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CANADAIR 4G 'NORTH STAR'

NORTH STAR CF-TFB
TRANS CANADA AIRLINES
by T. Bjarnason

The CAHS Journal

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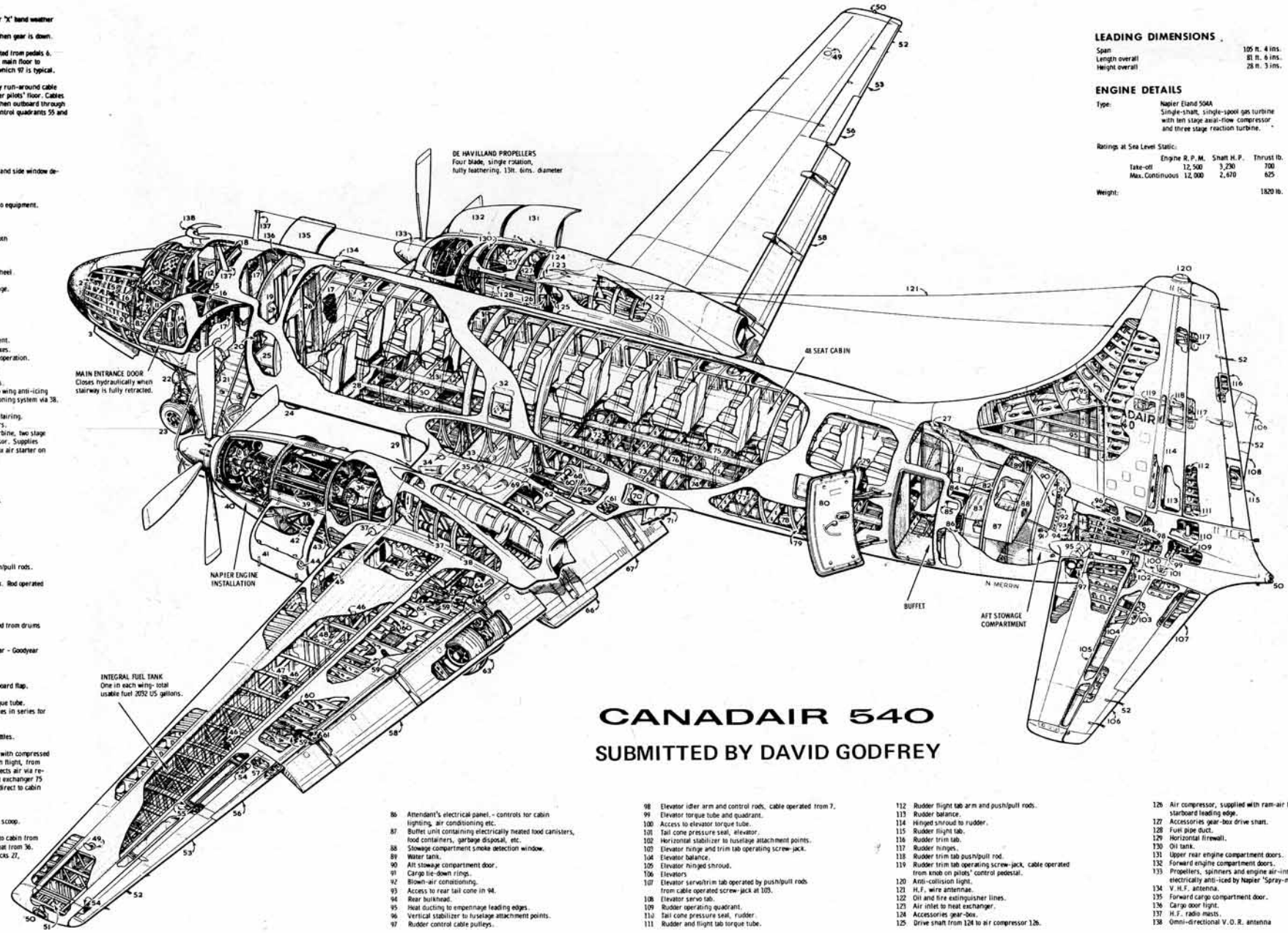
The Canadair 4 G North Star which appears on our cover in Trans-Canada Air Lines' (now Air Canada) colours was painted by Tom Bjarnason.

Printed by Swan Service Ltd.



CANADAIR 540

SUBMITTED BY DAVID GODFREY

LEADING DIMENSIONS

Span	105 ft. 4 ins.
Length overall	81 ft. 6 ins.
Height overall	28 ft. 3 ins.

ENGINE DETAILS

Type: Napier Eland 504A
Single-shaft, single-spool gas turbine with ten stage axial-flow compressor and three stage reaction turbine.

Ratings at Sea Level Static:

	Engine R.P.M.	Shaft H.P.	Thrust lb.
Take-off	12,500	3,230	700
Max. Continuous	12,000	2,670	625

Weight: 1820 lb.

1 Glass fibre radome.
2 Glide slope antenna and provision for "X" band weather radar antenna.
3 Nose wheel doors, normally closed when gear is down.
4 Wheel bay.
5 Rudder control quadrants, rod operated from pedals 6. Cables run aft from this point under main floor to rudder quadrant 109 via pulleys, of which 97 is typical.
6 Rudder pedals.
7 Dual control columns, interlinked by run-around cable system operating control drums under pilots' floor. Cables from drums are routed to rear spar then outboard through fuselage pressure seals to aileron control quadrants 55 and elevator idler arm 98.
8 Pilot head, one each side.
9 Pilots' foot warming ducting.
10 Pilots' control pedestal.
11 Pilot's seat.
12 Co-pilot's seat.
13 Pilot's compartment hot air ducting and side window de-frost.
14 Hydraulic reservoir.
15 Radio equipment racks.
16 Air cooling from atmosphere for radio equipment.
17 Electrical panels.
18 Main electrical racks.
19 Door and stairway operating lever.
20 Hydraulic equipment for stairway, both sides of door.
21 Hydraulically retracting stairway.
22 Landing light.
23 Forward retracting, steerable nosewheel.
24 A.D.F. Loop antenna.
25 Stowage compartment for hand luggage.
26 Coat stowage compartment, baggage compartment behind.
27 Air conditioning units.
28 Cabin floor, removable in panels.
29 A.D.F. sense antenna.
30 Forward underfloor cargo compartment.
31 D.C. power distribution junction boxes.
32 Emergency exits with inside/outside operation.
33 Wing to fuselage attachment points.
34 Ram-air intake and ducting to 73.
35 Cross-over ducting between jet-pipes.
36 Jet exhaust pipe. Supplies hot air to wing anti-icing ducts via 37 and to cabin air conditioning system via 38.
39 Engine control rods.
40 Forward engine compartment under fairing.
41 Rear engine compartment lower doors.
42 Blackburn Palouste 502 air bleed turbine, two stage axial flow with single stage compressor. Supplies compressed air for starting to a Rotax air starter on each engine.
43 Engine bearers.
44 Wing icing inspection light.
45 Landing light.
46 Fuel quantity transmitters.
47 Direct reading fuel contents guages.
48 Fuel-tight access panels.
49 Fuel tank filler cap.
50 Wing tip and tail navigation lights.
51 Gyro flux valve, one each wing tip.
52 Static dischargers.
53 Ailerons
54 Aileron hinge points.
55 Aileron operating quadrant and push/pull rods.
56 Servo-type aileron trim tabs.
57 Trim tab operating rod and idler link. Rod operated from cable-driven screw-jack.
58 Fowler-type flap, outboard.
59 Flap carriages and tracks.
60 Flap torque tube.
61 Flap pulleys. Flaps are cable operated from drums 62 on torque tube.
62 Flap operating drums.
63 Forward retracting main landing gear - Goodyear tires and tubes.
64 Main landing gear oleo-leg.
65 Main landing gear drag strut.
66 Nacelle under fairing, bolted to inboard flap.
67 Fowler-type flap, inboard.
68 Fuselage pressure seal for flap torque tube.
69 Two 12 volt, 88 ampere/hour batteries in series for 24 volt system.
70 Freon fire extinguisher bottles.
71 Access door to fire extinguisher bottles.
72 Flap torque tube override switch.
73 Primary heat exchanger. Supplied with compressed air from air compressor 126, and in flight, from ram-air intake and ducting 34. Directs air via refrigeration unit 74, secondary heat exchanger 75 and water separator 77 to cabin or direct to cabin via ducting 78.
74 Refrigeration unit.
75 Secondary heat exchanger.
76 Secondary heat exchanger ram-air scoop.
77 Water separator.
78 By-pass ducting, allows air direct to cabin from 73 when conditions demand full heat from 36.
79 Ducts to overhead outlets in hat racks 27, and blowers in toilet and galley.
80 Service door.
81 Toilet
82 Washbowl
83 Metal trays
84 Attendant's jump-seat.
85 Attendant's window.
86 Attendant's electrical panel, - controls for cabin lighting, air conditioning etc.
87 Buffet unit containing electrically heated food canisters, food containers, garbage disposal, etc.
88 Stowage compartment smoke detection window.
89 Water tank.
90 Aft stowage compartment door.
91 Cargo tie-down rings.
92 Blown-air conditioning.
93 Access to rear tail cone in 94.
94 Rear bulkhead.
95 Heat ducting to empennage leading edges.
96 Vertical stabilizer to fuselage attachment points.
97 Rudder control cable pulleys.
98 Elevator idler arm and control rods, cable operated from 7.
99 Elevator torque tube and quadrant.
100 Access to elevator torque tube.
101 Tail cone pressure seal, elevator.
102 Horizontal stabilizer to fuselage attachment points.
103 Elevator hinge and trim tab operating screw-jack.
104 Elevator balance.
105 Elevator hinged shroud.
106 Elevators
107 Elevator servo/trim tab operated by push/pull rods from cable operated screw-jack at 103.
108 Elevator servo tab.
109 Rudder operating quadrant.
110 Tail cone pressure seal, rudder.
111 Rudder and flight tab torque tube.
112 Rudder flight tab arm and push/pull rods.
113 Rudder balance.
114 Hinged shroud to rudder.
115 Rudder flight tab.
116 Rudder trim tab.
117 Rudder hinges.
118 Rudder trim tab push/pull rod.
119 Rudder trim tab operating screw-jack, cable operated from knob on pilots' control pedestal.
120 Anti-collision light.
121 H.F. wire antennae.
122 Oil and fire extinguisher lines.
123 Air inlet to heat exchanger.
124 Accessories gear-box.
125 Drive shaft from 124 to air compressor 126.
126 Air compressor, supplied with ram-air from intake in starboard leading edge.
127 Accessories gear-box drive shaft.
128 Fuel pipe duct.
129 Horizontal firewall.
130 Oil tank.
131 Upper rear engine compartment doors.
132 Forward engine compartment doors.
133 Propellers, spinners and engine air-intakes are electrically anti-iced by Napier "Spray-mats".
134 V.H.F. antenna.
135 Forward cargo compartment door.
136 Cargo door light.
137 H.F. radio masts.
138 Omni-directional V.O.R. antenna