

**WE ARE PROBABLY** as heavily committed to a revolutionary **new method of releasing atomic energy** as we are to the fitting of turbine engines to all large and medium-sized aircraft — indeed the two sciences are intended to go hand in hand. It has been evident for some time that we are not developing the method of fission which was evolved jointly during the war by British, Canadian and American scientists and subsequently engineered in America. We have not the manpower to build and operate a plant the size of Oak Ridge; in our new method we expect to sidestep the process of isotopic separation and so obviate the necessity for an "Oak Ridge in Britain."

We are concentrating on new fissionable materials, one of which is thorium (containing only one isotope) and we are also developing a new way of releasing atomic heat which does not rely on the basic idea of splitting a heavy element into two lighter ones. The novel method gives rise to a sober expectation that few of the existing difficulties of using atomic heat in conjunction with aircraft turbines as a means of propulsion will be encountered. The curtain on British atomic research has not so far been lifted. By entering the industrial field of atomic energy after America we may be more dispassionate in our choice of the most efficient method.

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**Cheapest gyro-pilot** on the market is the \$2,250 Miles co-pilot. This is an electronic unit with an electric gyro mounted at 45 deg. sensitive to roll and pitch. Four bulbs send light beams through brass shutters onto four photo-electric cells. The position of the aircraft alters the shutters and varies the strength of the light reaching the four cells. The cells operate on the grid of four Thyatron valves to excite servo motors and make the necessary corrections on the aircraft controls. The co-pilot weighs less than 40 lb. Miles expect to be able to feed in signals from various electronic blind approach systems and perhaps the Decca Navigator or radio compass to put an entire flight under automatic control.

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**NEWS IN BRIEF**—\*The Avro Tudor II is being fitted with four Bristol Hercules 120 engines as alternative power plants to the Civil Merlins. \*The second prototype Miles Marathon is now completed; it is fitted with thermal de-icing. The third aircraft will be the first Mamba-Marathon. \*"Elizabeth of England," the

## London Letter

Special to Canadian Aviation  
By R. G. WORCESTER

first Tudor I was christened on January 21 at London Airport. \*In answer to a question which I put to Joe Smith, chief designer of Supermarines, during a recent lecture on Spitfire history, he said he hoped to see power-folding wings on some Seafire 47 airplanes. \*"Salisbury" is the first Short Solent to be delivered to BOAC; recognition features include the long chord fin; the Hercules 637 engines may later be in low drag spinners. \*Twelve Airspeed Consul ambulances are being supplied to Turkey.

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**THE** official pamphlet, "Battle of the Atlantic," pays tribute to the work of the Canadian Navy and Air Force for its part in the relentless struggle. It also shows that the first rocket to sink a U-boat No. U-752 was fired by a young RNVR pilot in a Swordfish. The "father" of British rocket work is Lieut. Cmdr. G. H. Bates, M.B.E., R.N., who probably fired the first missile and has been C.O. of a British squadron using a secret counterpart to the American Tiny Tim large rocket.

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**Orders for British aircraft** are roughly as follows (home contracts in brackets): Consul 26 (89); Autocrat 200 (250); Bristol 167 (4); Concordia — (2); Dove 175 (25); Hermes — (25); Gemini 32 (119); Aerovan 18 (48); Messenger 12 (37); Marathon — (25); Proctor 84 (63); Merganser 4 (—); Aerocar 200 (20); Tudor I — (20); Tudor II 6 (12); Solent — (12); Shetland — (2); S-45 — (4); Viking 45 (115); Wayfarer—total 70. This adds up to some \$42½ millions of export orders. The figures for Marathon and Wayfarer are unrepresentatively low. The Aerocar is the only one that has not yet flown. Aero engines show important advances — for instance, in November, we exported 85 new engines valued at \$1.88 million against \$1.9 millions for aircraft. Both figures are eclipsed by the order for parts totalling nearly \$3.6 millions. The figures being prepared for December will probably show further gains all round.

**There are 60 flying clubs** now flourishing and some 50 airfields where aviation fuel may be bought (for coupons). The grouping of airdromes still makes it quite difficult to travel distances of 300 miles in Britain without making detours. The Air Ministry could help the private pilot by opening further military airdromes but they are apparently too engrossed in their own affairs.

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**THE** Meteor V is a radio-controlled version of the aircraft to be used for high-speed target practice for anti-aircraft gunners. The most important application of the Meteor V is as a transonic research aircraft although this is not specifically mentioned in the bare announcement of the new variant.

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**The following technical figures** of the de Havilland Ghost are printed for the first time. The Ghost develops 5,000 lb. static thrust or 8,000 lb. true thrust at 600 m.p.h. at sea level. At a propeller efficiency of 66% this is equal to the output of a 12,000 h.p. piston engine. Despite the greater power the diameter is only three inches greater than the Goblin, at 53 inches. The length is 115.5 inches. The engine has a single-sided compressor with ten combustion chambers (instead of 16 in the Goblin). The compressor is driven by a single-stage turbine. The main difference in design is the use of two ports at each combustion chamber. The diffuser ring is divided into two at each combustion chamber and the two ports join together at the head of the combustion chamber. This arrangement improves the intake efficiency which uses some 95% of the available ram. The weight is 2011 lb. Consumption at a cruising speed of 400 m.p.h. is 160 gals./hr. at 30,000 ft. and 65 gals./hr. 50,000 ft. Low down at 10,000 ft. the consumption is 380 gals./hr. All these figures are at cruising 8,500 r.p.m. The main claim of the single-sided impeller engines of de Havilland is their installed efficiency as compared with test bed efficiency. The Ghost is likely to carry on where the Goblin left off for the very high-speed types although there is still room for development in the Goblin II. Both the materials and the basic design of the two engines are similar.

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**THE** most enigmatic fighter in Britain is the Supermarine E 10/44 or, for want of a better name, the Jet Spiteful. This airplane uses

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