



Technicians check rigging on CF-100 drogue.

Pink CF-100's:

Collision course interception

Canadians who see "pink airplanes" in the sky should not worry, assures Avro Aircraft Ltd. at Malton. Those pink things are really there.

They are new target-towing CF-100-Mark IV's which have been painted a brilliant fluorescent red so that at the high speeds and height of modern rocket and gun-firing practice, there will be no mistaking the aircraft for the target.

► **Collision Course Interception.** The CF-100 specials were modified by Avro Aircraft in reply to the RCAF's request for "something fast and high to shoot at to practise the new one-pass radar-controlled collision attack technique which is the basis of present jet interceptor defense." At today's speeds, one pass is all a defending aircraft can expect.

The new collision attack technique is completely automatic. The interceptor picks up a target on its radar which then guides the aircraft unerringly on a constant bearing directly across the path of the target — like two cars heading for a collision at an intersection.

But all the while the interceptor's

computing equipment is being fed by constantly changing radar signals and is automatically correcting for range, speed and angle of attack.

So there is no collision between the two aircraft like there would be with the cars, because at the split second everything adds up, the electronic equipment automatically fires the rockets or guns. It is the rockets and bullets that collide with the bomber at the intersection. The interceptor has already turned away.

This means in effect that the interceptor can attack in complete darkness or dense cloud, and shoot down its target from perhaps a mile away without the pilot seeing the enemy clearly—if at all.

This is the primary role for which the CF-100 was designed.

► **Towing Modifications.** The target towed by the modified CF-100's is made up of a 6-ft. x 30-ft. wire and nylon banner attached to 12,000 ft. of armored cable which can be let out to any length desired. Just ahead of the target is a metal radar spinner. This sled-like metal framework with its spinners is ideal radar

"fishing bait" — giving a strong signal when picked up by the attacking CF-100's radar.

At high speed there is an additional 2,500-lb. drag (about the weight of a car) on the towing aircraft, and though there is plenty of power in the CF-100 to pull the target even faster, the cable breaks over this weight.

With one of the new aerodynamically shaped targets—which reduces drag to a minimum—the cable would permit the CF-100 to fly at almost maximum speed.

Because there is no room in a jet for large target equipment, the target is dragged off the ground some distance behind the aircraft. Once airborne the cable can then be let out until the target is at a safe distance for practice attacks.

Comments Avro Aircraft Test Pilot Peter Cope, who carried out early experimental flights: "Right from the start the take-offs proved easy. The banner and spinner — about 300 ft. behind us on the runway—came along cleanly and easily every time, and we had plenty of power left. We climbed at about 5,000 ft. a minute.

► **Target Jettison.** For cutting the cable over the dropping area after an exercise, Avro Aircraft devised a remote control for the standard "butterfly" device. On release, this "butterfly" races down the cable. Coming to a dead stop just before the target, its cutters are jerked through the cable allowing the target banner and spinner to fall away. The hydraulic winch is then able to reel in the lightened cable.

Once during Trenton towing trials, Avro Test Pilot Jan Zurakowski's "butterfly" failed to work. He had 6,000 ft. of cable out and the target in tow.

The weather had closed in on the dropping area so he dived down over frozen Rice Lake, and saw everything was all clear, and from 1,000 ft. used the auxiliary gear to jettison the lot for pick-up later.

But a local couple, Mr. and Mrs. Harris of Gores Landing found the cable on the ice and began rolling it up. They never knew what they had let themselves in for.

Nevertheless they stuck to it and eventually got the whole 6,000 ft. —weighing about 200 lb.—to their garage before calling the authorities to collect it.