

# REPORT ON THE FIRM OF CARL ZEISS, JENA

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COMBINED INTELLIGENCE OBJECTIVES SUB-COMMITTEE

"REPORT on the firm of CARL ZEISS, JENA"

Col. Arthur W. Angus (Control Commission, Germany)

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CIOS Target Number: 28/7.107

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COMBINED INTELLIGENCE OBJECTIVES SUB-COMMITTEE

32 Bryanston Square, W.1.

"Report on the firm of CARL ZEISS, Jena"

Introduction

This report covers investigations into the various aspects of the activities of the Carl Zeiss organisation of Jena and several of their associated factories and kindred organisations.

A similar investigation into the affairs of the associated firm at Schott & Genossen, Jena, is the subject of a separate report.

A special mission was formed comprising the following:-

Col.Arthur W.Angus (Control Commission, Germany)  
Col.Albert J.Philpot - Deputy Team Leader

Col.Edward W.Taylor

Lt.Col.Raymond Freeman (Control Commission,  
Germany)  
Wing/Comdr.A.S.Radford - Team Leader (M.A.P.)

The mission assembled at 12th Army Group Headquarters, Wiesbaden on the 25th May, 1945, and proceeded via Camp Dentine to Jena, the following day.

The directors and the various departmental heads of Carl Zeiss were interrogated during the following ten days and details are included in this report under the following headings:-

Section I	The Carl Zeiss "Stiftung"
" II	(Commemorative Foundation).
" III	Carl Zeiss and Associated Companies.
" IV	Summary of Zeiss production
" V	(1939-1944).
"	Building Construction (1934-1944).
"	Organisation of Carl Zeiss:-
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	(B) Sales.
	(C) Production.
	(D) Design & Patents.
	(E) Research & Development.
" VI	Education & Training.
" VII	Finance.
" VIII	Salaries & Wages.
" IX	Welfare.
" X	Collaboration with Japan.
" XI	Relationship of Zeiss with the Nazi authorities.

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SECTION I

"The CARL ZEISS STIFTUNG"

(Commemorative Foundation.)

The world-wide reputation of the products of the Zeiss Stiftung and its Associated firms is of sufficient interest to merit close investigation and analysis of the Stiftung's political set-up and organisation.

Carl Zeiss, instrument maker to the Jena University, had established his first workshop by 1846. He was joined in 1866 by Professor Abbe who, on the death of Doctor H.C. Carl Zeiss in 1888 and the retirement of his son, Dr. Rod-Rich Zeiss in 1889, acquired the sole control of the concern.

In 1891 Prof. Abbe created the Zeiss Stiftung to which he transferred the ownership of the Optical Works and controlling share in the Glass Works of Schott and Genossen. He transferred his entire personal estate and accepted the position on the Board of Management.

In handing over the Statute of the Carl Zeiss Stiftung to all employees engaged in the Works of Carl Zeiss and Schott and Genossen, Prof. Abbe said:-

"I would request the employees of the Optical Works in particular to regard this Statute and the guarantees of the continuance of those principles (which have ever been in vogue in the direction and administration of the Firm) offered them therein as a gift which I, as former part proprietor of the Firm offered to the whole body of my co-workers to commemorate the Fiftieth Anniversary of its activity.

"It is my earnest desire and hope, that the Optical Works and the Glass Works may flourish and thrive upon these principles, place both organisations to the advantage of all who enter their portals, to the service of the common weal, to the honour of German precise technical industry."

Quoting from the Statute of the Carl Zeiss Stiftung, "The objects of the Carl Zeiss Stiftung are:-

A. Within the Works.

Aim 1. To cultivate the branches of precise technical industry, which have been introduced into Jena by the Optical Works, and the Glass Works with the co-operation of the founder of the Stiftung and thereby maintain the said industrial establishments

under an impersonal title of proprietorship; that is to say:

- Aim 2. Permanent solicitude for the economic security of the above undertakings as well as for the conservation and further development of their industrial labour organisation - as a source of subsistence in the service of scientific and practical interests;
- Aim 3. To fulfil higher social duties, than personal proprietors would permanently guarantee, towards the totality of co-workers in its employ, in order to better their personal and economic rights.

#### B. Outside the Works.

- Aim 1. To promote the general interests of the branches of precise technical industry as indicated above not only within the sphere of action proper of the Stiftung's Works but also outside of it;
- Aim 2. To take part in organisations and measures designed for the public good of the working population of Jena and its immediate neighbourhood;
- Aim 3. To promote study in natural and mathematical sciences both as regards research and teaching.

The objects of the Stiftung as enumerated under A are to be carried out by the Stiftung by virtue of the statutory administration of its own industrial undertakings exclusively and within the scope of these undertakings.

Respecting carrying out the objects of this Stiftung as enumerated sub B, these shall be limited to such surplus funds as may be available after the provisions as detailed sub A have been provided for."

For details of the Stiftung's organisation and administration the reader is referred to:-

"The Statute of the Carl Zeiss Stiftung"  
(See pages 6 to 57.)

Amendments have recently been made to the Stiftung under Nazi influence and these are included in German, together with English translation on pages 58 to 70.

The intrinsic merit of the Stiftung is likely to be the subject of contentious debate. It will therefore be found in this report that whole paragraphs are taken from the German texts in order to avoid the introduction of opinion. It will be for the reader to study the ideals and aims of Dr. Abbe in relation to the Stiftung's accomplishments and

to form his own views as to the part played by the former.

The present commercial undertakings of the Carl Zeiss, Stiftung are the Optical Works of "Carl Zeiss" and the Glass Works of "Schott and Genossen" in Jena.

Each firm carries on permanently with separate assets for their working capital and in independent management under their own Board of Management, which comprise:-

"Schott & Genossen"

Richard Hirsch  
Dr. Erik Schott  
Paul Henrichs

"Carl Zeiss"

Paul Henrichs  
Prof. Bauersfeld  
Prof. Joos  
Dr. Kuppenbender

The Deputy of the Stiftung is Dr. Esan, last heard of in Berlin. His present whereabouts are unknown and he may even be dead.

N.B. If the facilities and staffing of the Department under Prof. Bauersfeld and Prof. Joos (see pages 93 & 94) are read in conjunction with Section VI, "Education and Training" (see pages 11 to 105) it might be said that the "Stiftung" is well on the way to meeting Aims 1 and 3 of Objects "B" of the Statute. (See pages 8 to 9.)

STATUTE  
of the  
CARL ZEISS <sup>\*</sup>STIFTUNG  
in JENA

Established by  
E R N S T A B B E.

---

Translated from the Text  
of the Revision of 1906.

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<sup>\*</sup>Stiftung = Commemorative Foundation



Competition clause.

Restrictions contained in the contract as to the occupation after leaving the service of the businesses of the Stiftung can only be imposed on officials with life contracts in conformity with 59.

61.

Hours of workmen.

The labour contract of those in receipt of weekly wages in the businesses of the Stiftung is only to be for a definite working period of the day, which is not to exceed nine hours while the Works are running.

Overtime.

No one is required or can be compelled to do overtime or work during statutory holidays, except in the case of a breakdown having occurred in the Works.

Agreements for temporary overtime during the regular running of the Works are not to be made for a longer period than four working weeks.

62.

Holidays.

All employees in the businesses of the Stiftung over 18 years of age and not being apprentices under contract are entitled to an annual holiday of 12 working days, the season taken being agreed upon beforehand with the Boards of Management of the businesses or their representatives.

The granting of leave of absence not exceeding three working days in a single case and within a month can only be refused on the ground of it being particularly prejudicial to the Firm or other employees of the business.

General restriction of all claims to leave of absence to certain periods of the year is only permissible in the case of those working with fires going night and day, or else take part in work, the interruption of which is always attended with special disadvantages.

Employees of the businesses, workmen and officials, who are elected to honorary positions in the service of the Empire, State or Municipality, must, upon their request, always be given the necessary leave of absence to regularly attend to the duties of such office.

Height of expenditure for scientific purposes relatively to the state of the Reserve Funds.

So long as the Reserve Funds of the Stiftung have not reached the amount indicated in 45 of this Statute, or, subsequent to a fall, have not been raised again, the amount spent on pure scientific purposes is to be left to the discretion of the Special Board, other interests of the Stiftung being sufficiently safeguarded.

When the Reserve Fund exceeds the amount allowed for and its further endowment be restricted to the limitations imposed by 49 and 50 of this Statute, so long as the University of Jena is in existence, there shall on an average of every three years the half of the surpluses be applied in favour of the University.

The other half of these surpluses shall according to the intentions of the founder and according to the suppositions, under which others have promoted the enlargement of the sphere of action of the Stiftung, primarily be kept at the disposal of the objects of the Stiftung laid down in 101 to 103. But in so far as problems of such a nature, the fulfilment of which would be serviceable to an enhanced general benefit in the sense of the objects of the Stiftung, may not for the moment be forthcoming, it shall be permissible to apply part of the second half of the surplus also for scientific purposes of the University.

108.

Disposal of moneys.

The disposal of moneys of the Carl Zeiss Stiftung with regard to the objects enumerated in 1, section B, of this Statute is to be effected by the Special Board. The Deputy of the Stiftung and the Boards of Management of the businesses have the right of making suggestions at any time according to 1, section B, and of being heard upon the proposals of others, as well as upon the views of the Special Board, so long as such proposals do not deal with the internal matters of the University fund, before a decision has been arrived at.

Unanimous proposals of all the members of the Boards of Management of the businesses of the Stiftung in Jena with regard to expenditures in favour of objects enumerated in 101 to 103 must always be accepted, provided that funds are available for the said expenditures in conformity with this Statute. Expenditures of the said description are not admissible contrary to the vote of these persons.

AMENDMENTS TO THE CARL ZEISS STIFTUNG.

FOUNDATION STATUTES OF THE CARL ZEISS FOUNDATION IN JENA

Paragraph 5.

Foundation Administration (St.V.) Foundation Commissioner  
(St.K.)

ORIGINAL FORM (TRANSLATION)

The rights and duties of the Special Board shall pertain to the Department of the State service of the Grand Duchy of Saxe-Weimar under which the affairs of the University of Jena are, for the time being, placed.

The office of permanent Deputy to be appointed by the Special Board shall be held in an extra-official capacity by a higher official of the State service of the Grand Duchy of Saxe-Weimar or, failing such, an active higher official of the public service; and he shall receive as remuneration a sum from the funds of the Stiftung fixed from time to time, but no bonuses or similar honoraria.

It is incumbent on the Special Board and on the Deputy to conduct the affairs of the Carl Zeiss Stiftung with due regard to the intentions of the founder thereof, both in accordance with the provisions laid down in this Statute and also in the spirit they suggest. In doing so they are bound to heed interests of State, which are alien to the implied objects of the Stiftung, no more than is legally demanded from private individuals.

AMENDED FORM (TRANSLATION)

The rights and duties of the Foundation administration shall be in the province of that department of the Grand Ducal Saxon Ministry of the State which controls the affairs of the University of Jena. 1.)

For the post of permanent Foundation Commissioner a higher official of the Grand Ducal Saxon Ministry of the State or any other active higher official in the public service is to be appointed by the Foundation administration in the capacity of acting outside his office, in agreement with the Reich Minister of Economy, granting a fee, fixed in advance and similar payments, except compensation out of the means of the Foundation. He can only be dismissed by agreement with the Reich Minister of Economy. 2.)

The Foundation administration and the Foundation Commissioner are required to manage the affairs of the Carl Zeiss Foundation in accordance with all the provisions of

LIFE CONTRACTS

ORIGINAL

The contracts engaging officials for life can only stipulate for a dismissal on the ground of gross infringement of duty, or of continued negligence of same and for such behaviour outside his service, which precludes general esteem or personal confidence, pensioning can only take place for such deeds which also justify the employees claiming a pension as per contract.

Suspending these officials without actually dismissing them or pensioning them off in conformity with the contract is not permissible.

AMENDMENT

APPOINTMENT FOR LIFE

The appointment contract of officials appointed for life may only provide for release from service in the case of activities inimical to the State, in the case of severe neglect of duty, in the case of continued omission of 3.) obligations and in the case of such behaviour outside the service as is likely to lead to a loss of civic respect or personal trust, pensions, only on account of such facts which also entitle the employee to a pension as set out in the provisions of the contract.

Release from an appointment without a contractually correct dismissal from service or pensioning of this official is not permitted.

POLITICAL AND RELIGIOUS NEUTRALITY

ORIGINAL

The practical activity of the Carl Zeiss Stiftung according to paragraph 103 is to observe at all times strict neutrality towards political and religious parties.

Under no circumstances are funds of the Stiftung to be applied within or without the businesses of the Stiftung in favour of organisations, the conduct or the benefit of which is circumscribed by religious or political considerations, or are in favour of objects, the furtherance of which in the case specified, even though such objects in themselves tend to the general welfare, is brought in any way whatever in contact with religious or political tenets.

AMENDMENT

ADMINISTRATION OF THE FOUNDATION'S INSTITUTIONS ACCORDING TO PARAGRAPHS 101 to 103.

The administration of all the institutions of all the purpose intended in favour of paragraph 101 to 103 is to be put into the hands of the Jena business managements and the Foundation Commissioner, and to be administered by these persons according to the provisions in paragraph 10 to 15.

Verwaltung der St.-Einrichtungen nach § 101-103.

Die Verwaltung aller Einrichtungen zugunsten der in § 101 bis 103 gedachten Zwecke ist den Mitgliedern der Jenaer Geschäftsleitungen und dem Stiftungskommisnar zu übertragen und von diesen Personen gemäss den Vorschriften in § 10-15 zu führen.

NOTES

1.) The former paragraph 104 was cancelled in 1935 and read:

"The activities of the Carl-Zeiss Foundation according to Paragraph 103 had to safeguard at all times a strong neutrality as against all religious and political parties.

"Under no circumstances may the means of the Foundation be used in favour of institutions whether within or outside the Foundation organisation."

"CARL ZEISS and Associated Companies"

Manufacturing Establishments.

Principal

JENA Main Works  
South Works - underground in course of construction.  
North Works

Dispersal Plants

Pössneck  
Göttengrüm  
Stodroda  
Glycerthal/Thier Wald  
Ebrach near Bamberg  
Amberg

Product

Crystals  
Optics  
Aircraft Periscopes  
Optical Mouldings  
Prisms  
Prism mountings

Underground

Rothenstein near Jena

Optical Instruments

Associated Companies

Zeiss Aerotopograph, Jena  
Zeiss Ikon A.G. Dresden, Berlin, Stuttgart and Rumburg  
R. Winkel, G.m.b.H. Göttingen  
Friedenauer Technische Werke, G.m.b.H. Berlin  
Sealfelder Apparatebau, G.m.b.H. Saalfeld  
Geraer Technische Werkstätten G.m.b.H. Gera  
Feinapparatebau G.m.b.H. Gablonz/Sud.  
Feinapparatebau G.m.b.H. Türrn/Sud.  
Alfred Gauthier G.m.b.H. Calmbach/Eng.  
Hensoldt & Söhne A.G. Wetzlar  
Nitsche & Gunther Optische Werke A/G. Rathenow  
Hans Kollmorgen G.m.b.H. Berlin  
Zeiss Ikon, A.G., which comprises the following:-

Ica A.G.	Dresden	} See Appendix IV, Page 170 for details.
H. Ernemann A.G.	Dresden	
C.P. Goerz, A.G.	Berlin	
Contessa Nettel A.G.	Stuttgart	
Georg. Photochem.	Berlin	
A.G. Hahn	Kassel	
Nitsche G.m.b.H.	Leipzig	

Foreign Companies in which Zeiss has interests or agreements

Nedinsco	- Holland
Bausch & Lomb	- America, U.S.A.
Ungarnische Optische Werke	- Budapest, Hungary

---

Since 1934, Zeiss and their Associates have undertaken a number of important building projects to a total value of over 36,000,000 R.Ms.

Details are given in a subsequent section.

---

**Directorate**  
Dr. Kuppenbender  
Prof. Bauerafeld  
 Henrichs  
 Prof. Joos

Secretaries  
Dept. for law  
Dr. David  
Dr. Schrade

Personnel  
Dr. Schomerus  
Economics  
Dr. Wonne

Administration  
 Henrichs

Financial ad-  
 ministration.  
 Used material  
 and adminis-  
 tration for  
 manufacturing.  
 General ad-  
 ministration.

Saleing Dept.  
 Henrichs

Military sale.  
 Binoculars.  
 Mikro.  
 Opto-Med.  
 Photo.  
 Mess.  
 Geo.  
 Topographical  
 instruments.  
 Pine measuring  
 instruments.  
 Astro-  
 Planetarium

Manufacturing  
Dr. Kuppenbender

Management for  
 facturing of  
 mechanical  
 working for  
 optical treat-  
 ment.  
 Management for  
 factory laying-  
 out in general.

Construction  
Prof. Bauerafeld

Offices for  
 construction.  
 Offices for  
 patent affairs.

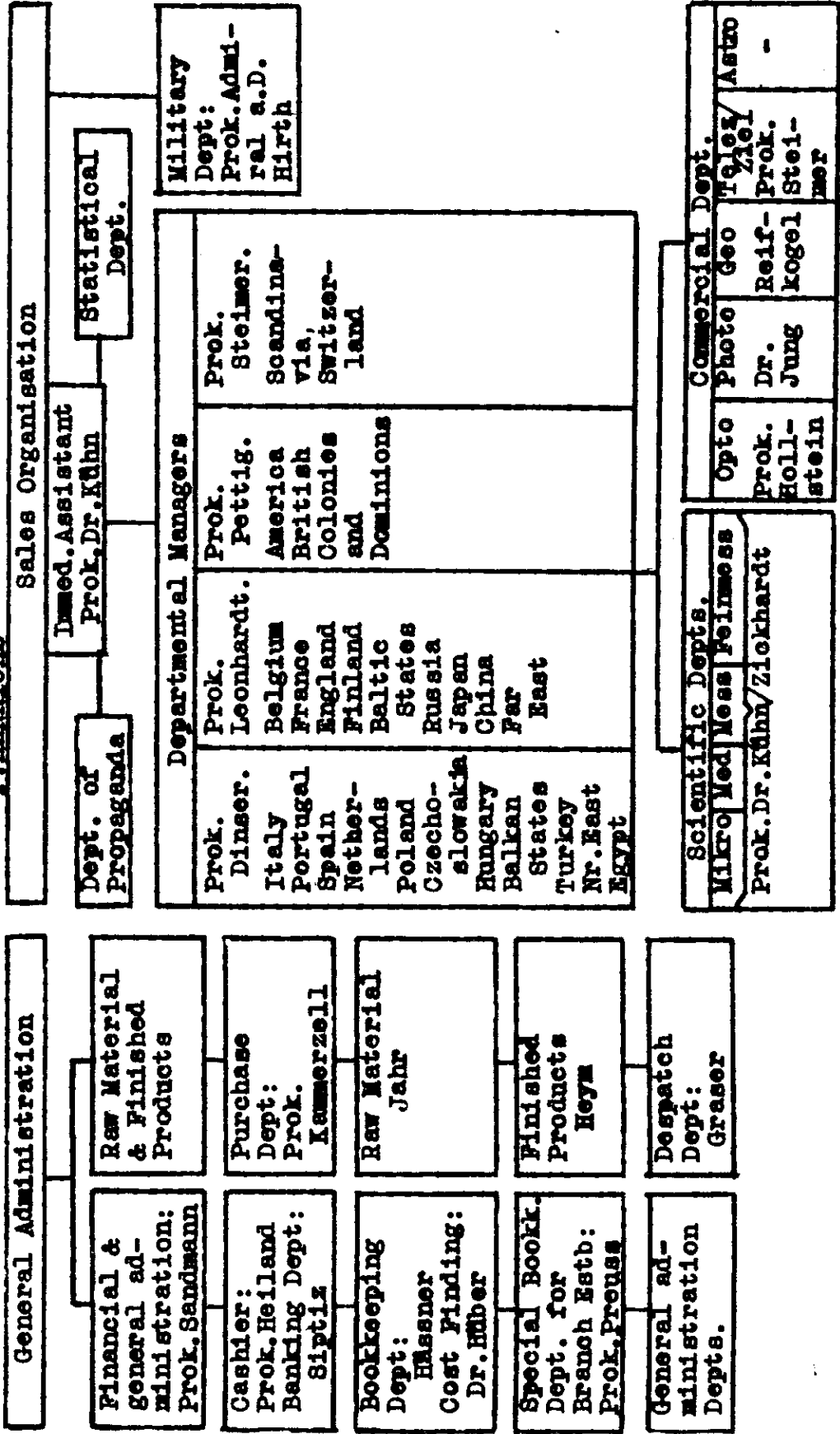
Developing  
Prof. Joos

Research and  
 developing  
 laboratories.  
 Mathematic  
 offices.



COMMERCIAL SECTION  
Responsible within the Board of Management.

P. HENRICHS



Principal Dept.No.8 (See Page 84)

"PRODUCTION" - Dr.Küppenbender

The production facilities at Jena are considerable, employing over 12,200 machines and, at the peak (1941), 13,700 workers including office staff.

It is significant that the build up of personnel took place practically wholly before the outbreak of war in 1939 and that this increase was matched by the large building programme which, by the end of 1939, had reached 70% of the total between 1934-1945. (See **Section IV**, Page 78 to 83.)

The following table gives the numbers employed for the years 1934/44; for immediate reference the volume of building and the output (in RMs) are added.

TABLE IV

Year	Total Employ- ees.	Increase	Women	% Staff	Volume of Build- ing, cu. metres	Output in RMs.
1934	6,589		11%	15%		
1935	8,076	1,487	12%	14%	110,886	
1936	9,419	1,343	13%	13%	50,846	
1937	10,492	1,073	14%	13%	53,697	
1938	11,170	678	15%	11%	98,644	
1939	11,732	562	17%	12%	121,746	114,000,000
1940	13,585	1,853	21%	12%	75,991	141,000,000
1941	13,701	116	20%	12%	80,920	170,000,000
1942	13,417	286	27%	11%	27,645	216,000,000
1943	13,565	148	30%	12%	1,786	189,000,000
1944	13,507	58	35%	12%		236,000,000

Of the total employed in 1944, 3,900 were foreign workers taken from most of the occupied countries; of their number, 2,800 were men and 1,100 women.

The main items of plant at Jena comprise:-

Shaping & Hobbing Machines .....	106
Turning Lathes .....	2,658
Turret Lathes .....	634
Drilling Machines .....	2,368
Milling Machines .....	1,265
Reaming Machines .....	16
Grinding & Lapping Machines .....	391
Special Lathes .....	96
Thread Cutting Machines .....	255
Gear Cutting Machines .....	133
Tool Room Machines .....	651
Cold Presses & Broaching Machines .....	397
Hot Presses .....	106
Surface Working Machines .....	188
Wood Working Machines .....	187
Glass Working Machines .....	2,563
Leather Working Machines .....	22
Casting Machines .....	2
Washing Equipment .....	63
Dividing Machines .....	120
Special Machines .....	30
	Total
	12,251

It was found that special machinery had been developed in considerable quantity to meet the specific needs of the various branches. The machines were designed at Jena and made either in the firm's own workshops or in one of the subsidiary plants at Dresden. For the rest, the plant at Jena consists of machine tools of standard types of varying ages, including belt driven and individually motorised equipment. Simple lathes by Küger or Auerbach and others, were in considerable numbers.

The location of the main tool rooms in Dresden is probably the weakest point in the production set up, and resulted in considerable embarrassment in the closing stages of the war.

Whatever varying influences may affect the success of the Zeiss concern, it is certain that the skill of its workers is a factor of considerable value, if not of over-riding importance. This firm has for generations attached great value to the adequate training of its personnel, and it would appear that no untrained worker is admitted to the factory. The various training schemes are reported on in Section VI, Pages 101 to 105.

The effect of the Stiftung's policy in this report has been the establishment of a tradition in Jena for craftsmanship of the highest order and a pool of labour second to none.

The technical strength of Zeiss in all branches, backed by extremely versatile manufacturing facilities, forms a powerful team where new models and urgent prototypes are in question. During the war instruments of some complexity were produced in a matter of weeks which in other circumstances would have taken months. The value of Zeiss from the military point of view is clear and from the German commercial angle hardly less so.

Dr. Ing Kuppenbender, the Production Director of Zeiss, is a man of great executive ability and engineering experience. He was transferred from Zeiss Ikon at Dresden to Jena at the end of 1941, at a time when the total number of workers was in the decline, and the percentage of women increasing. Judging by the output of the firm in the years 1942/44, he would appear to have justified his appointment. It is not surprising that he was charged with harshness towards the foreign workers, for which he was in jail at the commencement of our enquiries; he was probably rough generally.

Principal Dept.No.9 (See Page 84)

"DESIGN & PATENTS" - Prof.Bauersfeld

This Department is sub-divided into 8 Sections as follows:-

Sub-Section No.	( i )	"Telescopes" "Field Glasses" "Predictors" "Periscopes" "Measuring Instruments"	Herr Steinle
"	"	No.( ii ) "Rangefinders" "Standardisation"	Herr Puls
"	"	No.(iii) "Searchlight" "Signalling devices" "Astronomical Instruments" "Microscopes" "Projecting Apparatus"	Herr Büchele
"	"	No.( iv ) "Photographic Apparatus" "Optical Medical Instruments"	Herr Pfeifer
"	"	No.( v ) "Bombsights" "Gunsights for Air- craft"	Herr Kortum
"	"	No.( vi ) "Jigs Tools" "Special Machine Tools for 'Zeiss' "	Herr Raasch
"	"	No.(vii) "Patent Department"	Herr Reidinger

Further details of the work carried out by these sub-sections, together with names of the senior personnel, numbers employed, etc., are given on Pages 151 to 153 (See Appendix I.)

"RESEARCH & DEVELOPMENT" - Prof.Joos

This Department is sub-divided into 3 Sections:-

- Sub-Section No. ( i ) "General Laboratories"
- " " No. ( ii ) "Departmental Laboratories"
- " " No. (iii) "Calculating Offices"

(i) "General Laboratories" This section is further sub-divided into 9 groups:-

- (a) "Physical" - Dr.Hansen
- (b) "Electrical" - Dr.Weike
- (c) "Crystal Lab.1" - Dr.Haase
- (d) "Crystal Lab.2" - Dr.Smakula
- (e) "Surface Lab.1" - Dr.Koops
- (f) "Chemical" - Dr.Calsow
- (g) "Metallurgical" - Herr Sporkert
- (h) "Proof Methods" - Dr.Hessler
- (i) "Surface Lab.2" - Dr.Mossner

For further details see Page 146(Appendix I.)

(ii) "Departmental Laboratories" This section is further sub-divided into 8 groups:-

- (a) "Astro" - Dr.König
- (b) "Micro" - Dr.Michel
- (c) "Optical Measuring" - Dr.Hansen
- (d) "Mechanical Testing" - Dr.Röntzsch
- (e) "Photo.Lab.1" - Dr.Gössler
- (f) "Photo.Lab.2" - Dr.Leistner
- (g) "Ophthalmological" - Prof.Hartinger
- (h) "Rangefinder" - Dr.Münster

For further details see Page 148(Appendix I.)

(iii) "Calculating Offices" This section is further sub-divided into 5 groups:-

- (a) "Astro" - Dr.Sonnefeld
- (b) "Micro" - Dr.Bögehold
- (c) "Tele" - Dr.Roos
- (d) "Photo" - Dr.Marte
- (e) "Special Tasks" - Dr.Richter

For further details see Page 150(Appendix I.)

ORGANISATION OF MILITARY DEPARTMENT

HIRTH (Admiral)

General Questions of  
Dept. Personnel etc.  
Secretary

MEISSNER (Admiral)

"LIAISON"

- (a/1) Army Requirements  
BERENDSEN (Capt.)
- (a/2) Naval Requirements  
PETERSEN (Commdr.)
- (a/3) Airforce Requirements  
ZOGBAUM
- (a/4) Quartz Oscillators  
SCHIELE
- (a/5) Export  
MEISSNER

"TECHNICAL & COMMERCIAL"

- (b/1) Administration  
FISCHER
- (b/2) Orders & Controls  
SEIDE
- (b/3) Dispersal of  
Orders between  
Workshops  
BERBIG
- (b/4) Costings  
FIRNAU
- (b/5) Despatch  
STARKE
- (b/6) Propaganda,  
Advertising, etc.  
MEIXNER

List of Agents of the  
Military Department CARL ZEISS abroad.

ARGENTINA	Viktor Schubert c.o. Carl Zeiss Argentina, S.A.	Buenos Aires 1 Bernarde de Irogoyen 32 Telegrams: Jaguapinta Telephone: U.T.38-Mayo 2078
BELGIUM	Ernest Mantel	Brussel-Schaerbek 724 Chaussee de Haecht Telegrams: Mantelco Telephone: 15 08 97
BOLIVIA	Hugo Ernst, Rotmann y Cia.	La Paz Casilla de Correo 422 Telegrams: Ernst Telephone: 117
BRAZIL	Hanns Hentze c.o. Carl Zeiss Sociedade Optica Ltda.	Rio de Janeiro Rua dos Benedictinos 21 Caixa postal 1080 Telegrams: Zeissag
BULGARIA	Kosta P. Dotscheff A.G. für den Vertrieb von Stahl und Maschinen	Sofia Rakowski-Str. 137 Postfach 254 Telegrams: Dotscheff Telephone: 2-15-88
CHILE	W. Reichmann	Santiago de Chile Bandera 172 Casilla 3124 Telegrams: Mikrozeiss
CHINA	Carlowitz & Co.	Hamburg 1 Mohlenhof Telegrams: Rostowitz Telephone: 33 11 67
DENMARK	Frederik Rahliff	Kopenhagen V Vestre Boulevard 47
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PORTUGAL	Soc.Optica-Tecnica "Optec" L.da	Lisboa Rua 1 <sup>o</sup> Dezembro 101 Telegrams: Socoptec Telephone: 26510

- (a) deliberate policy of the central German Government,
- or (b) astuteness on the part of the Company's Management,
- or (c) inefficiency of price control of war materials by the central German Government.

Summary of Financial Position at 1.1.39 and 31.12.43.  
Prepared from accounts without verification.  
(All figures in Reichsmarks)

<u>Particulars</u>	<u>At 1.1.39</u>	<u>At 31.12.43</u>	<u>Increase</u>
<u>Current Assets:-</u>			
<u>Stocks &amp; Work in Progress</u>	59,856,342	130,130,078	70,273,736
<u>Debtors</u>	30,973,564	54,428,109	23,454,545
<u>Cash and Bank Balances</u>	6,203,793	19,945,014	13,741,221
	<u>97,033,699</u>	<u>204,503,201</u>	<u>107,469,502</u>
<u>Less Current Liabilities</u>	<u>36,874,052</u>	<u>75,478,544</u>	<u>38,604,492</u>
<u>Net Working Capital</u>	60,159,647	129,024,657	68,865,010
			(see Sch.B)
<u>Fixed Assets</u>	19,107,498	20,896,292	1,788,794
			(see below)
<u>Investments in and Advances to Associated Companies</u>	16,785,859	31,522,856	14,736,997
			(see Sch.B)
<u>Loans on Mortgage</u>		1,306,691	1,306,691
			(see Sch.B)
RM	<u>96,053,004</u>	<u>182,750,496</u>	<u>86,697,492</u>
<u>Represented by:-</u>			
<u>Capital and Free Reserves</u>	71,594,193	137,766,692	66,172,499
<u>Pension Funds</u>	<u>24,458,811</u>	<u>44,983,804</u>	<u>20,524,993</u>
RM	<u>96,053,004</u>	<u>182,750,496</u>	<u>86,697,492</u>

Increase in Fixed Assets comprises:-

<u>New Facilities</u>		40,357,576	(see Sch.B)
<u>Less Depreciation (see below)</u>		<u>38,568,782</u>	
As above RM		<u>1,788,794</u>	

Increase in Capital & Free Reserves comprises:-

<u>Cash Profit retained in Business</u>	125,266,274	(see Sch.B)
<u>Less Depreciation</u>	38,568,782	
<u>Transfer to Pension Funds</u>	<u>20,524,993</u>	<u>59,093,775</u>
As above RM	<u>66,172,499</u>	

Summary of Profit and Utilisation thereof 1939/43.  
Prepared from accounts without verification.  
 (All figures in Reichmarks)

Profits from Trading before providing for Depreciation and charges noted below:-

1939	37,086,803	
1940	43,269,426	
1941	53,636,404	
1942	79,378,943	
1943	<u>28,899,768</u>	242,271,344

<u>Income from Investments</u>	6,359,910
<u>Income from Royalties</u>	<u>6,395,283</u>
Total Cash Income	255,026,537

Deduct thereof withdrawn from the Business

For payment of Taxes (Other than Tax on Turnover)	120,141,578	
For payment of Pensions	4,737,089	
For development work	3,392,396	
For undisclosed purposes	<u>1,489,200</u>	<u>129,760,263</u>

Balance retained in Business      RM 125,266,274 (See Sch.A)

This sum was utilised in:-

1. Provision of additional facilities:-

Buildings	8,137,639	
Plant & Machinery	14,033,322	
Power Station	10,708,850	
Miscellaneous	<u>7,477,765</u>	40,357,576 (See Sch.A)

2. Investments in and Advances to Associated Companies (net)      14,736,997 (See Sch.A)

3. Loans on Mortgages      1,306,691 (See Sch.A)

4. Additional Working Capital (net)      68,865,010 (See Sch.A)

As above      RM 125,266,274

Financing of investments in the Carl Zeiss  
affiliated companies (concern companies)  
from 1934 on.

The principle followed was financing all investments in the Carl Zeiss concerns from their own funds. The only exception applies to the investments of:-

Saalfelder Apparate-Bau, G.m.b.H., Saalfeld.  
Geraer Technischen Werkstatte, G.m.b.H., Gera.  
Feinapparate-Bau, G.m.b.H., Works Gablonz and Turn.

1. Saalfelder Apparate-Bau, G.m.b.H., Saalfeld and  
Geraer Technische Werkstatte, G.m.b.H., Gera.

The investments of both Companies were carried out partly from own funds, partly from a loan from the O.K.H. (Ober Kommando des Heeres - Supreme Army Command).

The expenditure in both Works amounted to the following:-

		<u>Saalfeld</u>	<u>Gera</u>
Investment (Factory property) ....	RM	<u>8,347,000</u>	<u>8,700,000</u>
The financing was carried out by:-			
Pay-in of capital by Carl Zeiss ..	RM	1,000,000	1,000,000
Loan from Carl Zeiss .....	RM	1,147,000	1,900,000
O.K.H. Loan 1st instalment .....	RM	4,000,000	4,000,000
2nd " .....	RM	2,200,000	1,800,000
	RM	<u>8,347,000</u>	<u>8,700,000</u>
Redemption effected up to now:-			
C.Z. Loan .....	RM	640,900	989,419
O.K.H. " .....	RM	3,466,900	2,937,281
	RM	<u>4,107,800</u>	<u>3,926,700</u>
Loan debt as per today:-			
C.Z. Loan .....	RM	506,100	910,581
O.K.H. " .....	RM	2,733,100	2,862,719
	RM	<u>3,239,200</u>	<u>3,773,300</u>

2. Feinapparate-Bau (Precision Apparatus Manufacture)  
G.m.b.H. Gablonz and Turn.

The Works were erected for account of the Montan Verwertungs G.m.b.H., and taken on lease by the Fein Apparate-Bau, G.m.b.H. The value of the Works property taken on lease amounted at the end of 1944 to:-

Gablonz .....	RM 18,986,900
Turn .....	RM 11,091,600
	<u>RM 30,078,500</u>

The circulating capital (stocks of material and semi-finished goods as well as liquid resources) of the above mentioned companies were financed by Carl Zeiss.

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TABLE (a)

Wage Groups with Age Classification.  
Regional Class E.

MEN.

Wage Group	Over 21 100%			Over 19 90%			Over 17 70%			Over 16 60%			Under 16 45%		
	GL	AB	AM	GL	AB	AM	GL	AB	AM	GL	AB	AM	GL	AB	AM
I 75% E	60	69	79	54	62	71	42	48	55	36	41	47	27	31	36
II 80% E	64	74	85	58	67	77	45	52	60	38	44	51	29	33	38
III 87.5% E	70	81	93	63	72	83	49	56	64	42	48	55	32	37	43
IV 92.5% E	74	85	98	67	77	89	52	60	69	44	51	59			
V 100% E	80	92	106	72	83	95	56	64	74	48	55	63			
VI 110% E	88	101	116	79	91	105	62	71	82	53	61	70			
VII 120% E	96	110	127	86	99	114	67	77	89						
VIII 133% E	106	122	140	95	110	127									

TABLE (b)

WOMEN

Wage Group	Over 21			Over 19			Over 17			Over 16			Under 16		
	GL	AB	AM	GL	AB	AM	GL	AB	AM	GL	AB	AM	GL	AB	AM
I	45	52	60	41	47	54	36	41	47	31	36	41	27	31	36
II	48	55	63	43	49	56	38	44	51	34	39	45	29	33	38
III	53	61	70	47	54	62	42	48	55	37	43	49			
IV	56	64	74	50	58	67	44	51	59	39	45	52			
V	60	69	79	54	62	71	48	55	63						
VI	66	76	87	59	68	78									

In these tables:-

GL = Basic Wage. Women's GL = 75% of Men's GL.

AB = Target wage on Piece Work.

AM = The Maximum average permissible for the group.

If this figure is exceeded, the piece price is reduced by agreement between employer, employee and a member of the Arbeits Front.



"WELFARE".

There are many sides to this aspect of the Zeiss Stiftung's activities. It is felt that we cannot do better than repeat here a translation of a lecture given by Dr. Schomerus at the Technical University of Berlin in 1930: at that date there could have been no significant element of Nazi thought. Dr. Schomerus entered the Zeiss concern in 1906 and has been the leader of the Personnel Department for many years. He was displaced by the Nazis on account of his lack of sympathy for their views, but has since the collapse been reinstated in his post, his successor having been arrested. It may, therefore, be agreed that the matter of his lecture has full sanction of the Deputy of the Stiftung.

THE SOCIAL POLICY OF THE ZEISS WORKS.

On the fourteenth of January we commemorated the twenty-fifth anniversary of Prof. Ernst Abbe's death. The large hall in the Volkshaus at Jena was packed to overflowing with Zeiss Works employees of every grade and kind, assembled to pay homage to the memory of this singular man who had been fated to exercise a decisive influence on the life of many thousands. The University and the Trades Unions had deposited laurel wreaths at his memorial. As it is now, so it was then: When Prof. Abbe retired from the control of the firm in 1903 for reasons of health, the workers as a body gave him a torchlight parade, and when he died, two years later, workmen kept the guard of honour at his coffin day and night. Why this unflagging loyalty to a departed industrialist, - a loyalty of which fresh evidence is daily to be seen and which is extended also to the Zeiss Works? We at Jena love and honour our Ernst Abbe not alone for his rare unselfishness and the purity of his motives, we esteem him not only for his high achievements in science and industry, but we do so especially and particularly because he has left us a Works constitution, a charter, based on human dignity and a regard for human personality, and shaped to provide lasting employment. How, indeed, could close ties develop between the Works and the worker when he may be dismissed any day, even any hour? What good is all talk about a Works community when the worker does not know whether he will belong to it to-morrow or day after, when every retrograde movement of business conditions may supply the cause that will part him from his job and deliver him over to the mercies of the unemployment fund and the welfare board? On the strength of the system which Prof. Abbe has left us, we at Jena are able to carry on a Works policy which has every right to be termed social because it knows itself responsible, in every measure it takes, for the capacity and the future of the Works, as well

as for the Works staff and the good of the Community. The ground on which such a social Works policy can grow is this:

In the midst of private capitalistic surroundings, we have at Jena two "foundation" firms, i.e., two large plants, the Zeiss Works with a total of 6,300 employees - of whom 350 are detailed to agencies abroad - and the Jenaer Glaswerk Schott & Gen. with 1,650 employees. Both of these works belong neither to a single private capitalist nor a company as such, but to a Foundation, the Carl Zeiss Stiftung. This Foundation, which was instituted by Prof. Abbe in 1889 in honour of Carl Zeiss, the founder of the enterprise, is the owner of the two firms. The excess earnings which ordinarily go to enrich private persons, are here in part devoted to the Works, in part go to secure the rights of the Works staffs, while the remainder flows into the Foundation, which uses them for the common good. This fact alone is of very great importance for the spirit of the Works staff, that every man from the first to the last knows that he is not working for persons more or less foreign to the works community, but first and foremost for himself and his family, next for the preservation of the Works with which his fortune is intimately linked, and, finally, through the Foundation for the Community. The character of the foundation system, however, means even more. The control of the Works is independent of banks, exchanges, and stock market movements. No speculator can be interested in it or can get control. Our management need never fear that a block of shares has changed ownership overnight and the majority has gone over into other hands, so that outside monetary powers will make themselves felt. Economic, manufacturing, and social aims are evolved in the Works and mature and are applied within them without the possibility that alien financial might can reach in and disturb their growth.

The Foundation system by its very nature, however, also guarantees the permanence and steady pursuance of the Works policy. Especially in the pre-war period, we have frequently seen far-sighted and well-meaning employers endeavour to get ahead in the industrial workers' problem and create systems intended for the workers' good. When these employers died, however, their aims soon fell into decay because the sons of the owner had other interests, or else because the family ownership was converted into a company and financial considerations crowded out the social view-points. It is different with the Foundation system. The Foundation as a juridical person is independent of the coming and going, the life and death of individuals, lives beyond them - is as it were immortal. And that which Prof. Abbe has laid down as his social political intent in the Statute of the Foundation is not to be touched, is to be upheld as a thing holy, because it represents a testament, a heritage. Even those newly entered cannot for long resist the atmosphere of the Foundation and are drawn within its ban. So

it comes that what Prof. Abbe laid down in the early nineties on the strength of his own life experience, after painstaking elaboration and under the compulsion of his conscience, lives on to-day, twenty-five years after his death, not feeble and ailing, but with unimpaired strength - further developed in numerous single points, retrograde in not one single point.

Let us now see what the social works policy which can grow on such soil looks like. I said before that such a policy must feel itself bound in three ways - to the Works, the Works staff, and the common good. In respect of the Works I will be brief. It is at once the peculiarity and the strength of a Foundation plant that the profits produced in it accrue to the Works themselves, thereby benefiting them in every way and putting them in a position where they can maintain themselves economically and technically on the highest level, continually improve manufacturing and working methods, take up new fields of endeavour, and erect and equip new buildings. Such a Foundation plant is truly autonomous, i.e., it mainly finances itself and grows organically from out of its own vital strength.

You will be interested in knowing that there are other similar foundations. A short while ago I paid a visit to the Dr. Guntz Stiftung at Dresden. This foundation owns a large printing plant and a well-equipped art printing establishment. It publishes the *Dresdner Anzeiger* and the *Dresden Directory*, in addition to which it operates the *Dresden poster pillars* under a license system. It is a large exporter of illustrated weekly supplements, produced by art-printing processes for South American newspapers, and employs a total of 1,200 people. The excess profits go to strengthening the enterprise, and assisting public undertakings of the city of Dresden.<sup>1</sup> Even more important are the two foundations at Copenhagen, the two large and

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<sup>1</sup> It was only after I delivered this lecture that I became acquainted with the Dr. Arthur Pfungst Stiftung at Frankfurt a.M., which owns the "Gesellschaft des echten Naxos-Schmirgels - Naxos Union, Schmirgel Dampfwerk", Frankfurt a.M. This firm has about 100 employees. In accordance with the statute, the affairs of the firm must be conducted in a manner to safeguard the social interests of wage-earning and salaried employees. The profits flow back into the Foundation, which must employ them for general public educational purposes. The Foundation was instituted in 1913 subsequent to the death of Dr. Arthur Pfungst a few months before, by his mother and sister, in memory of and in conformity with the wishes of the deceased. The business shares of the *Neue Frankfurter Verlage-G.m.b.H.* are completely in the hands of the Foundation.

important Jakobsen breweries, which belong to the Carlsberg Foundation, and the profits of which are devoted to the further development of the breweries as well as to general scientific research and cultural aims. The attentive observer will not fail to note that the foundation plants referred to, with their excellent scientific and technical equipment, have ably held their own with their competitors, and that they represent a combination say of a sort of capitalism and socialism, which has proved itself to be not only successful but distinctly superior.

The paying operation of the Works is the "sine qua non" of the Works social policy. Prof. Abbe might have invented the most beautiful social policy, but if he had not also known how to imbue his enterprise with vitality and the capacity to grow, his invention would have been useless. The touch of genius in his work is that his social policy is both based on and brings about the prosperity of the Works.

Let us now take a closer look at this social Works policy, starting at the top. In a Foundation-operated plant, there are no bonus payments for members of the Board of Directors, nor any of the high managers' salaries of which one hears and reads in the case of stock companies. The Foundation statute says that the highest annual income which may be paid to leading officials, inclusive of the Board of Managers, shall not exceed ten times the average yearly income of all workers who are above twenty-five years of age and have been employed in the Works for over three years, the calculation to be based on the average earnings of the last three years. The Zeiss Works therefore produce no rich people, but instead a good middle class. There are differences in earnings, but they are subject to reasonable limitations which are bearable from the social political standpoint. Outside critics particularly have, indeed, doubted the wisdom of exactly this regulation as liable to lead to a condition where the best talent would be enticed away by better offers. I am here, however, to assert that this far no leading official has allowed himself to be so enticed away, a fact which is in part brought about by imponderabilia so weighty that I believe that also this regulation is not likely ever to prove of disadvantage to the Works in the future.

Just as good manners already in prewar times demanded that the leading men accepted no orders and honours which they might otherwise have had by the dozen, there are also to-day within the Foundation plants none of the usual German honorary titles, but only general managers, department heads, and plant engineers. This absence of titles has in no way depreciated the authority and the respect accorded to the leading personalities, but it has operated to facilitate collaboration between man and man. A point in this connection is the plainness of the administration buildings and

the simplicity of the appointments in the rooms of leading officials. This, however, only by the way.

Now to the Works staff. While Prof. Abbe considered an independent middle class as of high importance for the State and nation, he clearly foresaw the inevitable trend of industrial development in Germany, whereby a few would carry out the functions of organising, inspiring and directing the concerted work of the many, the masses, in large plants. We are becoming a people of dependents, and it was his fear that these economically dependent might at the same time develop into unfree men and citizens. He therefore strove to bring these new great strata of employees into an economic and social position where they might be of equal value to the State and nation as the former independent industrial middle class. Accordingly, he set himself to safeguard the dependent wage earner and salaried employee against having their economic dependence misused to limit their personal and political liberty. In addition, he sought to improve the social position of the workers by legally binding arrangements instead of by welfare institutions, and created a whole system of statutes which can here be but briefly delineated. Every worker is engaged at a fixed weekly wage which rises with the worker's age, his period of service, and his performance. A wage once paid may not be reduced at any subsequent time and when the worker grows old, and therefore as it were represents a minimum basis of existence. This basic wage is guaranteed for piecework and for any necessary short-hour work. It is paid for time missed through unavoidable and unintentional absences from work such as are inseparable from political and family life, on the first day of an illness, during any unpaid activity in the service of the State and community, and on similar occasions. In particular, festival days falling on week days - at Jena about twelve per year, since we keep a third holiday each at Christmas, Easter and Whitsuntide - are paid, lately even with an addition of 15 per cent. Vacations, which are fixed in the Foundation statute of six days for workmen, now gradually increase with the service age to as long as three weeks and are recently being paid for with an addition of 30 per cent to the fixed weekly pay. Overtime on week days is subject to an extra pay of 30 per cent, and on Sundays of 60 per cent of the fixed weekly wage.

This fixed weekly wage also serves as basis for calculating pensions. Prof. Abbe was of the opinion that large employers who, as administrators of the national working power must amortize dead plant material, should likewise make good the consumption of human vitality and protect the workers by appropriate funds. After five years, every Zeiss employee and worker can claim 50 per cent of his weekly wage for pension in case he is invalided, and after ten years of work this claim rises one per cent per year, up to a final maximum of eighty per cent of his wage earnings. The pension of the widow is 50 per cent of the

husband's pension after a five to ten-year service period, and rises one per cent for each additional service year, to a maximum of 60 per cent after a twenty-year term of service. No dues are paid by the plant employees for these pensions. The firm pays the whole of the amount of invalidity and old-age insurance and applies the amounts derived from these sources to the pensions, with the exception of children's stipends and allowances. There is no separate pension fund, but the entire holdings of the Foundation and plants are security for the payment of the pensions. The salaried employees of the firm had at one time suggested a pension fund to guarantee their claims, but this was declined by Prof. Abbe on the grounds that the guarantee of the Foundation and plants was better than that provided by a fund, and this view has been brilliantly justified in the sequence. For had we had a pension fund in the time of the inflation, then the pensioners as well as the establishments dependent on the devaluated moneys of the pension fund would finally have received nothing and had to starve. As it was, since the plants were security for the pension and worked and earned, we were able to adapt their receipts to the pensioners' space with the devaluation of the money, exactly as we did with the wages and salaries of the active staff members.

The older among you will remember that such pension institutions of various firms enjoyed no particular regard in prewar times. This was because the employer could at will dismiss his workers, who thereby lost their rights in the fund. Prof. Abbe was clear in his mind that the institution of a pensioning system with the complement of compensation for dismissal, was as a knife without an edge. This idea, born of the necessity of creating a solid basis for the pensioning system, was developed much further on being worked through. It grew into an early unemployed insurance and into an effective protection against dismissal altogether, and it has brought about the condition of permanent employment which Abbe had in mind. The way the system works is as follows: After half a year, each Zeiss employee can claim continued payment of his wage for one sixth of his period of service, if he has been given notice for reasons of lack of employment. After five years, when the worker acquires the right to a pension, the claim for compensation for dismissal grows at the same rate as his claim for pension. For any one who has been with us for ten, fifteen, or more years, the claim rises to several thousand marks, so that dismissal can hardly be considered because of its costliness. This system strongly affects the atmosphere within the Works. The worker has a much firmer footing, also with respect to his superiors, than in any other plant. In the consciousness that nothing can easily happen to him and that he need not fear to be discharged for every small difference with his superiors, he will not be willing to stand for injustice and his self-respect will rise. On the other hand, he will be inclined to think

highly of his position and not throw down his work and run away because of every small untoward incident, but instead he will feel himself obliged to practice a decent mode of intercourse. As a matter of fact, we have no penal regulations in our contract, and admonitions or stern warnings have this far always sufficed to maintain good behaviour and order in the Works. Because of the limitation of the right of dismissal, this institution is one of the basically most important points in the Zeiss charter, I am glad to say that its significance has also been recognised by the legislator in the form of the well-known paragraph 80 of the unemployment insurance law, which releases employees of the Foundation plants who have been serving for over three years, from payment of the unemployment insurance dues. And this rightly, for the legislator must admit that in case of unemployment, the help afforded by the Foundation plants is very much greater than that of the unemployment insurance, and that on the other hand, the institution of compensation for dismissal is fundamentally better than that of unemployment insurance, because the compensation clause impedes dismissal whereas the unemployment insurance facilitates it. For faced as it is with the necessity of paying very high sums in case of dismissal, the firm will think three times before giving notice to any one, while the unemployment insurance, to which the employer has also contributed, renders it morally easier for him to dismiss men and hence means relief from the risks of conjuncture.

This institution is at any rate very much more important than another institution that outsiders are wont to regard as particularly characteristic of our Works: the so-called profit sharing which we term salary and wage supplement and which consists in the payment, at the end of the year, of a percentage of the wages and salaries which have been paid in the course of the year. Prior to the war, this percentage ranged around 8 per cent, while in the last four years it was 4, 7, 9 and 8 per cent respectively. Though he made this provision, Prof. Abbe attached no fundamental importance to it. He said: What is it to serve for? As a stimulus to work? That is much better supplied by piecework, where the worker sees the results already at the end of the week. It is possible, however, that Prof. Abbe underestimated the value of this provision. Financially it means a great deal, and many a stock company would be able to pay a very decent dividend with this eight per cent of the wages and salaries accounts. It means a great deal to the household of the employee when he gets a larger sum paid out once a year. Last year the average annual earnings of a grown-up male worker amounted to RM 3,004. Eight per cent of wage supplement therefore means about RM 240.00 - more in some cases, less in others. Such an amount enables the employee to go in for some larger expenditure, to pay back debts, or else to lay the amount by for the future or grant himself or his family some long cherished wish, especially

since the supplement is paid in the middle of December in time for Christmas. This wage supplement applies to every waged and salaried employee who served the firm in the course of the year.

In view of the pronouncedly social character of the Foundation plants, it goes almost without saying that its members were represented at an early date. The first workers' committee was founded in 1896, and this was followed ten years later by a salaried employees' committee. In the course of the years, the Zeiss Works representative bodies have proved necessary and even indispensable institutions, and when the Works Council Law was introduced in 1920, this meant to us no revolution but merely an organic further evolution. The performance of the Works Council in the Zeiss Works is superior because it has been formed from sub-committees for certain special fields, for dismissal, wage, and piecework questions, accidents, social affairs, and the like. These sub-committees consider between themselves all problems coming up, which when they have matured within this circle are submitted for a hearing by the firm's authorities. In addition, we have a rule whereby a department representative can be elected for every fifteen persons. These may bring the affairs of their various departments or their members up for discussion, either with the Works Council or with the management, just as, on the other hand, the Council or the Management are able to inform themselves on happenings in the various departments from them.

Brief reference shall also be made to the question of working time. The eight-hour was introduced in the Zeiss Works already on April 1, 1900. At present we have the 48-hour working week, with Saturday afternoon off. Occasional suggestions have been offered, now that the eight-hour day is generally introduced, to shorten the working time still further. We have thought it better instead to lengthen the vacations, because a continuous free period appears of much more value to workers in a large plant than a further shortening of the daily working time, which, as experience shows, frequently becomes a cause of shoddy work.

We will not here go into details of other institutions, because they are described also elsewhere, whereas I want to deal with those which are characteristic of the Zeiss Works. Our Plant Sickness Insurance is probably the one in Germany showing the highest refunds, since the firms of Zeiss and Schott contribute to it as much as the total paid in by all of the fund members in their employment, and hence supply one-half instead of the usual third of the contributions. I will only refer in passing to some other points, the value attached to healthy, airy working rooms and accident protection, the holding of courses, which are very



heavily frequented, on domestic science and similar subjects by a plant nurse, the expert schooling of apprentices in Works training shops, and the spiritual and sporting incitement supplied by the Jugendverein Ernst Abbe (Abbe Adolescents' Association), the existence of an Aid Fund, which helps in special emergency cases and is administered by the head of the Works Sickness Fund, as well as the stipends given for technical education at engineering colleges. All of these things follow as matters of course from the very idea of the Foundation.

I now come to the third point, namely the effect of the Works social policy upon the community surrounding the plants. According to the Foundation charter, the Carl Zeiss Stiftung is to devote itself to institutions and measures benefiting the working population of Jena and its direct environs, as well as to advancing scientific research and education at the University. Within the last weeks appeared a very well written article by Dr. Wuttig, of the State Ministry at Weimar, on "Die Carl Zeiss Stiftung in Jena und ihre Bedeutung für die Forschung (The Carl Zeiss Foundation at Jena and its Contributions to Research).<sup>1</sup> Since this is the first time that the contributions of the Carl Zeiss Foundation to the University of Jena and to scientific institutions have been expounded in detail, I trust I may be allowed to refer to this article. Even though the article quotes no figures, it impressively demonstrates what the Foundation has done in this field. In the Eighties, the University showed a retrograde movement. It was sustained by four small states of Thuringia, the financial vitality of which was already at that time below the general average of the German states. The necessity of winning four governments and four parliaments over for allowances added further difficulties to the situation. The professors at Jena were the worst paid of those of all universities in Germany, although compensation was offered in the form of immunity from all state and municipal taxes. This privilege resulted in an influx of the pronouncedly well-to-do to Jena. Prof. Abbe felt this condition to be undignified. He offered supplementary funds for improving the salaries of the University teachers, but made their payment conditional upon the supporting states granting an equally high supplementary sum and abolishing the tax privilege. The contributions to the University were composed of regular grants and special grants of fluctuating magnitude. From the means of the Foundation have been erected the Technical Physics

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<sup>1</sup> In the collective work "Forschungsinstitute, ihre Geschichte, Organisation, und Ziele", edited by Ludolf Brauer, Mendelssohn-Bartholdy und Adolf Meyer. Paul Hartung, Hamburg, publishers.

Institute, a new Mineralogical Institute and a new Hygienic Institute, new buildings or large additions to the Pathological-Anatomical Institute, and the Botanical, Zoological, Anatomical, Pharmaceutical, and Chemical Institutes.

In almost all cases, the total building costs could be taken from the University Funds of the Carl Zeiss Foundation. Added to this were donations of scientific and particularly optical apparatus to University institutions of every kind. Considerable periodic grants were bestowed upon the mathematical departments. The legal faculty was notably enriched by the founding of an Institute for Economic Science, the field of political economy by the purchase of the Schmoller library and by financial aids which permitted the endowment of new chairs. An institute for experimental biology was created and in the first years of the War the Children's Hospital of the Carl Zeiss Foundation was built. On the occasion of the 350th anniversary of the University in 1908, the impressive and beautiful new University building was completed, the larger share of the construction costs being supplied by the Foundation. Substantial gifts were granted to the University Library, for which a large extension building was constructed. Under this general head belong also the aids afforded to students' physical training by the provision of modern recreation and sports grounds.

The losses of the inflation period operated to restrict the contributions of the Carl Zeiss Foundation. As the article referred to says, however: "It is a lucky thing for the University that the industrial plants of the Carl Zeiss Foundation have already overcome the severe disturbance of the first post-war years and that the hope for a steady even if slow upward trend has returned." The grants of the Foundation have again attained a considerable magnitude. Among others, funds to construct a new building for a Mathematical Institute and for an addition and new equipment for the Eye Hospital and a University Gymnastics Hall, have been provided. The Reich Institute for Seismology has been enabled to settle at Jena by erecting for it a building of its own. The German Museum at Munich has been presented with two new Planetaria. "When the development of the University of Jena in two short generations is reviewed, it may be added that it not only owes its external appearance in all essential respects to the Carl Zeiss Foundation, but that without the Foundation, the University could not have attained its present high standing."

Besides the University, the Zeiss Foundation is enjoined to promote institutions serving the common good of the population of Jena. Under this head must be mentioned the new and fine Volkshaus (People's House) building, which is open to all political and spiritual currents and forms the centre for the political and cultural life of the city.

The Public Library and the Circulating Library, which are in the main financed by the Foundation; the Jena Public Baths with swimming hall, which were erected jointly by the Foundation, the Municipality, and the Savings Bank; the Children's Hospital at Jena and the Children's Reconvalence Home, at Bad Sulza, which principally benefits the children of the Zeiss employees. Generally speaking, the Carl Zeiss Foundation avoids creating institutions but rather aids the initiative originating with the population, such as the work of the Women's Societies, the People's University, the gymnastic and sporting clubs and the like. The two firms do not engage in the building of employees' and working men's homes because they want to avoid the social drawbacks liable to arise from the association of the working contract and the rental contract. Instead they have suggested the construction of homes by co-operative building societies and have extensively advanced them by mortgages, interest reductions, and similar measures. At Jena there are at this writing probably about 1,300 dwellings erected by such building societies.

Apart from these direct effects of the social works policy of the Foundation plants, some indirect effects are also to be noted. While it would lead too far to consider these in detail, I will mention two symptoms to demonstrate my point. At the last town councillors' meeting in which I participated, the balance sheet for the year 1928/29 was presented. It showed - do not get alarmed - a plus of RM 120,000. While this figure is not overwhelming, representing as it does but 1.6 per cent of the total annual expenditure, it is nevertheless noteworthy and pleasing when one reads by contrast the daily reports about the financial difficulties of communities and their deficits, the more so that the financial year 1929/30 will, as is already apparent, also close without a deficit, while we are all confident of balancing also the proposed budget for the coming year. You see the cycle of events: Regular employment and regular earnings of some 7,600 employees, hence employment of craftsmen and sales for business men, and regular payment of taxes.

The second symptom: The German Towns' Association, in company with the Association for Private and Public Welfare, some months ago made an inquiry into social beneficiaries supported by the communities. The result at Jena so greatly departed from the usual that the Berlin Central Office wrote to the Jena Welfare Office requesting it to again check the figures to see that there had been no error. But the figures were all correct. While the average community has to support 32 per cent of social beneficiaries, there are but 14 per cent at Jena because the Foundation plants pay pensions to their old and invalid former employees.

Possibly one or the other of you may say: Why, conditions here at Jena seem to be paradisaic; are the workers, then, contented? Well, now, conditions are not paradisaic. In paradise, things were substantially different from those in a modern industrial plant. But undoubtedly, social conditions at Jena are better than in other industrial cities, and social contrasts are by no means as acute, already for the simple fact that the differences in income are not great enough to be a cause of pointed envy. And when it comes to the question of contentment, it should be said that what Prof. Abbe principally strove for were not contented people, for discontent may also be an element of progress. What he envisaged were working conditions such as he would consider humanly worthy if he himself were a worker, and what he wanted above all were upright, self-reliant, and free men on industrial soil. And these you will, indeed, find at Jena. That may not always be convenient and may have as a result that discussions and disputes are not fewer but possibly even more numerous than in other plants, but we feel confident that even from out of such friction, progress will ultimately grow. On the other hand, a works social policy imbued with a feeling of responsibility will occasionally also say a decided No when demands are put that do not seem compatible with the good of the whole, and it may be expected that this No will then be respected by all parties concerned.

In conclusion, let me express the opinion, though it lays no claim to being authoritative, that if we had more foundation plants in Germany, social conditions would be much less confused and social contrasts less marked. I add to this the hope that in modern industrial Germany, men will from time to time arise who will think and act big like Ernst Abbe and will then find the proper way to a works social policy which insures the economy of the enterprise, raises the social and general level of the workers, and serves the public well, thereby preparing the way for a better social future and leading to the better community of interests so urgently hoped for and desired by us all.

"COLLABORATION WITH JAPAN"

(Herr Leonhardt, Principal Contact)

The interest taken by Japanese in the activities of Zeiss can be judged by the number of Jap visitors. A list of these is on pages 130 and 131.

From conversations with the Zeiss Directors it would appear that mutual trust between these Axis members was not a strong feature, although it is clear that the Japs had unrestricted entry into the works. They were shown the lens Blooming plants and the process explained to them, but were not supplied with equipment or drawings. The Japs were important customers of military instruments and many of their visits were in the nature of progress visits, during which the operation of the instruments was explained. Zeiss maintain that no attempt was made by them to apprise the Japs of projects under development, but say that Nazi Officers talked freely on this subject.

There was no interchange of working personnel and no provision of working drawings or special machinery.

Delivery of equipment was made at the beginning of the war by Blockade runners and by rail across Russia. Later the number of Blockade runners was materially reduced and recourse was made to transport by submarine. The difficulties of transport limited the Jap demand for German equipment so that trade was mostly in samples, it being assumed that the Japs would copy them; no assistance in copying was given.

List of Japanese Visitors concerning Military Export.

<u>Date</u>	<u>Name</u>	<u>Rank</u>	<u>Coming from:</u>
1938			
5/6.5.	R. <u>Mabuti</u>	Major	Military Attaché
	<u>Motonichi Moorl</u>	Captain	" "
8/9.6.	<u>Toru Hirayama</u>	-	Naval Commission
	<u>Toyooki Shinohara</u>	-	C. Illies & Co.
8.8.	<u>Miyauchi</u>	Eng.	Naval Attaché
24.8.	<u>Takeo Kaniya</u>	Cpt. o. Frig.	" "
1939			
3/4.3.	Akira <u>Arima</u>	Col.	Military Attaché
	Shozo <u>Ishigo</u>	Captain	Military Commission
31.3/1.4.	Akira <u>Arima</u>	Col.	Military Attaché
	T. <u>Kihara</u>	Lt. Col.	" "
	T. <u>Shiniza</u>	Nav. Eng.	" "
24/26.5.	Akira <u>Arima</u>	Col.	" "
	T. <u>Kihara</u>	Lt. Col.	" "
13/16.6.	Isamu <u>Hanyu</u>	Eng.	" "
14/16.6.	Akira <u>Arima</u>	Col.	" "
	T. <u>Kihara</u>	Lt. Col.	" "
	T. <u>Kihara</u>	"	" "
19.6.	T. <u>Kihara</u>	Cmdr.	Naval Attaché
16/18.7.	Sutezi <u>Muroi</u>	Eng.	" "
11.7.	<u>Miyauchi</u>	Lt. Col.	Military Attaché
20.7.	T. <u>Kihara</u>	"	" "
22.8.	T. <u>Kihara</u>	-	C. Illies & Co.
	<u>Toyooki Shinohara</u>	-	Military Attaché
3/4.10.	T. <u>Kihara</u>	Lt. Col.	Military Attaché
	Dr. <u>Ueno</u>	-	Mitsubishi K.K.
	<u>Toyooki Shinohara</u>	-	C. Illies & Co.
1940			
18/20.1.	Haruo <u>Yoshikawa</u>	Cmdr.	Naval Attaché
	Kinosuke <u>Inone</u>	Nav. Eng.	" "
7.2.	Kawabe	Maj. Gen.	Military Attaché
	T. <u>Kihara</u>	Lt. Col.	" "
	<u>Akita</u>	Major	" "
27/28.2.	Kenzo <u>Iwashita</u>	-	Army
	Seiichi <u>Kaiho</u>	-	"
	Takeo <u>Mizuno</u>	-	"
	Katsuji <u>Naneas</u>	-	"
9.4.	Miziro <u>Takahashi</u>	Nav. Eng.	Navy
16/18.4.	T. <u>Kihara</u>	Lt. Col.	Military Attaché
	Mototada <u>Tateno</u>	Major	" "
	Isamu <u>Hanyu</u>	Eng.	" "
15/18.5.	T. <u>Kihara</u>	Lt. Col.	" "
20/24.5.	Eiiti <u>Iwaya</u>	Captain	Navy
29.5.	N. <u>Otiaf</u>	Lt. Col.	Military Attaché
6.6.	Kinosuke <u>Inone</u>	Nav. Eng.	Naval Attaché
26/28.6.	Mototada <u>Tateno</u>	Major	Military Attaché
	Isamu <u>Hanyu</u>	Eng.	" "
3/4.7.	Eiiti <u>Iwaya</u>	Captain	Navy

<u>Date</u>	<u>Name</u>	<u>Rank</u>	<u>Coming from:</u>
16/18.7.	Haruo <u>Yoshikawa</u>	Cmdr.	Naval Attaché
15/16.8.	Kinosuke <u>Inone</u>	Nav.Eng.	" "
19/20.8.	Mototada <u>Tateno</u>	Major	Military Attaché
17/19.9.	Akira <u>Oku</u> Sigeru <u>Ito</u>	Capt.c.F. Nav.Eng.	Naval Attaché " "
28/31.10.	Mototada <u>Tateno</u>	Major	Military Attaché
30.10/2.11.	T. <u>Kihara</u>	Lt.Col.	" "
26/27.11.	Haruo <u>Yoshikawa</u> Kotsuo <u>Iguti</u>	Cmdr. Eng.	Naval Attaché Navy
<u>1941</u>			
5/7.5.	T. <u>Nagai</u> Sunkiti <u>Abe</u> Tamazir <u>Kudo</u>	Cmdr. Eng. Nav.Eng.	Navy " "
30.6/1.7.	Matsuo Sigeru <u>Ito</u> Kanagawa	Captain Nav.Eng. " "	" Naval Attaché " "
15/16.10	Kohiri <u>Nagai</u>	-	Showa Tsusché
<u>1942</u>			
31.3/1.4.	Shoza <u>Nakamura</u> Sigeru <u>Kobayashi</u> Maseo <u>Yoshida</u>	Lt. Eng. -	Military Attaché " " -
27/28.4.	Maseo <u>Yoshida</u> Mituo <u>Nomaguti</u> Syanzaburo <u>Tano</u>	- Lt.Cmdr. -	- Navy Naval Attaché
24/26.8.	Sigeru <u>Kobayashi</u>	Eng.	Military Attaché
<u>1943</u>			
2.2. 28/29.9.	Sigeru <u>Kobayashi</u> <u>Kobayashi</u> <u>Yoshida</u>	Eng. Major Interpreter	Military Attaché Military Commission -
<u>1944</u>			
3/5.4. 28.4.	Hiroto <u>Shiba</u> Yasuto <u>Tamai</u> <u>Iki</u> Yoshuomi <u>Nakayama</u> Masao <u>Yoshida</u>	Lt.Col. Cmdr. Capt.o.F. " " "	Military Attaché Navy " " G. Illies & Co.
5/7.7.	Yoshuomi <u>Nakayama</u> Yasuto <u>Tamai</u>	Capt.o.F. " "	Navy "
24/26.8. 6/7.11.	Kenzo <u>Kawakita</u> Yoshomi <u>Nakayama</u> Maseo <u>Yoshida</u>	Cmdr. Capt.o.F. -	Naval Attaché Navy Deutsche Mitsui Bussan
<u>1945</u>			
2/3.2.	Sigeri <u>Kobayasi</u>	Major	Military Attaché

"THE RELATIONSHIP OF ZEISS  
WITH  
THE NAZI AUTHORITIES"

In view of the eminence and prestige of Carl Zeiss, it was to be expected that the company would take a leading part in the organisation of the German Fine Mechanical and Optical industry before and during the war.

"Before the war the German instrument industry was controlled by the Wirtschaftsgruppe Feinmechanik und Optik (Trade Group for Precision and Optical Instruments), of which Paul Heinrichs, Business Manager of the Carl Zeiss Works at Jena, was the Leiter or Director. This trade group worked in conjunction with the German Ministry of Economics and the private firms which formed its members and controlled raw materials, prices and exports, etc., for the whole instrument industry.

"Soon after the outbreak of war, Dr. Karl Albrecht, a member of the optical instrument firm, Emil Busch, A.G. of Rathenow, was appointed by the Ministry of Economics as Beauftragter, or controller, of the industry, with the task of turning it over to the production of military instruments. It was planned to make the instrument firms use about half their production capacity for the manufacture of military instruments; it was thought necessary to leave the other half for civilian products as these could be exported to provide foreign currency.

"At the end of 1940 the first Sonderausschüsse, or special Commissions, were formed by the newly appointed Minister for Armaments and Munitions to control the production of various goods for military use. The control of instruments production was placed in the hands of Arbeitsgruppen 5 C (Working Group 5 C) of the Sonderausschuss Waffen (Special Commission for Weapons). The head of this group was Dipl. Ing. A. Kotthaus, then Betriebsführer, or Works Manager, of Carl Zeiss, Jena.

"In 1942, when the whole organisation of German Industry was changed, a number of Hauptausschüsse (Main Commissions) and Hauptringe (Main Rings) were formed to take over control. The production of instruments was entrusted to two newly formed Special Commissions, the Sonderausschuss G1, Optisches und Feinmechanisches Rüstungsgerät (Special Commission G1, for Military Type Optical and Precision Instruments) and the Sonderausschuss G.11, Allgemeines Feinmechanisches und Optisches Gerät (Special Commission G.11, for General Precision and Optical Instruments). Both of these Special Commissioners were part of the Hauptausschuss



Wehrmacht-und Allgemeines Gerat (Main Commission for Military and General Equipment). The head of Special Commission G1 was Dr.Ing.H.Kuppenbender, who has been Works Manager of the Zeiss Works since the death of Kottaus; the head of the Special Commission G.11 was his colleague, Paul Heinrichs, business manager at the Zeiss Works.

"By the Autumn of 1943, the Ministry of Armaments and War Production (previously the Ministry of Armaments and Munitions) had recognised the fact that the instrument industry was important enough to be raised to Main Commission status, so the Haupthausschuss Feinmechanik und Optik (Main Commission for Precision and Optical Instruments) was formed under the leadership of Kuppenbender. The Main Commission had at first two Special Commissions, FO I and FO II. Later four more were added, FO III, FO IV, FO V and FO VI, and later still FO VII, FO VIII and FO IX. A list of these Special Commissions, their interests and the names of their heads, is given below:-

- FO I            OPTISCHES UND FEINMECHANISCHES RUSTUNGSGERAT  
(Military type optical and precision instruments)  
  
Head: Dr.Ing.H.Kuppenbender, of the firm  
Carl Zeiss, Jena.
- FO II            AUGENOPTIK UND OPTISCH-FEINMECHANISCHE BETRIEBS-  
UND FORSCHUNGSGERATE.  
(Visual optics and precision optical instruments  
and laboratory apparatus).  
  
Head: Paul Heinrichs, of the firm Carl Zeiss,  
Jena.
- FO III           NAVIGATORISCHES, METEOROLOGISCHES UND BALLIS-  
TISCHES KRIEGSGERAT  
(Navigational, meteorological and ballistical  
military apparatus).  
  
Head: Direktor P.Lüdke, of the firm of Askania-  
Werke A.G., Berlin-Friedenau,  
Kaiserallee 86/89.
- FO IV            MEDIZINMECHANISCHES GERAT  
(Mechanical-medical apparatus).  
  
Head: Dr.Ing.H.G.Zell, of the firm Injecta A.G.  
Klingenthal (Saxony), Auerbacher Str.43.

- FO V UHREN  
(Time-pieces).  
Head: Direktor H.Junghans, of the firm Gebr.  
Junghans A.G., Schramberg (Black Forest).
- FO VI INDUSTRIELLES MESS-UND HILFSGERÄT  
(Industrial Measuring and Ancillary Equipment).  
Head: Dr.Ing.W.Pabst, of the firm Maihak A.G.  
Pörsnek (Thuringia), Hindenburg Str.2.
- FO VII HOHENATMER  
(Respiratory apparatus).  
Head: Dr.Ing.Maul, of the firm Drägerwerk A.G.  
Lübeck.
- FO VIII MECHANISCHE FLUGZEUGMESSGERÄTE  
(Mechanical Measuring instruments for aircraft).  
Head: Direktor Renisch, of the firm Elektrolux,  
Berlin-Tempelhof.
- FO IX TRUPPENÜBUNGSGERÄT  
(Military training apparatus).  
Head: Direktor H.Hayde, of the firm Heyde K.G.  
Dresden, N.27. Kleiststr.10.

This Main Commission controlled the production of about 1,000 establishments with a total of approximately 150,000 employees.

"In the autumn of 1944 the Hauptausschuss Feinmechanik und Optik was combined with the Hauptausschuss Elektrotechnik (Main Commission for Electrical Engineers), whose head was Dr.Ing.Lüschen, to form the Hauptausschuss Elektrotechnik, Feinmechanik und Optik under the leadership of Lüschen, as he was senior to Kuppenbender. This change was caused by the fact that Speer had too many Hauptausschuss leaders to deal with; he gave his orders henceforth to Lüschen, who passed on matter concerning the instrument industry to Kuppenbender.

"This arrangement did not work very well, and in February, 1945, Speer created a new Main Commission, the Hauptausschuss Wehrmacht unter Kampfgerät (Main Commission for Military Equipment), under the leadership of Kuppenbender. This Hauptausschuss, besides being responsible for optical and precision instruments, was also responsible for military equipment in general, such as vehicles (other than motor vehicles), bridge-building equipment, entrenching tools, field kitchens and medical equipment. This

arrangement lasted until the end of the war."

Accommodation in the Zeiss Aerotopograph building was leased to the Statistics and Raw Materials Departments of the Wirtschaftsgruppe under the management of Dr. Huber and Herr Brennecke respectively. Herr Brennecke was one of the few Zeiss men who voluntarily joined the Nazi party.

According to Paul Henrichs, the expansion programmes of Zeiss were financed internally with the exception of the Saalfelder Apparate-Bau G.m.b.H., the Geraer Technische Werknisch G.m.b.H. and the Fein Apparate-Bau G.m.b.H., Carlitz and Turn plants. In the Saalfeld and Gera cases Nazi contributions were limited to a combined total of RM 5,595,819. Details are on page 112.

The degree of Nazi interference in the Zeiss Works was probably less than elsewhere on account of their outstanding importance in the instrument industry. There were, however, cases of personal persecution as exemplified by the cases of Dr. Schradt and Dr. Schomeras. Dr. Schrade has a Jewish wife who was put into a concentration camp, and Schrade himself was taken away to work as a builder's labourer in the Todt organisation. Pressure from the Zeiss concern secured his release but his wife remained in the camp until the end of the war.

Dr. Schomeras was removed from his post as Chief of the personnel department in 1933 by the Nazis, and his place taken by S.S. man Kittel. His position was restored at the end of the war and Kittel arrested.

Dr. Kuppenbender, the Nazi Betriebsfuhrer was also production director of the firm, an arrangement which left the control of the concern very much in the hands of the Board of Management.

The changes in the Statute of the Stiftung since the advent of the Nazis are especially marked in the reproduction on pages 58 to 70 Section I. They are not thought to be of great significance and will be rescinded if held to be detrimental by the Stiftung.

PERSONAL DETAILS AND QUALIFICATIONS  
OF THE SENIOR PERSONNEL OF CARL ZEISS.

APPENDIX I.

Name	Date & place of birth	Married or Single	Number of Children	Qualifications	Position	Entry to C.Z.
Dr. KUPPENBENDER	23.2.1901 Waldniel	M. 23.3.1929	2	Dr. Engineer; Dipl. Engineer; Member of Ges- chäftsleitung.		1.9.1927 to 15.7.1929
Prof. BAUERSFELD (Walther)	23.1.1879 Berlin	M. March 1908	8	Prof. Dr. Engineer; Dipl. Engineer; Member of Ges- chäftsleitung.		1.4.1908
HENRICHS (Paul)	3.1.1882 Aachen	M 28.10.1919 (Widower since 1944)	1	Member of Ges- chäftsleitung.		22.3.1901
Prof. Dr. JOOS (Georg.)	25.5.1894 Urach	M 7.4.1921	4	Member of Ges- chäftsleitung.		1.4.1941
Dr. DAVID (Walther)	4.10.1913	M 2.9.1944	-	Dr. of Law; Deputy head of Rechtsabteilung.		23.9.1943

BIBLIOGRAPHY

Other publications dealing with the activities of the firms of Carl Zeiss and Schott & Genossen, and their associated Companies:-

<u>TITLE</u>	<u>PUBLISHER</u>	<u>REF. NO.</u>	<u>DATE</u>
THE CARL ZEISS COMPLEX	German Economic Department, Control Office for Germany and Austria.	G.E.D.43/0/28	Jan. 1946
OPTICAL GRINDING & CENTERING EQUIPMENT USED BY CARL ZEISS	C.I.O.S.	Item No.9 File XXVII-23	-
MACHINE USED BY CARL ZEISS, JENA, TO GRIND ASPHERIC LENS SURFACES	C.I.O.S.	Item No.9 File XXVII-24	-
LUBRICANTS MANUFACTURED & USED BY CARL ZEISS	C.I.O.S.	Item No.9 File XXIX-40	24 Aug. 1945
PRODUCTION OF BINOCULARS BY CARL ZEISS	C.I.O.S.	Item No.9 File XXIX-42	24 July 1945
EQUIPMENT FOR PRODUCING DIVIDED CIRCLES AT ZEISS PLANT	C.I.O.S.	Item No.9 File XXIX-59	24 July 1945
POTS USED IN MELTING OPTICAL GLASS AT SCHOTT & GENOSSEN	C.I.O.S.	Item No.9 File XXIX-43	28 Aug. 1945
OPTICAL GLASS MANUFACTURING BY SCHOTT & GEN. JENA	C.I.O.S.	Item No.9 File XXXII-22	-