The President

1

WAR PROGRESS

Confidential
(British Secret)

How the Maritime Commission Schedules Making Up for Lost Steel

Number 144 June 18 1943

How Maritime Commission Schedules

Aims to synchronize flow of materials with construction operations at the yards. Mid-month forecasts for mass-produced Liberty ships more accurate than for minor vessels.

IN 1937, when the Maritime Commission began its activities, there were only 10 yards with a total of 46 shipways in the United States capable of building ocean-going ships of 400 feet or more in length. About half of them were occupied by naval construction. Now there are some 60 shipyards with more than 300 ways devoted to building large merchant ships. Most of them are brand-new yards. Others had long been idle—some since the last war—and were refurbished, expanded, and equipped with new and modern machinery. When the construction and facilities program of the Maritime Commission is completed, some $450,000,000 will have been expended on shipways and equipment.

RECORD VOLUME OF SHIPS

With this huge production capacity, the Maritime Commission has been able to turn out a record-breaking volume of ships. Output rose from 18 vessels aggregating 195,000 deadweight tons in 1937 to 746 ships of 8,090,000 deadweight tons in 1942. This year, deliveries are expected to increase over 150%: May schedules call for 2,182 ships totaling almost 21,000,000 deadweight tons.

The Maritime Commission program embraces many types of ships. But almost two-thirds of this year's production (in deadweight tonnage) are Liberty ships of uniform design; the remaining third consist of ocean-going and coastal tankers, combination passenger and cargo boats, standard types of freighters, ore carriers, concrete and wooden barges, as well as army transports, corvettes, navy tenders, and landing craft. It is significant that Maritime Commission production has come closer to meeting monthly schedules in Liberty ships than in other types. This is partly due to the fact that the commission has concentrated on Liberties, and it is easier to schedule a mass-production job than custom-made vessels.

PATTERN OF MATERIALS FLOW

Every ship requires thousands of parts, all of which must arrive at the yard in a definite sequence if the processes of construction—prefabrication, preassembly, and work on the ways and outfitting docks—are to move smoothly. Thus, scheduling by the Maritime Commission is based on a knowledge of (1) the rate of materials flow from manufacturers to shipyards and (2) the productive capacity of each yard.

Before the government undertook the production of merchant vessels on a large scale, the shipbuilding industry was more or less on a custom basis. Ships were usually "tailor made," and every yard purchased its own materials. The Maritime Commission standardized most of the designs and eliminated all changes which the shipyard could make in specifications except those offering an opportunity for greater interchangeability of parts.

The materials and components for ships produced in "emergency yards"—that is, Liberty vessels, some of the ocean-going tankers, and certain classes

of coastal carriers—are with few exceptions bought by the commission and allocated to the yards. The latter are generally allowed to purchase only certain expendable items, such as welding rod, nuts, bolts, rivets, and paint.

The "long-range" yards, which build miscellaneous types of merchant vessels, buy their own construction materials. The Maritime Commission procures for them only the thousands of separate items on the Allowance List—rope and cordage, navigation instruments, spare parts, furniture, radio, tools, stevedore equipment, galley and pantry gear, life-saving equipment, medical supplies, armed-guard equipment, etc.

BUYS BY SHIPSWORTH

The commission buys by the shipsworth. A shipsworth comprises all the items required to build and outfit one vessel. Thus, the commission is now placing orders for materials and parts for approximately 900 Liberty vessels whose keels will be laid in 1944. Incidentally, steel plate for the Maritime Commission is scheduled by the War Production Board. Orders for rolling the steel plate are placed three months before keel laying for shipment two months before keel laying.

Commission purchases are divided into three groups, according to the sequence of construction, and deliveries are arranged on the basis of making all materials and components available to the shipyards at least about the time the keels are laid.

PUMPS AND PIPES FIRST

The first group, comprising Schedule I, must be delivered to shipyards about two months before keel laying. It consists of stern frames, pumps and piping, the fire extinguishing system, bilge and ballast piping, etc. The second group (Schedule II) is due for delivery one month before keel laying, and includes items which are built into the vessel on the shipway or after launching, such as the rudder, winches, davits, generators, machinery seatings, radio equipment, doors, airports, masts, derricks, booms, etc.

Schedule III items are to be delivered about the time of keel laying. They comprise mainly outfitting materials—portable furniture, mess gear, tools, electrical fixtures, degaussing belts, instruments, life-saving equipment, interior communications systems, etc.

LIVING UP TO SCHEDULES

Since the commission deals with about 5,000 suppliers, a steady flow of materials and parts is generally assured. Expediters check up on manufacturers from time to time to see that they are living up to delivery schedules. The commission's aim is to synchronize the flow of materials with the processes of construction at the yards.

Every yard supplies the commission with periodic reports—usually weekly

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—of its inventory of steel as well as the rate of prefabrication and erection. From these the commission can tell where steel is short and where it is abundant and channel it accordingly. In this way, the Maritime Commission strives to avoid building up excessive inventories in shipyards. On the other hand, central procurement and allocation is designed to make materials available to the yards when they are ready for them.

IMPORTANCE OF "WAY TIME"

Heart of any scheduling procedure for a particular ship is way time—the time from keel laying to launching—because the date of keel laying for the next ship is dependent upon the way time of the present ship. The larger the preassemblies the shorter the way time, as a rule. In some yards as much as one-third of the steel that goes into a Liberty ship is preassembled. However, some of the old yards haven't enough space to make large assemblies. On the other hand, most of the new yards —like those on the Pacific Coast—have plenty of room and are laid out on a basis whereby large sections are sent to the ways. Their subassemblies, in fact, are generally limited only by the lifting capacity of their cranes.

MIDMONTHLY PLANE TALLY

ACCEPTANCES during the first 14 days of June totaled 2,765 airplanes, as against 2,723 during the comparable period of May, a 2% rise (unweighted). However, the full-month outlook is brighter than this small increase might suggest. Production of combat models was up 147. But output of lighter and less expensive trainer planes was down 111 units, in keeping with the recent cutback in trainer schedules. Comparison of acceptances in the first 14 days of June, with May, follows:

	June	May	% Change
Total.....	2,765	2,723	+ 2%
Combat planes...	1,715	1,568	+ 9
Service combat..	337	331	+ 2
Trainers.....	713	824	-13

Among combat planes, outstanding increases were scored by two-engined patrol bombers, up 22%; one-engined light bombers (18%), and two-engined fighters (253%). Heavy-bomber acceptances reached 319, as against 304 in the first two weeks of May.

To meet the June "working" schedule of 7,772 planes, more than 5,000 will have to be accepted in the last 16 days—an unlikely prospect.

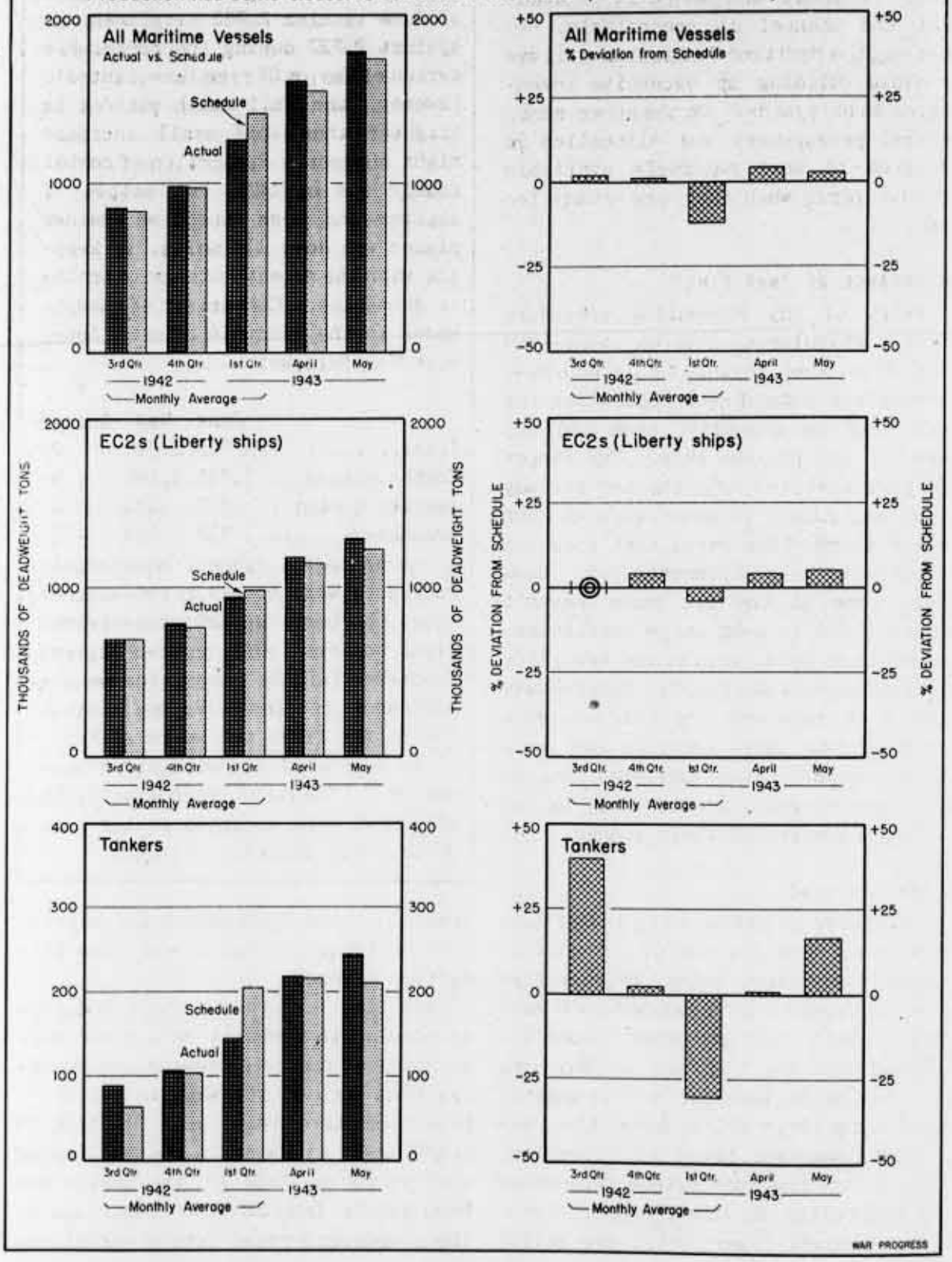
LIBERTIES LEAD

Shipyards constructing Liberties have been most successful in cutting down the way time, mainly because this type of vessel is produced on a much larger scale than any other. Some 1,097 had been built by June 1. Way time of other major vessels, such as tankers and C-type cargo ships, show the consistent downward trend of Liberties, but not to the same extent because of the complexity of their construction. Also, because fewer units are built, there is less opportunity for repetitive building processes and mass-production methods.

Way time for Liberty ships declines as more units are built on a given way. In the first round (a consecutive launching from each of the ways is a round), Liberties have been built in from 84 to 265 days; by the sixth round (reached by 9 yards on June 1), the margin had been cut to from 32 to 66 days; and on the fourteenth round (three yards), to

THE STORY OF SCHEDULING OF MARITIME VESSELS—

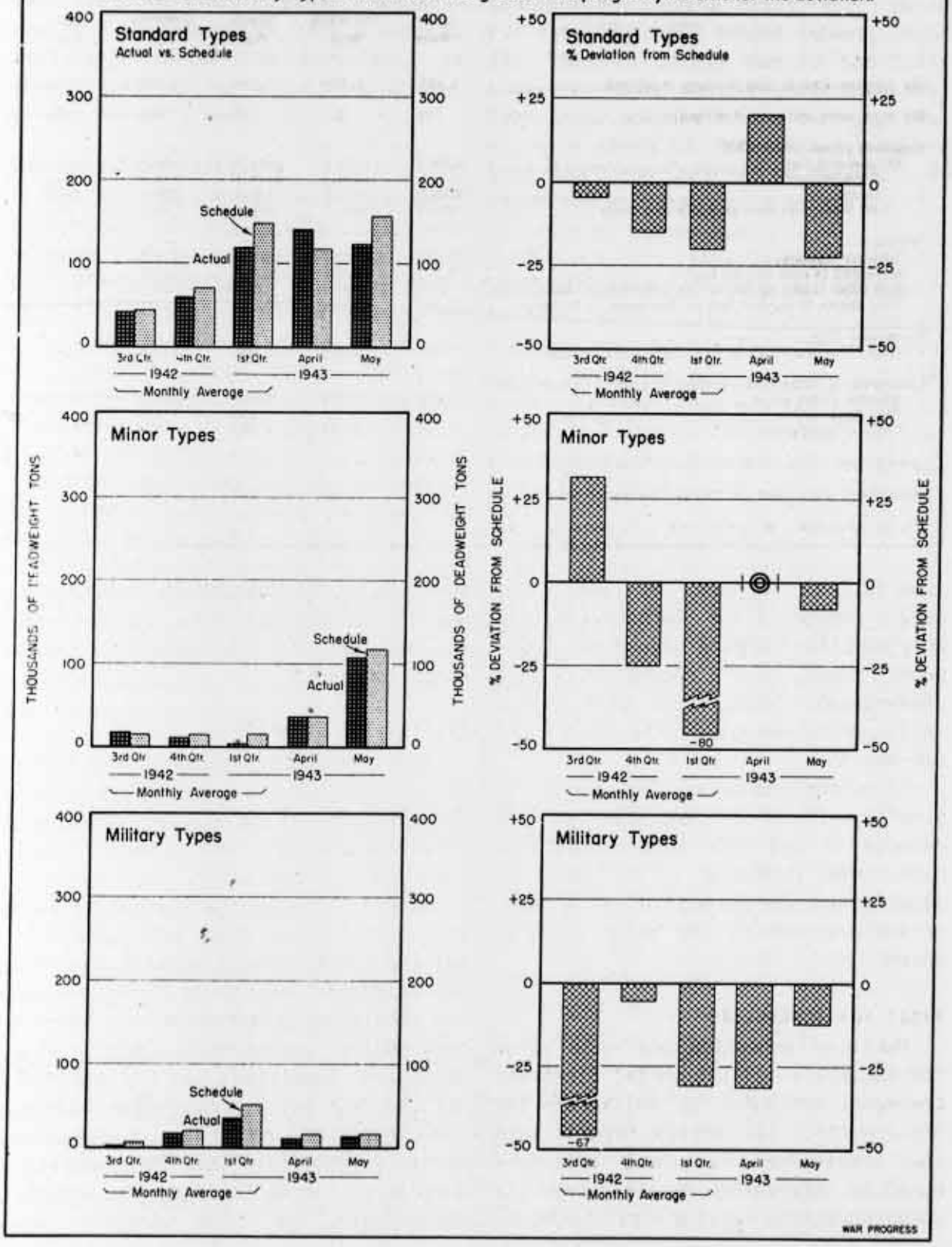
Production has come closest to schedule in the mass-produced Liberties, farthest



WAR PROGRESS

-IS THE STORY OF LIBERTY SHIPS AND OTHER SHIPS

in minor and military types. Inference: the greater the program, the smaller the deviation.



KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program - Checks paid (millions of dollars)	1,616	1,604	1,595	1,387	946
War bond sales (millions of dollars)	229	117	131	203	149
Wholesale prices (1926=100)					
All commodities	p104.0	p103.9	p103.8	100.5	98.4
Farm products	p127.6	p126.3	p125.7	112.0	104.3
Foods	110.9	110.6	110.2	104.0	99.5
All other than farm products and foods	p96.9	p96.9	p96.9	96.2	95.9
Petroleum:					
Total carloadings	53,417	54,267	58,870	51,190	54,280
Movement of cars into the East	29,147	28,886	31,148	24,974	22,227
East coast stocks for civilian use (1940-41=100 Seas. Adj.)	26.8	25.6	27.1	51.7	n.a.
Total stocks of residual fuel oil (thousands of barrels)	67,652	r67,461	67,311	74,785	79,120
Bituminous Coal:					
Production (thousands of short tons, daily average)	526	1,990	1,695	1,853	1,839
Exports (no. of freight cars unloaded for export Friday, excl grain)					
Atlantic Coast ports	2,308	2,314	2,104	1,088	1,491
Gulf Coast ports	326	340	380	319	467
Pacific Coast ports	1,377	1,344	1,202	925	417
Unused steel capacity (% operations below capacity)	2.2	2.5	1.4	1.6	1.7
Department store sales (% change from a year ago)	+28	r+2	+16	+17	-3

n.a. not available. p. preliminary. r. revised.

from 22.3 to 30 days. By June 1, the Oregon Shipbuilding Corporation, the only yard that had gone beyond the fourteenth round, set a record of 19 days (seventeenth round) from keel laying to launching, which so far is the "floor" for way time.

In scheduling deliveries, the Maritime Commission concentrates on the records of way time, since outfitting time (from launching to delivery) is usually much shorter and follows a rather uniform pattern for major types of ships.

BASES FOR SCHEDULING

Maritime schedules are made up on the basis of: (1) the yards' first-of-the-month estimates of deliveries for that month; (2) weekly reports from the commission's regional offices—based on information received from its yard inspectors—giving anticipated deliveries in the ensuing 45 to 90 days; and (3) monthly progress reports from the regional offices for all vessels under contract.

EDITING THE ESTIMATES

The commission collates and edits these reports in the light of its knowledge of past and current performances, including not only way time for every yard and type of ship, but also—at least for the major yards—the rate of prefabrication and steel erection. This editing is necessary because some of the shipyards' estimates of deliveries are consistently overoptimistic, others continually pessimistic. Also, the schedules submitted by the regional offices may not be reasonable because some inspectors may fail to make accurate prognostications. The commission also keeps tab on the manpower supply, absenteeism, and labor turnover. In

this manner it can weigh a shipyard's schedule against past performance and make a fairly close approximation of expected production. An elaborate charting system, something like a central register, enables the commission to know on a day-by-day basis what is happening in every yard.

MAKE MIDMONTH FORECASTS

The Maritime Commission has been able to forecast or schedule the delivery of ships with a high degree of accuracy on a midmonthly basis. That is, forecasts made on April 15 in Washington have been reasonably close to actual deliveries for April; May 15 schedules have closely approximated May production; and so on. In the last six months of 1942, overall production in commission shipyards virtually hit midmonthly schedules on the nose, running 2% ahead (on a deadweight tonnage basis) in the third quarter and 1% ahead in the fourth. In the first quarter of 1943, however, construction fell 12% behind midmonthly forecasts—about 4,257,000 deadweight tons in the aggregate were scheduled but only 3,757,000 tons were delivered. In the last two months, output again came closer to schedules, with deliveries running 4% ahead of the forecast in April and 3% ahead in May.

MINOR SHIPS TROUBLESOME

These overall figures, however, do not disclose the difficulty in forecasting deliveries of minor vessels in the Maritime Commission program. The accurate scheduling of emergency cargo ships (which comprised 79% of total Maritime Commission tonnage last year and will account for 63% this year) counterbalances the rather wide deviations from schedule in the output of smaller vessels. Thus, whereas the total production of emergency cargo ships has seldom fallen behind the midmonthly forecast, military vessels (tenders, transports, landing craft, etc.) have run from 5% to 60% behind (chart, page 5). This is partly due to the fact that some of the smaller yards have not been fully adapted to the construction of these types of vessels and production has been held up by bad weather as well as by unavoidable delays in the delivery of components.

Tankers, too, have deviated markedly from schedule. They ran 40% ahead of the forecast in the third quarter of 1942, were virtually right on schedule in the fourth quarter, but fell 30% behind in the first quarter of 1943. In April, however, they exactly met the schedule and in May ran 17% ahead (in deadweight tons).

CONCRETE AND WOODEN BARGES

The commission has also found it difficult to make accurate midmonthly schedules for minor types of vessels (coastal cargo ships, wooden and concrete barges, ore carriers, and inland and coastal tankers), although these comprised only about 1% of the entire program in 1942 (in deadweight tons) and will account for about 5% in 1943. Bad weather, ice conditions on the Great Lakes, technical problems, materials procurement difficulties—as in the concrete- and wooden-barge program—labor problems, and delays in delivery of materials and components to the yards, have played havoc with schedules. In the nine months from July, 1942, through March of this year, output of all minor types ran from 25% to 80% behind schedule. On occasion, inability to obtain a single component, such as a generator, has delayed deliveries. But, in the last two months, scheduling of these ships has been vastly improved: the fore-

cast was met in April, and in May deliveries fell only 8% short (in tonnage).

To summarize: The striking fact about the Maritime Commission's scheduling is its success in predicting the delivery of mass-produced ships like Liberties. And this shows up in longer-term results. In 1942, the Maritime Commission realized its objective of 8,000,000 tons of merchant ships. This year, 21,000,000 tons are scheduled and seem likely to be attained. Through May, 34% of the full 1943 schedule had been completed; in Liberties, 40%.

Making Up for Lost Steel

Lag in facilities program has cost some 1,700,000 ingot tons; urgent military demand for additional allotment forces revision in third-quarter plans.

LAST YEAR, planned production of about 300,000 tons of steel ingots failed to materialize because facilities were not put in place on time. And this year, some 1,700,000 tons of ingots will be lost because of delays in the country's steel expansion program.

That explains in part the current urgent demand for an additional 1,000,000 tons of steel in the next quarter for military purposes and why the War Production Board is putting on a drive to (1) divert allocated steel away from customers with ample inventories, and (2) increase third-quarter steel production by 700,000 tons. This last is to be accomplished by speeding completion of steel facilities now lagging for lack of critical components and materials and by working for increased productivity through labor-management arrangements. And it may be necessary to shift open-hearth furnaces from high-grade carbon and alloy steels to ordinary carbon steel, thereby increasing ingot output. (For every two tons of high-quality steel, the open hearth can pour three tons of ordinary carbon steel.)

Of course, the lag in installing new steel facilities is by no means exceptional. Almost all construction programs have met postponement after postponement. Tank plants, synthetic rubber plants, airplane plants, and so on, have not been finished on schedule. But the steel program serves to illustrate the vicissitudes of construction in wartime: the battle for priorities, the competition for materials even on high-priority ratings, difficulties in getting critical components, etc.

LOSS FROM PLANT LAG

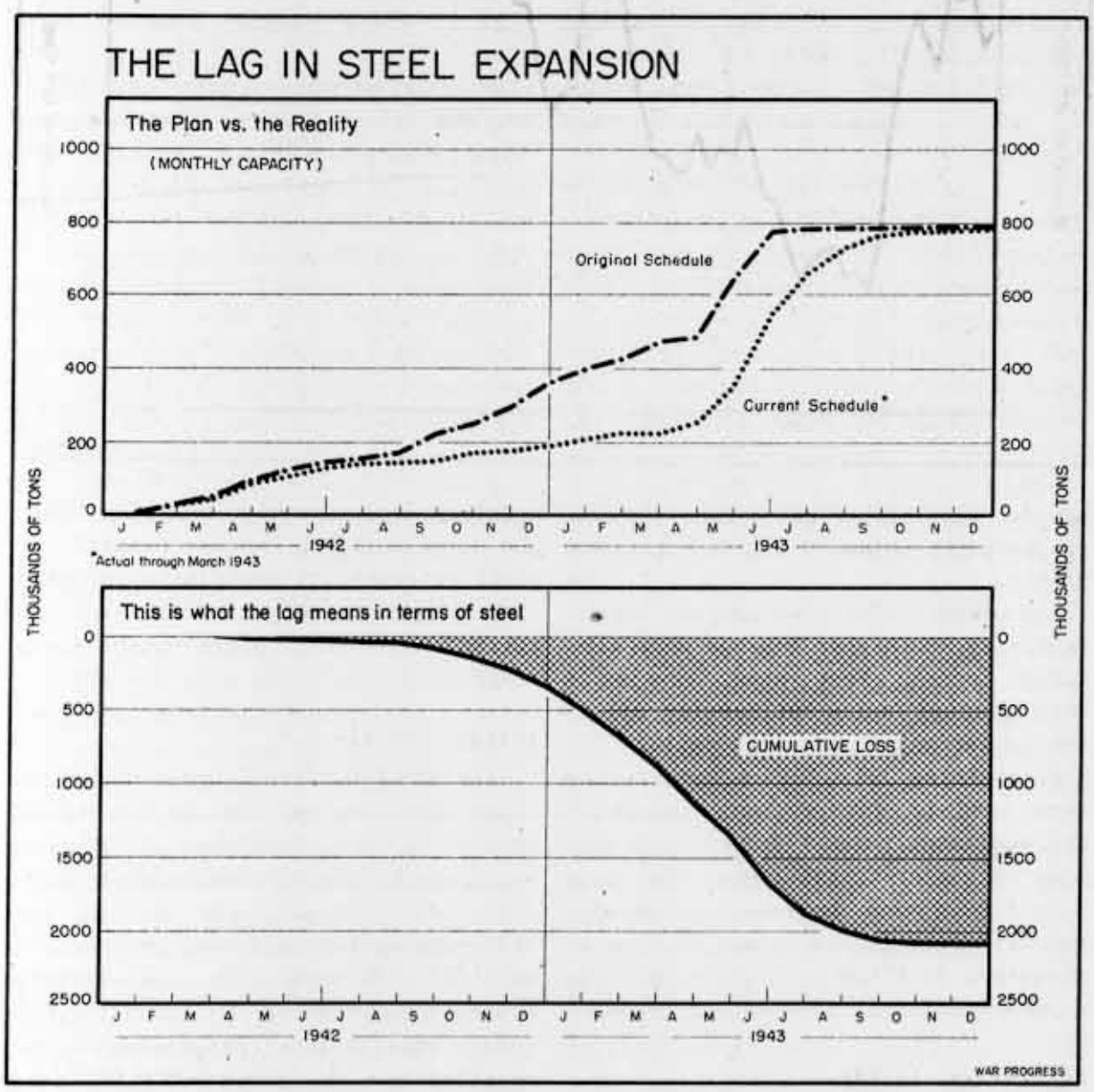
If steel-plant construction had moved along according to plan, some 6,750,000 tons of ingot steel would have been produced in new facilities this year. But up to a week ago, only 4,700,000 tons were looked for from new plants. Result: 1,700,000 fewer tons than anticipated earlier, viz.:

	Output from New Plants		
	Originally Expected	Now Expected	Loss
	(millions of tons)		
Open hearth...	4,700	3,600	1,100
Elec. furnace.	2,000	1,400	600
Total.....	6,700	5,000	1,700

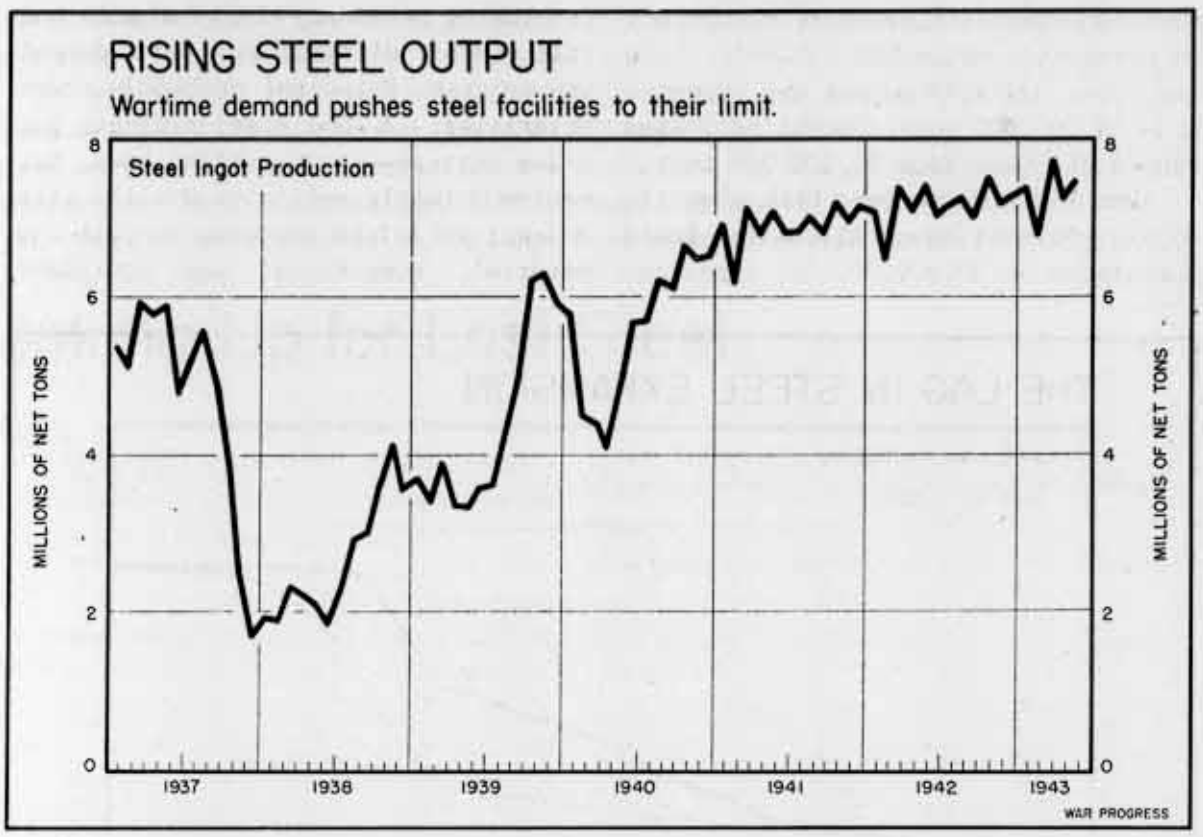
This loss, plus losses due to conversion of open-hearth furnaces from production of ordinary carbon steel to high-grade carbon or alloy steels, and decreased efficiency of existing furnaces, due to intensified wartime wear and

tear, have forced successive reductions in production estimates for 1943. Late last year, the 1943 output was expected to be 94,000,000 tons. Recent estimates ranged downward from 91,500,000 tons.

Ever since September, 1941, when the Supply, Priorities and Allocation Board authorized a 10,800,000-ton expansion (including necessary blast furnaces and coke ovens), difficulties have dogged the program. Principal problem has been priorities. A few steel projects got A-1-a ratings—the top rating then. But most were fairly well down the list with A-1-ks; and A-1-ks could not compete for material, components, and equipment



THIRD-QUARTER MILITARY DEMANDS FOR EXTRA STEEL NECESSITATE SPEEDING UP SOME LAGGING PROJECTS, SO THAT THE ESTIMATED 1943 LOSS OF 1,700,000 TONS OF STEEL PRODUCTION, DUE TO STEEL EXPANSION DELAYS, MAY BE REDUCED MODERATELY. BUT THE BULK OF THE 2,000,000-TON LOSS (300,000 TONS IN 1942) CANNOT BE MADE UP. THIS MEANS THAT EXISTING STEEL FURNACES WILL HAVE TO BE PUSHED HARDER TO REALIZE THIRD-QUARTER PRODUCTION GOALS, AND SUCH STRAIN ON FACILITIES MAY BRING A FOURTH-QUARTER SETBACK.



against such higher-rated construction projects as aluminum or direct munitions plants.

As a result, the steel program lagged initially, and higher ratings were virtually forced. Most steel projects were granted A-1-a ratings for 90% of the dollar value and A-1-c ratings for the remaining 10%. The A-1-a ratings were used to get critical materials and equipment, the A-1-c ratings were used on easier-to-get items. But this didn't help much, because top ratings had also been issued to too many other programs, and top priorities were no assurance of getting what was needed.

PRESENT vs. FUTURE

Moreover, construction in general dropped a peg or two in priority rank last year. As far back as the spring of 1942, WAR PROGRESS posed these questions: Is it more important to have critical materials for munitions now, and defer building new war plants? Or shall we construct new plants for maximum munitions output later, and let current munitions production get along on critical materials that are left?

FURNACE PROGRAM CUT

The War Production Board's answer to those questions was the abandonment of practically all construction projects which could not be completed by mid-1943. As a result, the program for steel-making furnaces was reduced 10% to 9,700,000 tons, and blast-furnace projects were reduced 20% to 11,000,000 tons. But the steel program had to be whittled down to about 9,500,000 tons later on.

Even this reduced program is far behind. On April 1 of this year, 5,840,000 tons of new steel capacity were scheduled to be in operation, but only

2,655,000 tons had been completed—47% off schedule:

Furnace	Planned	Completed	% Completed
	(000 tons capacity)		
Open hearth...	4,251	1,933	46%
Electric.....	1,389	722	52
Total steel..	5,640	2,655	47
Blast furnaces	7,864	4,408	56

The blast-furnace program is slightly more advanced than the steel-furnace program. On April 1, blast-furnace expansion—at 4,408,000 tons of pig iron annually—was 56% completed, while the balance was partially completed. But completion dates for the program have been pushed forward from June, 1943, to October, 1943. Completion date for the electric-furnace program has been moved up from June, 1943, to September, while the open-hearth program is not expected to be completed until February, 1944, instead of June, 1943. And even these later dates seemed highly uncertain until this week.

CRANES A BOTTLENECK

Right now, most steel expansion projects have AA-3 ratings, a few have AA-1 ratings or the top AAA rating. Projects have been delayed from one to eight months for lack of cranes, valves, compressors, boilers, steel plate, alloy steel, etc., which have been diverted into the higher-rated programs, such as synthetic rubber, high-octane gas, destroyer escorts, and aluminum expansions.

For example, rating difficulties in overhead traveling cranes have been holding up several projects. Crane manufacturers themselves have been having priority problems: they have been assigned only 75% of their material requirements for the third quarter as against their 100% second-quarter allocation. Crane manufacturers, also, are running into competition for electric motors to complete crane units.

Turboblowers—needed for blast furnaces—further epitomize the priorities problem. The sole manufacturer, Ingersoll-Rand, has an 11-month backlog, and only turned out 10 units during the first quarter instead of the 12 which had been scheduled. The major difficulty is securing enough rotors. The rotor is the heart of the turboblower.

GIVING STEEL TO GET STEEL

And steel itself has been a critical item in steel expansion. Construction of 9,710,000 tons of new capacity required 1,256,811 tons of finished steel—plates, shapes, rails, pipe, etc. But steel companies could not get priorities to get steel: a 1,000-ton blast furnace was held up for 90 days due to inability to secure 100 tons of steel plate—meaning a loss of 90,000 tons of pig iron because of a lack of 100 tons of steel plate.

To push on with their projects—priorities or no—steel companies have resorted to ingenious makeshifts. Henry Kaiser used parts from abandoned and partly dismantled furnaces. At Chicago, Republic Steel began operating two new electric furnaces without having cranes, loading platforms, and other materials handling installations in place, and used cold pig iron because the new blast furnace scheduled for completion at the same time was not ready.

FULLER UTILIZATION

Meanwhile, the industry was doing everything possible to get maximun steel production from the facilities on hand. The time required to reline furnaces was cut down, and, where feasible, blast-furnace capacity was enlarged by thinning

down the refractory linings. Also, melting practices were improved—reducing production time and increasing output of steel furnaces—and the efficiency and productivity of old units were enhanced by rehabilitating certain parts of their equipment.

Resourcefulness could not overcome all bottlenecks. And on April 1—a year and a half after the launching of the steel program—only 28% of the new steel furnaces were operating; only 40% of the pig-iron-making furnaces had been completed.

HOMESTEAD COMING IN

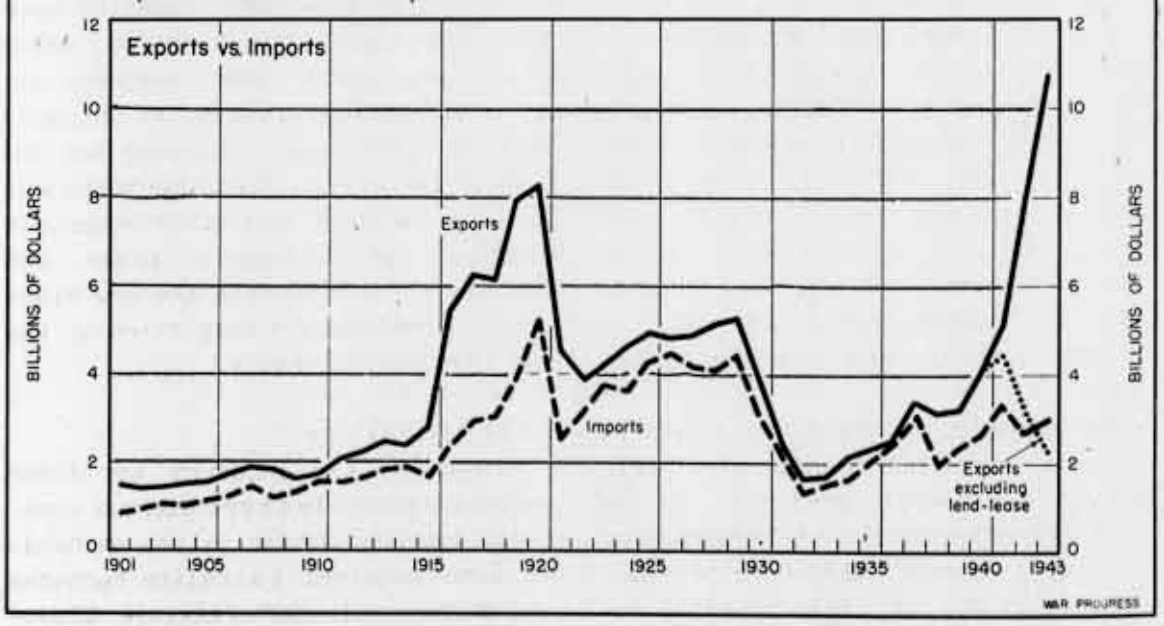
Among the delayed projects is the Carnegie-Illinois Homestead expansion —24% of the WPB's open-hearth program, or 1,740,000 tons of capacity. According to original plans, all 11 of its open hearths would be producing this month, instead of only one. Homestead will be rushed to completion to help the steel industry provide an additional 700,000 tons of steel in the third quarter.

A LOSS IS A LOSS

But even if all Homestead comes in, the loss of 1,700,000 tons of steel this year through construction delays will not be materially changed. Nor would the 700,000 additional tons which may be realized from putting on pressure in the third quarter change the basic fact that tonnage has been lost. Had the expansion program been finished in time, forced-draft production in the coming quarter on the already strained facilities might not have been necessary, along with its attendant danger of increased shutdowns for repairs and relining of furnaces in the future.

FOREIGN TRADE—THIS WAR AND LAST

Total exports in '43 will run 30% above 1920 peak; while imports will be 45% below. But for lend-lease, U.S. would have an "unfavorable balance of trade," i.e., imports would exceed exports.



Peak in Exports

Shipments in '43 will surpass World War high and 1920 peak. Imports are far short of previous tops. But, excluding lend-lease, U.S. would have "adverse" trade balance.

U.S. EXPORTS this year will reach an all-time high—$10,700,000,000 (estimated) compared with $8,100,000,000 last year and the previous peak of $8,200,000,000 in post-World War 1920. During the first World War, exports reached a high of $6,200,000,000 in 1917.

IMPORTS BELOW PEAK

Imports in 1943—at an estimated $3,000,000,000—will be far short of the 1920 peak of $5,300,000,000 and only slightly above last year's total of $2,700,000,000 (chart, page 12); but they will just about equal the World War peaks of 1917 and 1918.

The big peaks in foreign trade a generation ago were reached after the war when the eased shipping situation, the demands of European reconstruction, heavy foreign loans, and the domestic boom skyrocketed U.S. exports and imports.

LEND-LEASE BULKS LARGE

Of total U.S. exports this year, lend-lease will run to an expected $8,500,000,000; thus non-lend-lease exports will amount to only $2,200,000,000, or some $800,000,000 less than imports. If lend-lease exports are excluded, the United States would have an "unfavorable balance of trade"—something that hasn't happened in 60 years. (Peciprocal lend-lease, which has consisted mainly of services, facilities, and supplies for American troops abroad, has contributed little toward increasing imports into the U.S.) Exports other than lend-lease have been declining steadily ever since the lend-lease program was instituted early in 1941, viz.:

Year	-Exports- Lend-Lease	Non-L-L	-Imports- Total
	(in billions)		
1941.....	$ .7	$ 4.4	$ 3.3
1942.....	4.9	3.2	2.7
1943*....	8.8	2.2	3.0

*Estimated

Lend-lease is the equivalent of the foreign loans made during the last war. The trend of exports in the two wars suggests that the upswing got started more rapidly last time; the export volume more than doubled in the first two years, but the pace of shipments this time has been steadier:

Year	Exports (billions)	Year	Exports (billions)
1914.....	$ 2.4	1939.....	$ 3.2
1915.....	2.8	1940.....	4.0
1916.....	5.5	1941.....	5.1
1917.....	6.2	1942.....	8.1
1918.....	6.1	1943.....	10.7

REPORTS ON REPORTS

Pay as the Workers Go

Transit Aids to War Workers in Great Britain, Germany, and Russia (pp.5) outlines the compensations given war workers who move to new locations, with or without their dependents. These include travel and moving expenses, temporary loans, provision for periodic and emergency visits home, etc. (War Manpower Commission, Bureau of Program Requirements)

Program for Phosphorus

Phosphorus (confidential; pp. 46) presents a tentative program for allocating the 75,000-ton estimated supply. War needs alone—export, direct and indirect military—amount to 47,000 tons;

total usage in 1940 was only 38,000 tons. Important uses of phosphorus derivatives are in plastics, rust-proofing, and water treatment; estimated 1944 requirement of phosphorus for plastic bomber noses exceeds '43 by 1,500 tons. (War Production Board, Office of Civilian Requirements)

Lumber Lag

Lumber (confidential; pp. 14) reports that supply is still inadequate to meet demand in certain war programs, especially for army trucks. Softwood supplies are shortest; a recent limitation order applying to the western pine area allows mills producing 10,000 feet and over per day to sell only to the government or at its direction. (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

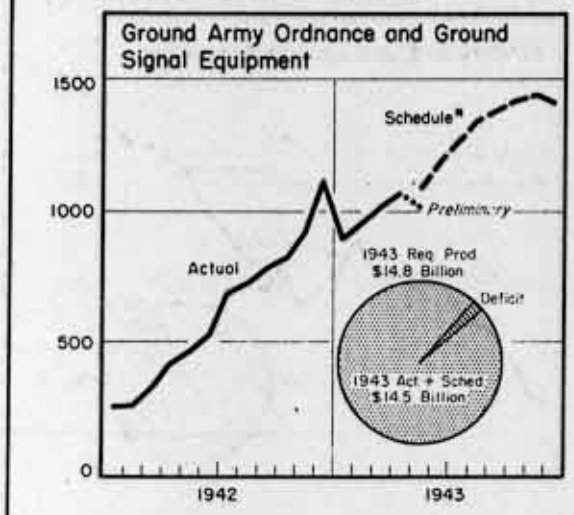
Cost of Living-Wholesale Prices-Hours and Earnings-Employment

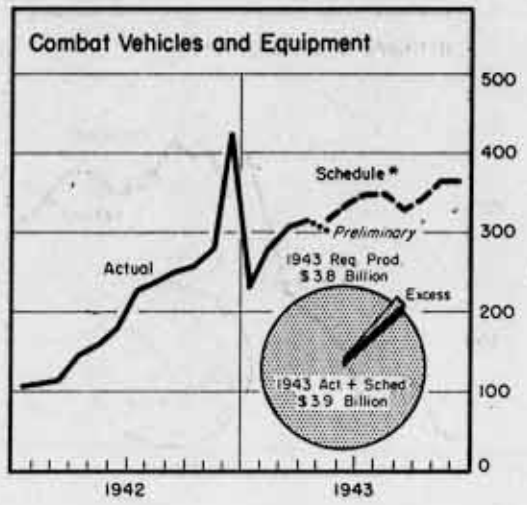
	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
COST OF LIVING-ALL ITEMS (1935-39=100)	p125.1	124.1	122.8	119.8	116.0	98.8	102.7
Food	p143.0	140.6	137.4	131.1	121.6	94.0	106.1
Other than food	p115.8	115.6	115.3	113.9	113.2	101.2	100.9
WHOLESALE COMMODITY PRICES							
ALL COMMODITIES (1926=100)	p104.1	p103.7	103.4	100.3	98.8	76.2	87.4
Farm Products	p125.7	p123.9	122.8	110.5	104.4	63.7	89.8
Food Products	p110.5	p108.4	107.4	103.5	98.9	68.2	84.2
Other than farm products and foods	p96.7	p96.6	96.5	95.8	95.7	80.6	86.3
AVERAGE HOURLY EARNINGS (Cents)							
All Manufacturing Industries	p94.4	93.4	92.4	89.3	82.2	63.0	n.a.
Durable Goods	p103.9	103.0	102.0	99.0	91.2	69.6	n.a.
Nondurable Goods	p79.0	78.2	77.3	75.1	70.3	57.9	n.a.
Bituminous Coal Mining	p112.8	111.9	111.3	107.0	105.8	88.4	87.8
Metalliferous Mining	p96.2	94.9	94.7	91.3	87.3	69.5	72.0
AVERAGE HOURS PER WEEK							
All Manufacturing Industries	p45.0	44.7	44.5	43.6	42.7	36.8	n.a.
Durable Goods	p46.7	46.4	46.2	45.8	44.9	36.9	n.a.
Nondurable Goods	p42.4	42.3	42.0	40.8	40.0	36.7	n.a.
Bituminous Coal Mining	p37.1	36.6	37.0	34.2	31.8	21.4	21.7
Metalliferous Mining	p43.9	43.7	43.6	44.0	43.5	39.1	44.5
NONAGRIC. EMPLOYMENT-TOTAL (thousands)	p38,234	38,382	38,184	38,533	36,346	29,277	n.a.
Manufacturing - Total	p15,913	15,956	15,958	15,434	14,133	9,732	
Durable Goods	p9,468	9,462	9,415	8,844	7,745	4,292	
Nondurable Goods	p6,445	6,494	6,543	6,590	6,388	5,440	
Government	p5,963	5,936	5,924	5,723	4,958	3,964	
Other	p16,358	16,490	16,302	17,376	17,255	15,581	n.a.

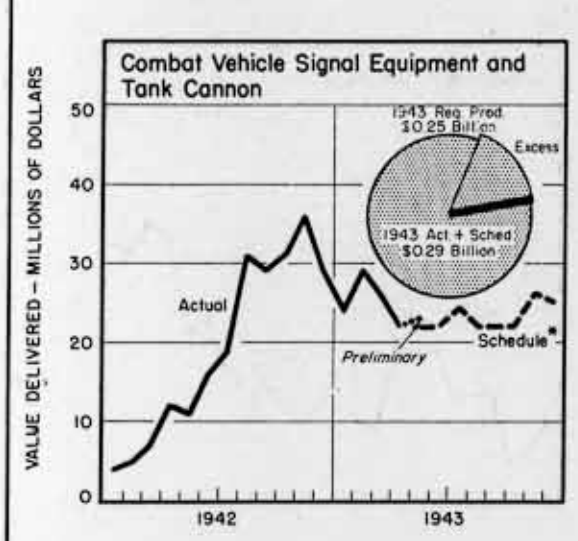
*May: Hours and Earnings, April. n.a. Not available. p Preliminary

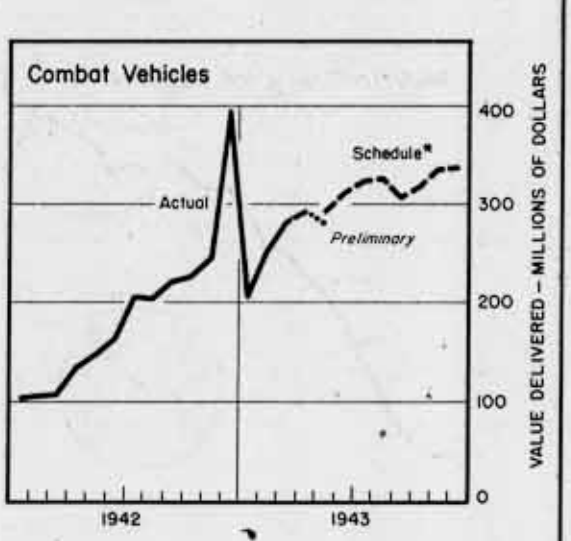
PRODUCTION PROGRESS

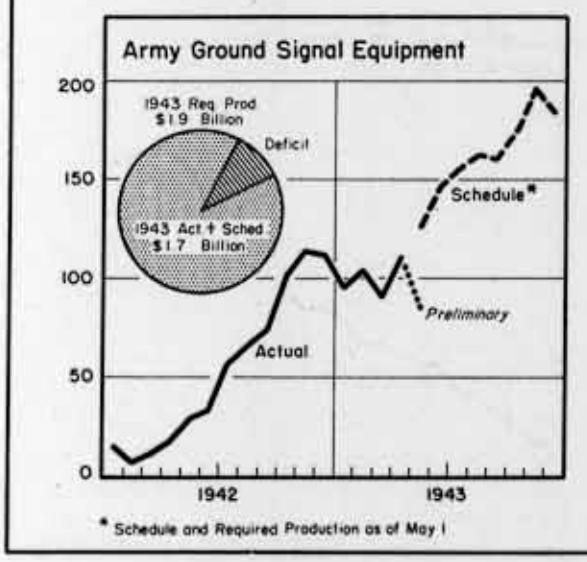
Ground Army Munitions

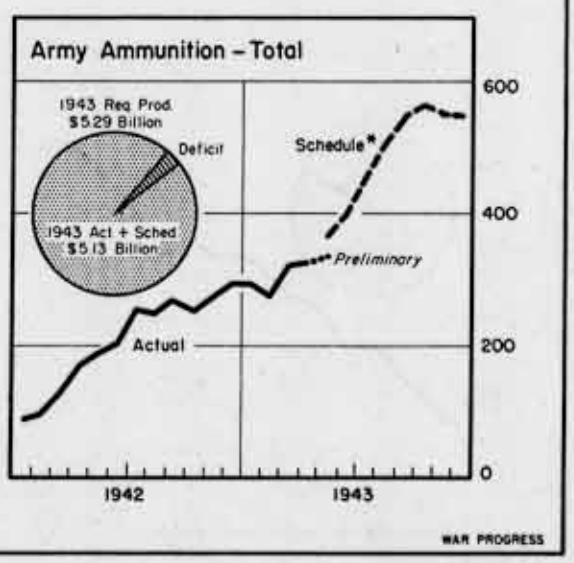












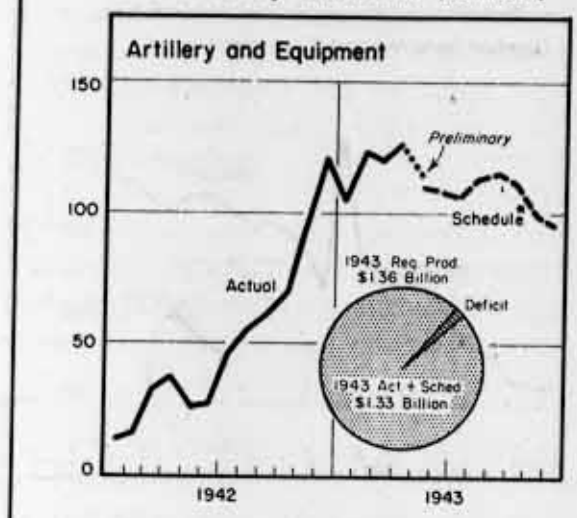
* Schedule and Required Production as of May 1

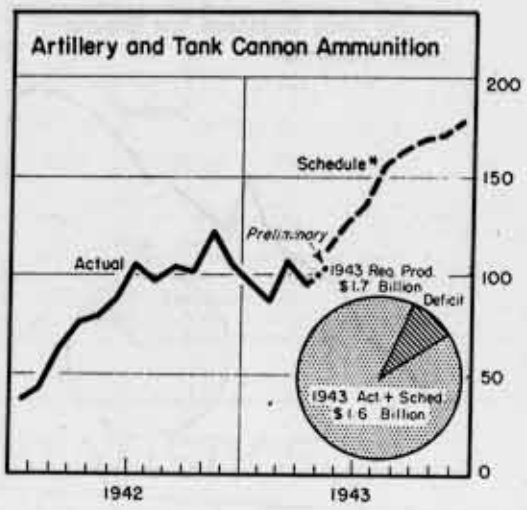
WAR PROGRESS

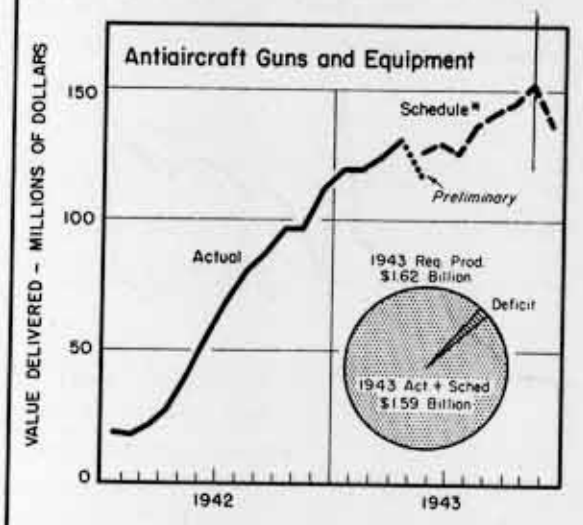
CONFIDENTIAL

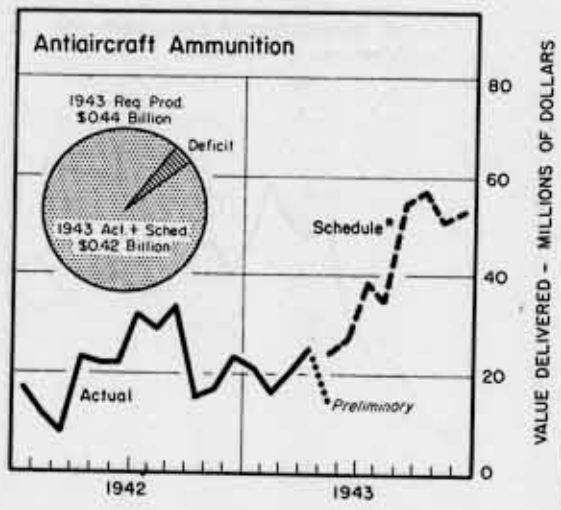
PRODUCTION PROGRESS

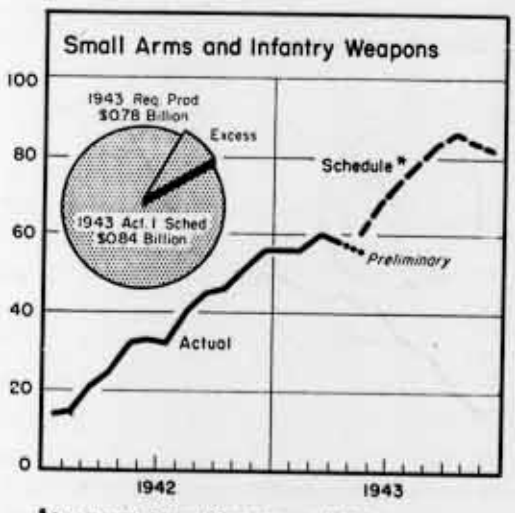
Ground Army Munitions (Continued)

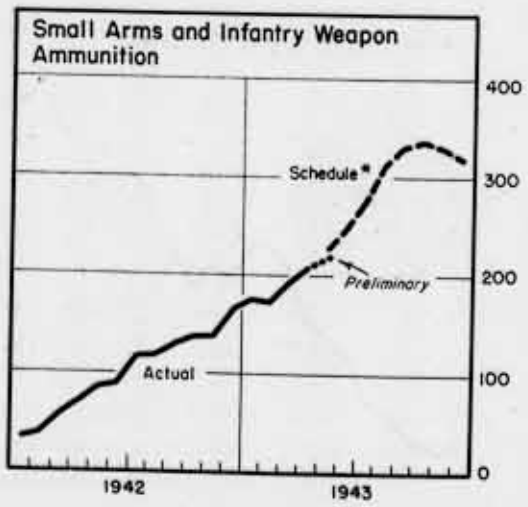












*Schedule and Required Production as of May 1

WAR PROGRESS

The President

1

WAR PROGRESS

Confidential
(British Secret)

OCR's Responsibility: A Program for Civilians

Number 145

June 25, 1943

Keeping Civilians in the Fight

OCR'S job is to see that the civilian economy holds at a level which will support a maximum war effort, that people get the things they need to keep them fit for production.

FOR THE FIRST TIME since its inception in April, 1941, the War Production Board's civilian supply agency—now known as the Office of Civilian Requirements—has been given explicit power to implement a civilian supply program.

Beginning with the fourth quarter, OCR will actually represent civilians, under the Controlled Materials Plan, by claiming steel, copper, and aluminum for such consumers' goods as cooking stoves, hairpins, medical supplies, baby carriages, furniture, cutlery, and razor blades (table, page 3).

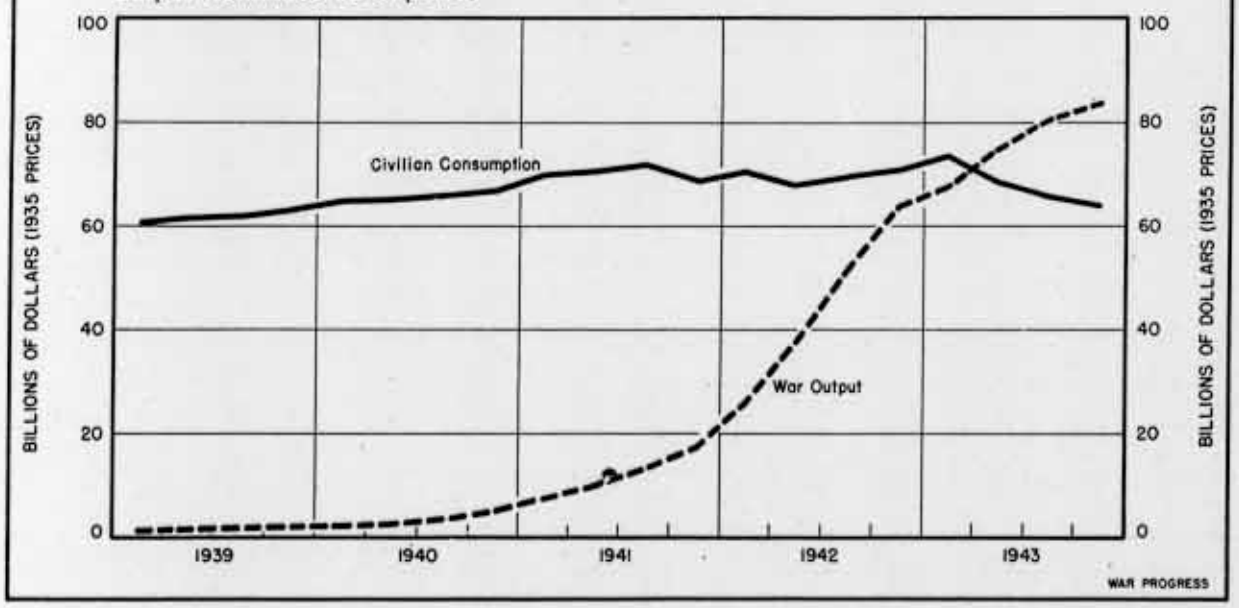
That contrasts with the third quarter, when OCR's predecessor—the Office of Civilian Supply—did not really represent the civilian under the Controlled Materials Plan; its claim for controlled materials consisted of: (1) miscellaneous "A" products, such as prefabricated arches and trusses, wax-molding machines, armored cable, and off-the-highway vehicles; (2) all maintenance, repair, and operating supplies for the industrial economy: aircraft, steel, automotive, and textile plants, mining, lumber camps, sawmills, etc.; and (3) miscellaneous industrial construction and facilities.

CONVERSION CAME FIRST

Today's problem differs basically from the problem of a year ago and the year before that. Then, the urgent requirement was to convert from peacetime production to war output. As far

BUTTER VS. GUNS—BROUGHT UP TO DATE

Civilian consumption has reached a new high, but is now due to decline; war output continues to expand.



back as September, 1941, a series of "L," "M," and "E" orders was instituted to cut down production of metal-using consumers' durable goods, as follows:

	Initial Production Restriction
Mechanical refrigerators...	Sept. 1941
Passenger cars.....	Sept. 1941
Domestic laundry equipment.	Oct. 1941
Metal office furniture.....	Nov. 1941
Vacuum cleaners.....	Nov. 1941
Automatic phonographs.....	Dec. 1941
Cooking appliances.....	Dec. 1941

After Pearl Harbor, the manufacture of hundreds of additional consumer items —radios, bobby pins, electrical appliances, fans, textiles, safety razors, sewing machines, ironers, watches, typewriters, etc.—was either sharply curtailed or eliminated entirely. But except for coffee, sugar, and gasoline rationing, civilians hardly felt the pinch in 1942. They coasted along on high inventories (WP-Dec18'42,p1).

Indeed, up until fairly recently, the job of the agency representing civilians has been to determine what consumers' goods and services were essential and which could be curtailed or eliminated. And the Office of Civilian Supply was in the vanguard in suggesting what might be cut so as to boost war production without endangering the civilian economy.

SHELVES ARE STRIPPED

Today, however, store shelves are no longer loaded. Shoes, butter, meat, fats, oils, cheeses, and canned goods have joined the ration list. Vacuum cleaners, mechanical refrigerators, washing machines, and other hard goods have virtually disappeared. Repair parts for autos, radios, and home appliances are scarce. Transportation is tight, as any civilian bidder for airplane or railroad space will tell you; selective service demands and higher wages in war industry are draining manpower from garages, laundries, shoe repair shops, and other service establishments. In short, the civilian economy is beginning to creak —and the new Office of Civilian Requirements is out to oil the machinery.

MULTIPLE CIVILIAN CONTROLS

The job of keeping the civilian machine running smoothly, however, won't be accomplished merely through OCR's function as a claimant agency under CMP. The new supply body has a coordinating responsibility. For the civilian economy is subject to multiple controls: Jurisdiction of the Office of Defense Transportation extends to automotive repair parts for civilians; that of the War Food Administration to food containers for civilians; that of the Office of Rubber Director to tires for civilians; that of the National Housing Agency to housing for civilians, and so on. Besides, at least a score of industry divisions in the War Production Board

IN THIS ISSUE:

ANIMAL TRAPS, OPHTHALMOSCOPES, AND FURNITURE

PRODUCTS shown below represent a sample of the contrasting types of consumers' goods for which the Office of Civilian Requirements will present CMP claims for the fourth quarter. Since many civilian items are under the control of other agencies—Office of Defense Transportation for auto repair parts, War Food Administration for food containers, National Housing Agency for housing, etc.—the list is not a complete indication of the products which OCR is interested in seeing manufactured. As a matter of fact, the number of consumer-goods programs which OCR is currently studying runs into the hundreds—and many of these programs represent items which are considered critical. Thus, the following list is only a beginning:

Animal traps & cages
Baby carriages & similar equipment
Bedsprings
Bobby pins
Brooms
Brushes
Buckles
Buttons
Cast-iron radiators
Church goods
Clocks
Collapsible tubes
Cooking stoves & ranges
Cutlery
Dental instruments & equipment
Dental supplies
Domestic heating stoves (excl. elec.)
Dry-cell batteries
Electric lamp bulbs & tubes
Electrical physiotherapy apparatus
Envelopes
Flashlight cases
Glass cooking utensils
Hair curlers
Hairpins
Hooks & eyes
Hot-water heating equipment
Ice refrigerators
Kitchen & household articles
Liquid-fuel lamps
Low-pressure cast-iron heating boilers
Metal hospital beds
Miscellaneous apparel findings
Mops
Morticians' goods
Musical instruments
Nails
Office supplies
Ophthalmic goods
Orthopedic appliances
Parasols
Pencils
Pens
Pins (common & safety)
Plated silverware
Portable electric lamps
Razors
Razor blades
Screen cloth
Slide fasteners
Snap fasteners
Sporting goods
Surgical & medical instruments
Surgical & medical supplies
Tablets
Tacks
Umbrellas
Watches
Warm-air furnaces
Wooden furniture
X-ray apparatus
X-ray tubes

are still concerned with civilian programming. And that doesn't take account of the Office of Price Administration, the War Manpower Commission, and the War Labor Board, whose duties cut across every segment of the civilian economy.

OCR's COORDINATING FUNCTION

So from now on, OCR's big task will be to direct civilian programming—to coordinate the efforts of the various agencies concerned with the supply of essential goods and services for civilians. For instance, if ODT doesn't formulate an adequate program for the production of repair parts for civilian automobiles, it will be up to OCR to see that an adequate program is formulated; if laundry services in a critical production area break down because higher-paying war jobs are siphoning off workers, it will be up to OCR to see if wage adjustments might be made to hold workers; if the textile industries can't turn out essential clothing for civilians because manpower is short, it will be up to OCR to work out a remedy with the War Manpower Commission.

SIMPLIFICATION TASK AHEAD

The nature of this overall direction will lead OCR into many fields—simplification, for instance. Together with WPB's Simplification Branch, the Textile, Clothing and Leather Division, and the clothing industry, OCR recently cut specifications—in types as well as fabrics—on women's dresses (by an amendment to Order L-85). Result: a 10% increase in output with no increase in material.

One of the problems in implementing OCR's objective is to determine civilian requirements. It is relatively simple, for instance, to figure the number of tacks needed for shoes: current production is known, the record of past shipments is clear, distribution is fixed by rationing. But not so with things such as fuses, lunch pails, builders' hardware, plumbing supplies, farm tools, and repair parts for radios, vacuum cleaners, etc. Operating data on such products are either sketchy or nonexistent. A civilian program for any one of these must necessarily rely on estimates, on judgment.

COLLECTING THE DATA

To overcome this handicap of insufficient information, the Office of Civilian Requirements has called upon the appropriate WPB industry divisions—Consumers Durable Goods, Building Materials, Containers, General Industrial Equipment, etc.—for data on the production, shipments, unfilled orders, and inventories of approximately 150 products which are today considered critical in the civilian economy. These include such diverse items as batteries, metal insect screens, carbon paper, lighting fixtures, saws, paint, matches, dry-cleaning preparations, adhesives, medicinal glycerin, automotive antifreezes, enamelware, commercial cooking equipment, wrapping paper, dental burrs, wound clips, and work shirts. At the same time, these investigations are being supplemented by special field surveys.

FOLLOW-THROUGH PROBLEM

Once the necessary information is obtained and a production program for civilians is worked out, it will then be OCR's duty to follow it through, to see that the product is not diverted from civilian channels—to see that civilian requirements go to civilians. And that's quite a problem.

The armed services, for example,

KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program – Checks paid (millions of dollars)	1,580	1,616	1,557	1,237	873
War bond sales (millions of dollars)	164	229	205	213	126
Wholesale prices (1926 = 100)					
All commodities	p103.5	p104.0	p103.8	100.7	98.1
Farm products	p127.0	p127.6	p125.8	113.3	104.5
Foods	109.0	110.9	110.3	104.2	98.4
All other than farm products and foods	p96.9	p96.9	p96.9	96.2	95.9
Petroleum:					
Total carloadings	57,495	53,417	59,300	49,974	54,968
Movement of cars into the East	31,399	29,147	31,793	23,966	24,384
East coast stocks for civilian use (1940-41 = 100 Seas. Adj)	27.6	26.8	26.8	46.0	n.a.
Total stocks of residual fuel oil (thousands of barrels)	67,455	67,652	67,717	74,205	78,934
Bituminous Coal:					
Production (thousands of short tons, daily average)	1,954	r524	2,050	1,917	1,867
Exports (no. of freight cars unloaded for export Friday, excl. grain)					
Atlantic Coast ports	2,233	2,308	2,433	1,066	1,799
Gulf Coast ports	333	326	388	351	566
Pacific Coast ports	1,424	1,377	1,260	909	628
Unused steel capacity (% operations below capacity)	2.4	2.2	0.7	1.9	2.0
Department store sales (% change from a year ago)	+29	r+29	+21	+15	+9

n.a. not available p. preliminary r. revised

need large quantities of civilian-type goods and such demand is not always centrally reported or controlled. Army procurement of items in the field has drawn heavily on jobbers' and wholesalers' inventories of auto repair parts (WP-Nov 6'42,p11). Early last summer the Navy decided that the home variety of washing machine was suited for many small advanced bases. From coast to coast, procurement officers swung into action. Wholesale and retail channels were scoured. Within a week, the Navy had purchased virtually every new washing machine in the United States.

ARMY GETS THERE FIRST

Such examples can be multiplied. In a leading New York apparel-and-sports shop, a special shipment of waterproof wrist watches was snapped up by an army procurement officer as soon as it was advertised. In Chicago, the Army purchased practically the entire stock of enamelware of a leading department store in one fell swoop. And in troop-maneuver areas, such as Tennessee, store shelves have been swept bare by soldiers buying, on their own account, anything and everything, from soda pop to guitars.

OTHER COMPETITIVE BUYERS

This competition with civilians for consumers' goods goes beyond the armed services; the Maritime Commission, Board of Economic Warfare, and Office of Lend-Lease Administration are also in the market for civilian-type products. The problem, however, has been recognized.

Early this month, the Army, Navy, Maritime Commission, and the export agencies agreed to centralize and control their buying of certain items so as to remain within stated quotas—to

avoid infringing on the portion intended for civilian consumption. Here are the products agreed upon:

Cast-iron boilers
Clinical thermometers
Cutlery
Dental burrs
Domestic cooking stoves and ranges
Fire hose
Heating boilers
Heating-system controls
Heavy-duty electric cooking equipment
Hot-water tanks
Inhalators
Oxygen-breathing equipment
Physicians electric diagnostic instruments
Porcelain-enameled utensils (hospital)
Radio replacement tubes
Silverplated flatware and hollow ware
Space heaters
Steel heating boilers
Sterilizers
Storage batteries (except aircraft)
Straight razors
Surgical dressings
Warm-air furnaces

The list is a starter. It may be expected to grow as the Office of Civilian Requirements decides that additional consumers' goods fall within the critical area.

DIRECTING DISTRIBUTION

As a further protection for the civilian, some industry divisions have already adopted the practice of directing the distribution of finished products. Not only has the Consumers Durable Goods Division told manufacturers that they can produce 2,800,000 alarm clocks this year, it has also told them that 1,600,000 of the timepieces must go into retail channels for war workers. The remainder will be available for the armed services and export. (However, this does not cope with raids on civilian supplies at the retail level, and some device may have to be developed to earmark goods produced specifically for civilians.)

BACK TO BOBBY PINS

This direction of finished products is slated to become increasingly important as time goes on. So far this year, output of alarm clocks, pressure canners, ice boxes, tin-can openers, baby carriages, commercial dish-washers, and office machinery has been either resumed or increased. As for the months ahead, production of hairpins, bobby pins, and curlers may be boosted; safety razors will again be manufactured for civilians. The question of reopening of typewriter lines has reached the Requirements Committee; and it may even be necessary to go back to making mechanical refrigerators. (When both husband and wife work, ice deliveries become a critical household problem.)

HOME-FRONT FACTOR

Today's emphasis on civilian consumption is of a piece with the sequence in other warring countries. First, the job is to increase war output at the expense of the home front; then, it becomes necessary to see that the civilian economy is maintained at a level which will support a maximum war output—that it does not decline to a point where munitions production is jeopardized. And that means taking into account such diverse factors as food, fuel, housing, transportation, clothing, medical supplies, etc.

What the Navy Will Build in '44

Next year's effort scheduled to eclipse '43—both in value of work done and in value of ships delivered. Emphasis on cruisers, DEs, landing craft; battleships decline.

UNDER the new Navy shipbuilding schedule —which fills out the authorized and planned program for several years (WP-June 11'43, p7)—the expected value of work to be put in place in 1944 will be $8,150,000,000. (Previously only $6,-200,000,000 had been scheduled.)

SOME CARRYOVER INDICATED

This $8,150,000,000 total only slightly exceeds the $8,050,000,000 contemplated for 1943. However, since some naval construction slated for this year may have to be carried over unfinished into 1944, it is possible that the work done next year will prove to be much greater than the work done this year.

The new schedule puts greater emphasis in 1944 on cruisers, submarines, destroyer escorts and landing craft; less emphasis on battleships, auxiliary aircraft carriers, mine and patrol craft, and auxiliary ships.

CRUISERS UP 75%

Cruisers show the greatest increase in work planned for 1944—up about 75% over this year. Value put in place on submarines will rise by 40%; landing craft, 27%; destroyer escorts, 25%. The following table indicates the changes in schedules of value put in place in leading groups for the two years:

	1943	1944	% Change
	(millions)		
Battleships	$ 85	$ 75	-12%
Carriers	488	514	+ 5
Cruisers	414	726	+75
Destroyers	$ 982	$1,043	+ 6%
Submarines	405	568	+40
Destroyer escorts	2,189	2,738	+25
Aux. carriers	367	105	-71
Landing vessels	901	1,140	+27
Auxiliaries	616	476	-23
Minecraft	486	219	-55
Patrol craft	735	329	-55

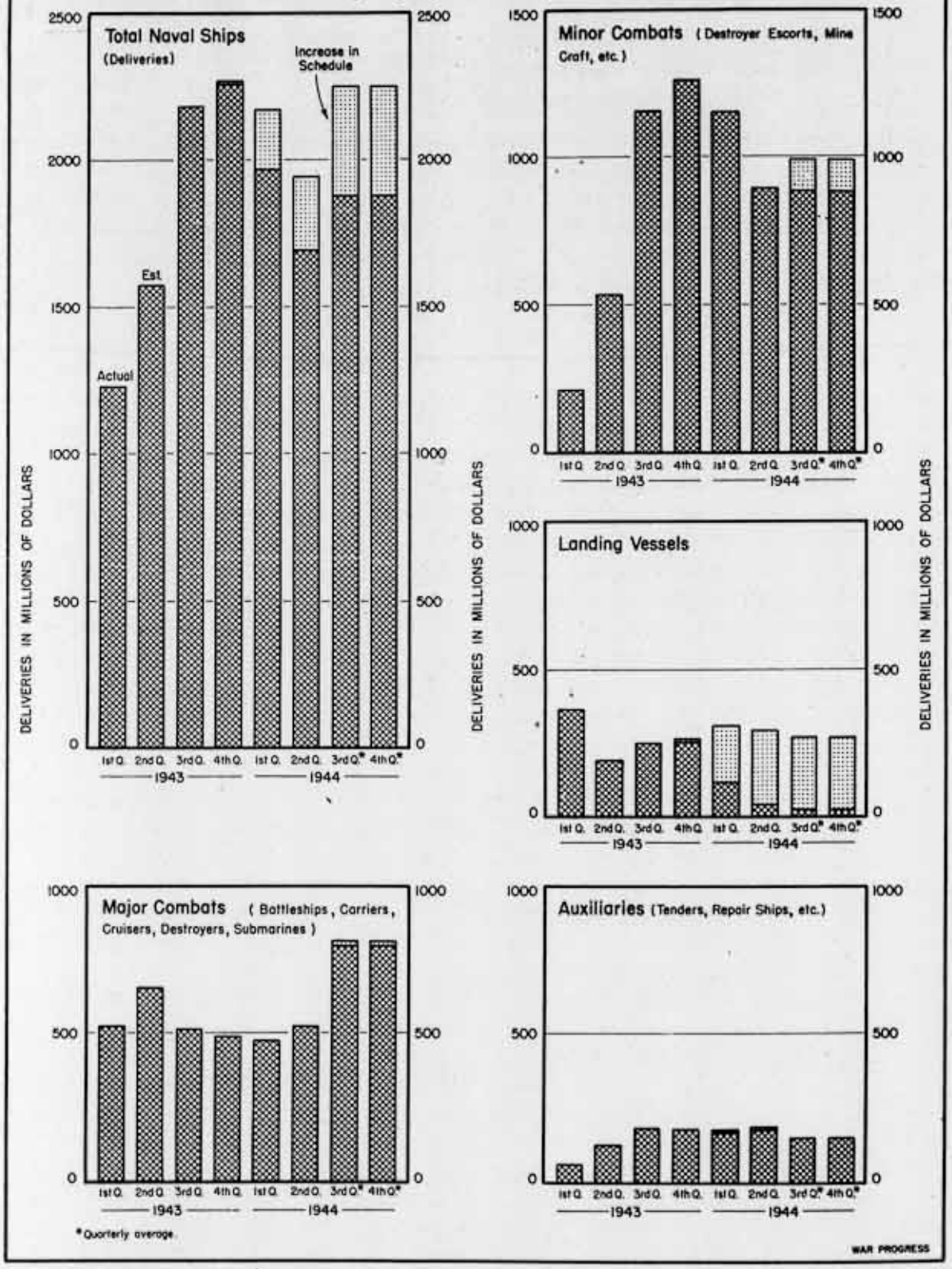
In contrast to value put in place, which is scheduled to rise slightly from '43 to '44, actual deliveries (which reflect in part work done this year) are due to increase by 16%—from an estimated $7,450,000,000 to $8,600,000,-000 in 1944. In general, the trend in deliveries will follow that for work put in place, with two notable exceptions: work done on destroyers in 1944 will increase, though deliveries are slated to decline; this indicates a rise in completions in 1945. In auxiliaries (tenders, repair ships, etc.) this sequence is reversed: 1944 work done will decline relative to '43, but deliveries will be up (charts, pages 8, 9).

This is how 1943 and 1944 scheduled deliveries in leading groups compare:

	1943	1944	% Change
	(millions)		
Battleships	$ 136	$ 68	- 50%
Carriers	426	550	+ 29
Cruisers	260	596	+129
Destroyers	1,093	890	- 19
Submarines	340	529	+ 56
Destroyer escorts	1,632	2,941	+ 80
Aux. carriers	332	209	- 37
Landing vessels	1,083	1,142	+ 5
Auxiliaries	559	668	+ 20
Minecraft	529	302	- 43
Patrol craft	699	461	- 34

WHAT THE NEW NAVAL PROGRAM LOOKS LIKE—

But work done will rise only slightly over this year. All major categories show



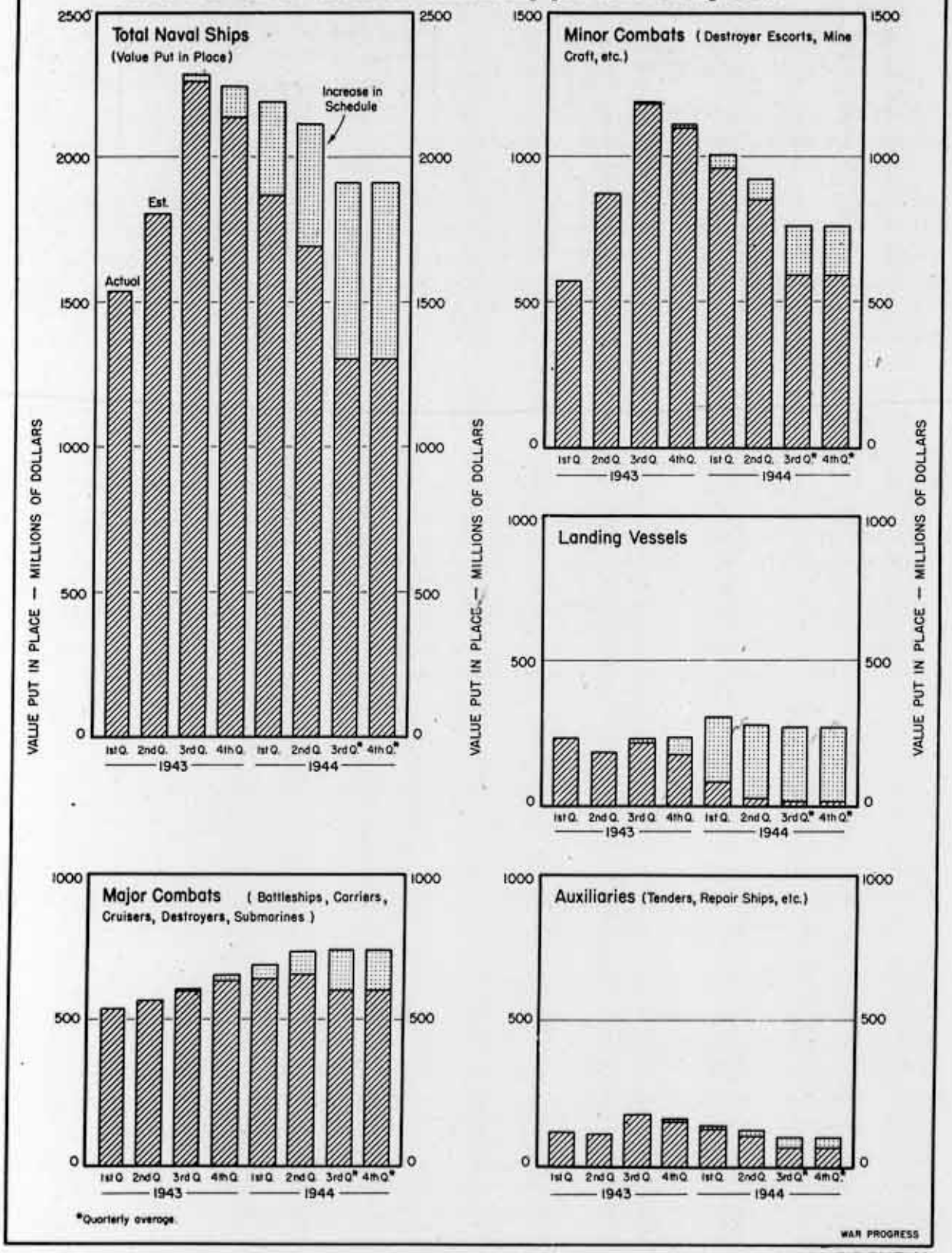
*Quarterly average.

WAR PROGRESS

CONFIDENTIAL

—SCHEDULES CALL FOR A 16% RISE IN DELIVERIES

increase over former schedules. Outstanding gain is in landing craft.



*Quarterly average.

WAR PROGRESS

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Leveling Ammunition

Army has developed a plan to smooth out production of fuses, shells, primers, etc., and get in balance for next July. Calls for six-month contracts on most types.

THE ARMY, in collaboration with the War Production Board, has developed a plan for smoothing out monthly production of artillery ammunition components. Under the plan, manufacturers, instead of working on a fluctuating, month-to-month schedule, are being awarded, whenever possible, firm six-month contracts to produce fuses, primers, etc. These contracts call for a specified volume of output per month, spread out over a specified period. The net effect will be to minimize plant shutdowns or slowdowns and layoffs of workers, which have brought complaints from manufacturers themselves, as well as from labor leaders, chambers of commerce, and legislators.

Even more important, the new plan is designed to bring ammunition components—fuses, primers, cartridge cases, and projectiles—into balance by June 30, 1944. Thus it would lead automatically to more efficient utilization of such critical materials as copper and steel.

BUNCHED PRODUCTION

In the past, production of ammunition has been on a when, as, and if needed basis. Whenever a particular type of shell was required, orders for components would be released (usually they'd be tagged "urgent" and manufacturers would rush output). And then, when some other components were more urgently needed, cancellations would go out. The result was unstable output of components as well as imbalance in production. It has been common to have an excess of fuses vis-a-vis cartridge cases (WP-Oct2'42,p5).

By now, however, the Army has built up a fair supply of ammunition. Pipelines—from loading plants to battlefield—have been filled. So a balancing-out of components production in a more orderly fashion is now feasible.

TERM CONTRACTS SET

Under the plan, manufacturers turning out components for standard ammunition, such as the 75mm. or the 105mm. howitzer, will be given six-month contracts. For ammunition on which requirements cannot well be established a half year or more in advance, three-month contracts will be let; for example, 37mm. shell. And for ammunition of uncertain requirements—or in which technical difficulties still exist, such as the 2.36-inch rocket for the bazooka—only one-month contracts will be awarded.

FORMULA FOR BALANCE

The formula to set components into balance by this time next year is simple and direct:

1. The number of completed rounds of each type of ammunition required in the 12 months through June, 1944, is computed by adding one-half of the full 1944 requirements to those for the last half of 1943. (Next year's requirements are subject to change—a lot can happen in 18 months—so only half of 1944's objective enters into the formula.)

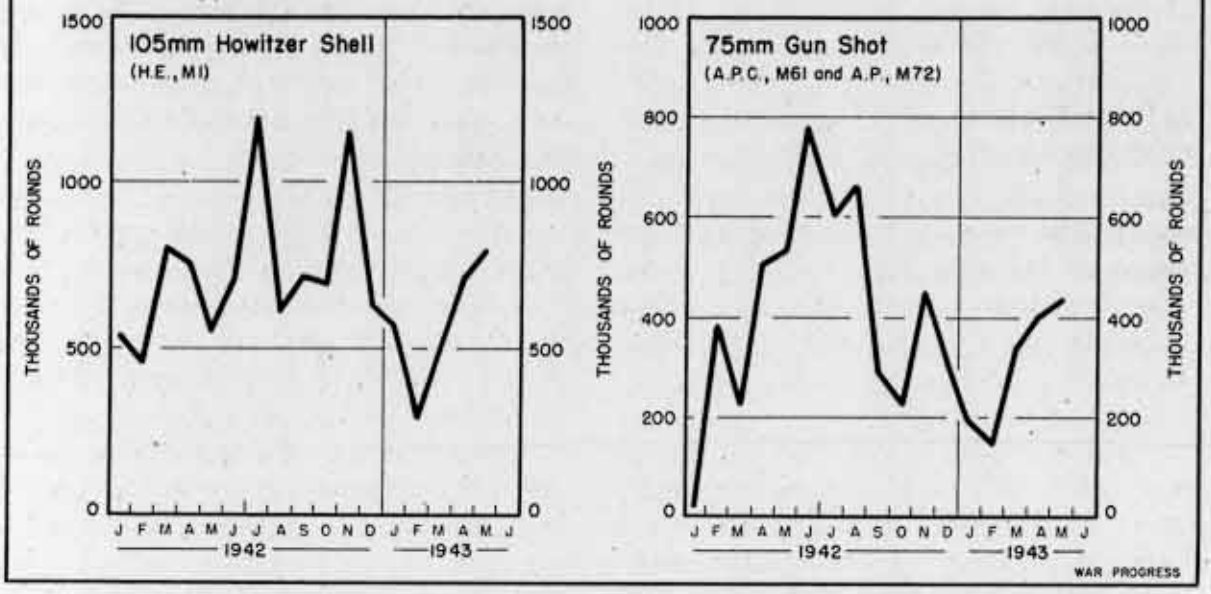
2. Those requirements are then translated into components—primers, fuses, cartridge cases, projectiles.

3. The inventories of each component, as of June 30, 1943, are subtracted from the following 12-months'—to June 30, 1944—requirements, and the stocks on hand are spread out for use during the year ahead.

4. The remainder (the difference be-

ERRATIC HAVE BEEN FLUCTUATIONS IN AMMUNITION

And 105mm howitzer shells and 75mm gun shot serve as examples of what has happened.



THE HISTORY OF AMMUNITION PRODUCTION SO FAR HAS REFLECTED NECESSITY. PLANTS LOADED SIZES AND TYPES NEEDED AT THE MOMENT. NOW, HOWEVER, AN AMMUNITION BACKLOG HAS BEEN BUILT UP AND A PLAN HAS BEEN WORKED OUT TO BRING COMPONENTS—FUSES, PRIMERS, CASES, PROJECTILES—INTO BALANCE BY JUNE 30, 1944; THIS MAY HELP TO LEVEL OFF THE PEAKS AND VALLEYS IN PRODUCTION OF FINISHED ROUNDS. THE FORMULA WILL CERTAINLY SMOOTH OUT PRODUCTION OF COMPONENTS AND IN THE LONG RUN WILL RESULT IN BETTER UTILIZATION OF COPPER AND STEEL—MATERIALS WON'T BE SO HEAVILY TIED UP IN FUSES WAITING FOR PRIMERS, OR VICE VERSA.

tween stocks and requirements) is spread out evenly over the next 12 months. And that gives an unfluctuating schedule for components manufacturers to work against. Then it is up to Army Ordnance to allot contracts on a six-, three-, and one-month basis—according to its estimates of stability of requirements for finished rounds.

PLAN OUGHT TO WORK

By no means can these schedules be rigidly adhered to; unquestionably, the exigencies of combat will make shifts necessary. But in view of the fact that a cushion of all types of ammunition has been built up (the Army has ammunition capital, so to speak), the plan ought to work for the most part—assuming no radical change in strategy.

The value of artillery ammunition scheduled for the second half of 1943 is about $1,500,000,000. Under the plan, by far the greatest part of the components required will be subject to six-month contracts—75%. About 22% will be under three-month contracts, the rest under one-month contracts.

War Progress Notes

RUBBER WORKERS

IN RUBBER PLANTS, labor requirements diminish as the size of plant increases. Thus, 40 workers are needed per 1,000 tons of butadiene output in plants of 15,000-ton annual capacity, only 5 in plants with over 60,000-ton capacity For styrene, labor requirements range from 14 per 1,000-ton annual production

for the smallest plants to 7 per 1,000 tons for the largest plants. Finished synthetic-rubber employment varies from 25 per 1,000-ton output for plants under 15,000-ton annual capacity to 12 for those with over 40,000-ton capacity.

BAZOOKA BUGS

PRODUCTION of "bazooka" 2.36-inch anti-tank rockets, including the practice model, has been halted temporarily because of "malfunctions in field." Deliveries dropped from 712,000 rounds in April to 237,000 in May—44% below schedule (WP-June 11'43,p7). None was scheduled for June.

Deliveries are expected to resume with 470,000 in July—two-thirds of April production. Of this number, three-fourths will be the M6 model, which contains a high-explosive charge for combat use. Because of the interruption of output, 1943 schedules do not now come up to required production.

RECLAIMING TUNGSTEN WIRE

ELECTRIC light-bulb manufacturers are utilizing obsolete molybdenum and tungsten wire—laid aside because of changes in specifications—to make up for the short supply of new wire of this type. Most of the recovered wire will be used in bulbs for residences and commercial establishments, which account for about 20% of the country's consumption. Since the start of the war, consumption of incandescent bulbs is up about 20%, and about 80% of the wire consumed by the industry goes into bulbs for industrial plants or direct military use.

ROTOR TROUBLE

HEART of the blast furnace is the turboblower, which builds up the 2,500-degree Fahrenheit temperatures needed to make pig iron; heart of the turboblower is the steam-and-air rotor. And today, the nation's steel industry is running into rotor trouble.

Three blast furnaces are idle because of rotor breakdowns; others face breakdowns, while the efficiency of still others, because of rotor wear-and-tear under wartime pressure, has been impaired.

Because of this, steel companies may now put in bids for spare rotors, something they could not do a month ago. Then all rotor production was reserved exclusively for use in new blast furnaces or for actual replacement of worn-out units.

However, putting in an order is no assurance of prompt delivery these days. Rotor makers are already booked full. And capacity is strictly limited. The jobs must be tailor-made for each blast furnace and require extensive machining on giant boring mills and large lathes. Average price runs between $65,000 and $85,000.

REPORTS ON REPORTS

Armed Services vs. Industry

The Canadian Manpower Situation Today (confidential; pp. 28) reports that the Dominion's manpower may be insufficient for war commitments already made. Crux of the problem is a tug of war between the armed services and industry for manpower. Out of Canada's population of less than 12,000,000, more than 750,000 have gone into the armed forces, almost 1,000,000 persons into war industry. (Office of Strategic Services, Research and Analysis Branch)

Food Fallacies

Most women overestimate the amount of food going to the armed forces and our allies—51% believe we send half our supply. A majority (57%) think

the amount we send is about right, regardless of what they believe it to be; 8% think we are sending too much. But *Women Appraise the Food Situation* (restricted; pp. 27) concludes that the dissatisfied minority may increase as food shortages become more serious. Recommendations: better information on actual volume of lend-lease shipments, seriousness of food shortages, black-market activities, etc.
(Office of War Information, Bureau of Special Services)

Black Market By-Product

Leather (confidential; pp. 20) reports that slaughter of federally inspected cattle declined further during May; in the first five months of 1943, the decline was 9%, compared with the same period in 1942. Uninspected kill, on the other hand, was 35% higher; many of the hides are destroyed, since black-market operators fear that the skins will be the tip-off on their activities. (Department of Commerce, Bureau of Foreign and Domestic Commerce)

Women and War

Utilization of Women in War Production in Germany, Great Britain, and Russia (pp.8) outlines the advancement of women from relatively simple operations at the beginning of the war to skilled work as manpower shortages increased. Germany and Russia have relaxed previous prohibitions on women in hazardous occupations; Great Britain still maintains peacetime standards.
(War Manpower Commission, Bureau of Program Requirements)

[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

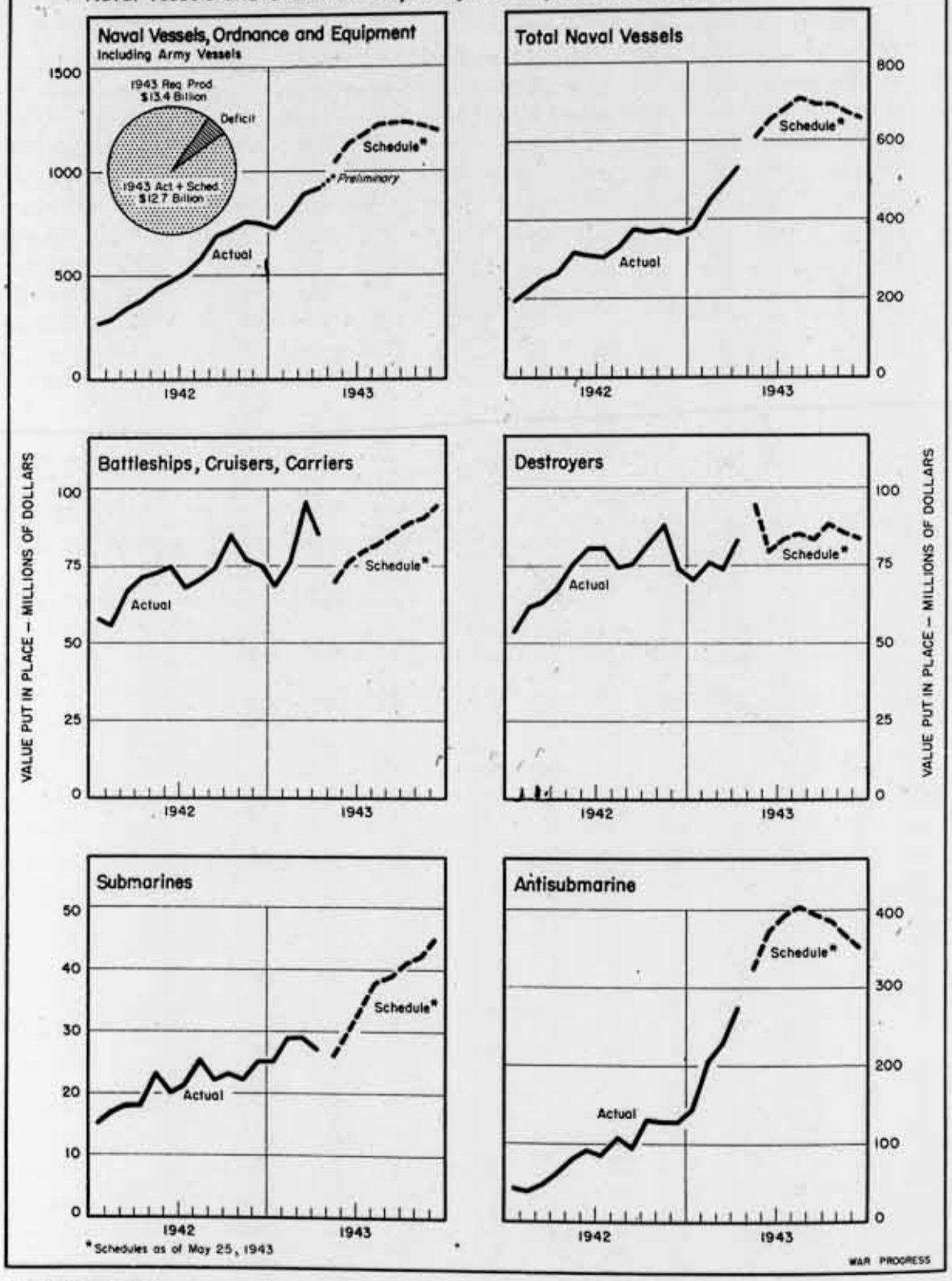
Production-Clothing and Shoes for Civilians-Transportation

	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
PRODUCTION INDEX-INDUSTRIAL (1935-39=100)†	p203	201	199	195	175	99	123
Total Manufactures	p216	214	212	206	183	99	124
Durable	p302	300	296	279	240	95	139
Nondurable	p147	145	144	147	137	102	113
Minerals	p132	125	124	132	131	97	115
CLOTHING AND SHOES FOR CIVILIANS (1935-39=100)†							
Clothing and Shoes combined	108	112	116	106	119	n.a.	n.a.
Clothing	110	115	120	108	120	n.a.	n.a.
Shoes	97	98	101	98	117	n.a.	n.a.
TRANSPORTATION-COMMODITY AND PASSENGER (1935-39=100)†	p207	203	201	203	167	89	112
Commodity	p197	195	193	202	169	87	114
Passenger	p241	230	227	207	160	98	107

*May; Clothing and Shoes for Civilians and Transportation, April. †Unadjusted. n.a. Not available. p Preliminary

PRODUCTION PROGRESS

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

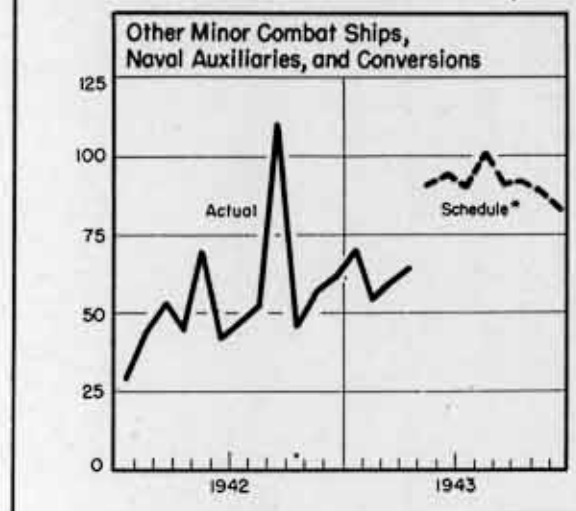


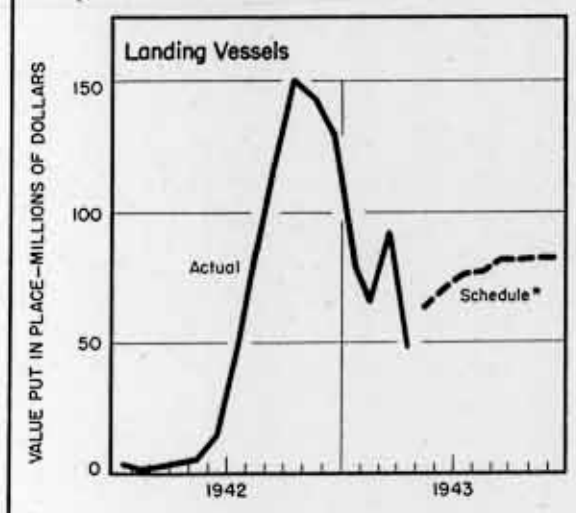
*Schedules as of May 25, 1943

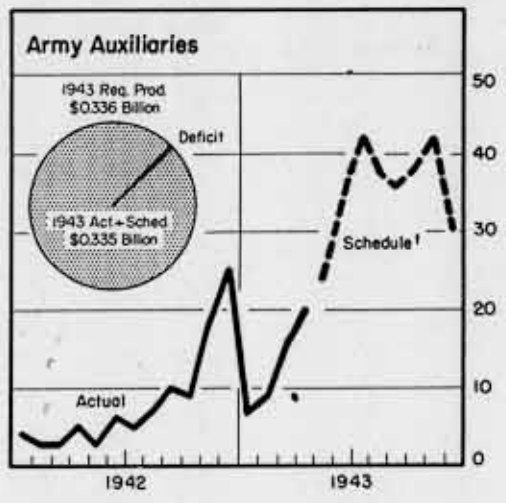
WAR PROGRESS

PRODUCTION PROGRESS

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







VALUE PUT IN PLACE—MILLIONS OF DOLLARS

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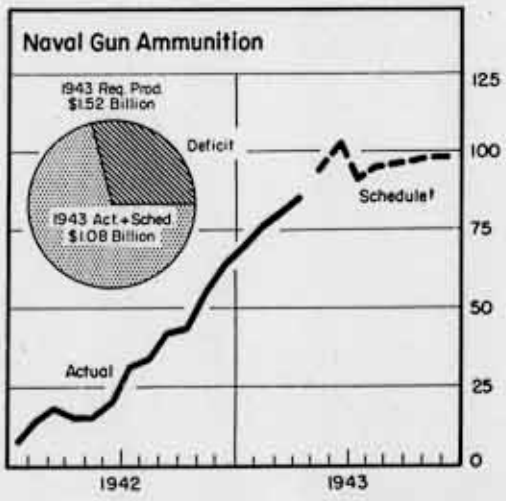


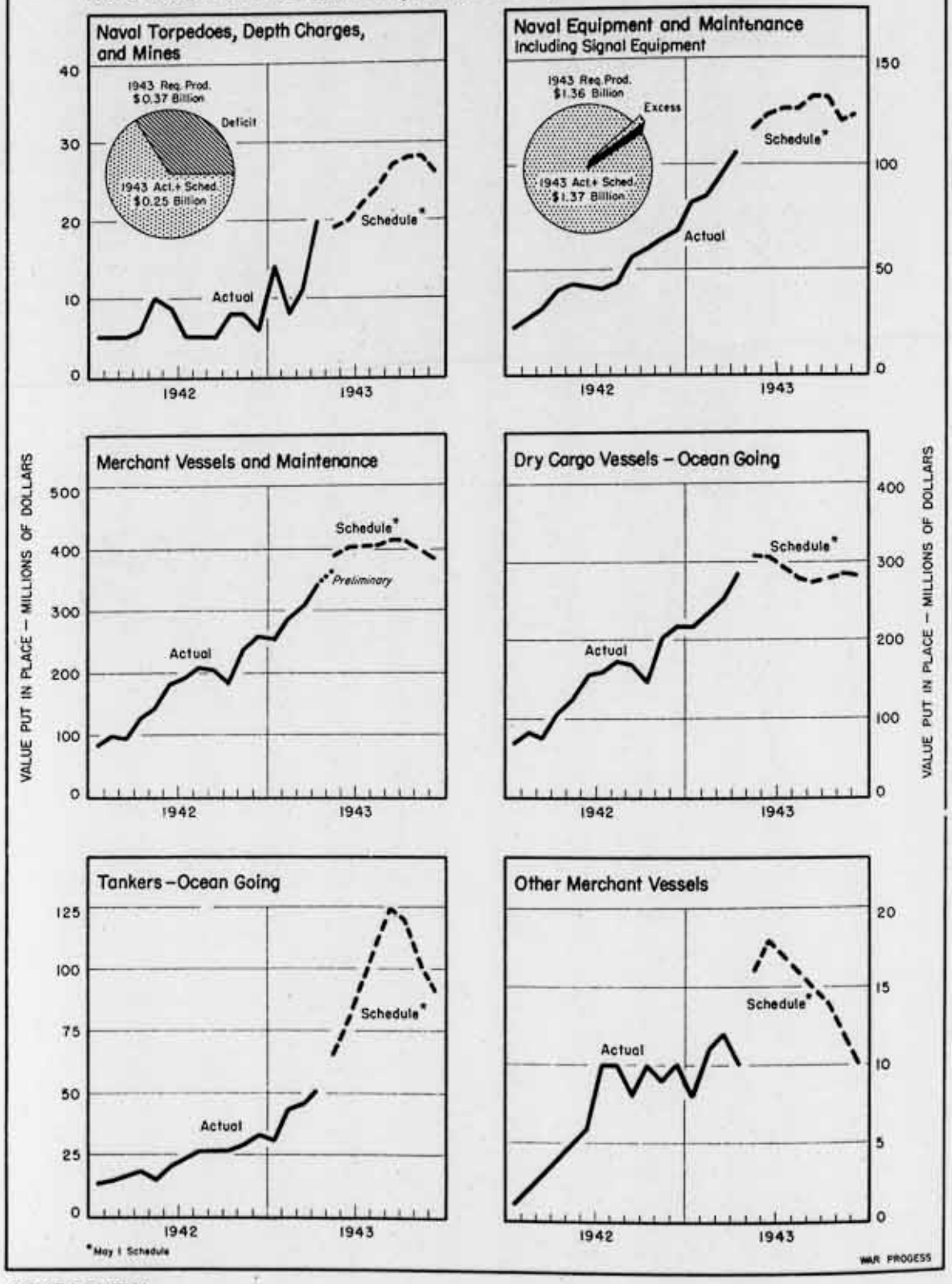
*Schedules as of May 25, 1943. †Schedules as of May 1, 1943

WAR PROGRESS

CONFIDENTIAL

PRODUCTION PROGRESS

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



The President

1

WAR PROGRESS

Confidential
(British Secret)

How Britain Controls Food Prices

Radar – the Storybook Weapon

Production Progress Tables

Number 146 July 2, 1943

Britain Does It with Subsidies

Government takes trading loss in stabilizing basic items – cereals, meats, etc.; rebates, bonuses used. Food index up only 20% since start of war, against 50% here.

THE PRICE of food has been stabilized in Great Britain, but in the United States it is rising steadily. Since the war began, the retail food index has increased by 50% here; in the United Kingdom, by 20%. Since the end of 1940, the British food index has actually declined, but the U.S. index has been going up steeply (chart, below).

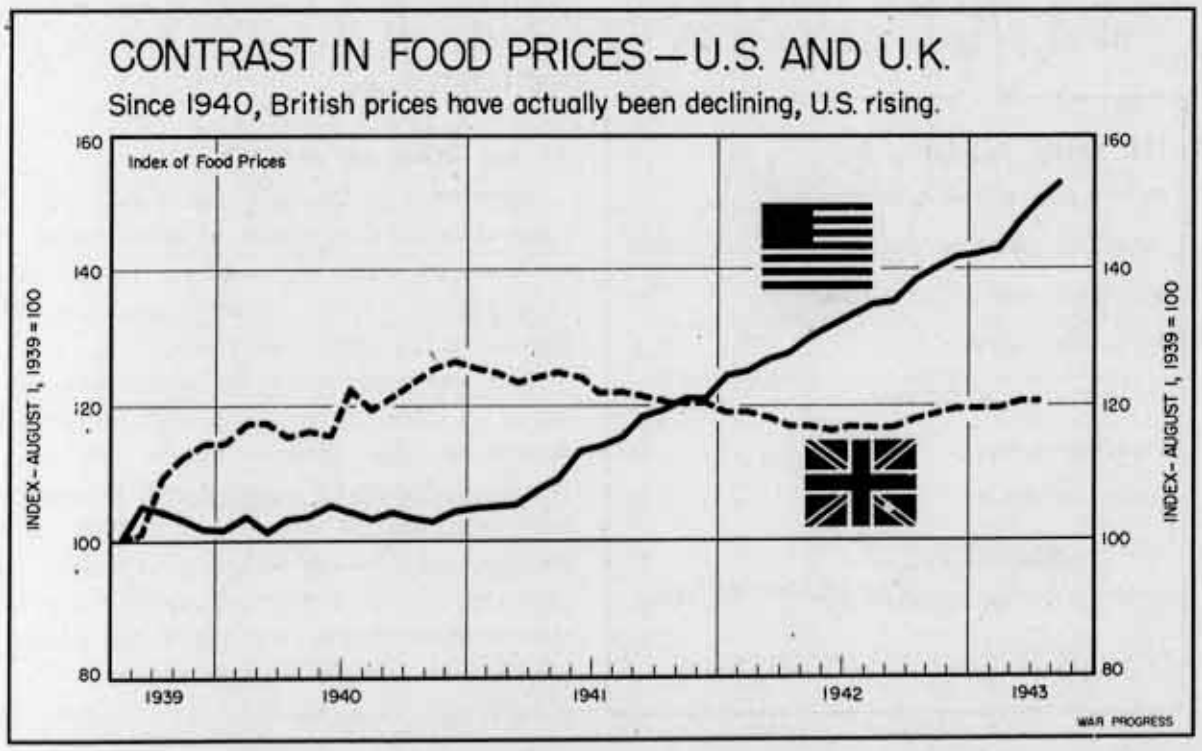
3% OF WAR BUDGET

Subsidies have contributed largely to the British success in stabilizing food prices and hence the cost of living. Currently, commodities subsidized by the Ministry of Food account for about 90% of the weighted cost of all items in the food index. Only fish and margarine among cost-of-living foods have not been subsidized at one time or another.

Altogether, food subsidies cost the British government about $600,000,000 a year (or about 3% of the nation's war budget), as follows:

CONGRESS AND SUBSIDIES

THOUGH Congress this week forbade the use of subsidies in this country to push down retail prices, the subsidy —as an inflation preventative—is not entirely dead. Congress itself may ultimately recant. Hence, an analysis of British procedure possesses for-the-duration pertinence.



Item	Annual Rate (millions)	Subsidy Started
Sugar.....	$59	Prewar
Flour, bread, oatmeal.....	135	Winter, 1939
Meat (beef, mutton).....	88	Winter, 1939
Milk.....	68	Early 1940
Tea.....	24	Spring, 1941
Eggs.....	50	Spring, 1941
Potatoes.....	90	Fall, 1941
Fish, bacon, etc.	86	
Total	$600	

The aim of the British subsidy plan is fivefold: (1) to keep prices down so that the average consumer can afford to buy an adequate amount of nutritious food; (2) to discourage black markets; (3) to assure a fair geographical distribution of supplies; (4) to stimulate domestic production of essential products such as potatoes, milk, eggs, carrots, etc.; and (5) to stabilize the cost of living and thus obviate the necessity for wage increases. (In Britain wages are tied to living costs.)

The major device for controlling the price of food in Great Britain is the trading loss, in which the government usually buys up all of the supply of a commodity and resells at a loss; next in importance are (1) the rebate, which is exactly what the term implies, and (2) the direct subsidy to farmers to expand production. Less important are subsidies to defray increased shipping costs, cancellation of import duties—Britain imports one-third of her food—and subsidies to benefit needy consumers.

The only U.S. food subsidies now in force are entirely rebates. For example, the Office of Price Administration pays packing houses two cents a pound for meat (dressed weight) and creameries five cents a pound for butter to compensate for the price rollback on these products. The U.S. has not yet adopted the trading loss subsidy on processed food, though this device is used in the case of jewel bearings, some nonferrous metals, and prospectively for alcohol. In these cases, the bulk supply is purchased by the government at a high price and resold to industrial users at a lower or going price.

AT ONE STAGE OR ANOTHER

In Great Britain, the Ministry of Food obtains ownership at one stage or another of all the nation's imported food supply, and, where necessary, of domestically produced foods.

The case of meat is a perfect example of how government ownership and subsidies facilitate price control. The Food Ministry slaughters, dresses, and distributes the meat around the country and finally sells it to retailers who in turn dispose of it to consumers at a price which, pound for pound, is less than what the farmer got. This scheme not only assures the consumer a

IN THIS ISSUE:

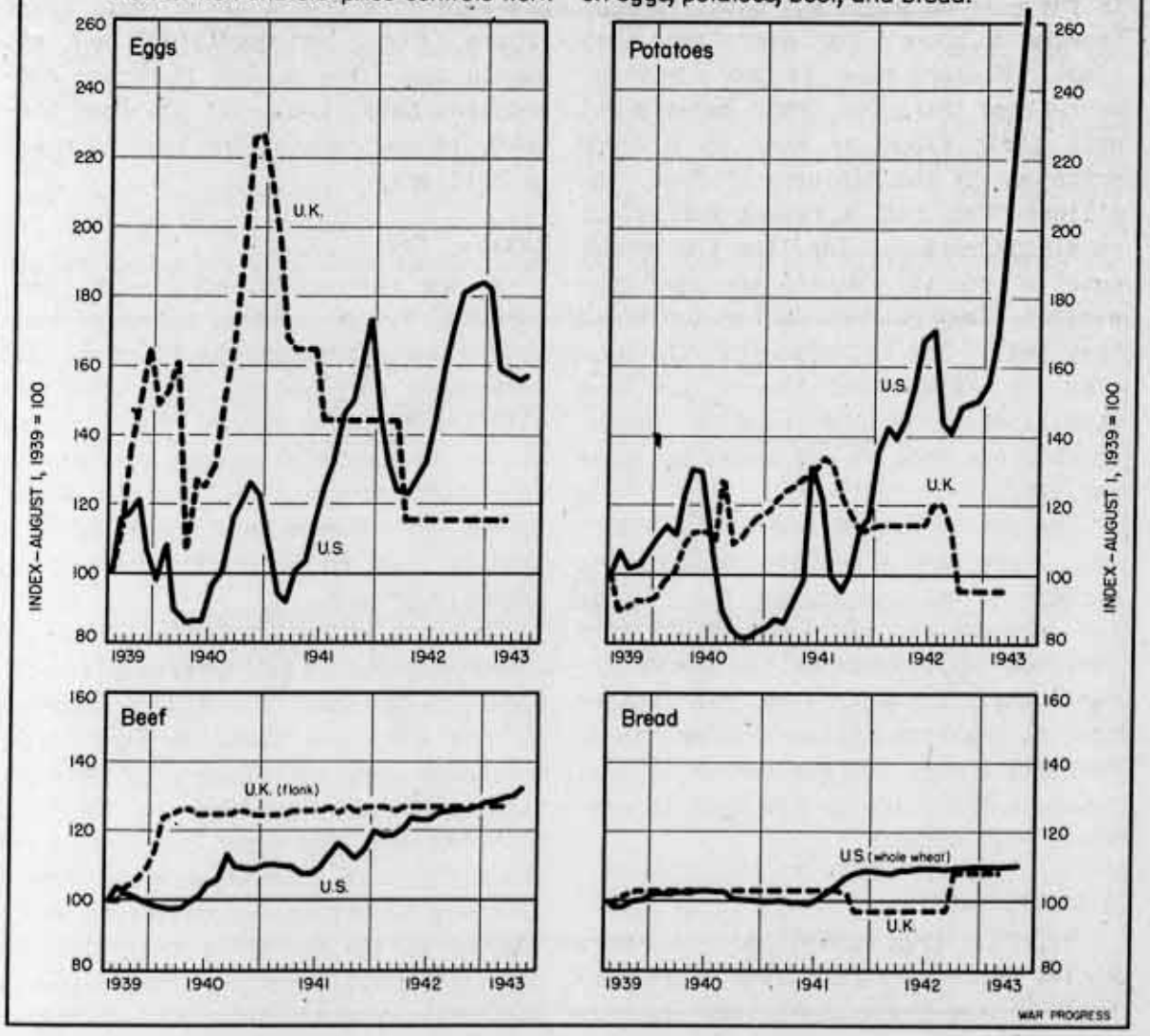
meat supply throughout the year at uniform and reasonable prices, but is an effective attack on the black market. Since the government owns the packing houses and controls the distribution system, black marketing operations are negligible.

The egg subsidy operates in about the same fashion. The government pays producers about 60 cents a dozen in order to attract eggs from rural to urban areas and spends about 18 cents more in packing, grading, and distribution, bringing the total cost to 78 cents. The consumer pays about 40 cents a dozen—only slightly more than before the war. Similarly with tea. It is imported exclusively by the government and is sold to distributors below the import price.

The sugar subsidy is basically a trading loss also since the government purchases the entire domestic and import supply of sugar and sells it below cost. Rebates and bonuses also are used. Refiners must pay a surcharge

HERE AND THERE WITH INDIVIDUAL FOOD PRICES

How British and U.S. price controls work – on eggs, potatoes, beef, and bread.



to the Food Ministry when selling into industrial channels, but, on the other hand, they get a rebate on sales for home consumption. And sugar-beet growers receive incentive payments.

In feedstuffs the government purchases the output of seed crushers and millers at prices sufficient to cover their cost plus a reasonable profit. Then the feed is sold to farmers at approximately prewar prices. The government's loss runs to about 30% of the retail price.

BREAD BOUNTIES

Cereals and potatoes are major examples of the use of bonuses and rebates. In the case of wheat and oats, farmers receive a bounty for every acre they plant. Millers have to pay a government-fixed price for their cereals yet sell their flour or meal at a lower price set by the Ministry of Food. The millers then get a rebate sufficient to yield them something like the prewar rate of profit. Bakers are also subsidized. They get a bonus for the bread they sell. The net effect of the subsidy to millers and bakers has been stabilization of the price of bread, which is now held at 10% above the prewar level.

The potato subsidy operates similarly. There are incentive payments to farmers as well as bonuses for storing the product between harvests—a move designed to compensate the farmer for marketing throughout the year rather than at peak-production seasons. These payments enable the government to sell potatoes at a price so low that it competes with bread.

A SOCIAL SUBSIDY

Milk is also subsidized. But here social welfare rather than price control is the prime objective. In this it resembles the food-stamp plan used during the depression to distribute low-cost food to persons in need in this country. Under the British plan, milk is supplied free to families with low weekly incomes.

Nursing and expectant mothers, as well as children under five, may obtain milk free; when able to pay, at less than half the fixed retail price. The program is handled through the regular marketing channels, with the distributors recovering the full price from the government.

In general, the British subsidize only basic foods. Though the Ministry of Food deals in canned goods, these are sold at a profit or at cost. Fresh fruits, fish, and vegetables are not subsidized. The prices of these commodities have risen, but the Food Ministry is now controlling them by means of ceilings.

CANADA, TOO

At one time or another, bacon, ham, carrots, butter, cheese, and other products have been subsidized. A special government corporation for a time handled the nation's carrot crop, selling it to consumers at a loss in order to encourage consumption. Subsidies on butter and cheese have consisted of a trading loss on both the imported and domestic product.

Canada also uses bonuses and subsidies to control retail prices and stimulate production.. Since the outbreak of the war, the Canadian food index has risen 29%; but since last December it has actually declined by 3%, thus bringing down the total cost-of-living index slightly. Canadian food subsidies may amount to approximately $75,000,000 in the current fiscal year, or about 2% of all government expenditures for war purposes.

Radar: The Storybook Weapon

Army, Navy call for 270% increase over '42; '43 program 30% completed by midyear, and December must double May's $61,000,000 output. Lag due to changes, labor, etc.

RADAR—short for "RAdio Detection And Ranging"—is the Sunday supplement story of the hour. It is the weapon which, in the summer of 1940, turned the scales in the Battle of Britain. Radar warned the defenders when the Luftwaffe was coming over and from what direction. Then British Hurricanes and Spitfires went up to meet them, and AA gunners got set.

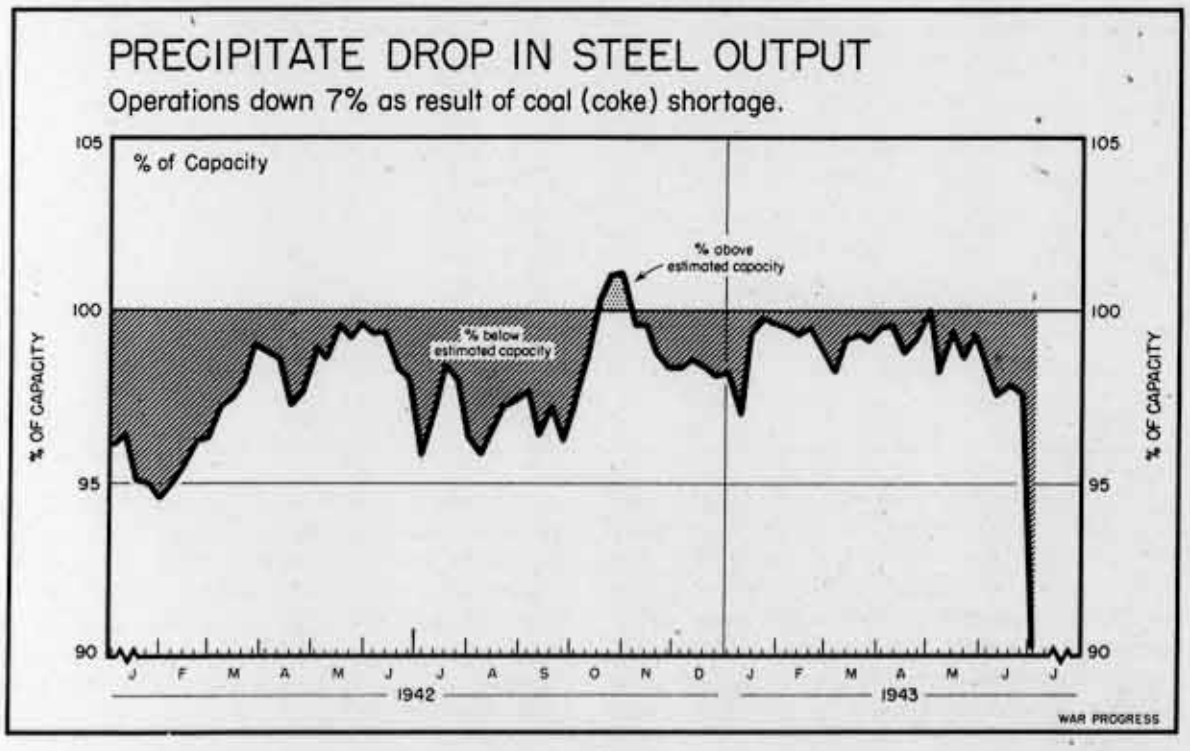
At Pearl Harbor, radar picked up the approach of Jap planes when they were 132 miles offshore, but they were assumed to be American craft.

U. S. production of radar did not get under way in important quantities until 1942; in that year it rose steeply, attaining a value of almost seven times the output of the preceding year and a half. Latest Army and Navy schedules call for 1943 radar output to reach a value of $1,100,000,000—about 270% greater than in 1942—and nearly a third of the value of all signal and fire-control equipment.

Radar devices—of which there are more than threescore individual models or combinations—fall into three basic types: (1) air-borne, (2) ground-to-air and ship-borne, and (3) fire control.

LAND, SEA, OR AIR

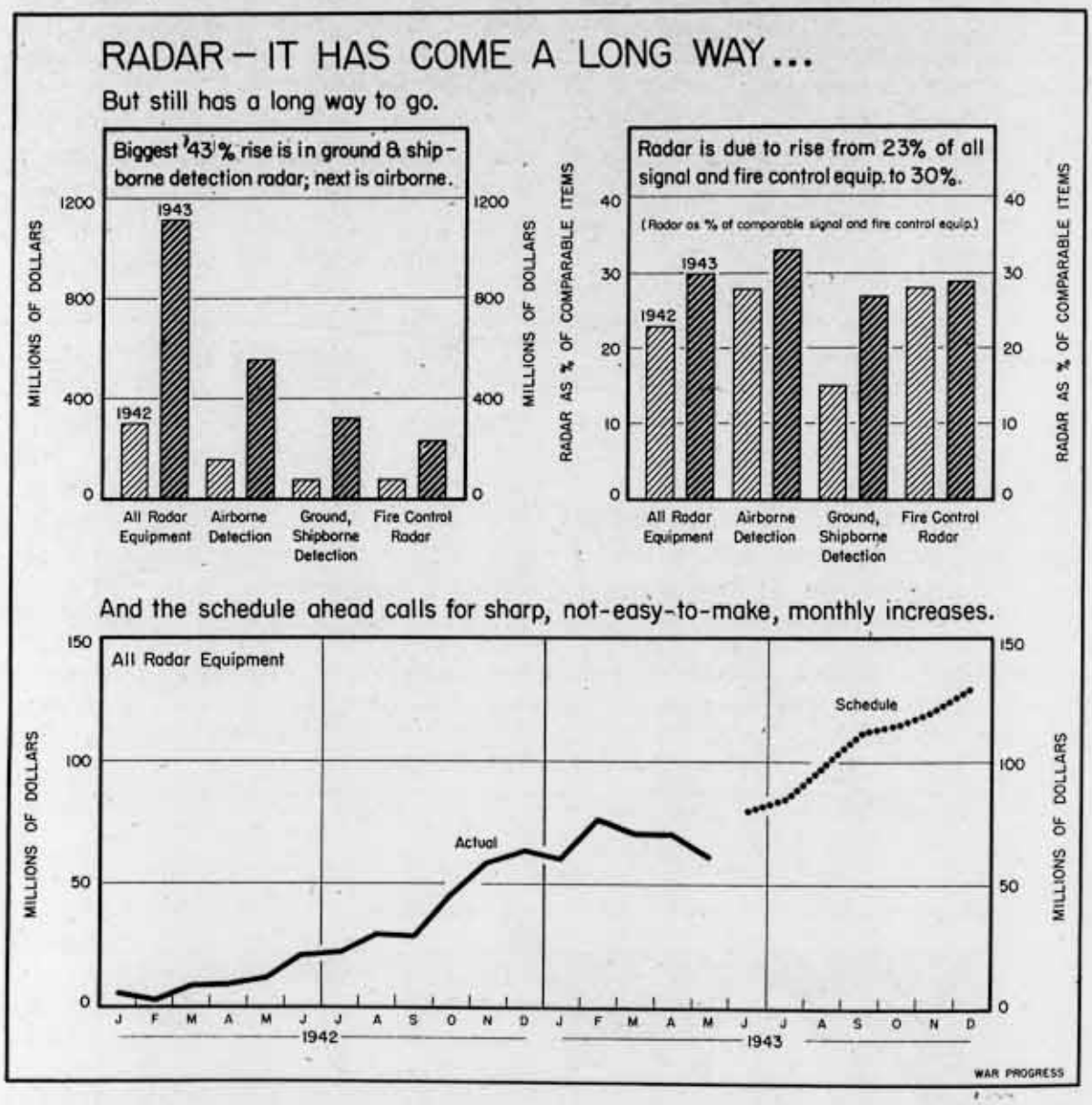
Largest category is air-borne—more than $550,000,000 is scheduled for this year, about 46% for the Army, 54% for the Navy. The stepup over last year amounts to nearly 270%. Radar equipment in planes, though slightly smaller, does the same kind of a job as radar on the ground or aboard ship. It sends out a beam of ultra high-frequency ra-



dio waves that reflect back from any objects they encounter. In planes, it is used to spot ships at sea, also to find enemy planes.

(Incidentally, friendly planes are easily distinguished from enemy planes: A predetermined signal actuates a device on a friendly plane which automatically sends back the "countersign".)

This year's schedule for ground-to-air and ship-borne radar amounts to about $325,000,000, or 29% of all radar



RADAR IS ONE OF THE FEW MAJOR MUNITIONS GROUPS WHICH STILL HAVE A LOT OF EXPANSION IN THEIR PROGRAMS. SCHEDULES THIS YEAR CALL FOR AN OUTPUT OF MORE THAN $1,000,000,000 AS AGAINST $300,000,000 IN 1942. AND THE EXPANSION RUNS THROUGHOUT THE RADAR LIST—COVERING REQUIREMENTS FOR THE ARMY AND NAVY AND INCLUDING AIR-BORNE, SHIP-BORNE, AND GROUND DETECTION EQUIPMENT, AS WELL AS FIRE-CONTROL APPARATUS. RADAR IS A COMPARATIVELY NEW WAR PROGRAM. IN THE FIRST QUARTER OF 1942, MONTHLY OUTPUT AVERAGED $5,000,000; TODAY PRODUCTION RUNS TO ABOUT $61,000,000. BUT BY DECEMBER OF THIS YEAR, THE MONTHLY OUTPUT IS SCHEDULED TO DOUBLE THAT, INDICATING THE STEEP GRADE AHEAD. AS IT NOW STANDS, THE '44 PROGRAM APPEARS HEADED FOR LOWER LEVELS; BUT SCHEDULES ARE NOT COMPLETE ENOUGH TO WARRANT COMPARISON WITH '43.

output. The Army gets about two-thirds. Radar of this type can detect the presence of aircraft as far as 150 miles away. A ship's radar can detect an enemy surface vessel up to 25 or 30 miles distant (the curve of the earth's surface cuts down its effective range). Ground-to-air and ship-borne radar will show the largest rise in 1943 over 1942 —almost 320%.

EFFICIENT FIRE CONTROL

Because radar will reveal the distance as well as direction of reflecting objects, it makes an efficient fire-control device, especially for antiaircraft guns. Combinations of this kind comprise about 20% of the value of U.S. scheduled output in 1943. (The United Kingdom—exposed to air attack—put 80% of the value of its radar equipment into fire-control items in 1942; this year, about 70% is so scheduled.) In the U.S., fire-control equipment is intended almost entirely for land use; 1943 output for the Army is scheduled to reach nearly $240,000,000, compared with the Navy's $27,000,000. Total rise over 1942 is more than 200%.

RADAR ROBOTS

In the case of antiaircraft searchlights, radar actually robotizes them—points and holds them in the exact path of enemy craft long before human sight or hearing could perceive their approach. Likewise, fire-control devices for antiaircraft and coastal guns are almost completely automatic; they do all the work of a battery of human observers and computers. Radar-aimed guns shoot plumb at the target—not merely in its general direction.

Essentially a custom-built rather than a mass-produced item, radar has a full share of production difficulties—especially in the matter of skilled labor. The essential parts of radar—coils, condensers, tubes, etc.—require painstakingly precise workmanship.

TUNGSTEN AND TANTALUM

Radar, however, does not use critical materials in great quantities. (For example, the Army's aluminum requirements in the third quarter will run to 47,700,000 pounds, of which ground radar items will use less than 1%.)

But certain components have been scarce because fabricating capacity was short—notably fine wire and hair springs for meters and resistors. Also, production has been delayed by shortages of tungsten, molybdenum, and tantalum, and copper anodes. And these shortages may be expected to extend into late 1943 in view of the combined radar-and-radio requirements of the U.S., United Kingdom, and Russia.

Radar uses a great many mica capacitators, too, and these have been tight, because 80% of the mica supply must be imported.

Furthermore, radar is in a state of flux technically. Improvements are constantly being incorporated or special devices are being turned out on short notice—such as devices to "jam" enemy radar once its exact wave length has been discovered. Under such conditions, radar output has consistently lagged behind schedule much farther than output of nonradar signal items.

WANTED: MORE

One result of these lags has been repeated cutbacks in the Army's radar requirements. The latest cutback, just reported by the Army Service Forces, brings requirements into closer agreement with existing schedules for '43—though requirements still exceed scheduled totals—and represents the sharpest downward revision to date, for it

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removes $90,000,000, or 12% of the previous radar requirements of the Army.

Bulk of this cutback—$60,000,000—comes from army air-borne radar, reduced 20% for the year. The remainder comes from army ground-to-air items, down 13%. Schedules and requirements for fire-control radar are not affected.

The $90,000,000 cut in 1943 Army radar requirements is more than restored by a $135,000,000 boost in the output slated for 1944, but this schedule will be hard to meet.

SHARP RISE AHEAD

By June first, only 30% of the year's radar schedule had been completed. And if the year's requirements are to be met, average production of $70,000,000 in the first five months will have to rise to an average of more than $107,000,000 per month in the last seven. There's another way of measuring the job. Output in May was about $61,000,000. In December, it's scheduled to amount to some $130,000,000, more than double as much.

New W-4 in Airplanes

New revision in program is minor; brings 1943 goal down to 95,000, but there are some important changes in models. Monthly adjustments possible in future.

DURING MAY, the original 8-L airplane schedule was revised downward. Under a so-called "working" program, the 1943 goal of 112,000 planes was reduced 10% in numbers and 14% in airframe weight (WP-May21'43,p1), while that for 1944 was cut 16% in numbers—from 151,000 to about 127,200—and 13% in weight (WP-June4'43,p4). And now the program has been lowered again.

Known as W-4, and dated June 10, the

KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program – Checks paid (millions of dollars)	1,850	1,580	1,932	1,176	803
War bond sales (millions of dollars)	217	164	277	216	146
Wholesale prices (1926=100)					
All commodities	p103.1	p103.5	p104.0	101.2	98.4
Farm products	p126.2	p127.0	p126.7	115.2	104.6
Foods	108.0	109.0	110.7	104.6	99.3
All other than farm products and foods	p96.9	p96.9	p96.9	96.2	96.0
Petroleum:					
Total carloadings	58,239	57,495	54,081	50,058	52,569
Movement of cars into the East	31,191	31,399	28,708	24,224	24,392
East coast stocks for civilian use (1940-41=100 Seas. Adj.)	29.5	27.6	25.7	42.0	n.a.
Total stocks of residual fuel oil (thousands of barrels)	67,960	67,455	67,682	72,962	77,790
Bituminous Coal:					
Production (thousands of short tons, daily average)	2,017	r1,956	1,936	1,913	1,834
Exports (no. of freight cars unloaded for export Friday, excl. grain)					
Atlantic Coast ports	2,162	2,233	2,396	926	1,624
Gulf Coast ports	354	333	354	343	493
Pacific Coast ports	1,305	1,424	1,274	805	576
Unused steel capacity (% operations below capacity)	9.7	2.4	1.6	1.8	4.2
Department store sales (% change from a year ago)	+19	r+28	+43	+15	-8

n.a. not available. p preliminary r. revised

latest revision brings the schedule further into line with probable accomplishment. It provides for approximately 95,000 planes this year (excluding targets and drones, etc.), with an aggregate weight of 700,000,000 pounds, excluding spare parts; that's a 3% reduction in numbers and a 2% drop in weight as compared with the last May revision. For 1944, the latest program sets production sights at 125,000 planes weighing 1,200,000 pounds.

MODEL SHIFTS

Although overall reductions since May are small, there is a considerable shifting among particular models. For 1943, long-range heavy bombers (B-29s and B-32s) are cut 33% to 153 planes, while the 1944 goal goes down 15% to 1,632.

Flying Fortresses (B-17s) and Liberators (B-24s) fare much better. The 1943 drop is only 39 planes—a fraction of 1%—for a total of 10,358 ships; and in 1944 they are slated for a 4% increase over the May schedule, from 15,985 planes to 16,662. Consolidated-Vultee's 4-engined patrol bomber—the Coronado (PB2Y)—is reduced 19% in 1943: from 211 ships to 171. (No Coronados were scheduled for 1944 under either the W-4 or the May working program.)

Parenthetically, greater subassembly activity at Ford on the Liberator will cut 1944 output of completed units at Willow Run by 410 planes, but this will be more than made up by a 730-unit gain at Consolidated-Vultee's Fort Worth plant.

MUSTANG'S RISE

A substantial revision—a cut of 10%—takes place in 1-engined army fighters this year (from 19,003 to 17,108), especially in the Bell Airacobra (P-39), which is cut 22%. For 1944, the drop is 3% (from 22,372 to 21,703), but the North American Mustang (P-51) rises against the general trend; the new schedule calls for an upswing of 23% at the company's Dallas and Inglewood plants. Instead of using part of its facilities for subassemblies to be shipped to England, all of the Inglewood plant's capacity will now be concentrated on completed planes.

In the army fighter group, a significant change next year is the introduction of 603 P-72s at Republic Aviation, Evansville, and a corresponding cut in the Thunderbolt manufactured at that plant. As yet unnamed, the P-72 is equipped with a 3,000 horsepower engine, 50% more horsepower than the Thunderbolt.

ARMY DIVE BOMBERS DOWN

Army dive bombers are reduced further under the new schedule. The Curtiss Helldiver (A-25) drops 13% this year, 30% next; the Consolidated-Vultee Vengeance slips a shade more than 1% in 1943, then falls 12% in '44.

One of the largest declines in any model, under the latest revision, takes place in the XC-82, a tank-carrying transport plane being built by Fairchild. The schedule for this air freighter, designed to carry two T9 tanks, is slashed 89% in 1944—from 334 units to 35; and deliveries originally planned for this year won't start until next.

OUTLET FOR SURPLUS PLANT?

No further change is made in the trainer program, which was recently cut by 40% for 1944. On the other hand, schedules for communication planes are reduced in the current year, and those for 1-engined light transports are lowered for both 1943 and 1944. It is conceivable that surplus facilities here may eventually be used to make subassem-

blies or aircraft parts for larger jobs.

From here out, changes in the airplane program for 1943 and 1944 are unlikely to be as frequent or as drastic as they have been during the past two months. But as the situation in materials changes—and as battle experience suggests alterations in models, shifts in types, etc.—further adjustments of the current schedule are to be expected, possibly on a monthly basis.

War Progress Notes

ANOTHER FISCAL YEAR ENDS

IN THE FISCAL YEAR 1943, just ended, the United States spent $74,900,000,000 for war, compared with $28,300,000,000 for the fiscal year 1942, and $6,600,000,000 for the fiscal year 1941. The three-year total is $109,800,000,000. During the Civil War, federal expenditures (both war and nonwar) were only $700,000,000.

War expenditures as a percentage of all goods and services produced increased from 6% during fiscal year 1941 to 21% in 1942 and 44% in 1943. Of total federal expenditures for all purposes, 96% were for war in fiscal year 1943, as against 87% in 1942 and 52% in 1941. In fiscal year 1941, total budget receipts were greater than war expenditures, but by 1942 the war outlays were 2.1 times revenues, and in the year just ended, 3.2 times.

BRITISH FARM TRENDS

BRITISH agriculture since 1939 shows an interesting contrast: land under cultivation is up sharply; but livestock on farms have been greatly reduced because of curtailed feed imports. By the end of 1942, acreage in wheat was up 36%, oats 72%, potatoes 80%. In 1943 wheat, barley, and potato acreage will increase further. The number of hogs on farms dropped by 52%, sheep 18%, and poultry 24%. But cattle—especially dairy herds, which get priority in feed supplies—have increased about 5%.

COAL AND STEEL

STEEL OPERATIONS for the current week are expected to be 9.3% below capacity (Key Statistics, page 8; chart, page 5) as compared with 2.4% last week, and 1.6% a month ago. The drop is directly traceable to the shortage of coal. Translated into terms of steel, this means a loss of 124,000 tons compared with last week. Steel lost to date because of the coal strike is estimated at 190,000 tons.

REPORTS ON REPORTS

The Public Pulse

Only 22% of the people understand that high taxes help to curb inflation, according to *Public Appreciation of the Problem of Inflation* (restricted; pp. 32), a preliminary report on a survey of 5,000 people. While 67% say prices are too high, seven out of 10 are confident that the government will be able to control prices and incomes; 83% favor freezing incomes, but only 43% are willing to have their incomes frozen at existing levels.
(Office of War Information, Surveys Division)

Paper Pinch

In the first four months of '43, receipts of pulpwood at U.S. mills were down 22% from the same period last year. *Pulp and Paper* (confidential; pp. 22) also states that 35% of the output of pulpwood goes for war purposes: paperboard containers for overseas shipments, ration packages, first-aid kits, etc. Result: Further control of paper uses will be necessary.

(Department of Commerce, Bureau of Foreign and Domestic Commerce)

Food South of the Border

Food Supplies and Consumption Deficiencies in the Latin American Republics (restricted; pp. 53) summarizes the import-export positions of Latin American countries with respect to cereals, beans, sugar, meat, and dairy products. Data on food requirements indicate that greatest increases are needed in dairy products, fruits, vegetables, and meats. (Coordinator of Inter-American Affairs, Research 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

Employment-Labor Disputes-Retail Sales-Consumer Expenditures-Food

	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
FEDERAL CIVILIAN EMPLOYMENT (thousands)	p3,099	3,068	3,026	2,813	2,175	911	874
War	p2,301	2,276	2,234	1,949	1,299	n.a.	n.a.
War Department	p1,444	1,417	1,394	1,234	770		
Navy Department	p635	633	619	548	416		
Other War Agencies	p223	226	221	166	112		
Nonwar	p798	792	792	864	876	n.a.	n.a.
LABOR DISPUTES							
Number of strikes in progress	450	445	300	172	373	434	877
Workers involved (thousands)	625	205	75	55	79	457	n.a.
Man-days idle (thousands)	1,275	675	230	128	322	3,548	2,983
RETAIL STORE SALES - TOTAL (million dollars)	p5,110	5,182	r5,067	4,843	4,569	3,670	3,755
Durable goods	p894	884	r815	772	856	998	1,115
Nondurable goods	p4,216	4,298	r4,252	4,071	3,712	2,672	2,640
CONSUMER EXPENDITURES (million dollars)	p7,427	7,325	6,836	7,520	6,622	5,068	5,266
Goods	p4,987	4,910	4,454	5,179	4,339	3,199	3,430
Services	p2,440	2,416	2,382	2,340	2,282	1,869	1,836
FOOD PRODUCTION							
Dairy Products (million pounds)							
Butter, creamery	190.5	s	s	s	203.4	197.1	182.0
Cheese	109.4				138.6	80.4	73.3
Evaporated Milk	376.0				449.3	263.2	239.1
Animal Fats (million pounds)**	n.a.				233.2	168.0	115.0
Meats-Total (including lard, million pounds)	1,544.0				1,374.0	1,127.0	813.0
Beef and veal	459.3				530.2	466.3	412.1
Lamb and mutton	69.9				61.2	55.4	54.2
Pork, including lard	1,015.2				782.3	605.5	346.4
Lard	177.7				135.1	105.7	50.7
Poultry and Eggs							
Eggs (millions)	6,506.0				5,782.0	4,763.0	2,154.0
Poultry (receipts at 5 principal markets, million pounds)	4.4	s	s	s	29.8	24.9	20.3

* May; Consumer Expenditures, April. ** Figures for year ago, 1939, and 1937 represent second-quarter averages. n.a. Not available. p Preliminary. r Revised. s Seasonal influences invalidate month-to-month comparisons.

PRODUCTION PROGRESS

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

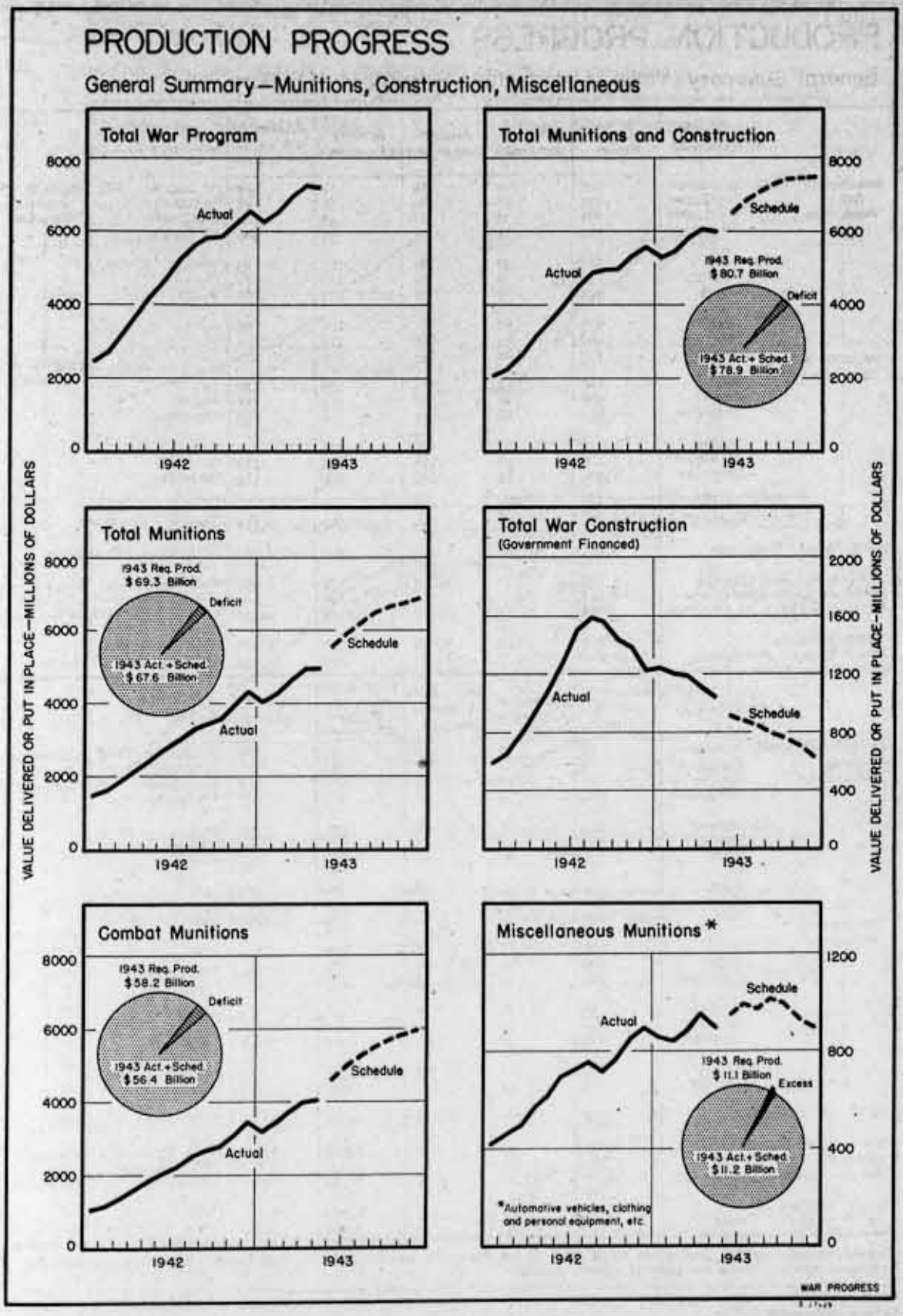
	MONTH OR MONTHLY AV.	Total Program	Total Munitions & Construction	Total Munitions	Total War Construction (Govt Financed)	Miscel. Munitions	MONTH OR MONTHLY AV.	
Valuation of Actual Production	1942 - 1st Quarter	2,790	2,328	1,648	681	453	1st Quarter - 1942	Valuation of Actual Production
	2nd Quarter	4,233	3,554	2,440	1,114	629	2nd Quarter	
	3rd Quarter	5,557	4,780	3,223	1,557	735	3rd Quarter	
	4th Quarter	6,220	5,305	3,954	1,351	840	4th Quarter	
	1943 - January	6,271	5,293	4,045	1,248	853	January - 1943	
	February	6,535	5,476	4,274	1,202	836	February	
	March	6,977	5,852	4,662	1,190	882	March	
	April	7,240	6,057	4,953	1,104	962	April	
	May	7,232	5,994	4,954	1,040	896	May	
Valuation of Schedules	June		6,507	5,591	916	956	June	Valuation of Schedules
	July		6,874	5,996	878	994	July	
	August		7,112	6,270	842	976	August	
	September		7,307	6,514	793	1,015	September	
	October		7,463	6,701	762	999	October	
	November		747.4	6,760	714	924	November	
	December		7,490	6,859	631	895	December	
	1944 - 1st Half		45,447	41,977	3,470	5,569	1st Half - 1944	
	2nd Half		45,414	42,384	3,030	5,418	2nd Half	
1942 Actual Production		56,400	47,902	33,795	14,109	7,974	1942 Actual Production	
1943 Actual plus Schedule			78,899	67,579	11,320	11,188	1943 Actual plus Schedule	
1943 Required Production			*80,656*	*69,336*	*11,320*	*11,113*	*1943 Required Production*	
Act plus Sched as % of Req Prod.			97.8%	97.5%	100%	100.7%	Act plus Sched as % of Req Prod.	
1944 Schedule			90,861	84,361	6,500	10,987	1944 Schedule	
1944 Required Production			*91,567*	*85,067*	*6,500*	*11,323*	*1944 Required Production*	

	MONTH OR MONTHLY AV.	Combat Munitions(a)	Aircraft & Aircraft Munitions	Ground Army Munitions(b)	Naval Vessels Ordnance & Equip (Incl Army Aux.)	Merchant Vessels & Maintenance	MONTH OR MONTHLY AV.	
Valuation of Actual Production	1942 - 1st Quarter	1,195	5.5	279	300	100	1st Quarter - 1942	Valuation of Actual Production
	2nd Quarter	1,811	740	475	431	164	2nd Quarter	
	3rd Quarter	2,488	953	728	587	220	3rd Quarter	
	4th Quarter	3,113	1,174	950	738	251	4th Quarter	
	1943 - January	3,192	1,290	896	723	283	January - 1943	
	February	3,438	1,374	955	792	317	February	
	March	3,780	1,526	1,021	893	340	March	
	April	3,991	1,625	1,066	922	378	April	
	May	4,058	1,714	1,038	942	364	May	
Valuation of Schedules	June	4,635	1,974	1,112	1,105	444	June	Valuation of Schedules
	July	5,002	2,177	1,199	1,171	455	July	
	August	5,294	2,296	1,310	1,239	449	August	
	September	5,499	2,453	1,345	1,243	458	September	
	October	5,702	2,599	1,366	1,260	477	October	
	November	5,836	2,723	1,383	1,249	481	November	
	December	5,964	2,836	1,454	1,205	469	December	
	1944 - 1st Half	36,408	17,631	8,665	7,404	2,708	1st Half - 1944	
	2nd Half	36,966	19,004	7,927	6,923	3,112	2nd Half	
1942 Actual Production		25,819	10,148	7,296	6,169	2,206	1942 Actual Production	
1943 Actual plus Schedule		56,391	24,587	14,145	12,744	4,915	1943 Actual plus Schedule	
1943 Required Production		*58,223*	*25,124*	*14,874*	*13,310*	*4,915*	*1943 Required Production*	
Act plus Sched as % of Req Prod.		96.8%	97.9%	95.1%	95.7%	100%	Act plus Sched as % of Req Prod.	
1944 Schedule		73,374	36,635	16,592	14,327	5,820	1944 Schedule	
1944 Required Production		*73,744*	*36,787*	*16,572*	*14,565*	*5,820*	*1944 Required Production*	

Schedules and required production as of June 10 for Aircraft; as of June 1 for ASF items, Navy Ordnance and Signal Equipment, and Merchant Vessels; as of May 25 for Navy Vessels; as of May 1 for War Construction.
(a) Aircraft and Aircraft Munitions; Ground Army Munitions; Navy 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



CONFIDENTIAL

PRODUCTION PROGRESS

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

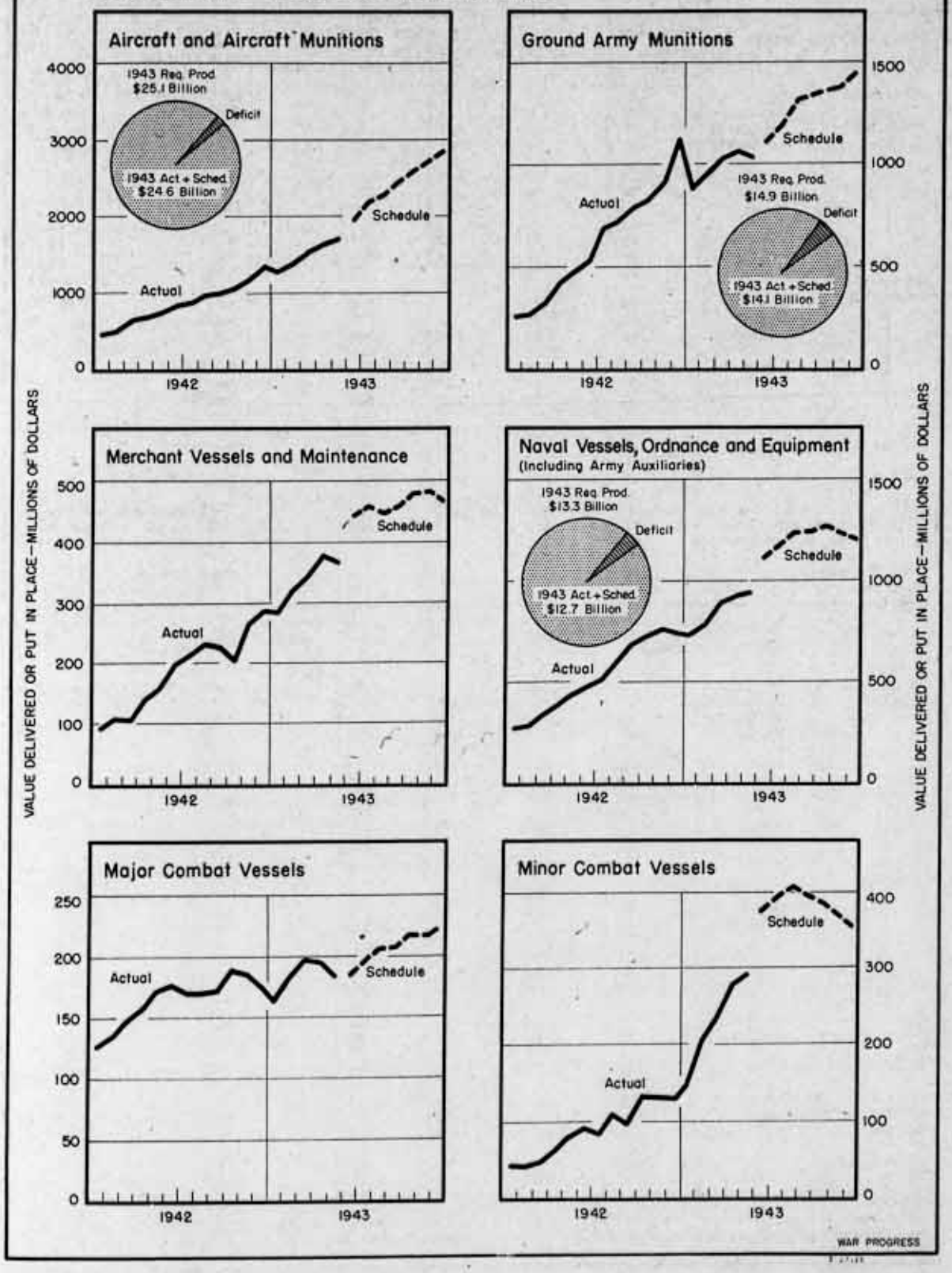
	MONTH OR MONTHLY AV.	Combat Planes	Aircraft Armament	Aircraft Ammunition	Artillery & Equipment	Artillery & Tank Cannon Ammunition	MONTH OR MONTHLY AV.	
Valuation of Actual Production	1942 - 1st Quarter	180	19	34	21	48	1st Quarter - 1942	Valuation of Actual Production
	2nd Quarter	233	29	46	31	81	2nd Quarter	
	3rd Quarter	294	30	62	55	102	3rd Quarter	
	4th Quarter	367	38	76	95	109	4th Quarter	
	1943 - January	361	38	88	105	95	January - 1943	
	February	442	38	80	123	87	February	
	March	513	41	76	120	107	March	
	April	575	42	91	126	95	April	
	May	647	41	88	113	104	May	
Valuation of Schedules	June	757	42	103	106	111	June	Valuation of Schedules
	July	865	44	135	103	122	July	
	August	922	46	131	113	158	August	
	September	1,012	47	126	116	166	September	
	October	1,095	47	122	115	177	October	
	November	1,165	49	116	113	177	November	
	December	1,221	22	122	106	179	December	
	1944 - 1st Half	7,789	345	566	674	1,775	1st Half - 1944	
	2nd Half	8,612	272	494	540	1,717	2nd Half	
1942 Actual Production		3,221	349	653	603	1,020	1942 Actual Production	
1943 Actual plus Schedule		9,575	497	1,278	1,359	1,578	1943 Actual plus Schedule	
1943 Required Production		*9,575*	*516*	*1,561*	*1,356*	*1,743*	*1943 Required Production*	
Act. plus Sched. as % of Req. Prod.		100%	96.3%	81.9%	100.2%	90.5%	Act. plus Sched. as % of Req. Prod.	
1944 Schedule		16,401	617	1,060	1,214	3,492	1944 Schedule	
1944 Required Production		*16,401*	*616*	*1,151*	*1,245*	*3,414*	*1944 Required Production*	

	MONTH OR MONTHLY AV.	Antiaircraft Guns & Equip.	Antiaircraft Ammunition	Small Arms & Infantry Weapons	Small Arms & Infantry Weapon Ammunition	Combat Vehicles	MONTH OR MONTHLY AV.	
Valuation of Actual Production	1942 - 1st Quarter	19	12	17	42	105	1st Quarter - 1942	Valuation of Actual Production
	2nd Quarter	42	22	30	81	147	2nd Quarter	
	3rd Quarter	79	32	39	121	209	3rd Quarter	
	4th Quarter	101	18	51	146	288	4th Quarter	
	1943 - January	119	21	56	175	206	January - 1943	
	February	119	16	56	171	251	February	
	March	124	20	60	192	282	March	
	April	131	25	58	206	293	April	
	May	114	20	57	220	285	May	
Valuation of Schedules	June	127	14	64	238	297	June	Valuation of Schedules
	July	129	18	68	261	323	July	
	August	140	31	77	272	326	August	
	September	148	41	85	277	305	September	
	October	135	43	89	284	313	October	
	November	138	47	94	288	312	November	
	December	125	56	91	340	331	December	
	1944 - 1st Half	762	317	325	2,304	1,559	1st Half - 1944	
	2nd Half	525	316	310	2,289	1,712	2nd Half	
1942 Actual Production		722	254	410	1,169	2,249	1942 Actual Production	
1943 Actual plus Schedule		1,549	352	855	2,924	3,524	1943 Actual plus Schedule	
1943 Required Production		*1,580*	*430*	*805*	*3,214*	*3,611*	*1943 Required Production*	
Act. plus Sched. as % of Req. Prod.		98.0%	81.9%	106.2%	91.0%	97.6%	Act. plus Sched. as % of Req. Prod.	
1944 Schedule		1,267	633	635	4,593	3,271	1944 Schedule	
1944 Required Production		*1,241*	*624*	*670*	*4,635*	*3,261*	*1944 Required Production*	

Schedules and required production as of June 10 for Aircraft; as of June 1 for ASF items. Schedules are used for required production in the case of combat planes.

PRODUCTION PROGRESS

Selected Items—Aircraft, Ground Army, Ships



CONFIDENTIAL

PRODUCTION PROGRESS

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

	MONTH OR MONTHLY AV.	Battleships Cruisers & Carriers	Destroyers	Submarines	Antisubmarine Vessels	Transports (Navy & Maritime)	MONTH OR MONTHLY AV.
Valuation of Actual Production	1942-1st Quarter	60	59	17	43	3	1st Quarter-1942 Valuation of
	2nd Quarter	73	75	20	77	6	2nd Quarter Actual
	3rd Quarter	71	77	23	96	10	3rd Quarter Production
	4th Quarter	79	81	23	128	13	4th Quarter
	1943-January	68	70	25	144	11	January - 1943
	February	76	76	29	205	18	February
	March	96	73	29	229	12	March
	April	85	83	27	273	15	April
	May	78	72	33	291	13	May
Valuation of Schedules	June	76	79	30	373	22	June Valuation of
	July	79	83	34	392	23	July Schedules
	August	82	85	38	401	24	August
	September	85	83	39	393	25	September
	October	88	88	41	384	26	October
	November	90	85	42	368	27	November
	December	94	83	45	350	29	December
	1944-1st Half	622	532	278	1,900	242	1st Half - 1944
	2nd Half	693	511	290	1,508	227	2nd Half
1942 Actual Production		850	876	249	1,031	92	1942 Actual Production
1943 Actual plus Schedule		997	960	412	3,803	245	1943 Actual plus Schedule
1943 Required Production		*997*	*960*	*412*	*3,803*	*245*	*1943 Required Production*
Act. plus Sched. as % of Req. Prod.		100%	100%	100%	100%	100%	Act. plus Sched. as % of Req. Prod.
1944 Schedule		1,315	1,043	568	3,408	469	1944 Schedule
1944 Required Production		*1,315*	*1,043*	*568*	*3,408*	*469*	*1944 Required Production*

	MONTH OR MONTHLY AV.	Landing Vessels	Industrial Facilities	Aircraft Fields & Bases	Clothing & Personal Equip.	Automotive Vehicles & Equip.	MONTH OR MONTHLY AV.
Valuation of Actual Production	1942-1st Quarter	2	352	50	98	134	1st Quarter-1942 Valuation of
	2nd Quarter	7	512	108	142	184	2nd Quarter Actual
	3rd Quarter	84	662	219	178	211	3rd Quarter Production
	4th Quarter	141	639	169	203	193	4th Quarter
	1943-January	80	622	112	221	173	January - 1943
	February	67	587	114	208	181	February
	March	91	557	111	227	204	March
	April	49	487	113	211	227	April
	May	67	442	93	186	234	May
Valuation of Schedules	June	70	351	83	191	254	June Valuation of
	July	76	302	87	185	295	July Schedules
	August	77	268	83	173	304	August
	September	81	253	81	178	321	September
	October	81	239	82	171	327	October
	November	82	216	74	166	321	November
	December	82	176	62	200	255	December
	1944-1st Half	591	1,160	335	1,143	1,381	1st Half - 1944
	2nd Half	549	990	290	1,182	1,348	2nd Half
1942 Actual Production		702	6,492	1,640	1,864	2,168	1942 Actual Production
1943 Actual plus Schedule		903	4,500	1,095	2,317	3,096	1943 Actual plus Schedule
1943 Required Production		*903*	*4,500*	*1,095*	*2,362*	*3,144*	*1943 Required Production*
Act. plus Sched. as % of Req. Prod.		100%	100%	100%	98.1%	98.5%	Act. plus Sched. as % of Req. Prod.
1944 Schedule		1,140	2,150	625	2,325	2,729	1944 Schedule
1944 Required Production		*1,140*	*2,150*	*625*	*2,398*	*2,909*	*1944 Required Production*

Schedules and required production as of June 1 for Clothing and Automotive Vehicles; as of May 25 for Navy Vessels; as of May 1 for Construction. Estimates for Aircraft Fields and Bases exclude overseas military construction. 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)

June – Another "Slow" Month in War Production

Scorecard on Merchant Shipping

Number 147 July 9, 1943

$6,000,000,000-a-Month Standstill

War output in June is again "slow," as modest increase in munitions barely offsets drop in construction. Riots, floods, hot weather retard operations.

FOR THREE MONTHS now, overall output has been on a plateau.

Last month, munitions production—at $5,100,000,000 (preliminary)—was up a modest 3% over May. But May, itself, showed no increase over April. And this marks the first time since the war program got under way that a "slow" month has not been followed by a fairly sharp increase. In relation to schedule, munitions fell 9% short of the first-of-the-month mark.

RIOTS, HEAT, FLOODS

War construction canceled the small gain in munitions, declining—as scheduled—to $900,000,000 (chart, page 5). And total munitions and war construction at $6,000,000,000—just about the same as in April and May—lagged 8% behind schedule.

Last month's unimpressive showing was undoubtedly influenced in part by the riots in Detroit and on the West Coast; by warm weather; by floods. But there is no blinking the fact that gains seem increasingly harder to make—this, in the face of steeply rising schedules.

AUGURY OF DIFFICULTY

From January to February, from February to March, and from March to April, gains in output, as a whole, ranged around $200,000,000 a month or higher. Since then, however, as the following table suggests, ordnance plants, shipyards, and plane factories have been unable to make up for the declining trend in construction:

	Munitions & Construction	Munitions
	(millions)	
January.....	$5,293	$4,045
February.....	5,476	4,274
March.....	5,852	4,662
April.....	6,057	4,953
May.....	5,994	4,954
June (prelim.).	6,000	5,100

This inability of production to climb during these two months is an augury of difficult days ahead in meeting schedules: Munitions output in the first six months of 1943 averaged $4,665,000,000 a month; but to make schedules from this point on, the monthly average must rise to $6,517,000,000. That would be 40% above the monthly average in the first half and 28% above the June rate of output (chart, page 3).

Biggest job will come in planes. At $771,000,000, June acceptances managed to edge into new high territory. But for the last half of the year, monthly average of plane acceptances must rise to $1,180,000,000. That's 86% higher than the January-June average and 53% above June.

In other major munitions groups, expansion requirements, though not so large, are still formidable; monthly average production in the last half must rise as follows to meet schedule:

	Required Increase Over 1st Half	June
Naval vessels, ordnance & equipment.	40%	24%
Merchant vessels & maintenance.....	35	19
Ground army munitions.	33	27

Within ground army munitions, the big jump is in ground signal equipment —which reflects the steep schedule for radar devices.

Aircraft

Last month's airplane showing was the poorest since January, when production slumped sharply after the high end-of-the-year cleanup in December.

Whereas, in each month since January, increases in airplane acceptances on a weighted basis ranged from 10% to 17%, last month the gain was between 3% and 4%. And production fell short of the W-4 schedule by 10%.

In all, 7,058 planes were accepted in June (excluding 36 targets and Drones), only 43 more than in May and 9% under schedule. But some 350 additional planes that rolled off assembly lines were not accepted for one reason or another. And July ought to get the benefit of these unaccepted, but almost-completed, planes. In fact, this has already been reflected in acceptances during the first few days of July.

A wide variety of production difficulties dogged manufacturers.

Boeing's Flying Fortress output was held up by labor shortages. Grumman had to concentrate on making up its spares quota for the Navy—at the expense of completed Wildcat IIs (F6F); deliveries of Consolidated Vultee PB2Y patrol bombers were stymied by faulty self-sealing fuel tanks; Bell's output of Airacobras (P-39s) was hampered by imperfect landing gear components; production of the North American Mustang (P-51) was cut because of inability to obtain 2-stage Packard-Merlin engines; and both Republic plants failed to turn out the expected number of P-47 Thunderbolts because of a change-over to a new type of turbo-supercharger. And absenteeism, attributable to the Detroit riot, is estimated to have caused a loss of a half-day's production of planes, engines, and parts in that highly concentrated industrial area.

BOMBERS BALK

However, four-engined bomber output last month pushed into new high ground. But, for the first time this year, bombers as a group failed to gain over the previous month. Patrol bombers and 2-engined light bombers were the weak spots. As a whole, bomber output was 11% behind schedule, which, while recently cut back, still requires big increases.

SOME ARE UP

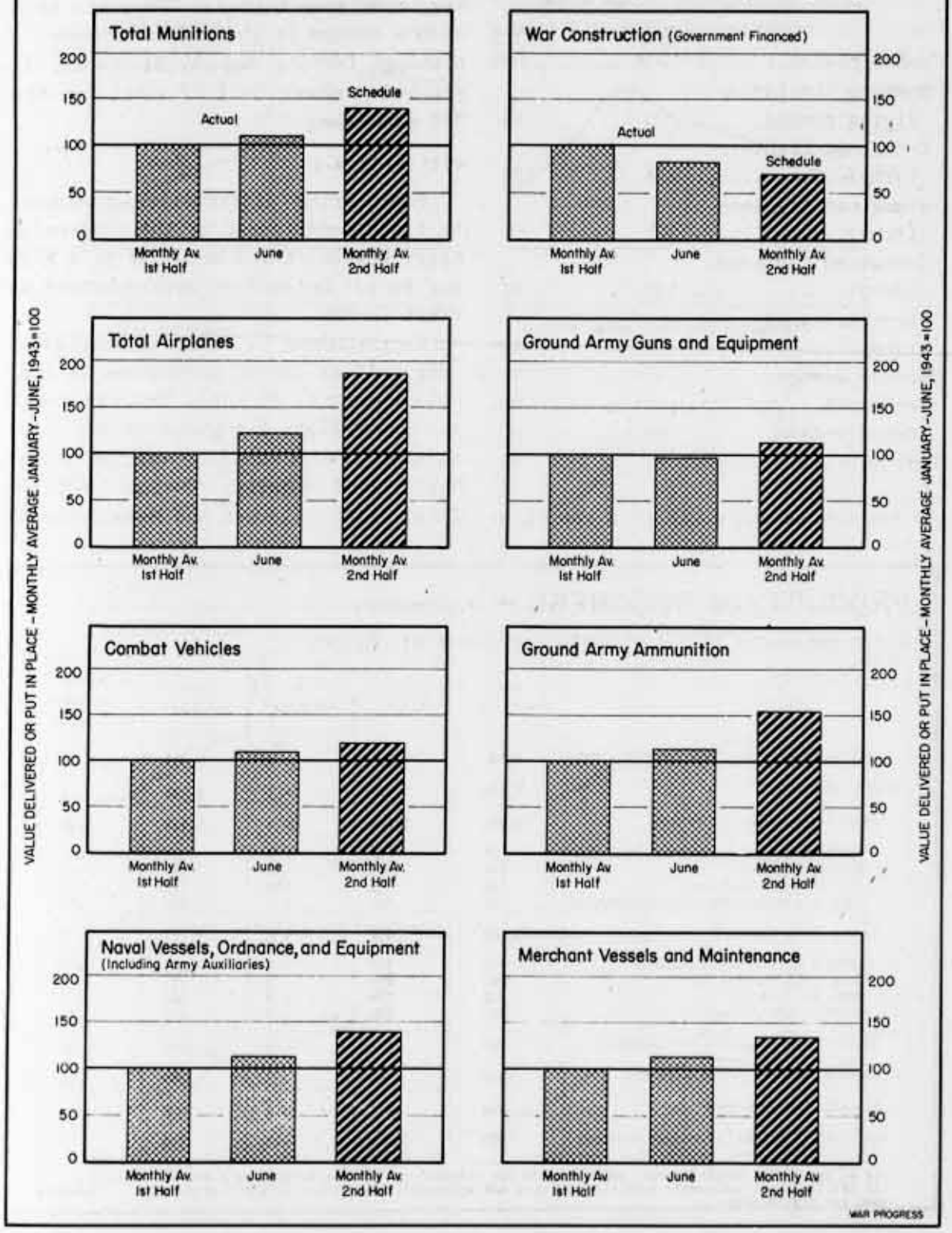
Several types of planes scored wide gains over May. But such increases were almost entirely due to comparisons with poor performances during that month. For example, the 2-engined Lightning fighter (P-38) snapped out of its May slump, scoring a gain of 114% and beating schedule by 30%. Operation of the company's new mechanized assembly line helped to speed production; installation of this same assembly line was a retarding factor during May.

June results by major types of planes,

IN THIS ISSUE:

MIDYEAR INVENTORY OF JOB AHEAD

Average monthly output of munitions in second half must be 40% higher than in first half to meet 1943 schedule; greatest increase is required in airplanes (86%).



figured on a weighted basis, were as follows:

	June Acceptances as % of	
	May	W-4
Combat planes.....	103%	88%
Bombers (including flying boats).....	100	89
2-engined fighters (Army).....	214	130
1-engined fighters (Army).....	102	80
1-engined fighters (Navy).....	116	86
Reconnaissance (Navy).....	90	69
Service combat.....	108	93
Transport.....	109	93
Communication.....	88	95
Trainers.....	96	99

For the second month in a row, Liberator production exceeded that of Flying Fortresses—403 to 333. And if Ford at Willow Run had measured up to recent performances, the showing would have been even better. (Ford was held up by a change in the B-24's armament.) Although topping May by 31 planes, 4-engined bombers fell 72 short of the 808 scheduled.

MOST MISS W-4

Engineering difficulties continued to block acceptances of the long-range heavy bomber (twice as heavy as a Flying Fort); deliveries were supposed to start in May.

Over at Glenn L. Martin in Baltimore, only half of the 60 Baltimores (A-30s) came through as planned. That was enough to throw light 2-engined bomber production 12% off schedule and 33% behind May's good showing. During June, the first A-26, a larger and more powerful

PRODUCTION PROGRESS — Preliminary

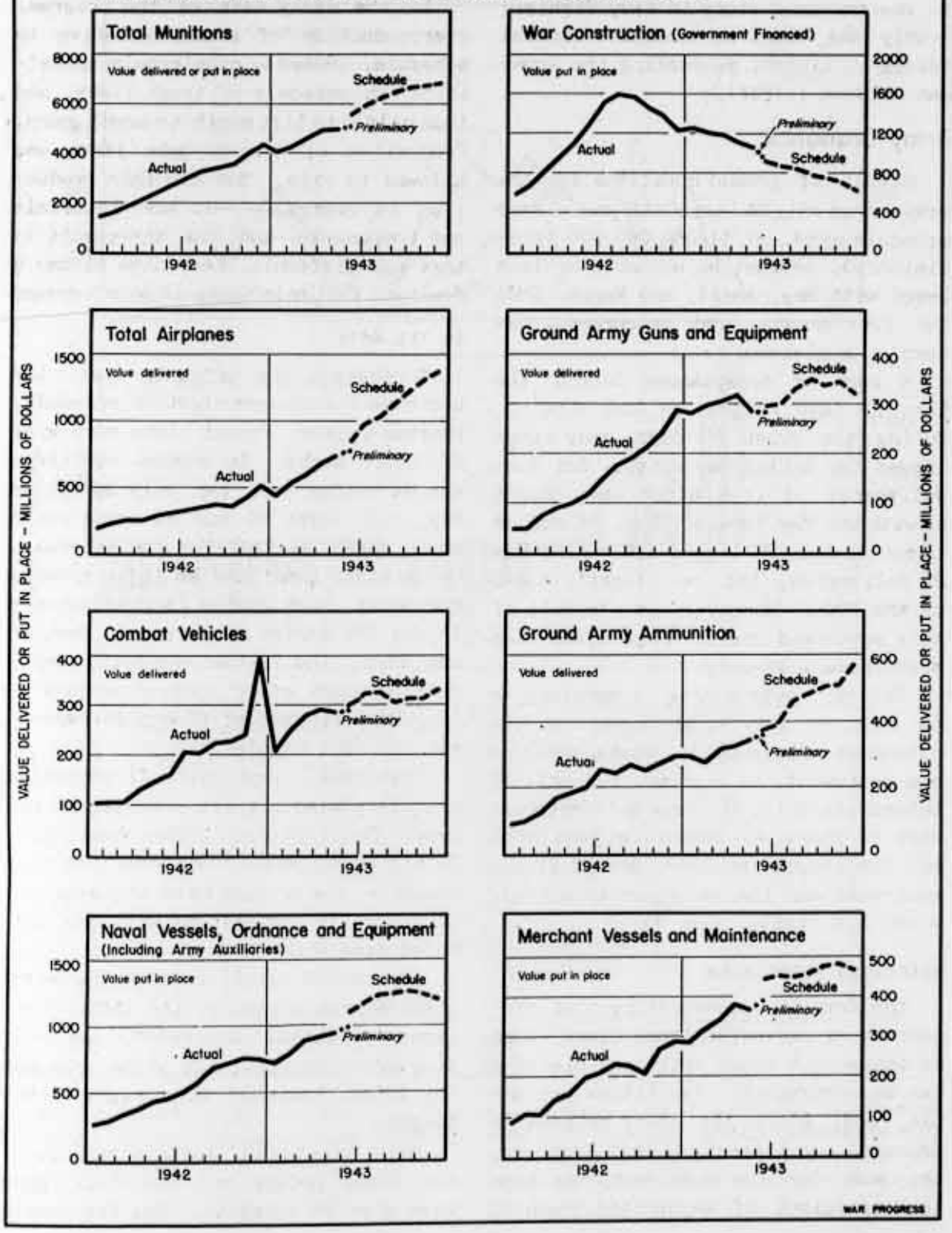
Value delivered or put in place — millions of dollars.

	June Preliminary	May Actual	% Change	June Schedule*	% Deviation June Prelim. vs. Schedule
TOTAL MUNITIONS AND WAR CONSTRUCTION	6,000	5,994	0	6,491	- 8
TOTAL MUNITIONS	5,100	4,954	+ 3	5,591	- 9
Aircraft and Aircraft Munitions	1,780	1,714	+ 4	1,974	-10
Airplanes	771	746	+ 3	864	-11
Aircraft Ordnance	126	129	- 2	145	-13
Aircraft Signal Equipment	155	137	+13	155	0
Other (spares, equipment and maintenance, etc)	728	702	+ 4	810	-10
Ground Army Munitions	1,060	1,038	+ 2	1,112	- 5
Combat Vehicles and Equipment	318	308	+ 3	323	- 2
Guns and Equipment (a)	284	284	0	297	- 4
Army Ammunition	358	344	+ 4	363	- 1
Ground Signal Equipment	100	102	- 2	129	-22
Naval Vessels, Ordnance and Equipment (incl. Army Auxiliaries)	990	942	+ 5	1,105	-10
Merchant Vessels and Maintenance	390	364	+ 7	444	-12
Miscellaneous Munitions	880	896	- 2	956	- 8
WAR CONSTRUCTION (Government Financed)	900	1,040	-13	900	†

*As of May 25 for Naval Vessels; as of June 10 for Aircraft and Spares; as of June 1 for all others. (a) Artillery and equipment; anti-aircraft guns and equipment; small arms and infantry weapons. †Schedule used for preliminary.

MUNITIONS UP, CONSTRUCTION DOWN; NET GAIN: NIL

Overall war output barely holds May level, despite moderate advances in airplanes, ordnance, naval and merchant ships; all groups lag behind schedules.



edition of the versatile Boston, was delivered by Douglas' El Segundo plant.

In 1-engined army fighters, only the Curtiss Warhawk (P-40) was on schedule. It was the same story in navy fighters —only one plant on schedule: General Motors at Linden, assembling the Grumman Wildcat I (F4F).

Army Ordnance

Output of ground munitions for the Army was up only 2% last month and missed schedule by 5%. At $1,060,000,000 (preliminary), production was more or less level with May, April, and March. Thus for four months Army procurement has been on a plateau.

A rush of acceptances during the last 10 days helped the June showing. During the first 20 days, many items lagged far behind May output. But then deliveries of item after item caught up with the May finals. Thus, M4 medium tanks on June 20 lagged 17% behind May 20 deliveries, but ran slightly ahead on the 30th. Moreover, as a result of this month-end spurt, item after item met schedule exactly.

Indeed, outstanding commentary to be made on Army procurement was the closeness of scheduling. Combat vehicles and equipment, as a group, ran only 2% behind schedule; all guns and equipment were 4% short; all ammunition just about hit the target. However, ground signal equipment was the exception to the rule —off 22% (table, page 4).

REGULATED PRODUCTION

The Army is demonstrating that production of old-established items—such as tanks and major artillery pieces—can be controlled. Facilities are ample, and, since the sharp cutback in ordnance requirements of last November, the job, for the most part, has been to keep output of major items down to schedule. And this, as the results show, has been accomplished fairly well. But it has its drawback; it prevents making big month-to-month gains.

In the early days of the program, overproduction of items, relative to schedule, tended to counterbalance deficits in schedule of tough items, and thus helped to lift month-to-month gains. Production of easy-to-make items was allowed to rise. But now this production is controlled—to save materials and components—and the net result is that new difficult items have become a dominant factor in month-to-month changes.

ON THE NOSE

Throughout the ordnance list, the backbone pieces were right on schedule, whereas the more recent items were wide of their marks. In combat vehicles, the M4 medium tank ran only 3% behind May, but light M3 and M4 tanks ran a shade ahead of both May and schedule. On the other hand, the M8 light armored car—only four months in production—lagged 58% behind the forecast. Another new item, the 7½-ton air-borne tank, came through after several months of laggard performance: 55 were delivered, against 42 scheduled.

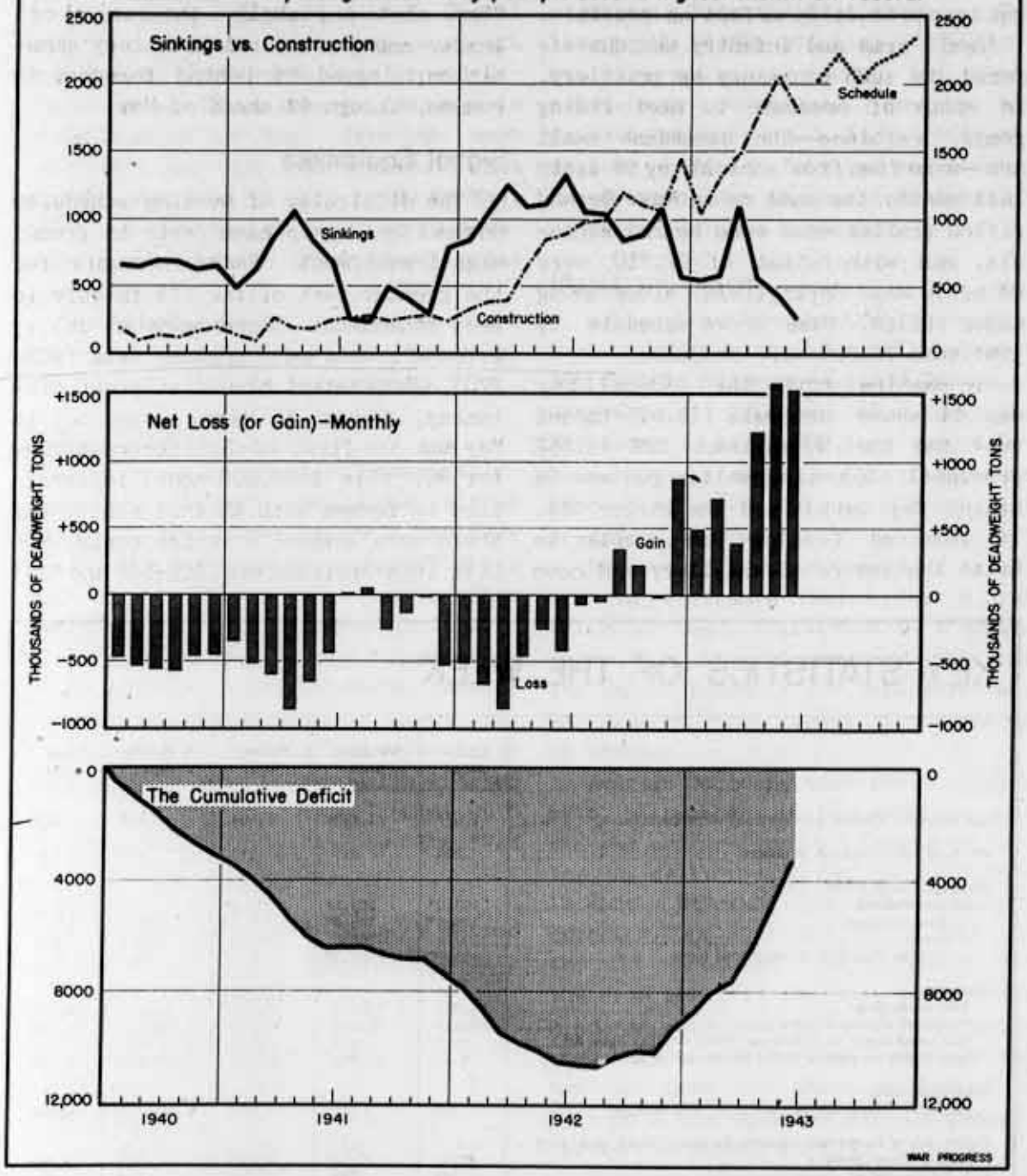
Principal items of self-propelled artillery also hit the schedule on the nose; for instance: 105mm. howitzers, 3-inch guns, 75mm. howitzers. In this instance, the program is on the decline, so naturally comparisons with May produced some minus signs.

In wheeled artillery, too, the major items were on schedule: the 155mm. howitzer, with 121 delivered, was only four under forecast; the 155mm. gun and the 105mm. howitzer were right on the target.

Main pieces in antiaircraft guns, the 40mm. Bofors and the 90mm. guns were also on schedule. But the newest

SCORECARD ON MERCHANT SHIPPING

Lowest sinkings in nearly two years indicate United Nations success against U-boats. June construction, though under May peak, is second highest month on record.



DURING JUNE, NEW MERCHANT SHIP CONSTRUCTION EXCEEDED LOSSES BY 1,500,000 DEADWEIGHT TONS, AND THE UNITED NATIONS MERCHANT FLEET IS BACK TO EARLY 1941 STRENGTH. SINKINGS ARE DOWN TO THE LEVEL OF AUGUST 1941, A PERIOD IN WHICH THE UNITED STATES WAS NOT YET IN THE WAR; HENCE, A PERIOD IN WHICH THE AXIS HAD FEWER ENEMY SHIPS TO TORPEDO. ANOTHER TWO MONTHS OF FLEET ADDITIONS AT THE MAY-JUNE RATE, AND MERCHANT TONNAGE WILL BE BACK TO WHAT IT WAS IN MID-1940—THE TIME OF THE FALL OF FRANCE.

and biggest antiaircraft weapon, the 4.7-inch mobile gun, was ahead of schedule—35 against 30. In May, 21 units were turned out. Here, the idea is to get into production as fast as possible.

Small arms and infantry weapons offered no such constancy as artillery. In spite of pressure to meet rising goals, carbines—the ascendant small arm—were down from schedule by 9% again, last month, the same as in May. Garand rifles trailed even more behind schedule, and with output of 92,750, were 2% below May. Springfield, alone among major rifles, rose above schedule by 12%: some 75,850 were produced.

In machine guns, the .30-caliber was 6% above schedule (15,615 turned out) and the .50-caliber, 22% (4,862 produced); but the smaller gun was 1% behind May output and the larger, 8%. It remained for the 81mm. mortar to ditto the record of artillery and come in exactly on schedule with 630, or 13% less than the previous month.

Ammunition was only 1% short of dollar schedule, up 4% over May. However, 75mm. shot and shell, the numerical leader among principal artillery ammunition, lagged 7% behind forecast in rounds, though 5% ahead of May.

Signal Equipment

The difficulty of meeting schedules on new items again came forth in ground signal equipment. Radar accounts for the greater part of the 22% failure to meet schedules. There were no deliveries of ground warning radar sets (SCR-270), which detect planes at great distances, though 35 were turned out in May and the first-of-June forecast called for 30; this $100,000 model is scheduled to resume with 23 this month. But there were several brighter spots. Mobile interception sets (SCR-527 and 627)

KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program – Checks paid (millions of dollars)	1,637	1,850	1,604	1,418	829
War bond sales (millions of dollars)	209	217	117	297	139
Wholesale prices (1926 = 100)					
All commodities	103.0p	103.1p	103.9p	101.2	98.5
Farm products	125.9p	126.2p	126.3p	115.4	104.9
Foods	107.6	108.0	110.6	104.2	99.3
All other than farm products and foods	96.9p	96.9p	96.9p	96.2	96.1
Petroleum:					
Total carloadings	59,961	58,239	54,267	46,157	54,691
Movement of cars into the East	32,218	31,191	28,886	22,712	24,024
East coast stocks for civilian use (1940-41=100 Seas. Adj.)	31.5	29.5	25.6	41.2	51.7
Total stocks of residual fuel oil (thousands of barrels)	n.a.	67,960	67,461	72,881	76,903
Bituminous Coal:					
Production (thousands of short tons, daily average)	767	2,017	1,990	1,714	1,888
Exports (no. of freight cars unlooded for export Friday, excl. grain)					
Atlantic Coast ports	2,192	2,162	2,314	963	1,360
Gulf Coast ports	350	354	340	271	607
Pacific Coast ports	1,260	1,305	1,344	723	600
Unused steel capacity (% operations below capacity)	3.4	9.7	2.5	3.0	3.0
Department store sales (% change from a year ago)	+ 39	+19	+2	+5	−2

n.a. not available p. preliminary

more than doubled May's output. Control equipment (SCR-573) passed May by one-third, with 40 sets produced, but made only one-third of its schedule.

All radar equipment under Signal Corps procurement (including aircraft and fire-control as well as ground-to-air) was up 2% in June as compared to a 7% decline in May. Even so, such equipment was 30% under schedule last month, compared to 23% below in May. Fire control radar came closer to meeting June schedules than other radar equipment.

Aircraft signal equipment—apart from ground—was about on schedule, increasing 13% over May output.

Naval Ships

Completion of the 45,000-ton battleship "New Jersey" last month lifted naval tonnage delivered to a new peak of 217,600 displacement tons—7% above May. On an estimated value-put-in-place basis the increase is somewhat less.

Despite the "New Jersey," June deliveries were 12% under schedule. Indeed, for the second successive month, all groups of naval vessels fell below forecast (but landing craft nearly reached the goal). And only major combat ship deliveries—due largely to the "New Jersey"—were above May:

	Deliveries (Tons)	% Change from May	% Behind Schedule
Major combats	99,100	+41%	-11%
Minor combats	52,900	-3	-15
Landing ves..	47,600	-3	-1
Auxiliaries & transports..	18,000	-39	-31
Total.....	217,600	+7	-12

Besides the "New Jersey," major vessels completed in June were the 11,000-ton aircraft carrier "Monterey," the 13,000-ton cruiser "Boston," 10 destroyers (compared with 13 in May), and six submarines (4 in May).

Among antisubmarine vessels, destroyer escorts made the best showing. Delivery of 22 DEs totaling 28,000 tons not only set a new record, but topped schedule by two vessels. However, the gunboat program still lags. Only one of four scheduled frigates and none of 6 corvettes (due for completion in Canadian yards) was delivered.

Merchant Ships

Deliveries of merchant ships slipped back a bit last month. Deliveries of 161 vessels aggregated 1,674,000 deadweight tons. This was 6% behind the May record of 1,786,000 tons and 4% behind schedule, and it was the first time since March that output did not meet or exceed the forecast.

Because of the good record of standard cargo vessels (which have a high value per ton), deliveries on a dollar basis were only 1% short of May; the lag behind schedule on this basis was 5%, however—just about the same as by tonnage.

Average building time for a Liberty ship, bellwether of the program, was reduced again—from 56.7 days (keel laying to delivery) in May to 55.1 days in June. Nevertheless only 115 were accepted, as against 120 in May and the 121 scheduled. Major reasons for the drop were (1) the heat wave, which hindered outdoor work, especially welding, in southern and east coast yards; and (2) some new shipways failed to come up to the expected rate of productivity (WP-June18'43,p1).

Standard dry-cargo vessels (which take longer to build than other items on the Maritime Commission program) came up to schedule. On the other hand, ocean-going tankers and minor-type ves-

MAGNESIUM FOR MAGNESITE

AN EXAMPLE of Anglo-American integration:

Heretofore, the United States has shipped magnesite to Great Britain to maintain operations of a plant making 1,000,000 pounds of magnesium a month.

But (1) magnesite takes up twice the cargo space of magnesium; and (2) the United States now has more magnesium than it can immediately use. So, hereafter this country will ship magnesium instead of magnesite, and Britain will close down part of its magnesium facilities.

Overall result: greater utilization of combined resources.

sels, which made excellent showings in May, lagged in June. Twelve tankers were expected but only 11 were delivered, against 15 in May. Thirteen minor-type vessels were completed (8 coastal cargo ships, 3 coastal tankers, and 2 ore carriers)—10 below schedule and 7 less than in May. The first corvette of the hundred to be built by the Maritime Commission was scheduled for June but was not delivered.

The chief month-to-month changes in Maritime Commission production were as follows:

	June Deliv. (Dwt. tons)	% June Sched.	% May Prod.
All M.C. ves..	1,674,000	96%	94%
Liberties.....	1,242,000	98	96
Ocean-going tankers.....	182,000	92	74
Standard dry cargo.....	175,000	100	145
Minor types...	58,500	72	53
Military types (ex. corvettes)	6,700	100	50

Reversal in Magnesium

Although consumption of once-critical metal has increased 50-fold since 1939, production has outpaced it; new uses sought for 89,000,000-pound ingot surplus.

AS FAR BACK AS 1939, magnesium was a critical material; it was the second U.S. metal to be placed under mandatory priorities—1941—(aluminum was the first).

As recently as last year, a shortage of magnesium was forecast for this year. Yet, today, a surplus of as much as 89,000,000 pounds of ingot magnesium over requirements is indicated in the coming six months.

LOOKING FOR TAKERS

As a result, new uses are being sought to take up the slack. A few months ago, WPB asked all the claimant agencies to submit new requirements based upon the enlarged supply of magnesium ingots.

At the outset of the defense program, the U.S. had only one producer of magnesium—the Dow Chemical Company—and, in view of magnesium's use (in structural form) in aircraft and incendiary bombs, and (in powder form) in the manufacture of tracer bullets, flares, signals, etc., a tremendous expansion in productive capacity was set in motion. But in the course of time, expectations in some of these items—especially incendiary bombs—were revised downward, and the use of magnesium in aircraft construction was not so extensive as originally anticipated.

50 TIMES '39

Nevertheless, consumption of magnesium has risen steeply—this year it will be 50 times that of 1939; and if you include the magnesium that goes into the pipelines of fabricating plants, consumption will be 55 times that of

1939. But production has gone up even faster—it is expected to be 65 times the 1939 output, viz.:

	Production	Consumption
	(000 pounds)	
1939.....	6,700	6,450
1940.....	12,491	11,155
1941.....	36,275	31,211
1942.....	105,861	88,713*
1943 Est..	434,939	318,000*

* Shipments of fabricated products converted to an ingot basis.

Largest use is in aircraft (about 36% of 1943 requirements), with chemical warfare—incendiary bombs—next:

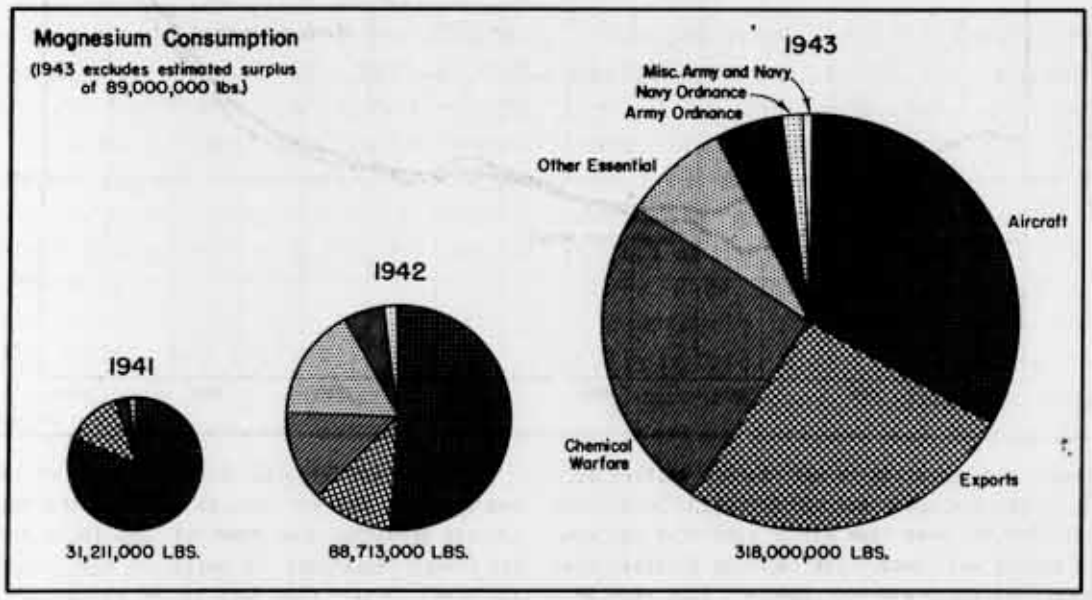
Use	Consumption 1941	1942	1943*
	(000 pounds)		
Aircraft.....	25,472	45,256	105,000
Army ordnance...	1,012	5,289	17,000
Chemical warfare	15	11,411	79,000
Navy ordnance...	284	1,775	5,000
Other army & navy.....	-	77	2,000
Other essential.	145	14,573	26,000
Exports.....	4,283	10,332	84,000
Total.....	31,211	88,713	318,000

* Estimated.

In seeking outlets for the indicated excess production, WPB does not expect any immediate broad substitution of

WHERE THE MAGNESIUM GOES

Use in chemical warfare 5,000 times larger this year than in 1941, rising from .04% to 25% of total consumption. Aircraft needs, though 4 times 1941's, drop to 33% of total, as compared with 82% two years ago.



A TINY INDUSTRY IN 1939 (ONLY 3,350 TONS WERE TURNED OUT), MAGNESIUM PRODUCTION HAS MUSHROOMED TO 65 TIMES THAT SIZE. CONSUMPTION KEPT PACE THROUGH 1942, BUT WILL FALL BEHIND OUTPUT IN 1943. RESULT: SURPLUS MAGNESIUM IN THE SECOND HALF WILL BE ABOUT 89,000,000 POUNDS, A TIMELY SUBSTITUTE FOR SCARCER METALS, PARTICULARLY ALUMINUM. BIGGEST USERS ARE AIRCRAFT, CHEMICAL WARFARE; BUT TO WHAT USES ADDITIONAL MAGNESIUM MAY BE PUT IS AN UNKNOWN QUANTITY, WHICH DEPENDS ON LABOR AND EXPANSION OF FINISHING FACILITIES.

magnesium for other metals in airplanes. Magnesium is 35% lighter than aluminum and one-fourth as heavy as steel—in other words, one pound of magnesium goes as far as 1½ pounds of aluminum and 4 pounds of steel. Its large-scale use would require redesign of combat planes. But new and increased uses of magnesium have been developed by the aircraft industry:

1. Within 90 days, about 75% of all combat aircraft wheels will be made of magnesium-base alloy, instead of aluminum: this is more than a mere substitution, it is expected to decrease the possibility of "brake freezing."

2. Magnesium will be used in gun turrets of planes.

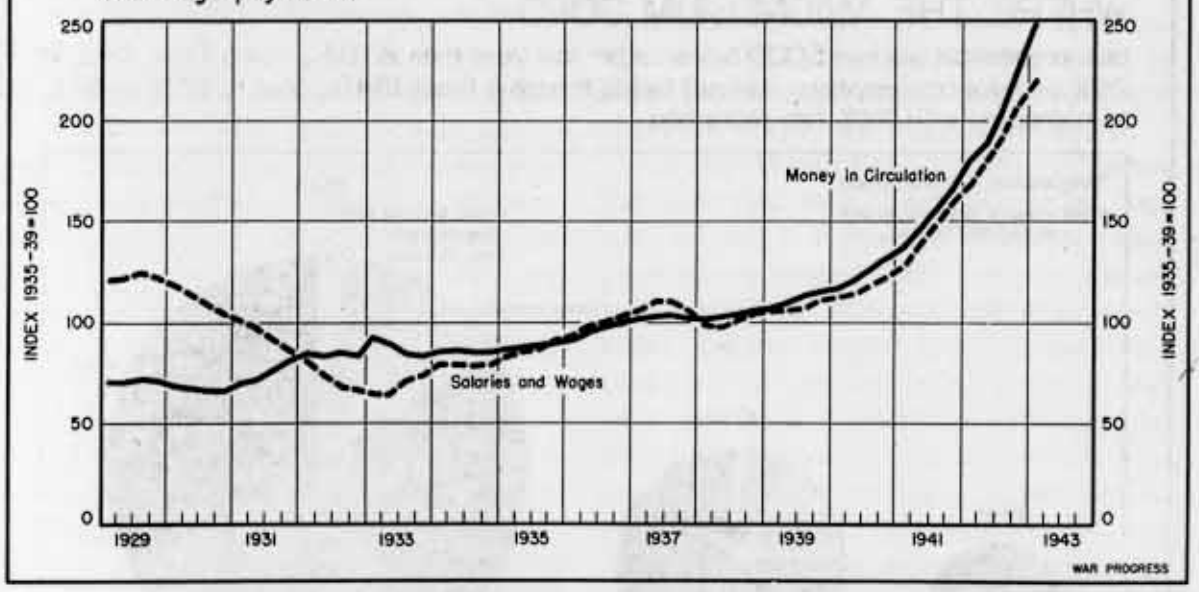
3. More of it will be used in airplane-engine carburetors.

4. Magnesium may soon be used in training planes.

Many other new uses are in the offing. But WPB has had to warn claimant agencies of shortages in finishing capacity and in labor. Although today there is a generous margin of capacity available for castings, for example, the situation in sheet, strip, and plate is tight, and if new requirements were

MONEY MOVES WITH THE PAY ENVELOPE

Increase of currency in circulation to record levels correlates closely with salary and wage payments.



CURRENCY IN CIRCULATION IN MAY REACHED ANOTHER ALL-TIME HIGH, EXCEEDING $17,000,000,000. THIS WAS $5,000,000,000 MORE THAN MAY OF LAST YEAR AND MORE THAN DOUBLE MAY, 1940. (AN INCREASE OCCURRED DURING THE LAST WORLD WAR TOO; CURRENCY ROSE FROM $3,000,000,000 IN 1915 TO $5,000,000,000 IN 1918.)

THE RISE THIS TIME HAS BEEN GOING ON EVER SINCE THE DEPRESSION OF 1937-38, AND IT IS ASSOCIATED, IN THE MAIN, WITH THE INCREASE IN INDUSTRIAL PRODUCTION AND THE ACCOMPANYING EXPANSION IN SALARIES AND WAGES AND FARM INCOME.

BUT OTHER INFLUENCES HAVE BEEN AND ARE AT WORK:

1. BANKS ARE IMPOSING SERVICE CHARGES ON CHECKING ACCOUNTS AND PAY SMALLER RATES OF INTEREST ON SAVINGS DEPOSITS THAN FORMERLY, SO THERE ARE NOT THE FORMER INCENTIVES TO BUILD UP BANK ACCOUNTS, AND MONEY DOESN'T FLOW BACK TO THE BANKS.

2. LOW-INCOME GROUPS, NOW GETTING A LARGER SHARE OF THE NATIONAL INCOME THAN FORMERLY, CONTINUE TO GET ALONG WITHOUT BANK ACCOUNTS.

3. WARTIME POPULATION SHIFTS HAVE RESULTED IN THE DISRUPTION OF BANKING CONNECTIONS.

4. THE WAR HAS GENERATED FEARS OF INFLATION AND INSPIRED CURRENCY HOARDING.

to be concentrated in the latter forms, a bottleneck in such facilities could easily develop.

This is how monthly requirements now compare with finishing capacity expected to be in place at the end of the year—obviously the margins of spare capacity are limited, and in many cases would be insufficient if the full 89,000,000-pound surplus is to be processed:

Finishing Facilities	Capacity	Requirements	% Margin
	(000 pounds)		
Sheet, strip & plate.....	665	632	5%
Extrusions...	440	350	23
Forgings.....	140	113	19
Sand castings	10,321	8,466	18
Permanent molds.....	1,079	430	60
Die castings.	868	468	46

Labor shortages place an additional limitation upon finishing facilities. For example, four plants making sand castings for Pratt & Whitney are held to a monthly output of 775,000 pounds—due to lack of labor—although facilities in these plants should permit monthly production of 1,175,000 pounds of castings.

DRAFT, WAGES, AND SULPHUR

Magnesium's labor problem is threefold: (1) the draft—as a new industry few of its workers had been on the job long enough to qualify for deferment on the basis of indispensability, and women now constitute 25% of the labor forces; (2) wages were frozen at low levels; and (3) the unpleasant nature of magnesium-casting work—the terrific heat and the constant fumes of sulphur (sprinkled on the surface of castings to prevent fires) make it hard to hold labor.

In contrast to these handicaps, the industry's raw material supply is quite comfortable—about 77% of total magnesium output comes from sea water, 17% from dolomite, and 3% from magnesite, with the balance coming from experimental processes.

LABOR PROBLEM REMAINS

To sum up: magnesium has plenty of raw materials, plenty of ingot capacity, but labor and finishing facilities are potential bottlenecks. However, before construction of finishing facilities can be started, firm requirements for specific shapes, forms, and sizes must be set. Nor is that the end. After the new finishing facilities are in place, the labor problem will be that much more troublesome.

REPORTS ON REPORTS

Miners' Minds

Interviewers, sent to Eastern coal mining regions, found (1) universal loyalty to the union and to John L. Lewis, (2) dislike of the War Labor Board, (3) divided opinions on the President, (4) general understanding and support of the war; they also found that miners were demanding increased wages to compensate for higher costs, especially in food. These are the tentative conclusions of *Some Attitudes Expressed by Miners in Eastern Coal Mining Areas* (confidential; pp.8).
(Office of War Information, Surveys Division)

Help Wanted

At least 3,600,000 people must be mobilized between now and July, 1944, for war industries and the armed services, according to *Manpower Requirements, January 1943—July 1944* (pp. 8). The report outlines the problems which

must be overcome in transferring workers, recruiting additional men and women, and distributing (to best advantage) the nation's labor force.
(War Manpower Commission, Bureau of Program Requirements, and Department of Labor, Bureau of Labor Statistics)

Transportation Troubles

Further tightening of gasoline distribution is recommended by *Domestic Transportation* (confidential; pp. 13). The report analyzes the difficulties resulting from increased freight and passenger traffic on railways, motor carriers, and inland waterways, and recommends steps for increasing gasoline supplies—key to the transportation pinch.
(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

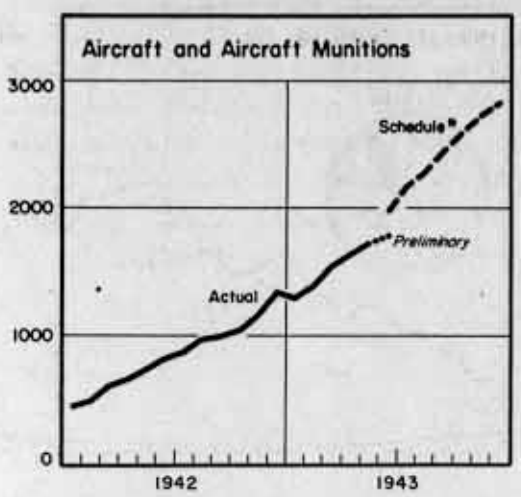
Federal Finance - Income - Labor Force - Labor Turnover

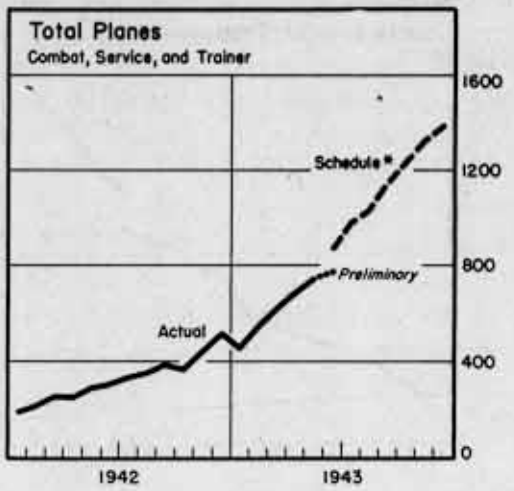
	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
FEDERAL FINANCE (GENERAL FUND)							
Expenditures - Total (billion dollars)	8.3	7.4	7.5	6.5	4.5	.9	1.3
War	7.5	7.1	7.0	5.8	3.8	.1	-
Nonwar	.8	.3	.5	.7	.7	.8	1.3
Revenues - Total	4.6	1.5	1.5	2.7	2.5	.6	.8
Income Taxes	3.8	1.0	1.0	2.0	2.1	.4	.5
Other	.8	.5	.5	.7	.4	.2	.3
War Bond Sales	.9	1.3	1.5	1.0	.6	-	-
"E"	.7	1.0	1.0	.7	.4	-	-
"F" and "G"	.2	.3	.5	.3	.2	-	-
Net Debt	127.2	123.2	117.2	97.6	69.4	37.6	33.9
INCOME PAYMENTS - TOTAL (million dollars)	11,132p	11,215	11,222	10,593	8,799	5,515	5,772
Salaries and Wages	8,169p	8,047	7,918	7,463	6,390	3,752	3,969
Mfg., mining, agric., constr.	6,370p	6,280	6,173	5,998	5,351	3,042	3,324
Government	1,795p	1,760	1,734	1,441	981	535	492
Military	834p	819	810	606	263	35	33
Nonmilitary	961p	941	924	835	718	500	459
Other	4p	7	11	24	58	175	153
Other income payments	2,963p	3,168	3,304	3,130	2,409	1,763	1,803
Income payments, annual rate (adjusted for seasonal, billion dollars)	230.8p	228.0	224.3	208.4	179.1	104.6	111.2
LABOR FORCE - TOTAL (millions)	54.6	53.0	52.1	53.4	56.1	n.a.	n.a.
Employment	53.4	52.1	51.2	51.9	53.3		
Male	36.7	36.2	36.0	37.0	39.4		
Female	16.7	15.9	15.2	14.9	13.9		
Unemployment	1.2	.9	.9	1.5	2.8	n.a.	n.a.
LABOR TURNOVER IN MFG. INDUSTRIES† (rate per hundred employees)							
All Manufacturing							
Accessions	7.18	7.43	8.32	8.14	7.29	3.29	3.59
Separations - Total	6.57	7.54	7.69	7.09	6.54	3.48	3.37
Quits	4.81	5.41	5.36	4.21	3.77	.68	1.37
Military Separations	.69	.87	1.12	1.55	.68	n.a.	n.a.
Aircraft							
Quits	4.23	4.62	4.75	3.93	4.06	1.55	1.83
Military Separations	.63	.84	1.41	2.22	.85	n.a.	n.a.
Shipbuilding							
Quits	6.20	6.30	7.11	5.41	5.20	.64	1.72
Military Separations	1.10	1.45	1.70	2.43	.91	n.a.	n.a.

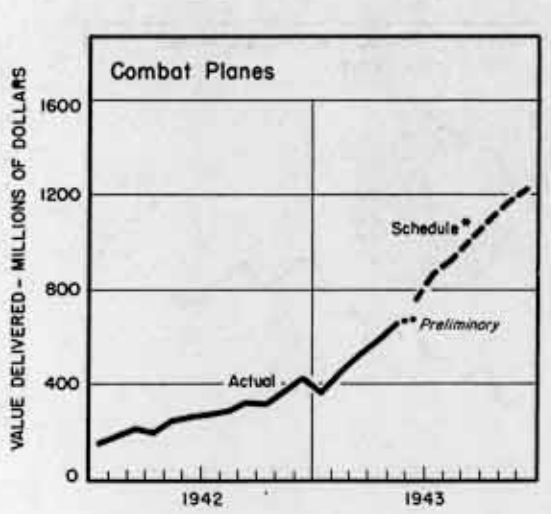
* Federal Finance, Labor Force, June; Income, Labor Turnover, May. †Rates beginning 1943 refer to all employees rather than to wage earners only and are not strictly comparable with earlier data.
n.a. Not available. p. Preliminary.

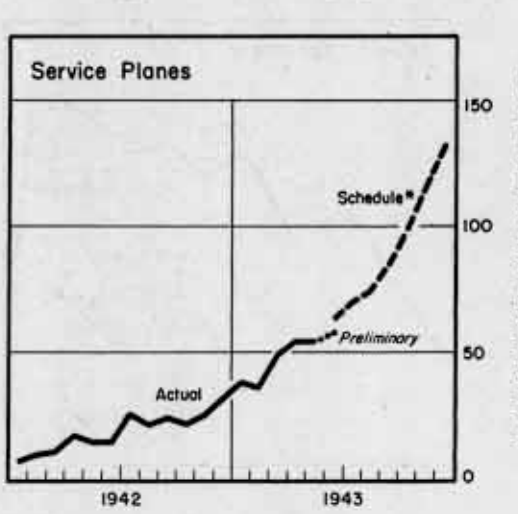
PRODUCTION PROGRESS

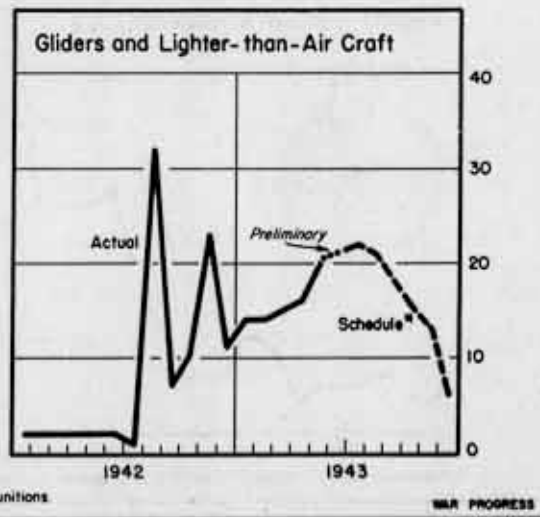
Aircraft and Aircraft Munitions











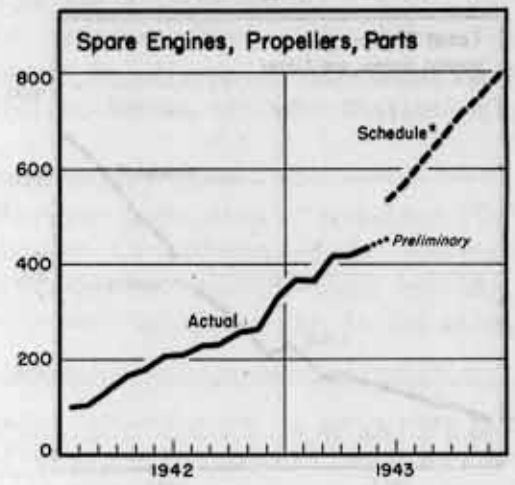
*Schedule as of June 10 for aircraft and spares; as of June 1 for aircraft munitions.

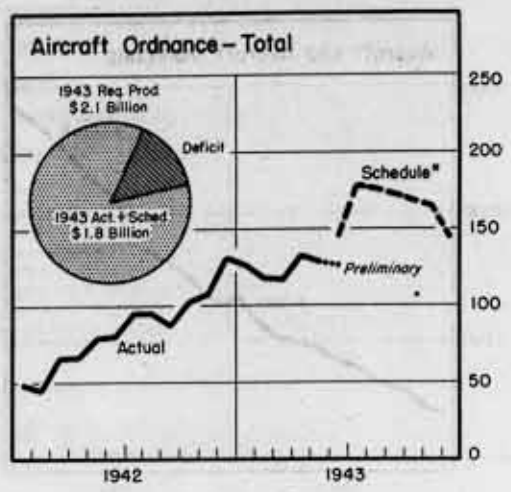
WAR PROGRESS

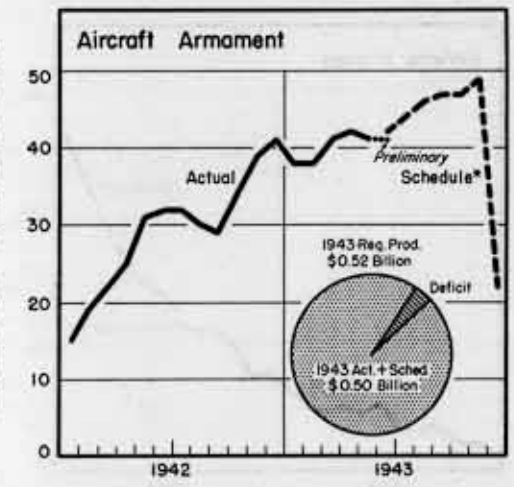
CONFIDENTIAL

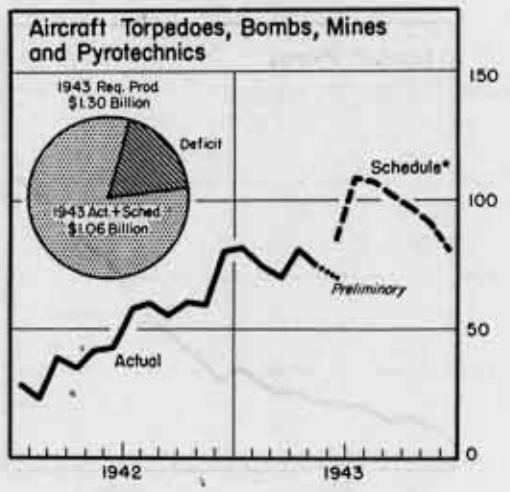
PRODUCTION PROGRESS

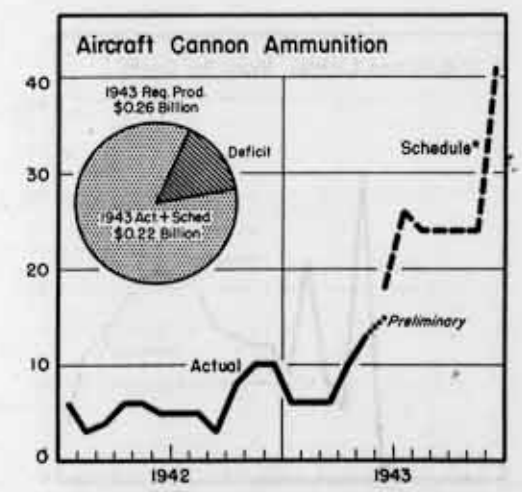
Aircraft and Aircraft Munitions (continued)

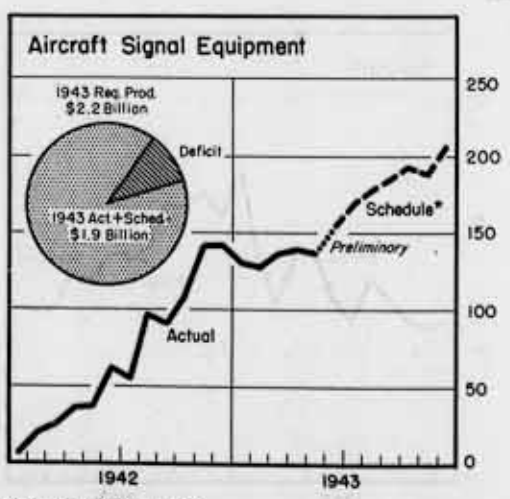












*Schedule and Required Production as of June 10 for aircraft and spares, as of June 1 for aircraft munitions.

WAR PROGRESS

The President

3

WAR PROGRESS

Confidential
(British Secret)

New High Level for Lend-Lease—Bofors and AA Artillery—Oscillators: A Success Story

Number 148 **July 16, 1943**

Fewer Sinkings, More Lend-Lease

Exports, at $820,000,000 a month, are currently running 45% ahead of December-January average. Aircraft and combat vehicle shipments continue to mount.

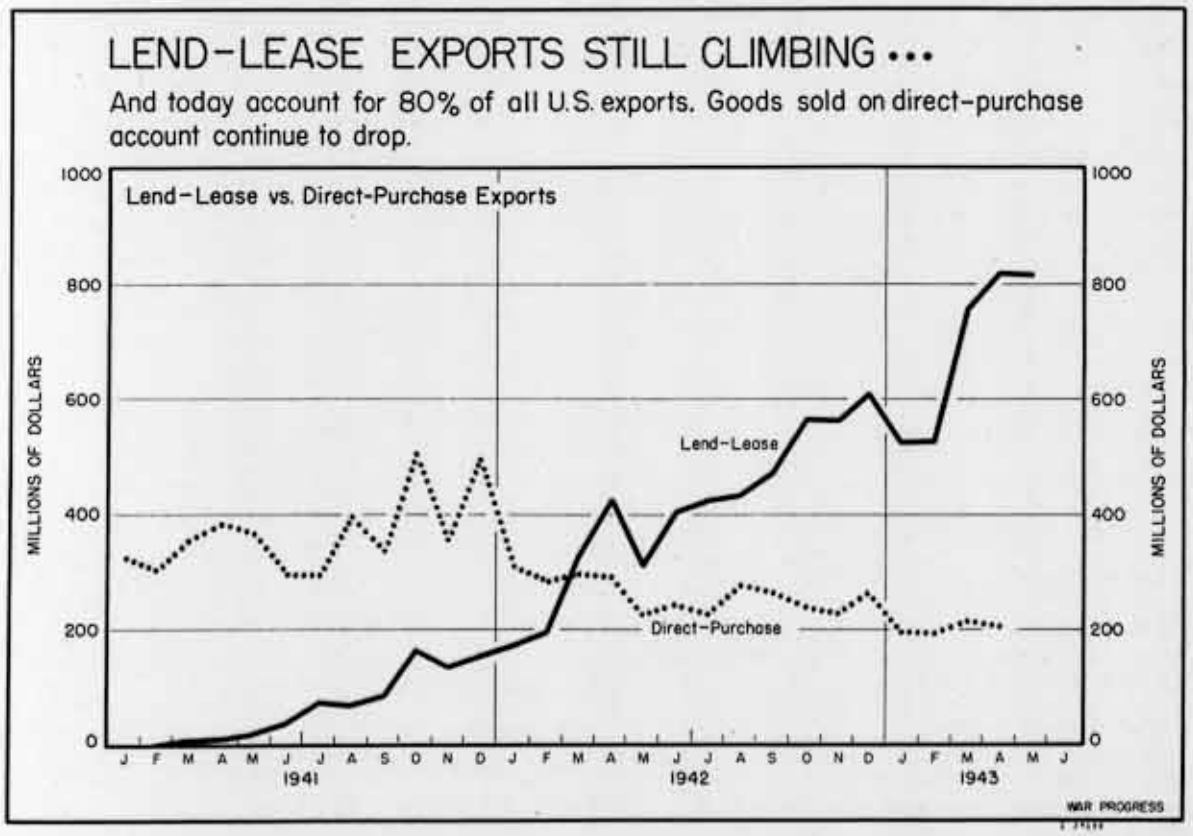
LEND-LEASE EXPORTS have jumped from an average of about $565,000,000 in December and January to around $820,000,000 in May—a rise of 45%. This is due almost entirely to the greater availability of shipping—sinkings have dropped sharply in recent months while construction of merchant vessels has increased.

With the spurt in exports have come changes in the composition of cargoes. All categories of lend-lease shipments, except ordnance, have increased in volume in the past six months. But the United States is now sending its allies a greater proportion of aircraft, tanks and other vehicles and a lesser proportion of ordnance, food, and industrial items, as follows:

	Exports (millions)		% of Total	
	May	Dec.*	May	Dec.*
Ordnance.....	$118	$141	15%	25%
Aircraft.....	160	81	19	14
Vehicles.....	215	82	26	14
Watercraft...	17	11	2	2
Agric. prod..	121	95	15	17
Indus. prod..	190	157	23	28
Total.....	$821	$567	100%	100%

*Monthly average for Dec. and Jan.

The destination of lend-lease cargoes



has also changed in the last six months. Great Britain is now getting the lion's share of the total (47%), while Russia's portion has dropped from 29% in December and January to 20% in May. In volume, Russia-bound cargoes increased only 3%, but those going to Britain are up 109% and to Egypt—the base for British operations in the eastern Mediterranean—94%. Shipments to Turkey, Brazil, Australia, and New Zealand have also risen substantially:

	May	Dec.*	% Change
	(millions)		
U.K.	$387.0	$185.4	+109%
Russia	167.5	162.0	+ 3
Egypt	101.9	52.5	+ 94
Australia & N. Zealand.	48.3	39.2	+ 23
India	29.3	43.9	- 33
Brazil	8.1	4.8	+ 69
Iran & Iraq.	8.0	18.0	- 46
Turkey	8.0	1.9	+320
U. S. Africa	7.8	9.6	- 19
Algeria	6.0	nil	
Nigeria	1.4	1.8	- 22
China	1.8	1.0	+ 80

*Monthly average for Dec. and Jan.

IN THIS ISSUE:

10-DAY PLANE OUTPUT

ALTHOUGH production of airplanes during the first few days of July started off briskly, some slackening occurred later on, and in the first 10 days acceptances came to 1,927, as against 1,935 in the first 10 days of June. The schedule for July calls for acceptances of 8,431 planes; thus, in the last 20 days, about 6,500 will have to be produced if the goal is to be met. This is an unlikely prospect.

Combat plane acceptances surpassed those of the first 10 days of June by only a narrow margin—1,216 to 1,192. Yet the June performance was "slow" (WP-July9'43,p1).

Fighters as a group made the best showing, running almost 10% ahead of the first 10 days of June. Bombers, as a whole, fell somewhat behind June, except for two-engined medium bombers and Army one-engined light bombers.

Some pickup later on in the month seems likely. So when final returns are in, even though the W-4 schedule is not met, plus signs will probably dominate the tally.

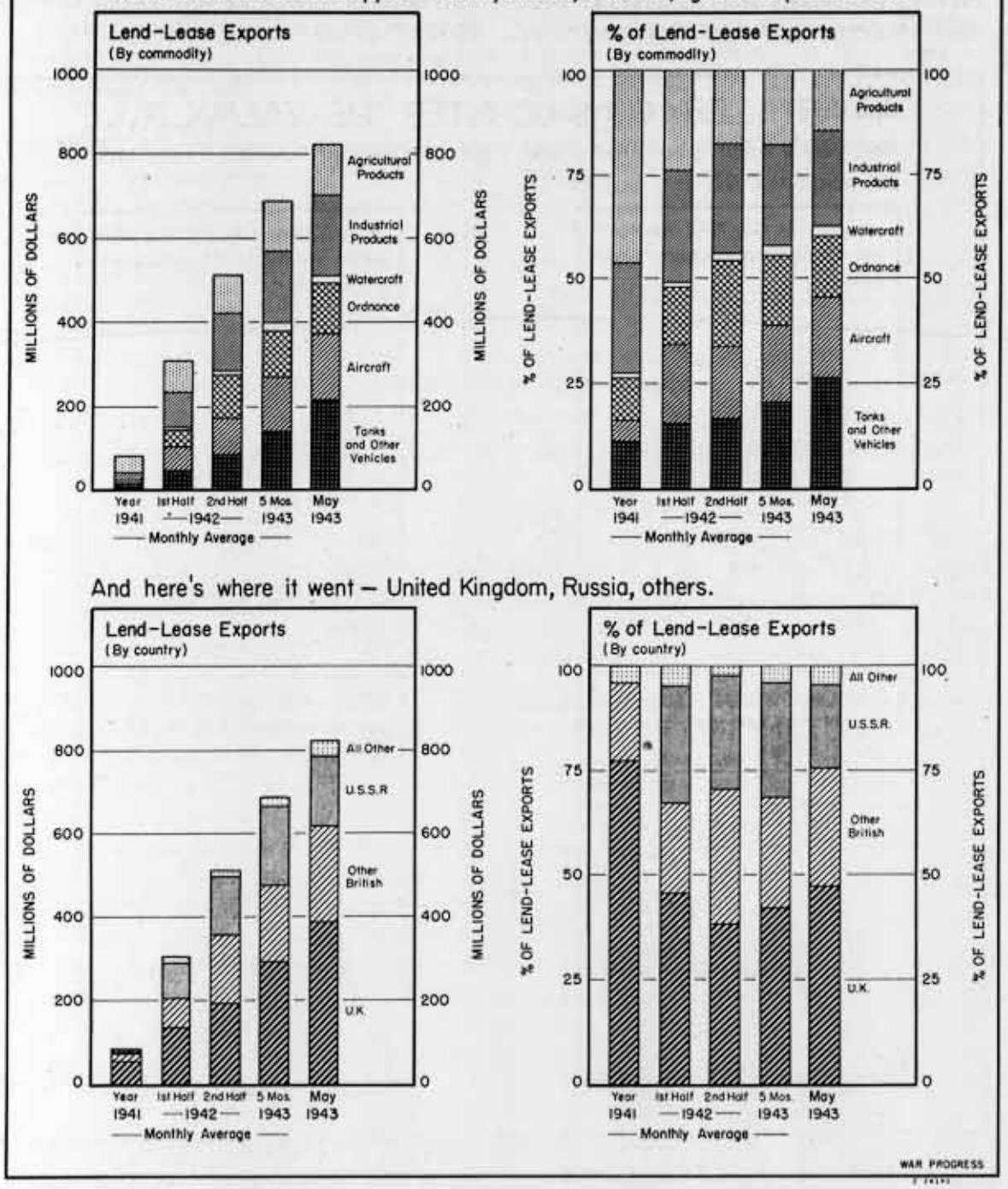
Munitions (ordnance, aircraft, watercraft, combat and other vehicles) account for 60% (in dollar value) of lend-lease goods going to Great Britain. Industrial and agricultural commodities, including processed food, comprise the remainder. The composition of shipments to Russia is about the same—57% munitions (mostly aircraft), 26% industrial products, and 17% food.

FOOD FOR THE GREEKS

Shipments to Egypt consist mainly of munitions as well as industrial items needed by modern armies. Brazil, the

THE TOTAL LEND-LEASE PICTURE

This is what has been shipped — tanks, aircraft, ordnance, agricultural products etc.



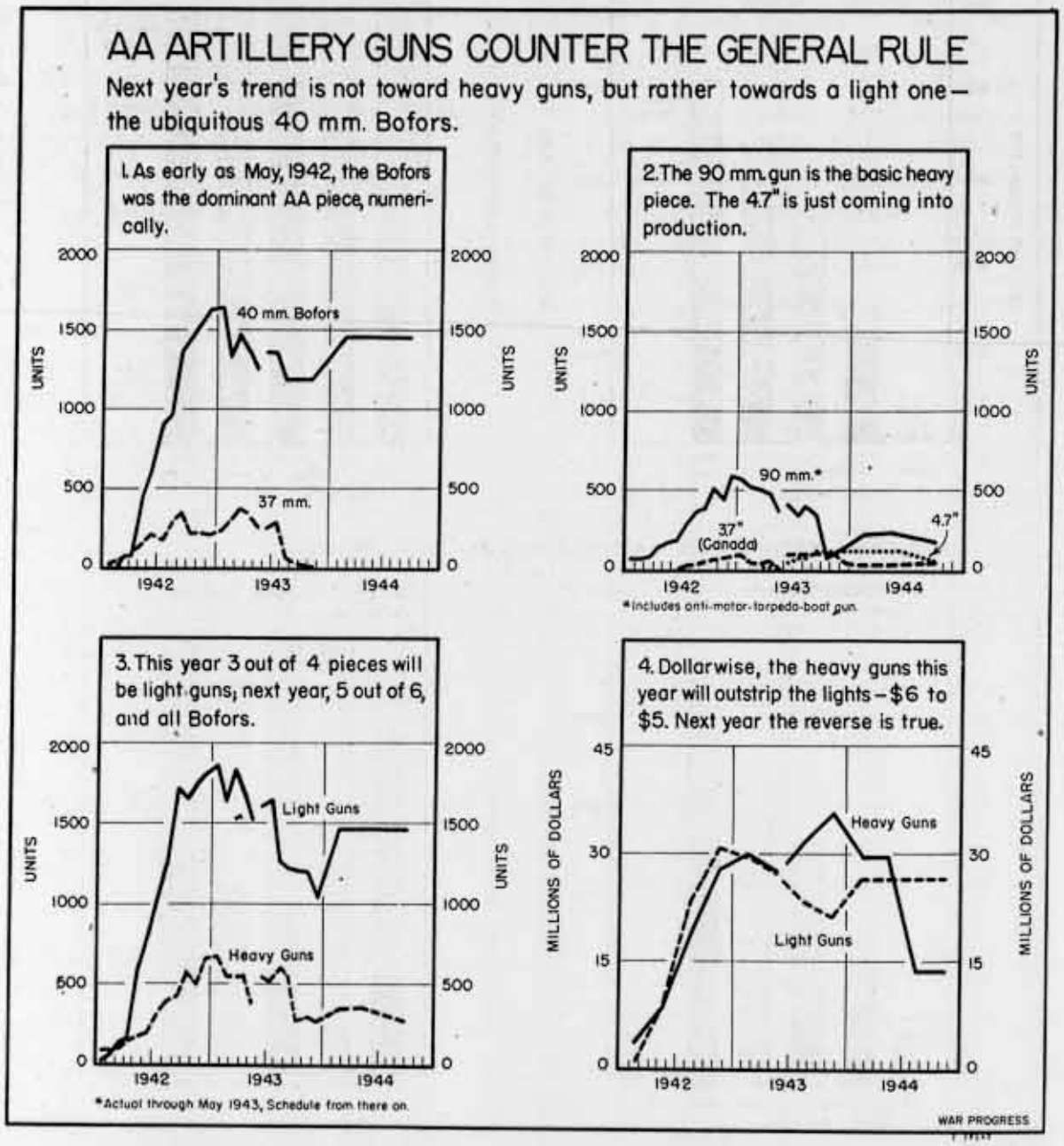
And here's where it went — United Kingdom, Russia, others.

WAR PROGRESS

OUTSTANDING FACT ABOUT LEND-LEASE HAS BEEN THE SHIFT FROM AGRICULTURAL AND INDUSTRIAL PRODUCTS TO MUNITIONS. WHEREAS, BACK IN 1941, MUNITIONS ACCOUNTED FOR ONLY 27% OF ALL LEND-LEASE EXPORTS, IN 1942 MUNITIONS ROSE TO 53%, AND IN MAY OF THIS YEAR $6 OUT OF EVERY $10 OF LEND-LEASE EXPORTS WERE GUNS, TANKS, PLANES, ETC. ANOTHER NOTEWORTHY SHIFT IS THE RISE OF RUSSIA AS A LEND-LEASE RECIPIENT—FROM VIRTUALLY NOTHING IN 1941 TO 28% IN 1942, AND ABOUT THE SAME THIS YEAR. IN MAY, HOWEVER, EXPORTS OF MUNITIONS TO RUSSIA DECLINED, THOSE TO THE BRITISH EMPIRE INCREASED.

chief Latin-American beneficiary of lend-lease, is receiving mostly munitions (tanks, airplanes, guns, etc.); Turkey, munitions and industrial products; Algeria and French Morocco, food, clothing, and other civilian necessities.

With Axis consent, some lend-lease food is going to Greece on neutral ships (3,500,000 pounds of dry beans and 1,300,000 pounds of dry peas in May).



AMONG ANTIAIRCRAFT ARTILLERY, THE 40MM. BOFORS HAS THE MAIN BURDEN, NUMERICALLY, FOR GROUND DEFENSE AGAINST ENEMY PLANES. ITS OUTPUT IS DESTINED TO RISE NOTICEABLY NEXT YEAR. THE 37MM. GUN—ONLY OTHER LIGHT ANTIAIRCRAFT ARTILLERY PIECE—SHORTLY GOES OUT OF PRODUCTION, WHILE OUTPUT OF HEAVY AA GUNS IS SCHEDULED DOWNWARD IN 1944. SO FAR THIS YEAR, NEARLY 20% OF BOFORS OUTPUT HAS GONE INTO UNOBLIGATED STORAGE—NOT CONSIGNED TO EITHER ARMY, NAVY, OR INTERNATIONAL AID.

Ack-Ack: Defensive Artillery

Bofors – used by Axis as well as the United Nations – dominates the program, which reaches peak this year; 9% decline is scheduled for 1944.

CONSISTENTLY, antiaircraft guns and equipment go to make up half of the nation's dollar output of army ground artillery. Thus in 1942 antiaircraft guns and equipment amounted to 50% of guns 37mm. and over. This year the percentage is slated to rise to 52, and next year it drops again to 50.

BOFORS IS THE TREND

The core of this 50% consistency is the 40mm. Bofors, a light gun as artillery goes and the only light AA piece scheduled for production next year. The Bofors is a universal weapon—made and used by the Axis as well as by the United Nations. Its range is 9,000 feet and it is effective against dive-bombers and other low-flying aerial targets.

Bofors production amounted to 8,900 pieces last year, or 62% of all antiaircraft artillery; this year, 15,500 Bofors are scheduled, or 67% of AA guns; next year, the number rises to 17,600, or 83%. Thus the trend is strictly to the Bofors, end—as a corollary—away from heavier pieces. Parenthetically, the trend in self-propelled and wheeled artillery is away from light guns and toward the heavier models.

37 OUT: 90 DOWN

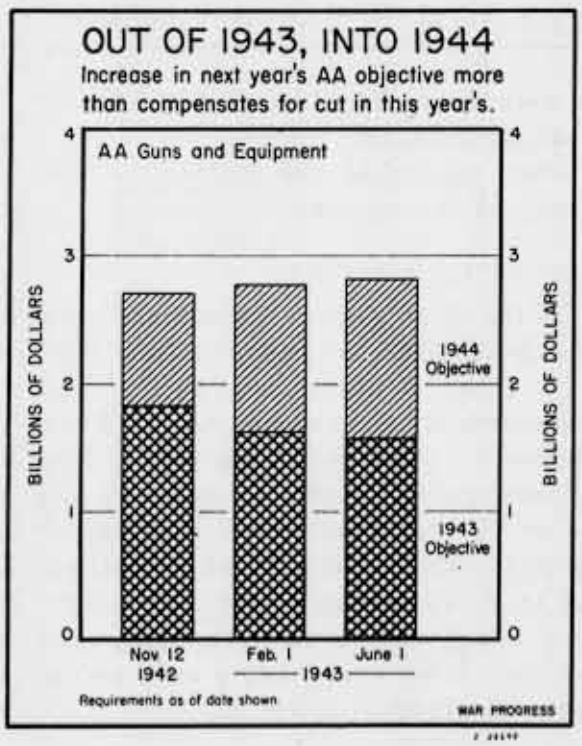
The 37mm. gun, smallest among AA artillery, winds up production in October; in all, 2,100 are scheduled to be made this year. The .50 caliber machine gun (not classified as an artillery piece and not included in the computations in this article) is due to drop off 25% in 1944, to 22,283 units.

Numerical leader among the heavier AA guns is the 90mm., a new model of which is now in production. It costs $74,000 (as against $16,000 for the Bofors), has a 34,500-foot range. The schedule declines from 3,700 this year to 2,400 in 1944.

60,000 FEET UPWARD

Newest AA development is the 4.7-inch gun, largest of AA artillery. One gun was delivered in March, and last month 40 were produced. It costs $140,000 and has a range of 60,000 feet—nearly five miles higher than the 90mm. The 1943 schedule calls for 600; next year, 850 are on the docket.

All told, some 23,000 pieces of AA guns (37mm. and over) will be turned out this year; next year, 21,000 are scheduled. That's a decline of 9%. Dollarwise, the drop for the program



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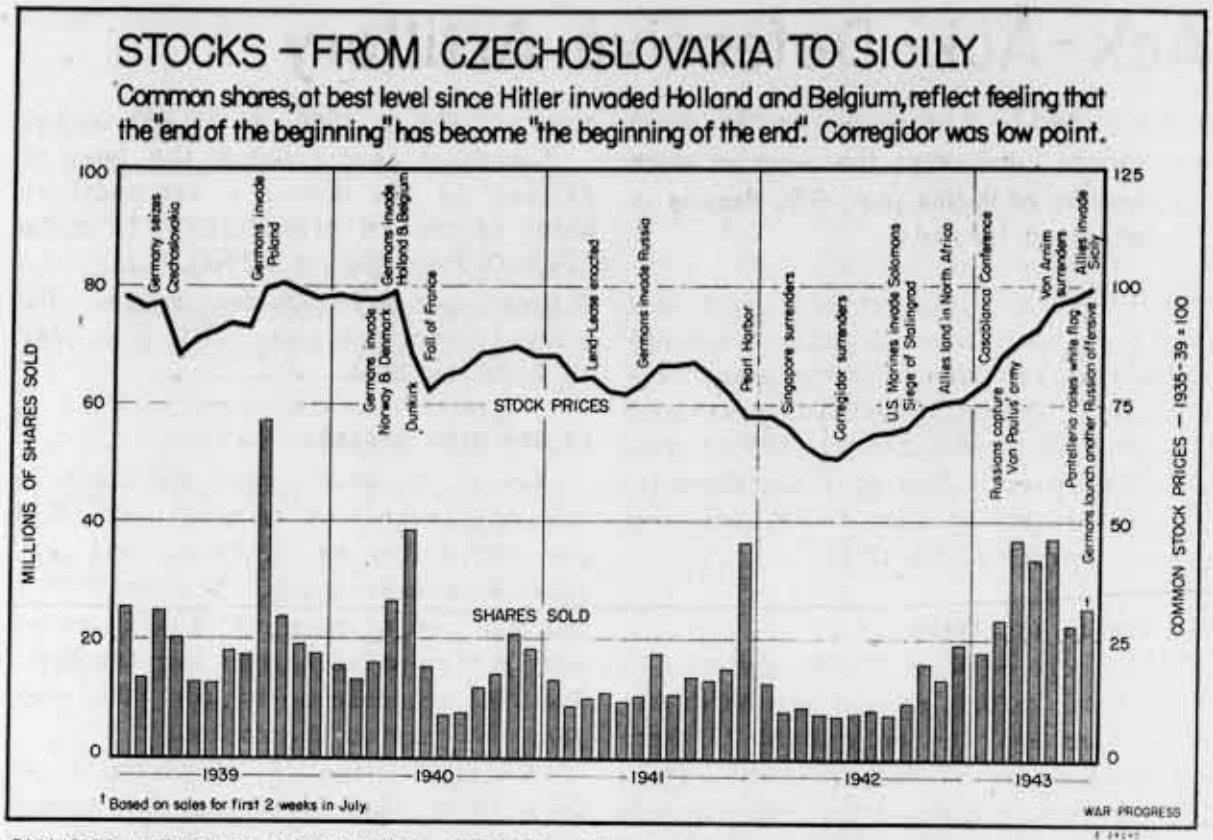

BY RISING TO ANOTHER NEW HIGH THIS WEEK, THE STOCK MARKET CLEARLY REFLECTED THE GROWING CONFIDENCE IN ULTIMATE VICTORY. AFTER CORREGIDOR, A CREEPING BULL MARKET GOT UNDER WAY; IT WAS GREATLY ACCELERATED WHEN THE RUSSIANS FINALLY TRAPPED THE ARMY OF GENERAL VON PAULUS AT STALINGRAD. THEN FOLLOWED THE ROUT OF ROMMEL IN NORTH AFRICA AND THE ALLIED INVASION OF SICILY, WITH GROWING ASSURANCE—AS THE PRESIDENT PUT IT—THAT THE "END OF THE BEGINNING" HAD CHANGED TO THE "BEGINNING OF THE END."

as a whole is 17%—from $1,550,000,000 to $1,300,000,000.

That scheduled 17% decline is not likely to materialize.

FIRE-CONTROL CATCHES UP

In the first place, the antiaircraft program for 1943 has been cut back several times (chart, page 5); and to compensate for the reductions, 1944 requirements have been boosted. This process may well continue farther. So far this year, actual output has lagged slightly behind the reduced schedules. And it is conceivable that any production deficit in 1943 will be carried over into 1944, thus raising next year's required production and schedule.

There's another reason why the decline from 1943 to 1944 may not reach 17%. Production of fire-control equipment for antiaircraft guns—directors, searchlights, radar, etc.—got under way much more slowly than production of the guns themselves. But now, fire-control output is catching up, thus boosting the dollar value of the AA program. In 1942, fire-control items were 36% of output of antiaircraft artillery and equipment. This year, they are scheduled at half the total. Next year, the proportion drops to 46%, but this drop is more statistical than real; the fire-control program is by no means complete, and, before 1944 is finished, the percentage will probably run con-

siderably higher—and this, also, will boost total output in 1944.

The gun part of the antiaircraft gun program reached its crest as early as January of this year, but the program as a whole is still rising; the high is scheduled for September. This is due to continued expansion in fire-control equipment. And since 1944 schedules for fire control are by no means complete, it is possible that the high may be pushed back beyond September.

For Want of a Crystal

A tank may be cut off from HQ, and a battle may be lost. That's why quartz oscillator manufacturing has become a $120,000,000-a-year business.

IN THE EARLY TWENTIES, the radio fan was as likely as not to lose his station just as the Jack Benny of that day was delivering his punch line. That was in part because broadcasting stations did not have their wave lengths under control. Frequencies varied from time to time and programs faded. But along about 1925 the quartz-crystal oscillator made its appearance. It had a great virtue: It fixed a station's wave length. If radio owners adjusted their own sets to a station's wave length what they got "stayed got."

WALKIE-TALKIES, ETC.

Today the quartz-crystal oscillator is on every battlefront. It is a part of the walkie-talkie and the two-way communication sets of tanks, airplanes, artillery stations, coast-guard patrols, police patrols, etc.

A tank will carry 80 different oscillators, and a spare for each—160 in all. No chances can be taken—for want of a crystal, a battle may be lost.

Each oscillator establishes a differ-

CONFIDENTIAL

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ent wave length when plugged into a radio set for tank-to-tank, tank-to-plane, or tank-to-HQ communication. And oscillators are changed intermittently during the day—to keep the enemy from tying into or jamming the frequency.

GHOSTS AND NEEDLES

The story of the oscillator is the story of high-grade quartz. About 99% of quality quartz goes into these crystal plates, which are from ¼ to ½ inch square and from one fifteen-thousandth to one-quarter of an inch thick. (The thickness determines the wave length.) But Brazil has the only readily available supply of high-grade quartz possessing piezo-electric characteristics (the property of generating an electric potential when placed under stress). Since the war began, Brazilian quartz has been rushed to the U.S. by air; and though requirements were met in both 1940 and 1941, in 1942 production was some 800,000 crystals short of demand, which had multiplied 100 times and more.

In fact, quartz shortages threatened to close plants this spring. Then in March a revision in specifications changed the situation almost over night. Quartz to be usable had to conform to army specifications, which called for "only highest grade of raw material, free from twinning, cracks, ghosts, needles," etc.

MORE PER POUND

However, it was found that reasonably high-grade quartz without flaws visible to the naked eye worked just as well, and accordingly army specifications were eased to make the test "satisfactory performance" of the finished product. As a result, previously rejected quartz was re-inspected and found acceptable. And, as production experience increased, the average number of oscillators obtainable from a pound of quartz rose from six in January, 1942, to about 17 today.

These changes led to another sharp increase in output: the manufacture of oscillators became comparatively big business.

24,000,000 CRYSTALS

Until 1940, three or four manufacturers, working under laboratory conditions and using the old "cut-and-try" methods of radio amateurs, met the limited demand for crystal plates. This year, 125 plants are expected to produce 600 times the number of oscillators turned out in 1940. Nine major plants account for 60% of the output; the remainder is spread among small shops. Production has risen as follows:

Year	Finished Crystals
1940.....	40,000
1941.....	55,000
1942.....	7,000,000
1943 (estimated)	24,000,000

Incidentally, the value of the 1943 output is estimated at $120,000,000.

War Progress Notes

25,000 MEN FOR A YEAR

FROM PEARL HARBOR to May of this year, strikes in all industries cost the nation 7,500,000 man-days, or the work of 25,000 men for a year. In terms of the 12,300,000,000 man-days of work scheduled since Pearl Harbor, the loss amounts to six days out of 10,000. This rate of loss is sharply lower than the pre-war rate (chart, page 9). In the year prior to Pearl Harbor, strikes cost 33 days out of every 10,000 days of work scheduled. So far this year, the loss runs to seven days out of 10,000; but

that includes the coal strikes. Exclude coal and the figure would be about four days per 10,000.

WOODEN SHOES—DE-CLATTERED

ABOUT 20% of the women's shoes being manufactured in Britain now have wooden soles partially covered with leather to eliminate clatter. A shortage of thin sole leather is the reason. For walking comfort, the sole is hinged at the ball of the foot. Introduced about six months ago, the "woodies" are in lively demand—they're waterproof, and British women can no longer buy overshoes. However, the wide publicity given them caused a rush on leather shoes, which British women fear won't be available much longer.

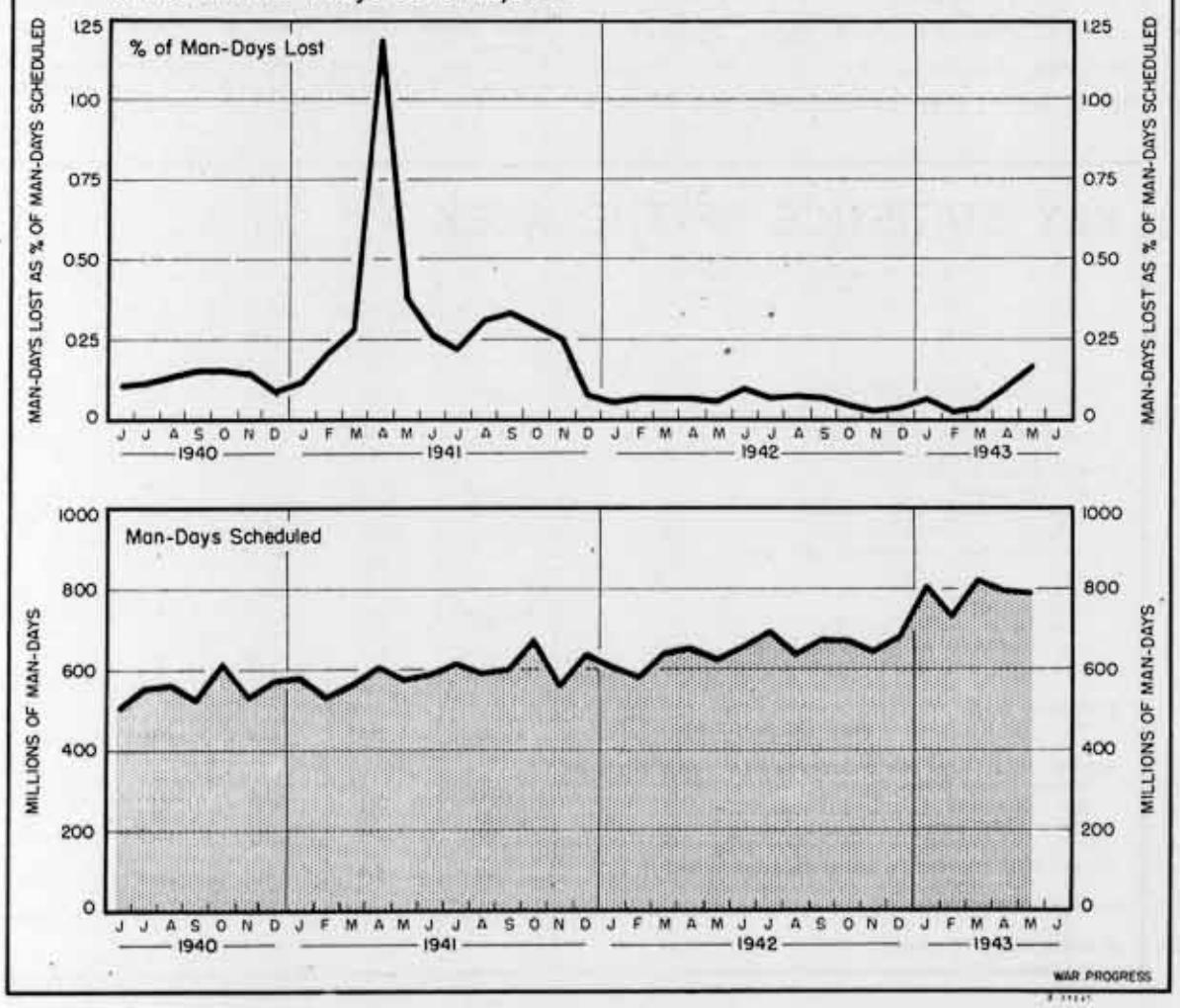
REPORTS ON REPORTS

Negroes and War

Negroes feel that prejudice and discrimination prevent their full participation in the war effort, both on the

STATISTICS ON THE "NO-STRIKE" PLEDGE

In the year before Pearl Harbor, strikes cost 33 out of every 10,000 work days. So far this year, the average has been 7 days out of 10,000. Exclude the coal strikes and it's 4 days out of 10,000.



battlefield and in the factory. This is the conclusion of a special OWI survey on *The Negroes' Role in the War* (confidential; pp. 53). About as many Negroes feel it is more important to eliminate race discrimination at home than to win the war abroad. Two-thirds of the white people interviewed said they didn't think the Negroes were discontented at all.
(Office of War Information, Bureau of Special Services)

Bombs and Fertilizer

Planned construction of three ammonia plants may be unnecessary if imports of Chilean nitrate can provide a margin of safety for fertilizer needs. *Nitrogen* (confidential; pp. 9), prepared for the Requirements Committee, shows an improved outlook for nitrogen, vital raw material for explosives and fertilizer, but warns of serious uncertainties ahead in the present program.
(War Production Board, Chemicals Division)

Food Freeze

Weather, manpower, and container limitations will probably combine to cut production of processed fruits and vegetables in 1943, according to *Processed Foods* (confidential; pp. 13). The outlook is brighter for meats, eggs, and fish, but military and lend-lease requirements will put a sharp brake on civilian demands.
(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.]

KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program – Checks paid (millions of dollars)	1,390	1,637	1,616	1,414	1,075
War bond sales (millions of dollars)	186	209	229	219	245
Wholesale prices (1926=100)					
All commodities	103.0p	103.0p	104.0p	101.4	98.6
Farm products	126.0p	125.9p	127.6p	116.1	105.5
Foods	107.3	107.6	110.9	104.4	98.7
All other than farm products and foods	96.9p	96.9p	96.9p	96.2	96.0
Petroleum:					
Total carloadings	58,155	59,961	53,417	49,044	51,161
Movement of cars into the East	31,140	32,218	29,147	25,129	24,017
East coast stocks for civilian use (1940-41=100 Seas. Adj.)	34.0	31.5	26.8	38.4	54.3
Total stocks of residual fuel oil (thousands of barrels)	67,142	66,470	67,652	72,559	77,766
Bituminous Coal:					
Production (thousands of short tons, daily average)	1,725	768r	524	1,880	2,043
Exports (no. of freight cars unloaded for export Friday, excl. grain)					
Atlantic Coast ports	2,288	2,192	2,308	1,262	1,457
Gulf Coast ports	360	350	326	363	563
Pacific Coast ports	1,268	1,260	1,377	1,027	694
Unused steel capacity (% operations below capacity)	3.0	3.4	212	0.7	1.6
Department store sales (% change from a year ago)	-1	+40r	+29	+6	+10

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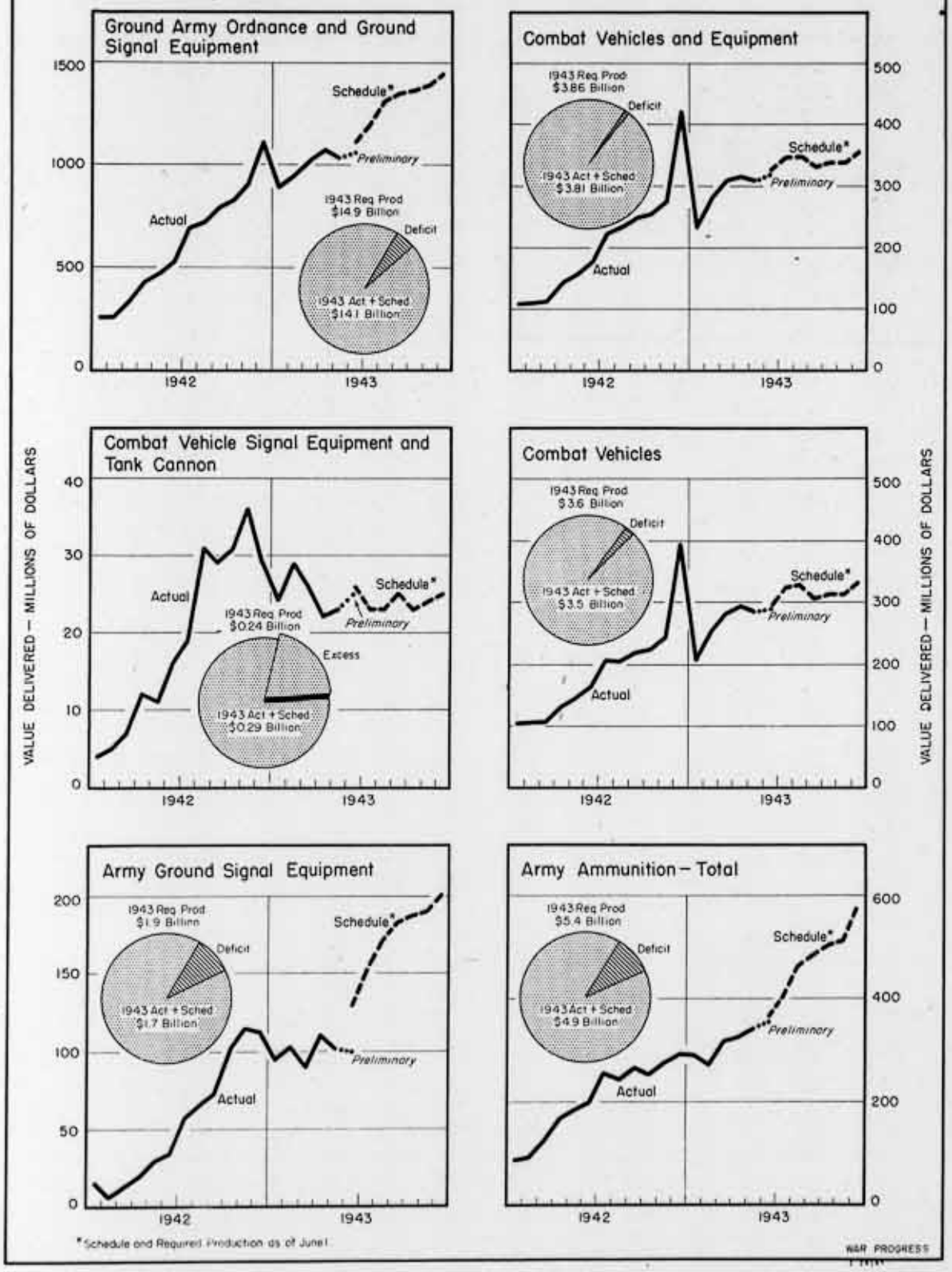
PRODUCTION PROGRESS

Ground Army Munitions



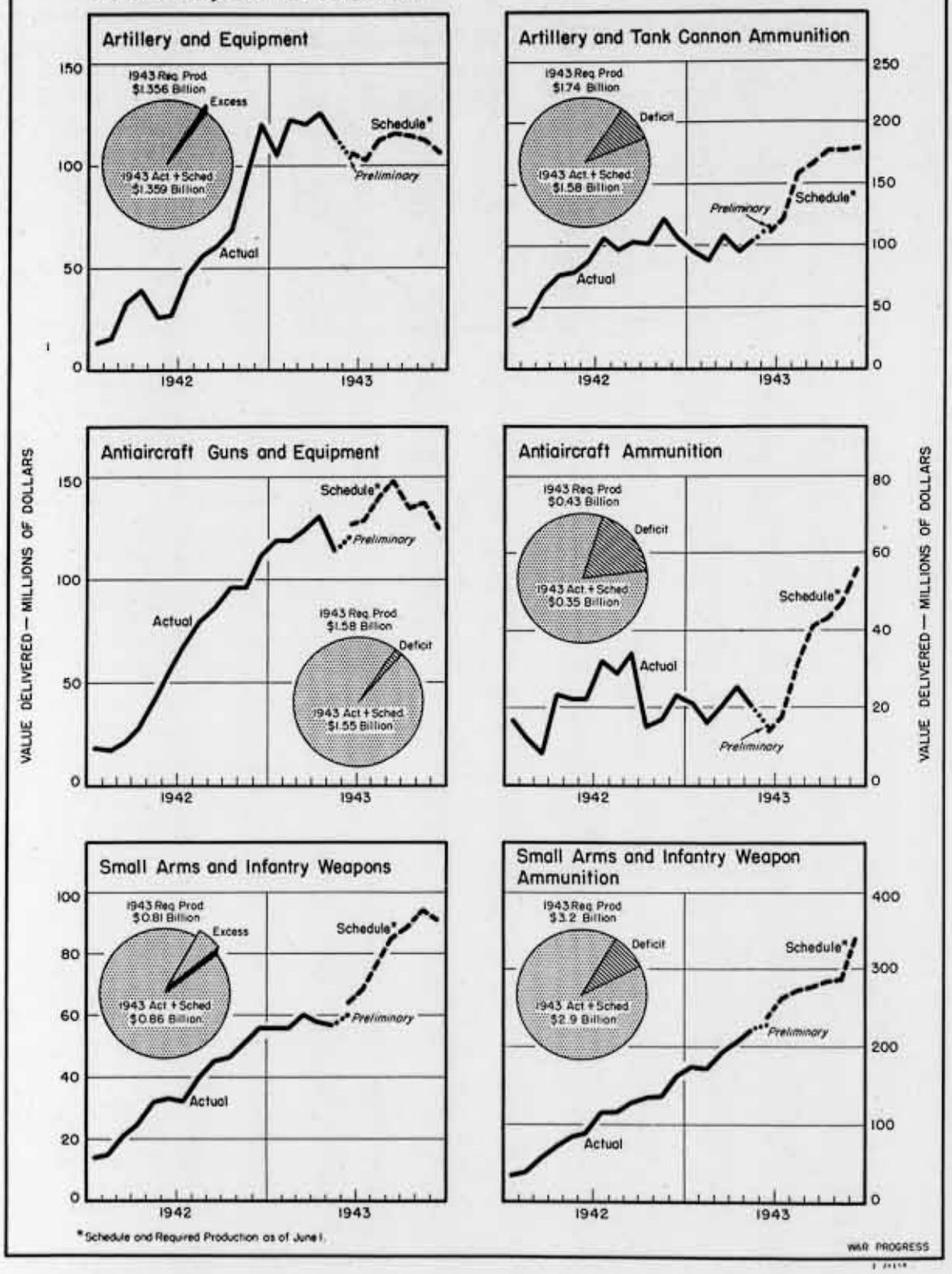
*Schedule and Required Production as of June 1

WAR PROGRESS

CONFIDENTIAL

PRODUCTION PROGRESS

Ground Army Munitions (continued)



*Schedule and Required Production as of June 1.

WAR PROGRESS

The President's

WAR PROGRESS

Confidential
(British Secret)

Copper–A Crisis in Manpower

Raw Materials Plants Catch Up

Number 149 July 23, 1943

Copper: A Crisis in Manpower

Labor is primary bottleneck, and Army is furloughing more men to work in the mines. Cut in small arms program, use of steel will lighten requirements slightly.

THE UNITED STATES uses one and a half times as much copper as the entire rest of the world. But that is not enough for this war.

During the fourth quarter, for every 100 tons of copper mined here or imported or culled from scrap, demand will run to 123 tons. Obviously something must give—and that something is demand. For prospects of boosting the copper supply are strictly limited.

Sources of U.S. copper (in short tons) are three:

Source	1943	% of Total
Latin-American imports.....	691,000	21.2%
Domestic output	1,126,000	34.5
Scrap.....	1,446,000	44.3
Total	3,263,000	100.0%

Productive Latin-American mines are operating at virtual capacity. Additional mining equipment might increase supply, but the expansion would be confined to marginal mines. That poses a difficult choice: Should critical materials and labor be used to manufacture mining equipment for Latin-American properties when the yields from those properties would not only be small but would be fairly remote? Probably no additional production would be forthcoming until next year.

In this country, labor is the primary bottleneck. Copper mining is the one industry in which the overall shortage of labor has unmistakably forced curtailment of output and, as a direct result, constricted military output—especially of ammunition. This has already been recognized. Last October, the Army furloughed 2,800 soldiers to return to the pits. Simultaneously, gold mining was stopped to divert gold miners into the copper mines.

ONLY PALLIATIVES

These measures have proved to be only palliatives. The draft and higher-paying jobs in war industries have been a persistent drain. Many copper miners have shoved off to California for work in shipyards and airplane plants; and

OUT OF THE ARMY, INTO THE PIT

TO alleviate the critical labor shortage in many copper, zinc, molybdenum and other nonferrous mines, the Army has asked for 4,500 volunteers to work in the pits on furloughs.

Manpower allotments will be based on a priorities preferential list. Mines which (1) are most productive and (2) turn out the most critical metals will be given preference. The object is to get the most production of the most critical metals per man.

Beginning August 12, about 1,000 soldiers per week will be assembled at a midwestern military post, where mining company representatives will sign them up for work.

Last fall the Army furloughed some 4,000 men, 2,800 of whom went to the copper mines.

many of the furloughed soldiers got a taste of mine work and decided they'd rather be back in the Army. As a result, there is a current labor shortage of some 3,000 men and the threat of a 10% drop in copper output for the next few months. To meet this, the Army is furloughing another 4,500 men for copper, as well as zinc and molybdenum mines.

The manpower shortage precludes the expansion of output through operation of marginal mines. Some high-cost properties are being subsidized—small quantities are purchased at as much as 27¢ a pound as against the going price of 12 1/8¢. But obviously it is far more economical to use labor on properties already operating rather than to start up new or abandoned mines.

SKIMPING DEVELOPMENT

So acute has the labor shortage been that for several months mines have borrowed from the future. It is customary for a crew to move ahead of the miners to prepare the earth for actual ore extraction (usually called "development work"). But the demand for copper has been so urgent that mines have skimped on preparation. Everybody was put to mining. As a result, men will have to be taken from ore extraction to catch up on preparation.

WOMEN: BAD LUCK

Mines have tried to employ women. But this has its drawbacks. In the first place, most mines are located in out-of-the-way regions. Persons there are already engaged in mining or associated work and importation of labor is difficult, particularly of women. Then, some states prohibit working women in mines, and in addition there's a mining superstition that it's bad luck to have a woman enter a mine. However, women are operating the trains which carry the ore to concentrating mills. The State Department, too, has been called in to relieve the problem: 2,050 Mexicans have been certified for entry into the United States under an arrangement whereby transportation to and from the mines is paid by the industry. But delays have bogged this program.

PLATEAU IN SCRAP

Nor is scrap a likely source of additional copper. That's because copper fabricating, itself, produces the bulk of the scrap—and if the copper supply is more or less on a plateau, then the new scrap created during the course of processing of copper likely will also be on a plateau. As far as old scrap is concerned, it must be chemically analyzed and prepared before re-use, and handling facilities are now taxed to capacity.

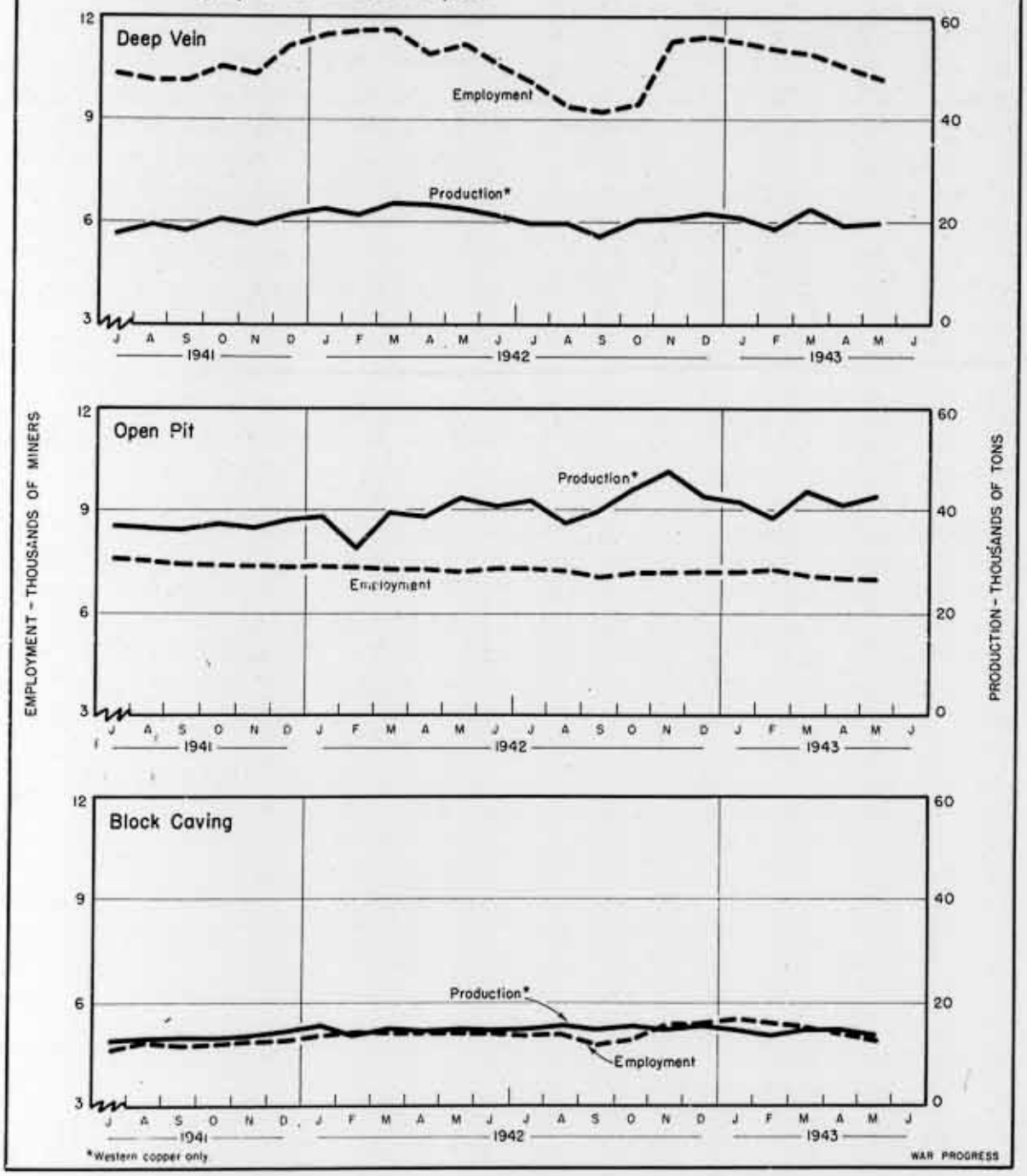
CLAIMS EXCEED SUPPLY

About 60% of all domestic copper requirements goes to the Army and the Navy, and most of this is for ammunition. The Army recently cut its small

IN THIS ISSUE:

MANPOWER IN THE COPPER MINES

Number of miners has been dropping off, and production, instead of climbing to new highs, is down from its peak.



LACK OF LABOR (CHIEFLY IN THE UNDERGROUND MINES, WHERE TURNOVER IS THE HIGHEST) HAS HAMPERED COPPER OUTPUT. BUT THINGS MIGHT HAVE BEEN WORSE IF MEN HAD NOT BEEN DIVERTED FROM PREPARATION WORK, AS THE BULGE IN OUTPUT LAST FALL INDICATES (~~TOP~~ CENTER CHART). NOW PREPARATION OF THE ORE PRIOR TO EXTRACTION WILL HAVE TO BE RESUMED, AND PRODUCTION WILL DROP UNLESS NEW MINERS ARE BROUGHT IN. LABOR, HOWEVER, IS NOT THE SOLE INFLUENCE ON OUTPUT. THE LOWER THE GRADE OF ORE TAPPED, THE LESS COPPER IS PRODUCED.

arms ammunition program for the fourth quarter by about 15%; and since small arms ammunition consumes about one-third of all copper, this represents a significant reduction on the demand side. It is not sufficient, however, to bring the stated requirements of the claimant agencies into line with prospective supply. Stated needs of claimants for the fourth quarter are as follows (in short tons):

	4th Quarter Stated Requirements	%
Aircraft.....	39,000	3.8%
Army.....	416,000	40.5
Navy.....	169,000	16.5
Maritime.....	26,000	2.5
Foreign.....	51,000	5.0
Other.....	325,000	31.7
Total	1,026,000	100.0%

But the supply is estimated at 840,000 short tons. Thus the apparent deficit is about 185,000 tons. However, there are two sides to the deficit. Programs may be reduced further, thus cutting down on requirements. On the other hand, the deficit allows for a saving of 125,000 tons of copper through substitution of steel in shell cases. This allowance may be on the high side—for technological reasons.

SUBSTITUTING STEEL

Though steel casings have worked out satisfactorily in the 20mm. Hispano-Suiza cannon, the 37mm., 75mm., and 105mm. shells, and in .30- and .50-caliber practice ammunition, they have not worked so well in the 20mm. Oerlikon antiaircraft gun nor in 20mm. and 90mm. antiaircraft shell sizes. Steel does not expand and contract as evenly as brass after the explosion of the shell; as a result, cracks develop in the outer surface, and the shell jams in the gun barrel. This is particularly true in the case of high-velocity ammunition. Incidentally, the Navy shies away from steel casings because of the high-corrosion factor on the sea.

FRONT-LINE SCRAP

So far as the re-use of spent ammunition cases by reforming and reloading is concerned, this will be a negligible factor in the demand-supply aspect of copper for ammunition for some time to come. Thus far, arrivals in the United States of discharged cases and other battlefield scrap have been trivial. Though the net copper yields from this source may run as high as 10,000 tons monthly late in 1944, that is no immediate relief.

Nor can copper exports be reduced without cutting into British output of munitions. However, conceivably African and Canadian mines could expand their output and thus cut down on U.S. exports to Great Britain and Canada. It is estimated that African mines could produce additional copper at an annual rate of 30,000 tons and that Canadian output might be raised by another 20,000 tons a year—if enough labor could be scraped together. However, the Canadian mine labor situation is as tight, if not tighter, than this country's. But in Africa, white labor might be pulled out of the gold mines. (Black labor is not scarce—only white.) Even so, this would yield—optimistically—15,000 tons from now to the end of the year.

LITTLE LEEWAY

In the final analysis, the United States, Great Britain, and Canada are in a tight copper situation despite a full-year supply for 1943 of around 4,300,000 short tons. To some extent, eating into inventories will help—80,-

KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program—Checks paid (millions of dollars)	1,600	1,390	1,580	1,446	968
War bond sales (millions of dollars)	212	186	164	344	202
Wholesale prices (1926 = 100)					
All commodities	102.9p	103.0p	103.5p	101.6	98.3
Farm products	125.0p	126.0p	127.0p	116.6	104.9
Foods	106.5	107.3	109.0	104.8	98.3
All other than farm products and foods	97.0p	96.9p	96.9p	96.3	95.9
Petroleum:					
Total carloadings	59,485	58,155	57,495	53,156	56,184
Movement of cars into the East	33,302	31,140	31,399	25,666	26,285
East coast stocks for civilian use (1940–41=100 Seas. Adj.)	35.0	34.0	27.6	36.3	52.6
Total stocks of residual fuel oil (thousands of barrels)	67,017	67,142	67,455	71,517	77,015
Bituminous Coal:					
Production (thousands of short tons, daily average)	1,947	1,725	1,956	1,850	1,797
Exports (no. of freight cars unloaded for export Friday, excl. grain)					
Atlantic Coast ports	2,343	2,288	2,233	1,156	1,289
Gulf Coast ports	381	360	333	370	531
Pacific Coast ports	1,327	1,268	1,424	926	589
Unused steel capacity (% operations below capacity)	1.7	3.0	2.4	0.2	2.0
Department store sales (% change from a year ago)	+20	-1	+28	+1	+5

p. preliminary

000 tons are considered to be "consumable stocks." But using that doesn't allow much leeway—it's only a fraction of total supply.

But even if raw and scrap copper were available, labor shortages would probably make it impossible to use all the copper and meet requirements of the armed forces. At current levels of operation, 1,000 additional men are needed by smelters and refiners. And any increase in South American mining of copper would aggravate this shortage.

LABOR IS THE PROBLEM

And that's not all. Biggest use of copper, furthermore, is in brass strip in ammunition. And there is an immediate danger that production may drop back rather than increase. Some 7,500 additional workers are needed almost immediately. But location of strip mills is a handicap to increasing the labor force. Most are in crowded manufacturing areas, in which labor is in demand, and workers seem to show a decided preference for factory rather than brass millwork. (Fabricating capacity for most products—rods, tubing, wire, extrusions, etc.—is fairly adequate.)

Fundamentally, then, the copper problem is a labor problem—horizontally, vertically, and internationally. And it brings into sharp focus how the general labor shortage (which we've been discussing for more than a year) can fasten itself on a specific industry and constrict—like a boa. It further emphasizes the acute need of controlling the flow of workers—to keep them from moving out of mines, to get them to go to mines, smelters, refiners, and brass mills. Copper is more than a sore spot—it is a particular and living symbol of a rapidly crystallizing overall manpower problem.

Midyear Inventory of Facilities

Program is now four-fifths complete. Finished munitions projects are farthest advanced, but raw-materials expansion gets green light.

AT THE YEAR'S MIDPOINT, more than four-fifths of the government-financed war facilities program had been completed —$12,038,000,000 out of a current $14,582,000,000 total. That compares with 61% at the beginning of 1943 and 34% a year ago (chart, page 7).

Plants to turn out finished munitions—guns, combat vehicles, aircraft, ships, ammunition, etc.—were furthest advanced; ammunition and explosives, for example, being 95% completed. Raw materials plants, such as synthetic rubber and iron and steel, were catching up. Thus, the synthetic rubber program, only 3% finished a year ago, was 15% in place at the beginning of 1943, and 61% completed today, as the following table shows:

	% Completed		
Type	July 1, 1942	Jan. 1, 1943	July 1, 1943
Ammunition & explosives.....	52%	82%	95%
Combat vehicles..	32	66	92
Guns.....	56	81	92
Chemicals.....	31	66	91
Machinery & machine tools...	30	65	85
Shipways.....	49	68	84
Aircraft.....	31	55	77
Iron & steel.....	17	42	76
Nonferrous metals	16	45	76
Synthetic rubber.	3	15	61
100-octane gas...	Nil	1	39
Other.....	21	40	63
Total.....	34%	61%	83%

This lag in the construction and equipment of plants to produce raw materials—a lag that is being made up—is an obvious development. Back in the early days of the defense program, the arms expansion that did take place was concentrated in ordnance, ships, and aircraft—most of it for British and French account. At that time, the need for more steel, synthetic rubber, aluminum, magnesium, and like materials had not been clearly established.

The ammunition and explosives group proves the point. Back in July, 1942, more than half of this $3,500,000,000 program--the largest of any group—had been completed. Six months later, the proportion had risen to 82%. And at the beginning of this month, the estimated value of work completed was $3,335,000,000, or 95% of the total.

AA-1 FOR HIGH OCTANE

It is only since the beginning of this year that raw materials facilities passed the halfway mark. In synthetic rubber, for instance, around 15% ($84,000,000) of the federally financed $568,000,000 program was in place on January 1. But early this year, rubber plants received preferential treatment for components which were bottlenecking war output—valves, fans, blowers, heat exchangers, compressors, etc. Construction and equipment deliveries leaped ahead. Today, an estimated 61% ($347,000,000) of this expansion has been completed.

The largest percentage gain of the last six months is in plants to produce 100-octane gasoline (sometimes treated as a raw material and sometimes as an end product). At the beginning of the year, less than 1% of the government-financed $109,000,000 program was in

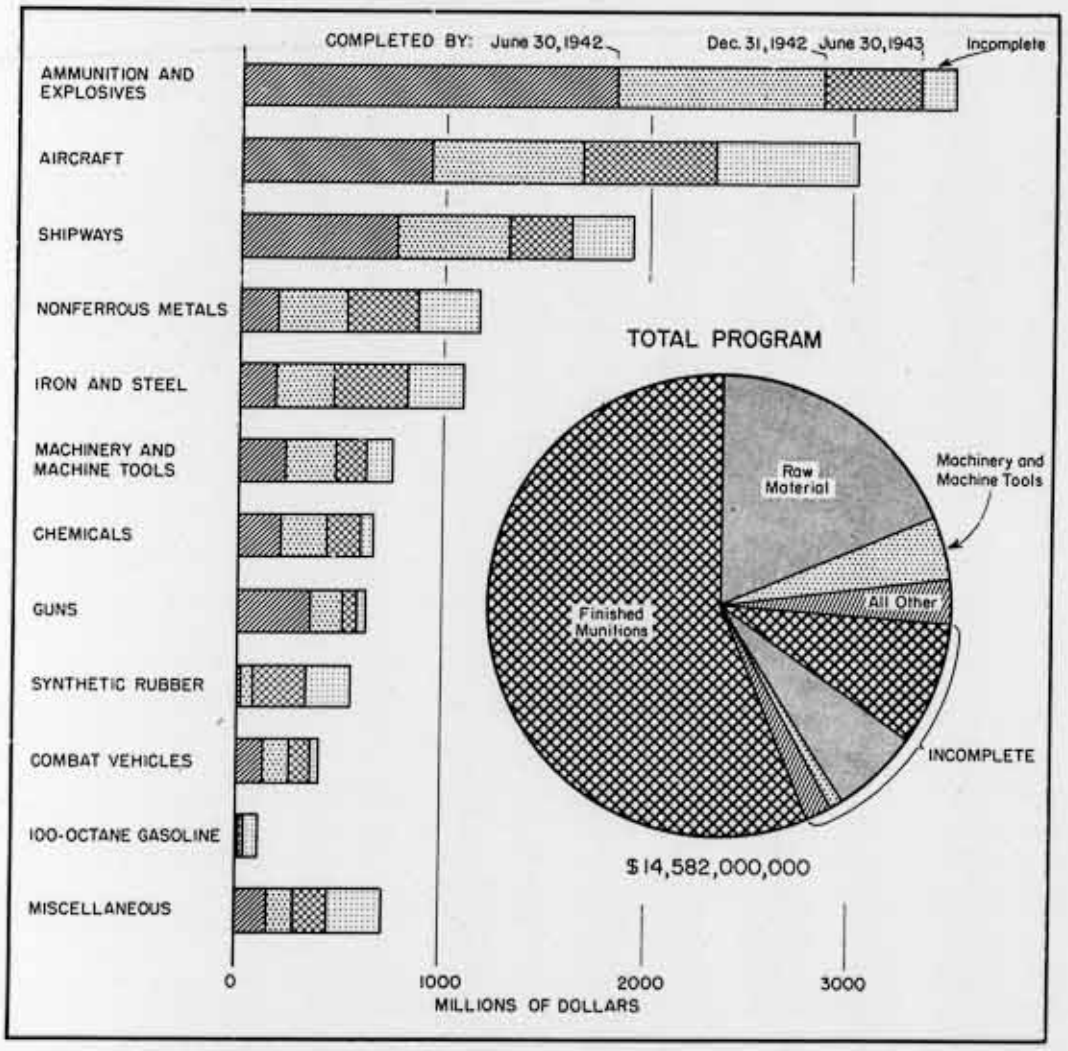
place; but six months later, on July 1, 1943, the proportion had risen to an estimated 39%, or $42,000,000. With synthetic rubber over the hump, all high-octane plants scheduled for completion in 1943 have just been accorded a higher (AA-1) preference rating. Consequently, steady increases in the program may be expected over the remaining months of the year.

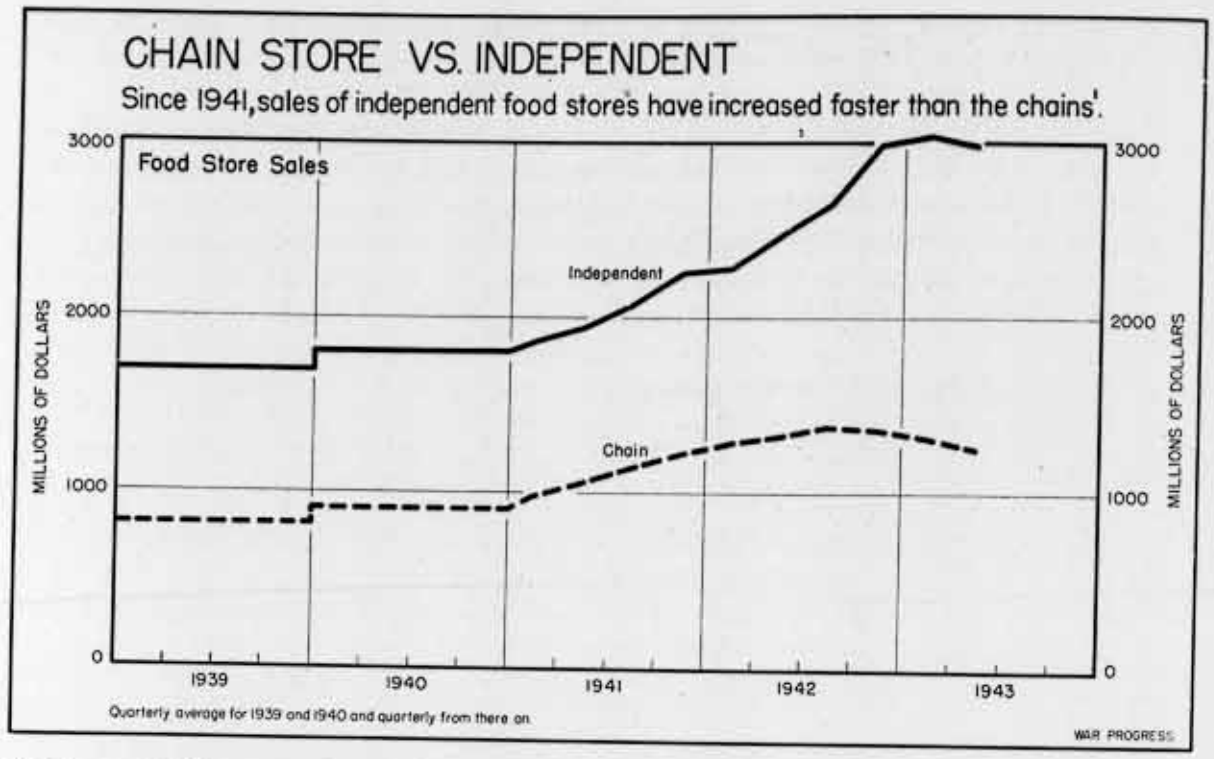
Parenthetically, high-octane plants represent the one program where private financing exceeds that of the government—$690,000,000 to $109,000,000. As of July 1, 1943, around 63% of the privately financed expansion had been completed.

The iron and steel program—a $1,100,000,000 expansion—has also been given the green light. Seven of the plants that are furthest advanced are being rushed to completion this year;

FACILITIES PROGRAM 83% COMPLETED

Ammunition leads with 95% in place; next are guns and combat vehicles. High octane and synthetic rubber are making up for lost time.





they constitute around one-third of the entire program, which is now more than 75% in place.

The chemical expansion—more than 90% completed today, 66% at the beginning of 1943, and 31% a year ago—is an apparent exception to the general rule of end-product facilities first, raw materials afterward. But this is accounted for by the inclusion of plants to turn out (1) lewisite, adamsite, mustard, chlorine, and other gases for the Army's Chemical Warfare Service—items which are really end products; and (2) anhydrous ammonia, one of the "obvious" raw materials needed for military explosives: work on the first anhydrous ammonia project began as early as December, 1940.

Combined, these two categories comprise about 80% of the $675,000,000 chemical expansion program; the remaining 20% is in plants to produce alcohol, phenol, oxygen, calcium carbide, etc.

An analysis of the government's war facilities program this year epitomizes clearly what is happening. Of the $6,492,000,000 completed in '42, the largest proportion—70%—went into ordnance, aircraft, and shipway facilities; only 21% into raw materials. This year, 40% of the $4,650,000,000 scheduled for completion is destined for raw materials; 50% for end munitions. Of all major end items, aircraft shows an increase—from 18% last year to 22% this:

Type	Distribution of Volume 1943 (est.)	1942
Raw materials*	40%	21%
Aircraft	22	18
Ordnance	18	37
Shipways	10	15
Machinery & machine tools	5	6
Other	5	3

*Includes 100-octane gasoline plants.

The conclusion is clear: The end of the munitions facilities program is the beginning of the end of the raw-materials program.

DEsigned for Subs

Destroyer escort program finally comes through and undoubtedly has helped to cut shipping losses. Deliveries must quadruple to meet second-half schedule

AFTER NUMEROUS LAGS and delays, the destroyer escort vessel program is finally coming through with a rush—22 were delivered last month against a schedule of 20. This was the second time a DE schedule had been exceeded and was the best showing for any antisubmarine vessel in June.

Deliveries of destroyer escorts were once slated to begin as early as November, 1942, but none was completed until February this year. And even though deliveries have increased rapidly since then, completions so far in 1943 have been 22 under the first-of-the-year schedule.

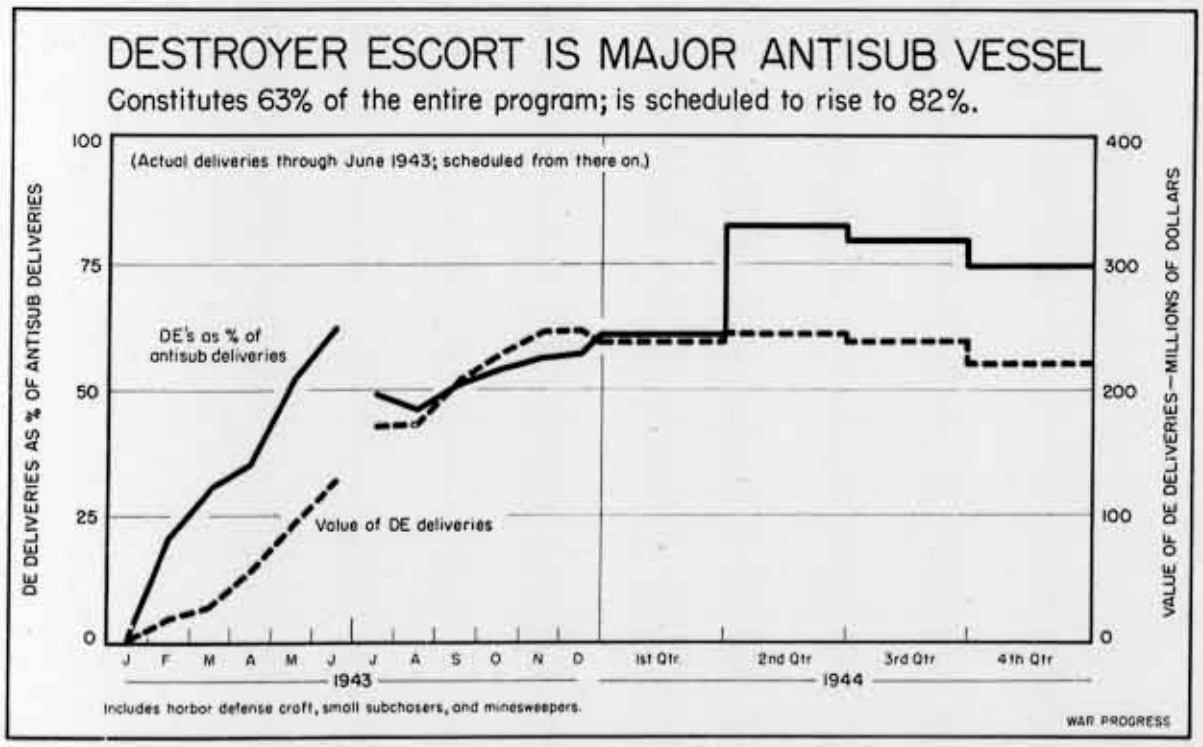
All told, 56 DEs have been delivered and some of these have undoubtedly been a factor in cutting down merchant ship sinkings, which in June were at their lowest level in almost two years (WP-July 9'43;p7).

From now on, additions of destroyer escorts to the fleet will mount rapidly. According to June 1 estimates, 30 are scheduled for delivery this month; by the end of the year, the count rises to 43 a month; and a peak of 46 vessels is reached in March, 1944.

AFTER DELAYS, DELIVERIES

Groundwork for the current showing was laid in March, 1942, when 300 of the vessels (including 50 originally slated for the British) were programmed. But delays developed from the outset. First, it was landing craft, with its green-light priority; then it was major design changes; and later on there were components shortages, especially in valves. Nevertheless, the amount of work put in place increased steadily (chart, page 10). That accounts for the current rapid rise in deliveries.

This year, 276 DEs are due to be de-

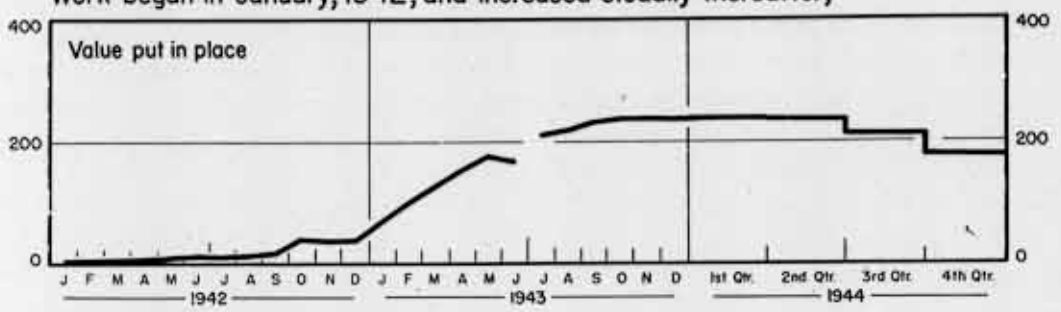


CONFIDENTIAL

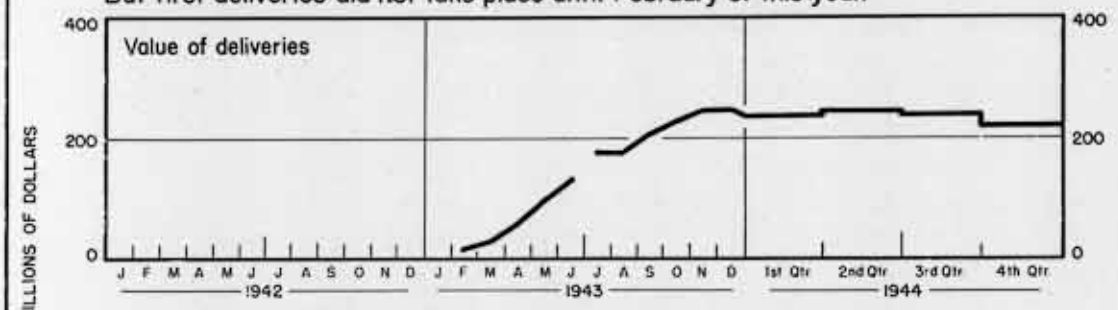
THE DESTROYER ESCORT PROGRAM

Yesterday's value put in place means deliveries of completed vessels today and tomorrow.

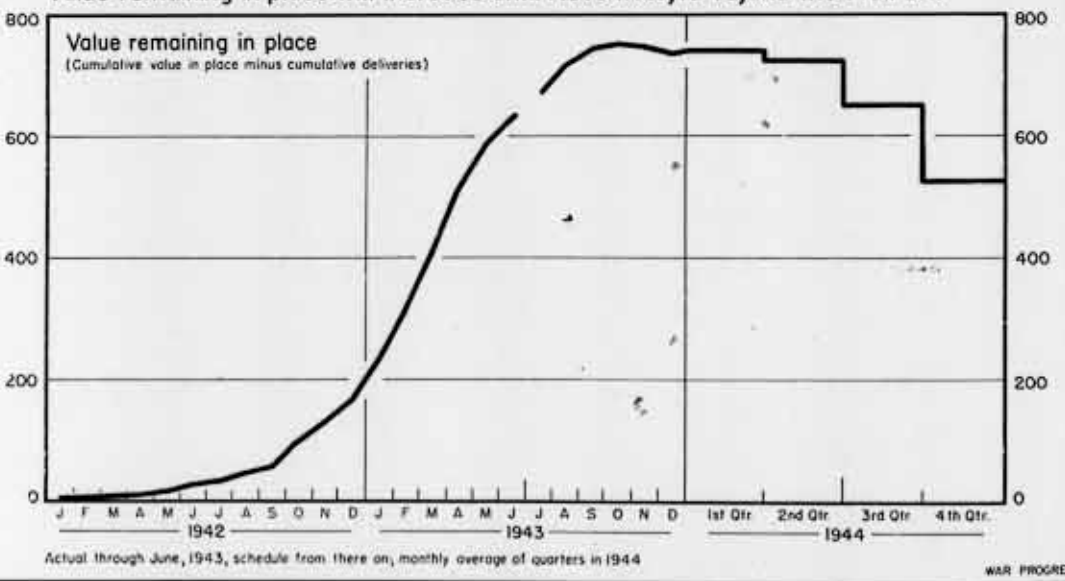
Work began in January, 1942, and increased steadily thereafter,



But first deliveries did not take place until February of this year.



Value remaining in place will increase until November, 1943, and then fall off.



Actual through June, 1943, schedule from there on, monthly average of quarters in 1944

WAR PROGRESS

CONSTRUCTION OF DESTROYER ESCORT VESSELS BEGAN IN JANUARY, 1942 (TOP CHART); BUT NONE WAS COMPLETED UNTIL FEBRUARY, 1943 (MIDDLE CHART). SO FAR, $950,000,000 OF WORK HAS BEEN DONE ON DES AND $319,000,000 DELIVERED, LEAVING $631,000,000 OF WORK ON UNFINISHED VESSELS. FOR THE NEXT FEW MONTHS WORK DONE WILL INCREASE FASTER THAN DELIVERIES, BUT AFTER NOVEMBER THIS YEAR, THE REVERSE WILL BE TRUE —AND THE BACKLOG OF ACCUMULATED CONSTRUCTION WILL DECLINE RAPIDLY (BOTTOM CHART).

livered—220 in addition to the 56 completed through June. In other words, for every escort ship delivered in the first six months, almost four must be delivered in the second half to meet the latest schedule. Next year the total rises to 495, a reflection of the heavy schedule of value to be put in place this year. There is a tapering off to 294 vessels in 1945. And after that, the program carries over in considerably smaller volume.

VARIPURPOSE EQUIPMENT

The DE is a new weapon—a cross between a British corvette and a large U.S. destroyer. It was designed specifically to relieve much faster vessels, such as 40-knot destroyers, from the job of shielding convoys traveling at 8-, 10-, 12-, and 14-knot speeds.

The DE's displacement ranges from 1,150 to 1,400 tons (against 2,200 tons for the latest U.S. destroyer); its top speed is 20 to 24 knots, equaling or exceeding the best a surfaced U-boat can show and more than doubling the U-boat's fastest speed submerged. The DE has special devices to detect submarines below the surface, carries a big cargo of depth charges, and such varipurpose equipment as torpedo tubes, antiaircraft guns, naval rifles, and radar.

Deliveries of destroyer escort vessels this year—$1,570,000,000—will comprise 50% of the Navy's expanding antisubmarine vessel program. And next year, the proportion is expected to rise to almost 75%: about $2,800,000,000 out of $3,800,000,000 (chart page 9).

War Progress Notes...

KEEPING THE HOME TUBES GLOWING

ON THE THEORY that the home radio is essential to civilian defense and morale, the Office of Civilian Requirements has asked for enough tungsten and molybdenum wire to permit manufacture of 26,000,000 radio tubes a year. They would be for replacement only. In 1940, replacements ran to 44,000,000 tubes.

So far this year, production of new tubes has run at an annual rate of 24,000,000; but the Army, Navy, and other procurement agencies have acquired 75% of them—on their high priority ratings.

CHAIN STORE SALES vs. INDEPENDENTS

TO DATE, war has boomed the retail food volume of both chain store and independent—but not alike (chart, page 8). Sales of the average independent store have increased much more sharply than those of the chain store. This is a change from prewar experience when chain store sales rose more sharply than those of the average independent. For which there are reasons:

Higher incomes make consumers less bargain-conscious, hence less chain-store conscious. Neighborhood shopping has become a wartime necessity. Overtime work, increased employment of women, and gasoline rationing have boosted neighborhood shopping.

Independent stores, with higher price ceilings, oftentimes can outbid chains in the market, especially for meat.

STATISTICS ON WAR SAVINGS

STATISTICALLY, the Treasury's payroll deduction plan is doing nicely. The number of participants in the plan has been rising and now constitutes about 60% of all nonagricultural employees. And the average participation per person has been getting up close to the old 10% minimum; the Treasury has adopted a new slogan—"figure it out for your-

self"—feeling that many workers are able and willing to spare more than one-tenth of their weekly wages or salaries.

Last year 37% of the Series E Peoples Bonds were bought under payroll deduction plans; so far this year, the proportion is 47%. But when the Treasury puts on a special public drive to sell bonds, the percentage drops. Note what happened last December and again in April and May this year (chart 4, below).

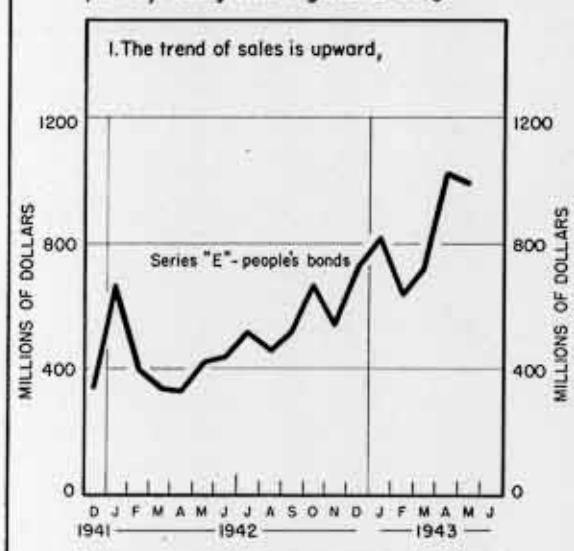
REPORTS ON REPORTS

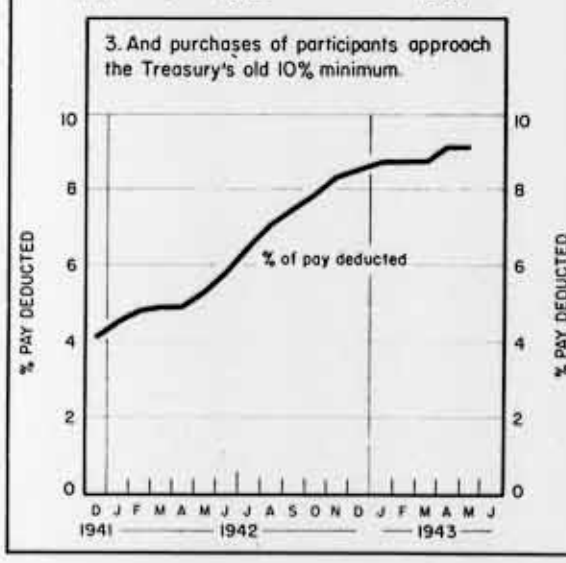
Time or Money

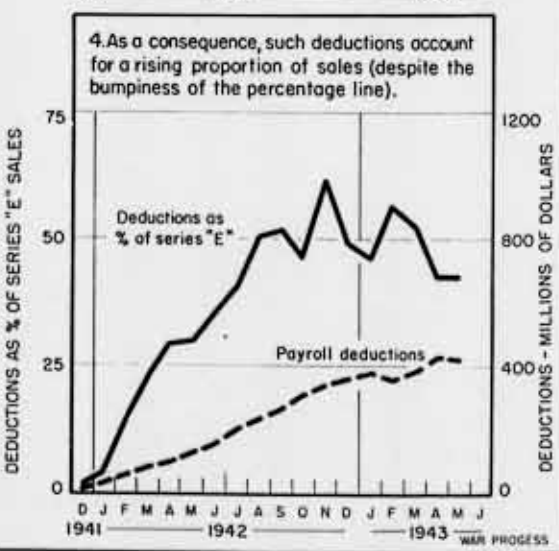
Incentive wage systems, to offset the effect of long hours and curtailed holidays on worker morale, are described in *Wage Incentive Policy Under a War Program in Great Britain, Russia, and Germany* (restricted; pp. 51). Labor and management collaborate with government

CHECKING UP ON PAYROLL SAVINGS

Last year 41% of all nonagricultural employees were participating in war-bond-buying plans; today the figure is 61%.







SELECTED MONTHLY STATISTICS

Employment—Hours and Earnings

	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
NONAGRIC. EMPLOYMENT-TOTAL (thousands)	38,328 p	38,262	38,336	38,942	36,665	29,676	n.a.
Manufacturing - Total	16,008 p	15,911	15,956	15,684	14,302	9,775	
Durable Goods	9,541 p	9,483	9,462	9,050	7,952	4,320	
Nondurable Goods	6,467 p	6,428	6,494	6,634	6,350	5,455	
Government	5,937 p	5,948	5,890	5,811	5,037	3,938	
Other	16,383 p	16,403	16,490	17,447	17,326	15,963	n.a.
AVERAGE HOURLY EARNINGS (cents)							
All Manufacturing Industries	95.3 p	94.4	93.4	90.5	83.5	63.2	n.a.
Durable Goods	105.0 p	103.9	103.0	100.5	92.5	69.4	n.a.
Nondurable Goods	79.6 p	79.0	78.2	75.6	71.2	58.3	n.a.
Bituminous Coal Mining	111.9 p	112.8	111.9	107.3	106.0	86.0	90.1
Metalliferous Mining	98.4 p	96.2	94.9	92.6	87.3	69.1	72.6
AVERAGE HOURS PER WEEK							
All Manufacturing Industries	45.2 p	45.0	44.7	44.0	42.9	36.9	n.a.
Durable Goods	47.0 p	46.8	46.4	46.1	45.2	37.1	n.a.
Nondurable Goods	42.7 p	42.4	42.3	41.3	40.1	36.8	n.a.
Bituminous Coal Mining	35.6 p	36.9	38.6	34.4	33.1	14.1	24.9
Metalliferous Mining	44.3 p	43.9	43.7	44.2	43.7	40.0	44.6

*Nonagricultural Employment, June; Hours and Earnings, May. n.a. Not available. p Preliminary.

2 28517

and industrial experts in determining piece rates and bonuses in Great Britain and Russia; in Germany, the government makes the rules and fixes the incentive. (War Manpower Commission, Bureau of Program Requirements)

Wanted: A Slogan

American businessmen, by and large optimistic, are aware of changing world relations, and subscribe to internationalism in principle, according to *Business Men Discuss the Post-War World* (restricted; pp. 21). But their speech reactions do not seem to have kept pace with their ideas. They still use obsolete cliches to describe an international order for which new words have to be invented.
(Office of War Information, Bureau of Special Services)

Latin-American Baedeker

The Latin-American Republics: Basic Data on Political, Geographic, Social, and Economic Conditions (restricted; pp. 150) is what its title implies—a handbook on political conditions, domestic resources and industry, foreign commercial relations, and the economic position of Latin-American countries.
(Coordinator of Inter-American Affairs, Research Division)

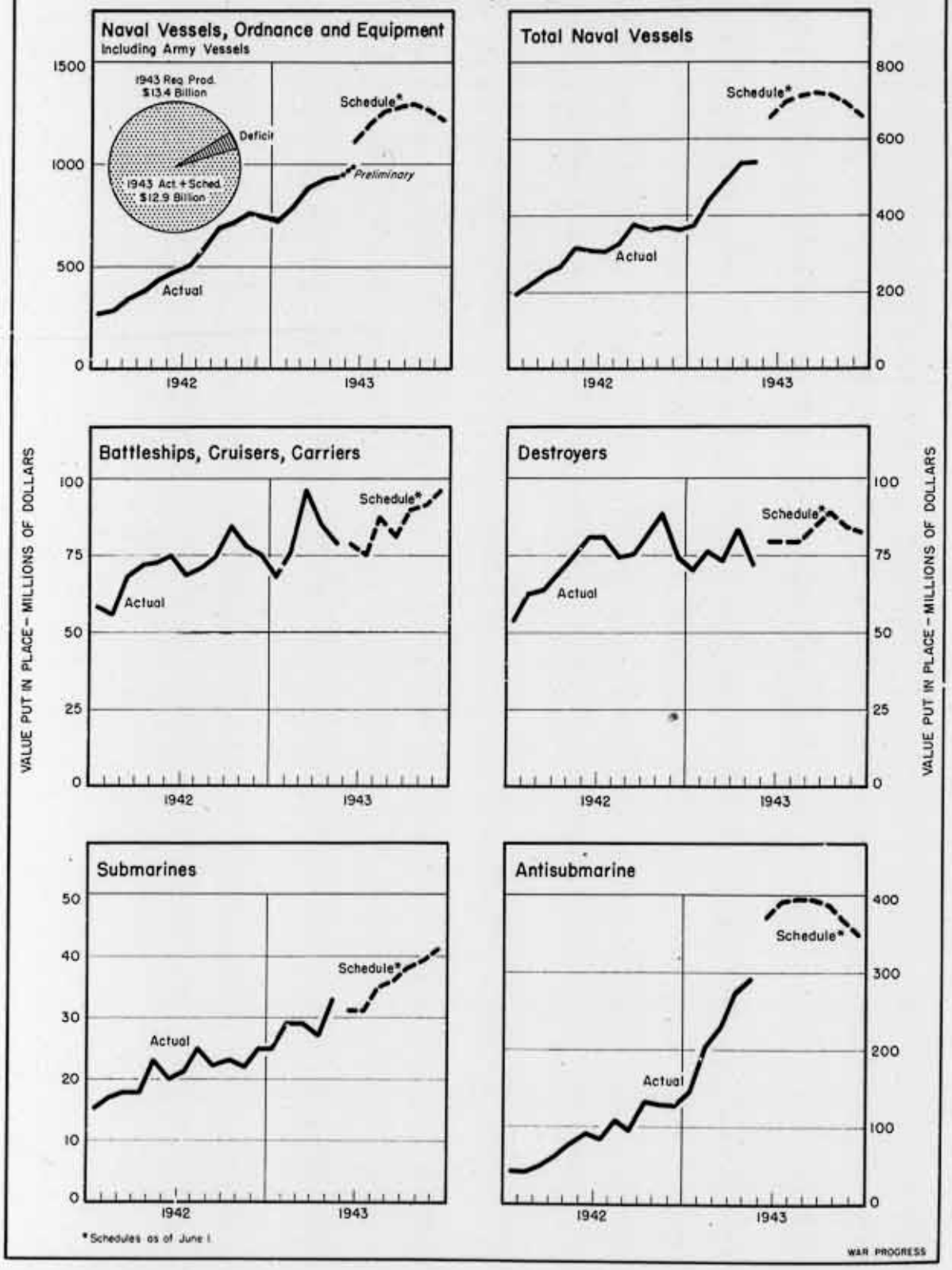
Cotton Outlook

More cotton textile production is needed, and 1943 crop prospects are uncertain, according to *Cotton Textiles* (confidential; pp. 30). The report recommends conservation measures, such as blending and reduction of yarn content per yard; simplification of patterns; voluntary 48-hour week.
(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.]

PRODUCTION PROGRESS

Naval Vessels, Ordnance and Equipment; Army Vessels; Merchant Vessels

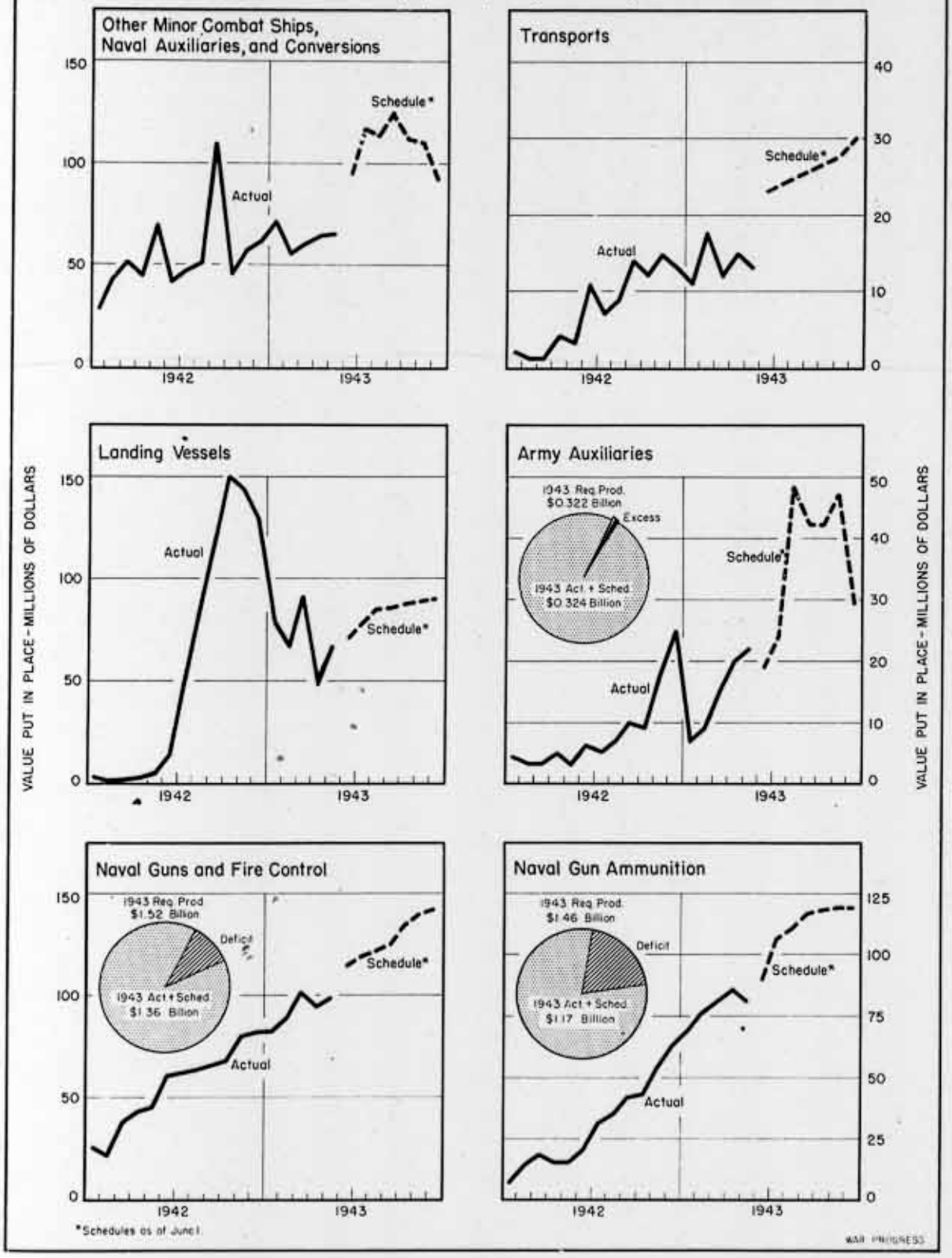


*Schedules as of June 1

WAR PROGRESS

PRODUCTION PROGRESS

Naval Vessels, Ordnance and Equipment; Army Vessels; Merchant Vessels



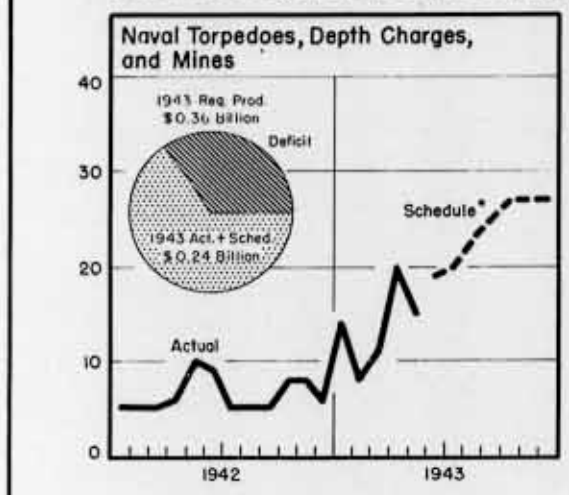
*Schedules as of June 1

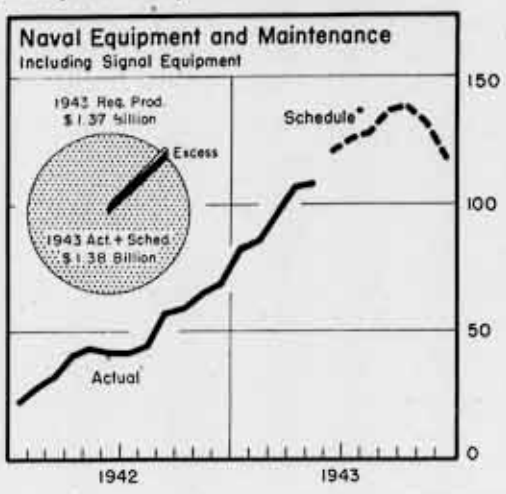
WAR PROGRESS

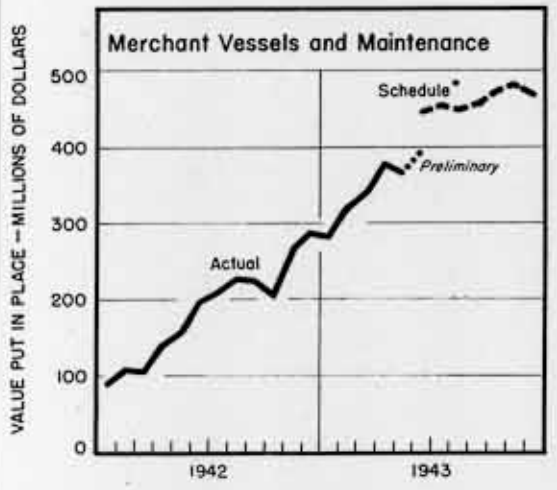
CONFIDENTIAL

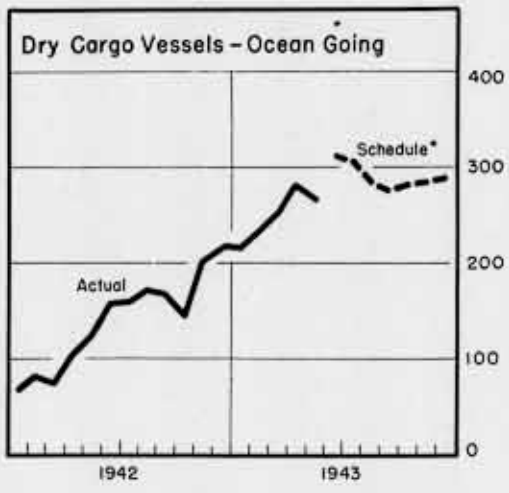
PRODUCTION PROGRESS

Naval Vessels, Ordnance and Equipment; Army Vessels; Merchant Vessels









VALUE PUT IN PLACE — MILLIONS OF DOLLARS

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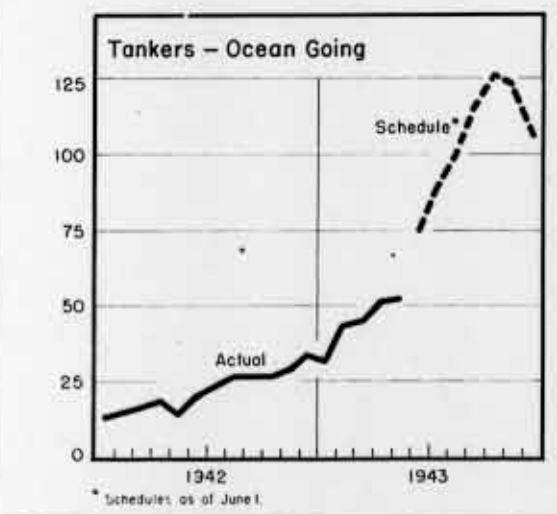
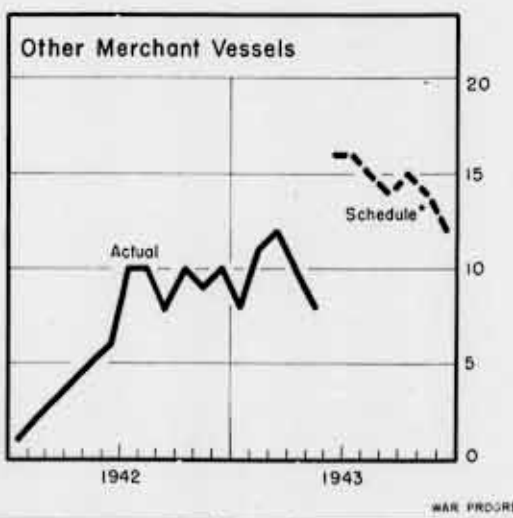




* Schedules as of June 1.

WAR PROGRESS

The President

WAR PROGRESS

Confidential
(British Secret)

The Program—
Yesterday, Today, and Tomorrow

Production Progress Tables

Number 150 July 30, 1943

Toward More Realistic Requirements

Job originally was to raise sights; then the programs had to be cut back. Current production plateau raises doubts about feasibility of this year's goals.

PRELIMINARY DATA covering the first 20 days of July indicate that munitions production has not registered any sharp resurgence from the April-May-June plateau. Another "slow" month seems to be in prospect.

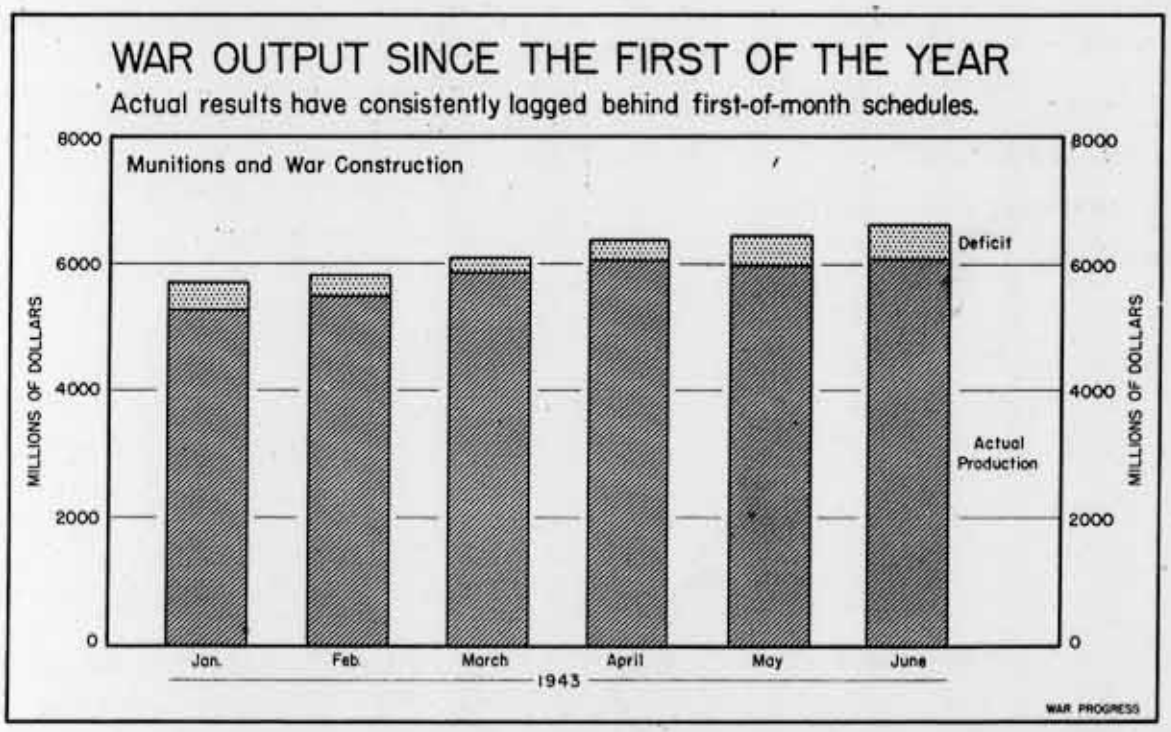
This leveling-off at this time is crucial. It makes it fairly clear that schedules for the year (amounting to $66,500,000,000) or requirements (amounting to $68,600,000,000) will not be met. Indeed, the performance even raises doubts whether full-year munitions will amount to as much as $65,000,000,000—which has generally been regarded as the "likely" prospect.

To achieve that $65,000,000,000 output, munitions production from now on will have to average $6,170,000,000 monthly, or 22% higher than June's $5,070,000,000. By December, the monthly value of munitions will have to get up to around $6,800,000,000 as scheduled.

POWERFUL JOB

The degree of difficulty is further suggested by this: to produce $65,000,000,000 of munitions this year, an increase of $315,000,000 per month from the June level is required; yet monthly stepups of that size have occurred only three times since the war effort started. Moreover, no such increase for July is likely, which piles an additional load on the next five months.

The construction program is a different problem. Here the schedule de-



clines. During the first half, government-financed construction amounted to $6,800,000,000, and $4,500,000,000 is scheduled in the next six months.

WHAT IS FEASIBLE?

Thus, on the basis of the current outlook, output for the year shapes up like this:

	Munitions	Constr.	Total
	(in millions)		
First half...	$28.0	$6.8	$34.8
Second half..	37.0	4.5	41.5
Total.....	$65.0	$11.3	$76.3

That estimated total for munitions plus war construction—if it is achieved—would not be too far out of line with past expectations. It's true that current schedules call for aggregate munitions and war construction for 1943 of $77,800,000,000; it's true also that requirements run even higher—to $79,900,000,000. But historically a $75,000,000,000 total has been looked upon as a realistic goal for 1943. Last fall, for example, the War Production Board reported to the Joint Chiefs of Staff that $75,000,000,000 to $80,000,000,000 represented the feasible production limits for 1943 and recommended that production programs be cut back accordingly (WP-Nov13'42,p3; Dec18'42,p7). And $80,000,000,000 was looked on as an outside possibility.

Moreover, this year's results are close to the target in comparison with what happened in 1942. Last year at this time, required 1942 output of munitions and war construction was set at $59,000,000,000. But when final returns for the year came in, the total reached was only $48,000,000,000. Thus the deficit—based on the midyear forecast—was $11,000,000,000, or 19%, compared with the estimated deficiency for this year of $3,600,000,000, or 5%.

SPEED, CAPACITY, BALANCE

This improvement is directly traceable to more realistic requirements. Ever since the war effort got under way, the Army, the Navy, and the Maritime Commission, and the War Production Board have been faced with a triple problem:

1. To get production going as fast as possible.

2. To use overall resources—materials, machinery, and manpower—at capacity.

3. To obtain balanced production—so that there are enough merchant ships to transport troops and equipment, so that there are enough guns for tanks, and so on.

AT FIRST, A SPUR

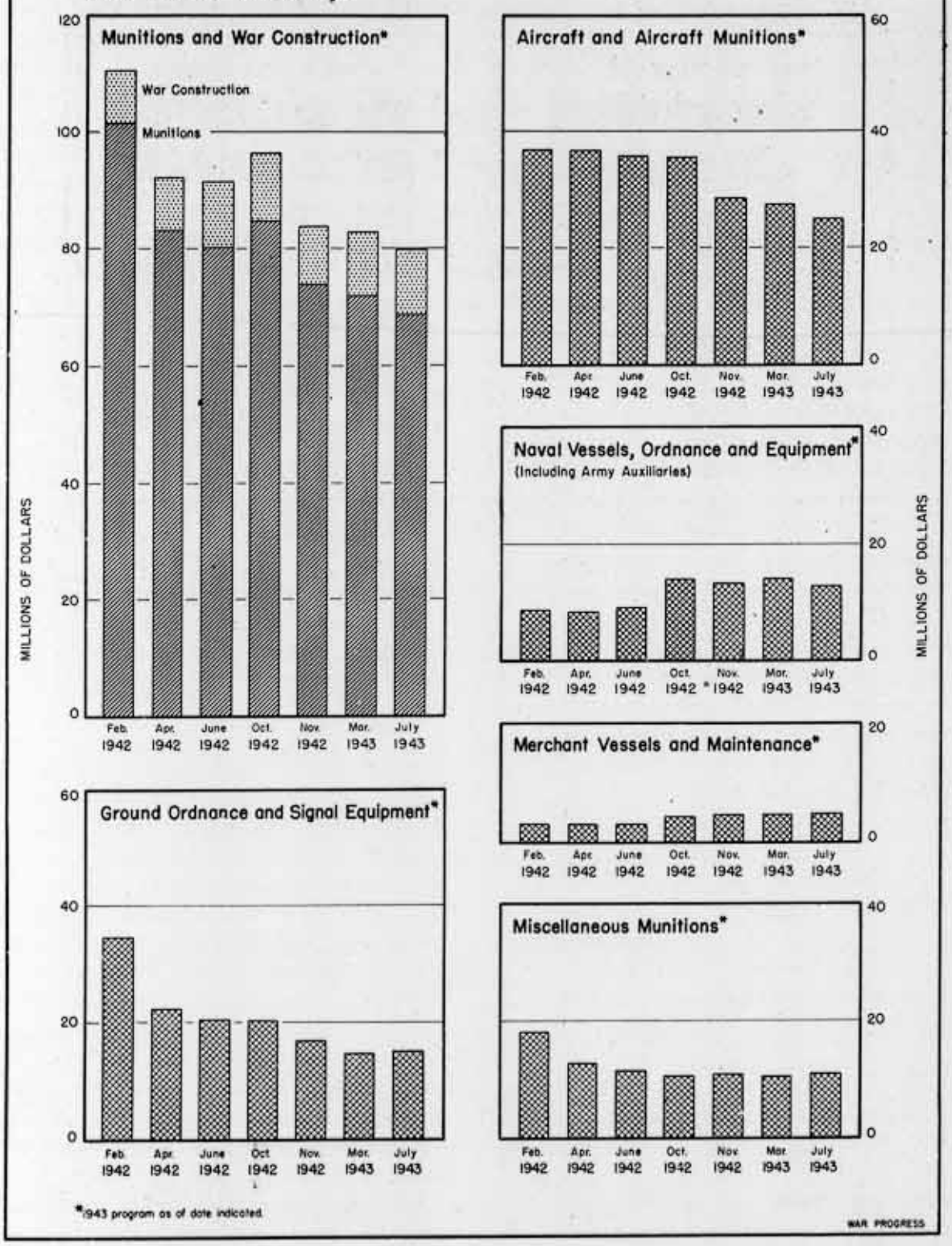
Initially, however, there were no reliable guides to what the nation really could produce when pushed. During 1940 and 1941, goals were generally set too low; they were based on what plants had been doing on one shift.

But after Pearl Harbor President Roosevelt set forth objectives designed

IN THIS ISSUE:

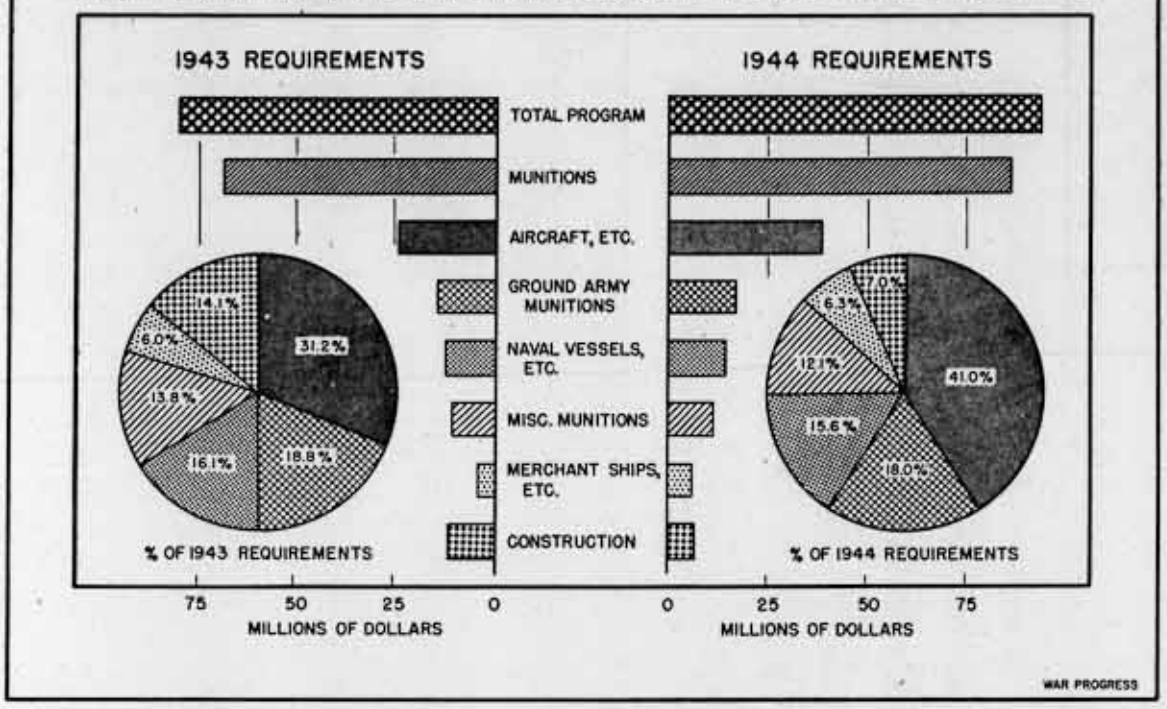
BRINGING THE 1943 PROGRAM UP TO DATE

Sights were set high after Pearl Harbor; thereafter, the problem was to adjust them toward "feasibility."



REQUIREMENTS - 1943 AND 1944

Overall program is destined to rise next year. Big gain: Aircraft. Sole drop: Construction.



to spur on military procurement officers. And they gave rise—in February, 1942—to the first full set of Army, Navy, and Maritime requirements. These requirements were both tentative and ambitious; they called for a 1943 program of $111,000,000,000, divided as follows:

Aircraft, etc...	$37,000,000,000
Ground ordnance.	35,000,000,000
Navy.....	9,000,000,000
Merchant vessels	3,000,000,000
Misc. munitions.	18,000,000,000
Construction....	9,000,000,000

This program soon ran into trouble.

The airplane program was deliberately put at a high level. But plants did not build up capacity fast enough to meet the goals. Hence there have been successive cutbacks—the last major one took place two months ago, when the W-4 schedule succeeded 8-L, and airframe weight was cut back 14%.

ORDNANCE REORIENTS

Army items—ground ordnance and signal equipment and miscellaneous munitions—also have been consistently cut back. Here original sights were set high, partly because of the urge to get into production as fast as possible, partly because many Army items closely resembled peacetime products—tanks were cousins of locomotives or automobiles, etc.—and the problems of building up a big volume did not appear so great as, say, in naval or merchant ships.

Moreover, strategical considerations prompted cutbacks, as in tanks. And in bombs and ammunition, expenditure has been less than originally anticipated.

On the other hand, the naval ship program has been expanded greatly. The original programs for destroyer escort vessels and landing craft were modest compared to what they are today. Merchant vessel requirements have gone up too—for obvious reasons. The war construction program also increased, despite attempts to cut it back sharply to save materials for munitions (WP-June4'43,p7).

AIRCRAFT IS A THIRD

As 1943 requirements shape up today, the total has been cut back 28% from the tentative February, 1942, level. The big cut was in ground army munitions, the big increases in naval and merchant ships, viz:

	1943 Requirements (millions)	% Change from Feb.'42
Aircraft, etc...	$24.9	-33%
Ground army munitions.....	15.0	-57
Navy.....	12.9	+43
Merchant vessels	4.8	+60
Misc. munitions.	11.0	-39
Construction....	11.3	+26
Total.....	$79.9	-28%

In terms of overall dominance, the aircraft and related munitions program has been consistently at the top. Back in February, 1942, aircraft items constituted 33% of 1943 requirements; in November, 1942, after the "feasibility" cutback of that period, aircraft was still one-third of all work to be done

W-4 BECOMES W-5: JULY AIRPLANE GOAL CUT

A PERIODIC REVISION of the airplane schedule has just been completed: W-4 has been succeeded by W-5. Overall goals for 1943 are not changed significantly, but the current month's schedule is reduced 4% in number to 8,057; in airframe weight, the cutback amounts to 6%. This reduction reflects the 10%-behind-schedule performance in June (WP-July9'43,p2).

Production for the last half of the year is now set at 57,106 planes, as against 57,348 in W-4. The full-year total under W-5 is 94,248, a reduction of less than 1% from W-4 both in numbers and in airframe weight. Next year's goal is lifted slightly—both in weight and number: the schedule calls for 127,307 planes as against 126,161 in W-4.

One of the biggest cuts is in the medium bomber group—from 3,996 planes to 3,721 planes in the last six months of this year, and from 9,000 planes to 8,640 in 1944. Two models will bear the brunt of this cutback: B-26 Marauders at Glenn L. Martin's Baltimore plant, and B-25 Billy Mitchells at North American Aviation's Kansas City plant.

The most significant increase comes in 1944, when Grumman's F6F Hellcat—formerly known as the Wildcat II—moves up 43% to 5,988 planes. Packing 2,000 horsepower, the Hellcat is one of the largest Navy fighters and has performed impressively in precombat trials.

The stepup in Hellcats is at the expense of Grumman's production of TBF Avenger light bombers, whose output will cease in January. Part of this loss, however, will be offset by boosting the monthly production peak for Avengers from 240 to 300 at General Motor's Trenton plant.

this year; and today it is about 31% of the program. How the program has shifted (note how the ground army munitions proportion has dropped) follows:

	% of 1943 Requirements		
	February 1942	November 1942	Today
Aircraft, etc...	33.4%	33.8%	31.2%
Ground army munitions.....	31.3	20.0	18.8
Navy.....	8.0	15.8	16.1
Merchant vessels	2.8	5.6	6.0
Miscellaneous munitions.....	16.4	13.0	13.8
Construction....	8.1	11.8	14.1

The 1944 program is not, by any means, firmly established. Changes undoubtedly will be made between now and next year. The total increases to $93,500,000,000 from this year's $79,900,000,000. But proportionally the only significant shifts are in aircraft, which rises to 41% of total requirements, and in construction, which drops to 7%. Army, Navy, and Maritime proportions stay pretty much put, though dollarwise they go up slightly (chart, page 4).

1944—A CHALLENGE

But to make next year's program—as it now is constituted—total output of munitions and war construction will have to average $7,700,000,000 per month. That's a big jump from current levels of $6,000,000,000 a month. Munitions production, alone, will have to average better than $7,200,000,000 per month next year if requirements are to be met. That compares with the afore-mentioned June level of $5,070,000,000 and the December end-of-the-year schedule of $6,800,000,000.

KEY STATISTICS OF THE WEEK

	Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
War program - Checks paid (millions of dollars)	1,474	1,600	1,850	1,123	1,068
War bond sales (millions of dollars)	199	212	217	279	183
Wholesale prices (1926=100)					
All commodities	102.9 p	102.9 p	103.1 p	101.7	98.4
Farm products	124.8 p	125.0 p	126.2 p	117.2	105.4
Foods	107.0	106.5	108.0	104.7	98.9
All other than farm products and foods	97.1 p	97.0 p	96.9 p	96.3	95.9
Petroleum:					
Total carloadings	57,344	59,485	58,239	53,631	54,682
Movement of cars into the East	32,239	33,302	31,191	26,520	24,971
East coast stocks for civilian use (1940-41=100 Seas. Adj.).	35.2	35.0	29.5	35.3	53.1
Total stocks of residual fuel oil (thousands of barrels)	66,992	67,017	67,960	71,216	77,512
Bituminous Coal:					
Production (thousands of short tons, daily average)	1,977	1,960 r	2,017	1,929	1,857
Exports (no. of freight cars unloaded for export Friday, excl. grain)					
Atlantic Coast ports	2,551	2,343	2,162	1,212	1,379
Gulf Coast ports	431	381	354	328	460
Pacific Coast ports	1,241	1,327	1,305	848	572
Unused steel capacity (% operations below capacity)	2.0	1.7	9.7	1.4	3.7
Department store sales (% change from a year ago)	+19	+20	+19	+1	+5

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Carriers for Convoys

Baby flat-tops, designed to protect merchant ships from subs, have also been used as offensive weapons. Present program almost triples that of year ago.

IN JUNE, 1941, a new antisubmarine vessel was completed. It had a flat top (flight deck) and an island (superstructure) on the starboard side. Only about half as large as carriers of the Essex class, such as the new "Lexington" and "Yorktown," it developed less than half their speed, mounted lighter armament, had no protective armor, and carried about one-fourth to one-third as many planes. It was the aircraft carrier escort "Long Island"—formerly the merchant ship "Moormacmail"—first of the Navy's baby flat-tops.

MERCHANTMEN REMADE

Since that time, 34 aircraft carrier escort vessels (first designated as aircraft escort vessels, later as auxiliary aircraft carriers) have been delivered. And many of them have already been highly effective in fighting off submarines from the convoys they were designed to protect. Of the total, 19—like the "Moormacmail"—were conversions of completed merchant ships; 12 were taken over by the Navy for conversion while under construction as merchantmen; and three were built as baby flat-tops from the time their keels were laid.

PRECEDENCE LOW

Like destroyer escorts, the program for aircraft carrier escorts didn't have clear sailing (WP-July23'43,p9). At the outset construction was delayed by the inexperience of private yards with Navy work. Later on, the rush call for landing craft took away components, especially motor generators, pumps, and winches. As a result, out of 30 ships slated for delivery last year—based on the August, 1942, schedule—only 17 actually came through.

Moreover, A.C.E.s continued low in the Navy's precedence list this year, behind destroyers, regular carriers, and such other antisubmarine vessels as destroyer escorts, large minesweepers, corvettes, and Coast Guard cutters. Thus, although first-of-the-year schedule called for 26 to be completed in the initial half of 1943, only 15 were delivered.

53 FOR 1944

The entire program now calls for 144 aircraft carrier escort vessels, as follows:

1941.....	2
1942.....	17
1943.....	41
1944.....	53
1945.....	15
After 1945.....	16
Total.....	144

This month, four baby flat-tops are scheduled for completion, while six are on the docket for August. The peak month is expected in January, 1944, when eight vessels are scheduled for completion. Thereafter, the program tapers off.

PINCH-HITTER

The A.C.E. was developed for antisubmarine work with ocean convoys. As recently as April, 1942, the total program consisted of only 29 vessels. But as undersea attacks increased and United Nations ship losses mounted, the program grew, as the above table suggests.

There was another reason for this growth. During the year after Pearl Harbor, the United States lost more than

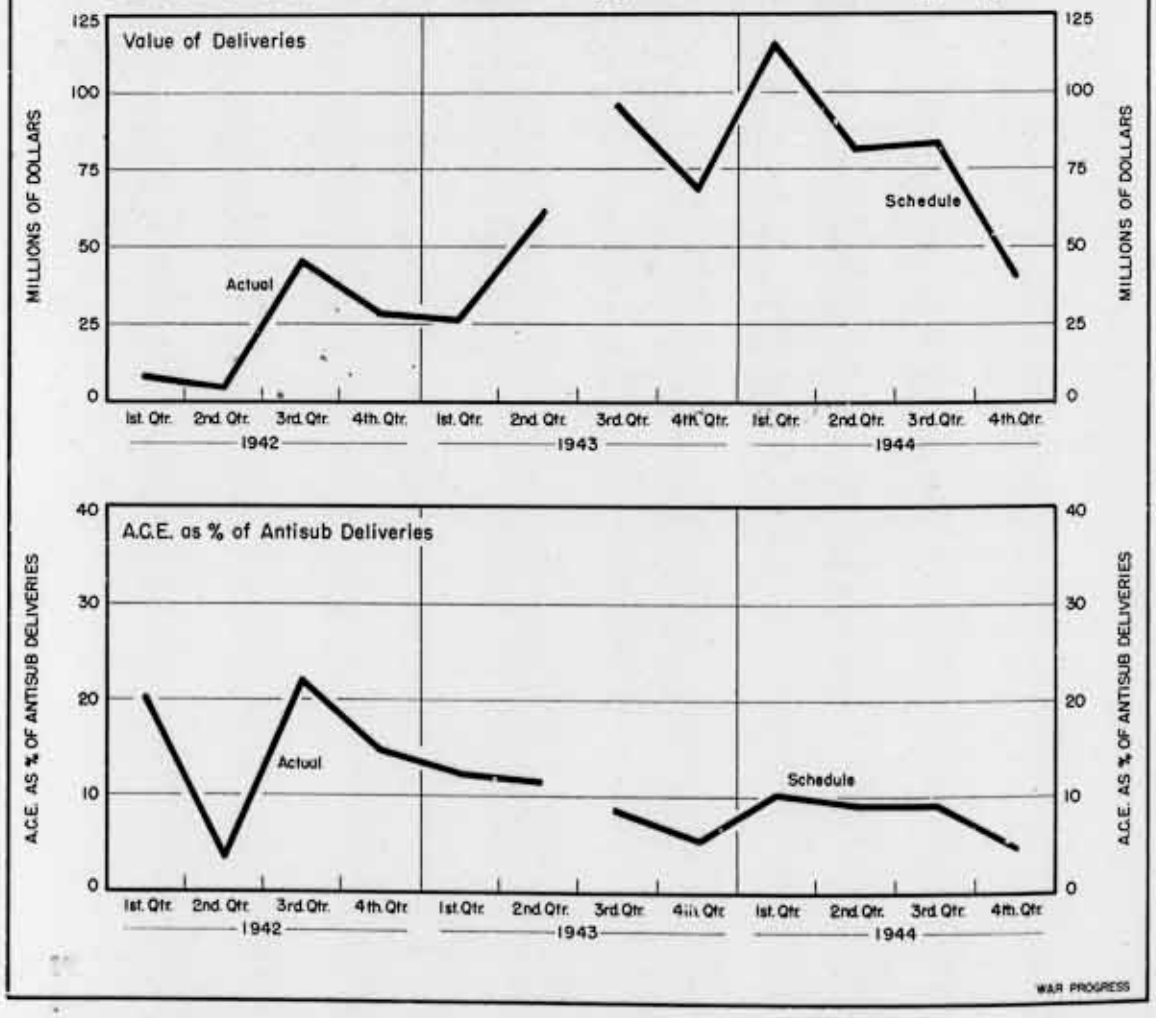
half of its regular carrier strength. A baby flat-top could be delivered in about half the average time it took to build a regular carrier (11 months compared with 20). And although more vulnerable to attack, principally because of its much lower speed (16-20 knots versus 29-34 knots), the aircraft carrier escort could be used for limited offensive duty, thus filling in for the regular aircraft carrier. That was a role it played in the South Pacific and the waters around North Africa, Attu, and probably the island of Sicily.

RELATION REVERSED

Deliveries of baby flat-tops in 1942 exceeded those of regular aircraft carriers—$85,000,000 to $55,000,000. This year, the reverse relationship will hold, with deliveries of regular carriers currently scheduled to be more than twice the value of aircraft carrier escorts: $537,000,000 against $247,000,000.

THE A.C.E. IN THE ANTISUB PROGRAM

Though it constitutes only a small proportion of antisubmarine vessels, the aircraft carrier escort has done and is doing yeoman service on convoy duty.



From Tools to Turbines

Backlog of machine-tool orders continues to decline, as cancellations average $16,000,000 per month. Makers seek new uses for facilities.

IMMEDIATELY AFTER Pearl Harbor, U.S. manufacturers swamped the machine-tool industry with orders. In six months, $1,250,000,000 of new business was placed, most of it "rush."

But now that bulge in business has been wiped out. For eleven consecutive months, the industry's backlog has declined—from a peak of $1,117,000,000 at the end of July, 1942, to $502,500,000 at the end of last month, or just about down to the level of January, 1942, when the backlog amounted to $488,000,000.

CANCELLATIONS, TOO

And the orders on the books are due for further shake-outs. Incoming business averaged only $71,729,000 a month during the first half of this year, as against shipments of $116,000,000, which means a $45,000,000 monthly reduction in business on hand. Moreover, cancellations continue to come in; so far this year they have averaged $16,000,000 per month.

As of May 1, Air Force orders dominated the backlog; foreign orders came next at 20%, and army ordnance and the Navy followed in close order. The rest was split up in small blocks:

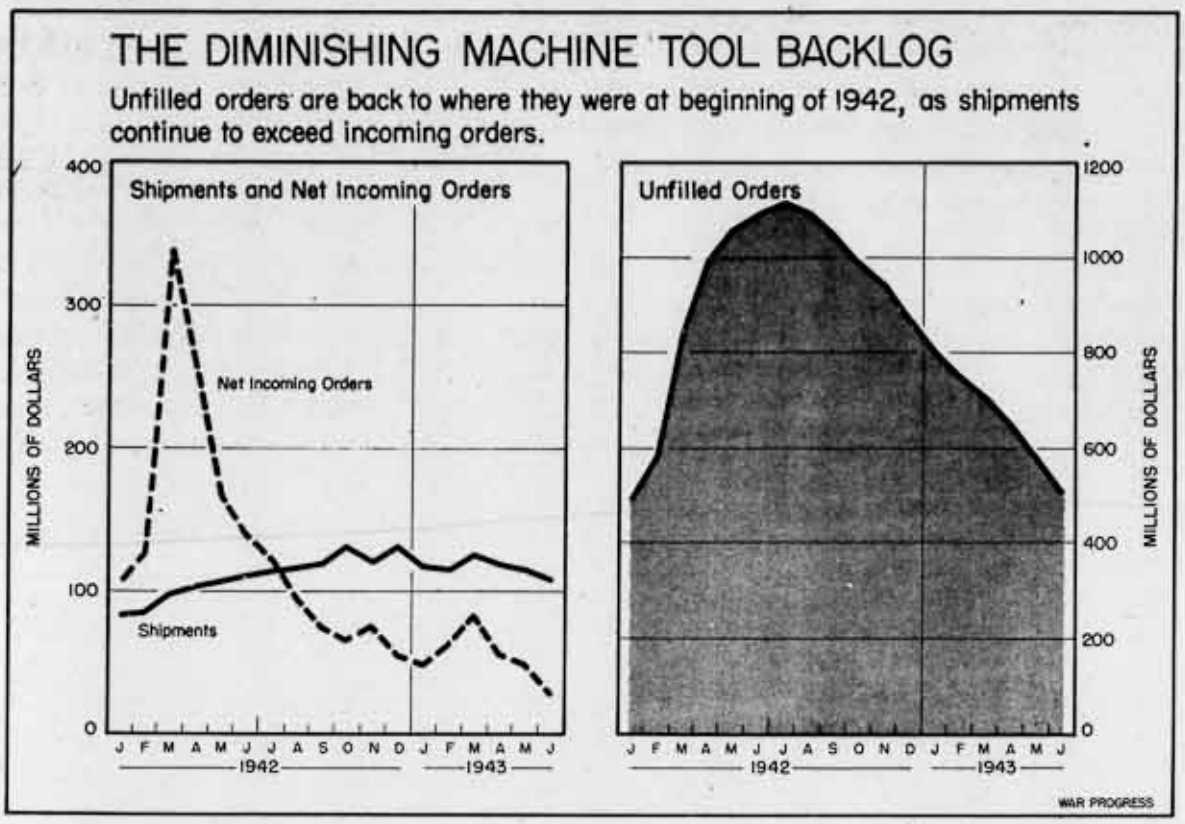
Source of Order	% of Backlog
Air Force	44.1%
Army ordnance	15.3
Bureau of ships	7.8
Naval ordnance	3.7
Signal corps	0.7
Miscellaneous Army and Navy	1.6
Maritime Commission	1.5%
Essential industrial	5.3
Foreign	20.0
Total	100.0%

As prospects now shape up, production of machine tools may run to about $500,000,000, or 40% of capacity, next year. Export demand, replacements and repair parts, and new orders resulting from strategic shifts in munitions requirements (weapons or new designs) will provide the bread-and-butter business, as follows:

Source of Demand	% of Industry's Capacity
Repair parts	10%
Shifts in munitions	10
Replacements	8
Export	12
Total	40%

But the $500,000,000 is "good" judged by peacetime standards. In 1939, output was $200,000,000, and during the depression the industry's output dropped as low as $20,000,000. Moreover, as WAR PROGRESS has noted before (WP-Apr30'43,-p1) machine-tool makers have already begun to anticipate the drop-off in their regular business, seeking outside orders for valves, turbines, airplane-engine and diesel-engine parts, gun mounts, torpedoes, superchargers, etc. The War Production Board, representing the government as the owner of 54% of the new facilities built and equipped to manufacture machine tools, has been pushing manufacturers to go out and find such business.

It is believed that about $300,000,000 worth of direct munitions can be turned out next year, although a volume of $500,000,000 might be possible with



adequate planning. Added to its machine-tool production, the industry would thus be operating at a $800,000,000 a-year clip—or about half its peak annual rate of $1,584,000,000 in the month of December, 1942.

But not all companies will be permitted to go in for direct munitions work. A few—for instance, manufacturers of forging machines and presses, precision boring machines, special purpose machines, etc., still critical tools—will have to use their facilities entirely on production of these tools.

War Progress Notes

BEDS FOR WOMEN

WHEN the war housing program was first launched, all the dormitories were for men. But then the trend toward women in industry began showing up on the blueprints. A year ago, one out of every four dormitories built was for women. Today the program is on a 50-50 basis, and the women's proportion is increasing.

SCABBARD AND BLADE

IN THE LAST WAR, soldiers wore out their scabbards faster than their bayonets. So, in this war, procurement was planned accordingly—more scabbards than bayonets. But the present plastic scabbard has lasted better than the old-style leather scabbard, with these results:

In January, 1,315,000 more scabbards than bayonets were on hand; so production schedules for scabbards were cut drastically. However, as of July 1 that excess had been whittled down to only 1,017,000. Further, the year's requirements for scabbard production have now been met, and no more will be made this year.

Requirements for 1944 call for ap-

proximately an equal number of scabbards and bayonets—something over 1,500,000 of each. How many will be made depends on which, from now on, has the higher attrition rate.

REPORTS ON REPORTS

Homes for Workers

Completion by March, 1943, of 76% of the program for 3,031,952 housing units to meet the needs of essential war workers through June, 1943, is reported in the *Annual Report of the National Housing Agency* (restricted; pp. 32). The agency estimates that the present publicly financed temporary family unit uses only 21% of the critical materials required by the prewar family unit. (National Housing Agency)

Tools, Stoves, Furnaces

Hardware, and Plumbing and Heating (confidential; pp. 13) reports a 16% increase in output over the first quarter of 1941. Most of the output is going to meet military needs, but possible relaxation of priorities and wider use of plastics may release a limited quantity for civilian use later in the year. (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

Production-Retail Sales-Cost of Living-Labor Disputes-etc.

	Latest Month*	Preceding Month	2 Months Ago	6 Months Ago	Year Ago	Same Month 1939	Same Month 1937
PRODUCTION INDEX-INDUSTRIAL (1935-39=100)†	202p	204	201	194	177	102	119
Total Manufactures	217p	217	215	207	185	102	120
Durable	304p	304	300	283	246	100	131
Nondurable	147p	147	145	146	136	104	111
Minerals	121p	133	124	119	132	103	115
PRODUCTION OF CLOTHING AND SHOES FOR CIVILIANS (1935-39=100)†							
Clothing and Shoes combined	105	108	112	102	110	n.a.	n.a.
Clothing	108	111	115	104	110	n.a.	n.a.
Shoes	95	98	98	94	109	n.a.	n.a.
RETAIL STORE SALES-TOTAL (million dollars)	5,228p	5,113	5,182	5,926	4,503	3,534	3,646
Durable goods	898p	893	884	937	837	949	1,080
Nondurable goods	4,330p	4,220	4,298	4,989	3,666	2,585	2,566
CONSUMER EXPENDITURES (million dollars)	7,345p	7,416	7,333	7,195	6,606	5,191	5,380
Goods	4,950p	4,984	4,910	4,820	4,315	3,320	3,558
Services	2,394p	2,432	2,424	2,375	2,291	1,870	1,822
COST OF LIVING-ALL ITEMS (1935-39=100)	124.8p	125.1	124.1	120.4	116.4	98.6	102.8
Food	141.9p	143.0	140.6	132.7	123.2	93.6	106.0
Other than food	116.1p	116.0	115.7	114.0	112.8	101.2	101.2
LABOR DISPUTES							
Number of strikes in progress	435	450	445	169	421	407	940
Workers involved (thousands)	955	625	205	62	126	127	n.a.
Man-days idle (thousands)	4,750	1,275	675	193	586	958	4,998
TRANSPORTATION INDEX-(1935-39=100)†	210p	207	203	196	174	95	113
Commodity	200p	197	195	192	175	93	116
Passenger	243p	241	230	209	168	100	104

*June; Production of Clothing and Shoes for Civilians, Consumer Expenditures, Transportation, May. †Unadjusted. n.a. Not available. p Preliminary.

PRODUCTION PROGRESS

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

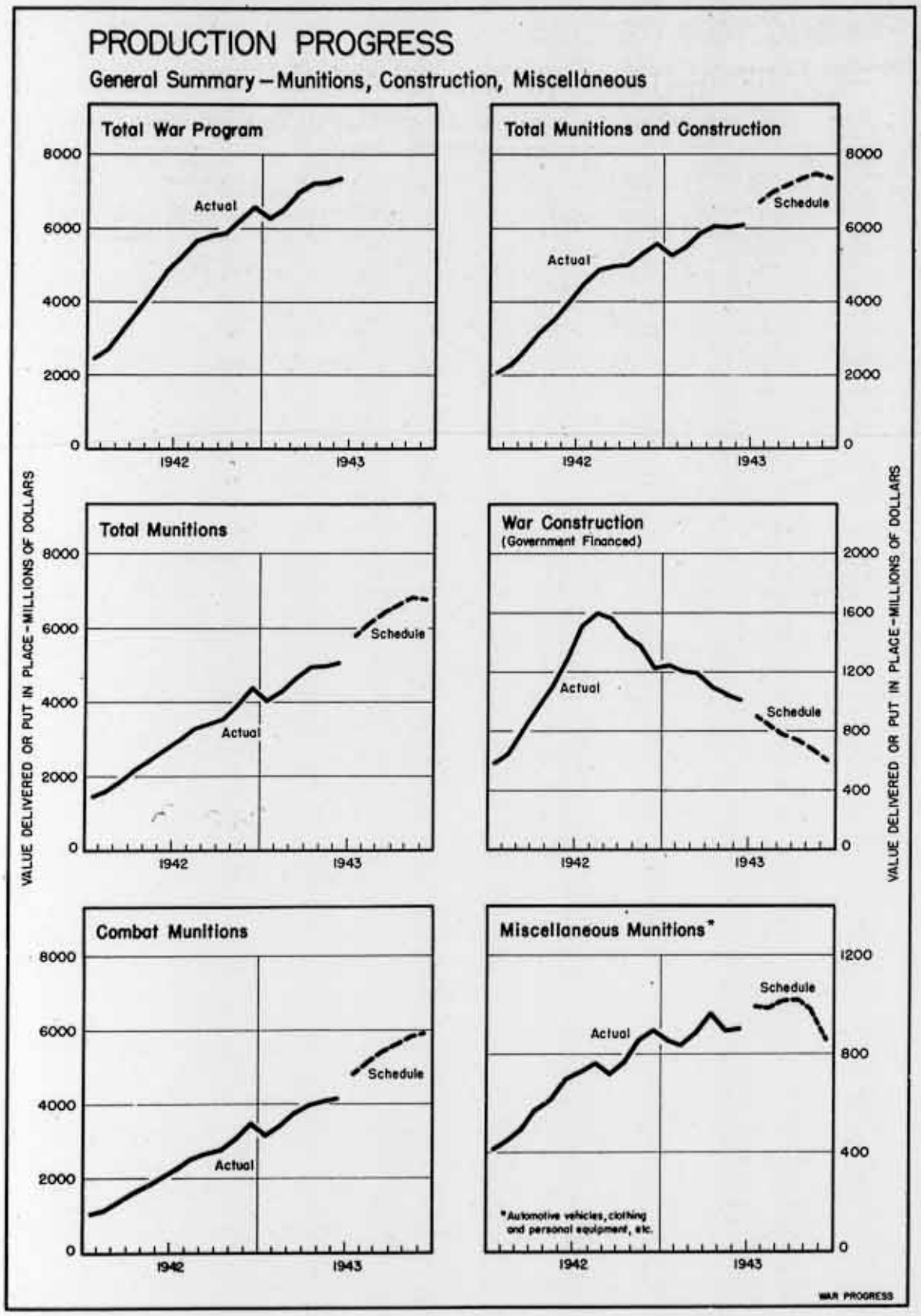
	MONTH OR MONTHLY AV.	Total Program	Total Munitions & Construction	Total Munitions	War Construction (Govt Financed)	Miscel. Munitions	MONTH OR MONTHLY AV.	
Valuation of Actual Production	1942-1st Quarter	$ 2,790	$ 2,328	$ 1,648	$ 681	$ 453	1st Quarter-1942	Valuation of Actual Production
	2nd Quarter	4,233	3,554	2,440	1,114	629	2nd Quarter	
	3rd Quarter	5,557	4,780	3,223	1,557	735	3rd Quarter	
	4th Quarter	6,220	5,305	3,954	1,351	840	4th Quarter	
	1943-January	6,271	5,293	4,045	1,248	853	January - 1943	
	February	6,535	5,470	4,274	1,202	836	February	
	March	6,977	5,852	4,662	1,190	882	March	
	April	7,240	6,050	4,953	1,097	962	April	
	May	7,247	6,009	4,959	1,050	896	May	
	June	7,384	6,080	5,070	1,010	905	June	
Valuation of Schedules	July		6,697	5,795	902	992	July	Valuation of Schedules
	August		6,965	6,122	843	987	August	
	September		7,195	6,420	775	1,016	September	
	October		7,370	6,635	735	1,019	October	
	November		7,491	6,816	675	977	November	
	December		7,308	6,709	599	857	December	
	1944-1st Half		7,560	6,982	578	967	1st Half - 1944	
	2nd Half		7,857	7,352	505	904	2nd Half	
1942 Actual Production		56,400	47,902	33,793	14,109	7,974	1942 Actual Production	
1943 Actual plus Schedule			77,846	66,520	11,326	11,182	1943 Actual plus Schedule	
1943 Required Production			*79,942*	*68,616*	*11,326*	*11,618*	*1943 Required Production*	
Act plus Sched as % of Req Prod			97.4	96.9	100.0	101.5	Act plus Sched as % of Req Prod	
1944 Schedule			92,508	86,008	6,500	11,237	1944 Schedule	
1944 Required Production			*93,518*	*87,018*	*6,500*	*11,273*	*1944 Required Production*	

	MONTH OR MONTHLY AV.	Combat Munitions(a)	Aircraft & Aircraft Munitions	Ground Army Munitions(b)	Naval Vessels, Ordnance & Equip (Incl. Army Aux.)	Merchant Vessels & Maintenance	MONTH OR MONTHLY AV.	
Valuation of Actual Production	1942-1st Quarter	$ 1,195	$ 515	$ 279	$ 300	$ 100	1st Quarter-1942	Valuation of Actual Production
	2nd Quarter	1,811	740	475	431	164	2nd Quarter	
	3rd Quarter	2,488	953	728	587	220	3rd Quarter	
	4th Quarter	3,113	1,174	950	738	251	4th Quarter	
	1943-January	3,192	1,290	896	723	283	January - 1943	
	February	3,438	1,374	955	792	317	February	
	March	3,780	1,526	1,021	893	340	March	
	April	3,991	1,625	1,066	922	378	April	
	May	4,063	1,716	1,038	945	364	May	
	June	4,165	1,776	1,065	920	404	June	
Valuation of Schedules	July	4,803	2,103	1,129	1,135	436	July	Valuation of Schedules
	August	5,135	2,267	1,231	1,194	443	August	
	September	5,404	2,435	1,278	1,239	452	September	
	October	5,616	2,590	1,318	1,234	474	October	
	November	5,839	2,735	1,365	1,259	480	November	
	Decembe	5,912	2,858	1,331	1,259	464	December	
	1944-1st Half	6,013	3,078	1,201	1,273	462	1st Half - 1944	
	2nd Half	6,448	3,337	1,408	1,178	524	2nd Half	
1942 Actual Production		25,819	10,148	7,296	6,169	2,206	1942 Actual Production	
1943 Actual plus Schedule		55,338	24,295	13,693	12,515	4,835	1943 Actual plus Schedule	
1943 Required Production		*57,598*	*24,884*	*14,944*	*12,935*	*4,835*	*1943 Required Production*	
Act plus Sched as % of Req Prod		96.1	97.6	91.6	96.8	100.0	Act plus Sched as % of Req Prod	
1944 Schedule		74,771	38,486	15,652	14,711	5,922	1944 Schedule	
1944 Required Production		*75,745*	*38,331*	*16,865*	*14,627*	*5,922*	*1944 Required Production*	

Schedules and required production as of June 10 for Aircraft; as of June 1 for War Construction; as of July 1 for all others. (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

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

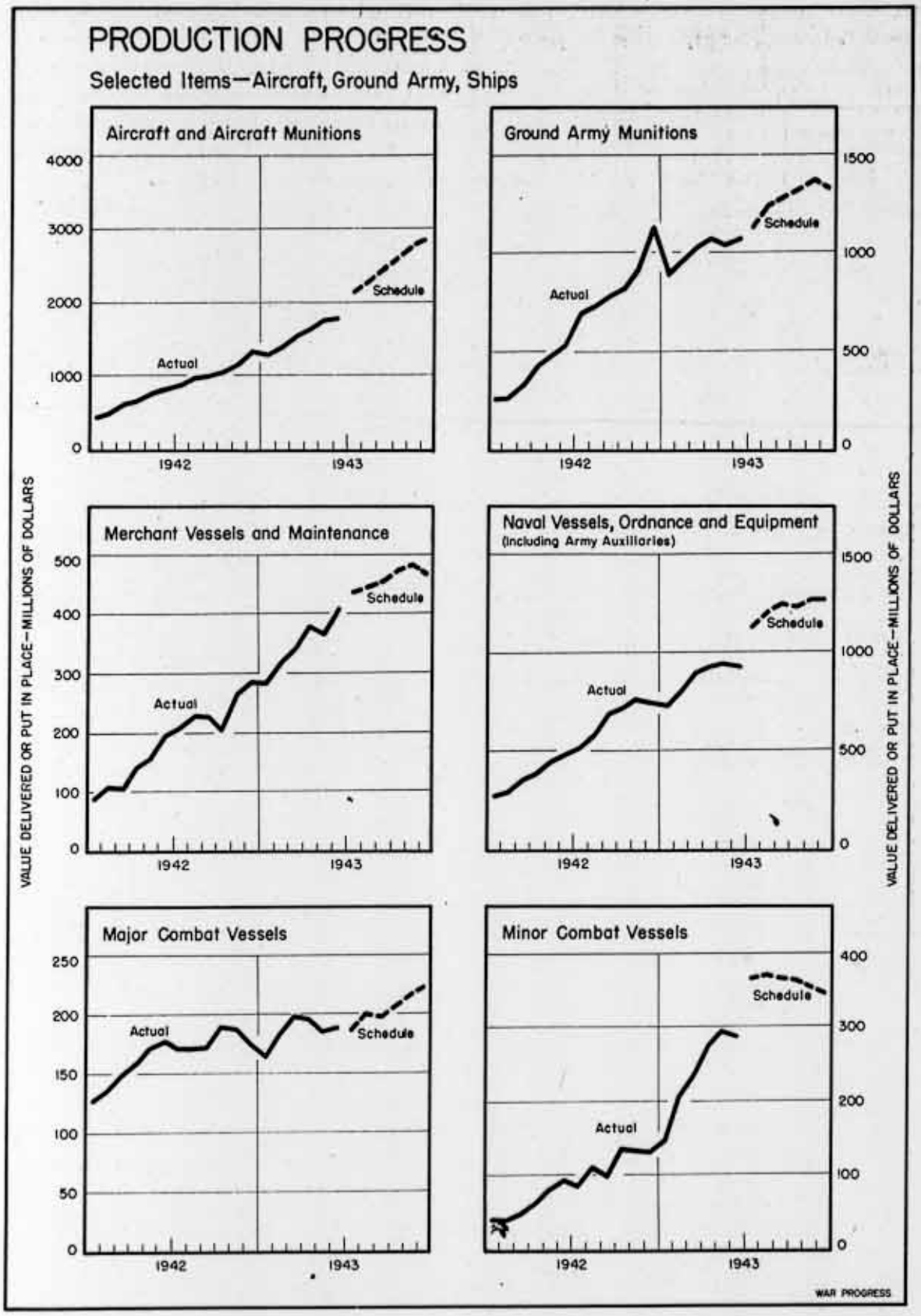
	MONTH OR MONTHLY AV.	Combat Planes	Aircraft Armament	Aircraft Ammunition	Artillery & Equipment	Artillery & Tank Cannon Ammunition	MONTH OR MONTHLY AV.
Valuation of Actual Production	1942 - 1st Quarter	$ 180	$ 19	$ 34	$ 21	$ 48	1st Quarter - 1942 Valuation of Actual Production
	2nd Quarter	233	29	36	31	81	2nd Quarter
	3rd Quarter	294	30	62	55	102	3rd Quarter
	4th Quarter	367	38	76	95	109	4th Quarter
	1943 - January	361	38	88	105	95	January - 1943
	February	442	38	80	123	87	February
	March	513	41	76	120	107	March
	April	575	42	91	126	95	April
	May	647	41	88	113	104	May
	June	670	42	96	101	118	June
Valuation of Schedules	July	865	43	110	96	101	July Valuation of Schedules
	August	922	46	125	114	112	August
	September	1,012	47	138	116	123	September
	October	1,095	47	137	115	131	October
	November	1,165	48	138	117	141	November
	December	1,221	46	138	110	142	December
	1944 - 1st Half	1,298	48	105	79	163	1st Half - 1944
	2nd Half	1,435	48	109	62	466	2nd Half
1942 Actual Production		3,221	349	653	603	1,020	1942 Actual Production
1943 Actual plus Schedule		9,488	519	1,305	1,356	1,356	1943 Actual plus Schedule
1943 Required Production		*9,488*	*516*	*1,544*	*1,363*	*1,739*	*1943 Required Production*
Act. plus Sched. as % of Req. Prod.		100.0	100.6	84.5	99.5	78.0	Act. plus Sched. as % of Req. Prod.
1944 Schedule		16,400	560	1,282	845	3,777	1944 Schedule
1944 Required Production		*16,400*	*616*	*1,079*	*1,244*	*3,415*	*1944 Required Production*

	MONTH OR MONTHLY AV.	Antiaircraft Guns & Equip.	Antiaircraft Ammunition	Small Arms & Infantry Weapons	Small Arms & Infantry Weapon Ammunition	Combat Vehicles	MONTH OR MONTHLY AV.
Valuation of Actual Production	1942 - 1st Quarter	$ 19	$ 12	$ 17	$ 42	$ 105	1st Quarter - 1942 Valuation of Actual Production
	2nd Quarter	42	22	30	81	147	2nd Quarter
	3rd Quarter	79	32	39	121	209	3rd Quarter
	4th Quarter	101	18	51	146	288	4th Quarter
	1943 - January	119	21	56	175	206	January - 1943
	February	119	16	56	171	251	February
	March	124	20	60	192	282	March
	April	131	25	58	206	293	April
	May	114	20	57	220	285	May
	June	124	18	65	232	290	June
Valuation of Schedules	July	109	17	67	256	309	July Valuation of Schedules
	August	130	32	72	267	320	August
	September	148	40	80	274	302	September
	October	141	43	86	284	308	October
	November	139	44	90	288	321	November
	December	135	49	92	284	321	December
	1944 - 1st Half	129	41	68	282	247	1st Half - 1944
	2nd Half	88	79	52	324	190	2nd Half
1942 Actual Production		722	254	410	1,169	2,249	1942 Actual Production
1943 Actual plus Schedule		1,533	345	839	2,849	3,488	1943 Actual plus Schedule
1943 Required Production		*1,572*	*430*	*834*	*3,214*	*3,611*	*1943 Required Production*
Act. plus Sched. as % of Req. Prod		97.5	80.2	100.6	88.6	96.6	Act. plus Sched. as % of Req. Prod
1944 Schedule		1,302	719	720	3,637	2,622	1944 Schedule
1944 Required Production		*1,241*	*624*	*671*	*4,635*	*3,261*	*1944 Required Production*

Schedules and required production as of June 10 for Aircraft; as of July 1 for ASF items. Schedules are used for required production in the case of combat planes.

PRODUCTION PROGRESS

Selected Items—Aircraft, Ground Army, Ships



CONFIDENTIAL

PRODUCTION PROGRESS

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

MONTH OR MONTHLY AV.	Battleships Cruisers & Carriers	Destroyers	Submarines	Antisubmarine Vessels	Transports (Navy & Maritime)	MONTH OR MONTHLY AV.
Valuation of Actual Production — 1942 - 1st Quarter	$ 60	$ 59	$ 17	$ 43	$ 1	1st Quarter - 1942
2nd Quarter	73	75	20	83	6	2nd Quarter
3rd Quarter	71	77	23	96	10	3rd Quarter
4th Quarter	79	81	23	128	13	4th Quarter
1943 - January	68	70	25	144	11	January - 1943
February	76	76	29	205	18	February
March	96	73	29	229	12	March
April	85	83	27	273	15	April
May	78	72	33	291	13	May
June	78	76	31	285	12	June
Valuation of Schedules — July	74	81	31	363	17	July
August	86	79	35	366	18	August
September	80	82	36	364	20	September
October	86	83	38	359	21	October
November	91	85	39	351	22	November
December	95	86	41	342	23	December
1st Half	105	92	48	313	27	1st Half
1944 - 2nd Half	114	89	46	255	41	2nd Half - 1944
1942 Actual Production	850	876	249	1,031	92	1942 Actual Production
1943 Actual plus Schedule	993	948	394	3,572	202	1943 Actual plus Schedule
1943 Required Production	*993*	*948*	*394*	*3,572*	*202*	*1943 Required Production*
Act. plus Sched. as % of Req. Prod.	100.0	100.0	100.0	100.0	100.0	Act. plus Sched. as % of Req. Prod.
1944 Schedule	1,314	1,088	562	3,406	408	1944 Schedule
1944 Required Production	*1,314*	*1,088*	*562*	*3,406*	*408*	*1944 Required Production*

MONTH OR MONTHLY AV.	Landing Vessels	Industrial Facilities	Aircraft Fields & Bases	Clothing & Personal Equip.	Automotive Vehicles & Equip.	MONTH OR MONTHLY AV.
Valuation of Actual Production — 1942 - 1st Quarter	$ 2	$ 352	$ 50	$ 98	$ 134	1st Quarter - 1942
2nd Quarter	7	512	108	142	184	2nd Quarter
3rd Quarter	84	662	219	178	211	3rd Quarter
4th Quarter	141	639	169	203	193	4th Quarter
1943 - January	80	622	112	221	173	January - 1943
February	67	587	114	208	181	February
March	91	557	111	227	204	March
April	49	482	113	211	227	April
May	67	489	117	186	234	May
June	62	414	105	180	242	June
Valuation of Schedules — July	77	343	86	181	279	July
August	83	294	82	170	311	August
September	86	262	76	179	321	September
October	87	239	72	178	338	October
November	88	215	64	177	335	November
December	88	181	53	170	309	December
1944 - 1st Half	106	193	54	188	254	1st Half - 1944
2nd Half	90	165	50	195	290	2nd Half
1942 Actual Production	702	6,492	1,640	1,864	2,168	1942 Actual Production
1943 Actual plus Schedule	925	4,645	1,105	2,288	3,154	1943 Actual plus Schedule
1943 Required Production	*925*	*4,645*	*1,105*	*2,353*	*3,148*	*1943 Required Production*
Act. plus Sched. as % of Req. Prod.	100.0	100.0	100.0	97.2	100.2	Act. plus Sched. as % of Req. Prod.
1944 Schedule	1,176	2,150	625	2,298	2,993	1944 Schedule
1944 Required Production	*1,176*	*2,150*	*625*	*2,402*	*2,951*	*1944 Required Production*

Schedules and required production as of June 1 for War Construction; as of July 1 for all others. Estimates for Aircraft Fields and Bases exclude overseas military construction. Schedules are used for required production in all cases except Clothing and Personal Equipment and Automotive Vehicles and Equipment.