

COPY.

# Lloyd's Register of Shipping.

Certificate No. 1931.



Port **PRAGUE,**

GLASGOW REPORT No. **54789**  
13th February, 1934.

Order No. 3555 d/28/10/33.  
Engine No. 168.  
Škoda 78-03.3184/5.

*Eng. No. 168*

This is to Certify that

Ing. P. Kertscher,

the undersigned Surveyor to this Society did at the request of Messrs. Limited Company formerly THE SKODA WORKS attend at their Works at Plzeň, Czechoslovakia, on the 30th November, 1933, and subsequent dates in order to test according to specification and examine in finished condition

1-SOLID-FORGED SIX-THROW CRANK SHAFT, details as below,

ordered by Messrs. British Auxiliaries Ltd., Glasgow, Order No. 3555 dated 28th October, 1933, Engine No. 168.

### SPECIFICATION.

To print No. KA. 316, K. 361-A. 300, finished complete, with the exception of all drilling and keyway cutting, 160 mm diameter, crank radius 210 mm, total length 3855 mm, in accordance with Crankshaft Forging Specification No. 2, basic S.-M. Steel, with higher manganese content, twice annealed, Yield Point not less than 19 ts.p.sq.in., Ultimate Tensile Strength 34-38 ts.p.sq.in., Elongation not less than 25% on B.E.S.A. test piece "C", Tensile plus Elongation longitudinally not less than 61, radially not less than 57, Bend tests 180 degrees, 1" x 3/4", radius 1/2", and to Lloyd's tests, requirements and inspection for auxiliaries in a classed vessel.

### RESULTS OF TESTS.

The big flange (adjacent to crank No. 6) corresponds to the bottom of the ingot, Charge No. 49869.

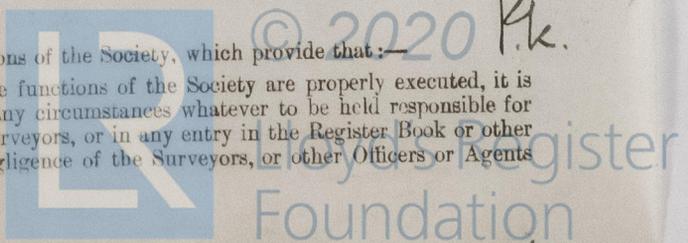
The crankshaft has been inspected at all stages of manufacture, finally in finished condition with the exception of all drilling and keyway cutting, and was found to be, so far as could be seen, sound and free from defects.

The dimensions of the crankshaft were checked, and found to be within the specified tolerances.

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This Certificate is issued upon the terms of the Rules and Regulations of the Society, which provide that:—

"While the Committee use their best endeavours to ensure that the functions of the Society are properly executed, it is to be understood that neither the Committee nor the Society are under any circumstances whatever to be held responsible for any inaccuracy in any report or certificate issued by the Society or its Surveyors, or in any entry in the Register Book or other publication of the Society, or for any error of judgment, default, or negligence of the Surveyors, or other Officers or Agents of the Society."



The slabs between the crank arms and the axial full size prolongation adjacent to the big flange (crank No. 6) were left on the crankshaft until the heat treatment had been completed, and were not detached until the longitudinal and radial test pieces had been marked, tested and declared as satisfactory.

The particulars of the results obtained are as follows:-

No. of Tests.	Position and direction of Test Pieces.	Diam. ins.	Yield Point. ts.p. sq.in.	Ultimate Tensile. ts.p. sq.in.	Elongation. 4x√Area. 3 ins. %	Red. in Area. %	Tens. plus Elong.
173/1	Big flange, adjacent to crank No. 6, longitud.	0.564	22.1	36.0	34.0	53.0	70.0
173/3	Slab removed from between arms of crank No. 3, cut radially.	0.564	24.5	36.4	32.0	49.1	68.4

Two bend test pieces 1" x 3/4" in cross section, cut from the same positions and in the same direction as the tensile test pieces, withstood, without fracture, being bent cold through 180 degrees over an internal radius of 1/2".

The crankshaft has been marked on the second web of crank No. 6 as follows:-

.....  
 E.168. ....  
 LLOYD'S .....  
 P.K. 9193. P.K. ....  
 .....  
 8.2.1934. ....  
 .....

PRAGUE, 13th February, 1934.

*P. Kertscher.*  
 Surveyor to  
 Lloyd's Register of Shipping, Prague.



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 Foundation

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