

New tactical aircraft sought

McDonnell's Phantom is favorite, but the lighter, cheaper F-5A has merit

By Peter Brannan

● In proposing the unification of the Canadian armed forces, Defence Minister Hellyer backed sound common sense against the deep-rooted prejudices of some senior staff officers, and the almost overwhelming approval accorded his plan has pretty well ensured that it will reach fruition.

Having taken this giant step with comparative ease, Mr. Hellyer should be encouraged to press on and to tie up all the ends in quick time.

Many urgent decisions are awaited — such as the selection of the new tactical aircraft for the combined force — and in matters of such prime importance, both to the force and the aircraft industry, no time should be lost. The contractor or contractors chosen for the job of licensed production — probably **Canadair Ltd.** (airframe) and **Orenda Division** of Hawker Siddeley (engines) — will have much work to do before production can begin.

According to Defence Department sources certain aircraft have already been evaluated, but on an individual preintegration service basis, and no selection can be made until the new integrated Defence Staff has been established. To quote the department source: "The plain fact is that we have not made up our minds on the exact nature of the multi-purpose tactical-ground-support air-surveillance aircraft we intend to acquire as a replacement for the CF-104 - CF-101 complement of aircraft."

Nevertheless, there is a strong rumor going the rounds that the new joint service aircraft has been chosen — that it will be the **McDonnell** Phantom II, known as the F-4B in the U. S. Navy and the F-4C in the USAF, and that the initial production run will be 217 aircraft.

If the rumor is true this will be a plum for Canadair, and it will be a forward step in performance for the pilots of the RCAF and the RCN. The Phantom, already ordered by the British Royal Navy, is a lot of airplane. Established performance figures include a top speed of 1,606.48 mph and an altitude of 98,556 ft (world speed and altitude records set up in 1960). Time-to-height records of the Phantom include these: to 9,840 ft in 34.5 sec; to 39,360 ft in 1 min

17.14 sec; to 65,600 ft in 2 min 58.5 sec; and to 98,400 ft in 6 min 11.43 sec.

But perhaps it is too much airplane for the Canadian armed force.

The Canadian Navy would certainly have to buy a new aircraft carrier to operate the Phantom from the deck; the aircraft being procured by the Royal Navy have to be substantially modified to enable them to operate from British carriers.

No question about it, the Phantom is a highly versatile machine. It is being built for the U. S. air force, navy and marine corps. In addition to the crew of two and full target detection and automatic tracking radar, it can carry an unspecified load of weapons and stores known to be in excess of 10,000 lb. Air-to-air and air-to-ground missiles and rockets, conventional or nuclear bombs and ground-strike weapons are all carried externally on the pugnacious-looking aircraft.

Power to spare is the key to the Phantom's scared cat performance. It can fly handily on any one of its two General Electric GE-J79 engines, which develop up to 16,500 lb of thrust with afterburning. The Lockheed Starfighter has just one of the same type of engine, with slightly less thrust — an engine that is already in production at the Orenda plant outside Toronto.

In addition to the twin-engine safety feature, the Phantom version ordered for the USAF has dual flying controls as standard. This provides flight training advantages as well as overcoming the problem of the second crew member being helpless to save the aircraft in the event the pilot becomes disabled.

Another plus for the Phantom, from a Canadian viewpoint, is that it would be operating in co-operation with USAF aircraft of the same type in its NORAD continental defence role. In the interceptor role the Phantom can be operated from 5,000-ft runways, which is a modest requirement by Air Defence Command standards, but might be embarrassing if the aircraft were ever to be considered part of the Canadian peacekeeping force. It would be subject to precisely the same criticism as the CF-104 from the concrete requirement and ground-support viewpoints.

Also on the debit side is the general cost and complexity of this piece of hardware, which has a gross weight of over 40,000 lb. The purchase of anything like 200 units would take a large slice out of the defence budget. In return, the RCAF would need much more than just a CF-101 Air Defence Command replacement. True, the Phantom could operate out of established bases, just as the CF-104 Starfighter does in Europe, but this hardly seems in tune with the aims and objects for the future of the Canadian force, as outlined in the Defence White Paper.

If one aircraft is to be chosen to replace both existing RCAF types (CF-101B Voodoo and the CF-104 Starfighter), then the **Northrop F-5A** would seem to be a valid candidate, as suggested in Canadian Aviation in the May issue (page 39) and apparently this type is among those under consideration. The Northrop F-5A might lack adequacy in the Air Defence Command end of the RCAF's requirements, but this appears to be of least importance from the small size and rapid erosion of the present Voodoo force and the current emphasis upon policing and peace-keeping.

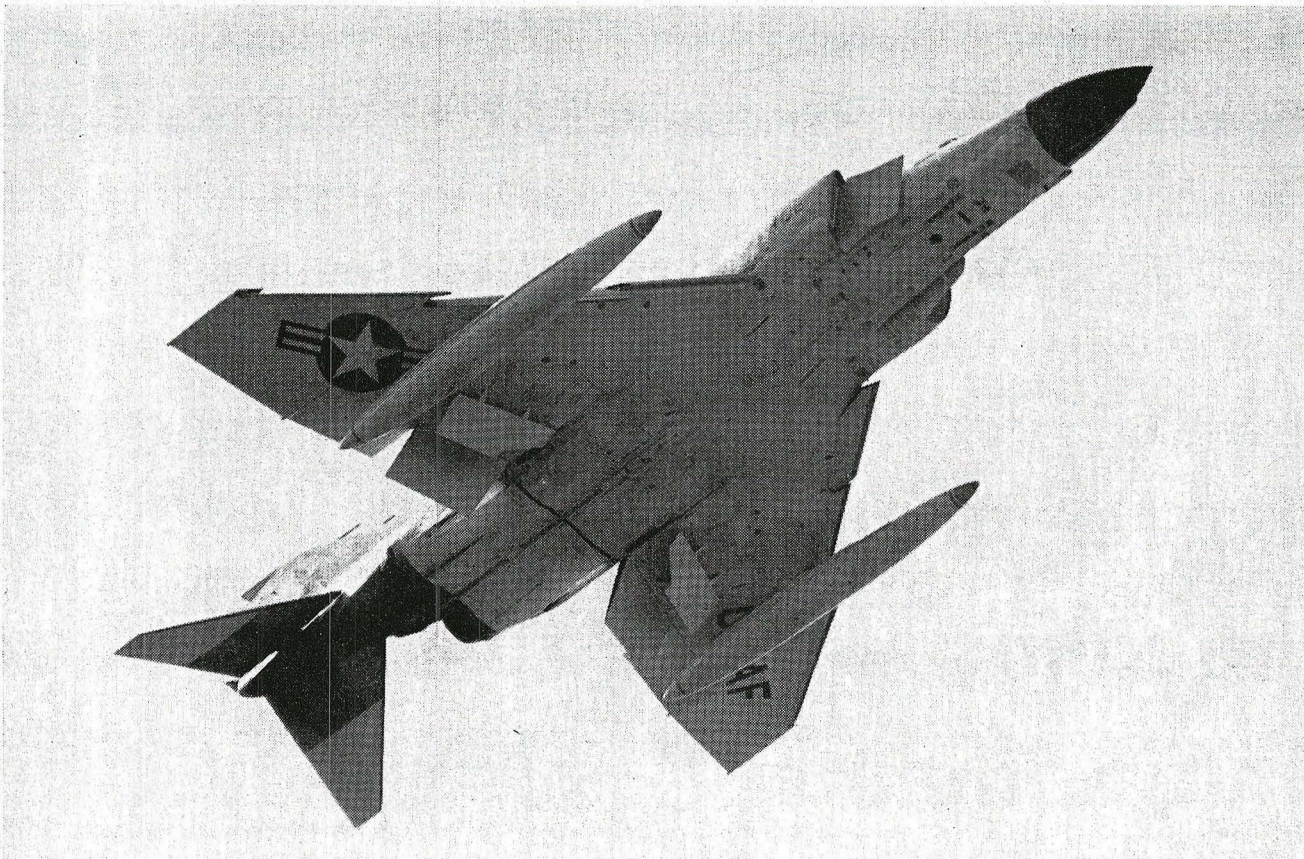
The F-5A is also a very versatile airplane. It was designed for the close support of troops, interception of enemy aircraft (by means of air to air rockets), attacks on ground targets, and armed reconnaissance missions at both low and high altitudes. It can operate without runways — from earth or grass fields.

Available as a single-seat or two-seat aircraft (designations F-5A and F-5B respectively) the Northrop Freedom Fighter, as it has been named, was conceived for delivery to nations friendly to the U. S. under its Mutual Security Program. It has already been chosen by the Norwegian Air Force, which has ordered 64 aircraft.

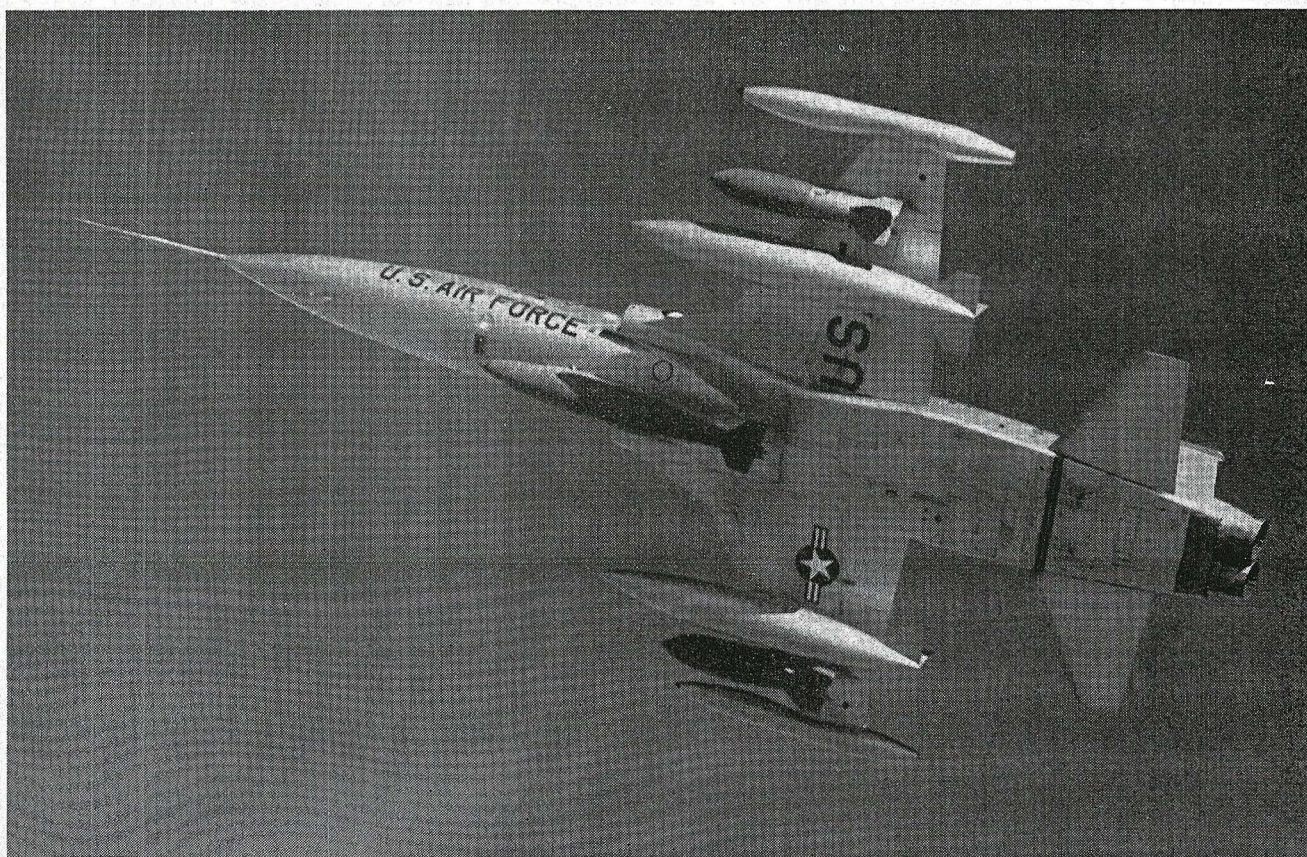
The same basic machine is also produced as the T-38A Talon two-seat trainer, and the whole package is eminently suitable for licensed production in Canadian plants. Power for the F-5 is provided by two General Electric J85-13 turbines, and for the T-38A by two J85-5 turbojets.

The F-5 will not lack in its appeal to pilots. It may not be quite such

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McDonnell 4C



Northrop F-5A

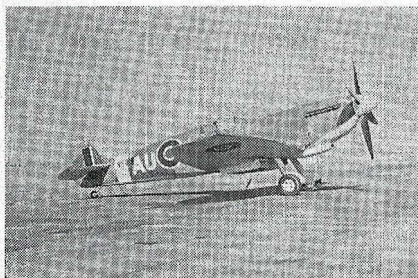


Sopwith Snipe

camouflage for low-level operations.

W/C Paul Hartman, who flew the Silver Dart replica in 1959, demonstrated the World War I Sopwith Snipe, acquired by the Canadian War Museum. Restored by Jack Canary of Los Angeles, the Snipe is in superlative condition. Somewhat noisier was the swan song of the Harvard aerobatic team from RCAF Station, Moose Jaw, soon to be disbanded. Like the Red Knight (F/O Bill Slaughter in a T-33), they were a real crowd-pleaser. The Vertol CH-113 helicopter and three Canadair Tutors were on view for the first time.

A Spitfire L. F. IX was presented to the National Aviation Museum at Up-lands by John N. Paterson, Fort William businessman, and president of the Thunder Bay Flying Club. Mr. Paterson flew Spitfires as a flight lieutenant overseas with No. 421 (Red Indian) Squadron during World War II. After the war, he obtained a Spitfire from Belgium for use as a personal aircraft. F/L Gerry Billings gave a spirited display in the aircraft, just 20 years to the day after he had flown a Spitfire over the Normandy beach-head.



Supermarine Spitfire IX

Ken Molson, curator of the Ottawa aviation museum, officially accepted the Spitfire, which is the same version as that flown by many Canadians during World War II. It bears the markings of Mr. Paterson's wartime machine and these will be retained permanently while it is on display in the museum. The Mark IX version had a top speed of 408 mph at 25,000 ft and could climb to 20,000 ft in 5.7 min. Its wing span was 32 ft 2 in. and its normal maximum weight was 7,500 lb.

Mr. Molson also received into the custody of the museum, a Bristol Bolingbroke, the Fairchild-built version of the Blenheim IV. The "Boly" was donated by G. K. Maude of Sidney, B.C. — N.A.M.

Tactical fighter

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a firecracker as the CF-104 but it can get up and go. Time from a standing start to 10,000 ft was recently clocked at 40 seconds; the sea level rate of climb is almost 30,000 fpm. Speed is Mach 1.4—around 1,000 mph—and range with external tanks, 1,600 nautical miles.

A variety of external stores can be carried for the 6,200 lb weapons payload and the F-5's take-off weight can vary from 13,000 to 20,000 lb depending upon the mission. Two 20 mm cannons are mounted internally. Tactical radius is 550 nautical miles.

The lightweight airframe enables this lively performance to be achieved with two engines of just over 4,000 lb static thrust apiece. The engines are accessible from ground level for maintenance; the record for an engine change is 20 minutes by three mechanics. Dual fuel, electrical and hydraulic systems ensure one-engine-out safety and permit a mission to be completed successfully on the remaining engine, if necessary. Normal ceiling is in excess of 52,000 ft.

McDonnell F4B facts: Length: 58 ft 3 in.; span: 38 ft 5 in. (wings folded:

27 ft 6½ in.); height: 16 ft 3 in.; weight, max t.o.: over 40,000 lb.

Speed: Mach 2.6 in trials but specific performance details not available; ceiling: (sustained level flight) 66,443 ft; max. altitude: over 100,000 ft.

Power: two GE J-79-GE-2A turbojets of 16,150 lb thrust with afterburning; total internal and external fuel: 3,200 U. S. gal.

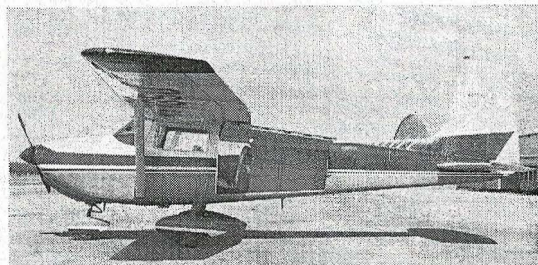
Armament: Six Sparrow III or four Sparrow III and four Sidewinder air to air missiles, with provision for alternate loads of nuclear or conventional bombs and missiles; Westinghouse APQ72 automatic radar fire-control system in nose, plus infrared equipment in bulge below nose.

Northrop F-5A facts: Length: 45 ft; span: 26 ft 7 in. with tip armament; height: 13 ft 2 in.; weight: 12,920 lb.

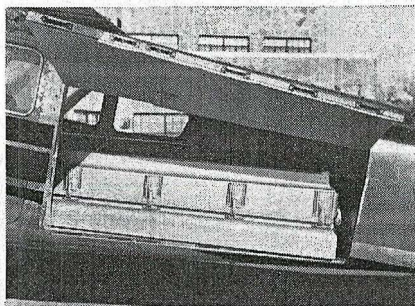
Speed: Mach 1.4 (supersonic from sea level to 50,000 ft); range: 1,600 nm (with external tanks); rate of climb at sea level: 28,600 fpm; ceiling: 52,000 ft; armament: two 20mm cannon plus 6,200 lb of external stores (Sidewinder or other missiles, bombs, rockets, napalm, reconnaissance and surveillance equipment).

Power: Two GE J85-13 turbojet engines with afterburners; static thrust 4,080 lb per engine at sea level.

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