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STATUS REPORT OF JUMBO

5 December 1944

12 Dec
W.S.P.

FINAL DETERMINATION
UNCLASSIFIED
L. M. Redman
FEB 4, 1981

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R. W. Henderson

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To Blown 55-16 2/25/45

Mr. R. W. Henderson, in the company of Major Stevens, Lt. Col. Stewart, Lt. Taussig and Mr. Frank Zeitlin, visited the Babcock and Wilcox plant at Barberton, Ohio, on 2 December 1944, where they inspected and discussed the progress made to date on Jumbo with Mr. A. R. McAllister, head of the Special Products Division of the company, and Mr. C. H. Gay, Design Engineer. The net result of the conference, which is covered in detail in the following paragraphs, brought out the fact that due first to the failure of a sub-contractor to meet certain specifications, and second to changes in fabrication procedure decided upon after the job got under way, the delivery of the vessel to the installation point at the test site has been set back to about 18 May 1944⁵ as the earliest realistic date. To this time must be added approximately 18 days for erection of the vessel and the construction of auxiliary platforms, etc., to facilitate the assembly of the charge. This results in the date of 5 June 1944⁵ as the most likely starting date for the assembly of the gadget in the vessel. The detailed analysis follows:

To clarify the following discussion it is first necessary to briefly outline the general manner in which the vessel is assembled. The basic vessel is cylindrical in shape, closed at both ends by hemispherical heads, one of which contains a large manway forging which is welded into a hemispherical shell formed by five "orange peel" segments. The other hemispherical head is formed from a polar cap with five identical "orange peel" segments surrounding it. The cylindrical portion of the vessel is formed from four semi-cylindrical plates joined by a circumferential weld on the center line of the vessel and by longitudinal welds along their edges. Upon completion of the above described basic vessel the outside surface of the cylindrical section is machined in a lathe prior to wrapping with

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laminated tension banding plates. This brief description should serve to clarify the following fabrication schedule.

As of 2 December 1944, the "orange peel" segments of the hemispherical head containing the manway forging had been completed and X-Rayed. The circumferential weld between the manway forging and the remainder of the hemispherical head has been half completed which was followed by a stress relief operation. The weld is being completed now and will go into the furnace for final stress relief on 12 December, to be followed by X-Raying which will be completed by 14 December.

The other hemispherical head has been completed and all welds X-Rayed. The four semi-cylindrical sections of the vessel have been welded together and all four longitudinal welds X-Rayed.

The circumferential weld on the center line of the vessel is ready for X-Raying.

The circumferential weld joining the non-manway head to the cylindrical portion of the vessel is approximately 2/3 complete and will be finished by 6 December.

This leaves then as the only remaining weld to be made the circumferential joint between the manway head and the cylindrical portion of the vessel

SCHEDULE

<u>Operation</u>	<u>Days Required</u>	<u>Date</u>
1. Start last weld (Circumferential joint between manway head and cylinder)		12/14
2. Welding operation	18	12/14 to 12/31
3. X-Raying weld (1) plus weld between non-manway head and cylinder plus circumferential weld on center line of vessel.	26	1/1/45 to 1/26/45

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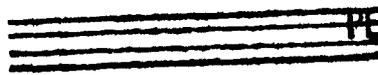
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Special Report of Judge
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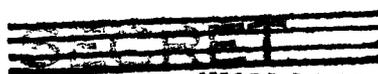
1001: The time estimate periods marked with an asterisk (*) are subject to the following comments, by item number:

5. and 7. - Transportation of the vessel between B. & W. and Mesta was originally estimated at one week each way. This figure is considered out of line by Mr. A. R. McAllister of B. & W. who states that they have ways and means of insuring transits in one or two days at the outside.

10. - Transportation of the completed vessel from B. & W. to Trinity is a matter for conjecture, depending primarily upon how much pressure is brought to bear on the railroad by the Government. The three week figure seems reasonable.

11. - The time required for the overland haul of the vessel from the railroad siding to the test site is indefinite at the moment and cannot be accurately tied down until after 12 December, at which time representatives of the Eichleay Corp., of Pittsburgh, to whom the hauling and rigging job is being contracted, will make a personal survey of the route preparatory to formulating definite plans for the job.

In conclusion, it should be mentioned that Lt. Faussig of the New York office has been given the responsibility of maintaining weekly or semi-weekly contact when necessary with B. & W. and their associates on this job to insure that all work is fully coordinated and carried out as quickly as humanly possible.



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There is no doubt in our minds as to the sincerity of the B. & W. Corp. and their genuine interest in getting this job out quickly, which fact alone would go far toward insuring the best possible job. The discrepancy between the delivery dates given in this memorandum and the original B. & W. estimates is due, first to the fact that Midvale Steel Corp., who took the sub-contract for furnishing the manway forging, had to make 3 forgings at considerable loss in time before they got one that met the metallurgical specifications. This delay completely disrupted the production and assembly schedule and routine planned by B. & W. for the associated parts of the vessel. Second, B. & W., fully realizing the importance of perfect welds, adopted cautious welding techniques which have produced 100% perfectly flawless welds to date. These techniques, although appearing to be costly in time at first glance, are probably justified as the time required to repair one faulty weld could well consume any time which might have been gained through a less refined technique.

R. V. HENDERSON

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