

Draft for Tech. Comm.  
4360

NIMROD PROJECT

Reassessment of the Construction Programme

1. Papers RSPC/P29 and 36 on this subject presented to the Project Committee on 13.11.58 and 22.1.59 respectively, stated that the terminal date of December 1961 for the completion of the Machine Construction could be maintained provided certain conditions were fulfilled. (These papers are reproduced as Appendices A and B).
2. As a result of considerable effort by all concerned the majority of the conditions set out were achieved but it is now clear that the completion date for the Main Vacuum Chamber cannot be met. Other items of anxiety are discussed later but the major uncertainty is the Main Vacuum Chamber.
3. The major change in the conception and design of the Vacuum Chamber had a consequential effect on the design of the rest of the Machine. Many designs had to be scrapped and additional more difficult ones had to be undertaken. Continuous development work has taken place with Messrs. Marston Excelsior, Ltd. and the fabrication problems have not yet been solved. This being so the first section of the Outer Vessel will have to be regarded as a prototype and the second section will most likely be the first to be installed in the Machine. The programme has accordingly been prepared on this basis. If, however, the first section exceeds our expectations and is suitable for incorporation in Nimrod some time will be saved.
4. The programme date for the Magnet Sectors has been achieved but with the Pole Pieces it is most difficult to determine the optimum design, develop the manufacturing technique and subsequently make in the time available. So many factors are involved that it will be unwise to make any forecast until the prototype has been successfully made and rig tested.
5. In general the building programme has been affected more by the lack of building labour than any other cause. To make the best use of the labour available priority has been given to the Magnet Room and Alternator Building but even so programmes have not been met. To encourage recruitment and retain existing labour weekend work has been the practice for some months. It is not Authority policy that we should go beyond this. Difficulties have been encountered in the design of a satisfactory foundation for the Alternators and this has delayed information to the site to permit the building to be constructed in the order recommended by the Construction Group. The design is now settled and the Alternator block will be poured last within the Alternator Building, which prevents the Power Supply System being the major anxiety; particularly since the English Electric and Brown-Boveri Companies are able to deliver their equipment to programme.
6. The rapid deterioration in the stainless steel supply position over the last few months could be disastrous. Not only does this affect the Octant End Structures but the result of a late delivery would be the setting back of the installation of the coils and Vacuum Chamber even further than the dates now being considered. Assistance in this matter being requested from the Directors of Messrs. Firth Vickers and alternatively continental sources of supply are being explored.
7. In order to guarantee that the Magnet Room roof will be water-tight for all time it has been necessary for Merz & McLellan to issue a re-design for the construction joints on the roof. This has delayed the mounding of the Magnet Room roof. Even had this not occurred some delay may have been experienced resulting from the fact that the full weight of magnets have not been positioned on the Monolith; nor can they be until the liner for the Linear Accelerator is delivered to the Injector Room. This will take place at the end of March.

8. The attached skeleton programme Appendix 'D' bears all the above points in mind and it would appear wise prior to issuing this programme to await the satisfactory completion of the first section of the Outer Vacuum Vessel.

9. It is requested -

(a) that the Committee take note of the proposed revision to programme, giving a completion date of ~~August~~ <sup>July</sup> 1962.

*It is recommended that*

(b) that the formal issue of the master programme based on the above skeleton programme be delayed until June 1960.

*(c) no changes be made*

P. BOWLES

2nd March, 1960.

Note that it is not intended to change the construction programme for the injector even tho' this too will be difficult to meet. The max. poss. period must be allowed for commissioning & development.

→ Avoid people being taken from injector, to <sup>install</sup> achieve this programme.

Vac vessels etc. into 148 first.