



May 27, 1932

Subject: Martin 333 Engine for TC-14 Airship.

To: Air Corps, Material Division, Wright Field,  
Dayton, Ohio - For Major C. W. Howard, Chief,  
Engineering Section.

1. Replying to your letter of May 24th we wish to answer  
the questions asked as follows:

- a. Our 333 engine can be modified for reversed rotation. We are investigating all the details involved to accomplish reversed rotation.
- b. Some auxiliary cooling means would be necessary to cool our engine in the position shown on your sketch at the very slow air speeds available. We can readily provide a flange on the end of our crankshaft (shown inside the car) to which a suitable blower could be attached. The intake to the blower could be arranged in any convenient manner and the outlet from the blower could be in the form of a nozzle just ahead of the cylinders. We do not have a suitable blower immediately available but could arrange to procure same as a part of this project. Possibly the Power Plant Section has blower units available which could be utilized. The necessary sheet metal housing and air ducts for the blower system do not appear to present any great difficulty.
- c. We believe that the aircooled cylinders with positive blower cooling would be much simpler and lighter than liquid cooled cylinders with piping, radiators, etc. Changes necessary to convert our engine to liquid cooled cylinders would be quite extensive and involve considerable delay.

Yours very truly,

THE GLENN L. MARTIN MOTORS COMPANY

*Lesiter C. Milburn*  
Lesiter C. Milburn  
Chief Engineer

*PRB/um*  
CENTRAL FILES

*7-15-32*  
LCM:CGC