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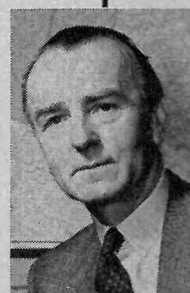
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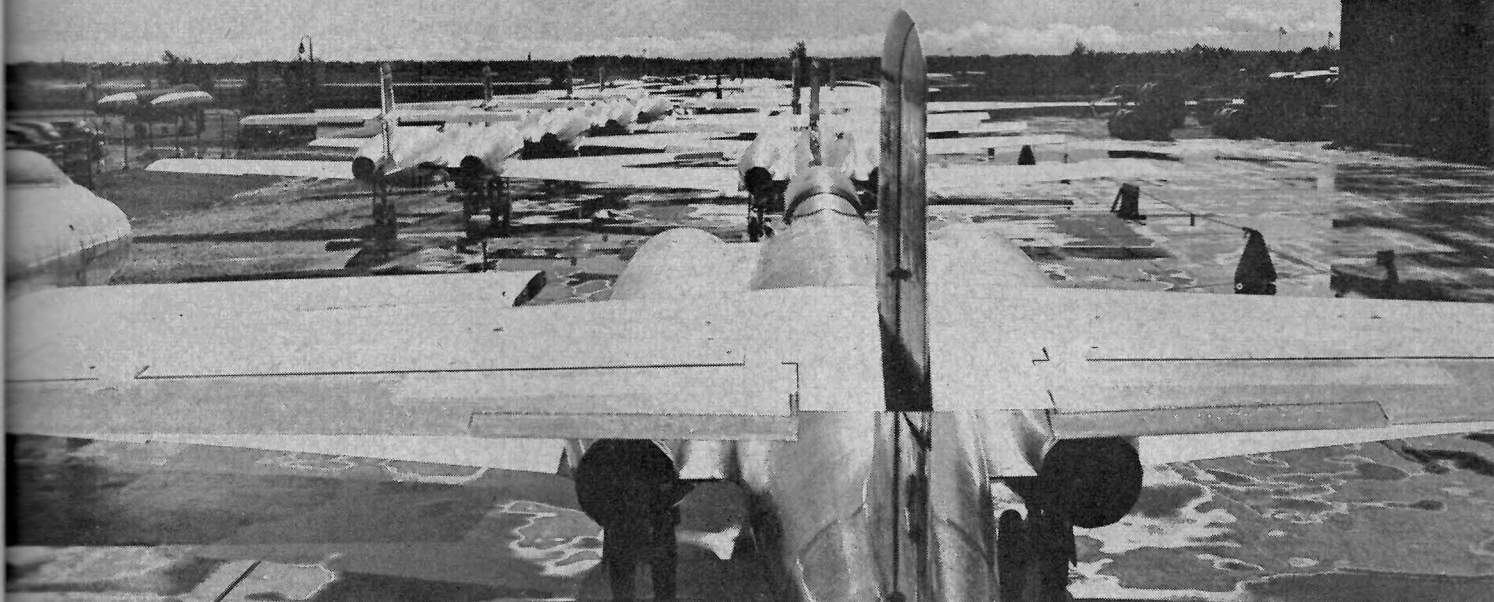
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EVER-INCREASING FLOOD OF CF-100'S crowd each other at Avro Canada ready for flight test.

How To Get A Repair And Overhaul Contract

IN THE performance of its function of procurement on behalf of the Armed Services, the Department of Defense Production has found one of its more complex problems to be repair and overhaul contracts for airframes, aero-engines, aircraft instruments, and aircraft and engine accessories. Because of the relative youth of the aircraft industry in Canada both the selection of contractors and the negotiation of contracts for this purpose has required some special considerations.

In the selection of contractors there are two guiding factors. The most important, of course, is the existence of facilities in the contractor's plant. Included under the term facilities are space, equipment, and technical knowledge. The second factor, the area of operations of the aircraft, is of almost equal importance, as the geographical situation helps to determine the choice of repair and overhaul contractors.

When the Department came into being in 1951, the expansion of facilities presented a serious problem. Prior to Korea the comparatively few aircraft that were in operation by the RCAF required few facilities for repair and overhaul, and the requirements of the Air Force were met by the larger aircraft companies

which had remained in operation following World War II. The rehabilitation and reconversion program of aircraft that were in storage in March of 1951 necessitated both the enlargement of existing facilities and the establishment of other facilities which could perform repair and overhaul of aircraft and accessories. The Department at first turned almost exclusively to facilities which had already been selected by the Royal Canadian Air Force but new facilities gradually became known and were utilized after approval by the Air Force. Very little capital assistance has been granted to repair and overhaul contractors but additional space was provided in some cases through loan of hangars which are under the control of the Department of Transport. Production tooling which is peculiar to a particular type of repair has been purchased by the Crown, in many cases, and provided to the contractor. Technical ability for the contract is determined on one of the following bases: past performance on defense contracts; past performance or experience on similar or related commercial contracts; and special knowledge of the item because of production experience as the manufacturer.

All contractors selected by the Department must be approved by the RCAF in accordance with the Air Force specification for quality control of aircraft and associated equipment. Because of the impossibility of checking individual parts on final inspection of an item after it has been reassembled, the processes and equipment of a repair and overhaul contractor must fulfill the requirements of the specification.

As aircraft are in operation in almost every part of Canada, it is necessary to have contractors across the country. However, because of the uneven distribution of aircraft in service in different areas, the requirement for repair and overhaul contractors is also uneven for different areas. Every attempt is made to distribute the work load, not only in relation to geographic location, but also with reference to individual contractors in an area.

The repair and overhaul of aircraft instruments is not necessarily performed in the area of operations. The defective unit is placed back in stores for forwarding to the major supply depots, and immediately replaced in the aircraft by a new unit from stores. Instruments which have completed the required time in op-

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CITF BOOTH at AITA Quebec City. Other exhibitors (photographs unavailable at press time): Abercorn Aero, Aviation Electric, Babb Co. Canada, Bristol, Canadair, Canadian Aviation Electronics, Collins Radio, Dowty Equipment, Dunlop, Garrett Manufacturing Corp., Jarry Hydraulics, Lucas-Rotax, Railway and Power Engineering, A. V. Roe Canada.



FRANK YOUNG of TCA, receives the McKee Trophy from Air Marshal C. R. Slemon at last month's AITA meeting in Quebec City. He won it for his efforts in organizing the National Air Show.

DEPARTMENT OF DEFENSE PRODUCTION

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eration before overhaul, and instruments in stores on which the required shelf life has expired, follow the same pattern. The instruments are forwarded to repair and overhaul contractors in the area of the major supply depots as the need arises.

In the negotiation of contracts, repair and overhaul in the aircraft field requires some special considerations. Because of the nature of the work, it is most impracticable to follow the preferred departmental policy of awarding contracts on the basis of competitive tenders. In order to obtain a realistic estimate of the amount of work to be done, it is necessary to have the aircraft, engine or instrument stripped down completely. If competitive tenders are called at that time and the successful tenderer is other than the contractor who has disassembled the item, then the item must be reassembled before transportation to the successful contractor. The cost of reassembly negates any saving which might result from competitive tenders. In consideration of this plus the loss of time resulting from reassembly, transportation and disassembly, necessary before repair and overhaul begins, it has been virtually impossible to award contracts on this basis.

In addition, it is most difficult for tenderers to submit, even after inspection of the disassembled item, a realistic firm price because of factors which come to light only after the work is in progress. This situation has prevented the establishment of firm prices in negotiations with a single contractor.

The majority of repair and overhaul contracts in the aircraft field have, as a result, been let on the basis of cost plus a fixed percentage of costs. In the conversion or modification of airframes, the department is presently establishing target price contracts based on a maximum number of manhours, estimated as a result of experience on prototype conversions or modifications. Since manufacturing experience almost invariably results in a decrease in the number of manhours required, the contracts are subject to renegotiation after a certain proportion of manufacturing experience.

Because of the variety in types of equipment which prevents application of past experience on one type to a subsequent contract for another type, it is expected that these contracts will be awarded on the basis of cost plus a fixed percentage of cost, for some time.

Although the number of aircraft presently in service is approximately three times the number which were active in March of 1951, this does not necessarily imply that the requirements for repair and overhaul have also trebled. The necessity for rehabilitation, reconversion and modification of aircraft and sup-

porting equipment which had been placed in storage, together with the comparative scarcity of repair and overhaul facilities, resulted in a large flow of contracts to established facilities. In addition, the Royal Canadian Air Force was then insufficiently staffed to handle all the standard maintenance of aircraft in service and it was necessary to employ civilian contractors to perform this work which is normally a service function.

At the present time, there are sufficient facilities available even though more and newer types of aircraft are in operation. In many cases the newer types, either purchased or manufactured, have been replacement aircraft for those which were in service in 1950 and 1951. Because new aircraft are being put into service, rehabilitation, modification and conversion constitute a much smaller percentage of repair and overhaul work. The Royal Canadian Air Force has removed its staff deficit to the point where it can handle its own standard maintenance on aircraft and such contracts are now placed with civilian contractors in only one instance. The continual change in the requirements picture on repair and overhaul for aircraft, added to the entry into the field of other companies having adequate facilities, and in some cases, special technical knowledge of an item, may mean that the work load of an individual contractor may decrease in comparison with 1951 and 1952.