production	1942						1942
	1st Quarter Avg.	2,710	2,248	1,568	681	410	1st Quarter Avg.
	2nd Quarter Avg.	4,112	3,433	2,319	1,114	573	2nd Quarter Avg.
	3rd Quarter Avg.	5,375	4,599	3,041	1,557	662	3rd Quarter Avg.
	October	5,713	4,846	3,397	1,449	663	October
	November	6,116	5,216	3,836	1,380	723	November
	December	6,571	5,592	4,367	1,225	812	December
	1943						1943
	January	6,173	5,195	4,018	1,177	726	January
	February	6,472	5,413	4,243	1,170	719	February
	March	6,982	5,817	4,690	1,127	806	March
Valuation of Schedules	April		6,418	5,334	1,084	929	April
	May		6,711	5,665	1,046	955	May
	June		6,932	5,982	950	965	June
	July		7,144	6,246	898	956	July
	August		7,321	6,455	866	940	August
	September		7,438	6,626	812	929	September
	October		7,650	6,893	757	921	October
	November		7,714	6,996	718	900	November
	December		7,465	6,790	675	781	December
	1942 Actual	54,992	46,494	32,385	14,109	7,133	1942 Actual
1943 Actual plus Schedule			51,218	69,938	11,280	10,527	1943 Actual plus Schedule
1943 Required Production			52,355	71,075	11,280	10,739	1943 Required Production
1943 Actual plus Schedule as % of Required Production			98.6	98.4	100.0	98.0	1943 Actual plus Schedule as % of Required Production

		Combat Munitions (a)	Aircraft & Aircraft Munitions	Ground Army Munitions (b)	Naval and Army Vessels & Equip.	Merchant Vessels	
Valuation of Actual Production	1942						1942
	1st Quarter Avg.	1,158	456	268	343	90	1st Quarter Avg.
	2nd Quarter Avg.	1,746	646	456	490	154	2nd Quarter Avg.
	3rd Quarter Avg.	2,380	839	689	646	206	3rd Quarter Avg.
	October	2,734	934	804	805	191	October
	November	3,113	1,103	909	861	240	November
	December	3,555	1,325	1,122	847	261	December
	1943						1943
	January	3,292	1,308	909	820	255	January
	February	3,524	1,393	977	867	287	February
	March	3,884	1,543	1,043	990	306	March
Valuation of Schedules	April	4,405	1,798	1,091	1,153	363	April
	May	4,710	2,026	1,116	1,200	368	May
	June	5,017	2,224	1,172	1,248	373	June
	July	5,290	2,406	1,220	1,290	374	July
	August	5,515	2,559	1,286	1,300	370	August
	September	5,697	2,709	1,336	1,284	368	September
	October	5,972	2,916	1,411	1,277	368	October
	November	6,096	3,029	1,437	1,258	372	November
	December	6,009	3,096	1,338	1,202	373	December
	1942 Actual	25,252	9,185	7,074	6,951	2,042	1942 Actual
1943 Actual plus Schedule		59,411	27,007	14,336	13,889	4,179	1943 Actual plus Schedule
1943 Required Production		60,336	27,192	14,937	14,028	4,179	1943 Required Production
1943 Actual plus Schedule as % of Required Production		98.5	99.3	96.0	99.0	100.0	1943 Actual plus Schedule as % of Required Production

Note: April 1 schedules for aircraft and aircraft munitions, ground army munitions, and other army items; March 1 for all others. Schedules are used for required production in aircraft and spares, navy vessels, and construction.
(a) Aircraft and aircraft munitions, ground army and ground signal equipment; naval, army, and merchant vessels.
(b) Ground army ordnance and ground signal equipment.

PRODUCTION PROGRESS

General Summary – Munitions, Construction, Miscellaneous



PRODUCTION PROGRESS

Aircraft-Ordnance (Value of production, in millions of dollars)

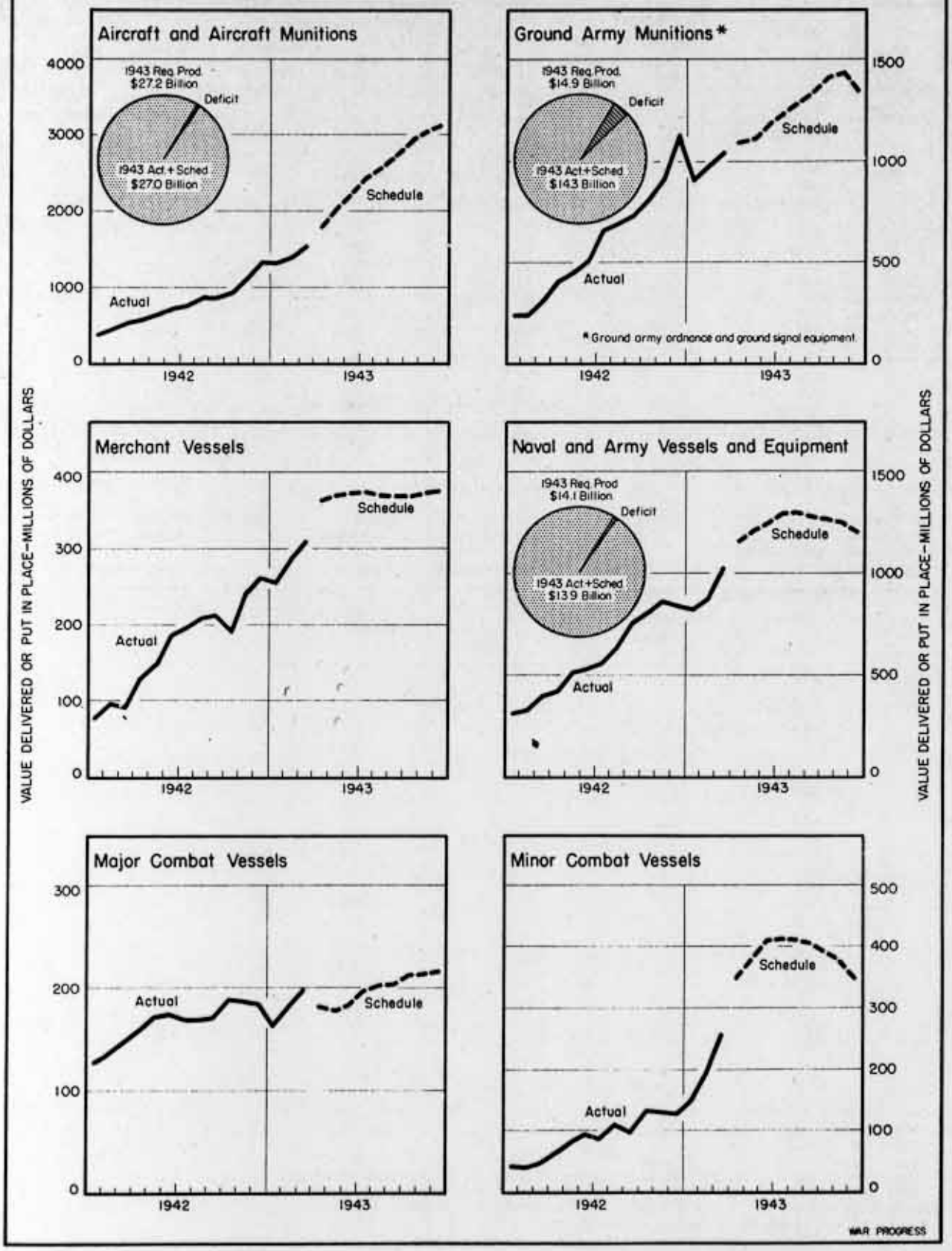
	Combat Planes	Aircraft Armament	Aircraft Ammunition	Artillery & Equip	Artillery & Tank Cannon Ammunition
Valuation of Actual Production — 1942 1st Quarter Avg.	180	17	36	23	54
2nd Quarter Avg.	233	27	43	33	90
3rd Quarter Avg.	294	29	57	52	110
October	313	33	64	66	107
November	368	37	66	97	126
December	425	42	86	121	106
1943 January	366	37	83	104	93
February	450	38	76	126	88
March	524	41	72	122	107
Valuation of Schedules — April	686	41	91	123	101
May	802	43	119	114	117
June	906	44	136	103	134
July	1,020	45	148	105	155
August	1,116	48	165	114	164
September	1,210	49	174	116	161
October	1,301	53	196	101	158
November	1,356	53	197	95	161
December	1,397	22	199	44	169
1942 Actual	3,227	330	623	607	1,102
1943 Actual plus Schedule	11,134	514	1,656	1,268	1,608
1943 Required Production	11,134	516	1,767	1,355	1,743
1943 Actual plus Schedule as % of Required Production	100.0	99.6	93.7	93.6	92.3

	Antiaircraft Guns & Equip.	Antiaircraft Ammunition	Small Arms & Infantry Weapons	Small Arms & Infantry Weapon Ammunition	Combat Vehicles
Valuation of Actual Production — 1942 1st Quarter Avg.	13	12	16	42	88
2nd Quarter Avg.	39	21	28	81	124
3rd Quarter Avg.	76	30	37	118	176
October	95	15	44	135	212
November	95	17	49	138	239
December	109	24	55	168	399
1943 January	110	20	54	179	211
February	112	15	53	178	255
March	118	21	57	202	289
Valuation of Schedules — April	130	24	63	212	300
May	126	27	69	227	292
June	124	30	70	249	308
July	123	33	73	262	316
August	132	38	78	277	311
September	144	45	81	299	316
October	155	53	80	333	330
November	153	51	80	343	340
December	138	53	78	314	340
1942 Actual	698	245	388	1,163	2,015
1943 Actual plus Schedule	1,565	410	836	3,075	3,608
1943 Required Production	1,613	439	809	3,181	3,736
1943 Actual plus Schedule as % of Required Production	97.0	93.4	103.3	96.7	96.6

Note: Schedules as of April 1 for aircraft and aircraft munitions, and ground army munitions; as of March 1 for all others. Schedules are used for required production in the case of combat planes, and navy vessels.

PRODUCTION PROGRESS

Selected Items – Aircraft, Ground Army, Ships



WAR PROGRESS

PRODUCTION PROGRESS

Ships-Construction-Miscellaneous (Value put in place, in millions of dollars)

		Battleships Cruisers & Carriers	Destroyers	Sub-marines	Antisub-marine Vessels	Transports (Army,Navy)	
Valuation of Actual Production	1942						1942
	1st Quarter Avg.	60	59	17	43	1	1st Quarter Avg
	2nd Quarter Avg.	73	74	20	77	7	2nd Quarter Avg.
	3rd Quarter Avg.	71	77	23	96	10	3rd Quarter Avg.
	October	84	82	23	131	10	October
	November	77	88	22	127	16	November
	December	76	74	25	124	13	December
	1943						1943
	January	68	70	25	146	11	January
	February	76	76	29	190	18	February
	March	96	73	29	229	12	March
Valuation of Schedules	April	73	82	27	345	20	April
	May	73	78	28	374	22	May
	June	75	79	30	401	23	June
	July	79	84	34	407	22	July
	August	81	84	37	406	24	August
	September	83	81	39	400	25	September
	October	88	82	41	388	25	October
	November	91	79	42	373	25	November
	December	96	75	44	343	25	December
	1942 Actual	850	875	249	1,031	93	1942 Actual
1943 Actual plus Schedule		979	943	405	4,002	252	1943 Actual plus Schedule
1943 Required Production		979	943	405	4,002	252	1943 Required Production
1943 Actual plus Schedule as % of Required Production		100.0%	100.0%	100.0%	100.0%	100.0%	1943 Actual plus Schedule as % of Required Production

		Landing Vessels	Industrial Facilities	Aircraft Fields & Bases	Clothing & Personal Equip.	Automotive Vehicles & Equip.	
Valuation of Actual Production	1942						1942
	1st Quarter Avg.	2	352	61	68	127	1st Quarter Avg.
	2nd Quarter Avg.	7	512	124	98	171	2nd Quarter Avg.
	3rd Quarter Avg.	85	662	236	117	196	3rd Quarter Avg.
	October	146	681	211	109	174	October
	November	143	635	201	107	179	November
	December	129	600	160	106	207	December
	1943						1943
	January	95	576	141	110	189	January
	February	65	562	151	111	202	February
	March	92	530	148	122	215	March
Valuation of Schedules	April	54	470	160	185	236	April
	May	63	420	150	193	274	May
	June	69	360	138	197	276	June
	July	73	335	137	176	289	July
	August	78	300	135	168	286	August
	September	75	277	132	166	282	September
	October	68	238	130	184	260	October
	November	60	219	122	182	259	November
	December	52	213	111	179	198	December
	1942 Actual	702	6,492	1,832	1,171	2,044	1942 Actual
1943 Actual plus Schedule		844	4,500	1,655	1,973	2,969	1943 Actual plus Schedule
1943 Required Production		844	4,500	1,655	2,167	2,976	1943 Required Production
1943 Actual plus Schedule as % of Required Production		100.0%	100.0%	100.0%	91.0%	99.8%	1943 Actual plus Schedule as % of Required Production

Note: Schedules as of April 1 for clothing and personal equipment, and automotive vehicles and equipment. As of March 1 for all others. Schedules are used for required production in all cases except clothing and personal equipment, and automotive vehicles and equipment.