

## PULVERISED MAGNESIUM

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COMBINED INTELLIGENCE OBJECTIVES  
SUB-COMMITTEE

LONDON—H.M. STATIONERY OFFICE

PULVERIZED MAGNESIUM

Reported by  
Squadron Leader B. H. JONES, M.A.P.

CIOS Target Number 21/24, 21/199, 21/200, 21/201  
Metallurgy.

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

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Personnel of Team

Sq/Ldr. B. H. JONES, M.A.P.

CIOS TRIP No. 503

BY F/LT. B.H. JONES, 62026, RAF.

Trip Commenced            19th. June, 1945.

Trip Concluded            4th. July, 1945.

O B J E C T S - P R I M A R Y

1. Visit to:- I. G. Farbenindustrie Aktiengesellschaft,  
Nordwerke - Electron,  
Bitterfeld.

for the purpose of:-

- (a) Obtaining plant suitable for producing Pulverised Magnesium - Grade O.
  - (b) Obtaining any stockas on hand of Pulverised Magnesium - Grade O
2. Ascertain the existence of any similar plants in SHAEF occupied territory, and visit them for purposes similar to 1(a) and 1(b) above.

O B J E C T S - S E C O N D A R Y

- 1. Obtain by general enquiry the names and locations of Pyrotechnic plants in the above mentioned territory for the purpose of later investigations by appropriate personnel.
- 2. Enquire for sources of information on enemy research into pyrotechnics for PFF simulation etc.

R E P O R T

TARGET No. 1 - I. G. FARBEN AT BITTERFELD

(A) PLANT

The magnesium pulver plant comprised:-

- (i) Qty. 107 of Kratzmaschinen (scratch mills)
- (ii) "     8 " Siebe (sieve machines)
- (iii) "    24 " Kugelmuhlen (ball mills)

to and full co-operation promised in that connection.  
It is recommended that the Allied Authority most concerned with Magnesium Grade O production will follow up the evacuation request to establish the location of the three scientists, whose particulars are as follows:

- (1) Name:- Dr. Erich Krasel  
Born:- 5th. December, 1892  
Address:- Bitterfeld, Parseval Strasse, 69.  
Works Pass No.:- I.G. 0033  
Status Chief of Mag. Pulver Dept.  
Family:- Wife and dependent daughter age 22 (medical student)
- (2) Name:- Dr. Gotthard Gosrau  
Born:- 23 March, 1887  
Address:- Bitterfeld, Hindenburg Strasse, 26  
Works Pass No.:- I.G. 00115  
Status:- Chief of Research (including manufacture of Edelstein, i.e. precious stones)  
Family:- Wife, and dependent aged mother.
- (3) Name:- Dip. Eng. Johannes Winkler  
Born:- 6th October, 1902  
Address:- Bitterfeld, Gneisenau Strasse, 3  
Works Pass No.:- I.G. 0042  
Status:- Metallurgist - Specialist in Mag. Pulver research and development. First Assistant to Dr. G. Gosrau, and direct specialist adviser to Dr. E. Krasel.  
Family:- Nil (bachelor)

(D) GENERAL

On the day that the shipment of plant was despatched, (i.e. 22nd June, 1945), the appropriate information was signalled from HQ XXI Corps Leipzig to:-

- (i) CIOS Secretariat London (for Chairman Group 2)  
Repeat:-AD/RD.Arm./P&I MAP London  
(ii) Col. Lawrence, G4 Shaef Main, Frankfurt.

A further signal was made to CIOS Sec. (Chairman Gp.2) advising him of request for evacuation of scientists and recommending his follow up action immediately.

It was stated by Dr. Gosrau that prior to commencement of the war he assisted in the installation of qty 12 Kratzmaschinen (which are of I.G. Farben Patent), in Manchester and Qty 12 of these same machines at the factory of:-

Societa Anonima Electron  
Milan - Italy.

It is possible that the Milan plant has developed and therefore an investigation is likely to be worth while.

TARGET No. 2 - WINTERSHALL AKTIENGESELLSCHAFT WERK -  
HERRINGEN-AM-WERRA

A visit was made as the result of information received at Target No. 1.

Plant is comparatively new and is concerned with the production of magnesium and aluminium in ingot and billet form and also the manufacture of pressed aircraft components in those same metals. They supplied the billet to I.G. Farben of Bitterfeld for making into Mag. er.

Plant included a small section equipped with machinery for making a very fine powder from 50-50 Mag./Aluminium for pyrotechnic purposes. The equipment comprised six small mills incorporating rotary beaters for pulverising Mag/Aluminium previously fragmented in stamping machines. The whole of this installation had been badly damaged in a recent works explosion and would require reconditioning almost equivalent to re-making. The plant was therefore rejected.

A full investigation of this target had just been completed by a USA team, no further information was sought by me, but F/Lts. Cole and Mott (of RAE) investigated certain specialised processes within their orbit.

TARGET NO. 3 FABRIK WOLFRATZHAUSEN DER GESELLSCHAFT  
MBH FUR VERWERTUNG CHEMISCHE ERZEUGNISSE WOLFRATZHAUSEN  
I.B.

I visited this target as the result of information observed on CIOS, Item 17, which described the plant as being concerned with "Incendiary Powders".

The visit was a waste of time as no incendiary powder has ever been made at that factory which is actually concerned with:-

- (i) Filling of Detonators (Fulminate of Mercury)
- (ii) Manufacture of PETN in bulk and pellet form
- (iii) Filling of Caps for small Arms Ammunition
- (iv) Filling of 37 mm and 50 mm Shells.

This target had been investigated just previously by Major H.G.E. Woods, S.M.L.C.O. and therefore no further information was sought by me.

TARGET NO. 4 ECKART-WERKE, STANDARD BRONZE PULVER WERKE -  
CARL ECKART, MAX STRASSE, FURTH. I.B.

The head office is situated at Furth, whilst the main factory is dispersed to:-

Guntersthal,  
Velden,  
BEI, Hersbruck.

The organisation has subordinate factories at:-

- (i) Pommelsbrunn Bei Hersbruck
- (ii) Furth/Bay - Neumuhle
- (iii) Erlangen - Neumuhle
- (iv) Vorra Bei Hersbruck

The items produced by the organisation are:-

Gold-Bronze powder  
Aluminium powder  
Electrolysed Copper powder  
Silicon Powder  
Aluminium-Silicon powder  
Peroxide of Iron powder  
Granulated Aluminium, coarse and fine  
Tin powder  
Zinc powder

Magnesium powder

Lead powder

Cadmium powder

Antimony powder

Glass powder

Special Aluminium Paint:-

- (a) for roof painting
  - (b) " light reflecting (Reflexal)
  - (c) Petrol and Benzole proof paints (Tanks)
  - (d) Motor car tyre paint (Alumobil)
  - (e) Heat resisting paint (Aluplast)
- Brushes of all kinds (except household)

The main factory which is solely devoted to production of metal powders, was the only one that I visited.

The factory is comparatively new, situated in a rural valley. It covers an area of approximately 50,000 sq. metres comprising 150 buildings each approx. 10 metres x 6 metres in size, separated by appropriate safety distances. In addition it has an extensive administration block and a medium sized laboratory building.

Near the factory there is situated a hutted camp that can accommodate 600 workers (hitherto occupied by slave labour). Then in addition it has a small community of cottages to accommodate the technical, scientific and administrative personnel with their families.

The factory is situated about two kilometres from the village and railway station of Hersbruck, to which it is connected by a very rough and hilly track, probably suitable to 4 wheel drive high powered trucks only.

The factory is wholly in good order, only slight damage having been done by liberated slave labour, who looted all driving belts (for purposes of boot repair), and who also wrecked the laboratory equipment which will need extensive renewal.

Power is derived from the Grid from which power is ~~tapped~~ at 20,000 volts, and transformed to 380 volts, which is the factory requirement. In addition the factory has an auxiliary power station with two Diesel motors. Capacity 750 KW.



The persons at the head of the organization are as follows:-

Jacob Eckart	Proprietor	(Merchant Manufacturer)
Carl Eckart	Son of Prop.	( - do - )
Dr. Richard Forster	Chemist	(General Manager)
Dr. Breidenfeld	Chemical Engineer	(Head of Research)

These four men are available at the Guntersthal plant.

The position in regard to Magnesium Powder is:-

- (a) Present Production Eight grades of powder ranging from coarse to fine. Some waxed and others unwaxed. Total capacity 25 tons per month. A sample of each has been taken and has been handed to AD/RD.Arm. /P&I at M.A.P. None of the grades correspond to Grade O. The total factory stocks of powder are 30 tons assorted grades mainly fine.
- (b) Boosted Production Dr. Forster stated that provided he were given the appropriate specifications etc., he could undertake to produce Grade O powder almost immediately and over a maximum period of three months from commencement he could boost production to 100 tons per month with existing plant, provided that he is supplied with the necessary drive belting (12 cm wide) and eight electric motors 45 k.w. x 380 v. which are mentioned below as being deficient.
- (c) Labour The plant has 120 operatives available now, but only 30 are required to produce 100 tons monthly of mag. pulver. No additional scientific staff is required.
- (d) Raw Materials Present stock of Magnesium billets is approx. 60 tons. Supplies were obtained from I.G. Farben at Bitterfeld, which source of supply is now probably closed. There should be no difficulty in organising future supplies from Wintershall Aktiengesellschaft, Werk - Herringen-Am-Werra (See report on Target No. 2 above)

(e) Potential Production It was suggested to the four officials mentioned above that they might reorganise the factory to accommodate the plant evacuated from Target No. 1. They were fully co-operative and stated their readiness to remove existing plant from sixty buildings in which to instal the new plant, which they would operate conjointly with their existing machines which are now housed in 10 buildings. This would provide 70 buildings with a total area of 4,200 sq. metres for the production of Grade O powder. It would be necessary to make up the deficiencies of Ball Mills and Sieves from a new source. Adequate storage and warehousing accommodation would be provided in addition to the 4200 sq. metres mentioned above.

No difficulty was foreseen in regard to training the additional operatives required which would presumably be directed by the appropriate labour controlling authority.

No estimate of the output from such reorganisation could be given at short notice.

(f) Plant now installed in factory This is as follows:-

(i) Qty 10 of Frasmachinen (Eckart design and manufacture).

This type of machine incorporates a fully enclosed rotor (in 3 sections) into which sets of spaced serrations have been cut. A magnesium billet of sectional dimensions 10 cm. x 7 cm. approx. is fed into the machine which cuts the metal into short lengths of light turnings. These turnings are then passed to:

(ii) Qty 10 of Atomomuhle (made by Heid of Vienna)

This type of machine has an enclosed rotor to which are hinged twelve

lengths of metal bar to operate as flails to beat the turnings into powder. Eight of these machines are deficient of motors, 45 KW x 380 V.

The product of these machines is passed to:

(iii) Qty 20 of Siebe Machinen (made by Stirl of Chemnitz) which sieve the appropriate grades of powder.

(g) Estimated general capacity To give an idea of the potential of the existing plant the following figures for all products were supplied by the management.

<u>Product</u>	<u>Estimated Monthly capacity</u>	<u>Operatives Employed.</u>
Gold Bronze Powder	100 tons	100
Aluminium "	500/750 "	200
Elect. Copper "	20 "	6
Silicon "	10 " )	2
Alum. Silicon "	10 " )	
Per. of Iron "	20 "	2
Granulated Aluminium (coarse and fine)	800 "	150
Tin Powder	10 "	4
Zinc "	20 "	10
Magnesium Powder	25 "	30
Other Metal Powders	10 "	2
Glass Powder	10 "	2

### P R I O R I N V E S T I G A T I O N

On the day previous to my visit, the plant was visited by Mr. Eppig of Ordnance Dept., U.S. Army. He enquired regarding capacity for coarse magnesium powder, with 3% of wax (I.G. wax - Grade "L") for slow burning. He was informed that such could be produced if he supplied the necessary technical data.

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SECONDARY OBJECT No. 1 - PYROTECHNIC PLANTS

Enquiries as to the existence of Pyrotechnic plants resulted in the following list of names and addresses. Among these there may be some that have not been scheduled for investigation and that may be worthy of a visit.

- (1) Deutsche Pyrotechnische Fabriken  
Eisfeld, Harz.
- (2) Deutsche Pyrotechnische Fabriken  
Neumarkt/Oberfalz
- (3) Dynamit A.G., (Coloured Smoke - Dr. Frederick  
Troisdorf, Koln in charge of research)
- (4) G. F. Sauer,  
München
- (5) Oscar Fischer,  
Markdorf - Baden
- (6) Fritz Sauer,  
Gersthofen Bei Augsburg
- (7) Idebenwein and Soehne,  
St. Veit/Glan - Austria
- (8) E. Pietschman,  
Zirl, Tyrol, Austria
- (9) Deutsche Pyrotechnische Fabriken  
Cleebron, Wurttemberg
- (10) Pommersche Industrie  
Werke,  
Barth - Pommern
- (11) Riedel de Haen,  
Seelze, Hannover
- (12) Minimax,  
Berlin
- (13) Felix Deichman,  
Velten (Mark),  
Brandenburg.
- (14) C. F. Berckholz,  
Hamburg.

SECONDARY OBJECT No. 2 - LOCATI  
- COUNTER OFFENSIVE RESEARCH

III

It is understood that this work is control  
by Dr. Dittmar and Dr. Gliwitzki of Chem. Tech.  
Reichsanstalt, Berlin - Plötensee.

*B. H. Jones*

B. H. JONES - 62  
F/Lt. RAEVR