THE WAR EFFORT OF THE UNITED KINGDOM

A Digest of "Statistics relating to the War Effort of the United Kingdom."
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CONTENTS

THE Government White Paper tells for the first time the story in facts and figures of the United Kingdom's mobilization for war.

It discloses the extent to which manpower and resources have been mobilized and the manner in which they have been organized for war production; the immense contribution made by women and the remarkable output of arms and munitions achieved. It shows how considerable was the extent to which this production supplied our own needs and those of our Allies; how carefully co-ordinated has been the planning of imports and home production to husband vital shipping space, how food policy and agricultural production have been interlocked to serve these same purposes of total war effort, and how the immense task of financing this tremendous war effort has been accomplished. Finally it shows the sacrifices in the lives of men and women of the Services, of the Merchant Navy and of the civilian population, in the loss of shipping, the destruction of houses, in increased burdens of taxation, lower living standards, the abandonment of export trade and the sale of foreign investments that this gigantic effort has involved.

To see this story in its full significance it must be remembered that what has been accomplished in production has been done by a people living under aerial bombardment and faced with attempted blockade by sea; that for two long periods, and these the most critical, factories had to work under constant and severe air attacks which destroyed and damaged many, and that everything brought to these shores during a large part of this time had to run the gauntlet of U-boat attack. Production and transport have been handicapped by the blackout, by the dispersal of factories in order to deny to the enemy the vulnerable targets he sought, by the diversion of shipping from London and South and East coast ports and by the disruption of normal channels of communication.

Men and women engaged in tasks of war production, which called for great efforts on the part of all, have over and above these tasks given service in Civil Defence, in the Home Guard, the Fire Service, and later as Fire Guards and in part-time duties in canteens, hospitals, salvage drives, savings groups, in helping the evacuated and bombed out, in all those innumerable activities that have become a part of the essential texture of wartime life in Britain. Few have been content with one job.

It is against this background of danger and difficulty, of hardship and sacrifice, that this story of unprecedented mobilization must be seen. It is an achievement of which the men and women of Britain have a right to be proud.

THE WAR EFFORT OF THE UNITED KINGDOM

I

HOW MANPOWER HAS BEEN MOBILIZED

(showing the extent to which manpower and womanpower have been mobilized)

1. THE EXTENT OF THE EFFORT

In June, 1944, the population of Great Britain* (England, Scotland and Wales) was approximately 46¾ millions. Nearly a third of this total consisted of children under 14 (9 millions) and of men over 64 and women over 59 (5¾ millions).

The population in the "active" age groups (men aged 14-64; women aged 14-59) was therefore only 31,930,000. This was almost equally divided between men (15,910,000) and women (16,020,000). Of this total in June, 1944, approximately 22 millions had been mobilized. The remaining 9,914,000 consisted mainly of housewives with such domestic responsibilities as the care of young children or invalids, or housekeeping for men and women engaged in the war effort, including those billeted upon them, or for evacuees, of students and school children over 14, and invalids (including war invalids).

This total of 22 millions mobilized for the Services and industrial employment represented an increase of 3½ millions since June, 1939. It included 93.6% of the men aged 14-64 and 44.4% of the women aged 14-59 in these age groups (the 900,000 women part-time workers being included on the basis of two being equivalent to one whole-time worker.)

* Northern Ireland, population 1¼ millions, is not included in the Ministry of Labour manpower statistics.

This is how the total was divided :

	MEN	WOMEN	
The Services and Whole-time Civil Defence			
Armed Forces	4,502,000	—	
Women's Auxiliary Services	—	467,000	
Whole-time Civil Defence	225,000	56,000	
TOTAL Forces and Whole-time Civil Defence :			5,250,000
Munitions (Group I) Industries .. .. .. (Iron and steel, non-ferrous metals, ship-building, engineering, aircraft, vehicles, instruments, chemicals and explosives).	3,210,000	1,851,000	
TOTAL Group I Industries			5,061,000
Basic (Group II) Industries .. .. .. (Agriculture, mining, public utilities, national and local government, inland transport, shipping, and the manufacture of food, drink and tobacco).	4,059,000	1,644,000	
TOTAL Group II Industries			5,703,000
Other (Group III) Industries .. .. .. (Building, civil engineering, textiles, clothing, other manufacturing industries, distributive trades and civilian services).	2,900,000	3,102,000	
TOTAL Group III Industries			6,002,000
GRAND TOTAL ..			22,016,000

In addition to these 22 millions in the active age groups, it is estimated that approximately one million older men and women were also in paid employment.

57% of all men between the ages of 18 and 40 have served or are serving in the Armed Forces. The other men in these age groups have been kept in industry because of special skill, particularly in making munitions, or because they were unfit for service in the Armed Forces.

55% of the total number of single, married and widowed women aged 18-40 (90% of the single women) were in the Services, whole-time Civil Defence or employed in industry. Two million of these had never been employed in industry before and represented, therefore, a net addition to the industrial labour force.

2. PART-TIME VOLUNTARY WORK

Large numbers of men and women have also rendered part-time voluntary service :—

1¾ million men in the Home Guard.

1¼ million men and 350,000 women in part-time Civil Defence.

Over 1,000,000 women were enrolled in the W.V.S. and many hundreds of thousands of others were giving part-time war service of different kinds in the organization of salvage parties, savings groups,

the collection, making and distribution of hospital supplies, comforts for the Forces and the Merchant Navy, etc.

Several millions of men and women performed 48 hours a month fireguard duties.

3. THE GROWTH OF THE ARMED FORCES

The total (June, 1944) of 4½ million men serving in the Armed Forces was reached *in spite of casualties* sustained during five years of war. Including the number of killed, missing, taken prisoner, or released on medical and other grounds, the total number of men who have served or are serving in the Armed Forces of the United Kingdom during this war is over 5½ millions.

The following table shows the rapid expansion of the Armed Forces (not including those locally enlisted abroad who by 1944 numbered 40,000), and Women's Auxiliary Services :

MID-YEAR	MEN	WOMEN	TOTAL
1938 ..	384,000	—	384,000
1939 ..	477,000	—	477,000
1941 ..	3,271,000	103,000	3,374,000
1942 ..	3,785,000	307,000	4,092,000
1943 ..	4,284,000	461,000	4,745,000
1944 ..	4,502,000	467,000	4,969,000

The numbers engaged in Whole-time Civil Defence reached their peak in 1941. In 1942 the total was maintained by the enrolment of further women to replace men transferred to other work or the Forces. The reduction of bombing and the enrolment of fireguards made it possible after 1942 to reduce the numbers further.

MID-YEAR	MEN	WOMEN	TOTAL
1939 ..	80,000	—	80,000
1941 ..	324,000	59,000	383,000
1942 ..	304,000	80,000	384,000
1943 ..	253,000	70,000	323,000
1944 ..	225,000	56,000	281,000

4. INDUSTRY

(*a*) *The Switchover of manpower and the growing part played by women*

Employment in the munitions industries reached its peak towards the end of 1943, since when there have been slight reductions in this category. Reductions in Group III industries have been very substantial and continuous throughout the war, the number of men in 1944 being half of the corresponding 1939 total, and the total of men

and women employed dropping between 1939 and 1944 from 9¼ to 6 millions.

The detailed changes showing the extent to which women have come into employment, thus releasing men, may be summarized as follows :—

	GROUP I (*Munitions*)		GROUP II (*Basic*)		GROUP III (*Others*)	
	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN
June, 1939	2,600,000	506,000	4,688,000	852,000	5,798,000	3,479,000
(June, 1943	3,305,000	1,928,000	4,040,000	1,592,000	3,093,000	3,186,000)
June, 1944	3,210,000	1,851,000	4,059,000	1,644,000	2,900,000	3,102,000
+ or −	+610,000	+1,345,000	−629,000	+792,000	−2,898,000	−377,000

Some striking changes are to be noted between 1939 and 1944 in individual industries. For example :—

	INDUSTRY	MALES	FEMALES
GROUP II	Agriculture and horticulture ..	−98,000	+117,000
	Mining	−66,000	+8,000
	National Government Service ..	+104,000*	+372,000
	Local Government Service	−198,000	+142,000
	Transport, Shipping and Fishing ..	−184,000	+161,000
GROUP III	Building and civil engineering ..	−694,000	+ 7,000
	Textiles	−180,000	−196,000
	Clothing	− 73,000	−165,000
	Other manufactures	−462,000	− 26,000
	Distributive Trades	−916,000	− 43,000
	Other services	−529,000	+ 60,000

*Much of this increase has occurred in the number of industrial employees of the Service and Supply Departments.

(*b*) *Extent of employment on Government work.*

At the middle of 1944, 7.6 million persons were engaged in the manufacturing industries (excluding mining), and of these

76% were engaged on Government work,
20% on work for the home market, and
4% in producing goods for export.

In 1938 about 15% of persons in the manufacturing industries (excluding mining) were engaged in producing goods for export.

Even in the Group III manufacturing industries, which have to meet the needs of the civilian population, half of those employed are working on Government orders. The proportions for individual industries in 1943 were as follows: Textiles 49%, clothing 39%, boots and shoes 20%, other manufactures 79%.

II

THE EXPANSION OF PRODUCTION

(showing the striking and rapid expansion of war production)

1. MUNITIONS

The monthly output of munitions in the United Kingdom in the first half of 1944 was about six times as great as that at the outbreak of war. As a result, the United Kingdom has not only been the principal source of supply of the munitions required by the British Commonwealth and Empire Forces (though large quantities of equipment have also been made in the Dominions and India, and supplies have been received from the United States both against British cash purchases and under Lend-Lease) but has also been able to equip the Allied Forces dependent on us for supplies, provide substantial assistance to Russia, and help other Allies.

About 7/10ths of the total supply of munitions produced by, or made available to the British Commonwealth and Empire since the beginning of the war has been produced in the U.K. and about 1/10th by other Empire countries, a total of 4/5ths from British Commonwealth and Empire sources. The remaining 1/5th of Empire supplies has come from the U.S.A. Of this American contribution 1/5th has taken the form of British cash purchases.

The production achievement is all the greater when the changes in production types required as the war progressed are taken into account. The average hours of work for men, including overtime, in the munitions industries were 54 hours a week at the beginning of 1944, compared with 48 hours before the war.

PRODUCTION OF PRINCIPAL ITEMS OF MUNITIONS BY THE UNITED KINGDOM FROM SEPTEMBER, 1939, TO JUNE, 1944.

1. Naval Construction

	NUMBER	STANDARD DISPLACEMENT TONNAGE
(a) Naval Vessels		
Major Naval Vessels	722	1,333,961
Mosquito Naval Craft	1,386	132,796
Other Naval Vessels	3,636	440,320
(b) Naval Munitions		
Naval Guns (including 20-mm)	49,865	
Ammunition (excluding rounds 20-mm)	23,335,000	
Mines and depth charges	897,274	
Torpedoes	17,677	

2. Ground Munitions

(a) Artillery		
Field, medium and heavy artillery equipments		13,512
Heavy A.A. equipments		6,294
Light A.A. equipments		15,324
Anti-tank equipments		27,882
Tank machine guns		57,319
(b) Machine guns and rifles		
Machine guns and sub-machine guns		3,729,921
Rifles		2,002,000
(c) Tanks		25,116
Carriers and Armoured Cars		74,802
(d) Wheeled vehicles for the Services		919,111
(e) Ammunition (rounds)		
Gun		161,100,000
20-mm.		387,700,000
Small arms		8,285,000,000
Grenades		81,383,000
(f) Signal Equipment		
Lines of communication cables	(miles)	3,009,307
Telephones	(units)	506,238
Wireless stations	,,	445,500
Reception Sets	,,	34,225
(g) Clothing		
Battledress (Blouses or trousers)		58,206,000
(h) Propellants and explosives	(short tons)	1,020,991

3. Aircraft

(*a*) *Aircraft*

Total aircraft	102,609
of which Heavy bombers	10,018
Medium and light bombers	17,702
Fighters	38,025

(*b*) *Air material*

Filled bombs (tons)	973,405
Aero-engines delivered	208,701

(*c*) *Repairs*

Aircraft	60,099
Aero-engines	113 005

(*i*) *Naval Construction*

The effort in naval construction has been fourfold: to increase the offensive fleet despite heavy losses and the additional work involved because of the need for faster vessels with vastly more complicated armament and equipment than that fitted in the early stages of the war; to build the large numbers of escort vessels needed to protect our ocean communications; to provide the large numbers of small patrol and other craft necessitated by the enemy invasion of France and the Low Countries and the progress of operations in the Mediterranean; and finally to provide the landing craft required for combined operations. The vital need for aircraft and army equipment after the earlier German successes necessarily limited the manpower available for shipbuilding, as did also the large number of men required for the refit and repair of ships continuously at sea and frequently in action. Moreover, the fact that in 1944 a greater effort had to be concentrated on the refitting and repair of vessels in connection with preparations for the invasion of Europe and the Far Eastern war necessarily meant a decline in the rate of new production of certain types of vessels and armaments.

The increase in ships has called for an even greater increase in naval munitions. It is now necessary to arm regular warships with many offensive and defensive weapons additional to those fitted in the early stages of the war. Moreover, much additional equipment is required in the way of radar and wireless apparatus, control gear and devices for protection against the various forms of enemy attack, including surface craft, U-boats, aircraft and mines of the magnetic and other

types. In addition practically every merchant ship must be equipped with complete defensive armament including many of the weapons and devices fitted in war vessels.

NAVAL CONSTRUCTION AND ARMAMENTS

	1939 3 months	1940	1941	1942	1943	1944 ½ year	TOTAL Sept., 1939 —June, 1944
Major War Vessels (displacement)	17 (22,780 tons)	106 (221,935 tons)	170 (346,416 tons)	173 (299,920 tons)	168 (292,450 tons)	88 (150,460 tons)	**722 (1,333,961 tons)**
Mosquito Craft ..	2	121	395	405	337	126	**1,386**
Other Naval Vessels	9	200	314	605	1,601	907	**3,636**
Naval Guns (including 20-mm.) ..	441	1,486	3,977	13,449	20,023	10,489	**49,865**
Torpedoes ..	362	939	1,929	3,896	7,039	3,512	**17,677**
Mines and Depth Charges ..	9,048	175,986	196,452	218,532	233,206	64,050	**897,274**

(ii) Ground Munitions

Production of munitions for the ground forces rose steadily from the outbreak of war until early 1943. The figures given do not, however, give a complete picture of the expansion in production which has taken place, for over the period there have been marked changes in the types of equipment produced. In the case of tank and anti-tank equipment, 2-pounders gave place to 6-pounders and they, later, were replaced by 17-pounders. Ammunition not only grew in weight but also became more complicated and difficult to make. Fighting vehicles now are heavier and more highly powered than they were, and wireless sets and other types of signal equipment have become much more elaborate. A wide range of specialized stores, sometimes of a very bulky character, has been made to facilitate the landings in Western Europe. During 1943 and 1944 the production of many stores decreased as a consequence of movements of labour and industrial capacity to aircraft manufacture.

The following figures show some of the most striking increases in the production of ground munitions :—

	1939 (3 months)	1940	1941	1942	1943	1944 (½ year)	ACTUAL TOTALS Sept., 1939—June, 1944
Gun Ammunition (million rounds) ..	1.9	12.8	29.3	59.4	46.4	11.3	**161,100,000**
20mm. (million rounds)	—	3.2	15.5	91.3	167.5	110.2	**387,700,000**
Small Arms (million rounds)	45	572	1,148	2,173	3,046	1,301	**8,285,000,000**
Wireless stations (thousands)	3.0	19.6	31.8	102.3	193.1	95.7	**445,500**
Carriers and Armoured Cars ..	633	6,044	10,481	19,312	24,375	13,957	**74,802**
Artillery (i) Field, medium and heavy artillery equipments	—	968	3,780	3,946	2,962	1,856	**13,512**
Artillery (ii) Light and heavy A.A. equipments	254	1,990	4,214	7,402	6,873	885	**21,618**
Artillery (iii) Anti-tank equipments	138	1,534	2,747	9,569	13,049	1,845	**28,882**
Tank machine guns ..	418	2,907	7,368	23,806	19,457	3,363	**57,319**
Brens and Vickers machine guns ..	7,000	30,200	39,300	68,200	81,000	33,800	**259,500**
Sub-machine guns (thousands)	—	—	6.4	1,438.3	1,572.4	395.9	**3,413,000**
Rifles ..	18,300	80,800	78,500	594,900	910,100	319,400	**2,002,000**

(iii) Aircraft Construction

At the beginning of the war total *deliveries* of new aircraft were no more than at the rate of 730 a month, and over a quarter of these were trainers.

By 1943 the average rate of deliveries had trebled, and as measured by structure weight (reflecting the change to the production of larger and more powerful types, particularly heavy bombers) had increased nearly sixfold. 2,889 *heavy bombers* were delivered in the first six months of 1944, compared with only 41 in the whole of 1940. In spite of this the output of *fighters* also showed a striking increase—from 110 a month in 1939 to 940 a month in the first half of 1944.

Bomb loads increased with the size and power of the bombers produced. In 1939 the average bomb load was 1.2 tons; in 1943 it was 4.0 tons. The weight of bombs which could be carried a distance of 1,000 miles in one sortie by the monthly output of bombers increased from 210 tons in 1939 to more than 3,000 tons at the beginning of 1944.

Engine output increased from 1,130 a month at the end of 1939 to an average of 5,270 a month in the first half of 1944. Over the same period the average horse-power of engines produced was doubled.

The *repair of aircraft* has absorbed an appreciable proportion of the capacity of the industry. For every six aircraft newly produced in 1943, four aircraft underwent major repairs in the U.K.

The following figures also illustrate the rapid and substantial expansion which has taken place :—

DELIVERIES OF AIRCRAFT, AERO-ENGINES AND BOMBS

	1939 (3 months)	1940	1941	1942	1943	1944 (½ year)	ACTUAL TOTALS Sept., 1939—June, 1944
Structure weight of newly delivered aircraft (million pounds) ..	11.26	58.84	87.26	133.36	185.23	111.75	**587,700,000**
Aero-engines delivered (numbers)	4,532	24,074	36,551	53,916	57,985	31,643	**208,701**

	1939 (3 months.)	1940	1941	1942	1943	1944 (½ year)	ACTUAL TOTALS Sept., 1939—June, 1944.
Weight of filled bombs (thousand tons) ..	4.5	48.3	143.4	240.9	308.6	227.8	**973,500**
Bomb load at 1,000 miles range of average monthly output of bombers (tons) ..	210	389	736	1,436	2,575	3,221	
[illegible] bombers ..	—	41	498	1,976	4,614	2,889	**10,018**
Fighters	447	4,283	7,063	9,850	10,727	5,655	**38,025**

2. MERCHANT SHIPBUILDING

The tonnage of merchant ships constructed in the United Kingdom in the years 1940-1943 averaged nearly 1/5th more than in the years 1915-1918. Just over 4½ million gross tons (the equivalent of 6¾ million deadweight tons) of new merchant ships (tankers and non-tankers) were constructed in the United Kingdom between September, 1939, and December, 1943. For the three years 1941, 1942 and 1943, production averaged approximately 1¼ million gross tons. The detailed figures (vessels of 100 gross tons and over) were: 1939 (Sept.-Dec.) 243,000 gross tons; 1940, 810,000 gross tons; 1941, 1,158,000 gross tons; 1942, 1,302,000 gross tons; 1943, 1,204,000 gross tons.

This construction was achieved (a) in spite of the blackout and bombing, (b) in spite of the need for special types of ships to meet particular operational and other war needs, such as carrying awkward cargoes, and not adaptable to methods of mass production, (c) in spite of increasing complexity of armament and special equipment, (d) in spite of the heavy repair work necessitated by damage caused by enemy action and abnormal weather in the high latitudes frequented by convoys to and from North America and Russia, which absorbed more than half the manpower available for merchant shipbuilding work. At one period the amount of merchant shipping in hand for repair was over 2½ million gross tons.

(showing the contribution made by home production to the saving of shipping space)

(i) Raw and industrial materials

One of the most important problems facing the Government during the war has been to meet the demands of the munitions and other industries for essential raw materials and at the same time to economize in the use of imported raw materials and semi-finished products in order to save shipping space. This has been particularly important in the case of the iron and steel industry which had previously relied on large imports of high-grade (ferrous content 50-60%) iron ore.

To meet the needs of the situation, home output of *iron ore* was increased by one-half (18½ million tons in 1943; 12½ million tons average 1935-8) but in spite of the low grade (ferrous content 30%) of this ore, *pig iron* production was maintained at a high level. The collection of iron and steel scrap for steel-making was increased by one-third.

The production of *steel* (13 million tons in 1943) was held very close to the high level of the 1939 record figure (13¼ million tons) and well above the pre-war average (11¼ million tons), notwithstanding the need to increase greatly the proportion of alloy and high-grade sheets produced. This, together with the severe curtailment of exports of steel products, limited the increase in imports which the expansion of munitions production would otherwise have entailed.

The production of home-grown *timber* (hardwood, softwood, pitwood) also showed a remarkable expansion, rising from an average of 450,000 tons in 1935-8 to 3,021,000 tons in 1943.

Substantial savings of shipping were also secured by cuts which amounted in 1943 to 15% of 1935 output of *newsprint* and to 60% of pre-war amount of *cotton yarn*.

Magnesium production in 1943 was more than eleven times the pre-war rate—an achievement which has demanded the creation of virtually a new industry.

(ii) Agricultural production

The dominant aim of agricultural production during the war has been to increase the domestic output of food and so save shipping space. This increase was achieved (1) in spite of the fact that almost

all cultivable land was already in agricultural use, (2) in spite of the loss of farmland to military and non-agricultural use (such losses exceeded the area of land reclaimed and brought into cultivation, leaving a net loss of 600,000 acres) by (a) increasing physical yield, largely by ploughing up seven million acres of grassland ; (b) increasing the proportion of crops available for direct human consumption :—

CROP	1936-8 *average*	1943	% *increase since* 1936-8
	Tons	Tons	Tons
Wheat	1,651,000	3,449,000	109
Barley	765,000	1,641,000	115
Oats	1,940,000	3,059,000	58
Potatoes	4,873,000	9,822,000	102
Sugar Beet	2,741,000	3,760,000	37
Vegetables	2,384,000	3,197,000	34

(c) increasing the number of allotments from 800,000 before the war to 1½ million in 1943 ; (*d*) decreasing the number of sheep, pigs and poultry, thus also reducing bulky imports of feeding stuffs :—

	1939	1944
Sheep	26.9 millions	20.3 millions
Pigs	4.4 ,,	1.9 ,,
Poultry	74.4 ,,	55.2 ,,

This reduction, together with the growing of large quantities of feeding stuffs and fodder crops at home, made it possible to cut imports of animal feeding stuffs of all kinds, which amounted to about 8¾ million tons pre-war, to less than 1¼ million tons in 1943. Thus a considerable amount of shipping space was saved.

This was achieved in spite of the loss of about 100,000 regular workers, and the introduction of 117,000 women. The Women's Land Army, the enrolled strength of which was over 80,000 in June, 1944, has played an extremely important part. Farmers have also been assisted by schoolboys and adult volunteers who have spent their holidays on the land.

The agricultural production programme coupled with the control of food distribution had made it possible by 1943 (1) to secure a 50% reduction in food imports, thus releasing vital shipping space for war purposes, and (2) in spite of this to maintain total food supplies at an adequate level. It has been estimated that the net output of human food from British agriculture has increased by at least 70% in terms of calories and proteins.

III

THE REDUCTION OF IMPORTS

(showing the other side of the successful battle for the saving of shipping space)

To save shipping, imports of dry cargo into the United Kingdom have been drastically curtailed. In the five years before the war, imports of dry cargo (excluding petroleum and other tanker-borne products) averaged 55 million tons a year; in 1942 they had been cut to 22.9 million tons, and in 1943 to 26 million tons—less than one-half the pre-war figure (cf. 1917 34 million tons and 1918 30 million tons).

Imports of food and raw materials were halved, and imports of finished goods were confined almost exclusively to munitions.

IMPORTS OF DRY CARGO

YEAR	MILLION TONS			
	Food	*Raw Materials*	*Finished Goods Munitions*	TOTAL
1934–8 Average	22.0	26.0	7.0	55.0
1940	18.8	21.5	1.0	41.3
1941	14.7	15.0	0.8	30.5
1942	10.6	11.5	0.8	22.9
1943	11.5	12.8	2.0	26.4

(a) FOODSTUFFS

The fall in imports (assisted by dehydration) shown in the following table should be compared with the increases in agricultural production already noted.

	THOUSAND TONS		
	Average 1934-8	1941	1943
Wheat and Flour	5,451	6,099	3,975
Maize and Maize Meal ..	3,395	702	66
Other animal feeding stuffs	1,719	325	12
Sugar	2,168	1,658	1,458
Fruit and Vegetables ..	2,604	462	327

Certain imports essential for the maintenance of an adequate consumption standard were held at the required level or even increased, e.g., meat, to replace reduced home production (to facilitate the ploughing up of grassland and cut imports of feeding stuffs) and of oilseeds and fats (for the manufacture of margarine and compound lard) to offset the fall in supplies of butter.

	THOUSAND TONS		
	Average 1934-8	1941	1943
Meat (including bacon) ..	1,423	1,203	1,358
Canned meat	63	230	300
Oilseeds, oils and fats ..	1,783	1,948	2,154

(*b*) RAW MATERIALS

Striking reductions were secured in the imports of certain raw materials, e.g., iron ore, scrap and timber. In place of bulky imports, such as iron ore and scrap necessary for steel-making, imports were increased of finished and semi-finished steel.

	THOUSAND TONS		
	Average 1935-8	1941	1943
Iron Ore (average ferrous content 50-60%)	5,619	2,283	1,895
Scrap	778	549	5
Hardwood	1,126	365	307
Softwood	5,848	1,253	1,329
Pitwood	2,688	189	72
Wood pulp	1,650	346	390
Newsprint	424	122	95
Paper and board	730	72	48

IV

HOW THE WAR EFFORT HAS BEEN FINANCED

The measure of this gigantic task can be judged from the following figures :

£ MILLIONS

	GOVERNMENT EXPENDITURE	REVENUE	DEFICIT	NATIONAL INCOME	PRIVATE SAVINGS
1938	1,013	883	130	4,604	351
1943	5,782	2,876	2,906	8,172	1,749
Increase 1943 on 1938 ..	+4,769	+1,993	+2,776	+3,568	+1,398

Almost the whole of the increase in Government expenditure is accounted for by war expenditure. (The figures exclude the value of the resources received from the United States and Canada under Lend-Lease and Mutual Aid, but include the cost of Mutual Aid to our Allies.)

How was Government expenditure in 1943 covered ?

		£ millions
50%	Taxation and other Government Revenue ..	2,876
30½%	Savings of private persons and businesses as lent to Government	1,749
11%	Sales of assets and overseas disinvestment ..	655
3½%	Public Savings	191
3%	Home disinvestment	175
2%	Payments in compensation for war damage ..	136
100%		£5,782

How the Government has been able to finance so large a proportion of this expenditure out of current resources is seen more clearly by analyzing the growth of the national income since the war and showing how it has been redistributed to secure for the Government for war purposes not only an increased amount but also an increased share of the national income. In addition the Government has had to draw heavily on the nation's capital resources to meet its expenditure.

What were the sources of Central Government Revenue in 1938 and 1943 ?

£ *MILLIONS*

	Direct Taxation	*Indirect Taxation on personal consumption*	*Other Indirect Taxation*	*Income from Public Property, Trading, etc.*	*Total Revenue*
1938 ..	494	290	81	18	883
1943 ..	1,781	915	111	69	2,876

What were the forms of Government borrowings from 1st January, 1939, to 31st December, 1943 ?

33% War loans (excluding official holdings)
29% Floating debt (excluding official holdings)
22% Small savings
8% Extra-budgetary funds, etc.
6% Tax reserve certificates
2% Miscellaneous

Net disinvestment abroad in the years 1939-1943 totalled £3,073 millions.

Net private disinvestment at home in the years 1941, 1942 and 1943 totalled £397 millions.

V

THE EXTENT OF THE SACRIFICE

(showing the loss and destruction of human life, material and treasure, civilian sacrifice and the mortgaging of the future in the interest of the United Nations war effort)

I. CASUALTIES

The total casualties (Armed Forces, Merchant Seamen and Civilians) sustained by the United Kingdom in five years of war amounted to nearly three-quarters of a million.

(i) Armed Forces

In five years of war between 3rd September, 1939, and 3rd September, 1944, the casualties of all ranks of the Armed Forces of the United Kingdom as reported were:

Killed	176,081
Missing	38,275
Wounded	193,788
Prisoners of War ..	154,968
TOTAL ..	563,112

The total strength of the British Commonwealth and Empire forces at the middle of 1944 was 8,712,000 (of which the U.K. armed forces accounted for 4,542,000* or over 52%). The total casualties sustained by British Commonwealth and Empire armed forces in five years up to 3rd September, 1944, were 926,000 (243,000 killed, 81,000 missing, and 291,000 prisoners of war) of which the U.K. total represents 61%.

(ii) Merchant Seamen

From the beginning of the war up to 31st August, 1944, 29,629 merchant seamen serving in British registered ships have been killed

* Including 40,000 locally enlisted abroad.

by enemy action at sea and 4,713 have been interned by the enemy. (No figures are available of the number who have been wounded or injured.)

(*iii*) *Civilians*

In five years up to 31st August, 1944, civilian casualties were :—

	Killed or died of injuries	*Injured or detained in hospital*
Up to 12th June, 1944 ..	51,822	62,900
13th June–31st August, 1944 ..	5,476	15,918
	57,298	78,818
(Including : Women	23,757	
Children	7,250)	

Total killed, died, or injured and detained in hospital, 136,116.

2. SHIPPING LOSSES

The size of the ocean-going merchant fleet, including tankers, under the British flag at the beginning of the war was 17½ million gross tons (of vessels of 1,600 gross tons and over). Between September, 1939, and the end of 1943, 2,921 British ships of 11,643,000 gross tons had been lost—half the total number and tonnage of British, Allied and Neutral ships lost (5,758 ships of 22,161,000 gross tons).

This loss was partly offset by (a) the construction of 4½ million gross tons of new ships in United Kingdom shipyards ; (b) captures ; (c) the chartering of merchant vessels from other countries ; (d) the production in Canadian shipyards ; (e) the purchase and temporary acquisition of merchant ships (existing and new) from the United States and other countries. Thus by the end of 1943 the size of the ocean-going merchant fleet under the British flag was 13½ million gross tons (or 15½ million gross tons including ships returnable in due course to other flags). The loss of ocean-going merchant ships on the United Kingdom and Colonial registers alone amounted to 29%. Since the beginning of 1944 the situation has improved.

3. DESTRUCTION OF HOUSES, ETC.

Out of about 13 million houses in the United Kingdom at the outbreak of war, 4½ millions (or nearly 1 in every 3) have been damaged or destroyed by enemy action. Of these, 202,000 were totally destroyed or damaged beyond repair, and a further 255,000 were damaged and rendered uninhabitable.

During the war there has been an almost complete ban on the building of new houses, and repair and maintenance work has been severely curtailed. Moreover, private persons and businesses having lent their savings to the Government, such sums, except where essential for war purposes, have not been available for keeping houses, fixtures and industrial equipment in repair and up to date. These factors alone during five years have led to a serious deterioration in living conditions. But the difficulties have been aggravated by bomb damage, the necessity for the partial evacuation of certain areas (with consequent crowding of others) and the requisition of houses for the Services and for U.S. and other troops from overseas.

4. LOSS OF EXPORTS

During the first two years of war, exports had to be maintained in order to pay for imports of food, raw materials and munitions. Since 1941 the assistance received from the United States and Canada under Lend-Lease and Mutual Aid has relieved the need for increased foreign exchange earnings to finance supplies from North America and permitted the diversion of manpower and resources to essential war purposes.

Exports have, therefore, been sacrificed deliberately in the interests of the war effort, as the following table shows :—

EXPORTS OF PRODUCE AND MANUFACTURES OF THE U.K.

(*excluding munitions*)

YEAR	*Value of exports as recorded* £ *million*	*Quantity of exports* (recorded exports valued at 1935 prices) 1938=100
1938	471	100
1940	411*	73*
1941	365*	56*
1943	232	29

In so far as exports have been continued, attempts have been made, as far as possible, to export goods which do not make demands on manpower, e.g. spirits, or such goods as textiles which are produced mainly by female labour.

* Including munitions, exports of which became important after 1941.

How drastic have been the reductions since 1938 is shown by the examples in the following table :—

	1938	1943
Coal (tons)	35,900,000	3,400,000
Iron and Steel manufactures (tons) ..	1,915,000	134,000
Motor vehicles	58,396	1,132
Cotton piece goods (million sq. yds.) ..	1,386	374
Cotton yarn (thousand cwts.)	1,098	171

5. INCREASED TAXATION

(*a*) *Direct taxation*

The amount in income tax and other direct taxes collected from private individuals and businesses rose from £494 millions in 1938 to £1,088 millions in 1941, and to £1,781 millions in 1943. Of these totals, private individuals paid £472 millions in 1938 (9.9% of personal income), £796 millions in 1941 (12.4% of personal income) and £1,169 millions in 1943 (15.2% of personal income).

The standard rate of income tax almost doubled between September, 1939, and April, 1941, rising from 5/6 (April, 1939, Budget) to 7/- (September, 1939), to 7/6 (April, 1940, Budget), to 8/6 (July, 1940), to 10/- (April, 1941, Budget), at which figure it has been maintained.

On incomes of over £2,000 per annum, surtax has been increased similarly.

The exemption limit during the same period was reduced from £120 to £110, the personal allowance for a married man from £170 to £140 and for a single person from £100 to £80.

The number of income tax payers increased from 4 millions to 13 millions.

The effect of these changes is shown below :

Ranges of income before tax	*Percentages of aggregate of incomes paid in income tax and surtax*	
	1938	1943
Under £250 ..	0.2 ..	3.0
£250—£500 ..	2.9 ..	14.6
£500—£1,000 ..	11.1 ..	28.0
£1,000—£2,000 ..	17.0 ..	38.7
£2,000—£10,000 ..	28.9 ..	51.9
£10,000—£20,000 ..	43.7 ..	73.7
£20,000 and over ..	56.7 ..	84.4

Excess profits tax payable by businesses and corporations, which was 60% when first imposed in 1939, was raised to 100% in 1940.

(*b*) *Indirect taxation*

Indirect taxes levied by the Central Government which fall specifically on personal consumption rose from £290 millions in 1938 to £915 millions in 1943. Adding other items, the total Central Government receipts from indirect taxation rose from £371 millions in 1938 to £1,026 millions in 1943.

Adding to these figures local rates falling on personal consumption and other indirect taxes levied by local authorities, the total of indirect taxes more than doubled, rising from £582 millions in 1938, to £1,249 millions in 1943.

The tax paid on beer and tobacco amounted to more than £600 millions in 1943—about two-thirds of the total revenue from all sources collected by the Central Government in a single year before the war.

Examples of increases of specific rates of tax levied on personal consumption were :

	1938	1943
Beer (per pint) ..	2¼d.	7½d. (on a reduced average strength)
Cigarettes (Packet of 20)	5½d.	1/9

Since the war, Purchase Tax has been imposed on most articles of personal or domestic use. The basic rate of the tax is 33⅓% of wholesale value, with a reduced rate of 16⅔% on certain articles which require comparatively frequent replacement, and a maximum rate of 100% on various classes of goods of a luxury or non-essential character. (But while taxes have been imposed or increased on luxury or less essential articles, many millions have been expended by the Government in subsidies to keep down the level of prices of food and other essential goods. The amount of such subsidies in 1943 was £190 millions.)

6. REDUCTION IN CIVILIAN CONSUMPTION AND CURTAILMENT OF SUPPLIES

The quantity of all goods and services purchased fell by 21% between 1938 and 1943, although the amount spent increased substantially from £4,138 millions to £5,049 millions as the result of a rise in prices and an increase in indirect taxation. There has also been a marked deterioration in quality, though it is not possible to estimate this statistically.

(*a*) *Consumption of non-food items*

Calculated at 1938 prices, the following percentage decreases in personal expenditure on consumers' goods have taken place : clothing, 45% ; boots and shoes, 27% ; furniture, furnishings, household

textiles, etc., 77%; hardware (including pottery, glassware, ironmonger's goods, electrical goods, and heating and cooling appliances), 67%; private motor cars, motor cycles, bicycles, etc., 89%; other items (chemists' wares, stationery, books, fancy goods, jewellery, toys and sports goods, petrol and oil, soap, polishes, candles and matches), 48%.

There has been a drastic curtailment of the production of certain lines to save manpower, raw materials and shipping space. Clothes rationing was introduced in 1941, and the present ration provides adults with about half of the average pre-war consumption and is barely adequate to cover even their minimum requirements, thus causing a considerable deterioration in the state of their wardrobes. The reduction imposed on children's essential clothes is not quite so severe.

The production of many articles such as motor cars, refrigerators, pianos, vacuum cleaners, lawn-mowers, aluminium hollow-ware, was completely suspended in 1942 or earlier, while the production of cutlery, wireless sets and valves, bicycles, watches and fountain pens has been drastically curtailed.

Newly produced furniture may be supplied only against permits to persons, such as the newly married or the bombed-out, setting up house.

(*b*) *Food*

Food rationing was introduced early in the war. In 1944 meat (1/2d. worth per week), bacon (4 oz. per week), butter (2 oz. per week), margarine (4 oz. per week), cooking fats (2 oz. per week), cheese, tea (2 oz. per week), sugar ($\frac{1}{2}$ lb. per week), jam (1 lb. per month) are all rationed. The distribution of eggs and milk is controlled in order to ensure preferential supplies for priority classes of consumers and the equitable sharing of the remainder. Tinned goods and many other foods (e.g. breakfast cereals, rice, biscuits and dried fruits) are rationed on a points system—24 points per person per month, e.g. a tin of spam (small) 11 points; 1 lb. treacle 8 points; a tin of salmon, $\frac{1}{2}$ size, (Grade I) 20 points, (Grade III) 8 points; 1 lb. prunes (6 points). Chocolate and sweets are on a separate personal points system ($\frac{3}{4}$ lb. per person per month); fish is scarce; supplies of fruit have dropped by one-half, and these, except for the few oranges occasionally distributed, have had to come mainly from the home crop of fruit. For considerable periods of the year fresh fruit is very scarce. Potatoes,

other vegetables and bread are the only staple foodstuffs in unrestricted supply.

Generally speaking, people in Britain have eaten more bulky and starchy foods, and are eating less meat, fats and sugar. The total consumption of milk and cheese has increased, though the allowance of milk to the non-priority consumer during the winter months of the last three years fell to only two pints a week.

Though the ordinary consumer received only 30 eggs in 1943 as a registered customer, supplies of dried eggs were increased, and many people were able to keep their own poultry, exchanging their egg ration for an allowance of meal.

Rationing and other measures, by ensuring fair distribution of available supplies, have tended to reduce the inequalities in food consumption which existed before the war. When it is realized that in spite of these reductions the nutritive value of the country's total food supplies has fallen only slightly between 1938 and 1943, while imports of food have been halved, and the country's health has been maintained, the achievement of the Ministry of Food's scientific planning will be recognized.

7. INLAND TRANSPORT

(*a*) *Rail*

A severe reduction in passenger rail facilities has been necessary to enable the railways to provide the increased transport needed for essential war purposes.

Since the war began there has been a rise of 10% in the *number* of passenger journeys (caused by the introduction of new persons into industry and war work, special trains for workers and troops, travelling members of the Forces on leave, or travel necessitated by dispersal or evacuation, and the *average length* of journeys has increased by 60%. The number of passenger trains, on the other hand, has been reduced and passenger train miles have fallen by 30%. In consequence the average load carried by passenger trains increased between 1938 and 1943 by 125%, with inevitable discomfort and overcrowding. Restaurant cars have virtually disappeared, though a few are available for the longest journeys only.

The tonnage of freight carried and the average length of haul have both increased, so that the work done measured by net ton miles has risen by about 40%.

The strain on the railway system has been accentuated by the diversion of shipping from London and South and East Coast ports.

(*b*) *Road*

(*i*) *Private Motor Cars*

The number licensed had fallen from 2,000,000 to 700,000 at the beginning of 1944. The use of these was severely restricted to essential purposes only. In 1941 the unconditional ration of motor spirit was abolished and control was secured over all motor fuel issued. The amount of motor spirit used for private cars is now only about 1/8th of what it was before the war.

(*ii*) *Public Service Vehicles.*

The total mileage of all omnibus routes in the country has been reduced by 40%. Long distance express services have been discontinued or severely curtailed.

Against this curtailment must be set the increased demands from workers for transport—the number of passengers has increased and the distances travelled to work have been longer. Many omnibuses have had to carry 30–50% more passengers than in 1938. For the whole country the increase in passengers carried has been nearly 1/5th ; the increase in passenger miles has been 1/3rd.

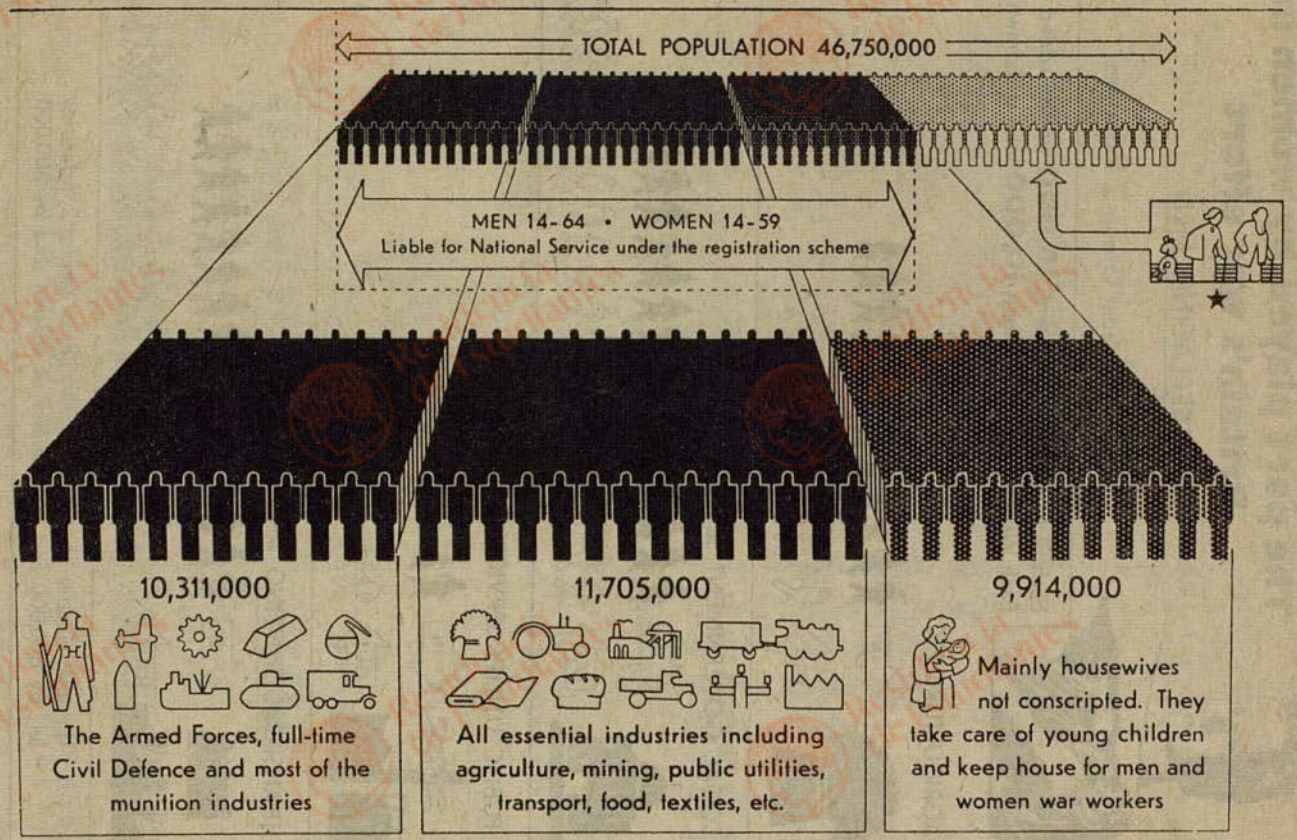
8. FINANCIAL COST

War expenditure during the past five years has amounted to nearly £25,000,000,000. During the same period, to finance imports of essential war materials, *overseas assets* to the value of £1,065,000,000 have been sold. The loss of these assets has deprived this country of a source of income which has in the past contributed an essential part of the foreign exchange needed to pay for imports.

These figures do not include losses of overseas assets in Empire countries, which have been destroyed or damaged to deny their use to the enemy.

Despite the sale of over £1,000,000,000 of overseas assets to finance purchases and the generous aid received from the United States and Canada, the United Kingdom has in addition incurred new *overseas liabilities* totalling over £2,300,000,000.

Britain's total mobilisation of all employable manpower



★ Persons outside the compulsory registration scheme

MEN OVER 64 • WOMEN OVER 59 • CHILDREN UNDER 14

The part played by women in Britain's war effort

REPLACING MEN

4 examples from Group 2 Industries

Each BLACK symbol represents **10,000** women added
Each WHITE symbol represents **10,000** men withdrawn

AGRICULTURE ETC.

LOCAL GOVERNMENT SERVICE

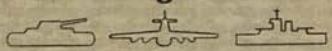
PUBLIC UTILITY SERVICES

TRANSPORT, SHIPPING AND FISHING

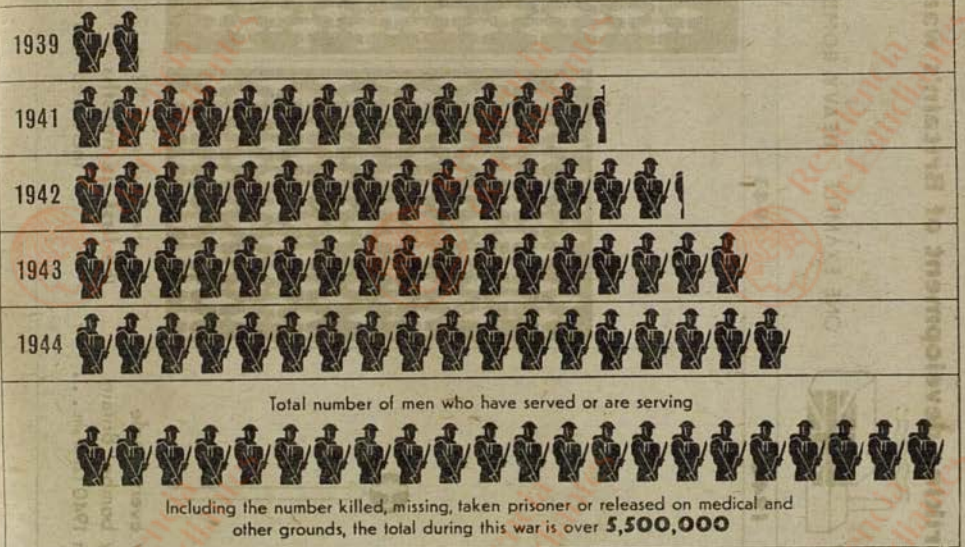
The total number of men in all branches of Group 2 industries fell by 600,000 and the number of women rose by 800,000

GROUP 2 Industries. All basic industries and services including agriculture, mining, government service, gas, water, transport, food, etc.

Men of the United Kingdom under Arms (In June of each year)

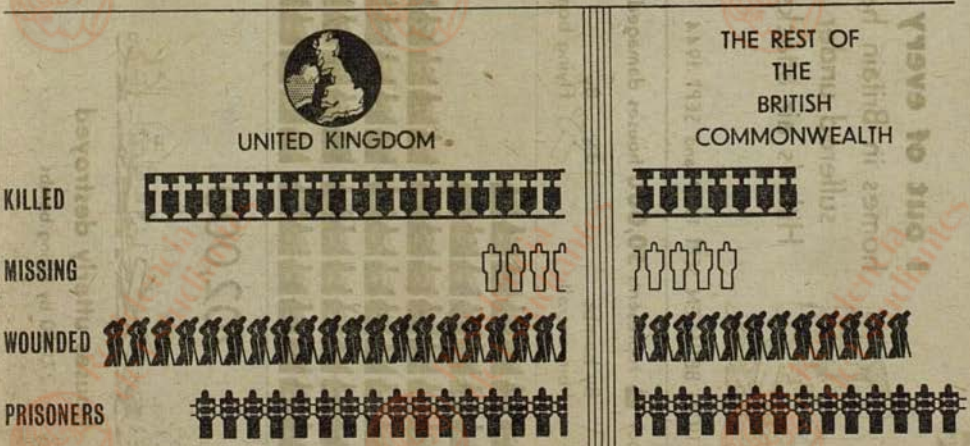


EACH SYMBOL REPRESENTS **250,000** MEN



Including the number killed, missing, taken prisoner or released on medical and other grounds, the total during this war is over **5,500,000**

Nearly a million casualties sustained by United Kingdom and British Commonwealth Armed Forces during 5 years of fighting



EACH SYMBOL REPRESENTS **10,000** MEN

1 out of every 3 homes in Britain has suffered under Hitler's air attacks

DESTRUCTION BETWEEN SEPT. 1939 and SEPT. 1944

Each symbol represents **50,000** houses damaged

By bombs from aircraft

By Flying bombs

202,000

houses utterly destroyed

27,000 by Flying bombs

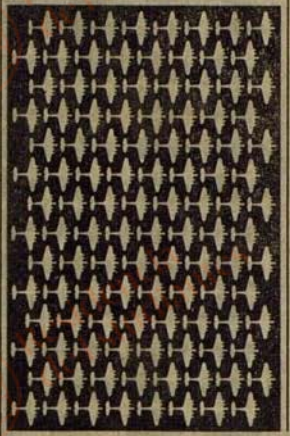
11/44 Wt 54188/P5871 10,100 4/45 KJL/240 Gp. 8/5

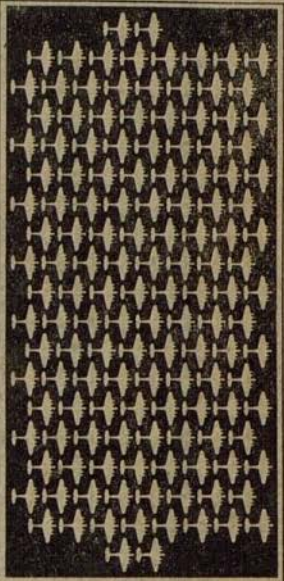
The striking development of Britain's warplane industry

ONE EXAMPLE · **HEAVY BOMBER OUTPUT**

1940 **1943** **1944**

For every single heavy bomber Britain built in 1940 (41 in all) . . .





. . . she built over 112 in 1943 . . . and during the **first six months** of 1944 the ratio was increased to over 140