ITEM No. 30
FILE No. XXIII—15

I. G. FARBENINDUSTRIE A.G.
FRANKFURT/MAIN

COMBINED INTELLIGENCE OBJECTIVES
SUB-COMMITTEE

LONDON — H.M. STATIONERY OFFICE

I. G. FARBENINDUSTRIE, A. G.

Office Building: Frankfurt/Main

Reported by

PART ONE:

Colonel K. GORDON
British Ministry of Fuel and Power

PART TWO:

Lt. Col. C. F. THOMPSON
British Ministry of Economic Warfare

On Behalf of

British Ministry of Fuel and Power
and
U. S. Technical Industrial Intelligence Committee

CIOS Target Number 30/4.17

Fuels and Lubricants

COMBINED INTELLIGENCE OBJECTIVES SUB-COMMITTEE
G-2 Division, SHAEF (Rear) APO 413

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PART ONE:- INFORMATION ON FUELS

MARY

Personnel of Team:-

olonel K. Gordon	- Brit. Ministry of Fuel & Power.
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Lt.Col.O.F.Thompson	- Brit. Min. of Economic Warfare.
ajor E. Tilley	- Br.Army; CIP, G-2, SHAEF (Rear).
rvin H. Jones	- U.S. Bureau of Mines.

PART I: INFORMATION ON FUELS

Location of Offices:

Grüneberg Platz, to the north of Frankfurt/Main.

Description of Target:

The target is a very large office building which was the chief financial and business office of the IG. It dealt in particular with the dyestuffs industry. None of the business concerning oil or fuel production was handled through this office.

There was a technical bureau under Dir. Dr. Struss, assisted by Dr. Loehr, which was primarily concerned with dyestuffs and pharmaceutical fields but was generally informed with regard to fuel developments.

The information on fuels obtained at Frankfurt and forming Part I of this report should therefore merely be taken confirmatory of the other reports. The headquarters of the fuel side of the IG business is at Leuna, so far as production is concerned, the chief officials being Dr. Schneider and Dr. Bütefisch.

General Research on fuels is concentrated at Ludwigshafen under Dir. Dr. Pier.

Part II of this report is concerned with Organization and Management of the I. G. Farbenindustrie.

Other information obtained at the target is contained in a separate report.

Tetraethyl Lead. This was made at (a) CAPEL, near DOBRILUGK, (b) FROSE, near NACHTERSTEDT, and (c) HEYDEBRECK, near Silesia.

(a) is a pre-war 50/50 IG-ETHYL CORPORATION plant,
(b) is a 100% IG plant, and
(c) is believed to be owned by the REICH.

(a) and (b) were in operation, whilst (c) was still under construction. Each had an output of about 150 tons/month, and all used the same conventional process of manufacture.

Ethyl Chloride was made at Ludwigshafen/Rhein and later at Schkopau.

Sodium was made at Knapsack.

Iron Carbonyl was not employed as an anti-knock material and no other substitutes for TEL had been discovered.

5. Aromatic Amines. There were enquiries for these from the Wehrmacht and an attempt was made to get 200 tons a month of XYLIDENE from MULHAUSEN, but in practice only small quantities were produced due to transportation difficulties.

Thirty tons of mixed mono ethyl and methyl anilines were supplied to Bayerische Motor Werke for trial and enquiries were made for iso-butylamine.

6. Methanol was used as a fuel early in the war but in the last two years has been in short supply. It was used for:

(a) Formaldehyde for plastics
(b) " for manufacture of hexogen (explosiv
(c) For Toluene manufacture from benzene (benzol) by alkyletion at WALDENBERG (Silesia), using a process developed by the GUTEHOFFNUNGS HUTTE GMBH, OBERHAUSEN.
(d) For amine manufacture for poison gases.

Methanol was made at Ludwigshafen, Leuna, and after 1944 at HEYDEBRECK and OPPAU. The objective was 70,000 tons year at Leuna and 30,000 tons at each of the other two. The Leuna production was stopped by bombing in May, 1944.

2,500 tons per month of benzol was allotted to toluene manufacture under paragraph (c).

7. Mersol. There were plants at both Leuna and Wolfen for the manufacture of a detergent called 'Mersol', for which the raw material was a straight chain hydrocarbon fraction approximating to C_{16} from the hydrogenated Fischer product.

The process consisted of treating this fraction with chlorine and SO_2, and subsequently neutralising with caustic soda to give a compound of the approximate formula $C_{16}H_{33}SO_3Na$.

A capacity of 90,000 tons per year was aimed at but this rate of production was realised only for a short time near the end of 1942 since the Kogasin was needed for fuel.

8. Lubricating Oil. At Leuna there was a plant cracking ethane to ethylene and the ethylene was used for the manufacture of lubricating oil. The process consisted of aluminium chloride polymerisation.

Lubricating oil was also made at Schkopau, where the ethylene was made by hydrogenating acetylene.

OXO Process. This process was the reaction between CO, H_2 and C_{10} - C_{18} olefines from the Fischer-Tropsch process to make aldehydes from which acids and alcohols were made. A joint company was formed for this process by I.G., Ruhrchemie, and Henkel (soap manufacturers). This company was called Oxysynthese, G.m.b.H., and had started the construction of a plant at Oberhausen.

Several reports on the Oxo process were picked up for later analysis.

Synthetic Fatty Acids. Plants existed at Oppau, Witten and Heydebreck for the manufacture of fatty acids by the oxidation of Fischer wax. This was used for soap manufacture and also the esters of the acids were used as a plasticiser.

Aviation Fuel - Leuna. The final programme to which Leuna attempted to work was the production of 400,000 tons per year of aviation fuel, and 200,000 tons per year of diesel oil for the German Navy. This programme was never achieved on account of Allied bombing. The programme could only have been achieved at the expense of ammonia production, which has resulted in drastic cuts in fertilizer allocations to farmers.

In 1942 farmers received 100% of their requirements but by 1944 their allocation was cut to 40% and by the end of that year no fertilizer nitrogen was available.

The crude hydrogenation product was made by the hydroforming process to give better quality base petrol which was blended with alkylate, for which butanes were produced by the dehydrogenation of isobutane.

Plant also existed to make iso-octane from iso-butane produced by the dehydration of isobutanol. The isobutanol was made by the CO + H_2 synthesis which gives methanol simultaneously.

Kybol. This is a code name for diethyl benzene for use as aviation fuel component of which the manufacture of 20,000 tons per year was contemplated.

There was a plant at Huls, near Recklinghausen, using as raw material benzol and ethylene from coke oven gas over an aluminium chloride catalyst.

12. Heydebreck. This was a new nitrogen plant comprising two units each of 100,000 tons per year capacity. Another unit of the same size was built at Linz (On the Danube) and another was under construction at Ausschwitz (Poland).

13. Oppanol and Lupolene. Oppanol is the IG trade name for polyisobutylene which is made at Oppau from isobutylene produced from isobutanol. Boron fluoride catalyst is used at about -40°C.

Lupolene is the IG trade name for ethylene polymer which was worked out at Ludwigshafen from information given under ICI patents.

Plant for 10 tons a month was built at Zweckel near Scholven (Ruhr) in 1942.

14. Preparation of Hydrocarbons from CO + H_2. The following is a translation of a document found in the files of Dr. ter Meer in the IG Farben Offices at Frankfurt/Main. It is the only data obtained there relating to the synthesis of liquid hydrocarbons from mixtures of CO and H_2 by means of the IG sintered iron catalyst; this document represents the minutes of a meeting held on 5th May 1939:

Chief Engineer's Office
5th May 1939

Conference on 3rd May at Oppau on the Benzine Plant

Present: Drs. Pier, Becker, Michael, Möller, Dipl. Ing. Gebhart and two others unnamed.

Oppau has developed in recent years a modified process for the production of benzine using CO and H_2; the process has the following characteristics:

1. Sintered alkalyzed carbonyl iron is used as the catalyst instead of cobalt (Fischer-Tropsch).
2. It operates at 20 ats.
3. The heat of reaction is removed not by conduction but by a large recirculation of hot gases whereby, with the very short contact time of 3/4 second, the temperature is maintained at from 300° to 350°C, and if possible from 320° to 330°C.

The present experimental plant has a capacity of 300 kg/day. A larger experimental plant with 4 cbm contact space, which is equal to 3 to 4 tons per day of benzine, is under construction and should be ready in July 1939. The final technical unit contemplated for the contact oven at the present time is suggested as 20 cbm. The present process produces a large proportion of unsaturated compounds, and other differences can be deduced from the following tabulated operating results on Table I, together with the accompanying Schematic Flowsheet of the process.

YIELDS

Per Different Units of Starting Material and Product

Required	g	g	Kg	t
Coal Gas	1 cbm	-	10.1 cbm	500,000,000 cbm
Coke	-	1,000	5.5	280,000
Products				
Diesel Oil -21%	99			
Benzin -79%		180	1	50,000
Paraffin	1	1.82	0.01	500-1,000
Alcohols	14	25.5	0.141	7,000
CH_4	10	18.2	0.101	5,000
C_3H_6	16	29.1	0.162	8,000
C_4H_8	15	27.3	0.152	7,500
H_2 + CH_4	35	63.6	0.354	18,000
Waste Heat	-	-	6,500	-

REPORT ON THE I.G. FARBENINDUSTRIE A.G.

PART II.
ORGANIZATION AND MANAGEMENT.

GENERAL.

In the course of our investigation, which was primarily directed towards a study of technical developments, a certain amount of information was acquired upon the organization and general activities of the company.. No attempt was made to investigate these matters in detail but the following observations are recorded in the event that they may be of value in supplementing the special studies being made of the many activities of the I.G.Farbenindustrie.

MANAGEMENT.

The management of the company was headed by the Board of Directors (Aufsichtsrat), under which was the Board of Management (Vorstand). The latter was divided into a Central Committee (Zentral Ausschuss) and the Vorstand Proper. The Vorstand as a whole did not meet, its work being done by the Central Committee. The composition of these Boards or Committees at the end of the War was as follows:-

The Board of Directors.

Chairman	:	Prof.Dr.Carl Krauch	Former Directors.
Acting Chairman	:	Dr. Wilhelm-Ferdinand Kalle	
		Dr. Wilhelm Gaus	
		Dr.Ing.Richard Bayer	Former Representatives.
		Dr.Waldemar von Boettinger	
		Dr. Leopold von Schrenk-Notzing	
		Dr. Friedrich Schmidt-Ott	
		Dr. Walter von Bruening	
		Dr. Carl Ludwig Duisberg	
		Graf R.J.E.Schimmelpennick (Dutch)	
		Hermann J. Abs	Bankers
		Karl Pfeiffer	

Dr. Karl Krekeler)
Dr. Gustave Pistor) Former Directors
Prof. Erwin Selck)

Dr.Ing. Johannes Hess, Director of
Dr.Alexander Wacker G.m.b.H.

The Board of Management.

The Central Committee

Chairman: Dr. Hermann Schmitz
Dr. Fritz Gajewski
Prof.Dr.Heinrich Hoerlein
Dr. J.A.von Knierieme
Dr.Ing.Fritz ter Meer
Dr. Christian Schneider
Dr. Georg von Schnitzler

The Vorstand Proper

Dr. Otto Ambros
Dr. Max Brueggemann
Dr. Ernst Buergin
Dr. Heinrich Buetefisch
Paul Haefliger
Dr. Max Ilgner
Dipl.Ing.Friedrich Jaehne
Prof.Dr.C.L.Lautenschlaeger
W. R. Mann
Dr. Heinrich Oster
Wilhelm Otto
Dr. Carl Wurster
Dr. M. Mueller-Cunradi

In addition to these two Boards, there were approximately 100 members of the Direktorium, these comprising mostly heads of departments.

RODUCTION ORGANIZATION

The Production Organization was divided into three Technical Sub-Divisions, or Sparte.

Division I. Nitrogen, Oil, Catalysts, etc. Under the management of Dr. Schneider.

Division II. Dyes, Chemicals (both organic and inorganic), Metals and Pharmaceuticals. Under the management of Dr. ter Meer. *

Division III. Agfa, Rayon, Textiles and Fibres.

Although production management was divided under these three headings, the plants themselves were largely autonomous, this being the logical sequence of their historical development. Not only did the plants work largely independently in their production operations, but they also did their own research work. Scientific studies of a particular subject were frequently undertaken at two or more plants at the same time, each working on the problem independently.

For the purpose of coordinating research activities and exchanging cost data, there was a Technical Committee (Technischer Ausschuss or TEA) which had its headquarters in Frankfurt. This Committee met at irregular intervals and its membership comprised the following:-

Chairman : Dr. F. ter Meer.

Sparte I -

Nitrogen	Dr.C.Schneider	Leuna
Oil	Dr.R.Buetefisch	Leuna
Methanol	Dr.M.Mueller-Cunradi	Oppau

Sparte II -

Dyes	Dr.Ing.F.ter Meer	Frankfurt
Chemicals	Dr.E.Buergin	Bitterfeld
Metals	Dr.C.Wurster	Ludwigshafen
Pharmaceuticals	Dr.O.Ambros	Ludwigshafen
	Dr.Kuhne	Leverkusen
	Prof.Dr.Hoerlein	Leverkusen
	Prof.Dr.C.L. Lautenschlaeger	Hoechst

Sparte III - Dr.F.Gajewski Wolfen

The secretarial work of the Committee was under the direction of Dr.Phil.Ernst August Struss, assisted by Dr.Oskar Loehr.

* In 1944 Dr.ter Meer was loaned to the Italian Govt. to be Director of Armament Production, He is reported to have been been working in Milan up to the termination of hostilities.

This Committee also served the purpose of advising plant managements upon production policy and adjudicating upon new projects. If the preparations for a new plant had reached the appropriate stage, its erection was at first approved by a special committee and then by the Technical Committee. Thus endorsed the whole project was then authorized by the Vorstand.

DISTRIBUTION ORGANIZATION.

The sales organization was divided into five categories, these being as follows:-

Product	Management	Head Office
1. Nitrogen	Dr. Benn Dr.H.Oster) Stickstoff R.Hanser) Syndikat	Berlin
2. Oil (Deutsche Gasolin)	Dr.E.R.Fischer	Berlin
3. Dyes and Detergents	Dr.G.von Schnitzler	Frankfurt
	Dr.H.Kugler	"
	H. Koehler	"
	K. Weigandt	"
	D. von Bruening	"
4. Chemicals	Dr.G.von Schnitzler	Frankfurt
(a) Inorganic	K.von Heider	"
(b) Organic	H.Borgwardt	"
(c) Metals	P.Haefliger	"
5. Pharmaceuticals	W.R.Mann	Leverkusen
6. Photographic	W.Otto	Berlin
	A.Feindel	"

The following briefly describes the activities of these groups:-

Nitrogen & Fertilizers. The distribution of all products in this category were handled through the Stickstoff Syndikat G.m.b.H., which disposed of the entire German output of synthetic and by-product ammonia and their derivatives.

Dyes & Detergents. Until 1939 the I.G. was the largest producer in the world of dyes and dyers auxiliary products. The assortment of products was on the widest possible basis, enabling the company, until the beginning of the war, to export considerable quantities of dyes to England and, despite the high protectionist tariff, to the United States. Production decreased considerably during the war, mainly due to the loss of overseas markets, yet until the end of 1942, the output was maintained at a substantial level i.e. approximately 36,000 tons per annum. The production of detergents greatly increased during the war, finding a ready made in the soap and textile fields on account of the scarcity of fats. Numerous other auxiliary products in the field of textiles also became increasingly important.

Chemicals. Practically all chemicals and light metals were handled. In 1943 the volume of sales, before the air attacks became fully effective, approximated 1,400,000,000 Rm. a year. Some details of activities in the light metals industry are given later in this report.

Pharmaceuticals. The main producing plants were at Hoechst, Elberfeld, Leverkusen and Marburg. The management of distribution had been in the hands of Herr Mann and the head office had been moved from Berlin to Bayrisch Schwaben.

Photographic & Miscellaneous Products. Agfa photo products formed another department and distribution was handled on the same lines as other commodities.

The distribution of Staple Fibres and Rayon was handled through the Reichsvereinigung Chemical Fibres.

Economic & Propaganda Department.

A department to deal with general economic and political-economics problems was attached to the Central Finance Office in Berlin. This was the Wirtschaftpolitische Abteilung located at Kochstrasse 73. A predominant part in the activities of this department was played by Dr. Max Ilgner.

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Financial Department.

The Zentral-Finanzverwaltung was in Berlin at Unter den Linden 78. Reporting direct to the chairman of the Central Committee, Dr. H. Schmitz, and to his nephew, Dr. Max Ilgner, this department was headed by:

Dr. Guenther Frank-Fahle
Dr. Kurt Krueger
Dr. ter Haar

Accounting Department.

The Zentral-Buchhaltung was in Frankfurt under the direction of:

Paul Dencker
Fritz Kraus

Details of a number of documents relating to outputs, costs, etc. are given in a footnote on this page *)

Legal Department.

The head of the Juristischen Abteilung, who had his office in Heidelberg, was Dr. Johann August von Knieriem, a member of the Central Committee. Other members of the department were:-

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*) The following miscellaneous documents are in London:

Documents No.	Number.	Title.
3414	8	Cost statistics for all I.G.plants 1942-43.
	9	Report on audit of Pölitz cost figures 1941.
	10	ditto. ditto. ditto. 1940.
	23	Capacities of I.G.Plants for all products except Fuels 1.1.41. (1936-
	24	Research Expenses by Plants & Projects (1944.
	65	Three volumes giving production quantities, costs & sales prices for individual I.G. products 1939-1942.

Clemens Brendel	Heidelberg
Dr.Max Brueggeman	Leverkusen
Dr.Jur.Herbert Stein	Frankfurt

Personnel Department.

The manager of the Personnel Department was Wilhelm Bohrmann with his office in Frankfurt.

Other Officials.

A list of the principal officials of the Company is beyond the scope of this report. The following is, however, a fragmentary list of officials that are recorded as being likely to have information of value in their respective fields. A full list of the Directors of the I.G. Farben, with their addresses as of January 1945, is in the hands of the German Economic Department, Foreign Office, Lansdowne House, London, W.1.

Ambros, Otto, Dr. Director, Gendorf , Formerly Ludwigshafen. In charge of inorganic research work. Played the leading part in the development and production of lethal gases. A Catholic.

Buergin, Ernst, Dr. Director, Bitterfeld. In charge of light metals production.

Haefliger, Paul, Director. Frankfurt. Swiss. Swiss Consul for Frankfurt, which title he finds of value for disassociating himself from any German activities of which he no longer approves.

Ilgner, Max, Dr. Director. Berlin. Nephew of Schmitz with whom he worked in close association. Finance, propaganda and political activities.

Borgwardt, Helmuth, Director. Frankfurt. Head of the Organic Chemicals Department. All the appearances of an unrelentant Nazi.

Flotho, Walter, Prokurist. Frankfurt. Head of "Abteilung Z" which was the intermediate (Zwischenprodukte) Products Department.

Gross, Professor. Wuppertal-Elberfeld. In charge of I.G.Farben Gewerkehygienisches Institut. Has made a special study of the physical effects of, and antidotes for, poison gas.

Heider, Karl. Director. Frankfurt. Head ofthe Inorganic Sales Department. He was also Abwehr Beauftrager and, on behalf of the Government, in charge of security measures within the company. Not over intelligent but apparently a man of good principles, and his undertaking to cooperate is probably sincere.

Holdermann, Dr. Ludwigshafen. Lives at Heidelberg. In charge of Patents (Oil).

Koehler, Heinrich. Director. Frankfurt. Formerly in charge of overseas dyes sales and in that capacity was a Director of the Trafford Park Chemical Co. A small man and untrustworthy.

Kramer, Hans, Dr. Gendorf. Played a leading part in the development of new lethal gases.

Kuepper, Gustav, Dr. Jur. Director. Frankfurt. Generally responsible for agencies abroad. Knowledge of Cartel agreements. Also handled insurance matters and therefore has knowledge of the value of assets abroad, value of bomb damage etc.

Kugler, Hans, Dr. Director. Frankfurt. Director of the Dye Sales Organization; also in charge of the Central Office for contracts in regard to the sales of dyes.

Loehr, Oskar, Dr. Frankfurt. Deputy Secretary of the Technischer Ausschuss, under Struss.

Meyer-Kuester, Albert. Director. Reported to be in Madrid. In the Light Metals Division and was probably directing production in Spain. Described by one of his fellow directors as "an ardent Nazi and a crook of the first water".

Overhoff, Julius, Dr. Director. Frankfurt. In charge of chemical sales in S.America since 1934. More recently in charge of all chemical sales ("Abteilung R"). Negotiated sales to Spain during the war.

Spamer, George Wilhelm. Prokurist. Frankfurt. Head of the department handling sales of chemicals and dyes to the Far East.

Struss, Ernst August, Dr. Phil. Director. Frankfurt. Secretary of the Technischer Ausschuss.

Witwer, Dr. Gendorf. In charge of the Gendorf plant.

RELATIONS WITH THE GOVERNMENT.

The ramifications of the I.G.Farben are the subject of a special study by a group under the Financial Section of G-5 SHAEF and in conjunction with the Department of Justice and the British Treasury. The mass of documents available for this investigation, together with the evidence of the Company's officials, should reveal in detail the part that the I.G. Farben has played in the German war effort. However, in the course of our investigation, some glimpses were obtained of some of the Company's activities and the following notes are recorded in the event that they may be of assistance to other investigations.

Any account of the I.G.'s participation in the war would need to be preceded by details of the Company's relationship with Hitler in the early days of the Nazi Party. Schmitz, Ilgner, and probably Krauch, would have played a leading part in the original dealings with the Party and information on this subject would undoubtedly be contained in the minutes of the meetings of the Aufsichtsrat or the Zentral Ausschuss. We were informed that these minutes were in the possession of Schmitz and that no copies were ever made.

It is also possible that these papers may throw light on the extent to which the Nazi Party was dependent upon the benefices of the I.G. and likewise the extent to which the I.G. used the Party as an instrument for the purpose of attaining objectives no less wide-reaching than those of the Nazi hierarchy. The cynical observation made by a prominent member of the Directorate, "We were above the Nazi Party", may well be a pointer to plans of World Domination no less ambitious than those of Hitler.

Regardless of whether the original associations of the I.G. with the Party were prompted by the ambition of a small self-interested group or by national ideals of a Germanic World Order, the fact remains that the I.G. played an important part in the preparations for war. The Company integrat

elf completely with the Four Year Plan and evidence this is seen in the appointment of Krauch * in 1936 a twofold position in the Government as Generalbevollchtige fuer Sonderfragen der Chemischen Erzeugung and o as head of the Reichsamt fuer Wirtschaftausbau. These administrations were concerned, under the organization the Four Year Plan, with the development of oil, nitro-, rubber and chemicals.

However closely the I.G. participated in the planning r war and in the subsequent execution of these plans, y were careful to keep the Nazis at least at arm's length m the inner workings of the Company and the forming of policies. However much the principal members of Hitler's ntourage - Goering not excluded - may have coveted the sibility of a seat on the I.G. directorate, with all its spects of participating in the control of great industries of financialaggrandizement, the door was discreetly osed to them.

Upon the decease or retirement of a member of the ichtsrat or the Vorstand the vacancy was not filled, it the declared policy of the Board that the size of the torate was to be reduced. In this manner, the possibi- of the unwelcome infiltration of any members of Hitler's mate circle was effectively prevented.

The actual date when this policy was decided upon was ascertained but it might give a clue to time when the came to the full realization that the juggernaut on they were riding was not only getting out of control,

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* Krauch was responsible in 1916-18, for the construc- of Leuna and from that time on has played a leading part the expansion of the synthetic oil and nitrogen industries. recent years he had been Chairman of the Central Com- e of the Board of Management (Vorstand) of the I.G., al- a short time ago he changed places with Schmitz, who irman of the Board of Directors (Aufsichtsrat), the al reason for this change being that Schmitz was phy- y better suited for the more energetic duties of ing director.

but was also going in a disastrous direction. Whatever optimistic views Schmitz and his associates may have had in the heyday of German victories, their disillusionment appears likely to have been caused not so much by the first military disasters in Russia as by the growing realization of the incompetence of many of the leading Government administrators.

The smooth operations of the I.G. were imperilled at an early stage of the war by the high-handed actions of Kehrl, chief of the Planungsamt. This "bankrupt textile manufacturer from Kottbus", as he was described, was portrayed as a political upstart with no comprehension of the intricacies of big business. Kehrl imperiously over-rode the recommendations of the industrialists. When advised that a task was incapable of achievement, the advice would be ignored and the project initiated on the assumption that the impossible could be accomplished by the momentum of the needs of war. It was stated that Kehrl put pressure upon the I.G. to increase manufacturing capacity for textiles and regardless of the fact that the additional chemicals to provide for this output could only be obtained by depriving more important war requirements.

The Planungsamt was not the only administration that made mistakes. The unpredictable policies of the Luftfahrtministerium, which were apparently subject to frequent changes at the whims of Hitler and Goering, played havoc with the light metals industry. On the other hand, it is possible that the I.G. took a particularly jaundiced view of the Luftfahrtministerium on account of the disastrous failure of the light metals plant at Moosbierbaum on the Danube. (See page 20).

It was evident that, throughout the war, all decisions of the management were conditioned by the need to safeguard the company's financial position and to promote the future well-being of the organization. The following notes comprise some miscellaneous information upon three aspects of the policies of the I.G.Farben in these matters, namely the formation of Government-assisted companies, the attempts to maintain and increase commercial relations with other countries and the plans to place as many assets as possible outside Germany in anticipation of the Allied victory.

LURANIL G.m.b.H. This company was primarily engaged in the building of plants. It undertook the erection of the plants at Dyhernfurth, Falkenhagen-Briesen, Gendorf and possibly others. The company had a mixed board of Government and I.G. officials. The key personnel was provided by the I.G.

MONTAN G.m.b.H. The board of this company comprised Government officials exclusively. This company generally owned the property on which plants were erected and, in some cases, also the buildings and equipment. The company leased plants under any one of the three schemes enumerated above. Montan provided, in fact, the Government representation in the agreements connected with the formation of these special companies.

ANORGANA G.m.b.H. This was an I.G. subsidiary, with its headquarters in Ludwigshafen, that was formed to make operating contracts with Montan. The company had a mixed board of I.G. and Government officials although the management and technical personnel were drawn from the I.G. The company operated the plants at Dyhernfurth and Gendorf, and 30% of the net profits went to the I.G. The expenditure upon Dyhernfurth was reported to have exceeded 200,000,000 RM. Anorgana served a useful purpose for the I.G. in that it provided an insulator between the I.G. and the Government. Not only did it act as an insulating medium in matters affecting the sale of war products and simplified the accounting arrangements, but it also helped to keep the I.G.'s hands clean in the event of any criticism concerning the commodities being manufactured. In the same way, the Montan provided the insulation on the Government side.

MONTURON A.G. This company was similar in its organization to Anorgana and was intended to operate a plant owned by Montan at Falkenhagen-Briesen (code name SEEWERK) near Fuerstenberg. The plant was intended for the production of lethal gases. It was in course of construction by Luranil when captured by the Russians.

Another Government-associated company was the Luftfahrt Anlage G.m.b.H., which was an organization formed by the Luftfahrtministerium for the operation of aircraft plants. Among the various activities of this company was its interest in the aviation fuel complex of the hydrogenation plant at Heydebreck.

The tetra-ethyl-lead plant of the Ethyl G.m.b.H. (a wholly owned I.G. Farben subsidiary) at Capel-Dobritz was taken over by the Government in 1944. The reason for is acquisition was not ascertained, although it appears obable that it was taken over under the wing of the Luftfahrt Anlage G.m.b.H.

The Government funds for these operations were generally furnished through the Luftfahrt Bank in Berlin. Most of the arrangements were made without any allowances for war risks and when expenses were incurred as the result of mb damage * it was necessary for either subsidies or special loans to be made to the operating companies.

The principal member of the Government appointed sit on the boards of these semi-commercial companies s Oberregierungsrat Dr. Ehmann. He was the OKH director or intermediate products for the manufacture of explosives and poison gas.

MERCIAL ACTIVITIES OUTSIDE GERMANY.

In the course of our investigations upon other subcts, a certain amount of miscellaneous information was ed up on the commercial activities of the I.G. and the lowing notes are recorded in the event that they may make e contribution to other studies that are being made of s complex subject.

With the loss of former markets in Allied countries, I.G. did their utmost to transact a maximum of business he remaining countries to which they could get access. e countries divided themselves to those within the area he Allied blockade and those outside it. In all of , however, trading was continuously handicapped by the k of foreign currency. There was an adverse clearing nce in all countries that they dealt with. In the case pan, this difficulty was to a certain extent overcome rter transactions although the amount of goods moving directions was limited by the lack of shipping cities.

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*: Up to the time of the last computation, in April the total claim of the I.G.Farben and its subsies against the Government for bomb damage amounted to ximately 1,200,000,000 RM.

Before the war, the I.G. had acquired a predominant position in the chemical field in most European countries by means of international cartel arrangements. * The marketing organization had been based firstly on two-way cartels with France and Switzerland respectively. These had then been combined into a three-way cartel involving a combination of the I.G. and the Swiss and French cartels. Subsequently agreements were made with Solvay & Cie of Brussels and the Verein fuer Chemische und Metallurgische Produktion of Prague, thus ensuring that all the major concerns came within the scope of the agreements. These agreements naturally added very considerably to the strength of the I.G. Every advantage was taken of the German occupation of Poland and Czechoslovakia to increase trading in those countries and an aggressive marketing policy was likewise pursued in the Balkans. The value of goods exported to these countries was approximately twice the pre-war price levels.

France.

The collapse of France afforded the I.G. another opportunity for strengthening their position in Europe and here it would seem that theytook advantage of the plight of the French to gain a controlling interest in the dyestuffs industry and in a manner which would hardly have been possible in normal peacetime conditons. It would appear that the I.G. considered that the circumstances of the nullified normal commercial agreements. The principal French dyestuffs concerns were formed into a new company known as Francolor and it was contrived that 51% of the share capital was held by the I.G.

(An assistant of Dr. Julius Overhoff, named Heyenbrueck or Herrenbruck, has detailed knowledge of the marketing arrangements in France and Belgium).

Spain.

Activities in Spain were threefold, namely, domestic sales of I.G. products, the production of wolfram, and the use of the country as a means of circumventing the Allied blockade.

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* NOTE: Dr. Hans Kugler of the Frankfurt office had particular knowledge of all the dyestuff cartel arrangements and especially the arrangements made in Bulgaria, Hungary and Roumania.

In regard to domestic sales in Spain, these were conducted through two subsidiary companies known as [illegible]NCA and FLIX. Details of the I.G. relationship with these two concerns are known to Dr. Julius Overhoff of Frankfurt. FLIX had a capital of 9,000,000 pesetas. As, under Spanish law, no foreign concern could control more than 25% of the capital of a Spanish company, any I.G. holding in FLIX above this amount would have had to have been arranged by a subterfuge.

Only fragmentary information was obtained on the attempts of the I.G. to obtain tungsten concentrates from Spain and Portugal. These activities were largely directed by Albert Meyer-Kuester, a director of the I.G. and with an office in Madrid. (According to one of his fellow directors, Paul Haefliger, this person has a most unsavoury reputation; he was last reported as being still in Madrid). The tungsten mines were operated by a consortium of producers in which I.G. were interested to the extent of about 20%. The quantities of tungsten concentrate obtained were reported to be disappointingly small.

Spain was used as a channel for the smuggling of commodities through the Allied blockade. The importance of the country for this purpose was increased after the Allied occupation of Western France which closed Bordeaux as a port of embarkation for blockade runners. The arrangements for transactions through Spain were organized by Dr. Julius Overhoff. He went to Spain in January 1942 to study the possibilities of resuming exports to South America. His visit proved fruitless. However, in the latter part of 1942, he got into touch with a man named Uebele *, with an office in Barcelona, and it was through Uebele that a small amount of trading was resumed.

I.G., using Schenker & Co. as entrepreneurs, delivered the goods, which comprised dyestuffs, to the French-Spanish frontier at Cerbere. Uebele then took delivery and arranged for the goods to be passed over the frontier at Port Bou. It is probable that Uebele dealt with a Spanish manufacturing concern by which means it was contrived that the goods were "made in Spain" and by which means the British Navicert was obtained.

NOTE : The address of Uebele might be known to Fraulein Liesl Gentzsch of Eschersheimer, Lastr. 368, Frankfurt.

The dyestuffs moved through these channels were all consigned to the Argentine and some 40,000 to 50,000 kilos were shipped in a total of five or six shipments. When the Allied invasion of France closed the frontier to this traffic, the I.G. were successful, in the latter part of 1944, in transporting some valuable dyestuffs to a total quantity amounting to 6,000 or 7,000 kilos, by aircraft to Barcelona. These shipments first went from Stuttgart and later from Berlin.

Further details of this export business can be obtained from Georg Stotz of the Frankfurt office, resident at Haingasse, Bad Homburg.

No details were obtained of the I.G.'s assets in Spain but a document, dated March 15th 1945, in the insurance files of the company indicated that the insured value of certain assets in Spain was put at 12,300,000 RM.

Japan.

The intention of maintaining profitable commercial relations provided the background to the operations of the I.G. with the Far East both before and during the war. More than one of the officials of the company expressed the view that in pre-war days they preferred to do business with China as they disliked the business practices of the Japanese. Nevertheless, Japan offered attractive commercial prospects. The part played by the I.G. in the development of Japan's fixed nitrogen industry was a profitable undertaking in that I.G. could not hope to sell fertilizer and nitrogenous products to Japan on account of the transport cost and it was therefore profitable to derive some income from the Japanese by the sale or licensing of manufacturing processes. Furthermore, Japan was a useful market for dyestuffs and since 1939 there has been a certain amount of reciprocal trading in which the I.G. had been exporting dyestuffs and had been importing much-needed wolfram in return.

Sales of dyestuffs to Japan came under the supervision of Georg Wilhelm Spamer, head of Abteilung Farben Japan, Frankfurt office. At the outbreak of war the I.G. had large stocks of dyestuffs in Japan and these were supplemented during 1939-1941 by rail shipments via Siberia, some 450,000 kilos being transported by this route. Shipments were arranged by Schenker & Co. When movements via Russia were no longer possible, a small quantity of dyestuffs, reported to be about 300 tons, were shipped in 3

blockade runners, of which one was the Braunfels, sailing from Bordeaux.

In exchange for these dyestuffs, the I.G. was successful in importing a useful quantity of wolfram. Full details of the amounts received and their values are contained in the following documents which were transmitted to G-2 (Japanese Section) SHAEF Main on 28 April 1945. Items 1 and 2 are likely to contain useful information on the activities of blockade running submarines.

1. Consignment Notes of Wolfram Imports by I.G. Farbenindustrie from Japan. April 1941 to February 1944.

2. Consignment Notes of Wolfram Imports by I.G. Farbenindustrie from Japan. February 1944 to February 1945.

3. Correspondence on Wolfram Imports by the I.G. Farbenindustrie from Japan. November 1943 to March 1945.

4. Correspondence on I.G. Farbenindustrie Exports to the Far East. 1941-1945.

5. Manuscript Report by the head of I.G. Farbenindustrie Dye Sales Export Department on Sales to Japan, 1939-1945.

Although the assistance that the I.G.Farbenindustrie given the Japanese in the development of their nitro- industry had been a profitable venture, a rather differ- view was taken when the company was approached by the anese in 1942 for the rights to operate the Bergius oil ogenation process and for the supply of a plant of this e. The I.G. Farbenindustrie were extremely reluctant to come to terms and this was partly because they suspected the basic reason for these approaches was to get German icians to Japan to remedy the difficulties that were encountered in their existing plants, which plants anese had designed themselves. It was not until erman Government had exerted pressure on the I.G. enindustrie that an agreement with the Japanese was con- ed in January of this year.

ESPIONAGE & POST WAR PLANS.

By no means the least important of the many activities of the I.G. were those connected with their intelligence operations. Their world-wide ramifications, and especially the technicians that supervized manufacturing processes in many countries, provided a ready-made intelligence-gathering organization the value of which evidently went beyond that of commercial fact-finding. The direction of these activities came from the Wirtschaftspolitische Abteilung in Berlin, a prominent part in the direction of which was played by Dr. Max Ilgner.

In the early stages of the war, the I.G. took such steps as they were able to safeguard their interests in the event of Germany's defeat. One of these measures was the sale, for a nominal sum, of all their patent interests to a patent attorney (a brother of one of the Directors) in New York, this transaction taking place some time before America entered the war.

As the prospects of victory became increasingly remote, the attempts to spread the company's assets into neutral countries became intensified. These activities were largely directed by Baron von Schnitzler and arrangements were made for the formation of "cells" in Spain, Sweden, Switzerland, the Irish Free State and in other countries. Any substantial transfer of liquid assets to these "cells" was, however, handicapped by adverse clearing balances.

LIGHT METALS PRODUCTION.

An indication of the position held by I.G. in the field of light metals production is shown by the following figures. The percentages given represent the direct I.G. capital participation as of August 1942. As the indirect participation, in the form of I.G. interest in other participating companies, is not shown in these figures, they do not necessarily show the actual I.G. share in these undertakings.

Aluminium Zentral	16-2/3%
Petsamo Gemeinschaft	40%
Wolfram Konvention	30%
Molybdan Konvention	28%
Vanadium Konvention	20%
Zirkon Konvention	21%

A certain amount of information was provided on the light metals activities of the I.G. Group by Paul Haefliger who was in charge of this side of the business.

A table is given below comprising Haefliger's estimates, from memory, of the capacities of the various aluminium, alumina, and magnesium plants in Germany. Comparative figures provided by M.E.W. are also given.

Magnesium.

In 1935 Germany's production capacity of magnesium was only to the order of 3,000 to 4,000 tons per annum. Energetic steps were taken to increase this capacity and the I.G. played a leading role in the expansion of the industry.

Haefliger emphasized the importance of various technical improvements in the production and utilization of metals that had been developed by the I.G. in the course of the war. Their new knowledge of magnesium was likely to be of particular interest. The plant at Herya near Oslo, was claimed to be the first of its kind that is capable of a commercially profitable operation using sea-water. This plant, however, never came into operation as it was successfully bombed on the day it was to go into production. Although this plant had a designed capacity of from 10,000 to 12,000 tons per annum, Haefliger was of the opinion that it should have been capable of producing 15,000 tons.

The plant at Moosbierbaum * on the Danube, had an equally unhappy record. Designed along very similar lines to Herya, it was intended to produce 24,000 tons of magnesium per annum. When Herya was put out of action, it was decided that the capacity of Moosbierbaum would have to be doubled. No sooner had this work been put in hand than

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NOTE: The Moosbierbaum plant was to have comprised three separate complexes:-

1. A chemical plant manufacturing inorganic acids, sulphite of sodium, sodium bisulphide.
2. A magnesium plant.
3. An oil plant, comprising a light naphtha hydroforming unit and an oil distillation unit. The latter never came into operation.

the need for this additional production was obviated by a fall in the demand for magnesium due to the bombing of the aircraft industry. The plant never came into production.

Vanadium.

A new process had been developed under a Roechling patent for the extraction of vanadium from Bessemer slag. By this means it was stated that a production of as much as 4,000 tons per annum was obtained. This production was of the greatest importance in view of the difficulties in manufacturing satisfactory alloys.

Tungsten.

The shortage of tungsten was a continuous anxiety. When supplies via Siberia ceased, every effort was made to obtain increased quantities from the Iberian Peninsula. These supplies, however, never amounted to more than 1000 tons per annum. It was finally necessary to resort to imports by submarine from Japan (see page 17). However, the economical use of tungsten led to interesting discoveries whereby better results were obtained with alloys containing smaller percentages of tungsten than had been customary.

DOCUMENTS.

The following miscellaneous documents on light metals activities are in London:-

MIRS Bag No.	Document Number	T i t l e.
03414	11	File of correspondence on light metals, 1945.
03414	16	Haefliger's correspondence file on Norwegian light metals plants 1944-45.
03414	32	Ter Meer's correspondence in respect of his trip to Italy and receipts of platinum from Italy, 1944-45.

Plant Capacities.

The following table is a comparison of plant capacities as given by Haefliger and those taken from the records of the Ministry of Economic Warfare. It will be noted that the widest discrepancies are in the figures shown for VAW, this is understandable in view of the fact that VAW were the predominant company and the informant would not necessarily be well informed on their activities.

See Note	Owner	Plant	Capacity (MEW Estimate)	Capacity (Paul Haefliger)
	Aluminium	**Germany**		
(a)	V.A.W.	Lautawerke, Lausitz	70,000	Approx. 250,000
		Erftwerk, Grevenbroich	25,000	
		Innwerk, Töging	50,000	
		Lippewerk, Lünen	45,000	
	I.G.Farben-industrie	Bitterfeld	35,000	No estimate
		Aken	10,000	Approx. 50,000
(b)	A.I.A.G.	Rheinfelden	36,000	Approx. 35,000 incl. Lend (Austria)
		Austria.		
(b)	A.I.A.G. Kraftwerke Oberdonau	Lend	10,000	No estimate
		Steeg	5,000	" "
	V.A.W.	Braunau	75,000	" "
(c)	**Alumina**			
	A.I.A.G.	Martinswerk, Bergheim	140,000	Thalheim ? approx.150,000
	Gebr.Giulini	Mundenheim, near Ludwigshafen	140,000	100,000
	V.A.W.	Nabwerk, Schwandorf	80,000	Lauta and other appr. 300,000
		Lautawerk, Lausitz	140,000 bauxite	
			clay 8,000	
		Lippewerk, Lünen	baux.100,000	
			clay 40,000	

Magnesium	Germany		Approx.
I.G.Farben-industrie	Bitterfeld	5,500	4,000
	Aken	8,000	13,000
	Stassfurt I	6,000	15,000
	II	6,000	
Wintershall A.G.	Heringen	6,000	7,000
		31,500	39,000

Austria

I.G.Farben- Moosbierbaum - Project under construction reported similar to Herya which was designed for: Project Magnesium only 24,000 tons not yet in prod.

Aluminium	12,000 tons
Alumina	25,000 "
Magnesium	10,000 "
Syn. cryolite	3,000 "
Caustic soda	9,000 "

NOTES.

(a) The chief discrepancy appears in the estimates for the V.A.W. plants of which Haefliger mentions only three, giving their total capacity as approximately 250,000 tons. This figure might represent the total aluminium capacity owned by V.A.W. in Germany and Austria but it could scarcely be accounted for by the three plants given. It is known that the capacity of Erftwerk has not been increased beyond 25,000 tons. There is no evidence of extensions to Lautawerk or Innwerk that would account for the difference between the MEW and Haefliger estimates. It is surprising that no mention is made of the big new plant at Braunau in Austria, although this may have been confused with Innwerk.

(b) Information received from A.I.A.G. puts the capacities of Rheinfelden & Lend at 36,000 and 10,000 tons respectively.

(c) Haefliger's estimates of alumina capacity appear to be low. V.A.W. capacity (based on bauxite) is at least 320,000 tons and there is a further 48,000 tons based on clay. The capacity of the Giulini plant at Mundenheim was about 90,000 tons before the war and it is known that extensions have been completed that would bring the capacity up to at least 140,000 tons. No plant is known at Thalheim but this probably refers to Martinswerk at Bergheim, near Cologne.

RUBBER.

No investigation was made into the I.G.'s synthetic rubber activities but the following is a list of documents that were obtained and which are now in London:-

MIRS Bag No.	Document No.	Title.
29	03414	Report on conference of technical rubber commission 22.7.43.
56	03413	Report on operation of Ferrara (Italy) syn.rubber plant May 1942.
57	03413	Minutes of meeting of syn.rubber committee, Renchen, 16.6.44.
58	03413	Cost data on Schkopau Buna production 1941-1944.
59	03413	Data on I.G.Buna oper. 1941-1942.
60	03413	Folder of misc. data on Buna production 1942-1942.
64	03413	6 boxes lantern slides re German syn.rubber industry.
45	03414	Notes on Reppe report on new developments in acetylene & carbon monoxide chemistry 29.6.44.