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WEEKLY SURVEY OF
GERMAN OIL PRODUCTION

No. 1 : July 16, 1944

Note: This is the first of a series of weekly surveys of the state of German oil production, summarizing the conclusions of the Working Committee of the Joint Anglo-American Oil Targets Committee which has been set up to provide a running assessment of the effects of air attack on enemy oil installations. The assessments are based on ground intelligence and deductions from air cover; the forecast of future output takes into account the enemy's probable repair performance but makes no allowance for additional damage in further attacks. The present report includes the results of all attacks up to and including July 7.

I. SUMMARY OF EFFECTS ON PRODUCTION

- a) Damage done to oil installations since the attacks began is estimated to have reduced the total Axis output of finished products to 1,163,000 tons (85%) in May and 828,000 tons (61%) in June from the pre-raid normal of 1,360,000 tons (100%). In the absence of further damage repairs may enable output to be restored to 870,000 tons (64%) in July. The probable production of each producing area is summarized in Table I and the major factors in the current situation in each country are summarized below.
- b) The output of gasoline is likely to have been affected more severely than the output of other products. Both in June and in July gasoline output may not exceed 50% of the pre-raid production.
- c) Damage inflicted on refineries in Roumania, Hungary and Austria has led to a situation in which the potential output of crude is substantially in excess of the refinery capacity available locally. It is now known that the despatch of crude from Roumania for treatment elsewhere has been rendered difficult in the past two months by the dislocation of communications and that in consequence two-thirds of the normal production of the Roumanian oilfields was shut down in the middle of June. The course of action adopted in Hungary and Austria is not yet known.

II. CURRENT SITUATION IN PRINCIPAL PRODUCING AREAS

a) Germany : Bergius Hydrogenation Plants

It is estimated that the output of these plants fell from a pre-raid normal of 380,500 tons per month (100%) to 286,500 tons (75%) in May, and 157,500 tons (41.5%) in June and that it will fall further to 136,500 tons (36%) in July. Four plants (ZEITZ, GELSENKIRCHEN-NORDSTERN, BOHLER and POLITZ) are likely to be out of production throughout the month. Seven

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plants, though damaged, may be in a position to operate partially. Only two plants remain intact.

b) Germany : Fischer Tropsch Synthetic Plants

Output of these plants was only slightly affected in May but is likely to have fallen to 73,500 tons (72%) in June and 68,500 tons (67%) in July, compared with the pre-raid normal of 102,000 tons (100%). One plant (RUHLAND) is out of action and three others are likely to suffer some reduction of activity during July. Five plants are still probably operating normally.

c) Germany : Refineries

Only one of the six refineries which are capable of handling the crude output of the N. German fields remains intact. Two plants (OSTERMOOR and EMMERICH) have been so heavily damaged as to be incapable of operation. Before the attacks there was a substantial surplus of refining capacity in relation to the amount of crude locally available and it is possible that the damaged plants can be patched up to a sufficient extent to permit the handling of the available crude during July.

Successful attacks have also been carried out against a number of refineries engaged in finishing and plants specializing in the production of lubricating oils. Four such plants have been severely damaged and are believed to be out of action.

d) France, Holland and Belgium

There is as yet no evidence that refineries in these countries have been restarted for the treatment of crude diverted from elsewhere. Many of them would be incapable of operation without extensive repairs.

e) Romania

The following plants are severely damaged and may be expected to remain out of action for an indefinite period:-

STRAUA ROMANA
PHOENIX (ORION)
CREDITUL MINIER
COLOMBIA-AQUILA
RENEVENTZA
LUMINA

Five plants, despite damage in some cases, were in partial or full operation during June:-

ROMANA AMERICANA
CONCORDIA
RENEVENTZA ZENIA
DACIA ROMANA
STANDARD PETROL BLACK

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Two plants which have been under repair may be capable of a partial resumption of operations during July.

ITAL ROMAN
UNTEL. SPERANZA

Output of finished products is estimated to have fallen from a pre-war normal of about 375,000 tons per month (100%) to 190,000 tons (50%) in May and 220,000 tons (58%) in June. In the absence of further damage, repairs might enable output to be raised to 250,000 tons (66%) in July.

According to a reliable source:-

(i) Damage to pumping stations and loading terminals as well as to communications generally has severely hampered the shipment of crude and finished products, whether by rail or water, since the beginning of April. As a result, two-thirds of the normal crude production was shut down at the middle of June. Of the remainder the available refinery capacity was only able to treat one-third and the surplus crude was being stocked in any available storage capacity against the time when the progress of repairs should enable the refineries to treat it. The enemy is working hard to organize alternative means of shipment to replace the damaged communications.

(ii) Very little specialized refinery repair material can be obtained from Germany and repairs are being carried out mainly by improvisation - i.e. by patching up with equipment stripped from damaged or inactive plants.

(iii) The enemy has been particularly concerned to secure supplies of lubricating oil which, at the middle of June, apart from the possible output of some of the active refineries named above, was coming mainly from the specially-equipped PHOTOGIN plant at BRASSOV. (This plant was severely damaged in the attack of July 4 and is now probably out of action).

f) Austria : Refineries

Five out of the six Austrian refineries have been attacked; two at least (LOFEL and KUGELN) are likely to be out of operation throughout July (the results of three recent attacks are not yet known). Output of finished products in July is not likely to exceed 17,000 tons, compared with 23,000 tons in June. The monthly production of the Austrian fields is 142,000 tons some of which is normally treated in Czechoslovakia and some probably in Germany. It is not yet known to what extent it has been possible to direct the large current surplus to other refineries.

g) Hungary : Refineries

Six out of the ten Hungarian refineries have been

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attacked and is probably badly damaged. Since the refinery capacity available is considerably in excess of the local crude production, the total Polish output may not be seriously affected. The Polish refineries may well be refining some of the surplus crude from Austria and Hungary but little is known of the current position.

b) Czechoslovakia : Refineries

One plant (POLICE-BRAUNAU) has been attacked and is likely to remain inactive in July. Output is estimated to have fallen from 43,000 tons in May, to 38,000 tons in June and may not exceed 32,000 tons in July. The Czech refineries are probably working on Austrian and perhaps Hungarian crudes of which a large surplus is now available.

c) Poland : Refineries

One Polish refinery (POLICE-BRAUNAU) has been attacked and is probably badly damaged. Since the refinery capacity available is considerably in excess of the local crude production, the total Polish output may not be seriously affected. The Polish refineries may well be refining some of the surplus crude from Austria and Hungary but little is known of the current position.

d) Italian, Jugo-Slav & Albanian Refineries

Positive evidence that M. Italian refineries have continued to receive supplies in recent weeks is lacking, but air cover in June showed a certain amount of activity. Two refineries, however, have been so seriously damaged as to be incapable of operation. There have also been further attacks the results of which have not yet been assessed.

Of the four small plants in Jugo-Slavia, two are probably out of action and a third has recently been attacked with results which are as yet unknown.

The small topping plant on the Albanian field is believed to be intact and in operation.

Enemy Branch
(P.O. & M.E.W.)
16.7.44.

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TABLE I

AXIS EUROPE : Production and Refining Potential

The following table shows the estimated output of Axis oil plants as on 10th July 1944 for the months of May and June, and forward estimates for July and August. These forward estimates do not take into account the possibility of future attacks nor any interruption in repairs, the rate of which have been estimated on assumptions favourable to the enemy's repair organisation.

Axis Europe : Production and Refining Potential
(all figures in thousands of metric tons)

Normal Monthly Crude Capacity	Maximum Net Output Capacity of finished Products before attacks	Estimated Output of finished Products			
		MAY	JUNE	JULY	AUGUST

SYNTHETIC PLANTS

1. Bergius Hydro- genation	380.5	286.5	157.5	136.5	239.5
2. Fischer- Tropsch	102	98	73.5	68.5	86
3. Unknown plants	16	16	16	16	16
Total (synthetic)	498.5	400.5	247	221	341.5
Percentage of Pre- Attack Capacity	(100%)	(80%)	(50%)	(44%)	(70%)

REFINERIES

4. Germany Refineries operating on Crude	165.5	119	90	68	69	81
5. France	289	5(a)	6	6	6	6
6. Belgium	0	0(b)	0	0	0	0
7. Holland	0	0(a)	0	0	0	0
8. Czechoslovakia	43	43	47	42	36	36
9. Poland	86	78	60	60	60	60
10. Austria	54	50	51	49	17	17
11. Hungary	74	67	60.5	36	16	16
12. Italy	86	77	68	22(b)	13(b)	13(b)
13. Yugoslavia	24	22	22	10	6	15
14. Albania	2	2	2	2	2	2
15. Rumania	868.5	782	190.5	120	258	225
Total (from Crude Oil)	1276	1276	597	415	463	540
Percentage of pre-Attack Capacity	(100%)	(100%)	(47%)	(32%)	(36%)	(42%)

(a) Excludes refineries intact, but not operating, due to lack of

(b) This should be considered a maximum figure, based on the

crude being supplied to these plants, which is

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WEEKLY SURVEY OF AXIS EUROPE OIL PRODUCTION

NO. 5. AUGUST 9TH, 1944.

Intro: This survey summarises the conclusions of the Working Committee of the Joint Anglo-American Oil Targets Committee upon the current status of Axis oil production. The assessments are based on ground intelligence and deductions from air cover. The forecast of future output takes into account the enemy's potential repair performance, but makes no allowance for additional damage in further attacks. The present report includes the results of all attacks up to and including August 6th.

I. SUMMARY OF EFFECTS ON PRODUCTION.

A number of successful attacks on oil installations were made during the past week. The statistical position is now estimated as follows:

	Metric tons per month	
Pre-raid normal output of finished products	1,360,000	(100%)
Estimated production in June	811,500	(60%)
July	731,000	(54%)
August	928,000	(68%)
September	1,122,000	(82%)

Revised estimates of output of products are as follows:-

	<u>% of pre-raid normal</u>	
	<u>July</u>	<u>August</u>
Gasoline	48	60
Kerosine	56	80
Gas/Diesel Oils	53	62
Fuel Oils	73	100
Lubricants	38	39
Total	54	68

II. CURRENT DEVELOPMENTS.

It is now evident that first priority is being given to the repair of the less seriously damaged synthetic plants and to the refineries in Germany, Austria and Roumania.

Repairs to several of the synthetic plants have reached a stage where resumption of output of a number of them must be regarded as imminent. Furthermore, a reported movement of Austrian crude to ROTHEBURG raises the possibility that it is planned to resume operations at MAGDEBURG, either treating the crude through the refining sections of the plant, or using the crude as a feedstock for hydrogenation. As the normal feedstock of this plant is L.T. tar, the substitution of crude oil would not result in an important increase in the output of finished products. This development may, however, be symptomatic of an intention to use crude oil in plants that have previously hydrogenated coal; such an expedient would, if successfully applied, result in a higher output of gasoline in these particular plants.

/Repair

K-72664

Repair activity in Roumania is resulting in an increasing output of finished products. There is no confirmation that the STIAUA ROMANA refinery is yet back in operation, but if this should shortly be the case, there may be sufficient refining capacity available to handle the whole of the normal Roumanian crude production during August, in the absence of further damage. This production, if achieved, would be equivalent to 40% of total Axis output for the month.

Intensive repair activity has been seen at the damaged Austrian refineries and a number of these may be capable of substantial production by the end of the month.

III. POSITION IN THE PRINCIPAL PRODUCING AREAS.

(a) Germany: Bergius Hydrogenation Plants.

Repairs have made significant progress at MAGDEBURG and POLITZ. Recent cover of LEUNA shows that the plant is inactive. BRUX was further damaged on July 21, a number of hits being scored on the power plant. BOTTROP-WELHEIM was seriously damaged on July 20/21 and is likely to be inactive throughout August.

The possibility of the experimental plant of the I.G. Farben at LUDWIGSHAFEN-OPPAU being brought into operation is under examination: this plant might be capable of an output of 8,000 tons per month.

The position is therefore as follows:-

Three plants (LUTZKENDORF, ZEITZ and BOTTROP-WELHEIM) will probably be inactive throughout August; eight other German plants are inactive but may be capable of some resumption of operation shortly. There is no evidence that the OSWIECIM plant is yet in operation, and the status of the two BLECHHAMMER plants is not known, having been attacked subsequent to the preparation of this report.

(b) Germany: Fischer-Tropsch Plants.

Moderate damage was inflicted on the WANNE EICKEL plant on July 25/26. Excluding the possibility of damage inflicted by recent Mosquito attacks, the results of which are not yet known, the present position is as follows:

HOMBERG will be completely inactive throughout the month and three plants (RUHLAND, STERKRADE HOLTEN and WANNE EICKEL) are expected to be partially active. The remaining four plants are assumed to be fully active.

The results of the attack upon the French plant at HARNES are not yet known.

(c) Germany: Refineries

Further attacks have been made on the active crude refineries but the results have not yet been completely assessed. A tentative appraisal of the position indicates that three refineries (OSTERMOOR, EURO-TANK-HAMBURG and HEIDE-HAMMINGSTEDT) are heavily damaged and out of action; two (MISBURG and RHEINLAND-HARBURG) are inactive but possibly capable of resuming operations shortly; and KILBANO-HARBURG is partially active.



A number of the finishing and lubricating oil plants were bombed during the past week, a provisional assessment of the status of these plants being as follows:

Five plants (OSLEBSHAUSEN, DOLLBERGEN, and three Hamburg plants, Schliemann, Albrecht & Schliemann and Schindler) are seriously damaged. Damage to three plants (RHENANIA-GRASBROOK, D.F.A.G. and RHENANIA-WILHELMSBURG, and SCHULAU) has not yet been fully assessed. Five plants (ROSITZ, MONHEIM, REISHOLZ, EMMERICH and SALZBERGEN) are assumed to be operating normally.

(d) French, Belgian and Dutch Refineries.

The MERKWILLER plant has been successfully attacked and will be out of action for an indefinite period. The COURCHELLETES refinery has also been damaged.

(e) Roumania: Refineries.

No further significant damage has been reported during the past week. Of the thirteen principal refineries, it is probable that four (STEUA ROMANA, PETROL BLOCK, REDEVENTA XIENIA, and DACIA ROMANA) are either capable, or may shortly be capable, of full operation. Five are believed to be in partial operation (ROMANO AMERICANA, ASTRA ROMANA, CONCORDIA VEGA, PRAMOVA and COLOMBIA AQUILA); and the remaining four principal plants are inactive.

(f) Austria: Refineries.

Vigorous repairs are apparent in Austria and it is evidently intended that a number of the plants will be back in operation before the end of the month. The KORNEUBURG refinery is believed to be active and FLORIDS DORF may be in partial operation.

(g) Hungary: Refineries.

In contrast to the position in Austria, the progress of repairs to the Hungarian refineries appears to be slow. Of the six principal plants, four are totally out of action; two may be capable of some production during August.

(h) Czechoslovakia: Refineries.

Air cover shows no attempt to repair the APOLLO-BRATISLAVA refinery, and no damage was suffered by the PARDUBICE refinery in the attack of July 21/22. Five refineries are believed to be fully active and one doubtfully active.

(i) Poland: Refineries.

The oilfield area around BORSZLAW and the refinery centre of DROHOBYCZ have been occupied by the Russians. The oilfields and the group of refineries further to the West may not yet be over-run but it is probable that these plants will yield little or no production to the enemy during August.

The TRZEBINIA and DZIEDRZICZ plants in Polish Silesia are still securely in enemy hands and are in a position to operate on Austrian or Hungarian crude.

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(j) Italy, Yugoslavia, Albania, and Bulgaria: Refineries.

There is no refining activity to report in any of these countries at the present time. Some Roumanian crude has been shipped to Bulgaria for refining in the small processing plants at RUSTCHUK but it was reported that in the last week of July refining operations had not yet been started.

ENEMY BRANCH (F.O. & M.D.W.)
9.8.44.

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TABLE I.

ESTIMATED OUTPUT OF AXIS OIL PLANTS
FROM INFORMATION AVAILABLE UP TO
7 AUGUST 1944

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(all figures in thousands of metric tons per month)

<u>Normal</u> <u>Finished</u> <u>Products</u> <u>Output</u>	<u>Estimated Output of</u> <u>Finished Products</u>			
	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>

SYNTHETIC PLANTS:

1. Bergius Hydrogenation	368	145	106	127	196
2. Fischer Tropch	112.5	85	69	64	69
3. Unknown Plants	16	16	16	16	16
Total from Synthetic Plants -	496.5	246	191	207	281
Percentage of Pre-raid total	100%	49%	38.5%	41%	56%

REFINERIES:

Normal
Capacity
Finished
Products
Output (B)

4. Germany	149	(From	68(A)	31	28	62(A)
5. France	260	avail-	6	6	0	0
6. Belgium	52	able	0	2	0	0
7. Holland	42	crude	0	0	0	0
8. Czechoslovakia	43	Note	38(A)	32(A)	32(A)	32(A)
9. Poland	78	(C)	53(A)	43(A)	14(A)	14(A)
10. Austria	54		54	12	30	51
11. Hungary	60		31	14	13	25
12. Italy	80		4	3	0	0
13. Yugoslavia	21		9(A)	3	0	0
14. Albania	2		2	2	0	0
15. Roumania	714		134.5	200.5	112	165
Total from Crude Oil	1555		697.5	399.5	348.5	529
Percentage of pre-raid total			100%	57%	50%	76%
						93%

GRAND TOTALS:

(i) Synthetic Plants	496.5	246	191	207	281
(ii) Crude Oil	697.5	399.5	348.5	529	649
(iii) Other Sources (D)	166	166	192	192	192
TOTAL -	1360	811.5	731.5	928	1122
Percentage of pre-raid total		100%	60%	54%	68%
					82.5%

NOTE: (A) Assumes imports of crude to extent of available capacity.

(B) Crude oil refinery capacity less 10% for refining loss.

(C) Figures for normal finished products output from available crude by individual countries not indicated. Total figure is used for comparative purposes.

(D) From sources not subject to attack. These include benzol, alcohol, tar oils, etc.

8.8.44.

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