

REGIONAL PRICES INDEXES

Seven of the ten regional-city consumer price indexes were lower between the beginning of January and the beginning of February, with declines ranging from 0.1 per cent in Halifax to 0.5 per cent in Winnipeg. Indexes in both Saint John and Toronto were unchanged, while the index for St. John's rose a fractional 0.1 per cent.

Food indexes were lower in seven regional cities from Montreal to Vancouver, unchanged in Saint John, and up 0.2 per cent in both Halifax and St. John's. Shelter indexes were down in both St. John's and Halifax, up fractionally in Saint John, unchanged in four cities from Montreal to Winnipeg and up in the other three western cities. Clothing indexes showed mixed results, with three regional-city indexes higher, four lower, and the remaining three unchanged. The household-operation group indexes experienced similar movements, as three city indexes increased, four decreased, and three were at the same levels as during the previous month. Group indexes for "other" commodities and services recorded little or no movement, as six of the ten regional-city indexes were unchanged, two were up a fractional 0.1 per cent, and the other two were down 0.1 per cent.

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NEW FLIGHT SIMULATOR

Trans-Canada Air Lines' pilots are "flying" sleek, 550-mile-an-hour Douglas DC-8 jetliners without becoming airborne.

It's being done in a DC-8 flight-simulator -- a million-dollar electronic mock-up of the DC-8 cockpit, complete in every detail and capable of doing anything the aircraft can do -- except leave the ground.

Built by Link Aviation Company, of Link Trainer fame, the simulator has been installed at TCA's new \$20,000,000 maintenance and overhaul base at Montreal Airport in an air-conditioned and temperature-controlled training building where it will soon be joined by "Viscount" and "Vanguard" simulators.

Both flight crews and ground crews involved in aircraft operation will be "checked out" on the DC-8 machine, saving the airline many hundreds of thousands of dollars and countless man hours each year.

It costs close to \$1,200 an hour to fly the DC-8 jet; approximately a quarter of that to fly the simulator.

The DC-8 simulator is fully electronic, employing many of the same principles used to guide moon rockets into outer space, including a magic brain of multiple computers, digesting information and resolving it in the form of

instrument readings and machine reactions. It has been called the largest analogue computer in the world.

The DC-8 machine simulates any aircraft action down to the last perfect detail, even to random passenger movement; while in "flight", simulator trim alters as hypothetical passengers walk up and down the aisles. This action automatically ceases when the seat-belt warning lights are turned on.

The simulator receives its life from 21 control cabinets containing fantastically complicated electronic and hydraulic equipment.

There are 10 electronic cabinets, each with four racks, containing more than 4,000 vacuum tubes, 500 amplifiers and 250 servo-motors; two power cabinets; four radio-aids cabinets, three air-conditioning and blower cabinets to cool the simulator and ancillary electrical equipment; a dual-refrigeration and air-conditioning cabinet for the flight deck of the machine and a 3,000 psi hydraulic package.

The whole complex is linked together and to the simulator itself by more than 128 miles of wiring.

Most of the power for the machine comes from five generators driven by three 15 h.p. electric motors, each generator supplying a different current. There is a plus 300-volt generator, a minus 300-volt generator, a plus 28-volt generator, a minus 28-volt generator, all direct current, and a 110-volt, 400-cycle alternating current generator.

Together, they supply enough power to satisfy the electrical needs of 50 average-size homes.

The hydraulic system actuates the simulator, nosing it up on take-off and climb, down on descent, and banking it on turns.

Electronic noise generators duplicate the engine noise inside the cockpit, altering the roar of the engines with the movement of the throttles.

Operation of the simulator is monitored on two control panels -- one a long-range panel for complete point-to-point flights, the other a local panel for airport operations.

The instructor can simulate in-flight incidents, such as loss of an engine in flight, failure of an electrical system and the like, and can monitor the flight crews' corrective action.

The flight-deck instruments, duplicated on the control panels, respond to every action of the simulator.

"It's just like flying the real thing," commented one senior TCA pilot. "You may not leave the ground, but that's pretty hard to believe when you're seated in front of that instrument panel with the 'rush' of the engines in your ears."