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ARTHUR D. LITTLE, INC.

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N.D.R.C. DIV. 11

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Progress Report covering period from May 15 to
June 15 on Development of Test Unit for
Production of Oxygen by a Regenerative Chemical.

Work on the Arthur D. Little, Inc. shipboard unit
has proceeded very slowly during the past month, due to
several delays in obtaining the mechanical timer and valve
assembly. This finally arrived at Cambridge after the
first of June and was connected into the unit, as shown in
the photographs of the model, included in our last report.

Actual successful operation of the unit was not
accomplished until June 9. On June 11, the unit for the
first time was operated at full air pressure and capacity.

The following data give the operating conditions
and yields for the first two hours of operation:

Air pressure to cases	90 p.s.i. ga.
Air flow	96 c.f.m.
Air pressure ahead of ejector	82 p.s.i. ga.
Steam pressure	8 p.s.i. ga.

<u>Time</u>	<u>Cu.Ft. Yield</u> (Uncorrected for purity)
0	0
30	209
60	411
90	620
120	826

Purity during the desorption period varied from
95 to 98%, as measured on the Pauling Meter. A value of
98% was obtained during two-thirds of the desorption period.

A yield of 450 cu.ft. per hour of 99% gas was
predicted for the unit. Applying approximate corrections,
it is seen that the unit is now producing 405 cu. ft. per
hour of 99% oxygen.

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At the time of this writing, several leaks have been observed in the unit which are currently being eliminated. Higher purity is believed attainable, as well as higher yield.

Breakdown tests will be initiated the week of June 14. It is hoped a more detailed report on the unit may be presented next month.

Respectfully submitted



T. L. Wheeler
Supervisor



Benjamin Fogler
Chemical Engineer

BF:HMR

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