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...minor operations, ... is only about three ...and one foot square. It is dropped with an 18 foot parachute.

The new look in fire-fighting fashions. Aluminum foil coating for the suit greatly reduces the internal heat.

The IAM, Toronto, with all its sound-proof chambers, its human centrifuge, its decompression chambers and its hot and cold rooms was thrown open to the visitors, who went away with a very strong impression that Canada is among the foremost of the nations in the aviation medicine field.

The RAF brought over a very comprehensive display from its Institute of Aviation Medicine at Farnborough, England. This showed the tremendous influence that the doctors have in the pattern of an air force, even in the design of airframes. Oxygen apparatus, the Martin Baker ejection seat, new types of sound proof helmets and instrument panel lighting were only a few of the devices on show, and W/C H. P. Ruffell-Smith RAF. did an excellent public relations job in telling visitors what Farnborough is doing.

The USN and the USAF provided another example of the way America goes out in a big way to do any job that it thinks worth doing. One of the most impressive of the exhibits showed how much thought and time has gone into the development of airborne hospital equipment. Weight has been shed in all directions and not only has there been no loss of efficiency, in certain cases there has actually been an improvement registered. A complete operating theatre can now be carried in a comparatively light aircraft, and set up in working order in an incredibly short time.

Many devices for testing human reactions and failings were put on show by the US, and among these was a speeded-up film showing the visual problems which face a pilot who may have to dive on a target at supersonic speeds. His reactions will certainly have to be fast or he will only make one dive.

The panel discussions covered a very wide range of subjects, including such things as "The explosive decompression of monkeys at extreme altitudes"

The Franks "G" suit, now used extensively in the service.

and the effect of "High velocity wind blast on personnel and equipment." The movies shown also dealt with every aspect of the air force doctors' work.

The social side of the meeting included a garden party at the RCAF Staff College and a cocktail party given jointly by TCA and CPAL, both of whom had exhibits in the show.

"After Burner" Increases Jet Power

Designed to give pilots flying jet powered aircraft a tremendous supplementary speed and power boost at a flick of a special control, the newly developed Ryan "After Burner" has been announced by the Ryan Aeronautical Company.

The thrust-augmentation device is the first specifically designed for regular use in flight, and has been developed by the Ryan Aeronautical Company for the U.S. Navy's Bureau of Aeronautics. It is applied to jet propelled aircraft to give added power take-off, during combat conditions and on all occasions where extra thrust and speed are required.

In basic conception, the Ryan After Burner is a ram jet installed downstream from the turbine of a conventional jet engine to add more than one-third of the power plant's normal propulsive thrust, Ryan engineers point out. This is accomplished by spraying fuel into the tailpipe where its burning adds mass and velocity to the speeding gases of the jet stream.

Fuel consumption of the after burner at low speeds is high compared to the jet engine, but at very high speeds, it is more economical than the turbo-jet.

With gasoline used as a fuel in an internal combustion engine a fuel-air ratio of 1 to 16 is necessary to obtain complete combustion of the oxygen in the charge. In contrast the turbo jet engine operates at a fuel-air ratio of 1 to 50 and as a consequence there is a great deal of unburned oxygen in the jet stream. The quanity of this unburned oxygen is the limiting factor in the amount of thrust augmentation which it is posible to attain.

One of the most important problems in operation of the after burner is controlling the flow of fuel. Excessive combustion of fuel will impose a choking at the nozzle which affects the operation of the turbine of the turbo-jet. A proper fuel rate is achieved automatically in such a way that the ultimate performance of the engine-after burner combination is maintained without exceeding operating limits. The amount of fuel that can be burned is limited only by the size of the nozzle and resistance of the metals to high temperatures.

Another problem is starting an after burner because the conditions are more critical than those experienced after the flame has been started.