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MEMORANDUM TO FILE

SUBJECT: PROJECT RESEARCH GROUP

For some time now it has become increasingly necessary to establish what our next project will be, and we have now reached the stage where it is essential to consider all the possibilities. In addition to this there is obviously a continuing overall Company requirement to be carrying out basic project research work to provide Management with the data on which to base our forward thinking, and planning.

We have attempted to do this in the past by throwing the problem into our existing set-up, but with little success, since, obviously, everybody is giving almost 100% of their time to the particular job in hand. For instance, I issued instructions during an Engineering Management meeting on March 22, 1956, and also in a memorandum dated July 4, 1956, requesting that a survey be carried out to provide the data on which to establish the best project to undertake after the CF-105. This again fell by the wayside for the reasons mentioned above, and it is obvious that if we are going to do a reasonable project research job, we must have a separate small group set aside with no other interests.

Their job would be to carry out extensive surveys on all types of aircraft and allied products, to establish areas in which the Company is best fitted to contribute, and the requirements of both the Military and Industry for the future.

I am convinced that this job cannot be left as a part time operation of the people presently in charge of other projects, and neither can it, in this day and age, be accomplished by straight intuition. We must

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have as complete a knowledge as possible of the state of the art, the trends in the Industry, and the future requirements of both military and civil potential customers. As a case in point, we are probably already late in starting the survey in the field of atomic energy.

It is therefore my intention to set up a Project Research group reporting direct. In setting up this separate group however, it is essential that it not be tagged from the outset with competitive suspicion, and the inputs must come from all available sources within the Company. For instance, in addition to inputs from the Vice-President Engineering and the Chief Design Engineer, there must be cooperation and a certain amount of integration with the efforts of the Chief Technician, the Specialist Engineers, etc., and also from other Divisions such as Special Projects, Sales and Service, and Manufacturing.

For instance, in the design studies which would be carried out on missiles, it may well be that Mr. Frost's Special Project could be developed as some form of missile and, in fact, the Project Research Group should be completely uninhibited, have free access to all technical information within the Company, and the full cooperation of everyone within the Company.

The establishment of an efficient Management tool to accomplish the above is obviously a common problem within the Industry at present, and certain companies in the United States and in the United Kingdom have set aside a large group of people to carry out these studies, and in one case, I understand that approximately 180 people are employed in a group on the West Coast.

I am not suggesting anything of this magnitude and intend to start with a group of three or four people under a competent engineer.

It is probably necessary to clarify the broad terms of reference between this group and the Initial Projects Group. I visualize that the Project Research Group would be set up adjacent to the Initial Projects Group, and would, where necessary, use the skills available in Initial Projects in addition to having its own permanent members.

NOTE - THE PRG WAS FINALLY SET UP WITH ACCESS ONLY THRO' MY OFFICE FOR SECURITY REASONS.

In the Project Research stage each particular project would be considered on an overall broad basis and, for instance, on a transport, probably only a cursory look would be given at the actual aircraft design, but a great deal of attention would be paid to requirements, economics, phasing, costs, and integration into the Company's overall program.

When the time came to complete a design brochure and work out detail performance, the main bulk of the work would pass into Initial Projects, who would prepare the brochure in a very similar manner to that produced for the T.W.A. Transport and the Navy V.T.O.

Also, there would obviously be inputs from the Initial Projects office and, as I say, it would be imperative that there is no feeling of competition between these groups, since on the one hand, the Initial Projects Group have a very important initial design job to do, whereas the Project Research Group should be a very important Management tool.

I intend to set up a Design Council at the same time, to monitor the work going on in the Project Research Group, and receive frequent reports on progress. The Council will consist of Messrs Floyd, McCarty, Lindley, Hake, Lindow, and Chamberlin, initially, and the scope may be broadened as the requirements arise.

The Project Research Group will be set up with two main sections, one on research, which would in-

investigate the following :-

- (a) Nuclear research
- (b) Electrogravitics
- (c) Automation and computation
- (d) New and unusual materials such as ceramics, glass products, etc., high temperature studies.
- (e) Power plant research, including chemical fuels, etc.
- (f) Missiles

The other group would be set up to do project studies on actual aircraft hardware, including :-

- (a) Military projects
- (b) Commercial projects
- (c) Economics
- (d) General planning of projects
- (e) Systems
- (f) Special projects, such as Mono-Rail
- (g) Their job would also include the writing up of a number of brochures for sales discussion purposes.

Initially, Mr. Pesando will take Group One, and Mr. Marshall will take Group Two, which will accomplish the integrating of the present Design Research Group into the new group.

From an overall administrative point of

view, Mr. Pesando will initially take charge of the setting up of the group, with Mr. Marshall as his deputy. Mr. Marshall will, at present, retain his position as Technical Assistant to the Vice-President, Engineering, in addition to the above job.

It will, of course, be imperative that we allocate a certain amount of the Company's funds towards running this Group, and this will have to be discussed with the Company Directors.

The first jobs within the Group will be to attempt to accomplish the following :-

1. MISSILES

To carry out a complete North American Military and Industry survey of the present status on all types of missiles, including air-to-air, ground-to-air, ground-to-ground, ballistics missiles, etc., and to prepare a report on this which will indicate program timing, uses, adaptability for other uses, etc., etc.

In the meantime, I will, in conjunction with Mr. Morley, check with the Government agencies in Canada to ascertain as nearly as possible, what their requirements for missiles will be for the next, say, 10 years. At the same time, Mr. McCarty will carry out a similar type of survey in the United States.

We will then attempt to frame some Divisional policy as to the most profitable missile studies which the Company should undertake, with a view to getting into a missile project after the CF-105.

2. COMMERCIAL

To make a survey and prepare a report on commercial projects throughout the world, and their

possible adaptation to a T.C.A. replacement for the Viscount for medium range operation, with a view to manufacturing this in Canada.

To also consider, if none of the above projects fit exactly into the right slot, what we might come up with in the form of a new aircraft, outlining a specification which is best fitted to the T.C.A. inter-city routes.

3. COMMERCIAL PROJECTS OTHER THAN AIRCRAFT

To study the ground transportation patterns in Canada, with a view to the possibilities of building a Mono-Rail system between major areas of population. (To be discussed in more detail.)

4. NUCLEAR RESEARCH AND ANTI-GRAVITATION

To do a complete North American survey on the state of the art with regard to the above two items.

J. C. Floyd,
VICE-PRESIDENT, ENGINEERING.

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