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SOME THOUGHTS ON FUTURE PROJECTS

Any requirement for future projects must be considered on a Company-wide basis, bearing in mind the goals which the Company hopes to achieve over, say, the next ten years. While we have an increasingly urgent requirement for a new project in Engineering, it is obviously not sufficient just to decide what would be best from an Engineering point of view in order to keep our key people interested and up to date with the state of the art. However, this is obviously a big factor in the equation if we are to remain as a top-notch Engineering company.

What we must have, as a Company, is a well balanced overall operation with improvements in the areas where we can make the most money.

In outlining any proposals for future projects it should be borne in mind that all the detail planning in the world, at a given time, will not necessarily ensure continuity in our program in the future, since the aircraft game is still inherently a somewhat unstable operation, like a chess game where the opponent's next move will inevitably decide what our own next move should be. In this case the opponent could be described as any inputs coming from the NCAF, the commercial operators, any major increase in the capability of the enemy, etc., which is likely to call for a change in concept, or even a change in basic Company philosophy, such as more emphasis on commercial, less on military, etc.

In view of the above, it is essential to retain a great degree of flexibility, so that advantage can be taken of any technical break-through in the state of the art, any sudden requirement for a particular kind of commercial or training aircraft, etc., and it would be wrong to plan ourselves out of business by being unable to take advantage of these chances as they come along.

However, this is no excuse for having no plan at all, and to get the best results we should have some logical plan for a period of say, 5 years ahead, at any given time, and this plan should be changed on a semi-formal basis each time a new input comes along. We should, in other words, always have some goal in sight regardless of how many times we have to adjust our sights.

It is probably necessary to re-state the Company's aims before suggesting any future program, which, as I understand it, are as follows :-

1. We require to keep our direct labor force at the maximum possible figure.
2. We intend, basically, to stay in the aircraft business.
3. We would be willing to divert some of our manpower to other than aircraft products if we felt that this would be lucrative work, and felt at the same time that it would use some of our established skills, to enable us to retain personnel over a lean period.

Dealing in more detail with these points :-

1. DIRECT LABOR FORCE

In addition to our established projects at their presently estimated timing and numbers, and assuming that there is no shooting war within the next two or three years, the retention of the maximum labor force possible would require the manufacturing of someone else's design.

The most obvious projects, provided we can

find a market for reasonable quantities, are :-

- (a) The Fairchild C-123 Freighter.
- (b) The Boeing Bomarc Missile, for use with the R.C.A.F.,
and, possibly,
- (c) The Fairchild High Speed Transport.

Another possibility which should be given some thought is the job of re-engining, say, the Douglas DC.7 with turbo-prop engines. C.P.A. have expressed an interest in a turbo-prop version of the DC.7, as opposed to the Britannia, since they consider that with the long background of the DC.7 airframe in airline use, and the extensive use of the Rolls-Royce Dart engine in the Viscount, the matching of these two components would provide an overall aircraft with the required reliability, and, at the same time, the higher performance of the Britannia class aircraft. Darts would obviously not be large enough for this version, which would use the Rolls-Royce Tyne engine, a development of the Dart, incorporating the general proven features of that engine.

I believe we should also check the possibility of building the T.37 Cessna Trainer for the R.C.A.F., which would require quite a selling job, since they have apparently decided to go ahead with a new design based strictly on R.C.A.F. requirements.

Another project worth considering is the Northrop X-156-T Transonic Trainer.

2. NEW DESIGN

If we are to continue with our present policy of providing a design facility to deal with the R.C.A.F.'s present and future requirements, we must obviously keep up to date with the state of the art in order

to be able to tackle any project which our Air Force might require in the future, whether it be another manned aircraft, or a missile, or both.

This is also the only way that we can keep our high technical skills in the Company, since they require an incentive which can only be provided by reaching as far along the road as possible from an Engineering point of view. Otherwise, the team will go stale or join a Company who is pursuing a more advanced course.

This may lead us into a manned aircraft beyond the C-125, probably an all-steel aircraft, capable of speeds up to Mach 4, and altitudes up to 100,000 feet, and if we continue along the logical development path, we will inevitably be led into the missile business.

This is obviously an area where we have to be flexible and able to change our thoughts and plans with the changing state of the art, and whereas at the present time we might plan on the all-steel aircraft mentioned above, it could very well be, that by the time we came to do this project, missiles will have advanced to the stage, and have the reliability, to make it obsolete. We must therefore continually re-examine the requirements and our planning, and keep as current as possible in our thinking.

As an insurance policy, if nothing else, I believe that we should consider the possibility of getting into the commercial business, either freight or passenger, since, while there is a distinct possibility of joining the 'money losers' in this game, almost every company in the United States has used it as a means of keeping in business in the years that peace at least appeared to have broken out.

The two most obvious new design projects in these fields are a medium range transport aircraft to replace the Viscount, and a medium to long range freight

aircraft, probably turbo-prop, for general use in Canada. The possibility of re-engining the C-123 with turbo-props should also be examined.

The R.C.A.F. and the commercial operators in Canada are obviously our best prospects on the commercial side, since we are not likely to provide a technical break-through in these areas, which would be sufficiently attractive to persuade the U.S. operators from continuing their traditional policy of buying Douglas, Boeing, or Lockheed. The only reason that National Airlines were ready to purchase and operate the Jetliner was because of the technical break-through that it represented at that time.

It could of course be that we may again find a commercial technical break-through which could be applied without too much risk, which may appear attractive to other customers in addition to our Canadian contacts, such as a STOL transport or a VTOL transport, in which case the market might be a much wider one, but there are certain hazards in reaching out into the state of the art on Commercial projects, since the Airlines are notoriously conservative in their outlook.

The Jetliner project was not taken up in Canada primarily because of fear and lack of courage; by T.C.A. because of the problems of operating a new type of aircraft in the existing traffic patterns, and by D.C.T. because of their reticence to be the first to license a commercial jet.

In other words, the project was born too soon, which is evident from the fact that in recent discussions with Harold Hoekstra of C.A.A., he said that they are now into exactly the same conversations with Boeing on the 707, and Douglas on the DC-8, with regard to certification for 1961, that they were having with us for operation of the C-102 almost ten years ago.

3. PROJECTS OTHER THAN AIRCRAFT

Other areas in which there may be distinct possibilities are :-

- (a) Other forms of transportation, such as Mono-Rail, etc.
- (b) The application of atomic energy, and some of the other techniques, such as anti-gravitation.

We should certainly not dismiss these possibilities, since they would make very excellent insurance policies for the future.

The above, then, gives some indication of the areas in which we should be searching for a new project, and, in summary, I believe that we should, at the present time, be taking the following steps to establish some sort of forward planning.

1. Set up a Project Research Group within Engineering as a full-time job, to keep up to date completely with the state of the art on aircraft and allied products throughout the rest of the world (a separate write-up on this is attached). I am, at the present time, setting up this group, which will collect data from all sources, analyse it, contribute by its own inputs, and generally do the searching and providing of data on which Management can make decisions.
2. At the same time, Sales and Service will be analysing the market potentials and areas in which we might profitably be engaged. I believe that this has to be done jointly, and suggest that someone from Sales and Service and a member of the Project Research Group in Engineering be given the job of jointly analysing the market in the main areas of interest.

3. The Company should come up with a long range plan which is a combination of planning carried out by Engineering, Manufacturing, and Sales and Service, and which would reflect the best balanced program over, say, the next five years at least. In setting this up, however, we should all understand that such a plan is no solution for all our long range problems, since the plan must stand the injection of items at any time, which, because of further knowledge of the state of the art, further knowledge of requirements of the customer, technical break-throughs which can be applied with success, and intuition, would make the plan more logical at any given time.

In order to start the ball rolling, the attached Charts give an indication of where Engineering would require work, and how certain new projects would fit into this picture with regard to filling in the manpower gaps.

Manufacturing would, I assume, come up with a similar requirement, and we could then jointly, between Engineering, Sales and Service, and Manufacturing, work out a plan which at this time looks most attractive, with the full knowledge that within three months this may have to be changed because of further inputs from one source or another.

There is obviously no easy solution to this problem of forward planning, and the main key to the whole subject is a frequent and aggressive re-examination and re-planning on the basis of the current state of the art, and customer requirements.

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