

A copy of an original memo, with comments, sent in by Collin Baker

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Saving Time

For a long time past it has been the writer's impression that drawing and planning time could be cut quite considerably on new aircraft work. The time referred to is that which is spent by all departments when designing and assessing a new project. As a new job progresses and grows, so additional labour is placed upon it and this labour, is, of course, not fully conversant with the general design and engineering features. To adapt new personnel to a new project all takes time (and time is money) and very often this increasing labour force is placed on one particular aspect of the job. Thus each individual channel of labour tends to be rather limited in its outlook and not fully tolerant to others working on the same job.

Co-operation does, of course, takes place – it has to, but it is never fully integrated due to the pressure of work upon the people concerned.

The most common form of visible integration takes the shape of a semi-reliable full-size wooden mock-up. This has been all very well in the past, but the time has arrived when something much quicker is required.

With the complexity and space factors involved nowadays in the time scales required, senior group personnel are finding it increasingly difficult to follow-up mock-up work in the manner which is required.

Surely then, all this calls for one man who can fully integrate the whole DO effort as a full-time job and produce evidence of this integration in the form of a thoroughly reliable mock-up. Not the type of mock-up we have known in the past, but a fully engineered and equipped version. True, this has been the object on past occasions and up to a point it has succeeded, but how big and space demanding these full size efforts have been.

In the writer's view, the answer to all this can be found in the formation of an engineering model department where a 'quarter' scale mock-up can be produced by experts under the direction of a full-time DO integrator. An essential thing though, is that this department must be in, or immediately adjacent to, the DO thus ensuring that individual DO personnel make full use of the information available from the model.

Not only will a quarter scale model prove beneficial to time DO, other departments, Stress, Tech. Pubs, Instrumentation Service, Shops, etc will all gain by making full use of the facilities which will be built up in the department. But why quarter size? The benefits are not immediately obvious.

Firstly, of course, is the size itself. What really is the use of a full-size mock-up to start off with (other than cabin) which is placed a distance from a conference room, is inevitably in a noisy locality and forever stays in the place where it is originally built? How much more useful would be a quarter scale version where transportation presented no difficulty, where reproduction of selected areas was a very simple matter and where the information presented was accepted by all as being reliable?

To this end the writer paid a preliminary visit to Westway Models to gain information from model experts on the feasibility of the idea and to see how they could help us should the idea materialise. Naturally, they jumped at the idea and did not hesitate to show the writer around the works or answer any of the inquisitive questions that were asked.

Their facilities are first class and there is no doubt whatsoever that working in conjunction with ourselves we could produce a model of the very nature envisaged. Repetition models of various marks or versions would be a simple matter using modern techniques.

It is the writer's opinion that quarter model of the accuracy envisaged would be of immense value in the history of TSR2 and future projects.

A final point that must be stressed is this: It must never be thought that his quarter model is a toy. It is not. It is to be as well

engineered as the final product and should always be thought of in that light.

Initial model types: quarter scale

Model No.1

A full length version giving basically all frame outlines and longerons and remaining basic structure. This will be used to give all concerned a quick initial basic structure on which to work out details. It will be built jigsaw-wise in order that major changes can be completed with minimum delay and will be primarily built by members of the Project Office themselves.

Model No.2

Structural only and built to show basic structural breakdowns. To be used mainly by structure and stress groups and shop jig and tool. Built in conjunction with Model No.1 on a partially engineered basis.

Model No.3

This will be built accurately from detail or scheme drawings as the are issued and be useful by all design and planning departments. It will be a fully-engineered model built ahead of but still parallel the full-size metal mock-up.

Other models

Before Model No.3 equipped, local area models will be made to assess equipment layouts. Once finalised and agreed they will be incorporated in the fully engineering model.

Photographic

In this sphere the models will really come into their own. From every aspect, photographs taken at the right angle can be of immense value to everyone ie perspective drawings for Tech. Pubs.

The cost?

In terms of the design man hours it would save, its direct financial cost would be a fair exchange.

The question now the is: 'Is a quarter scale mock-up likely to save any time, or is the full-size mock-up still to be the only design too. Would a quarter scale model in fact 'waste' time?

Opinions vary of course. Some say yes, some say no, some are willing to be converted either way.

The writer's opinion is known. The convictions of other interested parties will be sought and recorded at any meeting which may be called to discuss the proposals.

CM Baker