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ARTHUR D. LITTLE, INC.

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Supplement No. 1

July 21, 1943

Progress Report Covering Period from June 15
to July 15 on Development of Test Unit for
Production of Oxygen by a Regenerative Chemical. R

The Arthur D. Little, Inc. Shipboard Unit during the past month has been entirely rebuilt with the elimination of the mechanical valving and timing assembly. The timer failed to operate satisfactorily. Valves frequently stuck and the cams often got sufficiently out of line to result in serious damage to the unit. A new design of cams and push rods was installed, but these also failed to function satisfactorily.

In place of the mechanical timer, an air-operated timer will be used in conjunction with bellows-operated valves. These valves are being equipped by the Cook Electric Company, Chicago, with their "Spring-Life" Bellows.

The unit is now completed, save for the valves which are promised by July 28. Two valves have already been shipped and appear satisfactory in every way.

A new ejector has been incorporated in the unit. This ejector is rated to pull 28 inches of vacuum, when the one formerly used pulled only 27 inches. This should improve the purity of the oxygen produced, since it will reduce the amount of inerts by 33%.

The unit as now constructed differs considerably from the layout pictured in our report dated May 22. The reactors now are on the floor, side by side. Above them, a platform has been constructed to hold the compressor, utilities piping, timer and instrument panel. Oxygen storage tanks are strapped to the deck above.

Little difficulty is anticipated in the operation of the unit, since all the component parts have functioned satisfactorily in previous setups.

It is now hoped the testing of the unit may be completed by August 15, 1943.

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BY AUTH. *CG OAR-1 1.1*

BY *Dand S Wood* DATE *3/20/46*

By A E Spurdick ADD 3/10/96

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Respectfully submitted

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