PART IV

From Pearl Harbour to Normandy

STATISTICAL SUMMARY OF THE PERIOD[1]

1. NATIONAL FINANCE

(a) *National Income and Expenditure*

£ million

	1938	1941	1942	1943	1944	1945
1. National income . .	4,707	6,978	7,652	8,115	8,310	8,355
2. National cost of consumers' goods and services	3,713	4,006	4,164	4,188	4,452	4,886
3. Government[1] current expenditure:						
i. War . . .	327	3,643	3,945	4,452	4,481	3,827
ii. Other . . .	440	497	528	522	536	532
4. Net capital formation at home . . .	297	−352	−322	−367	−500	− 15
5. Net lending abroad .	− 70	− 816	−663	−680	−650	− 875
6. Net national expenditure at factor cost . .	4,707	6,978	7,652	8,115	8,310	8,355

Percentages

	1938	1941	1942	1943	1944	1945
1. National income . .	100	100	100	100	100	100
2. National cost of consumers' goods and services	79	58	54	52	54	58
3. Government[1] current expenditure:						
i. War . . .	7	52	52	55	54	46
ii. Other . . .	9	7	7	6	6	6
4. Net capital formation at home . . .	6	− 5	− 4	− 5	− 6	—
5. Net lending abroad .	− 1	− 12	− 9	− 8	− 8	− 10
6. Net national expenditure at factor cost . .	100	100	100	100	100	100

Figures for national income and expenditure are *net* in that they exclude sums allowed for depreciation and maintenance and are at *factor cost* in that they include subsidies but exclude indirect taxes.

Source: Cmd. 7371 and Central Statistical Office

[1] i.e. local government and national insurance funds as well as central government.

[1] See note at beginning of first statistical summary p. 75. The present summary covers the period from Pearl Harbour to the end of the war, instead of simply to D-Day.

(b) Personal Expenditure on Consumers' Goods and Services at 1938 Prices

£ million

	1938	1941	1942	1943	1944	1945
1. Food	1,287	1,036	1,086	1,061	1,120	1,136
2. Alcoholic beverages	285	287	267	270	274	297
3. Tobacco	177	196	206	204	205	225
4. Rent, rates and water charges	491	502	497	498	503	506
5. Fuel and light	197	205	199	187	193	198
6. Household goods	288	163	123	107	100	122
7. Clothing	446	275	273	247	275	279
8. Books, newspapers & magazines	64	61	63	67	73	77
9. Private motoring	127	30	17	8	8	25
10. Travel	163	148	174	186	188	215
11. Communication services	29	27	31	37	42	40
12. Entertainments	64	75	87	89	90	94
13. Other services	483	418	374	350	343	369
14. Other goods	177	131	109	110	113	120
15. Income in kind of the armed forces	17	98	106	136	152	146
16. Total of above items	4,295	3,652	3,612	3,557	3,679	3,849
17. Adjustment[1]	−7	19	28	34	27	72
18. Total	4,288	3,671	3,640	3,591	3,706	3,921

Source: Cmd. 7371 and Central Statistical Office

(c) Average weekly Government War Expenditure: Exchequer Issues for Defence and Vote of Credit Expenditure

£ thousands

1939 December	29,700
1941 December	87,800
1942 December	95,600
1943 December	82,400
1944 December	91,100

Source: Central Statistical Office

(d) Central Government Expenditure, Revenue and Borrowing

Calendar years	£ million			Revenue as percentage of expenditure
	Expenditure	Revenue	Borrowing	
1938	1,040	893	147	86
1941	5,052	2,172	2,880	43
1942	5,457	2,635	2,822	48
1943	6,047	3,139	2,908	52
1944	6,078	3,328	2,750	55
1945	5,583	3,293	2,290	59

Source: Cmd. 7371 and Central Statistical Office

[1] The figures relate as far as possible to expenditure met out of personal income including that of charities and other non-profit-making bodies as well as of individuals. The figures for individual categories relate to purchases in this country even when made by Dominion and Allied troops. On the other hand, they do not include consumers' expenditure abroad out of British personal income. Item 17 is a rough adjustment for these items.

(e) Proportion of Personal Income Required to Meet Taxation

£ million

	1938	*1941*	1942	1943	1944	*1945*
Personal income	*4,884*	*6,508*	7,200	7,721	8,072	*8,411*
Direct tax payments	*439*	*770*	879	1,145	1,328	*1,394*
Indirect taxes on consumption	*611*	*1,045*	1,199	1,282	1,294	*1,359*
Less Subsidies to consumption	*−36*	*−137*	−168	−188	−202	*−249*
Total tax payments out of personal income	*1,014*	*1,678*	1,910	2,239	2,420	*2,504*
Tax payments as a percentage of personal income	*21*	*26*	27	29	30	*30*

NOTE: The rise in the proportion of tax payments to private income was not all due to increases in rates of taxation; it also reflected the increased consumption of highly taxed goods and services—beer, tobacco, entertainments.

Source: Cmd. 7371 and Central Statistical Office

(f) Prices and Wages

	Weekly wage rates: estimated increase in all industries[1] Sept. 1, 1939 which=100	Average weekly earnings in certain industries[2] Oct. 1938 =100	Cost of living Sept. 1 =100	Price index of total consumers' expenditure 1938=100	Import prices 1938 =100	Export prices 1938 =100	Wholesale prices Aug. 1939 =100
1939 Sept.	*100*	—	*100*	—	—	—	*108*
1941 Dec.	*123–124*	*146*	*130*	*Year 1941 =134*	*164*	*152*	*159*
1942 Dec.	132	165	129	Year 1942 =143	179	178	164
1943 Dec.	137–138	179	128	Year 1943 =147	188	191	166
1944 Dec.	145–146	176	130	Year 1944 =150	195	197	170
1945 June	148–149	180	132	Year 1945 =153	N.A.	N.A.	173
1945 Dec.	*152–153*	*174*	*131*		*195*	*194*	*173*

N.A.=Not Available.

Source: Central Statistical Office

[1] Some small industries are omitted. Figures for wage rates relate to the end of the previous month in order to make them comparable with the cost-of-living index which relates to the beginning of the month mentioned.

[2] The figures represent the average earnings, including bonus, overtime, etc. and before deduction of income tax or insurance, in one week in January and July of each year. Administrative and clerical workers and other salaried persons are excluded.

2. MANPOWER

(*a*) *Total Population of Great Britain*

Thousands

	1939	*1941*	1942	1943	1944
TOTAL . . .	*46,466*	*46,875*	47,039	47,300	47,627
0–13 . . .	*9,231*	*9,101*	9,091	9,150	9,239
M. 14–64 } F. 14–59 }	*31,923*	*32,245*	32,259	32,285	32,386
M. 65 and over } E. 60 and over }	*5,312*	*5,529*	5,688	5,865	6,002
MALES . . .	*22,332*	*22,600*	22,656	22,770	22,975
0–13 . . .	*4,672*	*4,615*	4,614	4,648	4,698
14–64 . .	*15,887*	*16,140*	16,140	16,155	16,261
65 and over .	*1,773*	*1,845*	1,901	1,967	2,016
FEMALES . .	*24,134*	*24,275*	24,383	24,530	24,652
0–13 . . .	*4,559*	*4,486*	4,477	4,502	4,541
14–59 . .	*16,036*	*16,105*	16,119	16,130	16,125
60 and over .	*3,539*	*3,684*	3,787	3,898	3,986

NOTE: (1) The figures have been given for Great Britain only, to correspond as closely as possible with the tables given elsewhere showing the distribution of manpower by industry. It should be noted however that in the manpower tables the figures for the armed forces include an unknown number of recruits from outside Great Britain (mainly from Northern Ireland and Eire) who are not included in the total population figures above.

(2) The figures for 1939 exclude men serving overseas in the armed forces and merchant navy (estimated at between 200,000 and 250,000). From 1940 onwards all members of the armed forces and merchant navy are included, whether at home or overseas. Prisoners of war in enemy hands are included in 1944, but are mainly excluded from earlier figures.

Source: Central Statistical Office

(*b*) *Distribution of Labour Force of Working Age in Great Britain*

(i) Thousands

	June 1939	*June 1941*	June 1942	June 1943	June 1944	June 1945
Working population:						
Total	*19,750*	*21,332*	22,056	22,286	22,008	21,649
Men	*14,656*	*15,222*	15,141	15,032	14,901	14,881
Women	*5,094*	*6,110*	6,915	7,254	7,107	6,768
Armed Forces:						
Total	*480*	*3,383*	4,091	4,762	4,967	5,090
Men	*480*	*3,278*	3,784	4,300	4,500	4,653
Women	—	*105*	307	462	467	437
Civil Defence, N.F.S. and Police:						
Total	*80*	*383*	384	323	282	127
Men	*80*	*324*	304	253	225	112
Women	—	*59*	80	70	57	15
Group I Industries:						
Total	*3,106*	*4,240*	4,990	5,233	5,011	4,346
Men	*2,600*	*3,140*	3,285	3,305	3,180	2,891
Women	*506*	*1,100*	1,705	1,928	1,831	1,455
Group II Industries:						
Total	*4,683*	*4,845*	4,983	5,027	5,100	5,191
Men	*4,096*	*3,856*	3,763	3,686	3,710	3,762
Women	*587*	*989*	1,220	1,341	1,390	1,429
Group III Industries:						
Total	*10,131*	*8,283*	7,520	6,861	6,574	6,752
Men	*6,387*	*4,524*	3,943	3,430	3,232	3,368
Women	*3,744*	*3,759*	3,577	3,431	3,342	3,384
Registered Insured Unemployed:						
Total	*1,270*	*198*	87	60	54	103
Men	*1,013*	*100*	61	44	40	68
Women	*257*	*98*	26	16	14	35
Ex-Service men and women not yet in employment:						
Total	—	—	—	20	20	40
Men	—	—	—	13	14	27
Women	—	—	—	7	6	13

NOTE: (1) The figures include men aged 14–64 and women aged 14–59, excluding those in private domestic service. Part-time women workers are included, two being counted as one unit. The figures refer to Great Britain only, except for the armed forces which include an unknown number of volunteers from Northern Ireland, Eire, etc.

(2) Group I covers metal manufacture, engineering, motors, aircraft and other vehicles, shipbuilding and ship-repairing, metal goods manufacture, chemicals, explosives, oils, etc.

Group II covers agriculture, mining, National and Local Government services, gas, water and electricity supply, transport and shipping.

Group III covers food, drink and tobacco, textiles, clothing and other manufactures, building and civil engineering, distribution trades, commerce, banking and other services.

Source: Ministry of Labour and National Service and Central Statistical Office

(ii) Thousands

	Mid-1939	Mid-1943	Mid-1945
Total Labour Force	*19,750*	22,286	21,649
Armed forces and Civil Defence	*560*	5,085	5,217
Supplies and equipment for the Forces.	*1,270*	5,121	3,830
Group I Industries	*1,070*	4,310	3,132
Group III Industries	*200*	811	698
Manufactures for Export	*990*[1]	252	410
Group I Industries	*450*	90	200
Group III Industries	*540*	162	210
Manufactures for the Home Market	*4,555*	2,373	2,580
Other Industries and Services	*11,105*	9,375	9,469
Unemployed	*1,270*	60	103
Ex-service not yet employed	—	20	40

Source: Central Statistical Office

3. SUPPLIES FROM ABROAD

(a) *United Kingdom External Disinvestment*

(as far as recorded: probably an underestimate)

£ million

	1941	1942	1943	1944	Jan.–June 1945	*Total: Sept. 1939–June 1945*
Realisation of external capital assets	*274*	227	189	143	63	*1,118*
Increase in external liabilities[2 3]	*564*	519	647	608	282	*2,879*
Decrease or increase (−) in gold and U.S. dollar reserves[3 4]	*−23*	−75	−150	−99	−32	*152*
Unallocated	*5*	3	3	11	16	*49*
TOTAL	*820*	674	689	663	329	*4,198*

NOTE: The figures given in the above table are those in Cmd. 6707 and are the only ones at present available. The totals given in Cmd. 7099 for the years 1940–45 are however slightly smaller so that the figures in the table will need slight adjustment throughout.

[1] In addition, it is estimated that in 1939 160,000 workers were producing coal for export; in 1943 to 1945, the number was about 12,000.

[2] Comprising banking liabilities less assets, and funds held in the United Kingdom as cover for overseas currencies, etc.

[3] After deduction of outstanding liabilities to provide gold against sterling liabilities and of liabilities to convert U.S.A. holdings of sterling into dollars on demand.

[4] Gold valued at 172s. 3d. per ounce fine and dollars at £1=$4.03.

(b) United States Lend-Lease to the British Empire

$ million

	1941 (March–Dec.)	1942	1943	1944	1945 (Jan.–Aug.)	Total
Ships (sail away)	65	195	1,078	540	229	2,107
Munitions destined for:						
United Kingdom	86	987	2,797	3,807	971	8,648
Rest of Empire and other war theatres	100	1,158	2,131	2,294	1,203	6,886
Other goods destined for:						
United Kingdom	576	1,404	1,782	2,405	1,275	7,442
Rest of Empire	10	227	436	583	390	1,646
Services	245	786	807	1,137	369	3,344
Total aid to British Empire	1,082	4,757	9,031	10,766	4,437	30,073
Aid to Russia	20	1,376	2,436	4,074	2,764	10,670
Aid to other countries						2,872
Total Lend-Lease aid						43,615

Source: Central Statistical Office

(c) Comparison of Lend-Lease Aid to the British Empire and Reciprocal Aid to the United States up to VJ-Day

	In $ millions		In £ millions sterling	
	Lend-lease aid from U.S.	Reciprocal aid to U.S.	Lend-lease aid from U S.	Reciprocal aid to U.S.
U.K.:				
Ships and construction	2,107	910	301	227
Military stores	13,823	2,014	1,975	288
Petroleum	1,850 [1]	1,187	462 [1]	297
Other goods	6,263 [1]	361	1,566 [1]	90
Services	2,980	1,195	745	299
TOTAL	27,023	5,667	5,049	1,201
Australia	1,570	1,041	296	216
New Zealand	271	248	52	54
South Africa	296	1	53	— [2]
India	913	610	178	134
TOTAL	30,073	7,567	5,628	1,605

NOTE: Conversion from dollars to pounds sterling and conversely at $7 to £1 for military stores (including ships) and at $4 to £1 for all other goods and services.

Source: R. G. D. Allen, 'Mutual Aid between the U.S. and the British Empire', *Journal of the Royal Statistical Society*, Part III, 1946.

[1] Approximate division between petroleum and other goods.

[2] Less than £0·5 million.

(d) Exports of Produce and Manufacture of the United Kingdom

Year	Value as recorded £ million		Index of volume 1935=100	
	Including munitions	Excluding munitions	Including munitions	Excluding munitions
1938	*470·8*		*98*	
1941	*365·4*		*55*	
1942	391·4	271·3	52	36
1943	337·5	233·5	42	29
1944	328·3	266·3	38	31
1945	434·5	399·3	49	45

NOTE: (1) As the figures up to the end of 1941 do not show munitions separately, it is impossible to get comparable figures.

(2) The index of volume is calculated on quantities revalued at 1935 prices and expressed as a percentage of the quarterly average in 1935.

Source: Board of Trade

(e) Shipping

(i) Gains and losses of non-tankers on the British Register or on time charter to the United Kingdom

(1,600 gross tons and over) Thousand gross tons

	Gains	Losses	Net gains (+) or losses (−)
1941 1st Quarter	*783*	*969*	*−186*
2nd Quarter	*733*	*1,264*	*−531*
3rd Quarter	*787*	*625*	*+162*
4th Quarter	*638*	*392*	*+246*
1942 1st Quarter	546	826	−280
2nd Quarter	607	958	−351
3rd Quarter	822	1,363	−541
4th Quarter	626	1,374	−748
1943 1st Quarter	542	729	−187
2nd Quarter	643	548	+ 95
3rd Quarter	830	406	+424
4th Quarter	*977*	*334*	*+643*
1944 1st Quarter	703	242	+461
2nd Quarter	778	212	+566
3rd Quarter	375	352	+ 23
4th Quarter	431	211	+220

NOTE: (1) Gains cover new construction, new charters, transfers, captures, etc.

(2) Losses cover enemy action, marine risk, termination of charter, transfer, etc.

(3) Figures of loss are given by date of notification and not by date of occurrence.

(4) The figures from the fourth quarter of 1943 onwards are not strictly comparable with the earlier figures.

(5) The figures in this table are not comparable with the figures in Table 3(d) of the statistical summary to Part III. There, the figures for gains and losses refer only to British registered tonnage.

(6) It is important to realise that figures for gains are no guide to the post-war position as they include ships due to be returned after the war.

(7) For definition of gross tons and deadweight tons, see p. 80 above.

Source: Central Statistical Office

(ii) Gains and losses of tankers on the British Register, Allied and neutral tankers on time charter to the United Kingdom and other Allied tankers under the control of the Allied Governments [1]

Thousand deadweight tons

	Gains	Losses	Net gain (+) or loss (−)
1942 1st Quarter	62	598	−536
2nd Quarter	164	599	−435
3rd Quarter	117	344	−227
4th Quarter	130	278	−148
1943 1st Quarter	110	349	−239
2nd Quarter	95	132	− 37
3rd Quarter	55	87	− 32
4th Quarter	*139*	*54*	+ *85*
1944 1st Quarter	199	82	+117
2nd Quarter	110	42	+ 68
3rd Quarter	69	72	− 3
4th Quarter	96	30	+ 66

NOTE: (1) Figures are given by date of notification and not by date of occurrence.
(2) The figures from the fourth quarter of 1943 onwards are not strictly comparable with the earlier figures.

Source: Central Statistical Office

(iii) Employment of non-tankers on the British Register or on time charter to the United Kingdom

(1,600 gross tons and over)

Thousand gross tons

End of Month	Allocated to the Fighting Services [2]	Coasting trade of U.K. and Eire	Trading between countries other than the U.K. and Eire	Repairing or damaged [3 4]	Importing Services of U.K. [5]	Total [3]
1941 September	*3,995*	*314*	*2,505*	*2,045*	*7,114*	*15,973*
1941 December	4,341	373	2,677	2,041	6,787	16,219
1942 March	4,828	322	2,814	2,073	5,902	15,939
June	4,405	394	3,322	1,795	5,672	15,588
September	4,715	306	3,475	1,563	4,988	15,047
December	4,840	325	2,824	2,343	3,967	14,299
1943 March	4,591	309	2,158	2,070	4,984	14,112
June	4,829	260	2,406	1,512	5,200	14,207
September	4,709	317	3,289	1,500	4,816	14,631

Source: Central Statistical Office

The series of figures in the last table was discontinued after September 1943. The following table shows the employment figures analysed differently.

[1] i.e. tankers under the control of the Belgian, Dutch, Greek and Norwegian Governments.

[2] Excluding vessels under repair other than naval commissioned vessels. A part of the tonnage in this column brought commercial cargoes to the United Kingdom on completion of the outward voyage (see note 5).

[3] Including a small tonnage allocated but not yet delivered.

[4] This column includes all vessels other than naval commissioned vessels out of employment.

[5] This column includes vessels which brought imports to the United Kingdom but which were allocated on the outward voyage to the fighting Services or which had previously been trading between countries other than the United Kingdom and Eire. In addition to the figures in this column, certain of the vessels still under allocation to the fighting services for the homeward voyage were bringing imports to the United Kingdom.

(iv) Non-tankers under British Control
Analysis by Availability
(1,600 gross tons and over)

Thousand gross tons

End of month	Vessels not engaged in or available for carrying cargoes to or from overseas countries (including all troopships)								Vessels carrying or available for carrying overseas cargoes civil or military	TOTAL
	Troop-ships[1]	Other vessels wholly on fighting Services[1]	Immobilised by damage repair, fitting or reconditioning	Engaged on coasting or inter-coastal trade	Engaged in local operations	New vessels not yet allocated, etc.	Employment information incomplete	Total		
1943 March	2,103	1,398	1,773	1,166		19	20	6,479	7,742	14,222
June	2,127	1,366	1,177	1,618		58	10	6,357	7,889	14,246
September	2,180	1,251	1,041	1,673		85	6	6,235	8,449	14,685
December	2,217	1,271	1,445	1,680		105	3	6,721	8,607	15,328
1944 March	2,313	1,305	1,043	2,089		141	2	6,893	8,896	15,789
June	2,292	1,406	1,251	1,229	1,844	136	12	8,171	8,185	16,355
September	2,245	1,308	1,247	1,279	1,671	151	2	7,903	8,475	16,378

[1] Including those under repair.

Source: Ministry of War Transport

(*f*) *Imports under Departmental Programmes*

(*excluding imports from Eire*)

Million tons

	Non-tanker Imports				Tanker Imports[1]
	Total	Ministry of Food	Ministry of Supply	Munitions Miscellaneous	
Quarterly average, 1934–38	*13·75*	*5 5*	*6 5*	*1 75*	*4·1*
Quarterly average, 1941	*7·6*	*3·7*	*3·8*	*0 2*	*3·4*
1942 1st Quarter	5·8	3·0	2·7	0·16	2 9
2nd Quarter	6·4	3·3	2·9	0·19	2·3
3rd Quarter	6·2	2·5	3·5	0 22	3·0
4th Quarter	4·6	1·9	2 5	0 20	2 8
1943 1st Quarter	4·5	2·0	2·2	0 26	2·7
2nd Quarter	7·2	3·4	3·2	0 59	3·8
3rd Quarter	7·8	3·2	3 9	0 68	5·2
4th Quarter	7·1	3·0	3·6	0·48	3·6
Quarterly average, 1944	6·3	2·7	2·9	0 60	5·1
Quarterly average, first half of 1945	6·2	2·9	2·9	0 43	5·0
Year 1941	*30·5*	*14·7*	*15·0*	*0 78*	*13·6*
Year 1942	22·9	10·6	11·5	0·8	10·7
Year 1943	26·4	11·5	12·8	2 0	15·1
Year 1944	25·1	11·0	11·8	2·4	20·5

Source: Central Statistical Office

[1] Petroleum products, molasses, unrefined whale oil and industrial alcohol. From January 1943 acetone is included.

(g) *Stocks of Food and Raw Materials in the United Kingdom*

Million tons

End of month	Food and animal feeding-stuffs			Raw materials		Petroleum products	Principal commodities					
	Total	Stocks other than on farms	Stocks on farms	Total[1]	Covered by import programme		Iron-ore[2]	Steel[3]	Timber[4]	Non-ferrous metals[5]	Wheat[6]	Flour
Beginning of War	*10·5*	*3·7*	*6·8*	*13·1*	*11·8*	*6·7*	*2 4*	*1·0*	*3 9*	*0·7*	*1·0*	*0 3*
1940 June	*5·1*	*4·9*	*0·2*	*11·5*	*10·1*	*6·3*	*2·3*	*0 8*	*2·8*	*0 7*	*1·4*	*0·7*
December	*10·6*	*5·1*	*5·5*	*14·4*	*12·5*	*5·4*	*2·0*	*1·7*	*4·1*	*0 8*	*1·3*	*0·7*
1941 June	*5·2*	*5·0*	*0 2*	*13·8*	*12·3*	*4·7*	*1 9*	*2·2*	*3 5*	*0 8*	*1 6*	*0·7*
December	*13·4*	*6·4*	*7·0*	*14·7*	*12·9*	*7 0*	*2·1*	*2·6*	*3·0*	*0 9*	*1 4*	*0 9*
1942 March	9·0	6·3	2·6	13·7	12 0	6·7	2·1	2·4	2·4	0 9	1·1	0·8
June	6·6	6·3	0·3	13·4	11·8	5·9	2·1	2·3	2·1	0·8	1·5	0 8
September	12·8	6·0	6·8	14·1	12·2	5 8	2·2	2·5	2·1	0·8	1·3	0·7
December	13·7	5·7	8·1	13·0	11·2	5·3	2·0	2·2	2·1	0 7	1·1	0·7
1943 March	9·2	5·4	3·8	12·0	10·4	4·8	1·9	1·8	2·1	0 7	0·9	0·7
June	6·4	6·0	0·4	12·3	10·6	5·7	2·1	1·9	2·2	0·8	1·4	0·8
September	13·9	6·8	7·1	13·6	11·7	7·5	2·1	2·1	2·6	0·9	1·7	0·9
December	15·8	7·6	8·1	13·8	11·8	7·5	2·1	2·2	2·8	0·9	1 6	0·8
1944 June	7·3	7·0	0·3	12·8	11·0	7·2	2·1	1·9	2·4	1·0	1·6	0·9
December	15·0	7·1	7·9	12·1	10·3	6·5	1·6	1·7	2·3	1·1	1·4	0·8
1945 June	6·5	6·1	0·4	11·0	9·3	4 9	1·9	1·3	1·8	1·0	1·4	0·5

[1] Excluding consumers' stocks of steel.

[2] Including home-produced iron-ore at the imported equivalent.

[3] At producers' works and in British Iron and Steel Corporation stockyards, including material in transit. Consumers' stocks are excluded.

[4] Softwoods, hardwoods, pitwood and constructional plywood.

[5] Copper, zinc, zinc concentrates, lead, tin, nickel, bauxite.

[6] Including dilution grains from December 1942 to December 1944.

Source: Central Statistical Office

CHAPTER XIII

THE NEW PROPORTIONS OF THE WAR

(i)

Economic Aspects of the New Alliances

Up to June 1941 the British had shouldered the main strategical and economic burdens of the war. In December 1941 they were still shouldering the main economic burden. However, from that time onwards, 'World War II', as the Americans named it, began really to live up to its name. It encircled the whole earth. In this global war, Britain maintained still a prominent, but no longer the dominant, position. The present chapter will outline in broad economic terms what this new position was.

The Second World War never became completely 'one war'. Between China and Germany there were never active hostilities; between Soviet Russia and Japan there was a pact of neutrality which lasted up to the very eve of Japan's overthrow. Even in Europe, there was a marked separateness between the operations in the east and those in the south and west. Thanks chiefly to the persistent efforts of Mr. Churchill and President Roosevelt, personal contact was established with the Soviet leaders and some degree of co-ordination was achieved between the Russian and British-American offensives; but Moscow remained aloof—even further aloof than geography dictated—from the concerted war-planning of Washington and London.

If this were a military history, it would lay the heaviest possible stress upon Soviet Russia's military services to Britain; but, since it is an economic history, it must review, even if briefly, Britain's economic services to Soviet Russia. Russian resistance to the German attack brought an immense easement of the strategical burden the British were carrying, but added to the economic burden. Supplies to Russia became an urgent British commitment and large quantities were promptly despatched, including 450 aircraft, 22,000 tons of rubber, three million pairs of boots and considerable stocks of tin, aluminium, jute, lead and wool—all these before the end of September. In that month, British and American delegations went to Moscow to receive a more formal statement of Russian requirements and to assess their combined capacity to supply them.

A study of the routes by which British and American supplies reached Russia would make in itself, if space permitted, a fascinating chapter of this history. The Arctic convoys to the White Sea ports underwent the most dramatic vicissitudes of fortune. In these convoys British merchant ships predominated at the beginning and American merchant ships at the end; from beginning to end the escorting warships were British. Up to the early days of March 1942, only one merchant ship was lost out of 110 despatched; at that time the deficiencies of Russian port capacity were a greater hindrance to the flow of supplies than were the German surface vessels, submarines and aircraft based on Norway. This situation changed when the days grew longer and when the size of convoys was increased through American anxiety to make good their backlog of deliveries. The famous convoy P.Q.17, which sailed for the White Sea ports at the time of almost continuous Arctic daylight at the end of June, lost twenty-two of its thirty-three merchant ships. The next convoy, postponed until mid-September, lost thirteen of its forty ships, though the Germans also lost heavily in aircraft.[1] Thereafter, shipping requirements for the invasion of North Africa necessitated an interruption of the Arctic convoys until mid-December. Such an interruption meant that a sizeable amount of tonnage lay idle for months in Russian ports; for there was a two-way convoy movement and ships leaving Murmansk had to meet those leaving Scotland and Iceland somewhere off the North Cape. The Russian convoys were suspended at times in later years, in 1943 for the invasion of Italy, in 1944 for the invasion of Normandy; but German interference from Norway was never again a major cause of loss and delay. From November 1943 to February 1944, five convoys were run with the loss of only three ships out of a total of 191,[2] and, when activity on the northern route was resumed after the invasion of Normandy, convoys of between thirty and forty ships were run virtually without loss at regular intervals of from four to five weeks.

The drama of the Persian Gulf supply route to Russia was of a different kind; here there was no need for fighting, but great need for constructional work to increase the capacity of Persian ports, railways and roads. For the first twelve months, the burden of this work was carried by the British; but by an agreement of September 1942 the United States Persian Gulf Service Command took over the greater part of it. Interruptions on the Arctic route were a powerful stimulus to American and British efforts to develop the Persian Gulf route to its maximum capacity at the greatest possible speed; at the same time, a balance had to be struck between Russian requirements

[1] The Admiralty's estimate was thirty-six German aircraft lost.

[2] During the passage of J.W. 55B, the *Scharnhorst* was sunk by units of the Home Fleet.

and those of the Persian population and of the British Tenth Army, which was guarding that important strategical area. The achievement was impressive. In the summer of 1942 clearance of supplies to Russia over the Persian route was 15,000 tons a month. By the end of the year it had risen to 45,000 tons. By the summer of 1943 it had risen to 170,000 tons. In the summer of 1944 it reached the peak figure of 290,000 tons a month.

Other Middle Eastern supply routes were experimentally tried, or at least explored; but they were all of minor importance. In North Pacific waters, however, there was a third supply route of very great importance. Its existence gives striking illustration both of the global nature of the war and of its curious incompleteness. It was the pact of neutrality, maintained almost until the end of the war between Japan and the U.S.S.R., which gave full value to Vladivostok as a port of entry for American and also (in minor degree) Australian supplies. At the beginning, the supplies were carried chiefly in United States ships; but the risk of loss through Japanese interception[1] prompted the Americans to transfer large numbers of ships to the Soviet flag, which gave immunity from Japanese attack.[2] By the last quarter of 1944, United States and Canadian supplies were travelling along this route at the rate of 297,000 tons a month. Meanwhile, the close neighbourhood of Soviet and United States territory was demonstrated through the delivery of combat aeroplanes by direct flight from Nome in Alaska to airfields in eastern Siberia. This was the main air route used by the Americans in fulfilment of their protocol commitments; in addition they made use of the air route via the Atlantic and Africa.

In the total of supplies delivered over all routes to Russia, the shares of Britain and the United States were at the beginning approximately equal; but the American share progressively increased until it became in the end by far the larger one. What Russia required and what the Western Allies were able to supply were defined in a series of Protocols. The first Protocol, signed at Moscow early in October 1941, ran from that date until the following June; the later Protocols ran from 1st July in each year until the end of June in each following year. Each Protocol listed the specific supplies to be delivered, the monthly rates of delivery to be aimed at and the totals for the whole period. There were, however, various reservations which gave some flexibility to the engagements that had been undertaken. For example, the first Protocol bound the supplying countries to provide the goods that were specified, not the shipping to carry them. Russia however

[1] Although the risk was always present, the Japanese in fact sank only two merchant ships on this route throughout the whole period of its use.

[2] During the period of the second Protocol, sixty-four ships were transferred.

proved unable to provide merchant ships or escorts; Britain and the United States therefore supplied both.[1] The first Protocol also made provision for consultation between the three countries if any change in the war situation or shift in the borders of defence should make necessary a readjustment of the arrangements that had been made. Clauses which were similar in principle, if not in detail, were embodied in the later Protocols also.

What the Russians needed most urgently in the autumn of 1941 was quick and effective reinforcement of their fighting equipment. At that time, four of their large aircraft factories, two from the Ukraine and two from the Leningrad area, were being evacuated and erected elsewhere; in a message to the Prime Minister, Marshal Stalin stated that they would not be in production again for seven or eight months at the earliest. Russian production about this time was down from seventy to eighty aircraft a day to approximately thirty a day. Aircraft took first place among Russian requirements and Britain and America undertook to supply them, on a fifty-fifty basis, at the rate of 400 a month, in the ratio of three bombers to one fighter.[2] The Russians were also in urgent need of tanks which the two western powers, again on a fifty-fifty basis, agreed to supply at the rate of 500 a month;[3] in addition, the British agreed to supply 'tankettes' (bren gun carriers) at the rate of 200 monthly. Of materials, the Russians were in special need of aluminium; the Americans undertook to supply 23,000 tons of it during the Protocol period and the British 18,000 tons, which would be procured for the most part from Canada.[4] The American commitment for machine tools was considerably higher than the British and in the event the Americans supplied 2,652 machines during the nine-months period while the British supplied 1,210. Both countries undertook extensive miscellaneous commitments for the supply of raw materials, food-stuffs and medical supplies. There were besides various supplementary requirements which did not figure in the Protocol: for example, the Russians made an unexpected request for anti-gas respirators. A million and a

[1] Although Britain and America bound themselves merely to make the listed supplies 'available at centres of production', thereby refusing guarantee of shipment, they promised to 'help with the delivery'. At no time during the war were the Russians able to contribute merchant shipping or naval vessels to the Allied cause.

[2] These proportions were subsequently reversed.

[3] Under the Protocol, no more than half the total were to be light tanks. The types actually sent from the United Kingdom were Tetrarchs, Matildas and Valentines, with some shipments of Churchills in May and June 1942. As late as the third Protocol (July 1943–June 1944) the Russians expressed a preference for British tanks over American, because (so it transpired later) of the more generous British provision of spare parts. They also showed a strong preference for Valentines, even when obsolescent, owing to the simplicity of the type and because, having already considerable numbers, they wished so far as possible to standardise.

[4] In the third Protocol and thereafter Canada was a directly contracting party.

half were promptly despatched from Britain. And the provision of spare parts became increasingly important.

After Pearl Harbour, some of the engagements listed in the Protocol were modified; for example, by arrangement with the Combined Raw Materials Board and with Russian agreement, the monthly quotas of rubber and tin were reduced from 6,000 and 1,500 tons to 2,000 and 1,000 tons respectively. It seemed for a time as if the whole programme might fail; on the morrow of Pearl Harbour the Americans suspended all deliveries and, although they soon resumed them, it was some months before they caught up with the target rates of delivery. But in the end they made good most of the lost time. By and large, the programme of the first Protocol was fulfilled.

When the time approached for negotiating the second Protocol, the British would have wished to apply to Russia the same methods of allocation to which they themselves were subjected—that is, to get the Russians to justify their requirements by submitting facts and figures, whether through the mechanism of the Combined Boards or in some other way. The Americans thought that for political reasons this procedure would not work. In the end, both countries made a joint approach to the Soviet Government with separate but co-ordinated schedules of supplies. The British offer was prepared in the knowledge that the Russians would have to bear the brunt of Germany's attack in the coming summer and that any slackening of aid might impair their will to fight; it might also impair the will of British workers to produce. So far as possible, aid should take the form of the most efficient weapons and it should arrive in time for the impending battles. In view, however, of the limitations of shipping and of Russian port and inland-clearance capacity, the joint British-American programme should be planned within the bounds of four million tons of high-priority supplies. Actually, the British-American lists added up to 8,000,000 tons, from which the Russians were invited to select 4,400,000. The Russians scaled down the lists chiefly by sacrificing foodstuffs and oil products. They put the heaviest emphasis upon their need for tanks, aircraft, aluminium and industrial equipment.

During the period of the second Protocol, the Americans took the leading place as suppliers of Russian needs. Whereas, for example, the British could not raise the rate of their delivery of tanks above 250 per month, the Americans undertook to deliver 3,000 in the first half of the period while in the second half they raised the figure to 4,500—a total of 7,500 for the whole twelve months, in comparison with the British total of 3,000. For aircraft, British and American offers were more nearly equal; for the first six months the British promised

delivery at the rate of 200 monthly while the American promise for the same period was 212 monthly. This undertaking was in fact modified by a series of British-American agreements whereby American aircraft were made available to fulfil the British commitment to Russia, in return for British aircraft supplied to the United States Army Air Force in Britain. As for aluminium, the amount supplied by the United States (49,225 tons) was four times the amount of British supplies, which were in any case chiefly procured from Canada. The Americans also out-distanced the British in the supply of industrial materials and equipment.

At the end of the second Protocol period, both countries had fallen short of their targets. Owing chiefly to the interruptions of the Arctic convoys, the total supplies despatched (2,972,000 tons) were nearly 1½ million tons short of the figure set out in the Protocol. However, when the time came to negotiate the third Protocol, there was a very different war situation. In the east, the Russians had begun their campaigns of reconquest; in the west, the British-American assault on Europe was impending. Henceforward the Russians were far less preoccupied in securing military equipment. Industrial equipment, of which the Americans were the largest suppliers, became the most heavily accented requirement of the third and fourth Protocols.[1]

The official American estimate in money terms of the total of United States aid to Russia up to 31st August 1945 is $10,670 millions—about one quarter of the total of lend-lease aid rendered to all countries. The official estimate in money terms of the total of British aid, excluding the value of supplies sent before signature of the first Protocol, was given by the Prime Minister in the House of Commons on 16th April 1946: in the period from 1st October 1941 to 31st March 1946 the value of munitions despatched was approximately £308 million; in addition the value of raw materials, foodstuffs, machinery, industrial plant, medical supplies and hospital equipment sent was about £120 million.[2] No attempt will be made

[1] When the war in Europe ended, supplies to Russia under the fourth Protocol were suspended, except those listed in the secret Annex III to the Protocol: these were to facilitate Russian participation in the war against Japan.

[2] H. of C. Deb., Vol. 421, Cols. 2515–2519. These figures exclude sea freight costs and the aid provided by the Royal Navy in the form of convoy escorts. They also exclude the one battleship, nine destroyers and four submarines which were a special arrangement described by Mr. Churchill to the House of Commons on 5th June 1945 (H. of C. Deb. Vol. 411, Cols. 683–687). Military supplies were provided on lend-lease terms. Civil supplies other than medical supplies or comforts were provided under an agreement whereby the Soviet Government paid forty per cent. of the value in gold or dollars and the remaining sixty per cent. out of an interest-bearing and repayable credit from His Majesty's Government. Medical supplies were provided free by public subscriptions to charitable bodies, mainly the Red Cross and St. John War Organisation. Clothing and comforts were bought out of a grant from the British Government and out of contributions from charitable bodies. Figures of supplies refer to actual shipments and not to arrivals (i.e. shipments minus losses).

here to adjust the dollar figures to the sterling ones nor to estimate the comparative effort and sacrifice involved in British and American aid to Russia; in so far as comparisons of this kind are necessary for taking the measure of British economic effort during the war, they will be made below in a considerably broader context. Here it need only be repeated that the volume of American aid over the whole period far outdistanced the volume of British aid, though in the first Protocol period and the first half of the second Protocol period—the time when Russia's need was most urgent—the supplies sent from the United Kingdom, despite its much smaller resources and the much greater strain imposed upon them, were very closely comparable with those sent from the United States.

The material is not available and probably never will be available for a detailed comparative study of the war economies of Britain and Soviet Russia; but there is a great volume of precise data which could be used for the comparative study of the British and American war economies. In the present book, however, the temptation to go too deeply into this inquiry must be resisted. The series in which the book has its place deals with the United Kingdom at war; international comparisons must be no further employed than is necessary for getting the British economic effort into proper focus. Nor is it possible to devote much space to the study of the combined planning whereby the British and American Governments endeavoured to make efficacious their concept of the pooling of resources. That story could not be adequately told except in a complete book as long as the present one. Nevertheless, the story must at least be sketched in outline; for after Pearl Harbour the war efforts of the two countries were so closely interlocked that neither can be properly understood if it is viewed in isolation from the other. The view of British war economy, in particular, would be quite out of perspective if it were not seen against the common British-American background.

It is desirable, first of all, to get a reasonably correct impression of the comparative war-making strengths of Britain and America. A good practical way of opening the inquiry is to compare the sizes and proportionate employments of the fighting and working populations of the two countries. The following table gives the comparison, as agreed by British and American statisticians,[1] for the summer of the invasion of Normandy.

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[1] By Canadian statisticians also: the figures quoted are in Table IV of *The Impact of the War on Civilian Consumption in the United Kingdom, the United States and Canada.* This was a report prepared in 1945 by a Special Combined Committee for the Combined Production and Resources Board. The Canadian figures have for the sake of simplification been omitted above.

Mobilisation of the Labour Force aged 14 and over of each Country for War, June 1944

Million persons

	United Kingdom	United States
A. Armed forces	5·2	11·5
B. Civilian war employment	7·8	13·4
C. Total A+B	13·0	24·9
D. Other employment	10·4	36·3
E. Unemployed	0·1	1·0
F. Total Labour Force aged 14 and over	23·5	62·2

The first fact which emerges from the table is that the United States armed forces in the summer of 1944 were rather more than double the size of the United Kingdom armed forces. Obviously, this does not mean that from the time of Pearl Harbour onwards the Americans did twice as much fighting as the British. In the summer of 1942 their armed forces were still appreciably smaller than those of the British and though their heavy drafts in the following twelve months gave them by June 1943 a lead of four millions,[1] a very large proportion of their total strength was still in home bases. It was for example not until just before D-Day in June 1944 that the numbers of American soldiers in fighting contact with the enemy exceeded the number of British Empire soldiers so employed. This is clearly demonstrated in the graph on page 367.

The immensely greater fighting strength of the United States—potential at first—became actual at the time of culminating impact upon the enemy.

A similar conclusion emerges from the comparative study of munitions production. In the report already quoted, munitions production indices are given for the United Kingdom, the United States and Canada covering the years 1940–44. The indices demonstrate the immense acceleration of American output, which in 1944 was almost eight times as great as in 1941. Of course, the American effort during the period of comparison started from a very much lower base than the British one; but again, this is for present purposes not the main

[1] Armed forces:

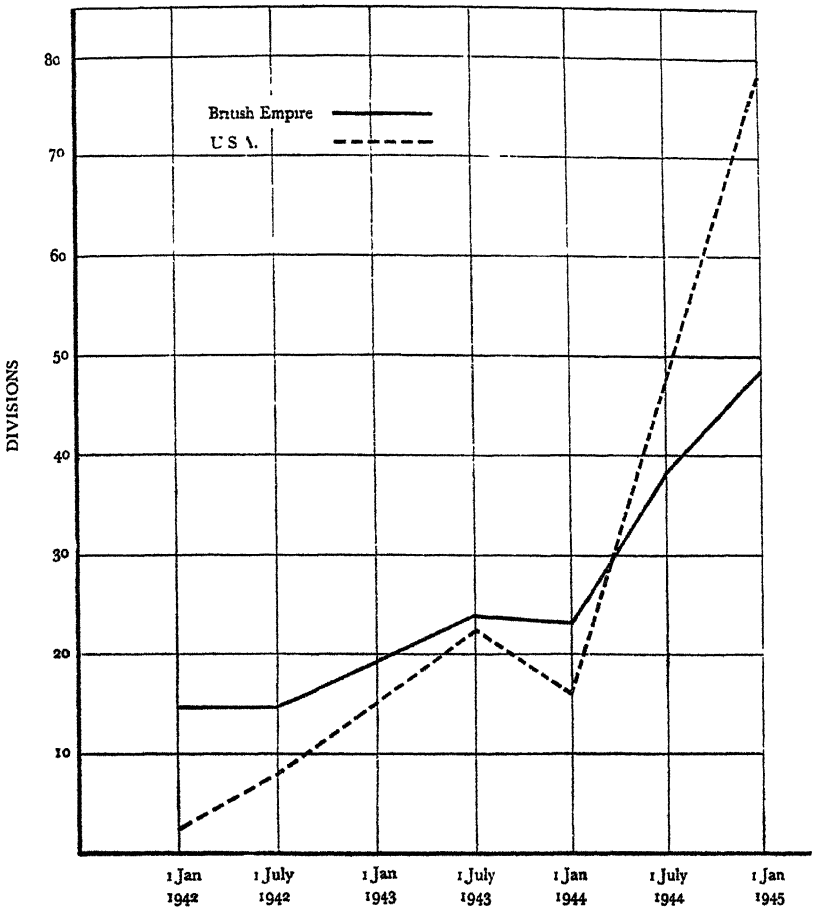
	Millions	
	U.K.	*U.S.*
mid-1939	0·6	0·4
mid-1941	3·8	1·7
mid-1942	4·5	3·7
mid-1943	5·1	9·2
mid-1944	5·2	11·5

The British figures include whole-time Civil Defence.

point. What is wanted is not merely a measurement of the comparative rates of growth, but an estimate of comparative productive strength at different points of time. Up to the early months of 1942, the volume of British munitions production was still greater than the American volume; but in 1943, the ratio of the American output to the British was nearly four to one. The Americans achieved this fourfold superiority

NUMBER OF ARMY DIVISIONS IN FIGHTING CONTACT WITH THE ENEMY

(Western and Eastern[1] War Theatres)



This graph was made at the request of the authors by their military colleagues in the Historical Section. It has a very precise statistical basis, which however does not exactly fit the facts of United Kingdom deployment, because Dominion, Indian and European Allied formations in the Western and Eastern theatres are included. On the other hand, British Empire Forces in the Pacific theatre (e.g. the Australians in New Guinea) are excluded.

[1] The N.W. Frontier of India does not count as an 'operational' area.

with a civilian war employment not quite double the British figure—in mid-1944 13·4 millions compared with 7·8 millions.

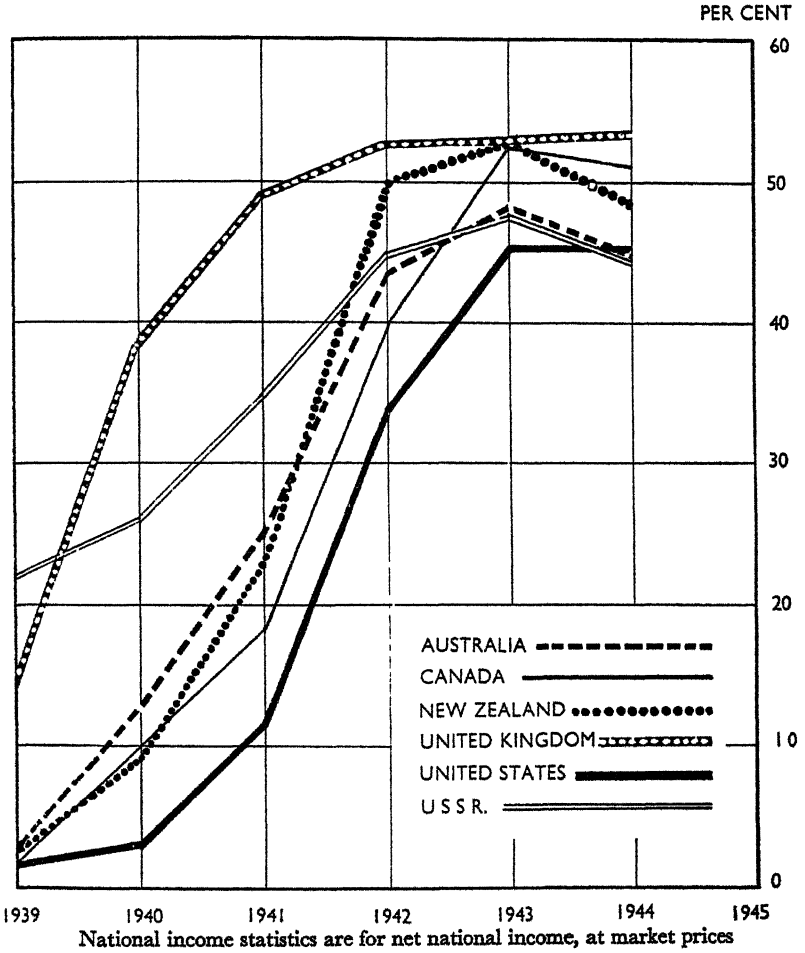
These figures of comparative productive strength must not be regarded as an estimate of comparative efficacy in war, still less of comparative war effort. War efficacy and effort signify not merely the accumulation of men and material but the intensity of their use in combat with the enemy. This point has already been made with reference to the deployment of armed forces and in certain circumstances it is no less valid for war production: for example, a 'mulberry' harbour produced in United States ports would probably have had no war-winning efficacy at all. A higher rate of production in areas thousands of miles distant from the battle fronts may have smaller value than a lower rate of output in an advanced base; indeed, if there should be insuperable difficulties of transportation, the higher rate of output in the distant country will have no military value at all. Throughout the war, the value of British production was in the military sense maximised because Britain was an advanced base, an 'arsenal of democracy' which saved distance and also, in the earlier years of the war especially, saved the time that enabled the New World democracies to 'tool up' their own factories.

Inevitably, war production in an advanced base has to struggle against acute difficulties which depress the rate of output. The direct destruction of materials and plant by air bombardment, the dispersal of production units, interruption of the flow of production through damage to the transport system, exhaustion of the workers through the black-out conditions in the factories and through the extra strain of night duty in the Home Guard or Civil Defence—all these drawbacks have to be set against the advantages of producing weapons close to the front line, or in it. There is another factor to be considered: when weapons produced in the factories must be used immediately in battle, they have to be modified continuously in order to keep pace with battle experience. This was the situation of the United Kingdom, particularly in the early years of the war. The advanced base was itself under menace of invasion; in consequence, the methodical tooling-up that would have given a larger output of standardised weapons in future years had frequently to be sacrificed for the sake of flexibility and immediate use in battle. In comparing British and American production it must also be remembered that in the early stages of the war a large proportion of British production consisted of defensive weapons to safeguard the United Kingdom. Even from the start a large proportion of American supplies were 'offensive'. This in part explains why when it came to the assaults of 1944 a large proportion of both British and American troops in action were using American munitions. Of course, American industry had a big initial superiority in higher productivity per man. This superiority was

increased by the particular character of the war effort demanded respectively from each of the two countries.

The study of comparative war effort merges also into the study of comparative sacrifice. This is a difficult and sometimes disputatious problem and the present writers have no wish to probe into it too deeply; but some use may be made of two measuring-rods which have been already employed in a purely national context. In the United States, the measuring rod of national income accountancy has more than once been authoritatively recommended as the most useful means of estimating the comparative effort and sacrifice of the nations allied in war. In the *Twentieth Report to Congress on Lend-Lease Operations*, presented in August 1945, President Truman declared: 'To the extent that the cost of each nation's contribution to the war

WAR EXPENDITURES IN PER CENT. OF NATIONAL INCOME



National income statistics are for net national income, at market prices

can be measured in financial terms, probably the best measurement is the proportion of its national income which each of the United Nations is devoting to the war.'[1]

The report illustrated this principle in the case of six nations by means of the graph which is reproduced on p. 369.

The report goes on to point out that the accuracy of such measurements varies from year to year and from country to country and that, in view of the great imperfections in the basic data, the ratios in the chart should be regarded, not as exact statistical measurements, but as general ratios and trends. It also emphasises the truth that money can never measure all the costs of the war. 'They must be and have been met in blood and toil, in lives lost and men maimed, in the immeasurable wreckage of human lives and happiness and the destruction of homes and cities.' No person possessing either military or economic knowledge would be rash enough to declare the war-effort of devastated Russia inferior to that of Britain or Canada, simply because the lines on the chart show that Russia—with its much lower national income per head of the population—devoted a smaller proportion of the total to direct war purposes. At the same time, no well-informed person can deny the significance of the contrast between the lines plotted for British and American war expenditures; for they clearly demonstrate that, of these two countries, the one which was subjected to direct attack and possessed besides the lower national income per head of the population, put forth an effort which was not only much longer sustained, but was also more intense in the period of climax.

When the measuring rod of manpower is used, the same conclusion emerges. This will at once become plain if the totals that were set down in the table on p. 366 for June 1944 are now stated as percentages of the labour force in each of the two countries.

Mobilisation of the Labour Force of each Country for War, June 1944

Percentages

	United Kingdom	United States
A. Armed forces	22	18½
B. Civilian war employment	33	21½
C. Total A + B	55	40
D. Other employment	45	58
E. Unemployed	—[2]	2
F. Total Labour Force	100	100

[1] *Op. cit.* p. 42. cf. the similar statement in June 1942 : 'All the United Nations are seeking maximum conversion to war production in the light of their special resources. If each country devotes roughly the same fraction of its national production to the war, then the financial burden of war is distributed equally among the United Nations in accordance with their ability to pay.' (*Fifth Report to Congress on Lend-Lease Operations*, June 1942, p. 23.)

[2] Less than 0·5 per cent.

These figures demonstrate the more intensive mobilisation of British manpower. An equally striking demonstration could be achieved by translating the comparative totals into ratios. The American population of working age was nearly three times as large as the British; but the ratio of the American to the British armed forces was no more than 2·2 : 1. When the figures of civilian war employment are added to those of military service, the ratio of American superiority is appreciably less than 2 : 1.

Viewed as a whole, the American task of mobilising its manpower was far lighter than the British task.[1] In 1939, the American population of working age (i.e. fourteen to sixty-four inclusive) was about 91,300,000; by 1943, the total had risen to 94,900,000—a rate of increase of about 900,000 annually. Moreover, the Americans before the war had 8¾ millions unemployed. With so large a spring of natural increase and so large a pool of unused resources to draw upon, they were less dependent upon emergency recruitment, which was, besides, much easier for them, because of the very large numbers of young people who could be drawn into industry from the colleges and universities. For all these reasons, it was for them a smaller effort to build up their total employed labour force from forty-three millions in 1939 to sixty-two millions in 1944 than it was for the British to build up their total labour force from 19½ millions in 1939 to 23½ millions in 1944. During the war the United Kingdom's population of working age (fourteen to sixty-four inclusive) was practically stationary at about thirty-four millions, its reserve of unemployed workers at mid-1939 was 1·4 millions and its so-called 'unoccupied' population was for the most part busily engaged in household tasks.

The manpower situation of the United States was easy enough to permit an extraordinary expansion of the armed forces and war industry without diversion of labour on a scale that would have stopped the expansion of American standards of living.[2] To the historian of British war economy, the realisation that manpower was never the most critical American shortage comes almost as a shock. 'At no time', an American official historian has written, 'were labor shortages so critical as the shortages of raw materials, machine tools, components, ships, freight cars, and other items which necessitated

[1] See Table III of the article 'Mutual Aid between the U.S. and the British Empire, 1941–45' by R. G. D. Allen. *Journal of the Royal Statistical Society*, Part III, 1946. See also C. T. Saunders: 'Manpower Distribution, 1939–45: Some International Comparisons.' *The Manchester School*, May 1946.

[2] American consumers were, of course, compelled to make specific sacrifices, especially of 'consumers' durables', such as automobiles, electric household apparatus, etc., etc., which normally were produced by 'Group I' workers. But the sixty per cent. of the American working population remaining outside the direct war zone was able to safeguard American consumers from the paradox endured by the British—higher money incomes alongside a general lowering of living standards.

tight control programs in those fields.'[1] The strategically central control over American industry was exercised through allocation of materials and distribution of component parts. The Americans got through the war without a National Service Act. They never really needed one. If the war had lasted much longer, manpower would probably have become their most troublesome shortage and they would then have been compelled to choose between industrial conscription and a failing war effort; but, as things turned out, their situation in 1945 was rather like Britain's situation in 1918. They had been able to achieve victory without submitting their economic and social system to this ultimate strain.

What impresses the economic historian is the contrast between the lavishness of American and the scantiness of British resources in relation to the challenges that the two countries respectively had to face. Because of this contrast, the tasks of American and British economic statesmanship were in some respects different. It did not matter very much if the Americans spilt a cupful or two from their gallon pot; what mattered most was that they should achieve unprecedented speed in filling their pot and pouring it out. This they did. But the British had to get a full pint out of their pint pot and if possible a bit more; they could hardly afford to spill a single drop. By 1943 manpower had become their basic shortage and they had to exercise the most parsimonious calculation in allocating it amongst alternative uses. It is significant that, out of a 2·8 million increase[2] in their total of gainfully occupied persons, 2·2 millions were women; the demands of the war upon the women of America, though substantial, were far less urgent.[3] Moreover, the hours of labour were lengthened far more drastically in Britain than in America.[4] Most significant of all was the ruthless diversion of British labour from peace employment to war employment. Whereas in America the switching of labour made a subsidiary contribution to war mobilisation, in Britain it made the chief contribution. With only forty-five per cent. of the British labour force remaining in 'other

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[1] *The United States at War. Development and Administration of the War Program by the Federal Government.* Prepared . . . by the War Records Section, Bureau of the Budget, pp. 173 cf. pp. 298–320 and 450–5.

[2] This is the figure for 1943, the peak year of manpower mobilisation both in the United Kingdom and the United States.

[3] In Great Britain the proportion of women of fourteen and over who were gainfully occupied rose from twenty-seven per cent. in 1939 to thirty-seven per cent. in 1944; in America the rise was from twenty-six per cent. in 1939 to thirty-two per cent. in 1944. (See C.T. Saunders, op. cit., pp. 12, 14). The estimates are for Great Britain, not the United Kingdom: i.e. Northern Ireland is excluded.

[4] In the United States the wage-earner's average weekly hours in munitions industries increased from 37·2 hours in 1939 to 47·5 in 1943. In the United Kingdom the corresponding increase was: in 1938, 48 hours for men and 44·2 for women, in 1943, 54.1 hours for men and 46·9 for women. (For definitions and further explanation see *The Impact of the War on Civilian Consumption*, p. 9.)

employment', the British people were compelled to undergo, irrespective of the shipping shortage, a sharp decline in their domestic standard of living, their export trade and their capital inheritance. The price paid in over-strain for this intense British mobilisation will become apparent in some of the following chapters.[1]

The strain would have been beyond bearing; indeed, the task would have been beyond the bounds of physical possibility, had it not been for the aid rendered by the United States through lend-lease. While the British mobilised fighting forces out of all proportion to the size of their population, American industry took over part of the task of equipping those forces. British-American war plans in the autumn of 1942 were based on the assumption that the United States would provide almost 100 per cent. of the joint requirements of transport aircraft, self-propelled guns, forty-ton tank transporters and ten-ton lorries, together with very high proportions of landing craft, auxiliary aircraft carriers, light bombers and tanks. An index compiled by Professor R. G. D. Allen reveals the increasing American contribution to the munitioning of British Commonwealth forces.

British Empire Supplies of Munitions from all Sources[2]

	Sept.–Dec. 1939 and 1940	1941	1942	1943	1944	First half 1945	Total
Total supplies ($ millions)	9,200	13,000	19,900	24,800	24,700	9,300	100,900
Per cent. from:							
U.K.	90·7	81·8	72 6	62·4	61·2	66·1	69·5
Canada	2·6	5·2	8·6	8·8	8 9	10 0	7·9
Eastern Group (mainly Australia, New Zealand and India)	1·1	1·5	1·9	1·9	1·2	1 7	1·6
Purchases in U.S.	5·6	9·1	4·7	2·4	1·5	1·2	3·7
U.S. Lend-Lease	—	2·4	12·2	24·5	27·2	21·0	17·3

It is doubtful whether a completely satisfactory index could be compiled. Nevertheless, it may be accepted that the United States, whose contribution of munitions up to Pearl Harbour had been negligible, were by 1942 supplying approximately one-tenth of the munitions requirements of British Empire armed forces and by 1943–44 over a quarter. The United Kingdom, in the culminating period of the war, was called upon to supply over sixty per cent. of the total munitions becoming available for Empire countries. This was a heavy burden for so small a population and it could not have been

[1] See especially Chapters XVI to XIX.

[2] R. G. D. Allen, op. cit., Table 18. This table covers total supplies of munitions becoming available to Empire countries from domestic production and from the United States, including munitions later transferred to Allies. Valuations are as far as possible at comparable U.S. costs. For further explanation of the table see Professor Allen's article.

borne without a disproportionate concentration of British industrial manpower in the war factories; in June 1944, as we have seen, thirty-three per cent. of the total labour force in the United Kingdom was in civilian war employment as against 21½ per cent. in the United States. But this concentration would itself have been beyond attainment had it not been for the large deliveries to British war industry of lend-lease materials and tools and the large deliveries of food to the British civilian population. If, to quote one example out of many, Britain had been compelled to make current payment for the larger part of her essential imports, she would have been quite unable to cut by seventy per cent. or so the volume of her production for export.[1]

The narrative therefore returns from comparative effort, which is in this chapter the minor theme, to the major theme of comparative strength. What calls for most emphasis here is the American achievement of raising its armed forces from 1·7 millions in the year of Pearl Harbour to 11·5 millions in the year of Normandy, producing the equipment for these immense numbers, producing on top of that large masses of equipment for the British and other Allied nations, reinforcing the war industries of its Allies with materials and plant and contributing large quantities of essential civilian supplies—not to mention the shipping turned out in American yards to carry all these cargoes overseas. To the British inquirer, perhaps the most impressive demonstration of American strength is the fact that the aid which so decisively re-inforced the war effort of his own people was only a subsidiary element in the American war effort. In terms of dollars, lend-lease aid to the whole British Empire over the period January 1942 to June 1945 amounted to no more than eleven per cent. of the total United States war expenditure. Some more specific examples may be given for 1944, the peak year. The deliveries of food which meant so much to the United Kingdom in that year amounted to little more than five per cent. of American food output. The deliveries of metals to the British Empire were 3·4 per cent. of American output; of machinery, 7·1 per cent.; of ships (including the work of ship repair in United States ports) 6·7 per cent.; of ordnance and ammunition, 8·8 per cent.; of aircraft, 13·5 per cent. Vehicles and their equipment, at 29·4 per cent. of American output, topped the list in 1944. In the two years, 1943–44, deliveries of all types of military equipment amounted to approximately 11½ per cent. of American output. These were the years of decisive military impact and the years when lend-lease reached its maximum volume; after that, deliveries of almost every kind fell steeply down until lend-lease was once and for all cut off.[2]

[1] The index of volume of United Kingdom exports, excluding munitions, fell from 98 in 1938 to 29 in 1943 (see Table 3(d) on p. 354).

[2] See Chapter XIX, pp. 546–548.

The examples given above are quoted from Table 15 of Professor R. G. D. Allen's paper to the Royal Statistical Society.[1] Readers who desire a comprehensive and careful analysis of mutual aid between the United States and the British Empire are referred to that paper. No attempt can be made here to enter into the refinements of the statistical calculations, but the salient conclusions must be set down.

Before this summary is given, reference must be made and tribute paid to the financial aid granted by Canada to the United Kingdom. From the outset of the war, the Dominion had shown itself resolved not to allow the rapidly growing British shortage of Canadian dollars to create a corresponding shortage of the munitions and agricultural produce which Canadian producers could supply. By the time lend-lease came into operation, the British Government had run through its means of payment and the Canadian Government was holding sterling balances in excess of £200 million. In April 1942, the Dominion disposed of the past by means of an interest-free loan of $700 million which extinguished the accumulated sterling balances; it provided for the future by a free gift of $1,000 million. This gift covered United Kingdom requirements up to January 1943, when deficits on payment were covered for a month or two by a number of transitional improvisations.[2] In April 1943 the first Mutual Aid Bill was introduced into the Dominion Parliament; it appropriated $1,000 million, most of which covered supplies to Britain. The next appropriation, for $800 million, was made in the spring of 1944 and was supplemented, later in the year, by special manipulations to increase British holdings of Canadian dollars.[3] Finally in the spring of 1945, the Canadian Government decided to make an interim war appropriation of $2,000 millions to cover all war expenditure, including Mutual Aid, during the next five months. After VJ-Day a new chapter opened and the British deficit was financed by overdraft pending negotiation of an agreement to meet the needs of peace. The needs of war had been met from beginning to end without hesitation or stint.

To return now to American lend-lease: the outline from March 1941 to the end of August 1945, is as follows[4]:

	$ *millions*
To the British Empire	30,073
To Russia	10,670
To other countries	2,872
Total lend-lease aid	$43,615

[1] R. G. D. Allen, *op. cit.*

[2] Including the repatriation of certain residual British holdings of Canadian securities (Dominion and Provincial).

[3] The basis upon which Canada paid the United Kingdom for the maintenance of her forces overseas was revised in British favour and the revision was made retrospective.

[4] See Tables 3 (b) and 3 (c) in statistical summary, p. 353.

The British Empire's share in the total is approximately seventy per cent. It is a complicated business to determine precisely how the $30,073 millions were divided among the constituent Governments of the Empire, but Professor Allen gives $27,025 millions as the figure of lend-lease aid to the United Kingdom. Australia ($1,570 millions) received the second largest share of aid rendered to the Commonwealth countries.

There is, of course, another side to the mutual aid account, namely, lend-lease in reverse or reciprocal aid, granted chiefly in the form of facilities and supplies for American forces overseas and raw materials for the use of American industry. Professor Allen estimates the total of British Empire reciprocal aid to the United States at £1,605 millions sterling. To make an appropriate translation of sterling value into dollar value is a very complicated business;[1] by Professor Allen's calculation, the reciprocal aid provided by the whole British Empire to the United States had a value between twenty-five and thirty per cent. of United States lend-lease aid to the Empire. Some countries of the Empire came fairly close to an evening of accounts; New Zealand actually gave as much as she got and Australia's contribution of reciprocal aid amounted to about seventy per cent. of the lend-lease aid that she received. These estimates are for total sums; if the mutual aid account were calculated in relation to national incomes and total war expenditures, both Australia and New Zealand would be credited with contributions of reciprocal aid very much above their receipts of lend-lease aid.[2]

The favourable American balance in mutual aid accountancy with the British Empire occurred primarily in the account with the United Kingdom. As against the estimated $27,025 millions of lend-lease aid which the United Kingdom received, its contribution of reciprocal aid to all countries was £1,896 millions. This total was made up as follows:

	£ millions
To the United States . . .	1,201·2
To Russia	312·0
To other countries (provisional figure)	382·8
Total U.K. reciprocal aid . . .	1,896·0

[1] The official rate of exchange cannot be used to measure what the goods and services provided under lend-lease would have cost the United Kingdom and other British Empire countries in sterling if they had themselves produced them; nor, conversely, what the goods and services provided under reciprocal aid would have cost the United States in dollars if they had been provided at home costs. High costs, particularly in the sphere of munitions production, represent some of the 'cupfuls' spilt from the American gallon pot in the process of quick filling and pouring out. For munitions, Professor Allen favours an average of $7 to £1 sterling and for other goods $4 to £1 sterling. For lend-lease aid as a whole he translates at the rate of $5·3 to £1 sterling and for reciprocal aid as a whole at the rate of $4·7 to £1 sterling. 'The latter figure is the lower because the proportion of munitions—relatively highly priced in U.S. lend-lease—is higher in lend-lease than in reciprocal aid.'

[2] Professor Allen comments: 'Reciprocal aid from the two southern Dominions to U.S. forces in the Pacific was, in a sense, the practical substitute for the assistance which could no longer be provided to the United Kingdom.'

This table shows a sharing out of British reciprocal aid among the various foreign recipients that is rather different from the allocation of American lend-lease aid. Russia received a smaller proportion of the British than of the American total; other European countries received a larger proportion. But the broad division of United Kingdom aid between the United States and all other countries (sixty-five per cent. and forty-five per cent. respectively) is similar to the broad division of United States aid—seventy per cent. to the British Empire, thirty per cent. to all other countries.

At the rates of conversion that have been explained above, the £1,201 millions of aid to the United States would be equivalent to $5,667 millions. This is between one fifth and one quarter of the estimated $27,023 millions of lend-lease aid to the United Kingdom. As a proportion of national resources, Britain's contribution of reciprocal aid to the United States came 'within hailing distance' of the lend-lease aid that she received. Professor Allen suggests eleven per cent. of war expenditure as America's lend-lease contribution to the British Empire and nearly nine per cent. of war expenditure as the United Kingdom's reciprocal aid to the United States. Almost identical proportions of the national income—approximately $4\frac{3}{4}$ per cent.—were devoted over the whole period to lend-lease in the United States and reciprocal aid in the United Kingdom.

It would, however, be injudicious to place too much emphasis upon the accountancy of mutual aid. In particular, so far as the United Kingdom is concerned, the main balancing item against American lend-lease aid is the more intensive mobilisation and deployment of British military manpower, the more intensive concentration of the British labour force in war industry, and the corresponding sacrifices of the nation's living standards and its capital inheritance. It must be admitted that the theory of mutual aid was never completely coherent. Lend-lease was introduced originally as a policy 'for the defense of the United States' when the United States were not yet at war. This was strategical theory, whereby the United Kingdom and the other fighting democracies gave their return for American aid by keeping the war away from American shores. Side by side with this theory, however, the original Act of Congress asserted United States property rights in the defence articles and services that were transferred, and looked forward to some kind of repayment.When the United States became an active partner in the war, some people (e.g. Monnet) argued that the theory of proprietary rights was now inappropriate and that the theory of strategical solidarity should henceforward dominate all lend-lease transactions. The American Congress and public opinion would not, however, have accepted any change in the terms of the original act. On the other hand, the theory of reciprocal

aid (as first set out in the Mutual Aid Agreement of February 23rd 1942, between the United Kingdom and the United States) was entirely strategical. This Agreement was the model of the others subsequently signed between the United States and the other Governments of the United Nations.

To attempt in terms of distributive justice a general balancing of the manifold items in the real British-American war account would be quite hopeless. The statesmen and peoples were not thinking in terms of distributive justice between themselves and their Allies when they were fighting the war. The terminus of their thought and action was victory. Mutual aid should be primarily regarded as one of the essential mechanisms for the international division of economic power and effort whereby victory was achieved.

The allocation of economic resources on an inter-Allied basis was not left to the free play of the market. Planning and conscious control were no less essential in this wider sphere than they were in the sphere of the national war economies. Deliberate decisions had constantly to be taken and carried through if strategical requirements and economic resources were to be brought into conformity with each other. The following section will therefore survey the methods of British-American planning for global war.

(ii)

British-American Procedure

Despite what has been said earlier and will be said again about the continuity of experience connecting the Anglo-French and Anglo-American war partnerships,[1] the present survey must begin by emphasising some important contrasts between the earlier partnership and the later one. Before September 1939, Britain and France had bound themselves by treaty under certain clearly specified eventualities to wage war as Allies; they had defined with precision the military support which they would give to each other; they had specified the combined machinery through which their combined war effort would be conducted. At the apex of this machinery was a well-tested institution of the previous war, the Supreme War Council. Such gaps as existed in September 1939 on the economic side were soon filled in during the following months. In short, before there was any serious fighting, the Anglo-French alliance had provided itself with an excellent paper constitution. But the constitution did not work very well; the excellence of its outline had not sufficiently been filled

[1] See above, pp. 193–194 and below, p. 393.

in by detailed preparatory planning and mutual confidence between British and French administrators. These are the bricks and mortar of international administration and without them the best architectural plan cannot be made effective. They were still scarce when the incomplete edifice of the Anglo-French alliance came crashing down.

The foundations of the British-American alliance were laid in exactly the opposite way. Its operational detail was being tried and tested before its obligations and principles were defined or avowed; its bricks were being made and cemented before there was any agreed design for the complete edifice.

> As I see it [the Prime Minister wrote in the spring of 1941] we are confronted with the singular situation of two Great Powers entering upon an association before any attempt has been made by either to define the objective or the articles of the association.

The observation was just. The British Commonwealth was at war, America was at peace. The United States Government and Congress had accepted no contractual high-political obligations of any kind towards the United Kingdom. They were still insisting upon their full freedom of action when their action was determined for them by the Japanese attack upon Pearl Harbour and the German and Italian declarations of war. From the passing of the Lend-Lease Act right up to Pearl Harbour, the limits of British-American collaboration were set by the sovereign decision of American democracy to keep out of the war.

> So far [the Prime Minister said] all that has been agreed in effect is that Great Britain and her Allies shall be used as the agent to do the fighting, while America furnishes the means in the form of material and money.

Practical collaboration, however, extended far beyond the boundaries of this tacit agreement. Within the limits of 'all aid short of war', the United States Administration intermeshed its policies with British policies with a comprehensiveness which has seldom been surpassed by full military allies and which at that very time was not even approached by the formally Allied Governments of London and Moscow. As will soon be seen, the intermeshing was most striking in the sphere of economic action; but it also took place even within the politically difficult sphere of strategical planning. For the United States had to reckon with the possibility that they might sooner or later become entangled in the war, either by their own decision or by decision of the totalitarian dictatorships. In shaping their plans for defending the still-neutral American democracy, they found themselves inevitably and immediately entangled with the war-torn British democracy. From the summer of 1940 onwards, the British were making available to the Americans, just as if they were allies, full

information about their military and scientific secrets. The Americans on their side were supporting the British with such military supplies as they could spare and were looking for ways and means of freeing themselves from the 'cash and carry' policy which set sharp limits to the growth of this support. Meanwhile, the United States Service Chiefs became convinced that it would be advantageous to discuss with British experts the higher strategy of a war in which America might possibly become involved. The approaches from the American side were at first hesitant; but, in the end, British-American Staff conversations were held at Washington between 29th January and 27th March 1941.

Out of these conversations came the first basic document of British-American strategical planning. It was an hypothetical document. It neither stated nor implied any American commitment, but merely outlined an appropriate combined strategy 'should the United States be compelled to resort to war'. This outline of strategy was a compromise which in one important matter failed to satisfy the British. Whereas both parties were agreed upon the need to 'concentrate on the defeat of Germany and Italy and subsequently to deal with Japan', the British were afraid that an excessively home-keeping policy of United States naval forces in the Pacific might leave too much scope for Japanese initiative in the opening phases of the war. The British would have liked to gain an assurance of American help in defending the 'Malaysian barrier' pivoted upon Singapore—that 'indispensable card of re-entry' whose loss, they argued, would be 'a disaster of the first magnitude, second only to the loss of the British Isles'. The Americans were unwilling to give any such assurance. They were not even planning to hold the Philippines in strength. They were determined to resist any appreciable dispersal of their naval strength in the Pacific beyond the defensive zone of the Pearl Harbour base. However, the British cherished a hope that they might persuade the Americans, later on, to change their minds. For it was agreed that the contact which had been made during the conversations of January to March should thereafter be maintained. A further conference on Pacific and Far Eastern Defence would be held later in the year with Dutch participation. Meanwhile, a British Joint Staff Mission would be sent to Washington as soon as possible and a corresponding American Mission to London, so that the policies and plans of combined strategy might be worked out in further detail and put 'smoothly and rapidly' into effect in the event of the United States joining the war.

Under elaborate 'cover',[1] the two Joint Staff Missions were in due course established. They did not at that time achieve very much. In

[1] To provide this 'cover', the American Mission in London called themselves the 'United States Special Observer Group' while the British Joint Staff Mission in Washington called themselves 'Military Advisers to the British Purchasing Commission in the United States'. It was necessary for the J.S.M. to disguise themselves in civilian clothes.

particular, they did nothing to fill the dangerous gap in defensive plans against the Japanese. They did, however, have opportunity for exercising important influence in the zone where strategy overlaps production.[1] It had been resolved in the January-March military conference to establish 'a method of procedure which will ensure the allocation of military material, both prior to and after the entry of the United States into the war, in the manner best suited to meet the demands of the military situation'. In this recommendation, the thought of the Service Staffs merged with the theory of lend-lease. From the union of strategical and economic planning was born a fundamental principle of the British-American war partnership—the principle of a combined pooling of war-making resources.

The same principle had already begun to emerge, at a lower level, through the day-to-day collaboration of the two national administrations in their policies of supply. Raw materials policy offers some good illustrations. In this field, the needs of the British and the Americans and their capacity to render each other reciprocal service were very evenly balanced. The British, after the fall of France, had increasingly switched their import programmes to North America and were particularly dependent upon American supplies of iron and steel;[2] nevertheless, they still remained dependent upon other overseas territories, and particularly territories of their own Empire, for the larger part of their raw material requirements. The Americans, despite the great resources of their own country and their close interlocking with Canada, required from the sterling area imports of raw materials no less important than those that they could themselves offer to the United Kingdom. Interwoven with this reciprocal dependence of supply interests was the interdependence of supply and blockade policies: if in some parts of the world the Americans could strengthen British efforts to cut off Axis imports at the source, in other parts British action could secure for the Americans materials that were essential for their 'war-preparedness program'. Moreover, both countries had a common interest in preventing market prices from being raised against them. Within their own Empire and wherever possible elsewhere, the British had entered into long-term agreements which assured regularity of supply at stable prices; they could not tolerate the disruption of these arrangements through the growth of uncontrolled American competition. The Americans, on their side, saw the advantage of co-ordinating their buying policies

[1] This sentence applies to the J.S.M. in Washington; the American Staff Mission in London had very little authority delegated to it.

[2] In the four years 1940–44, total imports by cash, lend-lease and mutual aid from North America (i.e. the U.S.A. and Canada) of all raw materials *other than* iron and steel, were 8·28 million tons. During the same period (*plus* the unimportant last quarter of 1939) imports of iron and steel from North America were 14·57 million tons, almost exactly on a 50 : 50 basis between lend-lease and cash payment.

with those of the British; failing this, the two countries would bid up prices one against the other and in the end each would be left short of some vital commodities. For all these reasons, the elements of a combined raw materials policy began to be assembled, by one particular transaction after another, long before a Combined Raw Materials Board was thought of. The United Kingdom bought the whole crop of Egyptian flax and made an allocation sufficient for American needs. The United States bought the whole crop of manilla hemp and made an allocation sufficient for British needs. The British were already sole purchasers of many important staples produced within their own Empire; the Americans became sole purchasers of the exportable surpluses of Mexico and Brazil. The two countries, acting together, dominated the raw materials markets of the world. Each country, from its own stock pile, made provision for its partner's needs. Co-ordinated purchase, price control, allocation from one country to the other in accordance with the statistical demonstration of need—all these principles of a combined raw materials plan were clearly emergent before Pearl Harbour. What was still lacking was the central design of the plan and conscious avowal of its theory and purpose.

In the field of industrial production, there had begun to occur before Pearl Harbour a similar intermeshing of policies and mingling of personalities, although the difficulties were greater and the opportunities for reciprocity of service less striking. It was predominantly the British role to be takers of munitions, not givers; according to lend-lease theory, they made their return by fighting rather than by producing. Nevertheless, their experience in fighting and in producing weapons to suit the requirements of their own fighting forces had taught them lessons which could profitably be absorbed by American war industry; if the flow of munitions was from America to Britain, the flow of operational experience was from Britain to America. In the technique of war production, each had something to teach the other.[1] At the beginning, it is true, neither country had made full use of these opportunities. By the theory of 'cash and carry' the British were free to go shopping in the United States as if it were a vast Woolworth store. Provided they were able to pay on the nail, their purchases were of no concern to the United States Administration. In consequence, the British Purchasing Commission had established its headquarters in New York and staffed itself chiefly with commercial men. The placing of British war contracts during the

[1] e.g. thanks largely to the Dewar tank mission to the United States in the summer of 1940, a combination of American chassis and British-Canadian turret was adopted which led ultimately to the U.S. Sherman tank. In 1940, however, the British were in general slow in sending over technical personnel and models of Army weapons. The exchange of experience in Air Force production, through the Joint Aircraft Committee and otherwise, was more advanced.

first period of the war was of indirect value to American defence because it laid foundations for the expansion of American war industry; but it involved little contact between British and American Service personnel, administrators and technicians. It was not until the fall of France that a new situation began to arise. The United States Government then initiated a modest programme of rearmament and established the National Defense Advisory Commission to co-ordinate it. The N.D.A.C. decided to set a limit to the value of the contracts that the British might place without official authorisation. The purpose of this control was to prevent the British from buying up supplies and absorbing industrial facilities which the Americans might need for their own defence; its effect was to compel British procurement officials to argue their case with American officials. The advent of lend-lease carried the process a great deal further, since the procurement of all lend-lease supplies was placed completely in the hands of American Departments—the War Department, the Navy Department and the Treasury. These Departments established 'Defense Aid Committees' to handle the various categories of lend-lease supplies and invited the British to accept representation on these committees. This made it necessary for the British Purchasing Commission, the British Air Commission and the rest to shift the focus of their activities from New York to Washington and to change the character of their staffs. The change did not occur all at once, for there was still plenty of work to do in handling the old contracts; but the new work coming in necessitated continuous administrative and technical collaboration with American officials. Moreover, there arose on the American side an increasing demand for 'user' justification of British munitions requirements. This meant that British Service personnel had to be associated with the British civilian officials who were handling supply problems. Both the military men and the civilians became absorbed in practical day-to-day business with their opposite numbers among the Americans.

There was, of course, some discordance as well as harmony in these close relationships. Even on the British side,[1] there were some divergences of outlook between Service representatives and Supply representatives; for while the former were apt to put their main emphasis upon allocations of American output for the battles that British forces would have to fight in the near future, the latter looked forward to the output that would come from American production lines many months and even years ahead. Fortunately, the task of holding a fair balance between these two points of view was a manageable one; the close co-ordination of Service and Supply policy by the

[1] It is impossible to discuss here the conflicts of interest and view-point and the jurisdictional struggles within the U.S. Administration. Some account of them is given in Chapters 2–4 of *The United States at War. Development and Administration of the War Program by the Federal Government.* (Historical Reports on War Administration, No. 1.)

War Cabinet, reflected as it was in Washington by the quasi-federalistic organisation of the British Supply Council and the brilliant leadership of Mr. A. B. Purvis, was sufficient guarantee that rough justice would be done to both sides. Here it is the production side that needs to be examined. British policy in Washington, formulated in large measure by Monnet's planning mind and propagated by the persistence and persuasiveness of Purvis, made demands upon American industry that were far in advance of contemporary American opinion. The British put forward the idea of a 'Victory Programme' which would stretch American industry as it had never been stretched before. The process whereby Americans in key positions became converts to this idea and, in a collaboration which cut right across national divisions, worked with their British colleagues to transform it into an effective policy, would make—if there were time to tell it—a fascinating chapter of this history. Time must at least be found to explain the concept of a Victory Programme; for it was destined to occupy a central and permanent place in the foundations of British-American economic planning.[1]

One cardinal element in the concept may be illustrated by two rows of figures chosen at random from a long statistical document composed in London during August 1941.

United States, United Kingdom and Canada: Output and Supplies of War Equipment

Item	Output		Supplies	
	July–September 1941	October–December 1942	Stocks at June 30, 1941	Stocks at June 30, 1941, *plus* total output July 1941 to December 1942
AIRCRAFT				
14A. HEAVY BOMBERS				
United States	55	770	119	2,112
U.K. and Canada	198	1,023	154	3,646

The document of which these figures are an exemplar was given various names. Sometimes it was called the Stacy May document; sometimes the Stimson Balance Sheet. These titles did justice to the important part played by two Americans in bringing the document to birth. But it might with equal justice have been called the Purvis document—since it represented a climax of Purvis's labours—or the Monnet Balance Sheet—since it embodied a technique that Monnet had been using far back in the days of the Anglo-French alliance.

[1] The following account is based upon both British official papers and upon some notes jotted down by A. B. Purvis early in August 1941. The notes were recovered from the wreckage of the aeroplane in which he was killed on 14th August. They would be valuable for the biography of him which ought some time to be written.

The best name of all is the one which ultimately stuck—the *Anglo-American Consolidated Statement.*

It was a statement of statistical fact. It made no attempt to set targets for production, but restricted itself to realistic forecasts of output under existing programmes and of stocks up to the end of 1942. Under each head, its estimates were comparative: on one line the figures for the United States, on the next the figures for the United Kingdom and Canada.[1] The contrasts that these figures illuminated were in part contrasts of military experience and Service policy. The Americans, for example, were producing a lower ration of ammunition per gun for field artillery than were the British, but a higher ration per gun for anti-aircraft artillery. They were planning to produce large quantities of light tanks while the British and Canadians were switching over completely from light tanks to medium and heavy tanks; they were specialising on light and medium bombers while the British were specialising on heavy bombers; they were aiming at producing large quantities of small bombs while the British were concentrating increasingly on large bombs. It was useful to put a spot light upon these qualitative differences in production trends. But it was still more useful to demonstrate the quantities. In some items—for example, medium and light bombers, merchant ships, light tanks, army artillery—American output for the eighteen months from June 1941 to December 1942 would exceed British and Canadian output: in a second group—e.g. fighter aircraft, A.A. ammunition, machine guns—the two outputs would be approximately equal: in a third group—e.g. heavy guns, heavy and medium tanks, tank and anti-tank guns—British and Canadian output would exceed American. In overall production, Britain and Canada would throughout the greater part of the period still be ahead of the United States; but towards the end of 1942 the United States would take the lead. However, since they had so much leeway to make up, their stocks of war material would be considerably lower, even at the end of 1942, than the stocks possessed by Britain and Canada.

These cold rows of figures were not very flattering to the United States. Their population was more than $2\frac{1}{2}$ times the size of the combined British and Canadian populations and their superiority of productive capacity was even greater; but they were not as yet seriously fulfilling their promise to be 'the arsenal of democracy'. The Anglo-American Consolidated Statement punctured a good deal of facile oratory. And this precisely was what its authors,

[1] It had originally been intended to give in addition comparative figures for German production and stocks; but subsequently it was decided that such figures (on which besides the British and American Intelligence Services were not always in agreement) were too speculative to merit inclusion in the Statement. Such rough conclusions as seemed to be well established in August 1941 were set down in a separate document which Stacy May took back with him to Washington.

American no less than British, had intended. Purvis had designed it as a lever for shifting the obstacles to the expansion of American war industry and as an aid in securing the allocation of American munitions in accordance with strategic need; Secretary Stimson and his American allies had designed it as a new and effective weapon in a campaign that they had been waging in Washington throughout the summer. Hitherto, the expansion of American war production had been achieved almost entirely by new additions to American productive capacity rather than by switching over existing capacity to the tasks of war; in consequence, the flow of war output was postponed while civilian production boomed. The Office of Production Management,[1] which exercised some rudimentary control over American industry through the instrumentality of a primitive priority system, was in the main reluctant to impose restrictions upon the civilian boom; but Secretary Stimson argued that such restrictions were immediately necessary if war production was to be expanded to the level of war needs. But how were war needs to be measured? The disposition hitherto had been to restrict them to the requirements of visible military manpower in the United States—approximately two million men in training—*plus* the appropriations for lend-lease aid authorised by Congress. Such measurements were not in any way related to the strategical facts. If the United States, in combination with the fighting democracies, were to produce the tools 'to finish the job', it was necessary to take the measure of the job. What was wanted was a statement of production requirements to outmatch the Axis powers.

This conception found expression on the highest political level in a personal message from the Prime Minister to the President on 25th July 1941.

> We have been considering our war plans [Mr. Churchill wrote] not only for the fighting of 1942 but also for 1943. After providing for the security of essential bases, it is necessary to plan on the largest scale needed for victory.

Victory, he said, might conceivably come by an internal convulsion or collapse of the enemy, brought about by blockade, bombing and propaganda; but plans must also be made to liberate Europe by force of arms.

> If you agree [the Prime Minister continued] with this broad conception . . ., we should not lose a moment in
>
> (a) framing an agreed estimate as to our joint requirements of the primary weapons of war, e.g. aircraft, tanks, etc.
>
> (b) thereafter considering how these requirements are to be met by our joint production.'

[1] The O.P.M. had succeeded the N.D.A.C. (National Defense Advisory Committee) and after Pearl Harbour was itself succeeded by the W.P.B. (War Production Board).

These sentences contained the complete conception of a Victory Programme. To establish the facts about existing production and stocks, the statisticians of the two countries had already been called in. To determine the extra output required to outmatch the Axis powers, the military planners must now be called in. To fill the gap between existing production and the requirements for victory, orders must thereafter be given to government departments and industry by the highest political authorities of the associated democracies.

The United States Government endorsed this conception. On 3rd September, Mr. Winant, writing from the American Embassy in London, gave the Prime Minister the names of the Americans who would be going on the Anglo-American mission to Moscow and informed him at the same time that high-ranking staff officers would attend a preliminary conference in London to discuss with their British colleagues long-term production requirements and the allocation of existing production. It had not been part of the original plan to telescope discussions on the Victory Programme with the discussions on aid to Russia; but the two subjects fell conveniently together. The new and heavy commitment to sustain Russian resistance[1] underlined the need for a rational procedure of allocating resources from the combined British-American pool and for planning a productive effort which would make the pool large enough to satisfy the three major claimants upon it—belligerent Britain, belligerent Russia and rearming America.

The work achieved in the London and Moscow discussions fell short of full comprehensiveness. The supplies to be made available for Russia up to 30th June 1942 were listed in the first Moscow Protocol. As an outcome of the London conference, military requirements in the British sphere of strategical responsibility (as defined in the Washington Staff Conference of January–March) were enumerated up to the end of 1942 in four annexes: (1) Royal Navy and Fleet Air Arm, (2) Army, (3) Air Force, (4) Merchant Shipping. The missing element in the Victory Programme was a statement of requirements in the United States sphere of strategical responsibility. The United States representatives at the London conference were not ready to submit figures; it was in consequence decided that the American requirements should be worked out subsequently in Washington.

Even with this notable gap, the demands that the military planners made upon British-American war industry were truly formidable. And, since the limit to the upward climb of British industrial production could already be forecast, these demands were predominantly a challenge to American industry to launch itself at last upon the strenuous whole-hearted mobilisation of its war strength. This was

[1] In immediate short term, the new American commitments towards Russia involved reduced deliveries to Britain—'a heavy reduction of our expectations,' as Lord Beaverbrook said. Moreover, immediately after Pearl Harbour, Britain made good out of her own production part of the shortfall in American supplies programmed for Russia.

precisely what the apostles of the Victory Programme, both American and British, had from the very beginning intended.

It seemed for a time as if their hopes would be disappointed. Autumn drew into winter and nothing new or important seemed to be happening at Washington. Then came Pearl Harbour. The faith and works which had brought the Victory Programme to birth achieved their reward on 6th January 1942, when the President announced to Congress the 'letter of directive' that he had sent to the responsible departments and agencies of the United States Government—to produce in 1942 60,000 airplanes, 45,000 tanks, 20,000 anti-aircraft guns, 8,000,000 deadweight tons of merchant shipping: in 1943 to produce 125,000 airplanes, 75,000 tanks, 35,000 anti-aircraft guns, 10,000,000 deadweight tons of merchant shipping. The production targets for American democracy, the greatest industrial power on earth, were at last set high.

The British-American partnership could not indefinitely have survived on the basis of the limited liability of one partner and the unlimited liability of the other; had it not been completed, it must sooner or later have been relaxed. However, when Pearl Harbour did complete it, its structure took shape with a rapidity which would have been quite inconceivable had it not been for the work of preparation—in part an unconscious growth, in part the product of conscious planning—which has been reviewed above. To consider further the example that was last discussed: 'victory programming' ceased henceforward to be the tactical weapon for a specific occasion and became instead a continuous activity of the associated Governments. Each of its three elements endured in permanence. On the side of supply, the Anglo-American Consolidated Statement, amplified and kept up to date under the oversight of the Combined Production and Resources Board, provided the objective data which were indispensable for allocating munitions in accordance with strategical need and for constructing realistic production programmes. On the requirements side, the Combined Chiefs of Staff, with their ancillary organisations continuously at work, defined the strategical objectives for which munitions must be both allocated and produced. For raising production programmes to the level of strategical requirements, or for lowering requirements to the level of production possibilities (not to mention the reshuffling of output that was necessary to meet the rapidly changing conditions of warfare) the two administrations maintained continuous contact with each other at all levels, both through the mechanism of the Combined Boards and otherwise. The final decisions were, of course, taken by the supreme executive authority in each country.

Naturally, it is not suggested that perfect institutions and procedures of inter-Allied collaboration were achieved all at once or, indeed,

that they were ever achieved. Three things need to be stated in rather crowded juxtaposition with each other: first, that invaluable preparatory work had been done before Pearl Harbour; secondly, that Pearl Harbour, by a decisive stroke, pushed this work a long way further forward; thirdly, that the work, even then, needed to be expanded and deepened in a continuing process of effort and experiment amidst the tests of war.

The interweaving of these strands may possibly best be made clear by reverting to simple narrative. For starting point, we may take the embarkation of the Prime Minister at a Scottish port on 13th December 1941. It was from a Scottish port that he had embarked four months earlier on the *Prince of Wales* for his Atlantic Charter meeting with President Roosevelt at Placentia Bay in Newfoundland. But the *Prince of Wales* was now lying at the bottom of the sea off the east coast of Malaya; it was in her sister ship, the *Duke of York*, that he made his December journey. This time his appointment with the President was in Washington. He was accompanied by Lord Beaverbrook, the Chiefs of Staff, and a party of experts larger than that of the previous voyage. The Prime Minister and his party constituted, in fact, a kind of itinerant Defence Committee of the War Cabinet, competent to handle the problems both of operations and supply.

By the time they reached the United States they had got through a great deal of work. They had, to begin with, produced a document which the American Chiefs of Staff discussed paragraph by paragraph with their British colleagues. From these discussions emerged the combined war plan of the new alliance. For Germany, if not for Japan, this plan was destined to be carried out in subsequent years almost to the letter. They had, moreover, outlined a complete design of the machinery whereby the new alliance would order its business. Each of the two combining countries, they believed, needed to equip itself with an adequate national organisation complete in its component parts, both strategical and economic, and properly co-ordinated under responsible political authority. The interweaving of these national organisations could then be achieved through a series of joint organisations, some for action in short term, others for long-term preparations. The institutions to be set up on a combined British-American basis were listed as follows:

1. Permanent joint planning organisation (all Services).
2. Joint supply board, to deal with production, raw materials, allocation, etc.
3. Joint allocation committee to deal with naval, military and air weapons.
4. Joint shipping committee.
5. Perhaps some other joint bodies, e.g. for economic warfare.

The decisions taken at the Washington Conference embodied a significant modification of terminology: the word 'joint' was restricted to inter-Services collaboration within one nation; for international and specifically for British-American collaboration, the word 'combined' was chosen. In substance, the structure of 'combination' that was agreed upon followed the British proposals very closely. Most important of all was the emergence of the Combined Chiefs of Staff as a practical working institution. For a time, the British proposal for a single combined strategical directorate was deflected by an American proposal to establish an 'appropriate joint body' to supervise strategy in one area only, the short-lived ABDA area;[1] but it was in the end agreed that there would be danger in building 'a pyramid of authorities' to oversee operations in separate areas. The unity and balance of combined effort in a global war would be ruined if strategical planning and direction were parcelled out among a number of *ad hoc* bodies, each imprisoned within its own partial view of the war and each fighting for its own hand. It was instead judged essential to impose upon a single body, the Combined Chiefs of Staff, undivided responsibility for advising the associated Governments on war policy in all areas.

The Combined Chiefs of Staff rapidly developed a sound working practice. There was no fusion of the two national Staff organisations; each continued to act as before within its own government framework. The two national bodies came fully into combination only when they were assembled in the periodical conferences which became for the remainder of the war the landmarks of strategical decision. At each of these conferences, the Combined Chiefs examined in joint session papers originating from the planning staff of one nation or the other. Between each conference and its successor there was an organised continuity of thought and decision. It was centred upon Washington. This was a reversal of the arrangements foreshadowed before Pearl Harbour; for at the conference of January–March 1941 it had been agreed that strategical control of the combined war effort—should America join the war—ought to be double-centred, in Washington and London. However, it would in practice have been impossible to carry on strategical discussion in two places at the same time; one place or the other had to be chosen and the decision to choose Washington was a wise one, seeing that the British were always readier to delegate authority to their overseas representatives than the Americans were. The Joint Staff Mission in Washington, representing the British Chiefs of Staff, held weekly meetings with the American Chiefs of Staff. This weekly conference was the embodiment, between full conferences, of the Combined

[1] ABDA was the American-British-Dutch Area in the Far East under General Wavell. It was the first experiment in the series of combined commands.

Chiefs of Staff. It had common offices, a combined secretariat and a combined planning staff—though the latter was seldom employed to capacity except during full conferences, when it submitted papers along with those of the national planning organisations.

Three other combined institutions emerged from the Washington Conference of December 1941–January 1942.[1] First, there was a Munitions Assignment Board, operating under the Combined Chiefs of Staff but divided into a Washington committee and a London committee, each of which was put under a civilian chairman. The Munitions Assignment Board was established to give effectiveness to the principle that 'the entire munitions resources of Great Britain and the United States will be deemed to be in a common pool' from which assignments must be made, both in quantity and priority, in accordance with strategic needs. The second new institution was a Combined Shipping Adjustment Board, which will be discussed in the next chapter. Finally, it was agreed at the Washington Conference to establish a Combined Raw Materials Board with headquarters in Washington. It would be the function of the Board to plan the development, expansion and use of all raw material resources under the jurisdiction or control of the two Governments and to make such recommendations as were necessary for executing the plans: these recommendations, it was stated, 'shall be carried out by all parts of the respective Governments'. Outside the limits of direct British or American legal control, the Combined Raw Materials Board was instructed to pursue by 'collaboration' the same objectives of developing raw material resources and procuring them to serve the combined war effort.

The Washington Conference had established a good part of the machinery outlined in the British proposals; but it had left certain gaps. If one looks at the general picture from the point of view of shipping—which up to the early spring of 1943 was the most dangerous British-American shortage—there was need for a Combined Food Board alongside the Combined Raw Materials Board; for food and raw materials together constituted the overwhelming bulk of United Kingdom import needs. From 1943 onwards the need for a Combined Food Board would be even greater; for in that later period food shortages were destined to reflect not merely a scarcity of shipping but an insufficiency of production at source. However, the failure to institute combined planning for food was not the only, nor the chief omission of the Washington Conference. There was a big gap in the arrangements made for planning war production. As the

[1] Their composition and functions were publicly set out in Cmd. 6332 (January 1942). When Mr. Churchill submitted the draft to the War Cabinet, he quoted Napoleon's maxim—'A constitution should be short and obscure'. This document, however, was both short and—in its fundamental principle, the pooling of resources—clear.

British Supply Council soon pointed out, effective 'victory programming' contained the following elements:

> determination of strategic concept and its expression in military requirements—translation into terms of raw materials necessary for their production—production itself—assignment of finished weapons —shipping.

At Washington, all these elements except one had been recognised. In the institutional structure that had been set up there was a gap between the Combined Raw Materials Board and the Munitions Assignment Board. 'Production itself' had not been provided for in the system of combined organisations.

In circumstances that will be explained below, these two gaps were filled a few months later. A Combined Food Board and a Combined Production and Resources Board were established in June 1942. Thereby, the proposals for combined organisation that had been drafted on board the *Duke of York* were completed in full.

It must not, however, be imagined that the working constitution of the British-American alliance (if the phrase may be allowed) was merely or chiefly the product of a single well-drafted paper plan. Once again, it is necessary to recall the long period of trial and error, of natural growth and deliberate planning, during the eighteen months before Pearl Harbour. To cite once more the example of raw materials: on the eve of the Washington Conference and while it was in session, the British and American officials who, in one particular transaction after another, had already carried so far the principles of combined procurement and allocation, were at work on schemes designed to give full regularity and formality to their hitherto unsystematised collaboration. What they had in mind was the idea of a permanent Raw Materials Conference. However, the idea which took shape at the higher level was better than this. The Conference would have been unwieldy; but the two-man Board possessed an almost inspired simplicity, which was in no way impaired when three-man Boards were created later on by calling in Canada. In the sphere of raw materials policy as elsewhere, this streamlined construction quickly became an assembly point for all the techniques that had been proved and all the experience that had been gained during the past months of preparation.

In one important respect, the new institutions took shape in a manner that was less logical and tidy than the British planners had forecast. As a preliminary to the dovetailing of British and American organisations, they had assumed the establishment of a complete and well co-ordinated system of organisation within each of the two countries. Here, of course, they were reasoning from British experience; for, as has already been seen, a mature and effective system of War

Cabinet control had been established before Pearl Harbour.[1] To adapt this system to the requirements of the American alliance, it was sufficient to make the newly established Ministry of Production the focal point of business within the sphere of the Combined Boards. It might have seemed that the Minister (Mr. Lyttelton) would find his opposite number in Mr. Nelson, the Chairman of the War Production Board; but this expectation would have under-rated the vigour of jurisdictional conflict between the departments and agencies at Washington and over-rated the capacity of any single authority to make its nominal powers effective.

It is for American historians to tell the story of how co-ordination began to be achieved amidst the interdepartmental struggles that were rife in Washington during 1942:[2] here it need only be pointed out that the orderly pattern of the Combined Boards was at best an anticipation, rather than an expression, of a similar order within the American Administration. All the same, the Combined Boards offered levers which could be used by those Americans who saw the need for a more comprehensive and balanced system of planning for their own war economy. The studies instituted by one Board or another frequently identified dangerous frictions, unbalances or shortcomings of the common war effort which could only be rectified by action taken in Washington. When Washington did decide to take such action, it was sometimes able to make good use of British war experience: for example, that experience was drawn upon in November 1942 for establishing the Controlled Raw Materials Plan[3]—the first effective instrument that the Americans discovered for allocating their economic resources amongst the competing claims of war.

At this point it will be useful to pause for some reflection upon the real terms of the British-American war partnership. In one sense, it contained an inequality reminiscent of the Anglo-French alliance. The United States possessed over Britain an even greater superiority of potential war-making resources than Britain had possessed over France. Washington, therefore, took the place that London had earlier held as the headquarters of inter-Allied planning and decision. The British, like the French before them, became 'the visiting team'. There were, however, some important weights in the opposite scale. The British war economy was highly developed when the American one was still primitive. Even when the effort of both countries was at peak, the British were more tightly mobilised than the Americans; if their resources were smaller, they were making more intensive use of them. This extra effort produced its effect on

[1] See Chapter VIII.

[2] The story has already been told in part in *The United States at War. Development and Administration of the War Program by the Federal Government* (Historical Reports No. 1) *passim.*

[3] cf. ibid. p. 306.

the battle-fronts. As we saw, almost until the end of the long period now under review, British army deployment was roughly at parity with American; at the beginning of the period it was, of course, very much greater.[1] Finally, there was the advantage that has already been pointed out in the British machinery of planning and government co-ordination.[2] All these considerations together may help to explain what otherwise might have seemed paradoxical—that, while Washington was chosen as the planning centre, the initiative in such plans as have so far been described came chiefly from the British side.

However, in tracing the evolution of the Combined Boards as working institutions, it would be difficult and positively misguided to attempt to disentangle British from American initiative and action. More important than the separate national influences was the growth of a common attitude to the salient problems which the official staffs of the Boards—working together in the same offices with common terms of reference—were called upon to handle. Illustration may be given from the operations of the Munitions Assignment Board. It was the body most closely linked with the central institution for strategical planning, the Combined Chiefs of Staff. At the same time, its decisions were of immediate and great consequence to the war-economic structure of Britain, since the disposition of British manpower was bound in large measure to be governed by the assignment of munitions out of the common pool.[3]

The pool was not placed under a single centralised management. The assignment of munitions could only be satisfactorily achieved on the basis of very full information about the operational situation, the state and equipment of the troops, the requirements for training in each separate theatre of the war, and so on. To have gathered all this mass of information into one centre would have necessitated an immense staff largely duplicating the work of the Service Departments both in Britain and the United States. The facts of geography demanded that the Munitions Assignment Board should be split into two parts. There was a Board in Washington and another in London. Later on, a separate Board for the assignment of Canadian production was established at Ottawa. Assignment committees were also established in Australia and India when these countries began to

[1] See p. 367 above.

[2] cf. *The United States at War*, p. 132. 'The experience with these boards frequently demonstrated to the American members the admirable nature of the staff work and the excellent co-ordination of the policy lines available to the British members. The British members and staff were seldom, if ever, uninformed on recent top-side decisions and never in pursuit of contradictory major policies. The British, moreover, appeared to be acquainted with major military strategy and programs of which our members including the military were often innocent.'

[3] The C.M.A.B. only assigned new production. If the war had lasted very much longer after August 1945, there would have been an important problem of redeploying weapons between different war fronts.

produce disposable surpluses of weapons or ammunition. On these committees, British and United States representatives sat with representatives of the producing country.

However, it was the Boards in Washington and London that counted for most. There were about forty claimants upon the Washington-London pool of weapons. Since endless confusion would have arisen if each claimant had been free to submit his requirements in both places, the whole body of claimants was divided into two groups, a British group and an American group. With some exceptions,[1] the members of the British Empire and the European Allies fell naturally into the British group because they were equipped for the most part with weapons of British type, and, in addition, were closely associated with British forces in the field. Equally naturally, the South American Republics and China fell into the American group. Russia, as has been seen, was a special case; her claims were separately negotiated and defined in a series of Protocols.

The procedure of the London and Washington Boards was as follows:

1. Each of them ascertained the requirements of all members within its own group.
2. Each of them, so far as it was able, satisfied these requirements from the stocks of munitions produced at home.
3. Each of them thereafter approached its partner with the purpose of making good the deficiency in its own resources.

Between the London and Washington Boards there was a genuine two-way traffic of assignment. From time to time Britain was able to supply important items of equipment in which the United States was deficient—for example, radar equipment. A pleasant exchange of compliments took place between the London and Washington Boards after the successful invasion of North Africa: the Americans thanked their British friends for supplies furnished to the United States Forces; the British thanked their American friends for the Sherman tanks and other equipment which had helped the British Army to win its final Libyan campaign. Moreover, the constant and pressing necessity for stringent economy in shipping space was the occasion for very strenuous British efforts to supply the growing American forces in the United Kingdom with maximum quantities of general engineering goods, constructional material,

[1] e.g. for Australia and New Zealand it was finally ruled that they should submit their requirements for Army and Navy equipment to the London Board and for Air equipment to the Washington Board. For Turkey—an ally of Britain and an important element in a theatre of British strategical responsibility, but not a member of the United Nations—it was ruled by the Combined Chiefs of Staff that all bids for equipment, both in London and Washington, should be submitted by the British. This decision did not, however, interfere with the processes of lend-lease accountancy.

accommodation, stores, clothing and other equipment. It was here that reciprocal aid found its greatest scope.

When all this has been said, it remains true that the balance of munitions assignment was heavily in favour of the Washington Board; for it controlled the total surplus on which the United Nations as a body and the United Kingdom itself had need to draw.[1] But in 1942 it might well have seemed mockery to talk of a surplus. It was hardly possible in that year to raise the horizon of munitions assignment more than a month or two ahead. There was fierce day-to-day competition for supplies which everywhere seemed inadequate in relation to need. Nor was the definition of need an easy matter. The American Service Departments were naturally anxious to build up as rapidly as possible the military, naval and air power which ultimately would exercise the predominant weight against German-dominated Europe and Japanese-dominated Asia. There was, however, real danger that Germany and Japan might win the decisive battles while the Americans were still building up their predominance of power. The British representatives on the Washington Board and the British Chiefs of Staff continually maintained that the first charge on the munitions pool must be

> the provision of full equipment for existing units in available and active theatres of war with such orders of priority as may be assigned to these theatres.

This was an argument for giving priority to the immediately impending battles rather than to the more distant campaigns. It was at the same time an argument for British claims as against American claims. The argument was not one that could win easy success in Washington. For a time after Pearl Harbour, the British cash contracts and lend-lease follow-up orders[2] were mainly diverted to the use of the United States.

The Munitions Assignment Board in Washington, like its counterpart in London, did most of its business in committees—particularly the three big standing committees for ground forces, navy, and air. The American Service representatives on these committees expected their British colleagues to justify in meticulous detail every statement of British requirements; consequently there had to be a constant cabling to London for information wherewith to answer the innumerable American questions. There was another and more deep-seated impediment—the lack of continuous and concrete strategical guidance. For although a general strategical plan had been agreed in the Washington Conference and although the Washington Board had

[1] For examples of important items of British equipment supplied predominantly or in large measure by assignment from the Washington Board, see p. 373 above.

[2] See Chapter IX.

received a general instruction to make assignments in the light of strategic policy, changing operational conditions and realities of production, a good deal of time elapsed before strategic policy was closely defined in terms of time and place, or before the realities of production were adequately assessed. By April 1942 the British were ready to submit their Order of Battle for 1943; but at the end of 1942 the Americans were still not ready to submit theirs.[1] The instruction to assign munitions in the light of strategic policy gave very little precise guidance so long as strategic policy itself remained so largely undefined. There were times when the British took almost a despairing view of the munitions assignment procedure and felt tempted to conclude that Washington would never do justice to the immediate and urgent requirements of British forces deployed on active fronts. But, by the time the Board had completed its first year of life, it had by its own good performance effectively answered this pessimism. At the beginning of 1943, the British representative on the ground forces committee in Washington reported to London that reasonable British claims were almost always satisfied, provided they were given a convincing operational backing.

The chairman of the Washington Board was Mr. Harry Hopkins. His personality and close association with the President no doubt contributed a good deal to the equitable and efficient operation of the Board. Another factor in its growing success was the work of its Statistical Analysis Branch under the direction of Mr. Lubin, who had in time past worked in close association both with Mr. Hopkins and the President. At each weekly meeting of the Board Mr. Lubin presented statistical data relating to stocks, production, and requirements of munitions. It was his practice to concentrate every week on a single outstanding problem—small-arms ammunition, changes in tank programmes, changes in aircraft programmes, the use of shipping, etc., etc. His golden rule was simply to set out the facts clearly in his tables and graphs, to put the spotlight on the discrepancies and the disparities, but never to propose a remedy. That was a matter for the chairman to take up subsequently with the departments and other interests.

The Munitions Assignment Board did its work well and introduced an essential element of order into the conduct of the war. The intensity of British mobilisation, the proportions in which British manpower was to be divided between the Services and industry, could not have been determined in advance without reasonably firm knowledge of the

[1] On the occasion of General Marshall's visit to London in March 1942, the British and American Chiefs of Staff had agreed to draw up a combined Order of Battle. The British Joint Planning Staff did their part of the work within a month. They estimated *inter alia* the British, Dominion and Allied (European) land forces which would have to be provided by April 1943 with British types of equipment: these were very roughly equivalent to 25 armoured divisions and 125 infantry divisions. They also estimated that by April 1943 Britain, the Dominions and the European Allies would have ready 8,600 first line aircraft —provided the planned supply of U.S. aircraft was maintained.

supplies that would be allocated to Britain from the Washington pool.

But allocations from the pool were themselves ultimately governed by the quantity and quality of the inflow into the pool. Underlying the problem of munitions assignment was the problem of munitions production. It will be recalled that the institutional structure erected at Washington in January 1942 contained a gap on the side of production. A Combined Raw Materials Board had been set up, but nothing else. The lack of an agreed forum for the joint examination of production programmes soon made itself felt.

The British already had much experience of the problems involved in translating strategical plans into military requirements, in adjusting these requirements to the possibilities of production, and in achieving thereby a production programme that was well-balanced in its component elements and feasible in its total. Even before Pearl Harbour, the machinery for handling these problems was rendering good service; after Pearl Harbour it was further improved through the Joint War Production Staff, a committee of Service and supply ministers meeting with their experts under the chairmanship of the Minister of Production. On the American side, there was no comparable organisation or experience. The problems were new, the machinery for handling them still undeveloped.

There was, at first, no more definite guidance to the American effort of production than that given in the famous 'objectives' announced by the President in January 1942. By this announcement, the sights were at last set high for American war industry. This was precisely what the planning minds in Washington, British and American alike, had long been working for. Nevertheless, the same people—for example, Mr. Stacy May and his colleagues in the Statistics and Programmes Division of the War Production Board—were very soon working to get the 'objectives' scaled down. In their change of emphasis there was no real inconsistency. Before Pearl Harbour American industry was falling short of the needs of war because it was attempting too little. After Pearl Harbour a different danger arose. American war industry began to attempt too much.[1]

A war effort may fail either because the production sights are set too low or because they are set too high. For example, it was calculated by the Ministry of Production in the autumn of 1942 that the United States and the United Kingdom were committed between them to produce in 1943 enough tanks to equip 200 armoured divisions, with 100 per cent. scale of reserves for each division. It was calculated that they were planning to produce in the same year 22,000 million rounds of ball ammunition—although the Desert

[1] cf. *The United States at War* (Historical Reports No. 1), p. 299. 'A major step in getting war production on a maximum basis, strangely enough, was the reduction of the grand totals sought in a given period.'

Armies of the British Empire, in all their Egyptian and Libyan campaigns from 1940 to 1942, expended only 200 million rounds.[1] If the combined resources of the United Kingdom and the United States (including their resources of ocean-going tonnage) had been unlimited, such profusion of specialised output might have done little harm, provided it was not bought at the expense of quality. But, since industrial capacity and manpower were not unlimited, since rubber and some other essential materials were critically deficient, since ships were scarce, the super-abundance of tanks and ball ammunition and all the rest of the over-produced items must inevitably be paid for by a deficiency of ships or landing craft or other essential equipment. The immense expansion of United States Army programmes, in particular, was threatening to engulf vast resources in the production of equipment which would not be required for years to come and which it might never be possible to ship overseas. Meanwhile, in the campaigns immediately ahead, the fighting forces of America and the British Empire were likely to find that they had been deprived of urgently necessary equipment through the waste of resources caused by misguided efforts to provide them with 'the maximum of everything'.

These were predominantly American problems, and it is for American historians to explain in detail how they were tackled. But indirectly they were British problems also; since the allocation of resources in the British war economy could be given its final shape only within the context of a combined British-American war-economic plan. The most effective way of making that plan realistic would have been to define for specific periods ahead the Combined Order of Battle and the combined production programme necessary for its realisation. As has been seen, attempts were made to do this; but in 1942 they did not succeed.[2] However, in partial compensation for the failure, and in the hope of winning success later on, a new British-American institution was created. The Combined Production and Resources Board was set up in June 1942. It was a two-man Board, composed of Mr. Lyttelton, the Minister of Production, and Mr. Nelson, chairman of the War Production Board. It was located in Washington, where Mr. Lyttelton was permanently represented by Sir Robert Sinclair.[3] The directive issued to it by the President and the Prime Minister gave it two duties to perform: first, to combine the production programmes of the two countries into a single programme

[1] By far the greater part of the planned production was American: 20,000 million rounds against 2,000 million of British production. In the previous war the U.S. Expeditionary Force had consumed one million rounds.

[2] See above, p. 397.

[3] There was also a London Committee of C.P.R.B. but it dealt with comparatively subsidiary matters, chiefly adjustments in the U.K. production programme to meet the needs of U.S. Forces in Britain.

adjusted to all the relevant production factors and to the strategic requirements of the war as indicated by the Combined Chiefs of Staff: secondly, in collaboration with the Combined Chiefs of Staff, to assure the continuous adjustment of this combined programme to the changing military requirements.

The establishment of the C.P.R.B. did not magically solve the intractable problems discussed above. The duties laid upon the new Board, if read literally, could not possibly be fulfilled; for, like all the other Combined Boards, it had power merely to make recommendations, not to take decisions nor to issue orders. It was only by decision and command of the two sovereign Governments that the two national production programmes could be combined in a single programme realistically related to strategical plans. So long as the two Governments postponed their task, the Board was compelled to limit the scope of its work. It focused attention upon major 'unbalances' of the production programmes and suggested remedies for the most dangerous 'bottlenecks', thereby providing a lever for those British and American reformers who were struggling to bring order out of disorder. Sometimes it prepared the way for direct inter-government discussions on a high political level. For example, when the President took direct action in October 1942 to cut back the inflated programmes of the American Service departments, the British Minister of Production crossed the Atlantic in the hope of achieving definite enough agreements—about production programmes, the assignment of munitions, and shipping—to enable the British finally and irrevocably to allocate between 'fighting and fabrication' their last reserves of manpower. Agreement was reached. It was confirmed in an interchange of messages between the President and the Prime Minister. Thereafter, it had, if possible, to be speeded 'down the line' in Washington. Here again the C.P.R.B. was called upon to provide 'leverage'. Its work was valuable, but should not be over-valued. If difficulties which in 1942 had sometimes seemed insuperable began in 1943 to be overcome, this was due above all to the immensely swelling flood of American production.

The Combined Boards cannot be understood merely by meticulous study of their paper constitutions; they can only be understood through study of their operation. That is why it has proved impossible to avoid entanglement in the narrative of events during the first year of the Boards. The narrative has been both superficial and excessively selective and there is no space to correct these faults. Even so, it should at least have made one thing clear. The Combined Boards were no more than mechanism; they did not by their own power make the British-American partnership an effective thing. Even as mechanism, their importance was not exclusive and frequently not predominant. British-American 'combination' was in existence

before the Combined Boards were created; it continued its existence, outside and beyond them, after they had been created. Its dominant characteristic was a reciprocal inter-penetration of the two national administrations, a building-up at many levels of personal acquaintance—fortified, sometimes, by personal friendship—and a common fund of experience and knowledge. Here were the foundations of this unique war partnership. They had been laid before Pearl Harbour; after Pearl Harbour they were strengthened and extended.

The system of Combined Boards was built into the growing edifice; it was not by itself the whole edifice. For example, the Raw Materials Department of the Ministry of Supply was the administrative instrument for carrying through British raw materials policy. It directed the work of the British Raw Materials Mission in Washington. The head of that Mission, Sir Clive Baillieu, was British representative on the two-man Combined Raw Materials Board. A great part of his work was done purely in his national capacity. By agreement between him and his American colleague, Mr. Batt, the C.R.M.B. was called into action only when particular shortages needed to be coped with by combined planning; otherwise, policy remained with the two national authorities. It is significant that the C.R.M.B. cut its teeth on the acute problems of raw materials scarcity created by the sudden Japanese conquests. Like the rest of the Combined Boards, its task was to assemble and rearrange the facts of urgent common concern within its own sphere so that they might be presented to the national authorities under the aspect of common strategic interest. Each Board, within its own sphere, acted as a 'control point'; it had no executive power, but it had power to compose the 'complete United Nations picture' of requirements and resources and to make recommendations to the British and American Governments for the efficient use of these resources. This power to recommend is vastly different from the power to decide. It should not, however, be underrated. Recommendations of the Combined Boards were often the indispensable preliminary to decisions—at any rate, to sound decisions. Moreover, since the recommendations were almost always limited to problems which neither of the two Governments could handle effectively by itself, and since they were invariably prepared in close consultation with the national authorities who would be responsible for putting them into effect, they were in fact put into effect. Sometimes, it is true, there was obstruction, delay and a growing feeling of frustration. It then became necessary for higher authority to intervene; Mr. Lyttelton was sent to Washington, or the Prime Minister and the President agreed to meet. Then the intractable problem was resolved by a new decision—on strategy, on munitions assignment, on production programmes, on shipping, sometimes on all these things at the same time. In the process of implementing the

new decision, similar obstacles were sometimes encountered and similar methods had to be employed. Nevertheless, all major recommendations of the Boards became in the end decisions of the two Governments and all major decisions were in the end fulfilled. Behind them was the ultimate guarantee of the supreme executive power in each country; for the Prime Minister spoke with the authority of the War Cabinet and the President combined in himself the chief civil and military authority of the United States.

It is worthy of note that the British-American alliance did not provide itself with any formal organ of supreme control. This was not a matter of accident but of conscious decision. All the arguments of tradition and experience might have seemed to favour the establishment of a Supreme War Council. The Anglo-American Staff Conference of January–March 1941 had in fact recommended that this high controlling authority should at once be set up if and when the United States joined the war. But, when they did join it, the War Cabinet showed itself positively alarmed by rumours coming from Washington to the effect that the Americans wished too pedantically to copy inter-Allied constitution-making of the past. In fact, the rumours were without foundation. The Americans were no more anxious than were the British to jeopardise the flexible and natural growth of British-American co-operation by clamping upon it a political directorate of excessive formality. Just as the two administrations had already been knitting their work together at the nodal points of raw materials policy, munitions assignment, shipping, and the rest, so also had they been coming together at the high policy level through the special relationship that had been growing up between the Prime Minister and the President. The exchange of telegrams between Mr. Roosevelt and Mr. Churchill had begun when the latter was still First Lord of the Admiralty in the Chamberlain Government. It continued when the 'Former Naval Person' became Prime Minister. Supplemented by the special conferences at which President and Prime Minister met each other with their attendant experts, it was destined to grow almost to the status of an institution. In practical efficiency it was preferable to the more formal, less flexible procedure of a Supreme War Council. Nor was it in any way less constitutional; for the President spoke with the authority committed to him by the American people as head of the executive power and Commander-in-Chief of the armed forces, while the Prime Minister spoke with the authority of the War Cabinet, which was itself upheld by the approval of Parliament.[1]

It might perhaps have been argued that a Supreme War Council was necessary in order to associate the other Allies in the higher

[1] The practice should be noted whereby the drafts of important telegrams from the Prime Minister were submitted to the War Cabinet for examination and, if necessary, amendment.

direction of the war. But this was precisely what the British and the Americans wished to avoid. Although by their political philosophy they were committed to the representative principle, they knew that it could not be applied with doctrinaire impatience amidst the dangers of war. A Supreme War Council representing every member of the United Nations was inconceivable; even if it had acted by majority decision instead of insisting upon unanimity, it would have slowed down action and jeopardised victory. Even a more narrowly representative Supreme War Council might well have proved unworkable. The inevitable differences of opinion or emphasis which arose between Britain and America about the higher strategy of the war were on each occasion resolved in sufficient time by agreement of the Combined Chiefs of Staff; but, if Soviet Russia and China had been included, it might have proved impossible to get agreement. Yet some co-ordination of strategy and effort had to be achieved with these Powers, with Russia especially. Once again, the flexible solution was judged the more practical one; once again, the solution had been prepared by British practice before the United States joined the war. In the summer of 1941 the Prime Minister had opened with Marshal Stalin a parallel correspondence with the one he was conducting with the President. He had more recently opened a third correspondence with General Chiang Kai-Shek. The exchange of telegrams between the executive heads of States—supplemented, as opportunity might offer and occasion demand, by personal meetings —offered a workable alternative to the dangerous formalities of a cumbrous permanent body.

Moreover, if the representative principle had been accepted for the political and strategical direction of the war, it would have been difficult to exclude it from the constitution of the Combined Boards. As has already been seen, the difficulties of bringing the economic policies of America and Britain into focus were by themselves formidable enough; unwieldy multiple-nation Boards professing to represent the complete society of the United Nations would have found their task quite unmanageable. Admittedly, there was a danger that Britain and America, by taking upon themselves the responsibility for determining not only their own contributions and receipts but those of other people, might lay themselves open to the charge of high-handedness and provoke not only resentment but resistance. The danger was in part avoided through each country making provision for consultation and agreement with those nations of which it was the natural leader. The United States performed this role with the Latin-American countries and China; Britain performed it with the majority of Commonwealth countries. For example, the Empire Clearing House in London worked out the statement of British Empire supplies and requirements of raw materials and the British

member of the Combined Raw Materials Board used the statement as essential data for the recommendations to be made in Washington. The London Food Committee performed a similar function in relation to the Combined Food Board.

These arrangements did not, however, fit the needs of Canada. Her situation was highly complex. She was a member of the Commonwealth and a belligerent when the United States were still neutral; but in 1941 she joined the United States in what might be called the North American Combined Board system, which included both a Defence Board and an Economic Board. From 1939 to 1945, Canadian troops fought alongside British troops and used British-type equipment; Canadian factories helped to produce this equipment. On the other hand, Canadian industry was highly dependent on American tools and components. For raw materials, the two countries were reciprocally dependent upon each other; in the summer of 1941 they had set up, within the framework of their Joint Economic Board, a Materials Co-ordinating Committee of their own. It was therefore natural that the American member of the Combined Raw Materials Board should handle, on Canada's behalf, the statement of Canadian supplies and requirements. But elsewhere the importance and special situation of Canada justified her separate representation. In November 1942 the Dominion became a third member of the Combined Production and Resources Board and in October 1943 of the Combined Food Board.

With this one exception, the United States and Britain kept in their own hands full responsibility for managing the combined pool of economic resources. As victory became visible on the horizon and the thoughts of the smaller Allies began to fix themselves upon relief and rehabilitation within their own countries, suggestions came to be made for making the managing institutions more representative. However, the aptness of British-American procedure for achieving its primary purpose—victory—was never seriously questioned. Between them, the two countries possessed the power to make their allocations of economic resources respected; for they were by far the most important buyers of materials, they controlled almost the whole supply of finished goods, and they controlled the world's shipping. Because they used their power responsibly for the purpose of winning the war in the shortest possible time, its basis was never seriously challenged. Action which would have been resented in time of peace was accepted and welcomed because it was necessary to win the war. Responsible and effective leadership won for itself the necessary backing of consent.

(iii)

Strategy

The primary purpose of the Anglo-American partnership was to destroy the enemy's fighting capacity and so win the war. The foundation of combined planning in all spheres was, therefore, the higher strategic decisions of the British and American leaders. It is beyond the scope of this book to probe deeply into these decisions but they must be outlined in order to provide an intelligible background to the war economy.

The first war plan of the fighting partnership was framed at the Washington conference in December 1941.[1] In this document, the British and American Chiefs of Staff reaffirmed the basic principle of grand strategy that had long since been agreed between them.[2] Despite the entry of Japan into the war, Germany must still be treated as the prime enemy; the defeat of Germany was the key to total victory. Consequently, it should be a cardinal principle of British-American strategy not to divert from operations against Germany any more force than the minimum necessary for safeguarding vital interests in other theatres of war.

The essential features of strategy in the struggle against Germany were envisaged as follows. First was the realisation of the victory programme of munitions and the maintenance of essential communications. Secondly, the ring round Germany must be tightened; it was agreed that a valuable step in this direction would be to seize the North African coast. Thirdly, every effort was to be made to wear down German resistance by British and American air bombardment, by helping Russia, by blockade and by encouraging the spirit of revolt in enemy-occupied countries. Lastly, the conference looked to the continuous development of offensive action leading up to a military assault on the Continent; a land offensive in Europe seemed unlikely in 1942, but it was possible that an invasion might be undertaken in 1943. As for the Far East, the conference agreed that minimum forces must be used to maintain key points which would check Japan's advance and would serve as bases for offensive action later on: India, Australia and New Zealand must be made secure at all costs, and China must be assured of aid. Other points to be held included Hawaii, the East Indian barrier, the Philippines, Rangoon and the road to China.

Although the Washington conference agreed that only minimum forces should be diverted to the Far East, the situation there was so

[1] Its code name was 'Arcadia'.

[2] See above, p. 380.

serious and urgent that much of the conference's time was spent in planning how to meet it. Some time was also spent on plans for an invasion of North Africa; but, in general, ways and means of striking at the 'prime enemy' were left to be discussed by the Combined Chiefs of Staff organisation after the conference had disbanded. In the spring of 1942, when the outlook for the Allies seemed very dark, General Marshall came over from the United States and placed before the British an energetic plan for striking direct at Germany across the Channel.[1] His suggestion was that every effort should be made for a full-dress invasion of Europe as soon as possible, that is, about the spring of 1943. This should be preceded by continuous raiding in the remainder of 1942. In addition, if the Russian plight became desperate or if German strength in Western Europe was critically weakened, an emergency cross-Channel operation in the autumn of 1942 would be justified.

The Prime Minister warmly welcomed General Marshall's plan as 'a momentous proposal' which accorded with 'the classic principle of war—namely concentration against the main enemy'. There was a reservation to this welcome. The United States proposed to concentrate everything on the preparations for the 1943 attack on Western Europe; the British on the other hand insisted that nothing should further endanger the grave position in the Pacific, the Middle East and the Indian Ocean where, indeed, there was a real danger that Germany and Japan might join hands. Nevertheless, the outcome of the discussions was a general approval for a large-scale descent on Western Europe in the spring of 1943.[2] Nothing definite was decided about an emergency cross-Channel operation in 1942.[3] The Allies might be compelled to undertake it or an exceptionally favourable opportunity might occur. In any case, they should prepare for it.

In the weeks following these talks, the British Chiefs of Staff became increasingly convinced that an attack across the Channel in 1942 would be most unwise. They saw little if any chance that the attack would be successful. There was a serious shortage of landing craft. Until mid-September, when the weather would become too bad, the number of American divisions in Britain would be less than four. Air losses might well be heavier than the Allies could yet support. The great bomber offensive to weaken the German war-making power had barely begun. When Mr. Molotov visited England in May to urge the establishment of a second front in western Europe in 1942, the British Government assured him that it would not hesitate to execute a cross-Channel assault that year provided it seemed 'sound

[1] An excellent published account of the discussions of the summer of 1942 is the article 'A Year Late?', by a Military Correspondent in *The Economist* (28th September 1946).

[2] This operation was known as 'Round-up'.

[3] This operation was known as 'Sledgehammer'.

and sensible'. But 'wars', as the Prime Minister insisted, 'are not won by unsuccessful operations'. The War Cabinet refused to launch the attack unless there seemed at the time a good chance not merely of establishing a bridgehead but of maintaining it in preparation for the decisive attack of 1943. By July 1942 they felt sure that an attack on Europe that year was impracticable.

In Washington, on the other hand, the leaders of the United States Services increasingly favoured this 1942 operation and were increasingly confident that it would be possible. To reconcile these differences between the two countries, the Prime Minister and his advisers again visited Washington in June 1942[1] and in July the United States Chiefs of Staff visited Britain. From these conferences came the vital decisions about the next moves in the war in Europe and the Mediterranean.

The background of these summer discussions was very sombre. The Germans had swept British forces back in Egypt, they were driving deeply into Russia and their U-boats were reaping rich ocean harvests. The Japanese were threatening Australia. In retrospect, with the immense preparations for D-Day in mind, it is difficult to believe that a continental invasion was seriously contemplated in 1942. The bomber offensive was as yet a very minor affair, and the United States' war production was barely getting into its stride. The technique of a great sea-borne invasion was unknown and untried. Nor were battle-trained troops available.

While the British felt certain that the chances even of a small continental invasion in 1942 were very slender, they were equally convinced that some offensive must be launched against Germany in 1942. If Anglo-American resources were concentrated in preparing for a full-scale invasion of northern Europe in 1943, nearly a year would pass before American soldiers engaged Germany and before the British Army in the United Kingdom went into action. While Russia was in such desperate straits, such inaction seemed unthinkable. The British Government considered that a minor expedition to France would be of no military value to Russia. They believed that the only way of effectively coming to grips with the Germans in 1942 was to attack North Africa—an idea that had always appealed both to President Roosevelt and Mr. Churchill. The American Chiefs of Staff on the other hand were still hoping late in July that a bridgehead could be seized in Europe in 1942. They feared that entanglement in North Africa would indefinitely postpone the great attack in western Europe. Finally, however, at the end of the London discussions, the Combined Chiefs of Staff agreed to drop any idea of attacking north-west Europe in 1942 and to concentrate on an invasion of French North Africa at the earliest possible date before

[1] The 'Argonaut' conference.

December 1942. They faced the fact that this operation would probably make it impossible to fulfil their earlier decision to launch a full-scale invasion of north-west Europe in 1943. The reasons for their decision were so cogent that Marshal Stalin acquiesced in them when Mr. Churchill explained them to him in Moscow in August 1942.[1]

From July onwards, the chief preoccupation of the British and United States military leaders was the planning of the assault in French North-West Africa. Side by side with all these discussions and plans in 1942 for the next move against Germany there were other urgent strategical problems to be dealt with. It was of the highest importance to stem the Germans' advance into Egypt and thrust them back. Equally vital was the need to give the maximum help to Russia; various proposals were considered, including air help for the defence of the Caucasus and an invasion of northern Norway. Moreover, the war against Japan was a constant preoccupation. An assault on Madagascar was planned and executed. The position in the Pacific[2] remained critical, while in the last half of 1942 much thought was given to the possibility of launching an offensive in Burma and giving help to an almost entirely isolated China.

Apart from these pressing short-term questions, it was also necessary to keep future grand strategy under review. The conferences in Washington and London in the summer of 1942 had not thoroughly harmonised British and American views on strategy. The decision to attack French North Africa instead of western Europe and to accept for the time being a 'defensive encircling action' for the continental European theatre had led some American Service experts to think that the strategy agreed at Washington in December 1941 had been fundamentally altered. Believing that it was no longer intended to concentrate every effort on the defeat of Germany, they were beginning to divert resources to the Pacific. This worried the British, who considered that the principles of grand strategy agreed at Washington in December 1941 still held good and that the decisions taken in the summer had merely accepted a more prolonged prelude to the final assault on Germany.

All these threads of strategy, short term and long term, were brought together at the conference between the President and Prime Minister and their advisers at Casablanca in January 1943.[3] The background was now brighter—the North African landing had been successful, the Battle of Alamein had been won, the Japanese had

[1] Marshal Stalin however did not, it seems, regard the North African operation as a 'true second front'.

[2] In April 1942, the Pacific sphere was put under American operational control and the Indian sphere under British control.

[3] 'Symbol' conference.

been stemmed in the Pacific and the Germans in Russia. Anglo-American differences were vigorously discussed and a general strategic programme for 1943 was settled. The Combined Chiefs of Staff agreed that the defeat of the U-boats must remain a first charge on the United Nations' resources and that the Soviet forces must be sustained by the greatest volume of supplies that could be carried to Russia without prohibitive cost in shipping. Their programme stressed the importance of defeating Germany first, if possible in 1943. For this purpose there would be two main centres of action. In the Mediterranean, Sicily was to be occupied in order to make the Mediterranean more secure, divert German pressure from Russia, intensify the pressure on Italy and possibly enlist Turkey as an ally. From the United Kingdom, there was to be the heaviest possible bomber offensive against the German war effort and such limited offensive operations as the supply of amphibious forces allowed. Meanwhile, subject to the demands of operations in the Mediterranean and the Far East, the strongest possible force was to be assembled in constant readiness to re-enter north-western Europe as soon as German resistance was sufficiently weakened. Operations in the Pacific and Far East were to be continued with the forces already allocated to them in order to maintain pressure on Japan and attain a position of readiness for a full scale offensive there as soon as Germany was defeated; at the same time it was agreed that these operations should be kept within such limits as would not, in the opinion of the Combined Chiefs of Staff, jeopardise the capacity of the United Nations to take advantage of any favourable opportunity for the decisive defeat of Germany in 1943. Subject to this reservation plans were to be made for the recapture of Burma, beginning in 1943, and for operations against the Marshall and Caroline Islands if these did not prejudice the offensive in Burma.

The attack on Sicily was timed for July 1943. In May, when hostilities in North Africa were almost ended, another Anglo-American conference met at Washington[1] to review the chain of operations to be undertaken in the rest of 1943 and in 1944. The war against the U-boats was to be prosecuted as fiercely as ever. A plan was approved to accomplish 'by a combined United States-British air offensive, the progressive destruction and dislocation of the German military, industrial and economic system and the undermining of the morale of the German people to a point where their capacity for armed resistance [was] fatally weakened'. The plan was to be accomplished between the conference and 1st April 1944. 1st May 1944 was set as the target date for mounting a cross-Channel operation.

[1] 'Trident' Conference.

Meanwhile, it would have seemed intolerable for the Anglo-American Forces to be inactive during the rest of 1943 after Sicily was conquered. It was agreed that the Commander-in-Chief, North Africa, should be instructed to mount such operations in exploitation of the attack on Sicily as might be best calculated to eliminate Italy from the war. The conference also took difficult decisions about the Far East. The Combined Planners were directed to prepare an appreciation leading up to a plan for the defeat of Japan. Meanwhile, the Combined Chiefs of Staff agreed to concentrate in the Burma-China theatre on building up the air route to China and developing air facilities in Assam. They approved vigorous and offensive land and air operations at the end of 1943 from Assam into Burma and minor amphibious attacks to go in step with a Chinese advance. An offensive was also planned for the Pacific itself.

As the war moved swiftly towards its climax, frequent conferences between the President and the Prime Minister and their Chiefs of Staff were necessary. In August, three months after the Washington meeting, another conference was held at Quebec.[1] By that time, it had become easier to visualise the fulfilment of the first item in the grand strategic concept of the war—the unconditional surrender of the Axis in Europe. The progressive destruction of the German military and economic system by bombing as the prerequisite to invasion in 1944 must still have the highest strategic priority. The 1944 invasion—operation 'Overlord'—would be the primary United States-British effort against the Axis in Europe; its date was reaffirmed as 1st May. Reserves would be distributed between the Mediterranean and 'Overlord' with the main object of ensuring the success of 'Overlord'; this meant that opportunities of penetrating deeply 'the soft underbelly' of German power would be set aside in favour of the assault in the north-west. These operations in Europe were considered in some detail. Simultaneously, it was decided to maintain and extend unremitting pressure against Japan. The Combined Chiefs of Staff now looked further ahead to the time when the Axis had been defeated in Europe and it would be possible to direct the full resources of the United States and Britain to bring about the unconditional surrender of Japan at the earliest possible moment, if possible twelve months after the defeat of Germany. Many specific operations in the Far East were approved for 1943–44,[2] and planning began for the time when the Allies could throw their full weight against Japan.

The events that followed the Quebec conference of August 1943 brought into prominence a significant difference in outlook between the British and the Americans about the direction of war. The

[1] 'Quadrant' Conference.

[2] To facilitate vigorous and effective operations in S.E. Asia, the command in India was separated from the command in S.E. Asia.

American military experts considered that once a strategical programme had been settled it must be carried out without variation. The British experts, on the other hand, regarded programmes rather as a general aim to be constantly reviewed in the light of war developments. Thus, when Mussolini fled, Italy collapsed and her fleet capitulated in the autumn of 1943, the British saw a chance to win cheap prizes in the whole Mediterranean which would press Germany still harder and increase 'Overlord's' chance of success by diverting enemy troops to southern Europe. They chafed therefore at the necessity for sending away from the Mediterranean trained troops, and above all landing craft, in order to implement the Quebec decision that 'Overlord' should be mounted on 1st May. This firm adherence to the policy of Quebec had produced a series of disappointments in the Mediterranean and if it continued the front there would necessarily remain quiescent instead of continuously engaging German forces in the vital months before 'Overlord'. If 'Overlord' were delayed for a month or two, landing craft could be kept long enough in the Mediterranean to clear the position there.

The choice between retaining 'Overlord' in all its integrity and keeping the Mediterranean ablaze was the chief point of discussion at the Cairo and Teheran conferences in November and December 1943.[1] At Teheran, Marshal Stalin joined the President and the Prime Minister for the first time. Finally, it was agreed that 'Overlord', in conjunction with an assault on southern France, were the supreme operations for 1944. They were to be carried out in May 1944 and nothing was to be undertaken in any other part of the world which hazarded the success of these two operations. Every effort was to be made to provide the essential landing craft. Soviet forces planned to launch an offensive at about the same time. Before the meeting at Teheran, General Chiang Kai-Shek had been at the conference in Cairo discussing plans for offensive and amphibious operations in Burma; but the shortage of landing craft had made the amphibious operation seem extremely doubtful to the British. Then, at Teheran, the significance of the operation waned with Marshal Stalin's announcement that Russia would go to war with Japan when Germany was defeated. These meetings at the end of 1943 represented what the Prime Minister called 'the greatest concentration of worldly power that had ever been seen in the history of mankind'. The stage was set for D-Day and then for the swift defeat of Japan.

[1] 'Sextant' Conference at Cairo and 'Eureka' Conference at Teheran.