

ITEM No. 25

FILE No. IX-5, 6, 7, XI-22

**AIRCRAFT WORKS OF
KONINKLIJKE MAATSCHAPPIJ
"DE SCHELDE"**

"This report is issued with the warning that, if the subject matter should be protected by British Patents or Patent applications, this publication cannot be held to give any protection against action for infringement."

12671/556
COMBINED INTELLIGENCE OBJECTIVES

SUB-COMMITTEE

LONDON - H.M. STATIONERY OFFICE .

THE AIRCRAFT WORKS OF
KONINKIJKE MAATSCHAPPIJ "DE SCHELDE"
AT FLUSHING AND BREDA

Three Reports

Reported by

Lt. Cmdr. R. H. FAGAN, USNR
W/Cmdr. R. PURVES, RAF
Lt. Col. C. R. LAUBENTELS, USAAF
S/Ldr. T. D. SELLWOOD, RAF
Lt. A. BIOT, USNR
S/Ldr. A. H. W. MACBEAN, RAF
F/Lt. L. V. DAVIS, RAF

and

P/W. Interrogation by

S/Ldr. G. B. JEPSON, 2nd IAF

CIOB Black List Item 25
Aircraft

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

TABLE OF CONTENTS

	<u>Page No.</u>
I. Report by Lt.Cmdr.Robert H.Fagan, Team Leader.....	3
II. Combined Report.....	4
1. Introduction.....	4
2. Preamble.....	5
3. German Control at Flushing and Breda.....	6
4. Location and Layout of Aircraft Works. Controlled by "De Schelde".....	8
5. Production.....	9
6. Future DO 24 Production.....	12
Appendix A. Layout Diagram: De Schelde Aircraft Factory, Flushing.....	13
" B. " " Werk Zeehoven.....	14
" C. " " Werk Breda.....	15
" D. " " Werk Zwijndrecht I.....	16
" E. " " Werk Zwijndrecht II.....	17
" F. " " Werk Geer.....	18
" G. Statement Concerning Delivered Wings by the N.V.Kon.My."De Schelde" during 1940-1944.....	19
" H. De Schelde Members and Aircraft Letter Des- ignation.....	25
" I. Aanwezigs Machines in Breda.....	27
" J. Detailed Assessment of the Factory at Breda.	33
Addendum 1. List of Contractors to the N.V.Koninklijke Maatschappij "De Schelde" Aircraftwerke.....	37
2. German Firms Supplying Material to "De Schelde".....	52
3. Dutch Firms Supplying Material to "DeSchelde".....	55
III. P/W Interrogation Report on the Aircraft Industry in Holland and Germany	57
Appendix K. Dornier Personalities.....	59
IV. P/W Interrogation Report on Materials for the German Air- craft Industry.....	60
Appendix I.....	62
" II.....	64
" III.....	65

1. FACTUAL REPORT OF THE INVESTIGATION OF TARGET 25/69
BY LT. CMDR. ROBERT H. FAGAN, TEAM LEADER ON TARGET 25/69

1. The target visited is classified in the CIOS Black List under Aircraft - Flushing Zone.

Target No.

Factory or Firm

25/60

Koninklijke Mij De Schelde.

Target of Opportunity De Schelde dispersal Factory
at Breda.

2. The title of the report being issued by the investigating team is "Combined Report by Field Team under Item 25 which investigated the Aircraft Firm of Koninklijke Maatschappij De Schelde at Flushing and Breda".

3. A brief summary of the contents of the report is as follows :-

Production of wings for Dornier 24 Flying boat was carried out by the firm investigated. The report covers the dispersal of the factory, production methods employed. Production of hulls was performed by other factories of this firm, but these were not visited by the investigating team due to their location in enemy held territory.

/s/ R. H. FAGAN
Lt. Comdr. USNR

II. COMBINED REPORT BY FIELD TEAM UNDER ITEM 25 WHICH
INVESTIGATED THE AIRCRAFT WORKS OF KONINKLIJKE
MAATSCHAPPIJ "DE SCHELDE" AT FLUSHING AND BREDA
(TARGET 25/69) ON 10/14/11/44 (FACTORY PRODUCING
DORNIER D.O. 24 FLYING BOATS)

1.-INTRODUCTION

Report by C.I.O.S. team which visited the Flushing Works on the 10th and 11th November and the Breda factory on the 12th-14th November, 1944.

The team was comprised of the following members :-

Lt. Comdr. R.H. Fagan, U.S.N.R. - Team Leader
W/C R. Purves, R.A.F. - Deputy Team Leader and
representing M.A.P.
Lt. Col. C.R. Laubenfels,
U.S. Army Air Corps - Representing U.S.S.T.A.F.
S/Ldr. T.D. Sellwood, R.A.F. - Representing M.A.P.
Lt. A. Piot, U.S.N.R.
S/Ldr. A.H.W. MacBean, R.A.F.
A.T.I. - Representing A.I.2(G)
Did not accompany the team
to Breda.
F/Lt. L.V. Davis, R.A.F.
- A.P.W.I.U. - Representing A.D.I.(K).

The purpose of the visit was to investigate the production of D.O.24 aircraft by the "De Schelde" Works on behalf of the Germans and to study the organisation, methods of production, equipment and dispersal of Works.

The full addresses of the Works visited are as follows :-

KONINKLIJKE MAATSCHAPPIJ "DE SCHELDE" - FLUSHING
CONSTRUCTIE WERKPLAATS I.G.B. MARKKADE 46 - BREDA (Factory)
CHOCOLADE FABRIEK "KWATTA", MARKKADE - BREDA (Stores
and Offices)

In order to obtain the required information the following contacts were made with personnel of the "De Schelde" Works :-

At Flushing - H.C. WESSELING Senior Director
H.W. Van TYEN Director
W.J. THEUNE Assistant Manager
At Breda - H. CHEF d'HOTEL Chief Aircraft Engineer
G. LAM Assistant Chief Engineer.

An attempt was made to contact Mr. SCHIPPER, Chief Engineer or aircraft production at Flushing at his home at KOUDEKERKE, some three miles from Flushing, but unfortunately without success owing to the flooded condition of the country.

The Administrative Director for aircraft production in the "De Schelde" Works, H.E. JAEGER, was, at the time of the visit, absent at the DORDRECHT Works and could not be contacted as this town had not yet been liberated. His present address is given as /o MR. ZEVENBERGEN, NOORDHOVEN WEG, DORDRECHT.

Various documents were removed from the Offices at Breda and these were turned over to A.P.W.I.U. in Brussels for analysis and processing. Additional documents which were unobtainable at the time of the investigation are to be obtained from the office at Flushing by a member of A.P.W.I.U. Results of the analysis of these documents will be forwarded by A.D.I.(K) to interested parties.

In the course of the discussions with the De Schelde Management certain additional information not strictly applicable to target No. 25/69 was obtained. This information has been passed to A.P.W.I.U. and a separate report will be issued by that branch.

.- PREAMBLE

As is already well known the "De Schelde" Works at Flushing were manufacturing under license, DO24 Flying Boats for the Dutch Government before the War. Prior to this the Dutch Government had obtained 6 DO24 Flying Boats from the Dornier Works at Friedrichshaven and before the German invasion of Holland on the 11th May, 1940, some 7 Flying Boats had been completed by the "De Schelde" Works.

On the 22nd May, 1940, an R.L.M. representative visited the Works at Flushing and instructed them to continue production. At this time the internal arrangements of the "De Schelde" Works were such that the construction of superstructures (i.e. Wings, Engine Mountings and Struts) was carried out at Flushing, the construction of hulls at their Works in Dordrecht and final assembly at the Avirolanda Works at Papendrecht. In early 1943 the Dordrecht Works commenced assembly of superstructures with details supplied from Flushing.

Apart from the change-over from Wright Cyclone Engines to PRAMO 323 R2 Engines (9 cylinder - 800 H.P.) work proceeded normally until August, 1943, when a successful bombing attack on the Flushing Works caused such damage that work at this place had to be virtually discontinued and complete dispersal arrangements made.

The transfer of the Flushing Works was done by easy stages and it was not until June 1944 that the dispersal factories at BREDA and ZWIJNDRECHT came into full production, followed by a further factory at GOOR. During the interim period production of completed flying boats only decreased slightly owing to the fact that the Dordrecht factory stepped up the assembly of super-structures.

Production at the "De Schelde" Works finally ceased on the 20th July, 1944, when the Germans gave instructions that the manufacture of DO24 flying boats was to be discontinued in Holland, allegedly due to a shortage of petrol in that country. The "De Schelde" management confirmed this by stating that they intercepted a telegram from R.L.M., addressed to the R.L.M. representative at Breda, to this effect.

It was understood by the "De Schelde" management that their Works were to be turned over to Fighter wing production.

3.- GERMAN CONTROL AT FLUSHING AND BREDA

On the 22nd May, 1940, the first German arrived at the Flushing Works. This was a man named STELLMAN who was accompanied by Dr. LINDER, the Reichkommissar for the province of Zeeland, and instructions were given for work to be continued on behalf of the German Reich.

Stellman, who was a representative of Dornier, Friedrichshaven, did not however, actually remain at the Works but merely paid weekly visits of inspection.

After a period of about six months had elapsed, Stellman was replaced by SCHMIDT, who came from the Fokker Works near Amsterdam, and who had been appointed as resident R.L.M. Controller (Bananfricht) at the "De Schelde" Works, Flushing. He, however, only remained three months before departing for Germany.

At about this time a number of inspection visits were made to the Works by an Engineer GOTZ who was the chief outside production engineer of the Dornier Works at Friedrichshaven.

Schmidt's departure was heralded by the arrival of GANSS who came from Prague. Ganss, however, made his Headquarters at the Aviоланда Works, in Papendrecht and late in 1941 appointed two assistants, SCHONFELD and GESSNER, the former residing at the "De Schelde" Works, Flushing, and the latter at the Aviоланда Works, Papendrecht.

Schönfeld remained at Flushing until the end of 1943 when he departed to the Erla concern at Antwerp. During his residence at Flushing he was supposed to have exercised daily control, but owing to his liking for liquor the actual control was very lax.

About the time of Schönfeld's arrival Dornier of Friedrichshaven also sent their representative HANNACK to the Flushing Works. When Schönfeld departed at the end of 1943, Hannack assumed the duties of R.L.M. Controller for a period of about three months until the arrival of one, VOLMERICH. The first part of Volmerich's stay was spent at the Flushing Works and after complete dispersal took place he set up his office at the Breda factory where he remained for about three months, part of which time he also spent at the Dordrecht factory. In June, 1944, he left for Germany, after which control was exercised by Gessner (already referred to) from the Avirolanda Works at Papendrecht.

4.- LOCATION AND LAY-OUTS OF AIRCRAFT WORKS CONTROLLED BY "DE SCHELDE"

The "De Schelde" ramifications covered the following Works and Factories :-

FLUSHING - "De Schelde" Works.

DORDRECHT - KILKADE II

BREDA - Markkade 46 and Chocolate Fabriek "Kwatta",
Markkade.

ZWIJNDRECHT- Ringdijk 468 and Ringdijk 188a.

GOOR - Eternit Kompanie, Haven.

Flushing Works.

The aircraft factory was located at the northern end of the "De Schelde" Works and covered an area of approximately 162,000 sq.ft.

Appendix A shows the exact location of the Works, the key to which describes the functions of the various buildings.

Dordrecht Works.

The Dordrecht Works covered an area of approximately 37,500 sq.ft.

Appendix B. shows the layout of these Works, the key to which describes the functions of the various buildings.

Breda Dispersal Factory.

The Chocolate Fabriek "Kwatta" is a two storey building which was utilized for offices and the storage of raw material, finished detail parts, and the usual "Bought-out" supplies, such as bolts, nuts, washers, etc.

The building at Markkade 46 covered an area of approximately 64,000 sq.ft. Appendix C shows the lay-out of these Works, the key to which describes the functions of the factory.

Zwijndrecht Dispersal Factories.

The building at Ringdijk 468, denominated Zwijndrecht I, covered an area of approximately 29,000 sq.ft. Appendix D shows the lay-out of this building, the key to which describes the various functions of the factory.

The building at Ringdijk 188a, denominated Zwijndrecht II, covered an area of approximately 4,000 sq.ft. Appendix E shows the lay-out of this building, the key to which describes the various functions of the factory.

Goor Dispersal Factory.

The building, situated in the Haven, covered an area of approximately 56,000 sq.ft. Appendix F shows the general lay-out of this assembly factory, but as it did not get into full production complete detailed information is not available.

5.- PRODUCTION

During the time the Germans were in control of the DO 24 construction in Holland, a total of approximately 175 completed flying boats were delivered to the Reich. Of this total, 22 were delivered by the Fokker works at Amsterdam and the rest by the Aviоланда concern at Papendrecht, the two final assembly factories concerned.

Appendix G shows a tabulated statement of actual deliveries both of superstructures and completed flying boats up to 1st June 1944. In this connection the De Schelde concern assigned from block the R.L.M. numbers until June 21st, 1943, after which time the Germans assigned the numbers from Friedrichshaven. A detailed list giving the De Schelde works numbers and the aircraft letter designation is shown at Appendix H. Details are also shown of superstructures delivered up to 4th September 1944 when production actually ceased. The delivery of completed flying boats between June 1st and September 4th 1944 can only be ascertained when the activities of the Aviоланда works at Papendrecht and the FOKKER works at Amsterdam are investigated.

The R.L.M. planned production of DO 24's in Holland was scheduled to reach a maximum output of eight complete flying boats per month, but owing to a "go slow" policy on the part of the "De Schelde" concern, this figure was never actually achieved. The "De Schelde" concern maintained that there was an insufficiency of labour, whereupon the Germans gave instructions for a further assembly factory to be opened at Goor, but owing to the fact that on 20th July 1944 the Germans gave orders for the cessation of DO 24 production in Holland, the factory at Goor never came into production.

Factors bearing on the rate of production were -

- (1) The delay in effecting deliveries of material, which in contrast to the earlier period when deliveries were effected within 3 to 4 months after date of order, 8 to 9 months elapsed before deliveries were made in the later period.

- (2) Mistakes in the drawings of the large number of modifications issued by Dorniers of Friedrichshaven.
- (3) Shortages of specific grades of aluminium and steel, notably molybdenum, which necessitated reference to Dornier, Friedrichshaven for authority to use available alternatives.

The following details were obtained with regard to the activities of the various "De Schelde" works, dispersal factories and one sub-contractor :-

Flushing.

Prior to the war and until June 1943 the "De Schelde" works at Flushing had set apart the northern end of their factory for the production of superstructures which consisted of outer wings, centre sections, engine nacelles, engine installation, and rigging struts. After assembly the complete component with the engines already installed were transported by water to the Aviолanda concern at Papendrecht.

Due to the bombing attack on August 20th, 1943, when one of the big shops was partly destroyed and other parts of the works damaged, production at Flushing virtually ceased and from then on the only active part that these works contributed to the further production was of an executive nature.

During the time the works were producing they employed a total of some 1500 skilled and unskilled labourers, apart from the office staff.

At the time of inspection by the C.I.O.S. Team all aircraft production activity had ceased and the plant removed to Dordrecht and the dispersal factories. It was, however, noted that a small stock of duralumin in sheet, bar and extrusions, as well as some magnesium sheet was stored in the sub-assembly shop at (3) on the plan at Appendix A.

Dordrecht.

The "De Schelde" works at Dordrecht were primarily concerned with the construction of hulls during the whole period of the manufacture of DO 24's in Holland. Production of superstructures was commenced in the early part of 1943 at a programme rate of 2 per month which was stepped up to six per month when the works at FLUSHING ceased to function.

Further details about the activities of this factory can only be given after inspection, which so far has not been possible as it is still in enemy hands, but information obtained was to the effect that some 400 skilled and unskilled workers were employed there.

Breda.

This plant was originally set up in August 1943 as part of the dispersal policy of the Flushing works. It did not, however, come into full production until June 1944.

The factory was responsible for the manufacture of engine nacelles, engine mountings, engine cowlings, fire proof bulkheads, struts and hull fittings. After completion these sub-components and details were transported to either Dordrecht or Goor for assembly into the superstructure.

A total of some 600 men were employed at this factory, of which some 300/400 were skilled workers.

At the time of inspection by the C.I.O.S. team all aircraft production activity had ceased, but a certain amount of evidence remaining, together with records available enabled a detailed assessment of the plant, equipment and production methods to be made. This is set out fully in Appendices I and J.

A considerable portion of the plant and equipment had been removed to an unknown destination, presumably by the Germans, and the factory was being converted to its original role of window-frame manufacture.

Zwijndrecht I and II.

The two factories at Zwijndrecht were opened up towards the end of 1943 for the manufacture of ribs, petrol and oil tanks, wing spars and assembly of details made at Breda.

These factories employed a total of some 350 men, most of which were unskilled.

Goor.

In order to obtain the planned output of 8 DO 24's per month, arrangements were made in the Spring of 1944 for the factory at Goor to be set up for the assembly of two further superstructures per month. As already stated, however, this factory did not get into full production and no completed component was produced.

At the time of cessation of DO 24 production, about 100 men, mainly unskilled, were employed at this factory.

Sub-Contractors.

Holland Nautik Werke. This German concern, having branches at Haarlem, Waddinxveen and Papendrecht, employing a total of about 1000 workers was mainly engaged in marine work, but a section of the works produced access doors for the "De Schelde" concern and tail units for the Avirolanda concern.

6.- FUTURE DO 24 PRODUCTION

Early in 1943 the R.L.M. had issued instructions that DO 24 production should be started up at Weserflugzeugbau at Nordenham, near Bremen. For this purpose certain jigs and tools were moved to that factory from S.N.C.A.N. Paris and "De Schelde" Flushing manufactured three sets of jigs for the nacelles in June 1943 and sent them to Nordenham.

The impression gathered by the "De Schelde" management was that some time in 1944 this project was cancelled. This factory may, however, have been the destination of the plant and equipment removed from Breda.

15/11/44.

APPENDIX 'A'

SINGEL WEG.

