

OF ENGINEERING INTEREST



A jet boat at 25 m.p.h. in the Hope River, Canterbury, in water which seldom exceeds 12 in. in depth and often in the shallows of rapids only two or three inches. These are normal operating conditions for the jet boats which draw very little water at speed.

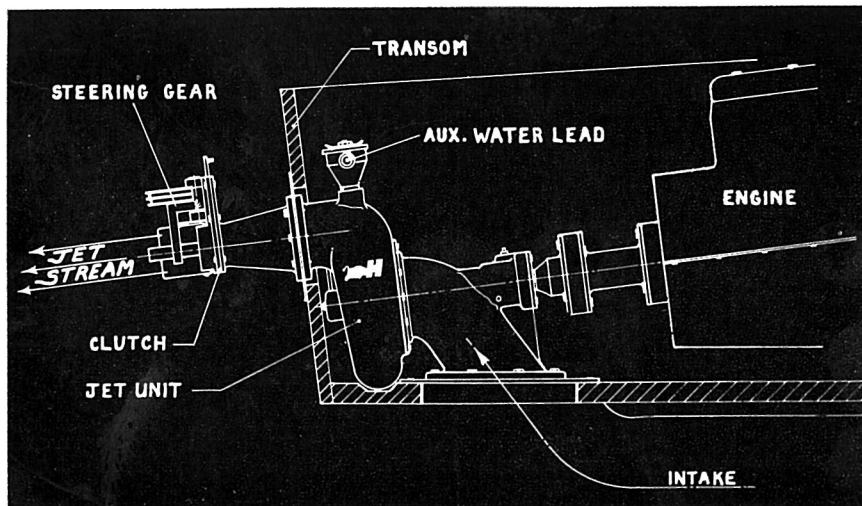
MARINE JET PROPULSION

THE basic principle of jet-propulsion for marine craft is as old as the screw propeller, but its efficient application has always been difficult. Hamilton marine jet units have been developed to such a stage that they closely rival a conventional propeller in efficiency, while possessing the advantages of giving a completely clean bottom, devoid of all appendages, and unparalleled manoeuvrability for small craft. In addition, they eliminate engine clutch and reverse gearbox.

C. W. F. Hamilton, of Irishman Creek Station, MacKenzie Country, has been responsible for their development, mainly for the negotiation of our swift and shallow rivers.

They take the form of a specially designed pump unit mounted inside the boat, drawing water through a flush-mounted grill in the bottom, and expelling it rearwards through a nozzle in the transom. Steering is obtained by deflecting the jet stream to left or right. A sliding gate shuts off the delivery to act as an engine "clutch", further movement of the same control bringing a reverse jet into operation.

Different designs are built for different purposes: the Chinook unit, for instance, is a two-stage axial-flow type direct driven off the engine. The jet stream passes into the air when the craft is planing. These units fitted to vee-bottomed planing hulls are ideal for



The smaller of the two Hamilton models is a centrifugal type weighing about 46 lb., its power requirement is up to 35 b.h.p.

shallow water operation of any kind, drawing only a few inches of water at speed, and are capable of climbing rapids and negotiating turbulent water. The normal runabout class of hull, with special heavy strengthening for river work, is capable of 20 to 34 m.p.h. depending on engine power, etc. They can be beached, dragged ashore, and generally handled without fear of damaging the propulsion gear.

Although Mr. Hamilton originally interested himself in jet propulsion for his own use, they have proved so useful and versatile that they are now being built commercially.



The jet boat demonstrates a startling 90° turn close into rock faces in the Waimakariri river, Canterbury. The ship has a remarkable stability in all conditions and at high speed can turn in its own length.

F.B.I. SCHOLARSHIPS FOR 1958

The Federation of British Industries is offering in 1958 three scholarships which will provide practical training in the United Kingdom to selected engineering graduates.

One of the scholarships now offered is for a graduate engineer with not more than two years' professional experience and covers all travelling expenses and the full cost of maintenance for two years' general practical training. The other two scholarships are available either to similar young graduate engineers for two years' training or to more senior engineers with not less than five years' professional experience for from 6 to 12 months' specialized training. These two scholarships do not cover the cost of travel to and from the United Kingdom and the more senior engineers will have to meet a portion of their living expenses.

Applications for these scholarships should be submitted not later than January 25, 1958, to the Senior United Kingdom Trade Commissioner in New Zealand, P.O. Box 369, Government Life Insurance Building, Wellington, C.I.