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Mr. F. T. Smye
J. C. Floyd
ENGINEERING ORGANIZATION, WITH PARTICULAR
REFERENCE TO CF-105

As I mentioned on Friday, although we have now made the major moves in the Engineering organization, such as the appointments of Mitchell, Booth, etc., there are a number of things to clean up, especially with regard to the inter-relation between Lindley's and Adey's organizations, and I am sure that in this regard there are probably a number of things that you could pick on where the situation is not quite resolved, since Adey has been away for the last two weeks, and there may be some modifications when he and Mac have had a chance to go over the situation with Bob and myself. However, at the present time, the organization is laid out as shown in the rough chart.

The form of organization has been established, attempting to take into account our program, the personalities which we have in our key jobs in Engineering, and a study of other people's organizations, based on group systems and project systems. The organization which has evolved from this is based on the group system, but with a project system responsibility, or systems management, on the over-all project.

Chart A shows the function of these responsibilities, Chart B shows the administrative set-up under Lindley, and Chart C shows the technical management of the CF-105 project in particular.

Lindley has reporting to him the two Project Designers who are completely responsible for their own particular projects, and the four technical groups, Chamberlin being in charge of Technical Design, Booth in charge of Equipment Design, Mitchell in charge of Product Design, and Liss in charge of Project Accounting.

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In addition, George Oscar reports to Lindley as an Assistant, and will be used for whatever assignment that may crop up where his own particular attributes can best be used. Originally, Lindley was going to put him in charge of the Project Accounting Group, but on second thoughts, has decided that Liss will fill the bill, and Liss, in turn, is very enthusiastic about entering more into the Management scheme of things.

Dealing with the project technical management, I will try to outline what Lindley had in mind in setting up the CF-105 group under Hake. Hake, as Project Designer, will be fully responsible for the complete CF-105 program in Engineering. He will have two Assistant Project Designers; Ian Craig will look after the Mark 1 and the over-all armament, and Al Buley will look after the Mark 2. It is intended that both of these assistants will assist in detail only, i.e., as a right arm, and Hake will take full responsibility for the project.

We then have the four major design groups:-

Chamberlin, as Chief Technician, takes the responsibility for all technical design, including Initial Projects work, Aerodynamics, Stability, Control Systems Analysis, Computing, etc.

Booth takes the responsibility of Equipment Design, which means the design of any items of equipment, i.e., non-structural components, in detail. For instance, where a special type of control booster might be required in the Flying Control System, requiring specialist knowledge, Booth would take on the design of this (but not the installation, which would come under Mitchell).

Mitchell is in charge of Product Design, as chief of Product Design, which includes the complete structure of the aircraft, and installation of all services. The Project Engineers in the Drawing Office, and, in turn, the Design Engineers and Draftsmen, report to Mitchell, and also

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the Chief Stress Engineer, Alford. This is intended to tie in Drafting and Stressing functions.

Liss will be in charge of all Project Accounting, which consists of the documentation and recording of everything that has to be handed to Engineering Management, and to anyone outside the Division, or outside the Company, i.e., all model specifications, parts counts, dollar progress, etc., and will also handle preparation for presentations.

Dealing with the relevant points in each of these four major categories :-

1. Technical Design - J. A. Chamberlin

Chamberlin will have an Assistant Chief Technician (F. Brame) who will act as his deputy in all respects. They will have reporting to them directly, six functional groups, the Stability Group under Kwiatowski, Flutter Group under McKillop, Performance and Internal Aerodynamics Group under Morris, Digital Computing Group under Downing, Systems Analysis Group under Malinowski, and the Preliminary Design Group under Czerwinski. He will also have Raymond reporting to him as an assistant to him, and, as you know, Raymond will be, in effect, his sort of public relations manager.

2. Equipment Design Group - J. P. Booth

Booth will have reporting to him three or four Project Engineers, one dealing with Maintenance, another with Logistics, and a third on Equipment, and the Specialist Engineers will also report to Booth.

3. Product Design Group - F. P. Mitchell

Mitchell will be in complete charge of the

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CF-105 Drawing Office and Stress Office. He will have a number of Project Engineers working for him including, Ring, Nash, Lascan, Farrance, etc., who, in turn, will have a number of Design Engineers who will look after a group of draftsmen. Mitchell will be charged with the responsibility of seeing that the Engineering drafting and stressing is carried out as efficiently as possible in the minimum time and minimum cost, which will leave Hake clear for the over-all technical responsibility.

4. Project Accounting Group - I.M. Liss

This group will take on the job of providing Engineering Management, Company Management, and the R.C.A.F. with those items which have been requested to obtain information on progress, technical reports, etc., and will issue the following type of documents.

1. Model specifications
2. Statement of work, similar to that requested by the R.C.A.F.
3. Work programs within the Company
4. Progress reports, including parts counts.
5. Quarterly reports
6. Technical reports
7. An internal daily news letter
8. Presentation data
9. Avro-R.C.A.F. Engineering correspondence.

This is the group which Lindley was setting up under George Oscar, and which will now be run by Irv Liss. The format of this group is still under discussion, but it will probably embrace the estimating and recording groups for the

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Project. Scott has asked to be included in this group.

At the commencement of a new project, the following is the rough procedure, as I see it at the moment:-

1. The requirement for a particular project is established within the Company with the help of the Project Research Group and Sales and Service. The Project Research Group would get out a preliminary discussion brochure, describing the project in very general form, as outlined in the brochure which was prepared as an example on the High Speed Transport.

2. A briefing would be given to Company Management and/or the customer, on the basis of the very preliminary work at this stage.(Estimates of man-hours, schedules, costs at this stage, would be carried out within the Project Research Group, but with the assistance of the other working groups.)

3. If the project was to proceed further on the basis of a formal sales document to meet a specific requirement, project studies would be carried out in the Initial Projects office under Chamberlin.

4. An intensive selling campaign would be instituted where necessary, based on a fairly formalized brochure.

5. Assuming that we received a preliminary contract, or a letter of intent, we would then proceed with preliminary design in the Initial Projects Office.

6. As this design proceeded, a Project Designer would be chosen to take full responsibility for the Project, and carry it through. (At this time, formalized work charts, parts counts, budgets, etc., would be issued and controlled on a day to day basis by the Project Accounting

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Group, but under the direction of the Project Designer.

I realize that this set-up leaves Adey's group out of the equation so far as the operations are concerned, and I visualize that he will be concentrating more on the over-all divisional matters, such as facilities, hiring programs, salary administration etc. Then the responsibility for budget control will be with the Project Designer, delegated where necessary to the operating groups, and the 'fire alarm' system, so to speak, will be with Liss's group.

This organization is not yet in operation, but there is a gradual transition towards it, which we hope will be achieved very quickly. I realize that this is a quick and dirty shot at the organization from your point of view, however, it will at least give you some idea of what we are attempting to set up.

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

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