23 OPERATIONAL CONTROL

The Purpose of Operational Control

In the introduction to this Report, I described the interrelationship of the various components that comprise the air transportation system. Central to the safety of this transportation system, and indeed to the safe operation of an airline, is the function of operational control. Operational control is defined in Air Navigation Order (ANO) Series VII, No. 2, as "the exercise of authority over, or the initiation, continuation, diversion or termination of, a flight." Implicit within it are the crucial functions of flight dispatch and flight following.

In a broad sense, operational control is intended to provide support to the flight crew by ensuring that they have available to them full-time communications systems providing access to up-to-date information which permits them to make the safest possible operational decisions. The circumstances of the Dryden accident illustrate the key role of operational control within the transportation system, as well as the tragic results of a breakdown in that system.

During the course of the hearings of this Inquiry, I heard extensive evidence which traced the events of Air Ontario flight 1362/1363 on March 10, 1989, and which, in my view, indicated a breakdown in Air Ontario's operational control. Flight crews rely on company dispatchers to plan flights and monitor their progress (flight following).[1] Decisions on flight planning necessarily require dispatchers to consider a range of factors including unserviceabilities on the aircraft, en route weather, fuel, en route station facilities, and passenger loads.[2] Operational control is intended to prevent circumstances of the sort that occurred at Dryden, that is, the operation of an F-28 with an unserviceable auxiliary power unit (APU) into a station with no ground-support facilities, under conditions of forecasted freezing rain.

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[1] The degree of the flight crew's reliance on the dispatcher is dependent on whether the dispatch system is a pilot self-dispatch system, as employed by Air Ontario, or a full co-authority dispatch system, as used by Air Canada. These systems will be expanded on below.

[2] The terms dispatcher, flight dispatcher, and flight operations officer are synonymous and are used interchangeably in this Report.

I also heard evidence about, and from, Air Ontario's dispatchers which revealed that the dispatcher of flight 1362/1363 was very inexperienced and inadequately trained for his job. Further, I heard evidence that the dispatcher responsible for the flight following of flight 1363 was also inadequately trained. The evidence suggested several breakdowns in Air Ontario's execution of its obligation to the travelling public which impacted directly upon flight 1363 on March 10, 1989. This section explores how this could have happened within the present regulatory framework, why the carrier did not live up to its obligation, and why the regulator allowed this to happen. In this discussion, I will examine the system of operational control that Air Ontario had in place at the time of the accident, and, based on the evidence of Mr Adrian Sandziuk, an experienced flight dispatcher from Air Canada, I will compare it with the system used by Air Canada. The importance of operational control, and the necessity to tighten its role in support of the flight crew, could not be clearer. Had a decision been taken by Air Ontario SOC for flight 1363 to overfly Dryden on March 10, 1989, the accident would not have occurred.

Because civil air transportation is regulated for the protection of the travelling public, and because the regulator obviously cannot monitor the safe planning and execution of every flight, the regulator requires a commercial carrier to exercise operational control over its flights. Transport Canada, being the regulator, is responsible for promulgating and enforcing aviation regulations and standards in Canada. During the course of the Commission hearings, the efficacy of existing Canadian standards relating to operational control, as well as dispatcher training requirements, was brought into question and both are therefore addressed in this section.

Operational Control and Operations Control

Considerable confusion surrounds the meaning of "operational control" and "operations control." The terms are not interchangeable, and the distinction between them is significant.

Operational control is defined by ANO Series VII, No. 2, section 2, as "the exercise of authority over, or the initiation, continuation, diversion or termination of, a flight." Operational control involves the control of the movement of a specific flight and is the responsibility of the pilots and the flight dispatchers.

Operations control is a broader term involving the organization of the carrier's equipment, personnel, and flights to ensure the efficient operation of the airline on a day-to-day basis and in the long run. The many aspects of operations control not directly connected with operational control would ordinarily include matters like crew scheduling,

long-term aircraft and personnel utilization planning, and reliability studies of system on-time performance. Operations control is often called system operations control (SOC), where it applies to an air carrier's total flight operations, or station operations control (STOC), where it applies to a single station in the system.

Operational control is the sole responsibility of pilots and dispatchers, while operations control is the responsibility of a diverse group, the composition of which depends upon airline size and organizational structure.

Mr Adrian Sandziuk, a senior flight dispatcher with Air Canada testifying before the Inquiry on behalf of the Canadian Airline Dispatchers Association (CALDA), described the confusion that exists surrounding the two terms. Mr Sandziuk testified that, ever since the creation of system operations control (SOC) centres in the early 1970s, neither Transport Canada nor the Federal Aviation Administration (FAA) in the United States has ever definitively described where system operations control terminates and operational control begins, thereby causing considerable confusion. In his evidence, Mr Sandziuk described incidents where unqualified individuals in SOC centres have interfered with operational control of aircraft with the potential for devastating results. He cited, by way of example, an incident in which a SOC centre, without consulting or advising the flight dispatcher, diverted a flight to Halifax, where the weather was below operating limits.

During the course of his testimony, Mr Sandziuk offered the following recommendation to the Commission:

> A. ... I think that one of the things that should be done through this Commission is a definitive line be drawn of what and where operational control starts and where ... Operations control ends.
>
> (Transcript, vol. 155, p. 19)

I strongly endorse Mr Sandziuk's recommendation. In my view this is clearly an area which requires specific delineation of authority by the regulatory body.

Throughout this chapter, the lack of clear delineation between operations control and operational control at Air Ontario is apparent, and its significance is discussed.

Operational Control: Governing Legislation

The Canadian regulations governing flight dispatch, which are to be found in ANO Series VII, No. 2, Part III, beginning at section 13, require

Canadian carriers to exercise operational control over their flights and set forth the methods by which this is to be accomplished. The object of this exercise of operational control is, or should be, to impose upon licensed carriers the obligation to ensure that flights are conducted in accordance with the Air Regulations and within the operating parameters of the aircraft type being flown. ANO Series VII, No. 2, Part III, sets out the minimum infrastructure and personnel requirements for flight operations which the carrier must satisfy prior to regulatory approval of its operation.

Approved Flight Watch System

Section 14 of ANO Series VII, No. 2, states that an air carrier "shall have an approved flight watch system, adequate for the nature of the operations to be conducted." A flight watch system is to ensure "proper monitoring of the progress of each flight," and be able to convey any information necessary for the safe conduct of the flight to the pilot-in-command.[3]

Operational Flight Plan

"Operational flight plan" is defined in ANO Series VII, No. 2, as "the operator's plan for the safe conduct of a flight based on consideration of aeroplane performance, other operating limitations and relevant expected conditions on the route and at the aerodromes concerned."

Section 15(1) of ANO Series VII, No. 2, provides that a flight cannot be commenced without an operational flight plan approved and signed – in the case of a pilot self-dispatch system – by the pilot-in-command, and – in the case of a full co-authority dispatch system[4] – by both the pilot-in-command and the flight operations officer authorized by the company to exercise operational control over that flight.[5] The co-authority nature of the full co-authority dispatch system is revealed in the requirement for pre-flight and other approval of the operational flight

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[3] The term "flight following," as found in FAR 121, the equivalent United States operational control legislation, was used interchangeably with "flight watch" by some witnesses at the Commission hearings.

[4] Throughout the hearings the terms "co-authority" dispatch system and "dispatcher-dispatch" system were used interchangeably. In this Report, I will use the term "co-authority" as appropriate.

[5] Pursuant to ANO Series VII, No. 2, the director of flight operations is the approved position responsible for the exercise of operational control; this responsibility can be delegated to a flight operations officer providing that person meets minimum qualifications as set out in ANO Series VII, No. 2, Part III.

plan by both the pilot-in-command and the responsible flight operations officer. Such a full co-authority dispatch system was not required by Transport Canada for use at Air Ontario.

Qualifications for Persons Exercising Operational Control

The qualifications required under Canadian law for an individual, acting within an approved flight watch system, to serve as a flight operations officer and to exercise operational control over a flight have been the subject of contention for many years. The circumstances of the Dryden crash and the evidence presented before this Commission call for a serious reassessment of the current regime.

Section 15(6) of ANO Series VII, No. 2, sets out in detail the minimum requirements for a flight operations officer (or dispatcher) operating in a full co-authority dispatch organization. There is no requirement that flight operations officers be licensed; there are no training standards; nor is there a requirement that Transport Canada approve the training syllabus for dispatchers. The responsibility to ensure the training and competency of flight operations officers is vested in the carrier and not the regulator. Section 15(6) states:

> (6) Where, under an approved flight watch system, operational control over a flight is to be exercised by a flight operations officer and not the Director of Flight Operations, that officer shall not be assigned to duty as a flight operations officer unless
>
> (a) he has satisfactorily demonstrated to the air carrier his knowledge of
>
> (i) the provisions of the *Air Regulations* necessary for the proper performance of his duties,
>
> (ii) the contents of the air carrier's *Operations Manual* and the operations specifications necessary for the proper performance of his duties, and
>
> (iii) the radio facilities in the aeroplane used;
>
> (b) he has satisfied the air carrier as to his knowledge of the following details concerning the operations for which he will be responsible:
>
> (i) the seasonal meteorological conditions and sources of meteorological information,
>
> (ii) the effects of meteorological conditions on radio reception in the aeroplane used,
>
> (iii) the peculiarities and limitations of each radio navigation facility that is used by the air carrier,
>
> (iv) the aeroplane loading instructions including preparation of aeroplane weight and balance forms, and
>
> (v) the aeroplane performance operating limitations; and

(c) he has satisfactorily demonstrated to the air carrier his ability to
  (i) assist the pilot-in-command in preparing the operational flight plan and flight plan,
  (ii) provide the pilot-in-command with all information required both before and during flight that is relevant to the flight,
  (iii) initiate such emergency procedures as are outlined in the air carrier's *Operations Manual*, and
  (iv) co-ordinate operational control so as not to conflict with established Air Traffic Control, Meteorological or Communication Services procedures.

These provisions provide minimum requirements for flight operations officers operating within a full co-authority dispatch system, but do not address a self-dispatch system, or the type of "hybrid" system employed by Air Ontario. Air Ontario's hybrid system will be discussed further below. While Air Ontario's Transport Canada–approved Flight Operations Manual (FOM) does outline that carrier's flight dispatcher qualifications and training requirements, they are less comprehensive in scope than the dispatcher requirements set out in section 15(6) of ANO Series VII, No. 2. In particular, Air Ontario's FOM does not contain the prerequisites relating to knowledge of meteorological conditions, sources of meteorological information, and the effects of meteorological conditions on radio reception that are found in ANO Series VII, No. 2, section 15(6)(b)(i) and (ii). Because the flight watch provisions of the air carrier's FOM are approved by Transport Canada, both Air Ontario and Transport Canada must share responsibility for this unsatisfactory state of affairs.

Although Air Ontario described its operation as "pilot self-dispatch," I find, on the basis of extensive evidence presented before this Inquiry, that its dispatchers were *de facto* exercising some measure of operational control. That it was not a requirement for Air Ontario's system of operational control to comply with the dispatcher training standards in ANO Series VII, No. 2, section 15(6) is a serious omission. However, it is necessary not to overlook the larger issue, namely the inadequacy of the regulatory provisions that wholly vest the training of dispatchers with the carriers, and the corresponding absence of Transport Canada from the process.

The Operating Certificate

Prior to granting an operating certificate to a carrier, Transport Canada is supposed, according to the sections of ANO Series VII, No. 2, noted above, to satisfy itself that the carrier is able to exercise "adequate" and

"proper" operational control over its flights. The carrier accomplishes this operational control through, among other things, adequate communications with its aircraft, a system of flight authorization, an operational flight plan that conveys sufficient information to the crew for the safe conduct of flights, and flight operations officers who are properly trained with regard to both the routes to be flown and the operating specifications of the aircraft under their control. Finally, there should be an operations manual, approved by the regulator, which clearly outlines what the carrier intends to do to fulfil these requirements, and against which the carrier should be audited.[6]

As I discussed in greater detail in chapter 15, F-28 Program: Planning, the operating certificate is the regulatory document that licenses Canadian air carriers' operations. When Air Ontario sought to introduce the leased F-28 aircraft to its operation, it was necessary for Air Ontario to apply to Transport Canada for an amendment to its operating certificate.

Air Ontario's application to amend the operating certificate, dated January 24, 1988, included a number of representations about the current status of its dispatch operation, as well as a proposed F-28 training program for its flight operations officers. Although these representations may simply have been too ambitious, in retrospect they were clearly inaccurate. For example, the portion of the application entitled "Personnel" includes a certification, signed on behalf of Air Ontario by the director of flight operations, Robert Nyman, that 11 flight operations officers (along with 9 captains, 9 first officers, and 25 cabin attendants) have been trained and qualified to "meet the requirements and/or the applicable ANO for operating the proposed service" (Exhibit 855, p. 23). In addition, further on in the same application, it states that:

> operations officers will receive training by Air Ontario supervisory pilots who are qualified on the F-28 to familiarize them with the aircraft and its systems with a special emphasis on flight planning, performance and MEL procedures.
>
> (Exhibit 855, p. 32)

Despite Air Ontario's certification to Transport Canada that 11 flight operations officers had received or would receive the critical F-28 training, the fact is that only duty operations managers, who performed

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[6] ANO Series VII, No. 2, sections 31–37, provide that an operations manual shall be provided for the use and guidance of operations personnel in the execution of their duties.

a supervisory function with respect to Air Ontario dispatchers, received any effective training on the aircraft.

From the evidence described below it became clear that neither the carrier nor the regulator took the operational control requirements seriously. I heard evidence that:

- the regulations regarding operational control are imprecise, incomplete, and not adhered to by either Air Ontario or Transport Canada;
- Air Ontario made undertakings to Transport Canada regarding its operational control facility and personnel that were not fulfilled; and
- Transport Canada had no meaningful audit or surveillance of Air Ontario that could have ensured sufficiency of operational control of the air carrier.

I found this latter point regarding the lack of surveillance particularly disturbing. In the case of regulated industries where statutory obligations are imposed, it is only prudent for the regulator to anticipate that individual companies may backslide on those obligations. This does not necessarily result from improper intentions; it can occur through simple misunderstanding of the regulations or disorganization.

Pilot Self-Dispatch System versus Full Co-authority Dispatch System

Air Ontario's approved flight watch system at the time of the Dryden accident, and that which was deemed by Transport Canada to be "adequate to the nature of the operations," was a pilot self-dispatch system. A pilot self-dispatch system is one of two recognized types of flight watch systems, the other being a full co-authority dispatch system, as employed by Air Canada.

In a self-dispatch system the pilot is charged with the responsibility of flight planning and maintains sole authority to make operational decisions regarding the flight. A co-authority dispatch system, in contrast, is characterized by co-authority between the dispatcher and the pilot. The dispatcher responsible for operational control of a particular flight prepares, approves, and signs the operational flight plan before submitting it to the pilot-in-command. The co-authority rests on the fact that the pilot-in-command must also approve and sign the operational flight plan; in the event the dispatcher and the pilot-in-command disagree over the dispatch of a flight, the most conservative operational opinion must prevail. Indeed, safety is enhanced in this co-authority dispatch system by building in the requirement of a conservative

resolution of any operational disagreement between the pilot and the dispatcher.

Mr Sandziuk, while comparing pilot self-dispatch to a full co-authority dispatch system, spoke of the pressures put upon a pilot in a marginal weather situation under a self-dispatch system. The pilot must decide whether to cancel a flight while facing a room full of passengers waiting to get to other destinations, and must then explain his or her decision to do so to management. Under a full co-authority dispatch system, the decision to cancel a flight can be made by, or at least shared with, the dispatcher, thus reducing the pressure on the pilot.

Air Ontario's Hybrid Dispatch System

Air Ontario's system of operational control was described in its approved Flight Operations Manual (FOM) as pilot self-dispatch.[7] On the basis of the evidence presented before this Commission, it can be said that Air Ontario's system was not in fact a pure pilot self-dispatch, but a mixture or "hybrid" of pilot self-dispatch and co-authority dispatch systems. This was confirmed by Air Ontario's director of flight operations, Robert Nyman. Air Ontario's system involved having a dispatcher in SOC prepare flight releases in much the same manner as in the full co-authority dispatch system, but with final acceptance of the flight release being the sole responsibility of the pilot.

Legally, and in the eyes of Transport Canada, Air Ontario operated a pilot self-dispatch system. In practice, however, it employed a hybrid system which, in normal day-to-day scheduled operations, more closely resembled a full co-authority system than a pilot self-dispatch system.

Air Ontario's FOM provides that no pilot shall commence any flight, other than local circuits, unless a flight dispatch clearance form/flight release, or operational flight plan, has been completed prior to flight. It is the evidence that operational flight plans, or flight releases, were generated at Air Ontario exclusively by its system operations control (SOC) centre. It can therefore be stated, as per the definition of operational control in ANO Series VII, No. 2, section 2, that Air Ontario dispatchers were exercising authority over the initiation of a flight. It follows by regulatory definition that dispatchers at Air Ontario were exercising a degree of operational control over flights. Clearly, therefore, the requirements of section 15(6) of ANO Series VII, No. 2, should have applied to Air Ontario at all material times regardless of the fact that Air Ontario labelled its operation a pilot self-dispatch system, and the fact that Transport Canada approved such a characterization.

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[7] Only two components of a company operating manual require Transport Canada approval: flight watch and crew member training.

Mr Sandziuk agreed with this proposition in his evidence:

> A. ... I would say to you that in my opinion that if this wording exists in the manual, then I have to agree with you, I believe that they do have a flight watch system in accordance with the Air Navigation Order.
> Q. ... If you tell a pilot, look you can't take off unless you have got a flight release from dispatch, then you have got a situation where dispatch is exercising operational control, correct?
> A. That is correct.
> Q. And, therefore, the requirements of section 15 (6) apply whether you employ the rules of calling it a pilot self-dispatch system or not?
> A. I would have to agree with that.
>
> (Transcript, vol. 155, pp. 114–15)

The Air Ontario system described as pilot self-dispatch not only reduced somewhat the legal obligations on Air Ontario, particularly in the critical area of dispatcher qualifications, but also created a potentially hazardous uncertainty as to the true role of the dispatch operation within the company. In the final analysis, even though final authority rested with the pilot-in-command in Air Ontario's pilot self-dispatch system, the dispatch department maintained a measure of operational control over any flight. It follows that Air Ontario should have had on duty a flight operations officer who met the criteria set out in section 15(6). In the case of Mr Daniel Lavery, the flight operations officer or dispatcher who dispatched flight 1362/1363 on March 10, 1989, Air Ontario did not comply with the requirements of the Air Regulations.

Co-authority Dispatch System: Classification Proposal

It is generally acknowledged that a full co-authority dispatch system of operational control should not be required for every level of air carrier operation. Mr Ian Umbach, Transport Canada superintendent of air carrier operations, had proposed a four-tier categorization of operational control delineated on the basis of the relative sophistication of air carrier operations (Exhibit 1114). At one end of the scale, Mr Umbach advocated what he termed a "Type A" system for large scheduled domestic passenger carriers operating turboprop or turbojet aircraft and for all carriers operating turbojet aircraft internationally. The "Type A" system would require that dispatch be exercised jointly by a flight operations officer and the pilot-in-command of the flight in a full co-authority dispatch system. Further, it would involve advanced communications between the aircraft and the dispatcher, and a staff of trained and

qualified dispatchers. At the other end of the scale is what Mr Umbach termed a "Type D," a pilot self-dispatch system. Types "B" and "C" define plausible alternatives for levels of service that are somewhere between the major national and international carriers and small bush operations. Mr Umbach's proposal sets out in some detail levels of training expected of flight operations officers at the various tiers.

Mr Sandziuk testified that he agreed in principle with Mr Umbach's proposal. While he was uncertain as to how air carriers ought to be properly classified for the purposes of required dispatch organizations, he was certain that CALDA would strongly support required co-authority dispatch systems for Canadian air carrier operations as complex as those of Air Ontario, AirBC, and the like.

I support the recommendation of CALDA that all passenger-carrying IFR commercial air operations to the level of Air Ontario and like operations be required to put in place a co-authority dispatch system. It would obviously be unreasonable to impose such requirements on small-scale or northern bush operations below that level.

Dispatcher Training

In 1980 the Dubin Commission of Inquiry on Aviation Safety considered an application from CALDA requesting that Canadian dispatchers be licensed. Based on the evidence then before him, Mr Justice Dubin stopped short of recommending such licensing. He recognized the need for proper training of dispatchers, however, and the need for dispatchers to be inspected by the regulator.

Since 1980 there has in fact been no change in the regulatory requirements for the training of flight dispatchers. The Air Navigation Order vests the authority to train and approve the flight operations officers solely with the carriers. Furthermore, there has been no apparent monitoring by Transport Canada of the level of training provided by the carriers or of the proficiency of the individual dispatchers.

The need for adequate training of flight dispatchers has been highlighted by the Dryden accident and the evidence presented before this Commission. As a result, CALDA sought the opportunity to appear before me and revive its application to require that Canadian dispatchers be licensed. I discuss CALDA's application later in this chapter.

Dispatcher Training at Air Ontario

According to Air Ontario's F-28 Revised Project Plan (Exhibit 802), training of SOC personnel with respect to the F-28 aircraft was to have been completed by April 11, 1988. This goal was not attained. The dispatchers who appeared before me testified that they received no

effective training on the F-28 and acknowledged a lack of familiarity with F-28 systems. The dispatcher responsible for the preparation of the flight release for the ill-fated flight 1363 and the flight following of the aircraft until its turnaround in Thunder Bay was Mr Lavery. Mr Lavery admitted that he was not adequately trained and not qualified for this highly responsible position.

Mr Lavery, a young Air Ontario ramp attendant, was promoted from his outside ramp work in May 1988 and given only one week of a projected two-week dispatcher training course by an Air Ontario dispatch supervisor.[8] He then sat with an experienced dispatcher in the SOC control room at London for about one week, before being designated as a dispatcher and set to work with minimal supervision. He was not given any tests or examinations following the one-week course. Mr Lavery, who had no aviation background, described his meagre training and qualifications as a flight dispatcher as follows:

> Q. ... Now, when you went and took your brief course to train to be a dispatcher, had you had any previous aviation experience or exposure to aviation that prepared you in any way to be a dispatcher ...
> A. No, I came directly from the ramp, so.
> Q. ... so this would be your first exposure to reading weather reports and to legal requirements for landing minima, alternate minima, all that?
> A. Yes.
> Q. ... Now, at the end of the one-week course, could you in fact read the weather sequences, the terminal forecasts and area forecasts and so on?
> A. Enough to get by.
> Q. ... Were you familiar with the Flight Operations Manual at the end of a week? Let me ask you, had you read it from cover to cover?
> A. No.
> Q. ... you had looked at it but you really hadn't even read it, correct?
> A. Yes.
> Q. And when you were turned out to run or to operate on your own on a shift, had you even by that time read the flight operations manual?
> A. I don't believe so.
>
> (Transcript, vol. 48, pp. 179–80)

[8] Mr Martin Kothbauer, Air Ontario duty operations manager, taught the training course taken by Mr Lavery.

Mr Lavery further testified that when he began working as a dispatcher he was not familiar with the F-28's operating specifications or performance limitations, nor had he been trained on the F-28 manual prior to dispatching F-28 aircraft.

When asked about the legal implications of an operational flight plan, Mr Lavery replied as follows:

> Q. ... Do you know whether or not the pilot is required by law to have an operational flight plan before he departs?
> A. I don't know the answer to that one.
>
> (Transcript, vol. 48, pp. 255–56)

A dispatcher requires a knowledge of the air regulations. The job involves complex mathematical calculations, and a dispatcher requires specific knowledge and expertise, as well as familiarity with such things as aircraft performance, fuel burns at various altitudes, load limitations for various atmospheric and runway conditions, and many other matters. Mr Lavery, after the most cursory and rudimentary introductory training, was left to dispatch Air Ontario aircraft, including the F-28 jet aircraft, on his own. Not only had he not received training on the Piedmont F-28 manual, but his testimony reveals that Mr Lavery had not even familiarized himself with that manual. Mr Kothbauer described Mr Lavery as a "weak dispatcher"; he said he was doubtful of Mr Lavery's competence to generate the flight release given the weather conditions on March 10, 1989, and that Mr Lavery was not given adequate training for the tasks that were required of him as dispatcher (Transcript, vol. 49, pp. 44–45).

The evidence before this Inquiry establishes conclusively that Mr Lavery as a flight operations officer was not qualified to exercise operational control over flight 1362/1363, on March 10, 1989.

On that day, Mr Lavery went off shift at Air Ontario SOC at 10:30 a.m.; replacing him was Mr Wayne Copeland. When Mr Copeland arrived at work at 9:45 a.m. for his shift, which commenced at 10:00 a.m., he briefed himself on the area weather and received a "handoff briefing" from Mr Lavery. While Mr Lavery was principally responsible for the dispatch of flight 1362/1363 and the flight following of flight 1362, Mr Copeland, from 10:30 a.m. on, was principally responsible for the flight following of flight 1363. The transition from Mr Lavery to Mr Copeland occurred at the same time that the F-28 aircraft was flying into Thunder Bay as flight 1362 and being turned around in Thunder Bay as flight 1363.[9]

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[9] On March 10, 1989, flight 1362 arrived at Thunder Bay at 10:35 a.m. and departed as flight 1363 for Dryden at 11:55 a.m.

Mr Copeland's testimony regarding his training from Air Ontario echoed that of Mr Lavery. While Mr Copeland had the benefit of some aviation experience prior to joining Air Ontario, he did not in any way receive adequate training on Air Ontario dispatch procedures and, in particular, he did not receive any training on F-28 systems.

Mr Copeland completed a two-year air carrier and airport management course offered by Confederation College of Thunder Bay, Ontario. He testified that the course was very general in nature, touching upon most aspects of small air carrier and airport operations. Mr Copeland described the training that he received when he joined Air Ontario as a dispatcher in May 1988:

> Q. – did you take any courses within the organization before the commencement of your duties as a dispatcher?
> A. Any courses with Air Ontario?
> Q. Yes.
> A. No, I did not.
> Q. Were there courses available within Air Ontario?
> A. Just prior to my employment, there was, I believe, a one-week course for dispatchers, but I was hired on after its completion.
> Q. And so you did not receive a formal course training?
> A. Correct.
> Q. What sort of training did you have?
> A. My training included working side by side with another dispatcher. I can't remember the exact duration, but it was one to two weeks, just working with him, and then he would give me instruction on all parts of the operation at that time.
> ...
> Q. What then occurred? Did someone just come in and say, okay, Wayne, you're on your own?
> A. I assume the dispatcher I was working with communicated with the manager of SOC at that time and they discussed it and I was then allowed to work the desk by myself.
>
> (Transcript, vol. 45, pp. 4–5)

Mr Copeland went on to testify that he would have liked to have had more training prior to his commencing his duties as a dispatcher. He stated that he had a low level of confidence:

> Q. Well, did you feel that you had enough training after two weeks to operate as a dispatcher and tell the captain everything he needed to know about fuel needed to get to the alternate, tell him everything he needed to know about what kind of weather he might expect to encounter, tell him everything he needed to know about whether he would break out the bottom of an ILS in the clear or in the clag, tell him about whether or not he

could expect to get stopped on that runway under those conditions, that kind of thing?

...

A. At the end of two weeks, there could have been things that I could have passed on to him that I wasn't passing on to him because of my low level of confidence.

(Transcript, vol. 45, pp. 143–44)

Mr Copeland was questioned at length on the dispatcher qualifications and familiarization training described in the Air Ontario Flight Operations Manual (FOM). Mr Copeland conceded that much of what was represented in the company's approved FOM was, in fact, not achieved in his case:

Q. And nor were you familiar with company rules and regulations at the end of the two-week apprenticeship, correct?

A. I guess I was partially, but not as much as I would have liked to have been.

...

Q. And so, really, the apparent requirements of the Flight Operations Manual with respect to the training that you should require before you're turned loose apparently weren't met; isn't that right?

...

A. I would have liked to have been trained more, yes.

(Transcript, vol. 45, p. 147)

The evidence before me establishes beyond any doubt that Mr Copeland was not properly trained or qualified to exercise operational control over flight 1363 on March 10, 1989.

Air Canada's Dispatcher Training

A comparison of Air Ontario's training of Mr Lavery or Mr Copeland with Air Canada's training of Mr Sandziuk provides a striking disparity. Mr Sandziuk first accepted a position in flight dispatch with Air Canada in 1966. At that time his initial training included one week in a classroom followed by seven years working as an assistant dispatcher under the supervision of a qualified flight dispatcher. Although he stated that two to three years as an assistant dispatcher should be adequate qualification to work as a dispatcher, Mr Sandziuk indicated that promotion was a function of industry demand and that seven years had not been an unusually long apprenticeship prior to his elevation to full dispatcher.

Air Canada's current training regime for its dispatchers is far superior to that which Air Ontario provided. Upon hiring, an Air Canada

dispatcher spends four to six weeks in classroom training during which time most of the functions in dispatch are introduced. In addition, Air Canada dispatcher trainees are required to take an eight- or ten-part home study course in meteorology. Thereafter, the new dispatcher works with an experienced dispatcher for approximately one year, and must pass an examination (Air Canada requires a passing grade of 80 per cent) before being given authority to sign off flight releases. Even then, the company imposes certain limitations on the dispatcher, such as a requirement for an additional qualification on transatlantic flights.

When asked in cross-examination to characterize the Air Ontario dispatch system, based on Mr Lavery's evidence, Mr Sandziuk was unequivocal in his condemnation of it. He described it as "unbelievable" and was emphatic that it was impossible for anyone to become a qualified dispatcher after one or two weeks' training.

> Q. ... Now, just having looked at those bits of his evidence, give me your characterization of a dispatch system which would allow this calibre of dispatch to support the pilots of passenger-carrying turbo-jet aircraft.
>
> A. Well, firstly, I must say that it's unbelievable that we could expect that type of a system to fit into the criteria that the Air Navigation Order sets out. I don't think under any view whatsoever could you consider that a flight watch system. Perhaps the system is acceptable, but I think the system fell apart in the training procedures.
>
> I do not think it is – in fact, I know it is impossible for any one person in a one- or two-week course to have been trained in the extensive knowledge required of all the subjects involved, and then be able to operate a functional airline as he has described his tasks.
>
> I'm not surprised he wasn't – that he felt incapable of doing them. I'm sure that people with much more training than he received would not be capable to cope with it. And I certainly wouldn't be surprised of the fact that it didn't cross his mind about the de-icing problem.[10]
>
> (Transcript, vol. 155, pp. 129–30)

Mr Sandziuk expressed the belief that a competent dispatcher would have adverted to the possibility of the need to de-ice the aircraft at Dryden without a serviceable APU and would have in all probability opted to overfly Dryden:

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[10] See pp. 719–20 infra.

Q. Would an experienced ... dispatcher, a competent dispatcher have adverted to this problem, the possibility of the need to de-ice without an APU?
A. I believe he would have. I would suggest in our office, this type of thing occurs every day and decisions are automatically made.
Q. All right. And the decision would be to overfly?
A. In all probability, yes.

(Transcript, vol. 155, p. 130)

It was Mr Sandziuk's opinion that the Air Ontario dispatch system, employing as it did dispatchers lacking proper training, was unsafe. In his view a pilot would be better off with no dispatcher than one lacking proper training:

Q. Is it, in your opinion, safe to have turbojet passenger-carrying aircraft dispatched by a system which allows individuals with this lack of training to dispatch aircraft?
A. I could not accept that it is reasonable to operate an airplane under those conditions. I believe you would be better off not to have a dispatcher, because at least the pilot would do his own calculations, and he'd know where he is. But, I would contend, that you would be far better off by having a flight watch system that is functional.

(Transcript, vol. 155, pp. 130–31)

It was Mr Sandziuk's evidence that an experienced Air Canada dispatcher would in all probability have caused flight 1363 to overfly Dryden on March 10, 1989.

Operational Flight Plan: Flight Release

An operational flight plan is the fundamental document used by an air carrier to fulfil its obligation to exercise operational control over its aircraft. Pursuant to section 2 of ANO Series VII, No. 2,

> "operational flight plan" means the operator's plan for the safe conduct of a flight, based on consideration of aeroplane performance, other operating limitations and relevant expected conditions on the route and at the aerodromes concerned;

While this ANO definition provides a conceptual overview of the importance of an operational flight plan, nowhere else in the ANO does Transport Canada provide a guide to operators in devising their own systems. Moreover, because Transport Canada has not prescribed a form for carriers to follow, operational flight plans in use by carriers may be disparate in both form and substance. This disparity was vividly

highlighted by evidence before this Commission that contrasted the operational flight plans in use by Air Ontario and Air Canada.

Typically, an operational flight plan contains significant operational information, including planned alternates, aircraft weights, fuel consumption, passenger loads, and other operational information necessary for the crew to plan and conduct its flights in a safe and orderly manner. It is the practice of Air Canada to issue a flight release, the company document that authorizes dispatch of the flight, only after an operational flight plan has been signed off by both the flight crew and the dispatcher.

In contrast, Air Ontario used just a flight release to serve the dual role of operational flight plan and flight release. Hence, there was much discussion during the hearings of this Commission as to whether Air Ontario's F-28 flight release in fact satisfied the ANO Series VII, No. 2, requirement for an operational flight plan. Legal or otherwise, the flight release format (Exhibit 345) utilized by Air Ontario for its F-28 operation was roundly criticized in testimony before this Commission by experienced dispatchers, pilots, and air carrier inspectors.[11] Both Mr Randy Pitcher, Transport Canada Ontario Region's lead inspector on the F-28 and himself a former dispatcher, and Mr Sandziuk were pointed in their criticism of the Air Ontario F-28 flight release format. They both identified the lack of detail to assist the pilots in ascertaining the basis of the dispatcher's calculations as a fundamental and glaring flaw in Air Ontario's flight release.

In the following excerpt from his testimony, Mr Pitcher described as "minimal" the information provided to Air Ontario's flight crews in the flight release and used the words "scraping the bottom of the barrel minimal" in saying that the flight release barely fit within the ANO Series VII, No. 2, definition of operational flight plan:

> Q. And can you explain generally to the Commissioner, first of all, what sort of information this flight release provides you with as a captain of an airplane?
>
> A. This particular flight release provides very little. In fact, I believe it provides minimal knowledge to the captain.
>
> He needs to know, for example, in situation here, he is given a time but he is not given any idea of how the time was calculated. There's no true air speed ... there's no mach number, there's no ground speed, there's no wind component, there are no fuel flows.

[11] Air Ontario's Flight Operations Manual provides a Convair 580 operational flight plan that includes far more information for the flight crew than could be found on the F-28 flight release. This operational flight plan is set out in chapter 19 of this Report, Flight Operations Manuals.

> I see that the fuel on board in the first column, 326, of this Exhibit 345 says "fuel on board of 16,000 pounds," I imagine that is.
>
> But ... this meets, I think, the minimum standard that the ANO speaks of ... when it defines operational flight plan. And when I say "minimal," I mean scraping the bottom of the barrel minimal.
>
> As a pilot, I would want to know a breakdown, at the very least, of my fuel. What's my burn-off, for example?
>
> But in all fairness, this form, with the type of operation that Air Ontario has and had at the time of the accident, is a pilot self-dispatch system. The pilot-in-command is absolutely responsible for ensuring that he is knowledgeable in terms of the stuff presented here.
>
> I just think that this form could be far more forthcoming in terms of making the pilot's job easier, because what he has to do in order to confirm this figure, he has to go back and work the whole thing up, whereas if they had ... broken it down in terms of burn-off, contingency factors, alternate and reserve fuels, he would have a much easier job of getting the whole picture.
>
> (Transcript, vol. 127, pp. 116–18)

Mr Sandziuk was equally critical of Air Ontario's F-28 flight release. When shown Exhibit 345 and asked to comment whether, based on his experience, it met with the definition of "operational flight plan" in ANO Series VII, No. 2, Mr Sandziuk responded:

> A. Well, I would have to say that the information presented is absolutely minimal. There are no guidelines as to what considerations were given to the calculations, how they arrived at them, what factors were considered with reference to any portion of it. Basically, all we have here is ... the minimal fuel, the alternate, via alternate. We have come up with a weight and fuel and the number of passengers.
>
> But short of that, I would suggest to you that a clearance like that is tantamount to giving a pilot a dart board and saying, you know, try and find how I got there. I say that without derision, and I'm serious that, if you look at the AFPAC [Automatic Flight Planning, Air Canada] that's presented by Air Canada, each of these items is very clearly explained so that the pilot knows how I arrived at that point.
>
> (Transcript, vol. 155, p. 68)

To the extent that Air Ontario operated a hybrid system of dispatch, such that the flight release prepared by dispatch was subject to approval by the captain, it would have been especially important to have a form that permitted an easy review of the dispatcher's calculations. However,

as Mr Sandziuk added, easy review of the Air Ontario flight was not possible; further, he did not believe that the flight release satisfied the ANO Series VII, No. 2, requirements for an operational flight plan:

> A. ... how in the world could the pilot ever arrive at these statistics to match the figures they've got here [in the flight release]? I believe it's terribly incomplete. There's certainly not sufficient evidence to justly expect a pilot to come up with the same answers and be able to explain how the dispatcher did it.
> Q. And, do you believe in this format [the F-28 flight release] ... meets with the requirement of the ANO, that it should provide a plan for the safe conduct of a flight?
> A. I don't believe it does because it doesn't enable the ... pilot to consider all the factors. If they are, it's guesswork.
>
> (Transcript, vol. 155, p. 69)

Another deficiency in the operational flight plan used by Air Ontario dispatchers in the operational control of F-28 aircraft concerned the calculation of minimum fuel. The Air Regulations, sections 551 and 552, require that no IFR flight[12] can be commenced unless the aircraft carries sufficient fuel to get to its destination and thence to an alternate airport, still with a specified reserve of fuel remaining. By regulation, the amount of fuel must take into account wind and other anticipated meteorological conditions as well as any anticipated air traffic delays. The evidence revealed that Air Ontario dispatchers did not include in their minimum fuel calculations any additional fuel for abnormal meteorological conditions or anticipated traffic delays. Instead, the need for such additional fuel was factored into the fuel on board (FOB) figure on the F-28 flight release.[13]

Mr Martin Kothbauer, formerly an Air Ontario dispatcher and duty operations manager, and himself a commercial pilot, testified that the minimum fuel figure on the Air Ontario F-28 flight release was occasionally less than the minimum fuel required by law. This information came out in the context of Mr Kothbauer being questioned on fuel calculation practices at Air Ontario.

He testified that the standard operating procedure at Air Ontario was to add contingency fuel to the fuel on board for the purpose, for example, of deviating around thunderstorms. This resulted in the minimum fuel not reflecting the fuel that might be required for deviation around weather shown on weather reports, or fuel that might be required for an air traffic control (ATC) hold. Mr Kothbauer stated that

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[12] Most if not all scheduled Canadian commercial flights under normal operating circumstances are conducted pursuant to instrument flight rules (IFR).

[13] FOB refers to the total amount of fuel on board an aircraft.

this standard operating procedure at Air Ontario was different from what was legally required and what he had known as a commercial pilot. He testified that he was surprised to discover this situation at Air Ontario:

> Q. Do you know why the standard operating procedure at Air Ontario concerning minimum fuel as reflected in the flight release did not follow the notion of minimum fuel as the law requires and that would be in the minds of commercial pilots?
> A. No, sir, I don't know.
> Q. That was never explained to you?
> A. Not that I can remember, no.
> ...
> Q. I take it it was a surprise to you when you first discovered that?
> A. Yeah, it was.
>
> (Transcript, vol. 49, pp. 99–100)

I find Mr Kothbauer's surprise to be understandable given the training all commercial pilots receive concerning legal minimum fuel requirements.

Air Ontario pilots were questioned on their understanding of the minimum fuel figures on the F-28 flight release. Monty Allan, who was a first officer on the F-28, testified as follows:

> Q. ... Now, is it your understanding that ... minimum fuel that is required by law is also the min fuel in the flight release?
> A. No, it's beyond that, I believe. The company, albeit they use the Transport's minimum requirements, I believe that the way it's been resolved is the company min has added a little bit more. I think we have provided ourselves – it's outlined in the company route manual specifically, but I believe we have allowed ourselves an approach at destination and an approach at alternate which I don't think Transport requires, but it's contained in the route manual.
>
> (Transcript, vol. 91, p. 225)

Captain Robert Nyman, Air Ontario director of flight operations, who had "ultimate responsibility" for operational control according to the Air Ontario FOM and who was an F-28 check pilot, was questioned on the evidence of Mr Lavery with regard to his minimum fuel calculations. He conceded that there were some fundamental problems with the training of F-28 dispatchers at Air Ontario:

> Q. And further, we see from page 210 and 211 of the transcript that when Lavery was calculating the min fuel, he would not account for known deviations due to weather or known holds due to ATC. He wouldn't include that in min fuel, but he would add

that to granny fuel and it would be added – it would be part of fuel on board but would not be reflected in min fuel. Do you follow me?

A. Absolutely.

Q. ... Now, first of all, shouldn't the dispatchers have been trained on – to a certain extent, at least, on the performance of the F-28?

A. Yes, a certain amount, yes.

Q. ... So they should know what altitudes the plane is likely to use, what the fuel burn is likely to be, how much fuel it's going to burn in climb and so on and so forth?

A. Absolutely.

Q. ... Definitely, the dispatcher should know how to calculate maximum payload available, correct?

A. Yes.

Q. And as a pilot, you would expect the dispatcher to include in minimum fuel any fuel required to get around known meteorological problems or to accommodate expected ATC delays?

A. That would have to be part of minimum fuel, yes.

Q. Sure, all right. So then, having reviewed that evidence in a cursory way, is it now evident to you that there were some problems, some fundamental problems with the training of dispatchers for the F-28 at Air Ontario?

A. If they didn't understand that, and it appears that this particular one did not, then I would have to say yes.

(Transcript, vol. 109, pp. 191–93)

The basic cause of this rather intolerable situation at Air Ontario was the fact that dispatchers who prepared the F-28 flight releases, and the pilots who relied upon the flight releases had different understandings of the meaning of the critical minimum fuel (MIN) figure. The difficulty caused by the lack of a common understanding of the meaning of MIN could be manifest in a situation like that encountered by flight 1362/1363 in Thunder Bay on March 10, 1989. A pilot like Captain Morwood, faced with a last-minute increase in passenger load, would look to a difference between FOB and MIN to see whether the increased passenger load could be accommodated by decreasing fuel load. If the MIN figure was relied upon by a pilot to ensure minimum legal fuel, it is conceivable that fuel could be off-loaded to the MIN level and below the legal requirement. For this reason, the minimum fuel indicated on a flight release should never be less than the minimum fuel required by regulations. It must be noted, however, that there is no evidence that the minimum fuel figure caused such a problem on March 10, 1989.

A further deficiency in the operational flight plan used by Air Ontario dispatchers in their operational control of the F-28 aircraft concerned the absence of a minimum reserve fuel figure. Minimum diversion fuel at a given location, usually the destination airport, is the minimum amount

of fuel required to fly from that location to the alternate destination, arriving with the fuel reserves required by law. Mr Randy Pitcher, when asked about minimum diversion fuel and whether that figure should be included in an operational flight plan, testified as follows:

> Q. On March 10, the day the plane crashed, the pilots were stretched to the limit for fuel because of general bad weather and full loads.
> A. They were stretched likely because the nearest alternate required them to carry this fuel.
> Q. That's right. So the alternate that they were carrying for Winnipeg was Sault Ste Marie?
> A. Yes.
> Q. ... Now, in cases in like that, you should have a good idea what your minimum diversion fuel is in case you have to hold in Winnipeg, don't you think?
> A. I'm sure they did.
> Q. ... A pilot should know that?
> A. Yes.
> Q. All right. Well, if a pilot should know that for safe flight, shouldn't it be part of the operational flight plan?
> A. It would be a good idea to be on the operational flight plan.
> Q. ... I'm not asking you whether it's a good idea or not. I'm asking you whether if the minimum diversion fuel in a situation like that is a number that's required for safe flight.
> A. In a situation as you described, yes.
>
> (Transcript, vol. 128, pp. 148–49)

It should be noted that the flight release form used by Air Ontario dispatchers in their operational control of F-28 aircraft (Exhibit 345) did not provide flight crews with an estimate of minimum diversion fuel. I agree with Mr Pitcher that this information should have been provided to pilots.

It was the opinion of Mr Pitcher, and one with which I emphatically concur, that ANO Series VII, No. 2, should be amended to define explicitly the minimum acceptable requirements for an operational flight plan. Mr Pitcher stated:

> A. Under the ANO definition of operational flight plan, because it is so vague, it does permit the type of document that Air Ontario was utilizing as their dispatch form to be accepted by Transport.
>
> Maybe a schedule of some sort to set out exactly what should constitute an operational flight plan with at least the basic knowledge or information that a pilot requires would, I believe,

> be very advantageous and would certainly prevent situations such as we have seen with the operation of the F-28.
>
> (Transcript, vol. 128, pp. 4–5)

As earlier alluded to by Mr Sandziuk, and in obvious contrast to the inadequate operational flight planning employed for Air Ontario's F-28, Air Canada's AFPAC provides extensive and useful information.[14] Not only are calculations clearly explained, but the system permits the flight crew to run checks that allow them to monitor their progress on an ongoing basis. Mr Sandziuk's preference for the AFPAC system is readily apparent from his evidence:

> A. It's very comprehensive. All the information is there: What I based the planning on, what the pilot's based the planning on is there. And not only that, but he has the opportunity to check it to make sure it is going ... according to plan. And for that reason, I think it's a very comprehensive and efficient way to do it.
>
> To go to the Air Ontario plan, it has, I guess, the minimum requirements ... of fuel burn, minimum and takeoff weights, but I would not say that it's a very ... efficient flight plan. I really would not be very happy with it. I think it's incomplete because I don't think it meets the requirements as indicated here in the ANO.
>
> (Transcript, vol. 155, pp. 71–72)

Ability of Air Canada To Provide Flight Dispatch Expertise to Air Ontario

As discussed elsewhere in this Report, Air Canada, despite its extensive experience and expertise in commercial jet transport operations, did not provide any significant operational consultation for its subsidiary, Air Ontario, during the implementation of its F-28 program. This was particularly true in the case of operational control. During Mr Sandziuk's testimony, he left little doubt as to Air Canada's ability to provide such expertise in setting up a proper flight dispatch system. Moreover, he clearly thought that such consultation was needed.

The Flight Release Requirement

Each Air Ontario revenue flight must, in accordance with Air Regulations and the company's flight operations manual, be specifically

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[14] AFPAC (automatic flight plan Air Canada) refers to Air Canada's computer-generated flight plan.

authorized before departure. Normally Air Ontario SOC, London, does this by issuing a flight release. The flight release is sent by telex to the point of departure, where it is picked up by the captain of the planned flight, and to all en route stations.

In light of the fact that Air Ontario ostensibly operated a pilot self-dispatch operation, the question was raised in the Commission hearings as to whether a pilot-in-command could initiate a flight on his own accord, without a flight release. Mr Danilo (Dean) Koncan, Air Ontario's duty manager of operations, indicated in his evidence that the pilot-in-command of an Air Ontario revenue flight would not take off without either a printed or verbal flight release (for example, in the event of a computer failure) from SOC. In fact, it is clear from Mr Koncan's testimony that Air Ontario pilots relied on SOC to dispatch them even in the absence of a printed or verbal flight release:

> A. ... under the pilot self-dispatch system, if I were to lose the computers because of power failure or what not, we can still verbally, through the flight watch system, issue him an aircraft, advise him of which crew he is working with, advise him the last reported alternates that we were carrying for him to double check through flight service if his computers are down as well, and what basic information we have; i.e., what flight numbers he is doing at which times which he will have a copy of.
>
> ...
>
> Q. ... If Captain Morwood or any other captain on a revenue flight did in fact not even receive a flight release of any kind, either verbal or printed, would he phone SOC?
>
> A. Yes, he would.
>
> Q. I take it from your evidence that he can't go unless he either gets a verbal or printed flight release approval, is that correct?
>
> A. That is my understanding, yes.
>
> (Transcript, vol. 47, pp. 94–95)

The procedure described by Mr Koncan reinforces the fact that, notwithstanding its description as a self-dispatch system, Air Ontario's dispatchers were exercising a degree of operational control over revenue flights.

Reliance of Air Ontario Pilots on Flight Releases

The evidence shows that because company dispatchers were exercising a degree of operational control in what has been termed a hybrid between the pilot self-dispatch and the full co-authority systems, there was a degree of uncertainty in Air Ontario's operational control of its aircraft.

Even though Air Ontario dispatchers would make all necessary calculations in the course of preparing flight releases, the degree to which Air Ontario flight crews relied on these calculations was not clear. It was the evidence of Air Ontario pilots and dispatchers that F-28 flight releases often contained errors in calculations. However, in that pilots were responsible for checking the accuracy of the flight release, both pilots and dispatchers tended to downplay the significance of such errors. Air Ontario pilots would routinely contact dispatchers in SOC to rectify any errors in flight releases.

A senior Air Ontario captain, William Wilcox, testified that in his view the flight releases were less reliable when the weather was bad. He added that he believed this view was shared by the Air Ontario pilot group. Another Air Ontario captain, Erik Hansen, testified that, although he did not always find Air Ontario flight releases to be accurate, this never caused him any problems.

Captain Christian Maybury, when asked whether he ever had occasion to question the accuracy of flight releases he received from Air Ontario SOC, gave the following evidence:

> A. ... after a while, you get to know that they are human too and they make mistakes.
>
> You just learn to skim the – you know, have a look at your flight release, and after a while, you get used to seeing a certain set of numbers that match. And sometimes ... that one isn't right. And usually call them up and they will change it and reissue the release, a correct one.
>
> Q. Would it be fair to assume, sir, that you then wouldn't accept blindly a release that you received from SOC?
>
> A. I always look at mine.
>
> Q. Look at them for what purpose?
>
> A. Well, make sure the numbers jibe as far as operational weights. Also check them especially weather-wise, looking at alternate airports and whether the alternate airports that they have given in the release jibe with the weather forecasts.
>
> (Transcript, vol. 92, pp. 63–64)

The fact that Air Ontario pilots, as a rule, knew they could not rely on calculations in flight releases issued to them and routinely redid the calculations themselves was corroborated in the evidence of Mr Kothbauer and Air Ontario dispatcher Warren Brown. Mr Kothbauer testified as follows:

> Q. Did you ever receive any comments back from flight crews as to whether or not they considered the system of the issuance of the flight releases as adequate?
>
> A. Yes, sir, I did.

Q. And could you enlighten us on that.
A. They were not considered accurate.

(Transcript, vol. 49, p. 50)

Mr Brown, when questioned at to what reliance the Air Ontario pilots put on the flight release, stated:

A. ... they look at it and they – I'm sure they take some of it for – ... I would hope they take it all as valid information.
Q. And they would use it for planning their day, would they?
A. Yes, they would.

(Transcript, vol. 48, p. 88)

He stated that it would be the pilot's responsibility, if they were going to rely on the details in the release, to ensure that they were accurate, and that he knew this when he prepared the release:

Q. You know that the pilots are not going to rely on this release as the last word?
A. That's correct.

(Transcript, vol. 48, p. 88)

When asked for his perception as to what Captain Morwood's attitude towards SOC and flight releases had been, Captain Hansen was resolute in stating that Captain Morwood would not have hesitated to assert his authority in dealings with SOC:

Q. And you heard George Morwood a few times have a few tiffs with SOC?
A. Absolutely.
Q. And what kind of a posture would he be adopting when he had these?
A. There would be no doubt in the other individual's mind what George wanted, and he wasn't going to go along with whatever plan of attack they might have picked for the day, and he would tell them.
Q. It was George's plan or no plan?
A. That's right.

(Transcript, vol. 94, p. 137)

The Flight Release for Flight 1362/1363, March 10, 1989

Because of the deficiencies in the Air Ontario operational control system, the F-28 aircraft C-FONF was dispatched with a non-functioning auxiliary power unit (APU) into Dryden airport, an airport that had no

F-28 ground-start equipment, with forecasted freezing rain conditions. The flight release that was prepared for Captain Morwood on March 10, 1989, contained serious errors.

The flight release for flight 1362/1363 on March 10, 1989, is reproduced below (figure 23-1). A discussion of some of its specific errors, as well as its likely impact on the events of March 10, 1989, follows.

Figure 23-1 Flight Release: Flight 1362/63, March 10, 1989

OU YWGOOAC YHDTRGX YQTOOAC YQTTRAC YXUOWGX
.YXUOWGX 03101257

< T608F > FLIGHT RELEASE

CAPT: MORWOOD ACFT: 281/ONF DATE/TIME:10/0753L
F/O: MILLS PURSER: SAY F/A: HARTWICK

FLT	DEP	ARR	VIA	ALT	MIN	FOB	WT.	LOAD	PAX	STD	REMARKS
362	YWG	YHD	YQT	YAM	126	160	610	121	11	0725L	
362	YHD	YQT	==>	YAM	92	116	614	155	30	0830L	
363	YQT	YHD	YQT	YAM	130	158	617	121	55	1055L	
363	YHD	YWG	YQT	YAM	146	150	606	103	52	1100L	
364	YWG	YQT	==>	YAM	BALANCE OF RELEASE TO FOLLOW						
365	YQT	YWG	==>	YHD	89	120	638	—	65	1515L	

CARGO ALLOTMENT 1000 LBS UNLESS OTHERWISE NOTED
S.O.C.: — CAPTAIN: _____

;101257 0222

Source: From Exhibit 345

The flight release (Exhibit 345) must be read together with the daily system operations control log (Exhibit 348). The SOC log is prepared by SOC personnel in anticipation of the flights scheduled for a particular day. The flight release is generated by SOC personnel on the basis of the SOC log and the latest available weather and passenger load information.

Both Messrs Kothbauer and Koncan, who were duty operations officers at SOC, testified that the figures generated by Mr Lavery on the flight release for flight 1362/1363 on March 10, 1989, did not match with

the figures on the computer-generated daily SOC log. In fact, after reviewing Mr Lavery's figures, both Mr Koncan and Mr Kothbauer identified numerous errors in the actual calculations and testified that the flight release made no sense. When asked to explain why the figures did not make sense to him, Mr Kothbauer responded that, while the numbers on the flight release should mirror what is on the SOC log, it was "clearly evident" to him that they did not (Transcript, vol. 49, p. 49).

On the morning of March 10, when he was to prepare the flight release for Captain Morwood's flight segments that day, the dispatcher, Mr Lavery, was faced with making several changes to the standard entries on the SOC log. The standard routing for the first segment of flight 1362 (Winnipeg to Dryden) had Thunder Bay as an alternate, a minimum dispatch fuel of 10,000 pounds, required fuel on board of 15,000 pounds, and a maximum takeoff weight of 62,000 pounds, yielding a maximum payload of 12,100 pounds. Because of the weather, Mr Lavery had to change the alternate to Sault Ste Marie, thereby requiring a change in minimum dispatch fuel (MIN), to his mind, of 12,600 pounds and a maximum takeoff weight (WT.) of 62,400 pounds; figures that he pencilled in on the SOC log. On the flight release, however, the takeoff weight for this segment was recorded as 61,000 pounds.

When Mr Koncan was asked to examine these two documents the first discrepancy he noted was that, contrary to standard company policy, the flight release had not been signed. Second, the takeoff weight on the first segment of flight 1362 on the flight release was 61,000 pounds. On the SOC log, however, Mr Lavery had crossed out the computer-generated 62,000 pounds and pencilled in 62,400 pounds. Mr Lavery was not able to provide an explanation for this inconsistency.

Mr Koncan was also unable to explain the maximum takeoff weight of 62,400 pounds. In fact, Mr Koncan explained that because the structural landing weight of aircraft C-FONF was 59,000 pounds, the maximum takeoff weight of 62,400 pounds would have required an unusually high fuel burn of 3400 pounds between Winnipeg and Dryden to meet the 59,000-pound landing limit.

Another problem detected in the flight release was the entry of 12,100 pounds under the payload column (LOAD). The payload is calculated by subtracting the basic empty operating weight of the aircraft – in the case of C-FONF 37,723 pounds – from the takeoff weight of 61,000 pounds, which yields 23,277 pounds.[15] The difference between the

[15] The takeoff weight must also take into consideration that, after the appropriate fuel burn to the destination, the maximum landing weight of 59,000 pounds will not be exceeded.

23,277 pounds and the fuel on board (FOB) is the allowable payload. Mr Koncan explained that the payload figure represents a recommended maximum figure not to be exceeded when calculating the combined weight of the passengers, cargo, baggage, and everything that is to be carried on the aircraft other than fuel. Obviously, the ability to refer to the appropriate weight calculation formula and to generate the correct allowable payload is fundamental to competent operational control.

The minimum dispatch fuel on the first leg of flight 1362, recorded on the first line of the flight release, was 12,600 pounds.[16] The fuel on board, or the actual amount of fuel carried, that Mr Lavery noted for the first leg of flight 1362 on March 10 was 16,000 pounds. However, according to Mr Koncan's calculations, subtracting the 16,000 pounds fuel on board from the 23,277 pounds (the difference between the empty weight of the aircraft and the maximum takeoff weight), results in a figure of 7277 pounds, instead of the payload figure of 12,100 pounds as on the flight release. Although, during his testimony, Mr Koncan carefully reviewed Mr Lavery's calculations, he was unable to explain the incongruities, which prompted him to comment: "How he came up with 12,100 is beyond me" (Transcript, vol. 47, p. 77).

Mr Koncan identified yet another error in the flight release, this time pertaining to the second leg of flight 1362, from Dryden to Thunder Bay (second row). Again, there was a discrepancy between the maximum takeoff weight of 62,400 pounds from the SOC log and the 61,400 pounds entered on the flight release. Mr Koncan could not rationalize Mr Lavery's entry of 15,500 pounds as a maximum payload available for the leg, prompting him to comment: "The basic fundamentals of adding and subtracting were totally in error in coming up with this figure" (Transcript, vol. 47, p. 80).

Errors were also identified in the flight release on the Thunder Bay to Dryden leg of flight 1363. As per the flight release, Captain Morwood ordered an uplift of 15,800 pounds of fuel upon arrival at Thunder Bay and awaited what he thought would be 55 passengers to be boarded. With the 61,700 pound takeoff weight and 15,800 pounds of fuel, using the same calculations as above, the available payload would have been 8177 pounds. With 55 passengers and 1000 pounds of cargo the payload would be 12,000 pounds; some 2800 pounds beyond that permitted to make allowable takeoff weight of 61,700 pounds.

Further evidence disclosed that Mr Lavery's errors in calculating maximum payload were attributable to his consistent application of an

[16] In the Air Ontario system, in accordance with the requirements of ANO Series VII, No. 2, minimum dispatch fuel consists of fuel required for start and taxi, takeoff, climb to altitude, an IFR approach at destination and a missed approach, a diversion to the alternate, plus, on the F-28, a 30-minute reserve.

erroneous formula. Mr Lavery substituted "minimum allowable fuel" for "fuel on board" in applying this formula. Hence, the allowable payload weight, by his calculations, was always too high because it erroneously included the weight of any fuel carried in excess of the minimum allowable fuel.

The question remains, why did the crew of flight 1362/1363 order the uplift of 15,800 pounds of fuel called for by the flight release when, as stated by many witnesses, Captain Morwood would have noticed such an obvious error?

During his testimony, Mr Lavery admitted his confusion in compiling the flight release, particularly with regard to the maximum payload figures:

> Q. ... Now, it appears, then, that in the very early morning hours of the 10th of March, 1989, there was some confusion in your mind about what the correct formula was for coming up with the maximum payload; is that right?
> A. It appears that way.
> Q. And that confusion apparently accounts for the erroneous maximum payload figures; is that right?
> A. Yes.
> Q. And all of those erroneous maximum payload figures find their way onto the flight release which you issued a little later that morning; is that right?
> A. I believe so.
> Q. Yes, 12.1, 15.5, 12.1 and 10.3? [payload figures from flight release]
> A. Okay.
> Q. Now, are you able to explain why some of the other figures on the SOC log did not get transposed verbatim or why they're not reflected in the SOC log? How did those disparities happen?
> A. I don't know.
>
> (Transcript, vol. 48, p. 184)

Deteriorating Dryden Weather and Air Ontario SOC

In my view, there were two critical weather forecasts which should have been accommodated by Air Ontario SOC in the operational control of flight 1363. These were the amended Dryden terminal weather forecast issued at 1502Z (10:02 a.m. EST) and valid at 1523Z (10:23 a.m. EST) and the terminal weather forecast for Dryden issued at 1630Z (11:30 a.m. EST) and valid at 1703Z (12:03 p.m. EST). Both forecasts called for light freezing rain at Dryden, and both were available to the Air Ontario SOC personnel and the crew of flight 1363 via Reservac computer terminals located in London SOC and the Thunder Bay airport crew room, respectively.

Aircraft C-FONF arrived at Thunder Bay at 10:35 a.m. EST and departed for Dryden at 11:55 a.m. EST. As stated earlier, on March 10, 1989, Mr Lavery went off shift at Air Ontario SOC at 10:30 a.m., and was replaced by Mr Wayne Copeland. When Mr Copeland arrived at work at 9:45 a.m. for his shift, which commenced at 10:00 a.m., he briefed himself on the area weather and received a "handoff briefing" from Mr Lavery (Transcript, vol. 45, p. 75).

It was the responsibility of Mr Lavery and Mr Copeland, as dispatchers, to monitor the weather that would be encountered by the flights they were following. In particular, with respect to the weather that would likely be encountered by flight 1362/1363, Mr Lavery should have been aware of the 1502Z (10:02 a.m. EST) amended terminal forecast for Dryden, and Mr Copeland should have been aware of both the 1502Z (10:02 a.m. EST) and the 1630Z (11:30 a.m. EST) forecasts.

Mr Lavery testified that, in the normal course of his duties, he should have been aware of the 1502Z amended terminal forecast calling for freezing rain at Dryden. Although he stated that he had no specific recollection of seeing that particular forecast, Mr Lavery testified that he was aware that freezing rain was a possibility for the entire area (Transcript, vol. 48, pp. 175–77). In this regard, Mr Lavery acknowledged that he had not had sufficient weather training and he conceded that, because of his lack of experience, he did not make the critical connection between the weather forecast for freezing rain at Dryden and the possibility that the aircraft might need de-icing there. Mr Lavery testified that in retrospect, if he had made such a connection, it "definitely" would have been better to overfly Dryden:

> Q. ... if you take a look at the weather for Dryden that day, which would have been available to you, if you had looked at that, you might have been clued in to the fact that the F-28 might have needed de-icing in Dryden; is that right?
> A. Yes.
> Q. And, if you had thought about that, is that something that you would have discussed with the duty dispatcher to see whether or not the F-28 should overfly Dryden?
> A. Yes.
> Q. But you did not have enough experience at that time to have your mind click on that issue; is that right?
> A. I don't think I did.
> Q. ... Today, if the same scenario came up, you would think about that possibility of de-icing, that it may be better to have the plane overfly since the plane doesn't have an APU, is that right?
> A. Definitely.
> Q. On March the 10th, did you know what the ramifications of not having an APU working were? I mean, did you know that the plane could not start without an APU?

A. Yes.
Q. ... and you knew that the plane would have to shut down in order to de-ice. At least that was your opinion, is that right?
A. Yes.
Q. And do you agree that it is part of dispatch's responsibility to follow the flight by looking at the new and updated weather as it comes out, and considering whether or not that might impact on the flight?
A. Yes.
Q. ... And if you had done that, you would have seen other indications that there might be freezing rain in Dryden, isn't that right?
A. Yes.

(Transcript, vol. 48, pp. 211–12)

Mr Copeland testified that he would have reviewed the weather when he commenced his shift, and he would have noticed any changes in the weather which had any operational significance. Having stated this, Mr Copeland claimed that he had no specific recollection of seeing either the 1502Z or the 1630Z terminal forecasts calling for freezing rain in Dryden. Mr Copeland acknowledged that, as the dispatcher on duty on March 10, 1989, it was his responsibility to monitor the weather which could affect flight 1363. He stated that had he been aware of the terminal forecasts calling for freezing rain in Dryden, he would have appreciated the possibility of having to de-ice the aircraft in Dryden and he would have brought the scenario to the attention of the duty manager, Mr Kothbauer. Mr Copeland was questioned on this issue:

Q. ... it was your responsibility to see this forecast in a timely way, isn't that right?
A. Yes.
Q. ... assuming that you saw this forecast, you would have known that there is a possibility that if the F-28 landed in Dryden, it would need to be de-iced, right?
A. Yes.
Q. But you knew that was a big problem because it couldn't de-ice with the engines running, right?
A. True.
Q. And it couldn't shut the engines off because if it did that, it couldn't get started again and you would have a bunch of people stuck in Dryden, right?
A. True.
Q. So once again, assuming that you saw the forecast, the logical thing for you to do would have been to relay this information to the captain so he could consider whether or not to overfly Dryden, is that right?

A. If it did happen the way you describe, I would have not at that time instructed the aircraft to overfly. I would have asked the duty manager, here is the way it is, what do you want to do.
Q. All right.
A. That decision would be his.
Q. So he would have had the option, then, of getting ahold of the aircraft and suggesting to the captain that he might want to consider overflying Dryden, right?
A. That's a possibility.
Q. I take it you don't tell these captains anything, you suggest things to them?
A. True.
Q. All right. Now, did you tell your duty manager that there is a possibility the F-28 might have to de-ice in Dryden and you might want to do something about it?
A. I don't remember doing that.

(Transcript, vol. 45, pp. 182–84)

Mr Kothbauer, the duty manager supervising the SOC facility at Air Ontario on March 10, 1989, testified that the two terminal forecasts calling for freezing rain in Dryden were not brought to his attention as they should have been. Mr Kothbauer explained how the weather forecasts were significant to the operational control of flight 1362/1363:

Q. ... Did you have occasion to look at either of those two sequences when you say you looked at the weather for Dryden after the departure of 363?
A. I don't remember seeing the amended terminal forecast.
Q. You don't remember seeing it. The 1502 amended FT for Dryden is, of course, 10:02 local London time, is that correct?
A. Yes, it is.
Q. And in the ordinary course, would that FT generated at 10:02 have been available on the RESERVAC system in London during the length of the turnaround at Thunder Bay being 10:35 ramp time to 11:55 departure time local Thunder Bay?
A. It should have been available, yes.
Q. ... could I direct your attention to the end of that sequence where it says two miles in light rain, light freezing rain and fog. Do you see that?
A. Yes, I do.
Q. But you [didn't] have occasion to have looked at that document?
A. No, sir, I didn't.
Q. ... If you would have had occasion to look at that document, would this amendment including ... light freezing rain ... have influenced your decision one way or the other with regard to the continuation of Flight 363 to Dryden with an unserviceable APU?

A. Yes, sir, it would have.
Q. And what ... conclusion would you have come to?
A. Normally, if it was just an occasional as it is in that terminal forecast, I would at least confer with the captain to see what his thoughts on it were, but I would plan a no-stop or to overfly the station.

(Transcript, vol. 49, pp. 74–75)

It is clear that there was a breakdown in Air Ontario SOC regarding the two terminal forecasts. Mr Lavery would have been in a position to see the 1502Z amended forecast calling for freezing rain in Dryden, and Mr Copeland would have been able to see both the 1502Z and the 1630Z terminal forecasts calling for freezing rain in Dryden. There is evidence that, at least in Mr Copeland's case, had he seen the forecasts, he would have appreciated their operational significance to aircraft C-FONF with an unserviceable APU flying into Dryden where there was no ground-start capability. In any event, neither Mr Lavery nor Mr Copeland notified his duty manager, Mr Kothbauer, or the crew of C-FONF regarding the forecast freezing rain for Dryden. Both forecasts were issued prior to the 11:55 a.m. EST aircraft departure from Thunder Bay.

Overfly Options

The evidence of the three individuals in Air Ontario SOC responsible for the dispatch and flight following of flight 1362/1363 led me to consider the possibility of Captain Morwood's deciding to fly directly to Winnipeg and overflying Dryden. None of the three individuals involved suggested this possibility to Captain Morwood and it is not known whether Captain Morwood considered this alternative.

The fuel required to fly from Thunder Bay to Winnipeg with Sault Ste Marie as an alternate would have been 13,000 pounds with no reserve fuel, using the formula of 5000 pounds for the first hour and 4000 pounds for each additional hour of flying. This is the formula that the testimony indicates the dispatchers would have used. Since the flight departed Thunder Bay with 13,000 pounds of fuel, the option of overflying Dryden and proceeding to Winnipeg after departure from Thunder Bay was not possible since the 30-minute holding fuel as required by ANO Series VII, No. 2, would not have been on board. In order to overfly Dryden, Captain Morwood would have had to take on additional fuel at Thunder Bay to meet legal requirements.

In practical terms, if, while airborne from Thunder Bay to Dryden, Captain Morwood had decided not to land at Dryden for whatever reason, he would have had to find a suitable alternate for Winnipeg that was within the range of his fuel on board, or he would have had to

abandon Winnipeg as his destination early enough to allow the flight to fly back to Thunder Bay or to Sault Ste Marie with required fuel reserves.

The time for Captain Morwood and Air Ontario SOC to have considered these options would have been during the one hour and 20 minute station stop at Thunder Bay.

Captain Morwood and the Flight Release

Several witnesses were asked, based on their knowledge of Captain Morwood, what they believed his reaction would have been upon receipt of the flight release on March 10, 1989. Early on March 10, prior to the dispatch of flight 1362 from Winnipeg, Mr Kothbauer had left word for Captain Morwood to call SOC so that Captain Morwood could be updated about what he would encounter that day, including the fact that ground starts had been set up at all en route stations except Dryden. However, as Mr Kothbauer testified, Captain Morwood did not return this message from Winnipeg. Mr Kothbauer testified further that, given his knowledge of Captain Morwood, he found it unusual that Captain Morwood did not return his message.

The evidence indicates that Captain Morwood received the flight release in Winnipeg the morning of March 10, 1989. However, notwithstanding the evidence cited above that Air Ontario pilots, including George Morwood, did not rely on the accuracy of SOC's flight releases and routinely reviewed the calculations themselves, Captain Morwood did not telephone SOC to advise of calculation errors in the flight release.

Both Mr Koncan and Mr Kothbauer testified that they would have expected Captain Morwood to call had he not received a flight release or had he received a flight release so error-laden as the one supplied to him. On the basis of his prior experience in dispatching Captain Morwood's flights, Mr Kothbauer was questioned about his expectations of Captain Morwood in the circumstances:

> Q. ... Mr. Kothbauer, if a pilot – and let's use the example of Captain Morwood on the 10th of March last year early in the morning in Winnipeg – if he did not receive a flight release, what would you expect him to do?
> A. Standard procedure was for the crew to call London SOC.
> ...
> Q. And you had, I take it, flight-followed or dispatched his flights before?
> A. Yes, sir.
> Q. From your recollection of Captain Morwood, would it be your opinion that, upon his viewing of this Flight Release, if indeed

he received it, he would consider it in the same light that you have considered it?

A. Yes, sir.

Q. I take it he would have known that it was erroneous?

A. I believe so, yes.

Q. Now, you've stated that you would have expected Captain Morwood to call you if he did not receive a flight release.

Would you have expected Captain Morwood, from your recollection of the man, to have called you if he received a flight release that, as you put it, he would have known was erroneous?

A. Yes, sir, I would expect the call.

(Transcript, vol. 49, pp. 51–52)

Similarly, the other duty operations manager, Mr Koncan, also expressed his opinion that in the circumstances he would have expected Captain Morwood either not to accept the flight release or to call SOC to discuss the errors:

Q. ... If Captain Morwood, or any other captain, for that matter, received a flight release such as the one we have in Exhibit 345, and it was as patently incorrect as you have described in terms of its payload, what would you expect the captain to do?

A. Knowing Captain Morwood –

Q. And did you know Captain Morwood?

A. I have known Captain Morwood since the day I started with Air Ontario. I have known him quite well. And in personally releasing flight releases as acting dispatcher on previous occasions with Captain Morwood, there have been instances whereby the flight release is issued at the same time as Captain Morwood is checking in, and within the time span of the issuance of the flight release, Captain Morwood getting the copy in hand, turning to his computer and reviewing the weather, Transport Canada amends the terminal forecast, your alternate has just gone down, and he will call you and ask you for a revision to the flight release.

... Captain Morwood, if indeed he got ... this particular flight release, I can only say that (a), he would not accept it, (b), he would definitely call dispatch as to why these numbers are so far out and incorrect.

(Transcript, vol. 47, pp. 92–93)

The evidence supports the conclusion that the errors in the March 10, 1989, flight release were not detected by pilots Morwood and Mills, and that they probably relied on the erroneous flight release.

The Thunder Bay Station Stop: Passengers versus Fuel

The cancellation of a Canadian Partner flight in Thunder Bay on the morning of March 10, 1989, and the accommodation of its passengers on Air Ontario flight 1363 presented operational problems for the flight crew and SOC personnel. The circumstances surrounding the fuel-versus-passengers question were clearly described by Mr Kothbauer in the following excerpt from a handwritten memorandum he prepared on March 11, 1989, regarding his involvement with flight 1362/1363, which he read in testimony:

> A. "At approximately 1100 o'clock Eastern Standard Time Air Canada in Thunder Bay notifies SOC that 363 is overloaded and will require offloading of ten passengers and their bags. Air Canada advised us that it was now a full load, 65 passengers. The projected load had been 55. Apparently Canadian Partner had cancelled their Thunder Bay-Dryden-Winnipeg sched and their passengers were protected on our flight.
>
> "Due to the heavy workload in SOC, the last check of projected passenger loads" would have been ... "prior to the issuance of the flight release.
>
> "Air Canada had not notified SOC of the increased passenger load and no load restriction had initially been placed on the flight by SOC.
>
> "I told Air Canada that I would check to see if we could defuel the aircraft while they checked further into the overload condition.
>
> "Initially SOC, [meaning myself] placed a 35 minute delay on the flight as we sorted it out. I did not want to bump 10 passengers if we could avoid it, and hot refuelling was required in Dryden anyway.
>
> "I called Thunder Bay ESSO and set up the defuelling. Since Air Canada couldn't give me exact figures, I told them to check with the captain on how much to remove.
>
> "At approximately 1130 Eastern Standard Time Air Canada called and advised that 2,000 pounds of fuel was being off-loaded as well as [and I can't remember exactly but I believe they said] 4 or 5 passengers. At this time, SOC forecast a departure out of Thunder Bay ... for 1145 Eastern Standard Time.
>
> "And the flight actually departed Thunder Bay 1 hour behind schedule at 11:55 Eastern Standard Time.
>
> "I spoke again with ESSO in Thunder Bay regarding billing procedures for the defuelling and, at this time, I again checked Dryden weather, and it was still VFR.

"This is the last thing that I did related to this flight before the accident."

(Transcript, vol. 49, pp. 88–90)

As stated earlier, after the aircraft arrived at Thunder Bay at 10:35 a.m. EST, the passengers from flight 1362 were deplaned and the aircraft was fuelled up to 15,800 pounds FOB, as specified in the flight release, by Mr Jack McInnis of ESSO Thunder Bay. The fuelling of the F-28 took approximately 15 to 20 minutes.

After the passengers of flight 1363 were boarded, approximately 15 minutes after the aircraft arrived, it was discovered that there were 65 passengers on board rather than the 55 passengers indicated on the flight release. The extra passengers had been moved to flight 1363 by Air Canada STOC in Thunder Bay after the cancellation of a Canadian Partner flight. Because of the extra 10 passengers, flight 1363 was overweight. There was some deliberation on the flight deck of C-FONF as to how to resolve the weight problem. They could off-load passengers, fuel, baggage, or any combination of these to get down to the proper weight.

Approximately 15 minutes after the aircraft arrived, Mr Morgan Brown, an Air Canada station attendant, boarded the aircraft to advise Captain Morwood of the baggage count for flight 1363. Mr Brown testified as to his discussion with the flight crew of C-FONF:

Q. ... Now, did the captain say something to you about passengers coming on and about taking off some fuel? Did he make a comment to you about that?
A. Yeah, he asked where all the passengers came from, and he said he was overweight, he would either have to defuel or take passengers and baggage off.
Q. ... And did the co-pilot say anything in relation to the defuelling of the aircraft?
A. He said it was available at Thunder Bay, they did defuel in Thunder Bay, and that's when I told him that, You make up your mind what you're doing, and when you've got – passengers or fuel, whatever you're taking off, because I had a Dash 8 to work. I left.
Q. Oh, you had another aircraft –
A. I had another aircraft to work.
Q. So you said, Make up your mind what you want to do and then I'll be back?
A. That's exactly what I said.

(Transcript, vol. 56, pp. 99–100)

Flight attendant Hartwick testified that she advised Captain Morwood that there were five non-revenue or contingent passengers on board.[17] Captain Morwood then tried to contact the Air Canada STOC to request that they take off the contingent passengers and their baggage.

Because there was no direct radio link between Air Ontario aircraft and the Air Canada STOC in Thunder Bay (or Air Ontario SOC in London), Captain Morwood relayed his message through an Air Canada radio operator, Mr Peter Shewchuk. Mr Shewchuk testified that he received the request from C-FONF approximately 15 minutes after its arrival and then tried unsuccessfully to contact Air Canada STOC. Because he received no answer from STOC, Mr Shewchuk contacted the Air Canada baggage room and spoke with an Air Canada passenger agent. Mr Shewchuk testified that he advised the passenger agent that the Air Ontario aircraft needed a passenger agent on board to deplane 10 passengers and their baggage because of an overweight problem. Mr Shewchuk testified that, approximately 15 minutes later (at approximately 11:00 a.m. EST), one of the crew of C-FONF called back advising that no passenger agent had come on board and requesting that Mr Shewchuk contact Air Canada STOC again. Mr Shewchuk then called the Air Canada customer service manager, who sent a ticket agent out to the aircraft.

Flight attendant Hartwick testified that the flight crew was trying to radio Air Canada STOC and the ESSO fuelling agent from on board the aircraft. At one point, Captain Morwood asked her to try to get the attention of some baggage handlers who were loading the aircraft. Mrs Hartwick provided the following testimony as to how these deliberations in Thunder Bay were affecting the crew:

> Q. ... In speaking to the pilots, Mrs Hartwick, did you ... get a feel of what their mood was starting to be?
> A. They were ... becoming very frustrated. They felt like we were all being ignored. No one was coming to our rescue. We sat there and we were actually delayed one hour in Thunder Bay.
> Q. As a matter of fact, did the captain to the best of your recollection make a bit of a comment that you recall?
> A. Well, he was very upset. He may have swore and said God damn it like this but ...
> Q. He felt ignored, didn't he?
> A. We all felt ignored. Passengers had connections to make in Winnipeg and we were delayed a total of an hour in Thunder Bay. So, we were worried about them as well.
>
> (Transcript, vol. 10, p. 191)

[17] Contingent passengers or "cons" are those passengers flying on a special pass. They would usually be company employees.

Apparently the ticket agent sent out to deplane passengers was stopped before reaching the aircraft and advised by one of the ground handlers that they were going to defuel rather than take passengers off.

Some time after his last conversation with the flight crew of the aircraft, Mr Shewchuk was again contacted by them. One of the flight crew explained to him that they were going to defuel rather than off-load passengers, and asked him to contact the ESSO fuelling people at Thunder Bay. Mr Shewchuk telephoned ESSO but received a busy signal. He the called Air Ontario SOC in London to apprise them of the situation, but was advised by them that they had already made the arrangements and the ESSO fuelling agent was already taking steps to off-load the necessary fuel. This was Mr Shewchuk's last involvement with the defuelling/passenger situation. Mr Shewchuk testified that during his discussions with the flight crew, they expressed concern regarding the delay and the connections that passengers had to make in Winnipeg.

At approximately 11:10 a.m., Mr Kothbauer contacted Mr Gary Linger of Thunder Bay ESSO and arranged for the defuelling. Fifteen minutes later, at about 11:35 a.m., Mr Linger and Mr McInnis of ESSO commenced the defuelling of the F-28 aircraft. Mr Linger spoke with Captain Morwood, who was standing outside C-FONF, and he instructed them that the aircraft was to be defuelled down to 13,000 pounds FOB. Mr Linger testified that Captain Morwood was very calm and professional but somewhat apologetic about the defuelling. The defuelling was completed approximately 20 minutes later. The aircraft then departed, approximately one hour late.

In my view, the additional delay and accompanying frustration experienced by the passengers and crew of flight 1363 in Thunder Bay was a result of poor communications among Air Canada STOC, Air Ontario SOC, and the crew of C-FONF. Air Canada STOC apparently determined that 10 additional passengers were to be loaded on Air Ontario flight 1363, yet it was tardy in entering this information in the Reservac computer. As a result, Air Ontario SOC was not notified of the change until approximately 11:00 a.m. EST, after the fuelling of the aircraft had been completed and the overweight situation was manifest. Had the increased passenger load been made known to Air Ontario SOC in a more timely manner, prior to the arrival of flight 1362 in Thunder Bay at 10:32 a.m. EST, they could have made arrangements for a change in the scheduled fuel uplift. With more timely and better organized communications, the passengers-versus-fuel difficulty could have been avoided altogether, and the crew of C-FONF would have been spared the frustration of having to communicate indirectly with Air Ontario SOC, Air Canada STOC, and the fuelling agent via the Air Canada radio operator and avoided the unnecessary delay at Thunder Bay.

The Performance of Air Ontario SOC: Conclusions

I am of the view that there were two significant shortcomings with respect to the operational control of flight 1362/1363: first, the preparation of the erroneous flight release; and second, the failure to accommodate for the forecast freezing rain for the Dryden area.

The question remains as to how Air Ontario's operational control of flight 1362/1363 could break down in the manner that it did. As in much of this investigation, several factors can be identified as at least contributing to the critical system failure, although a single cause is often difficult to identify.

Certainly, as he acknowledged himself, Mr Lavery erred in his preparation of the flight release. That there was such an error was not entirely unpredictable. It was stated by all of the operational control personnel who testified that the training and qualification of the Air Ontario dispatchers was inadequate. Mr Kothbauer, Mr Lavery's immediate supervisor on March 10, 1989, testified that Mr Lavery was a "weak dispatcher" who tended to have difficulty when the pressure was on, but the evidence suggested that Mr Lavery might not have been alone in this regard. For example, Captain William Wilcox testified that, when the weather was bad, the reliability of flight releases tended to diminish. This evidence suggests to me that the preparation and review of such flight releases by Air Ontario operational control could have been more hurried and less careful during poor weather operations, the exact opposite of what should have been required in such circumstances.

With regard to the accommodation of the forecasted freezing rain for Dryden, clearly Air Ontario SOC personnel should have been aware of the changing weather and made appropriate arrangements. Mr Kothbauer acknowledged this in questioning:

> Q. ... It is your evidence that had the flight watch system worked properly, had the weather been monitored with ... a properly trained and experienced dispatcher, what would have happened is the F-28 would have ended up overflying Dryden, is that right?
> A. Possibly, yes.
> Q. Possibly or probably?
> A. Probably.
> Q. ... thank you. It would have ultimately, I suppose, been up to the captain, but your advice to him would have been overfly?
> A. Correct.
>
> (Transcript, vol. 49, p. 187)

It is clear that the time for arranging an overflight of Dryden would have been during the one hour and 20 minute station stop at Thunder

Bay. One would have expected the dispatchers immediately responsible for the following of flight 1362/1363 to have detected the amended terminal forecast of 1502Z and the terminal forecast of 1630Z and passed along the information regarding freezing precipitation to the flight crew and/or the duty manager, Mr Kothbauer. From the evidence of Messrs Lavery and Copeland, it is not certain whether they saw the two critical terminal forecasts. From all of the evidence, I am certain that the information regarding freezing rain was not communicated by them to Mr Kothbauer or the crew of flight 1362/1363.

On March 10, 1989, Mr Kothbauer was the duty manager supervising the entire operational control function at Air Ontario. To the extent that Mr Lavery erred with respect to the flight release, it was Mr Kothbauer's responsibility to detect and prevent the error from taking on operational significance. At the same time, the F-28 C-FONF was not the only aircraft that Mr Kothbauer and Air Ontario SOC had to worry about – they were responsible for the operational control of all Air Ontario flights over their entire system. Mr Kothbauer was questioned at length on the failure of Air Ontario SOC on March 10, 1989. The following interchange provides, I believe, interesting insight into the problems encountered at Air Ontario SOC on that day:

> Q. ... if you had not been so busy and if you hadn't been attending to other duties that were imposed on you, do you agree that there was weather information available to you as much as three hours before the crash which would have confirmed your concern from the area forecast about the need for de-icing?
> A. Yes, sir, I agree.
> Q. You agree with me that it is the duty of the dispatcher to follow the weather for the assistance of the pilots?
> A. Yes, sir, I do.
> Q. And, if you had a properly trained dispatcher who was doing his job, that is, following the weather, he would have seen that terminal forecast three hours before the crash which spoke of light freezing rain in Dryden, specifically, right?
> A. Yes, sir, that terminal would have come out about the time that the dispatchers were shift changing.
> ...
> Q. ... List all the things you think that may have combined to cause that proper system outlined in the Flight Operations Manual to break down.
> A. I think the major factor that morning would have been the workload that not only the dispatchers but myself as well were under.
> Q. What else?
> A. I'm not sure that the dispatchers were aware that the auxiliary power unit was unserviceable. Or, at least, the dispatcher that

came on duty at about 10 o'clock, I'm not sure if he was briefed that it was.

...

Q. So what other reasons would there be for this system not working? You have mentioned workload.

A. Yeah, a lack of knowledge of what is required. The way – you would end up discarding things that you didn't have to do. You'd prioritize while you were on the shift, and if you didn't prioritize correctly, then that possibly wouldn't even be on your list of things to do.

...

Q. Now, the lack of knowledge, that goes back to poor training and lack of experience; is that right?

A. Yes, sir.

Q. You mentioned a shift change. Were there any other factors which you think might have contributed to the system not working, flight watch not working properly?

A. Going along with workload would be distractions, the telephone ringing, background noise off the radios, other people in the office. Crew Scheduling shared the same office that we did, and there was a lot of background noise during irregular ops in that office.

...

Q. You agree with me that the flight watch system broke down, it did not work the way it should have worked –

A. Correct.

(Transcript, vol. 49, pp. 173–78)

Mr Copeland, the dispatcher with the last chance, in my view, to have alerted Mr Kothbauer and/or the flight crew of the forecast freezing rain for Dryden, echoed Mr Kothbauer's evidence regarding the workload in SOC. On March 10, 1989, Mr Copeland would have been responsible for the flight following of six to ten aircraft over a large geographical area that included Winnipeg, Montreal, Toronto, and London, Ontario. Mr Copeland stated that he and everyone in SOC were quite busy that day as the weather was poor throughout the entire system:

Q. And if you're going to fulfil your duty as set out in the Flight Operations Manual, and that is, you're going to monitor every stage of each plane's progress across this broad geographical area, I take it that, at times, you were a very busy man?

A. Correct.

Q. Were you working in that scenario on March the 10th; that is, were you monitoring numerous airplanes simultaneously in a situation where you had generally bad weather and you had airplanes all over the place?

A. Are you asking me if I was busy?
Q. I guess. That's a pretty succinct way to put it ...
A. Yes, it was a busy day.
...
Q. ... All right, it was ... busy for the reasons that I mentioned: You had a number of aircraft, it was generally bad weather, and the aircraft that you were monitoring were spread over a large area; is that right?
A. That's not what I would call the reasons for being busy.
Q. Why were you busy?
A. Everyone in the room was busy. There was weather problems throughout the system. That keeps us busier. And there's a lot of other factors that can keep us busy that I can't really quote for sure, such as crew problems, rerouting aircraft, rerouting air crews, maintenance delays within the system, maintenance problems within the system.

I can't really account for why it was busy that day, but those are some possible factors.

(Transcript, vol. 49, pp. 161–62)

The explanations for the poor performance of Air Ontario SOC offered by Messrs Kothbauer and Copeland seem to boil down to the following:

- March 10, 1989, was a busy day which was getting busier as the weather deteriorated; and
- distractions, including noise and activity in the SOC centre, a shift change among dispatchers, and the activity generally associated with what could be called a bad day.

These factors all contributed to a situation where the personnel involved in the operational control of C-FONF performed in a less-than-optimal fashion.

I am not persuaded by these explanations. As was suggested by the questioning of Mr Kothbauer, when there is bad weather, aircraft unserviceabilities, or other irregular operational circumstances, SOC is especially relied upon by pilots. These sorts of demanding operational conditions are by no means unexpected. They call for prompt and professional attention by operational control personnel, and for this reason regulatory authorities require a high standard of training and qualification from operations control officers. A review of the evidence relating to these matters has convinced me that the most significant factors contributing to the breakdown in the operational control of flight 1362/1363 was poor planning and organization within SOC, a lack of

training and qualification of Air Ontario SOC personnel, and the failure of SOC personnel to appreciate the importance of their function.

Licensing and Training of Dispatchers

The Canadian Airline Dispatchers Association (CALDA) is a trade union with a membership of approximately 120 dispatchers employed by Air Canada, Canadian Airlines International, and AirBC. CALDA submitted a brief to this Commission of Inquiry (virtually the same brief as the one it prepared for the Dubin Commission of Inquiry on Aviation Safety in 1980) expressing in the strongest terms the need for proper training and licensing of flight dispatchers. The following passage from its introduction clearly indicates the impetus for CALDA's revival of its licensing application at this time:

> CALDA firmly believes that if a dispatcher dispatched system equivalent or better to the system at Air Canada or Canadian Airlines International (both of which systems are, in CALDA's submission, not perfect) this tragic accident would not have occurred. CALDA believes that if all air carriers in Canada were required to employ only federally licensed dispatchers, accidents of the nature of the accident at Dryden would be permanently prevented.
>
> (Exhibit 1232)

In 1971 the Department of Transport (DOT) announced its intention to establish licensing requirements for flight operations officers. This proposal was strongly opposed at that time by the Air Transport Association of Canada (ATAC), whose position was that "[t]here is no evidence that the standard of flight dispatch has ever had an adverse effect on safety, therefore, there is no reason to believe that licensing dispatchers will in any way contribute to a higher degree of safety" (Exhibit 1233). Although, in correspondence through to 1973, the DOT director-general, civil aeronautics, vacillated on the subject, he did finally initiate a study in 1974 which found that licensing of dispatchers appeared to be unnecessary. In 1976 the director, aeronautical licensing, supported CALDA's position on the need for detailed information and guidelines for an acceptable operational control system.

Following the Dryden crash, regulatory interest was revived, and in 1990 CALDA presented a proposed flight dispatcher training syllabus to Transport Canada and has continued to press for implementation of a standardized training system for flight dispatchers and for their licensing.

Report of the Dubin Commission of Inquiry on Aviation Safety

Based on the evidence then before him, Mr Justice Dubin stopped short of recommending the licensing of flight dispatchers in 1982. He did, however, recognize in the following recommendations the need for proper training of dispatchers and the need for dispatchers to be inspected by the regulator:

> Recommendation 240: A flight dispatcher's training manual should be prepared by the airline carriers and approved by Transport Canada.
>
> Recommendation 241: Transport Canada's inspectors should inquire into whether the airlines carriers are complying with the proposed Flight Dispatcher's Training Manual, once introduced ...

Despite Mr Justice Dubin's recommendations, there has been little change in the training requirements of flight dispatchers since his Commission of Inquiry was established in 1980. Training is still left up to the carriers. There is no approved training manual, and, as the evidence before this Commission revealed so clearly, Transport Canada has not, in any meaningful sense, monitored the training provided by the carriers or the proficiency of the individual dispatchers.

CALDA's Application for Licensing of Dispatchers

It is high time to increase the level of regulatory involvement in dispatcher training. This is not in issue. There is some controversy, however, over the two principal options. In general terms, these two options are:

1 A system along the lines recommended by Mr Justice Dubin in 1980, whereby training remains in the hands of the carriers but follows a Transport Canada–approved training manual, and Transport Canada carries out regular and effective compliance checks.

2 A system in which flight dispatchers would be licensed by Transport Canada.

The deficiencies observed in Air Ontario's dispatch operation would be alleviated, and the CALDA concerns satisfied, through implementation of an approved standard to which dispatchers must be trained, coupled

with Transport Canada enforcement of those standards. However, Mr Sandziuk pointed out that little, if anything, was implemented from the 1980 recommendations of Mr Justice Dubin and that in the intervening period the Dryden accident occurred, at the expense of 24 lives. Referring to the Dubin recommendations, Mr Sandziuk provided the following compelling testimony:

> A. ... [I]n general, perhaps his conclusions were correct. The only thing that was wrong with it is that very little, if anything, has ever been implemented. I think the concept that Justice Dubin perceived, if I understand it correctly, was to attain all the goals the flight dispatchers were looking for.
>
> Unfortunately ... there is no obligation upon the companies to meet his suggested program. Transport Canada, to my knowledge, does not do the inspections of the company to see that these things are fulfilled.
>
> And despite all the good things that are said in the report, my contention comes right back to what I initially said, and that is, that I view it, as long as Transport Canada vests the responsibility for flight operations solely within the company and the duties of the flight dispatcher in the company, rather than giving the flight dispatcher that authority, nothing really is going to change.
>
> Because, although they are very well-intentioned, they have every reason to follow the program, the ... hard cold facts are that monetary restraints cause companies to cut corners. And the first place they cut corners is a small group like flight dispatch ... [L]ook at Air Canada's example, they give us two days recurrent training; last year because we got the Airbus, we got two days on the Airbus – which we are very grateful and I think it is great – but as a result, we didn't get any recurrent training, and that is what we consider a really good airline.
>
> The question I have to ask is: What is happening in what we consider the not really good airlines? Are they getting any training? So, the concept that Justice Dubin had suggested is a very good concept, but I am saying it is unworkable, it will never be workable as long as Transport Canada vests that responsibility in the company and not in the flight dispatcher then nothing is going to change.
>
> ...
>
> A. ... And I'm saying to you that I have to believe, right or wrong, that part of the reason is that there was no inspection of the flight dispatchers by Transport Canada. I am saying to you, if one of those or I, as a dispatcher, have a licence, it is my responsibility to make sure that it's current because I know that at the end of the year if I don't meet ... their criteria, I don't

> have a job. But as long as you vest that responsibility in the company, there really are no rules that way.
>
> (Transcript, vol. 155, pp. 102–105)

ICAO and Licensing of Dispatchers

Canada is a contracting state to the 1944 Chicago Convention at which the International Civil Aviation Organization (ICAO), was created, and is a member of ICAO.

The Annexes to the Chicago Convention, also known as International Standards and Recommended Practices, set out minimum standards in areas that are recognized as necessary or desirable for the safety, regularity, and efficiency of international air navigation. Annex provisions are not binding on contracting states. Rather, when a contracting state is unable to comply with an international standard, it is required to file with ICAO a notification of difference.

ICAO has non-mandatory provisions for licensing flight operations officers (FOO); when a contracting state chooses to require licensing, it can use ICAO provisions setting out minimum prerequisites to be followed by the licensing body in issuing licences to its FOOs.

Where, however, a contracting state does not chose to license its flight operations officers, it is still required that operators establish and maintain an approved method of supervision of flight operations. In this scenario, as is the case in Canada, the responsibility for ensuring that dispatchers are properly instructed in their duties and responsibilities is vested in the operator.

In 1986, the Air Navigation Commission of ICAO rejected an internal committee's recommendation to abolish dispatcher licensing and stated in its decision that:

> Notwithstanding the recommendation of the panel to delete from Annex 1 the provisions for the flight operations officer licence, and the fact that the majority of replies support that recommendation, the Secretariat is impressed by the cogent arguments advanced for retaining the licence. It also feels that, because of the non-mandatory nature of the FOO licence, many States who agreed with the panel's proposal may, in fact, be content if a decision was made to retain the licence.
>
> (Exhibit 1236)

Canadian Position

The Canadian position on this question was to support deletion of the licensing requirements for the flight operations officer. The reasons for the Canadian position, as described by Mr Sandziuk, portray a Transport

Canada that was unresponsive to the interests of CALDA and the safety of the travelling public:

> A. ... I would like to say though at this point, that as a representative of CALDA at the time, I had approached Transport Canada hoping to convince them that they should support retention of licensing. Unfortunately the decision was already made.
>
> The Government of Canada and Transport Canada ... in particular, did not ever consult the flight dispatch groups in Canada for an opinion on retaining licences. And this is all despite the fact that I previously had a letter from the then Transport Minister Jean Luc Pepin that they would consult the addressed parties in the future, and that did not happen.
>
> (Transcript, vol. 155, p. 92)

Licensing and Labour Relations

A major issue to parties against licensing of dispatchers is the concern that licensing will be used as a labour relations tool in the hands of the dispatchers. Theoretically, if a company operates a full co-authority dispatch system of operational control, and if the law requires that dispatchers be licensed, a strike by dispatchers would possibly affect a carrier's ability to operate efficiently. I do not believe that logic supports this argument. Instead, I concur with the remarks of Mr Sandziuk on this point:

> A. Well, that has always confused me as to the contention of the licence for a flight dispatcher being used as an industrial weapon, because nothing could be more further from the truth.
>
> Today, I am not a licensed flight dispatcher and, yet, under the certification that Air Canada has, if the CALDA group at Air Canada decided to take strike action against Air Canada, we would literally close down the airline. It's unequivocal. It cannot be denied. They would close down.
>
> If we had a licence, the same thing would happen. If this were to happen – and I have to point out to you that throughout the history of CALDA there has never been an industrial strike. We have never had a strike in the flight dispatch groups in Canada that I know of. We have a very good rapport with the companies. We feel we do a very professional job and our people are very proud of the work we do.
>
> ... We don't have licences but under the certificate Air Canada, Canadian Airlines International have, if the dispatchers walked out of the office, the airline would shut down.
>
> Now, I could look at the recourse. What is the recourse? The recourse would be, if the dispatchers walked out of the office, it

> is not legal to just parachute pilots or anybody else into the function of flight dispatcher. They don't meet the criteria of their Navigation Order. Therefore, the option in my view that the airline company would have would be to go to Transport Canada, ask for a recertification as a pilot self-dispatched airline.
>
> But what is different whether I have a licence or no licence? There is zero difference. There is no difference. So, I don't understand the concept of anybody thinking that we would use it as an industrial weapon.
>
> (Transcript, vol. 155, pp. 107–108)

CALPA Position

On behalf of Canadian Air Line Pilots Association (CALPA), the following statement was offered with respect to the CALDA proposal that flight dispatchers be licensed:

> CALPA's position at present is that providing that the consequences (enforcement) of licensing are understood and that the ICAO and ANO standards are met, and that Transport Canada audits are performed, and that certain additional training topics are considered, CALPA's position is that it will not oppose licensing of dispatchers.
>
> The second portion of the statement is that CALPA would like to participate in the training programs to assist in presenting the flight deck point of view for the benefit of the dispatchers.
>
> (Transcript, vol. 155, p. 146)

United States Licensed Dispatchers and FAR Provisions

In the United States, the FAA licenses flight operations officers. Applicants must not only have two to three years of appropriate aviation experience, but they must also undergo formal training pursuant to an FAA-approved training course and pass a written "knowledge requirements" examination, as well as a practical "skill requirements" test before being licensed.[18] No such regime exists at present in Canada. The Air Ontario experience is in my view proof that such an initiative is overdue.

Moreover, Part 121 of the Federal Aviation Regulations, entitled "Certification and Operations: Domestic, Flag, and Supplemental Air Carriers and Commercial Operators of Large Aircraft," contains provisions on dispatch of far greater scope and detail than the corresponding provisions of Canada's Air Navigation Orders. For example,

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[18] "Knowledge Requirements," as set out in 14 CFR 65.55, include Federal Aviation Regulations, Meteorology, principles of aircraft navigation, and air traffic control procedures.

FAR 121 contains individual sections addressing the following relevant areas:

- Flight following system: requirements (14 CFR 121.127)
- Crew member and dispatcher training requirements (14 CFR 121.415). This section includes minimum instruction time allotments; requirement for "differences training" to ensure competence in dispatching different aircraft of the same type.
- Aircraft dispatchers: initial and transition ground training (14 CFR 121.422)
- Recurrent training (14 CFR 121.427)
- Aircraft dispatcher qualifications (14 CFR 121.463)
- Duty time limitations (14 CFR 121.465)
- Responsibility for operational control (14 CFR 121.533)

While the scope of this section does not warrant a more detailed scrutiny of the United States FARs, their superiority to Canadian ANOs in this regard is readily apparent. Canada's provisions are vague, ambiguous, and open to a variety of interpretation by both operators and regulator. In contrast, the FARs provide a clear and comprehensive code setting out the duties and obligations of all parties involved in the operational control of aircraft.

Findings

- There exists within the aviation industry confusion as to where system operations control begins and terminates and where operational control begins and terminates, and there is a need for Transport Canada to delineate the two concepts clearly and definitively.

- Air Ontario made undertakings to Transport Canada regarding its operational control facility and the training of its operational control personnel, undertakings which were not fulfilled.

- The Transport Canada regulations regarding operational control are imprecise and incomplete and were not adhered to by either Transport Canada or Air Ontario.

- The most significant factors contributing to the breakdown in the operational control of flight 1362/1363 were poor planning and organization within Air Ontario SOC, a lack of training and qualifica-

tion of Air Ontario SOC personnel, and the failure of SOC personnel to appreciate the importance of their function.

- Air Ontario flight dispatchers exercised a degree of operational control over aircraft flights, within the meaning of ANO Series VII, No. 2.

- Because Air Ontario flight dispatchers were exercising a degree of operational control over flights, they were operating as flight operations officers within the meaning of ANO Series VII, No. 2. (The terms flight dispatcher and flight operations officer are interchangeable.)

- Air Ontario's application to amend its operating certificate to include the F-28 aircraft, dated January 24, 1988, included a number of representations about the status of its dispatch operation that were clearly inaccurate.

- Air Ontario held itself out as having a pilot self-dispatch system, whereas its dispatchers were in fact exercising a degree of operational control over flights. This resulted in a hybrid dispatch system which introduced an element of uncertainty among flight operations personnel, in particular pilots and dispatchers, regarding their respective duties and responsibilities.

- Transport Canada approved a pilot self-dispatch system as adequate for Air Ontario.

- The hybrid dispatch system in place at Air Ontario on March 10, 1989, was not an adequate flight-watch system given the nature of the F-28 operation.

- A full co-authority dispatch system, which requires the concurrence of both the dispatcher and the captain in operational decisions, would have been a safer and more appropriate dispatch system for Air Ontario than the hybrid system that was in place on March 10, 1989.

- Transport Canada failed to monitor and inspect Air Ontario's system of operations control adequately.

- There is no Canadian regulatory requirement that flight dispatchers be licensed. Responsibility for the training and competency of flight dispatchers is left to the air carrier.

- The Air Ontario FOM that was approved by Transport Canada outlined qualification requirements for Air Ontario flight dispatchers that were less comprehensive in scope than the minimum training requirements required by law in a full dispatch system.

- Air Ontario provided inadequate training to its flight dispatchers.

- The flight dispatchers who exercised operational control over C-FONF on March 10, 1989, did not meet the qualification requirements for flight operations officers (dispatchers) as set out in ANO Series VII, No. 2.

- The operational flight plan (flight release) issued to the flight crew of C-FONF at Thunder Bay on the morning of March 10, 1989, contained serious errors and inaccuracies.

- The operational flight plan used by Air Ontario dispatchers did not contain sufficient detail to assist flight crews to understand and validate the dispatchers' calculations.

- The operational flight plan used by Air Ontario for the F-28 did not include an estimate of minimum diversion fuel.

- A procedure followed by Air Ontario F-28 dispatchers occasionally resulted in an operational flight plan which showed as minimum fuel an amount of fuel that was less than the minimum fuel required by Air Regulations.

- Inaccuracies in Air Ontario F-28 flight releases were not an unusual occurrence.

- Air Ontario F-28 pilots were accustomed to finding inaccuracies in their flight releases and customarily reviewed them to check their accuracy.

- It was the usual practice for Air Ontario captains, including Captain Morwood, to telephone SOC when they noted a problem with their flight release.

- Because Captain Morwood and First Officer Mills did not communicate to Air Ontario SOC on March 10, 1989, that they noted any problem with the flight release which was subsequently shown by the evidence to contain errors, it is probable that they relied on the erroneous information contained therein.

- Air Ontario SOC personnel should have been aware of the 1502Z and 1630Z terminal forecasts calling for freezing rain for Dryden on March 10, 1989, and should have made appropriate arrangements to have flight 1363 fly direct to Winnipeg without stopping in Dryden.

RECOMMENDATIONS

It is recommended:

MCR 87 That Transport Canada re-examine its regulatory requirements pertaining to air carrier operational control and flight watch systems, and that it consider putting into place the four-tiered scheme for such systems discussed in chapter 23, Operational Control, of my Final Report.

MCR 88 That Transport Canada proffer for enactment legislation requiring the licensing of flight dispatchers as a prerequisite to their acting as flight dispatchers and training to standards set by Transport Canada, including the passing of appropriate Transport Canada licensing examinations. I commend for Transport Canada's consideration the Federal Aviation Administration licensing regime for flight operational officers (flight dispatchers) in the United States.

MCR 89 That pending implementation of Recommendation MCR 88 above, Transport Canada direct its air carrier inspectors to be diligent in ensuring that flight dispatchers who exercise any operational control over flights meet the minimum training requirements of Air Navigation Order Series VII, No. 2.

MCR 90 That Transport Canada proffer for enactment amendments to Air Navigation Order Series VII, No. 2, that spell out minimum acceptable requirements for an operational flight plan (flight release).

MCR 91 That Transport Canada direct air carrier inspectors to be diligent during in-flight and base inspections in monitoring the accuracy of operational flight releases.

MCR 92 That Transport Canada, when approving air carrier manuals, ensure that flight dispatcher training qualifications set out in a flight dispatcher training manual are no less comprehensive than those requirements set out in the Air Navigation Orders in all cases where such dispatchers may exercise any operational control over flights.

MCR 93 That Transport Canada initiate a continuing program for the monitoring, inspection, and audit of air carrier flight dispatchers and flight dispatch and flight watch systems, with provision for spot checks and no-notice audits.

MCR 94 That Transport Canada introduce appropriate amendments to the Air Navigation Order Series VII, No. 2, Part III, so as to describe clearly and definitively where system operations control begins and terminates and where operational control begins and terminates.

MCR 95 That Transport Canada require that air carriers provide a system, automated or otherwise, for alerting dispatchers to significant changes in the weather, actual or forecast, at stations significant to flights for which a flight watch is provided.

MCR 96 That Transport Canada require that flight-planning data and procedures used by air carriers for pre-flight planning be accurate and sufficient to provide fuel reserves as stated in Air Navigation Order Series VII, No. 2, and to ensure that aircraft will be operated within the certificated weight restrictions.

MCR 97 That Transport Canada ensure that any flight watch system required under Air Navigation Order Series VII, No. 2, and approved by Transport Canada, provide for direct pilot-to-dispatch communications from the flight deck, where the necessary communications links exist.

MCR 98 That, if a pilot self-dispatch system is to be approved, both Transport Canada and the air carrier ensure that the duties and responsibilities of pilots and dispatchers are clearly and comprehensively covered in the Flight Operations Manual (FOM). It should be made clear in the FOM that no operational decisions are to be made without the captain's agreement.

MCR 99 That Transport Canada require all air carriers to have in place a system that requires ground-handling agents to inform dispatch and/or the captain of any significant change to aircraft passenger or freight loads immediately upon such a change becoming known to the ground-handling agent.

24 FLIGHT SAFETY

Introduction

During the hearings of this Commission a great deal of evidence was presented on the importance of flight safety within air carrier organizations. In particular, I heard evidence from experts and other informed individuals in the aviation industry regarding the necessity of a corporate commitment to flight safety within air carriers, and programs designed to give effect to such a commitment.

Dr C.O. Miller, an aviation safety expert appearing before the Commission, explained that there are two principal schools of thought regarding the infusion of a corporate commitment to flight safety within an air carrier. Dr Miller pointed out that the classic management approach argues that the application of basic management principles to an air carrier will inherently provide optimized safety. In simple terms, safety is everyone's responsibility, and if everyone does his or her job, then safety will be optimized. It may be apparent to the reader that such principles would indeed apply to any organization, be it a government agency, a manufacturing plant, or an airline.[1]

Dr Miller described a second approach to airline safety, which does not really contradict the classic management approach since it builds upon it. In what he terms the safety program approach, he suggests that, "given the complex technical and sociological nature of aviation today," something more than sound, professional management is required to foster safety adequately in air carriers. Dr Miller states that "a safety program involves specialized accident prevention efforts in addition to safety being part of everyone's job."[2] In keeping with this second approach, one can pose the question as to whether dedicated flight safety organizations ought to be mandatory for large air carriers. In fact, according to Dr Miller, as many as 50 per cent of the airlines in the United States already have identifiable safety departments, although there is no regulatory requirement to have them.

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[1] Exhibit 1251, C.O. Miller, "Investigating Management Factors in an Airline Accident," presented at the Brazilian Congress of Flight Safety, Rio de Janeiro, Brazil, 26 November 1990, p. 5.

[2] Exhibit 1251, pp. 5–6.

To explain what would be expected of a dedicated airline flight safety program, Dr Miller referred to an excerpt from the International Air Transport Association (IATA) Technical Policy Manual wherein four broad categories of flight safety function are identified. For clarity, the excerpt from the IATA publication is reproduced in full:

Flight Safety Functions
per IATA Technical Policy Manual
OPS Amendment No. 37, 1 July 1989

1. **Organization of Accident Prevention Programmes**

   Independent internal investigations of incidents and accidents with provision of appropriate safety recommendations to Management.

   An overview function comprising appropriate Safety Assurance and Quality Assurance programmes.

   An Airfield Inspection programme.

   Comprehensive safety training programmes focused on specific safety objectives.

   A flight data recorder exceedance programme.

   Developing management objectives to reverse undesirable safety trends.

2. **Collection/Analysis/Communication of Safety Information**

   Maintaining a flight safety data base to record and preserve operational safety incident information.

   Participation in industry safety activities.

   Internal analysis of incident trends and periodic reviews with senior management, including the CEO.

   Communication to crew members of appropriate safety information, including the publication of a Safety magazine, incident summaries, safety bulletins, technical letters and safety articles.

   Operation of a confidential crew member incident reporting system.

3. **Technical and Training Safety Coordination**

   Establishment of effective liaison between administration, operations and maintenance and training departments on safety issues.

   The overview of all emergency training and emergency procedures for both flight and cabin crews.

   Supervision of the evacuation/ditching demonstrations required by the appropriate authorities.

   Monitoring the contents of cabin safety information cards and video tapes.

   Ensuring aircraft safety equipment meets user requirements.

4. **Corporate Emergency Response Procedures**

   Development and maintenance of a corporate emergency response procedures manual.

   Testing and validation of all corporate emergency response procedures.

   Participation in airfield emergency exercises.

   Liaison with accident investigation authorities.

   (Exhibit 1251, pp. III-1–III-2)

The safety program model contemplated by Dr Miller and IATA involves a dedicated program of clearly defined flight safety functions within an air carrier organization. It might be argued that some individuals within air carriers may tend to regard the presence of a well-defined safety organization as providing them with absolution from their own flight safety obligations. It is clear from Dr Miller's comments that this is not what he was describing. Flight safety programs are designed to enhance the accepted premise that safety is everyone's responsibility, rather than to relieve individuals of such responsibility. An effective flight safety program should be regarded as a catalyst for flight safety activity throughout an airline.

It is apparent from the testimony that much of what is described in the IATA model program is already in place at and working well in Air Canada, and has been attempted to some extent by Air Ontario. In this chapter I examine the safety program adopted by Air Ontario to determine whether it was effective in addressing accident prevention in the context of the accident that is the subject of this Inquiry.

An air carrier's professed commitment to flight safety, as reflected in company policy documents and procedures manuals, its actual commitment to flight safety, as reflected in the example set by its senior management, its safety program, and the acts of its employees all make up what I have termed an air carrier's flight safety ethic. What I have found, having considered the evidence before me, is that the single most significant determinant of an air carrier's flight safety ethic is the actual commitment of the air carrier to flight safety as reflected in the example set by senior management. What might be a sound and apparently well-thought-out safety program can be scuttled if senior management support is lacking.

In this chapter I briefly review the legislative requirements regarding flight safety and examine Air Ontario's flight safety organization. Air Ontario's professed corporate commitment to flight safety is reflected in corporate documents and the evidence of senior managers. The development of the Air Ontario flight safety organization is recounted by its one and only flight safety officer. The effectiveness of the Air Ontario flight safety organization is also considered, using as examples the handling of three relevant flight safety incidents and a flight safety survey that was conducted because of the crash of C-FONF. I have also briefly reviewed the flight safety organization of the parent company, Air Canada, with particular emphasis on its involvement – or lack thereof – with the flight safety organization of its subsidiary, Air Ontario.

Legislative Requirements

The traditional and accepted method of regulating aviation safety is through operational and airworthiness legislation. In Canada, this legislation is contained in the *Aeronautics Act*, the Air Regulations, and the Air Navigation Orders. All operational regulations by their nature have a flight safety implication. Regulatory standards regarding pilot proficiency, licensing, maintenance facilities, operational control, and instrument flight rules, for example, are all designed to ensure an acceptable degree of operational integrity within the air transportation system and an acceptable level of safety. Nevertheless, it is the individual air carrier's prerogative to determine how it will meet the operational requirements specified in legislation.

A review of the United States Federal Aviation Regulation (FAR) 121 and Canada's Air Regulations and Air Navigation Order (ANO) Series VII, No. 2, reveals that there are no legislative requirements in Canada or the United States that are specifically directed at flight safety

programs or that require an air carrier to designate an individual to carry out a dedicated flight safety function.

As discussed in earlier chapters, there are required air carrier management personnel identified in both the ANO Series VII, No. 2, and FAR 121.[3] In Canada, ANO Series VII, No. 2, specifies that air carriers must have individuals employed on a full-time basis in the following or equivalent positions:

(a) Managing Director;
(b) Director of Flight Operations (or Operations Manager);
(c) Director of Maintenance and Engineering (or Maintenance Manager);
(d) Chief Pilot; and
(e) Chief Inspector.

(ANO Series VII, No. 2, section 5)

However, only the qualifications required of a chief pilot and a chief inspector are outlined in the Canadian legislation. In the case of Air Ontario and most Canadian air carriers, both the flight operations and maintenance manuals also provide a detailed description of the duties and responsibilities of the chief pilot and inspector as well as the other key operational managerial personnel.

The functions of each of the positions set forth in ANO Series VII, No. 2, and the equivalent United States FAR subsection 121.59 are seen by the regulators as being essential to the running of a safe air carrier operation. On the maintenance side of the air carrier's organization, there should be someone responsible for directing the actual maintenance work (director of maintenance) and another ensuring adequate quality control and monitoring of maintenance activities (chief inspector). Similarly, on the flight operations side of the organization, there should be a director of flight operations in charge of the control of operational flights (flight authorization, dispatch) and a chief pilot to ensure that flight training and operating standards for each type of aircraft in the carrier's fleet are properly maintained.

Contrary to the approach taken with maintenance and flight operations personnel, current legislation does not address the need for either a dedicated flight safety program or a flight safety managerial position as essential for the safe operation of Canadian air carriers.

The Canadian Aviation Safety Board (CASB), now the Transportation Safety Board of Canada (TSB), is charged with investigating aviation occurrences and making recommendations to enhance aviation safety.

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[3] The United States FAR 121.59 has air carrier management personnel requirements that are virtually identical to the requirements of ANO Series VII, No. 2.

Transport Canada's Directorate of Aviation Safety Programs also enhances aviation safety by tracking aviation occurrences, educating the industry, and promoting flight safety. Canadian legislation requires that certain types of aviation occurrences be reported to the TSB. Transport Canada publications, such as A.I.P. Canada: Aeronautical Information Publication, list these types of aviation occurrences.

Although not required by legislation, Air Ontario's approved Flight Operations Manual (FOM) contained a description of the carrier's dedicated flight safety officer (FSO),[4] referred to in the FOM as the company aviation safety officer (CASO) position, and included a list of CASO duties and responsibilities.[5] In addition, in the Emergency Procedures section of the Air Ontario FOM there is a description of, among other things, an aviation incident and occurrence reporting system.[6]

Air Ontario's Flight Safety Organization

Background

The Air Ontario business plans for 1987 and 1988 and surrounding board minutes were tendered into evidence. Mission statements contained within the plans included flight safety as part of Air Ontario's corporate objectives. Mr William Rowe, one of Air Canada's representatives on the board of directors of Air Ontario, gave evidence regarding the attitude of Air Ontario management to their professed objective of flight safety and what practical steps were taken to implement this objective.

During testimony, Mr Rowe was asked to address the proposed Air Ontario Inc. corporate mission statement for 1987. He was referred to a minute of the June 23, 1987, meeting of the board of directors where this issue was discussed.[7] Mr Rowe's testimony begins with his reading the minute:

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[4] For the purposes of this chapter, I use the term flight safety officer (FSO) to refer to the position occupied by Air Ontario's CASO and to the position occupied generically by air carriers' aviation safety officers.

[5] Exhibit 146, section 3.19

[6] Exhibit 146, section 8

[7] This was actually a meeting of the joint boards of directors of Air Ontario Limited and Austin Airways Limited. This was the last such meeting because, on August 12, 1987, the first meeting of the board of Air Ontario Inc. was held.

A. " ... The Statement of Mission of the Company contained in Section 5 of the Business Plan should be amended to include the twin objectives of dependability and safety."

Q. ... Do you recall the discussion that centred around the inclusion of dependability and safety in the mission statement?

A. Well, that's a manifestation, Counsel, of our influence on the company and the wording of the business plan itself. That appears in all of our mission statements ... that is, Air Canada's mission statements, and in ... its corporate plans as well, and we wished to ensure that it was highlighted in each of our subsidiaries' plans, and that's where the addition was asked of management.

(Transcript, vol. 121, pp. 103–104)

Mr Rowe testified further as to how these objectives were to be attained:

A. ... It was a statement that the document itself was a guide to management, and the objectives were taken seriously, and that's why they were incorporated in the document itself, and why we wanted specific mention of them.

...

A. ... [I]t is a direction to management that you will, in your normal corporate activities, contemplate those actions and keep that as one of the things uppermost in your mind.

...

A. ... the reputation for safety and concern for safety is paramount in the operation of an airline. There is no permissiveness in that regard. It must be and has to be the prime – one of the prime [guides] of all of management's personnel, management's performance.

(Transcript, vol. 121, pp. 105–109)

A new mission statement, incorporating Air Canada's philosophy, was submitted by the Air Ontario executive committee to the Air Ontario board for approval. The statement, approved by the board on June 17, 1988, reads as follows:

> The creation of a safe and reliable diversified air transportation system serving central Canada and northern United States, whose primary goal is the maximization of profitability and return on its shareholders' investment while optimizing feed traffic to and from the Air Canada network.
>
> (Exhibit 940)

The rationale of the "safe and reliable diversified air transportation system" was further elaborated in the explanatory notes presented by the executive committee to the board:

> Recognition of safety as being the paramount criteria with respect to both current operations and future planning. Recognition of reliability as being the most significant element of product quality. Recognition of Air Ontario's diverse revenue base and of the inherent competitive advantage of maintaining diversity.
>
> (Exhibit 940)

As well as addressing product quality and its diverse revenue base, Air Ontario recognized safety as an important element in the equation. In its mission statement approved by Air Ontario's board of directors, it places safety as "the paramount criteria" for the carrier's operations and planning.

Mr Rowe was reminded that during most of his tenure as Air Canada representative on the board of directors at Air Ontario, including the period when the mission statement was written, there in fact was no company aviation safety officer in place. The position of safety officer at Air Ontario was occupied by Captain Ronald Stewart from late in 1985 until the fall of 1987, but was then vacant until February 1989, when Captain Stewart was again appointed as FSO. When Mr Rowe was asked for his opinion, as the majority shareholder's representative, about this vacancy, he stated that it was understood that Air Ontario's flight safety program "was a much less formal arrangement" than that of Air Canada, but that this did not concern him (Transcript, vol. 121, p. 92). Mr Rowe viewed the issue of on-time performance as an indication of the operational integrity and safety of an air carrier. As there was nothing remarkable about Air Ontario's on-time performance, he stated that he felt that he did not have cause for concern.

Even though there may have been satisfactory on-time performance within Air Ontario, the lack of concern by Air Canada's representative on the Air Ontario board of directors that there was no FSO in Air Ontario is still somewhat incongruous, given the principle of primacy of flight safety espoused by Air Ontario's mission statement for 1988, and in view of the fact that Air Canada itself had a dedicated flight safety organization.

Mr Rowe testified that, on behalf of Air Canada, he retained Mr John McMurtry to look into Air Ontario's facilities at London.[8] When asked what was involved in Mr McMurtry's task, he replied:

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[8] Mr McMurtry was himself an Air Canada nominee on the Air Ontario board. Mr McMurtry was a long-time Air Canada employee who retired in 1985, after 39 years with the company, as its vice-president, central region. The expertise that he gained over the years was primarily in the areas of planning (including maintenance planning), administration, customer service, and operations control. Mr McMurtry was not qualified as a pilot, AME, or professional engineer.

A. Well ... he wouldn't go through, as Transport Canada might in their audits, all the records on an aircraft, for example, all the way back, maintenance records and log books and things of that nature.

But he looked at the delineation of responsibilities, the condition of the facility itself, were there the proper people in place or responsibilities delineated to individuals, because unlike our corporation which might have one individual per responsibility, in a company the size of Air Ontario, one individual might carry three or four responsibilities, and just by virtue of size.

(Transcript, vol. 121, pp. 94–95)

Mr Rowe stated that, to the best of his recollection, Mr McMurtry did not report to him the fact that there was no FSO at Air Ontario, but he did report that "he was satisfied the operation was a safe one" (Transcript, vol. 121, p. 96).

Mr Thomas Syme, as the person in charge of the everyday management of Air Ontario, was asked for his thoughts on the importance, the role, and the reporting relationship of an FSO:

A. His reporting relationship was defined as to myself. Functionally, he was interfacing much more closely with senior flight ops management, and also, he did interface and have direct access to the president of the company.

Q. ... [A]s the then group vice-president of operations, what was your understanding of the role of the flight safety officer?

A. Flight safety officer is performing an audit function and compliance function with respect to the flight safety aspects of the flight operations function.

The reporting stream recognizes the need for independence of action and his ability to access individuals not directly involved in the function that he is auditing.

Q. Now, is the flight safety officer position an important position, as far as you are concerned?

A. Yes.

Q. Was it somehow less important in December of 1987 and following when Mr [Stewart] was not in situ as a flight safety officer.

A. No, it was not.

(Transcript, vol. 97, pp. 163–64)

Mr Syme explained further that it was important for the FSO to report directly to him as the head of operations, "for the purpose of objectivity, that he has access to someone outside of the flight operations group" (Transcript, vol. 97, p. 145).

Mr Syme was questioned about the importance of having an FSO in place during Air Ontario's introduction of its F-28 program. In particular, he was asked about the possible contribution of an FSO with regard to specific flight safety concerns, for example, the installation of a flight attendant seat shoulder harness, during the F-28 implementation. He conceded in his testimony that it would have been desirable to have an FSO "in place all along":

> A. I accept the fact that it would have been desirable to have ... him [the FSO] in place all along. I don't know if that would have – what difference that would have made, but it would have been desirable.
> Q. We'll never know, but it would have been desirable –
> A. Yes.
>
> (Transcript, vol. 99, pp. 74–75)

The Development of Air Ontario's Flight Safety Organization

Captain Ronald Stewart, in his testimony, outlined his experience in the field of flight safety. He served as a Canadian Armed Forces pilot from 1967 to 1974, after which he joined Transport Canada as an accident investigator. He also spent a few years as a regional air safety officer in Edmonton. He joined Great Lakes Airlines in 1979 and soon became the Canadian Air Line Pilots Association's technical chairman for that airline's pilot group. From 1979 to 1985 Captain Stewart was a line pilot with Great Lakes, and, late in 1985, was appointed flight safety officer at Air Ontario Limited.

In a March 1985 memorandum to Captain Robert Murray, director of flight operations at Air Ontario Limited, Captain Stewart, at the request of Captain Murray, outlined his views on how a flight safety organization should fit within the company's flight operation. He emphasized the importance of the FSO reporting directly to the chief executive officer of the company, bypassing intermediary management. He testified as follows:

> A. ... this is a normal reporting relationship in most safety organizations, that the safety officer always has a direct line to the chief executive officer of the company.
>
> I think that the rationale behind it is, should the safety officer have problems say dealing with a vice-president or a problem that he can't resolve, that he can go freely one step beyond that and go to the president with that information.
>
> And I think it makes the flight safety process all that more effective, in that the vice-presidents and other managers in the company realize that the flight safety officer does have that

direct reporting relationship to the president. It keeps them honest, I think.

Q. And does it deal, then, with safety, really, in a bit of an elevated manner, putting it –

A. That's right.

Q. – as a matter of priority?

A. It certainly does, yes.

(Transcript, vol. 95, p. 11)

Captain Stewart testified that he reported not to the president of Air Ontario Limited but to Captain Murray as head of flight operations, because, in the view of Captain Stewart, the president, Mr Plaxton, was apparently uncomfortable with having the FSO reporting to him directly. This was not the ideal situation that Captain Stewart envisaged, but, as he stated, Captain Murray was very safety conscious and the situation proved to be satisfactory. Captain Stewart testified that he did not receive extra compensation, secretarial help, or a budget for his FSO duties at Air Ontario Limited.

Captain Stewart described the activity within the flight safety organization of Air Ontario Limited (and the successor companies) from the beginning of his tenure in 1985 to his resignation in 1987 as consisting of a few ad hoc meetings. Captain Stewart resigned as FSO late in 1987 because of the lack of management support, the lack of direct access to the CEO, and to avoid having to fly as a management pilot during an impending pilot strike (Transcript, vol. 74, p. 90). He was not replaced, and the position remained unfilled until February 1989.

Captain Robert Nyman was the director of flight operations at Air Ontario when Captain Stewart resigned late in the fall of 1987, and Captain Nyman remained in that position until the late summer of 1988, when he was replaced by Captain Clifford Sykes. The director of flight operations at Air Ontario reported to the vice-president of flight operations, a position occupied in December 1987 by Mr Peter Hill, and in June 1988 by Mr James Morrison.

Captain Nyman, who was formerly employed with Austin Airways, described the flight safety organization at Austin. He pointed out that the references to a company aviation safety officer (CASO) in the Air Ontario Inc. Flight Operations Manual were in fact taken from the Austin Airways Manual:

3.19 *Company Aviation Safety Officer (CASO) – Duties, and Responsibilities*

General Responsibilities

Responsible for monitoring and advising on all Company aviation safety and aircraft accident prevention activities.

Reporting Relationship
Reports directly to the area manager as well as to the Vice President of Operations on aviation safety matters

Safety Duties

A. Secretary of Company Aviation safety committee meetings responsible for scheduling, agendas, taking of and distribution of minutes.
B. Coordinates a flow and exchange of aviation safety matters within Company.
C. Maintain liaison with Transport Canada's Aviation Safety Programs Branch.
D. Follows up on any aviation safety occurrences in the interest of accident prevention.
E. Conducts periodic aviation safety surveys of all operational departments.
F. Identifies aviation safety deficiencies and makes collaborative suggestions for corrective action.
G. Solicits and processes aviation safety improvement suggestions.
H. Develops and maintains an aviation safety awareness program.
I. Monitors the F.O.D. Program.
J. Monitors program for the transportation and handling of dangerous goods.

(Exhibit 146, pp. 3-39, 3-40)

Captain Nyman, when questioned about efforts to replace the FSO position vacated by Captain Stewart, revealed that he himself had limited knowledge regarding the duties of a flight safety officer within an air carrier's operation (Transcript, vol. 108, pp. 159–64). He testified that he was unfamiliar with the flight safety structure within Austin, because when he left the company in 1984 it did not have an FSO. Captain Nyman indicated that while he was director of flight operations at Air Ontario, he did not have available any flight safety materials after Captain Stewart resigned from the FSO position, nor was he familiar with Captain Stewart's FSO program.

After Captain Stewart's departure, Captain Nyman advertised for an FSO within the company, attracting a response from Captain James Byers, an Air Ontario line pilot. He provided to Captain Nyman a comprehensive list of FSO duties as he saw them, and such were discussed at a meeting on December 21, 1987. Having received no response to his proposal, Captain Byers in May 1988 withdrew his application for the FSO position. In his letter to Captain Nyman he stated:

> I am unable to accept the position of company Safety Officer until there is a clear written description of the job and associated working

> conditions. Receiving this description will allow me, to make an informed decision about the position.
>
> (Exhibit 863)

During the period from late 1987 until February 1989, Air Ontario had no designated safety officer. Captain Nyman gave two reasons for this situation: his own "ignorance of the value of a good flight safety program" with available computerized information, and the fact that "there were other items that we [flight operations] had to deal with on a daily basis." He conceded that the replacement of Captain Stewart was not his highest priority (Transcript, vol. 108, pp. 169–70).

In November 1988 a fatal accident occurred at Pikangikum, Ontario, involving an Air Ontario DC-3. Captain Stewart agreed to a request by Captain Clifford Sykes, then director of flight operations, to investigate the Pikangikum accident on behalf of Air Ontario. He also conducted a safety survey of the company's northern operations. Captain Stewart carried out the investigation because, in his view, there was a company crisis and he felt duty-bound to help. In the fall of 1988 Mr James Morrison, newly appointed vice-president of flight operations for Air Ontario, expressed his concerns over the lack of an FSO to Mr Hill and to Captain Byers. Mr Morrison, who had come directly from Air Creebec where he had served in an executive capacity, approached Captain Stewart seeking to rehire him for the FSO position. Mr Morrison considered a flight safety department to be a necessity and he wanted Air Ontario to have a "good reliable flight safety officer" (Transcript, vol. 115, p. 137).

Captain Stewart advised Mr Morrison that he was not prepared to accept the position of FSO. Based on his previous experience, Captain Stewart anticipated that the support he would get from the company was "not the type of support that should have been given to a FSO" (Transcript, vol. 95, p. 50). In his testimony, Mr Morrison corroborated Captain Stewart's evidence:

> A. ... Quite frankly, he told me that he left his last position as FSO because he did not have direct access to the president, nor did he have good access to the previous operations manager. He had a number of reasons.
>
> He was not content at all, and he didn't feel that, given the size of Air Ontario at that time, that he would be able to have access to the president or ... have the ability to perform his duties the way he would want to do them.
>
> (Transcript, vol. 115, p. 137)

It is evident that the sources of Captain Stewart's discontent with the FSO position were essentially a lack of support by Air Ontario manage-

ment and a lack of direct access not only to the president but also to the operations manager. Mr Morrison explained:

> A. He did not have access directly to the president, and, that time, it was Jim Plaxton. He didn't have, as he said, direct access to the operations manager. I think it was Captain Murray. He didn't have the vehicle with which to do his job. He was using his own personal computer at home to develop the program that he wanted to have. He didn't have an office ...
>
> (Transcript, vol. 115, p. 140)

Following discussions with Mr Morrison, and after completing his investigation into the company's northern operations, Captain Stewart agreed to accept once again the FSO position at Air Ontario effective February 1, 1989. Captain Stewart drew up a proposal and a job description for the position of CASO that was acceptable to Air Ontario management. A letter of understanding was prepared covering Captain Stewart's primary concerns, namely, the provision of secretarial help, a computer terminal, direct access to all employees, and, most importantly, a direct reporting relationship to the president, Mr William Deluce. Compensation in terms of flight credits was also to be built into his employment contract. In return, Captain Stewart was to carry out the duties as set forth in the "major responsibilities" section of his job description. These included developing an incident reporting system, monitoring worldwide safety data, analysing in-house safety data, developing safety lectures, and monitoring the dangerous goods regulations. While some of these matters reflected what was already in the Air Ontario Flight Operations Manual, others did not. However, the Flight Operations Manual was not updated to reflect this new thrust, even to the time of the hearings.[9]

When specifically asked why the FSO should report directly to the company president, Mr Morrison gave the following reasons:

> A. I think that, quite simply stated, that if a flight safety officer were to report to anybody else in the flight ops group, that there's always a danger that the flight ops personnel he might be reporting to may not take any of his concerns seriously, that if there is any implication that is with financial or economic ramifications, they may try not to access the information.
>
> By going directly to the president, the flight safety officer would have the ability to have the freedom to make the

[9] The issue of the failure by Air Ontario to have in place a flight operations manual that reflected the actual structure of the flight operations of the company is discussed in chapter 19, F-28 Program: Flight Operations Manuals.

recommendations. Whether they could be met or not is up to, at that point, the flight safety officer and the president, but it certainly is a good means of doing this job.

Q. So, in a sense, it gives the flight safety officer an independence from the rest of the company structure with direct access to the president?

A. That's correct, and the least amount of influence as well.

(Transcript, vol. 115, p. 149)

At the time of the March 10, 1989, accident, the flight safety organization within Air Ontario had been reactivated for approximately six weeks. Its effectiveness was canvassed during the hearings of this Inquiry, with particular emphasis on its impact on the management of the F-28 program.

Three Case Studies in the Effectiveness of Air Ontario's Flight Safety Organization

The evidence shows that an air carrier flight safety organization must be able to investigate any incident or accident adequately and to follow up that investigation to ensure that occurrences are not repeated.

One of the most valuable tools for an aviation accident prevention program is an effective system of collecting, investigating, evaluating, and circulating occurrence information. This Commission examined how Air Ontario collected and handled occurrence reports in an attempt to evaluate the degree to which the Air Ontario flight safety program, or the lack of it, had an effect on the F-28 operation.

Three incidents involving Austin Airways and Air Ontario Inc. aircraft, two of which occurred prior to the Dryden crash, were examined in some detail during hearings of this Commission in an effort to evaluate the accident prevention program at Air Ontario and to identify any possible links to the F-28 accident. Two of these incidents had common elements with the Dryden crash; both involved adverse winter weather conditions and snow contamination of aircraft surfaces, and all three involved Captain Joseph Deluce. At the time of the Dryden accident Captain Deluce held multiple Air Ontario management positions as the F-28 chief pilot, chief instructor, and check pilot, and as the manager of the Air Ontario F-28 program.

Incident No. 1: November 20, 1986 – HS-748 – Kingston, Ontario

The first incident occurred on November 20, 1986, at Kingston, Ontario. An Austin Airways HS-748 aircraft was parked overnight on the ramp at the Kingston airport. It had snowed during the night and, prior to departure, snow was swept from the wings and the horizontal stabilizer.

The pilots on this flight were Captain Joseph Deluce and his brother, First Officer James Deluce. Captain Deluce testified that, although he could not specifically remember, he assumed a walkaround inspection of the aircraft would have been done because snow had been swept from the aircraft.

Captain Deluce was in the left seat and carried out the takeoff. After liftoff, aircraft vibration was felt that increased as the aircraft's speed increased. The flight was in visual weather conditions and the crew immediately returned to Kingston. After landing, the pilots inspected the aircraft and found ice adhering to the vertical stabilizer.

Captain Joseph Deluce called Captain Larry Raymond, at the time Austin Airways director of flight operations, and explained what had occurred. Captain Deluce testified that he did not recall whether an incident report was filed. He believed there was a company FSO at the time, but he definitely did not talk to him regarding this incident.

Captain Raymond investigated the incident and reported to Mr Robert Deluce, general manager of Austin Airways, in a memorandum that began by indicating some difficulty in obtaining an incident report from James Deluce. Captain Raymond further indicated in the memorandum that he had filed an aviation occurrence report at the time and had concluded that the vibration was caused by wet snow adhering to the vertical stabilizer.

Captain Raymond attached to this report a copy of a bulletin he had drafted, both of which were to be displayed on all Austin Airways pilot bulletin boards. Portions of this bulletin are noteworthy since they apply to future events. Captain Raymond stated in this bulletin:

> There is a vast difference between wet snow on any airframe, any snow on a warm airframe or dry snow on a cold airframe. The first two will probably adhere with potentially catastrophic results, in the last case the snow will probably blow off.
>
> (Exhibit 685, Part 2, tab 9)

In the bulletin, Captain Raymond also directed the pilots to review the applicable ANOs. He concluded by stating that the key word in the ANO is "adhering."

Given Captain Raymond's position at Austin Airways, I take this bulletin to reflect the thinking of the Austin Airways flight operations management on ice and snow contamination in late 1986. The information Captain Raymond provided on aircraft surface contamination is very general and seems to be based on experience rather than definitive testing. He did not mention de-icing methods, and it appears that his investigation did not establish why the de-icing methods used on November 20, 1986, were not effective in ensuring that the aircraft was

clean or why the contamination was not detected by the pilots on a walkaround.

In his bulletin, Captain Raymond expressed the opinion that the personnel involved would not forget the incident. In fact, Captain Joseph Deluce stated in testimony that he did learn from the incident that contamination on the vertical stabilizer posed a serious problem. He testified that at the time of this incident he was aware of the potential problems of contamination on the wings.

Incident No. 2: December 15, 1987 – HS-748 – Toronto, Ontario

The second incident involving an Air Ontario aircraft that was examined during the hearings of the Commission occurred on December 15, 1987, at Toronto's Lester B. Pearson International Airport. The captain involved was Joseph Deluce, the first officer was Scott Jensen, and the in-charge flight attendant Alana Labelle-Hellmann. The aircraft was an HS-748, the same aircraft type as was involved in the Kingston incident.

The flight departed the ramp at approximately 8:30 a.m. for a scheduled flight to Timmins, Ontario. It had been snowing for some time prior to departure, and the aircraft was de-iced at the ramp by Air Canada personnel. Neither Captain Deluce nor First Officer Jensen did an external walkaround following the de-icing.

It continued to snow heavily as the aircraft taxied towards the departure runway. The departure, however, was delayed for approximately 40 minutes, primarily because of the weather conditions. The reported weather at the time was a precipitation ceiling between 100 and 300 feet above ground, the visibility between one-eighth and three-eighths of a mile, in heavy snow, temperature 0°C, and the wind from 090 to 100 degrees at a speed of 28 knots with gusts up to 39 knots. It should be noted that snow which reduces visibility below one-half mile is defined as heavy snow.

In her testimony, Ms Labelle-Hellmann recalled that, about 15 minutes after the aircraft had departed the gate, a number of passengers raised concerns about snow accumulating on the wings as the aircraft waited for takeoff clearance. She stated that during this time several of the passengers expressed the opinion that the aircraft should go back and de-ice again. Ms Labelle-Hellmann attempted to reassure the passengers by expressing confidence in the pilots and by telling such passengers that "it will be fine, don't worry" and that "if it was necessary to go back and de-ice, we would, not to worry."

It is significant that the flight attendants aboard flight 1363 at Dryden on March 10, 1989, made similar expressions of confidence in the pilots of the F-28 in response to passengers' concerns about wing contamination just prior to the ill-fated takeoff. The subject of flight attendants' expressions of confidence in pilots, in the face of passengers' concerns

over observed wing contamination, is discussed in chapter 39 of this Report, Crew Coordination and Passengers' Safety Concerns.

Ms Labelle-Hellmann, who was generally aware of the dangers of ice contamination on aircraft wings, after listening to the passengers' concerns on December 15, 1987, went to the cockpit to inform the flight crew that passengers were asking whether the aircraft should go back and be de-iced. She stated that she spoke to Captain Deluce and described the scene in the cockpit:

> A. I went up there and I said, Joe, a couple of passengers have mentioned that there's snow on the wings and they feel that maybe we should go back and de-ice, what do you think.
> Q. All right, and what was his response to you?
> A. ... I believe he looked out and he said no, we de-iced at the gate and we should be fine.
> ...
> A. He also said that we should be departing shortly and that I should go back and take my seat.
>
> (Transcript, vol. 106, pp. 18–19)

Ms Labelle-Hellmann stated that it was about five minutes between the time she returned to the cabin and took her seat and the beginning of the takeoff roll. During the takeoff roll, she did not specifically recall looking out the window at the wings.

Both Captain Deluce and First Officer Jensen testified that they could not recall Ms Labelle-Hellmann coming into the cockpit with these concerns; however, both stated that under the circumstances it would be normal for the flight attendant to enter the cockpit to inquire about the delay. All three crew members agreed that the total time between de-icing and takeoff was approximately 40 minutes, in conditions of heavy snowfall.

Both Captain Deluce and First Officer Jensen testified that at the time they were unsure as to how long de-icing would provide protection against snow buildup on the wings. First Officer Jensen testified that about halfway through the taxi he had observed some snow on the wing turning to slush. He said that both he and Captain Deluce considered alternatives and decided that the de-icing should provide protection for 30 minutes and they felt the aircraft would be airborne by then.

First Officer Jensen stated that he had looked at the wings just prior to the takeoff roll, and he described what he saw:

> A. You can see the actual wings outside the engines. And there was snow, and there was slush – the snow was falling onto the wings and producing a slush on top of the wings less than a quarter of an inch in depth.
> ...

> ... it was not frozen, it was not freezing, it was liquid. It was slush, pinkish slush.
> Q. It was pinkish slush, and what does the colour pink indicate to you?
> A. De-icing fluid. The glycol mixed with the snow.
> Q. Did you see any white?
> A. No, apart from the white falling from the clouds, from the snow.
> (Transcript, vol. 106, pp. 139–43)

First Officer Jensen also described the runway at the time as being snow- and slush-covered to a depth of one-half inch. He stated that Captain Deluce checked the runway braking action prior to takeoff and assessed it as fair to poor.

First Officer Jensen testified that the visibility on takeoff was one-quarter mile, the lowest allowable visibility at the time of takeoff provided that a takeoff alternate was available and filed. Both pilots assumed that a takeoff alternate had been filed but neither could recall whether this had been done.[10] In this case, it was fortunate that the weather improved enough after takeoff to allow an immediate landing at the departure airport.

During his testimony First Officer Jensen was asked to compute the crosswind component on the date in question, using the reported wind and the Canada Flight Supplement crosswind component chart. The evidence is that the wind was gusting from 28 to 39 knots, giving a crosswind component by his calculation of between 20 and 27 knots.[11]

Given the directions in the FOM and the described conditions of the runway, First Officer Jensen was asked on the witness stand to apply the "runway surface condition and JBI equivalent."[12] Using these charts, First Officer Jensen, who during testimony calculated the maximum

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[10] A takeoff alternate was required because the ceiling and visibility at takeoff were lower than the captain's weather limits required for landing at the departure airport. However, generally speaking, the takeoff alternate requirement is designed to allow for mechanical malfunctions where the aircraft's redundancy would allow it to be flown to the takeoff alternate, but not for emergencies requiring an immediate landing.

[11] The Air Ontario Flight Operations Manual (FOM) advised pilots not to attempt a takeoff when crosswind components are greater than those demonstrated for the aircraft. In the case of the HS-748, this demonstrated maximum crosswind was 30 knots. The FOM also advises pilots that in a crosswind condition the decision to take off should "take into account associated conditions which might adversely affect the take-off or landing such as turbulence or icy runways, reduced visibility, limited runway length, etc., and will allow what they judge to be an appropriate tolerance above the limitations shown in the Flight Manual"(p. 7-6).

[12] Historically, it has been found that certain runway surface conditions (RSC) will produce a specific JBI (James Brake Index) or coefficient of friction on a runway surface. A chart is provided to convert RSCs to a JBI equivalent. A second chart shows the maximum recommended crosswind at any given JBI reading.

recommended crosswind for the takeoff on that day, found the maximum crosswind limit to be 14 knots. First Officer Jensen acknowledged that the crosswind limit had been exceeded, given the runway surface conditions (Transcript, vol. 106, p. 168).

Notwithstanding their decision to take off, the evidence indicates that Captain Deluce and First Officer Jensen were still concerned about the snow and slush that had accumulated on the wings. Captain Deluce decided they would conduct a visual check of the wings at 80 knots on the takeoff roll, whereby each of them would check the wing on his respective side of the aircraft to verify whether the slush had blown off. This unusual and potentially dangerous procedure was apparently not entirely new to former Austin Airways pilots and had been used on occasion by pilots in northern operations when cold, powdery snow accumulated on the wings. First Officer Jensen testified regarding this so-called "80-knot check" as follows:

> Q. Did either you or Captain Deluce – or did the fact of this substance on the upper surface of your wings give some pause to you or Captain Deluce? Did you take it into consideration for your takeoff?
> A. Yes, we did.
> Q. Okay, could you describe for the Commissioner what considerations you took?
> A. We discussed it amongst ourselves, and we had – actually, Joe decided that through the 80-knot check, we should check the wings to make sure that the snow ... or the slush was running off the wings, much as you would see water pouring off the wings, and at 80 knots, we would make the decision whether to continue the takeoff, and if it wasn't rolling off or running off the wings, then we would abort the takeoff at that point, at 80 knots, before we got to critical speed.
>
> (Transcript, vol. 106, p. 144)

The critical speed referred to by First Officer Jensen is the decision speed (V_1) below which the takeoff could be discontinued should anything go wrong. He could not remember exactly, but thought that the decision speed would have been around 88 knots. When asked about his previous knowledge of this "80-knot check," he testified that he had seen it "once or twice before in the north" and in "very cold" weather, involving conditions of a non-adhering "very light dusting of snow on the surface of the wings" (Transcript, vol. 106, pp. 145–46).

First Officer Jensen described the takeoff and the 80-knot check as follows:

> A. Okay, when I called 80 knots, I checked out the right wing to make sure the wing was clear, and I called the wing was clear,

and Joe checked out quickly and he checked the same time that his wing was clear.

Q. Okay, and what differences did you see? Did you see the pink disappear, for example?

A. It was all gone by then. At 80 knots, there was nothing on the wings.

Q. All right. And you have a distinct recollection of –

A. Oh, yeah.

Q. – the wings being clear?

A. The wings were absolutely clean.

Q. What did you think of this procedure, sitting there as first officer? Did you consider it a safe procedure?

A. I didn't consider it unsafe.

(Transcript, vol. 106, pp. 148–49)

Captain Deluce elected to take off, and, just after liftoff, the aircraft began to vibrate in a manner which was later described as severe. First Officer Jensen stated that after they were airborne he could read his aircraft instruments but with some difficulty. He testified that Captain Deluce explained to him what the problem was:

> A. ... when I first felt the vibration just after departure, I was taken aback. I wouldn't consider myself frightened, but I was curious and I was wondering what the vibration was.
>
> Joe told me a few minutes thereafter that he knew what it was, that it was snow buildup on the vertical fin or ice buildup on the vertical fin and that it had happened before and there was nothing ... to worry about. Now, whether or not this relaxed me at all, I don't know.
>
> (Transcript, vol. 106, p. 175)

In-charge flight attendant Alana Labelle-Hellmann testified as to vibration after takeoff and the reaction of the passengers aboard the aircraft:

A. ... it just started vibrating all of a sudden, and it didn't start as tense or as bad as it got. And I heard a big crash ... in the back.

Q. And when did you hear this crash? Was that the first thing you heard?

A. No, we started to shake and then I heard a big crash in the back, and I didn't know what was going on.

Q. Okay. Could you describe the state of the passengers when this started to happen?

A. They were pretty scared ... as we were still climbing, we started to shake even more, and the passengers started to hold hands in

> the aisles, and the gentlemen sitting with me were saying, maybe we should have went back to de-ice.
>
> (Transcript, vol. 106, pp. 24–25)

An emergency was declared and the flight returned to the airport, where it landed safely on runway 06 left. A controller at Pearson International Airport made an entry in his log indicating that after takeoff the crew "declared an unspecified emergency" (Exhibit 852). First Officer Jensen testified that while inspecting the aircraft on the ground after landing he observed snow adhering to its vertical fin. He described the snow as "a vertical band a foot to a foot and a half wide, and it was for sure less than an eighth of an inch deep" (Transcript, vol. 106, p. 176). He stated that it was the sort of snow one would see on a car that was sitting with its side facing into the direction in which the wind was blowing. It was his opinion that the snow accumulated while waiting for takeoff.

Following the landing, the three crew members went to an Air Ontario office in Terminal Two, where they each completed incident reports in writing. According to her testimony, Ms Labelle-Hellmann in fact wrote two reports. In her first report she wrote that she had observed snow on the wings prior to the takeoff and that she had gone to the cockpit to relay passenger concerns regarding this snow on the wings. Her evidence was that she included this information in the first version of her incident report because she assumed that the snow on the wings had caused the vibration. She stated that, upon completing her first incident report, she handed it to Captain Deluce, who told her that the problem was not caused by snow on the wings. Ms Labelle-Hellmann testified as follows:

> A. He didn't say that it was snow on the tail, he said that there was a problem with the tail and I just remember that. That it was not caused by snow, is what Joe was telling me.
> Q. Okay. Now, was this the reason; that is to say, was Captain Deluce's explanation to you the reason you wrote the second report?
> A. Yes.
>
> (Transcript, vol. 106, p. 35)

Following her discussion with Captain Deluce, she wrote a second incident report, omitting any mention of snow on the wings prior to takeoff.

Captain Walter Wolfe, who was then the chief pilot of Air Ontario Inc., reported to Captain Nyman that Captain Joseph Deluce called him shortly after the incident to report the details. It is clear from the evidence that Captain Wolfe thereafter conducted only a cursory investigation of this serious incident, though it was his responsibility to

conduct a thorough investigation. In this case, however, he summarized his post-incident actions as simply speaking to Captain Joseph Deluce, sending Captain Deluce's report of the incident to Transport Canada, and instructing maintenance personnel to investigate the condition of the aircraft. He also spoke to Captain Deluce and the Air Ontario maintenance people about the de-icing of the HS-748 aircraft. Captain Wolfe indicated that he was satisfied that the aircraft had been de-iced prior to taxiing and that, in view of the fact that an Air Ontario Dash-8 aircraft had successfully taken off ahead of Captain Deluce in the HS-748, he considered follow-up disciplinary action inappropriate in the circumstances.

The Flight Operations Manual (FOM) for Air Ontario Inc. identifies "reportable" incidents and outlines the follow-up actions that are to be taken. Section 8.3.1(c) of the Air Ontario FOM indicates that, whenever a flight crew has difficulty controlling an aircraft because of vibration, the incident must be reported. Either a member of the flight crew, air traffic control, or someone within the air carrier organization must inform the Canadian Aviation Safety Board (CASB, now the TSB) and provide the board with information describing the incident.

The provisions of section 8.3.5(c) of the Air Ontario FOM require the pilot-in-command of an aircraft involved in a reportable incident to report the incident to the carrier's system operations control (SOC) centre in London. SOC is responsible in turn for contacting one of a list of Air Ontario personnel, including the following:

- the director of flight operations
- the chief pilot
- the vice-president of operations
- the president of the company, or
- the company flight safety officer.

In the Pearson incident of December 15, 1987, Captain Wolfe did not take steps to have the flight data recorder and cockpit voice recorder data analysed. Nor did he investigate the prevailing weather and runway conditions at the time of this incident further, in order to determine if the flight crew had adhered to the "aircraft handling procedures" for crosswind and slush-covered runways contained in the FOM.

Curiously, CASB did not investigate this incident. The Ontario Region CASB occurrence record dated December 21, 1987, includes the following statements under "occurrence description":

> The aircraft was de-iced before leaving the ramp. But had a long taxi prior to takeoff. After takeoff a severe vibration was felt, the crew

> declared an emergency and returned to Toronto without incident. Inspection showed a large build up of ice on the tail plane.
>
> (Exhibit 852)

Under the heading of "investigation activity planned," the CASB record simply states: "case closed/nil." In my view, action should have been taken to determine the circumstances that allowed the ice buildup to occur. CASB should have conducted a thorough investigation, including interviews with the entire crew to verify the information received. CASB should have checked to ascertain if the flight characteristics of the aircraft described by the crew were consistent with a buildup of ice on the tail.

Transport Canada did not follow up to determine the nature of the declared emergency and to ascertain whether in fact any violation of the Air Regulations had occurred. I view this lack of response by Transport Canada and CASB to such a potentially serious incident to be inadequate.

Aviation safety is the express responsibility of both agencies. If the incident was caused by contamination, an opportunity was missed to highlight the hazard to all commercial operators in the early part of a winter season and to take steps to ensure that Austin Airways flight crews had a much greater awareness of the consequences of such conditions.

In summary, it seemed that Ms Labelle-Hellmann's observation that "nobody cared" contained more than a grain of truth (Transcript, vol. 106, p. 71). It is not difficult to understand Ms Labelle-Hellmann's reaction. This was obviously a dangerous and frightening incident. Clearly, positive action should have been taken by both CASB and Transport Canada to identify the source of the problem and to implement measures to prevent a recurrence. Virtually nothing was done by either organization other than to note the incident and close the books on it.

Following the December 15, 1987, incident at Toronto, the director of flight operations for Air Ontario, Captain Robert Nyman, quite appropriately, although belatedly, issued two advisory bulletins relating to these two incidents to Air Ontario pilots. The first advisory bulletin, dated December 23, 1987, signed by the director of flight operations, described the Toronto incident as involving an aircraft that was de-iced prior to taxi, that waited in line for 40 minutes for takeoff clearance, whose wings remained clear of snow and ice, but which, after takeoff, experienced severe vibration. The bulletin called for pilots to be vigilant regarding contamination on airframes prior to takeoff; if they had any doubts, they should de-ice again.

The second advisory bulletin was dated January 20, 1988, and contained advice for company pilots dealing with the effectiveness, or

lack thereof, of de-icing fluid after the de-icing of an aircraft. This bulletin advised pilots to be aware that the heavier the precipitation the faster the dilution rate of the de-icing fluid. It also stated that, in light precipitation at temperatures near or just below the freezing point, a spray of glycol-water de-icing fluid may be effective for periods in excess of 15 minutes. The bulletin also stated that constant vigilance is required on the part of the captain to ensure that no precipitation accumulates on the wings prior to takeoff.

First Officer Jensen testified that, although at the time he considered the decision at Toronto to take off with slush on the wings to be safe, in retrospect he considered the practice unsafe. He testified as follows:

> A. At the time, did I consider it a safe takeoff?
> Q. Right.
> A. Yes, at the time, I –
> Q. Do you consider it a safe takeoff today?
> A. As I look back on it, no.
> Q. Then what should have been done differently?
> A. Simply taxiing back to re-de-ice the aircraft would have been the simplest thing.
>
> (Transcript, vol. 106, p. 202)

For his part, Captain Joseph Deluce conceded during his testimony that he had made an error in judgement in using an "80-knot check" during takeoff that day. He agreed during questioning that he had exposed the passengers to unnecessary risk in the event that he had had to reject the takeoff:

> Q. I mean, if Scott Jensen said, Captain, there is rough ice on the wing, the slush has blown off and there is rough ice there, you would have had to reject and that would have caused the passengers an unnecessary risk, correct?
> A. It would have – the reject would have caused an unnecessary risk, yes, sir.
>
> (Transcript, vol. 149, pp. 144–45)

I might add that if the first icing incident at Kingston, Ontario, involving Captain Deluce had been properly investigated and dealt with, it might have become a valuable source of information for dissemination to all Air Ontario pilots, including Captain Deluce. A proper investigation of the Kingston incident might well have precluded the second incident from occurring.

Incident No. 3: April 4, 1989 – F-28 – Toronto, Ontario

The third incident examined during the hearings of this Commission concerned an alleged unstabilized approach and landing of an F-28

aircraft at Toronto on April 4, 1989, less than a month after the Dryden crash. The captain on this flight was Joseph Deluce, who at the time was giving line indoctrination training to First Officer Steve Burton.

The Commission did not examine this incident to establish whether an unstabilized approach occurred, but rather to review how the investigation of the alleged incident was handled from a flight safety organization perspective. Captain Stewart, the Air Ontario FSO at the time, explained during his testimony how the incident came to his attention and the actions which were taken by him:

> A. Again, it was a rumour. Came to my attention via rumour.
>
> I was able to determine the source of the rumour and contacted the individual that had witnessed the event, and I asked him over the telephone if he would be willing to give me some information on the occurrence.
>
> I suggested to him that we could do it anonymously or confidentially and he agreed to that, whereby I took down the information from him.
>
> (Transcript, vol. 95, pp. 183–84)

Captain Stewart learned that the captain of the aircraft involved was Captain Joseph Deluce. During his testimony, Captain Stewart indicated that he viewed this matter as an "allegation of a fairly serious occurrence." However, he elected to carry out no further investigation personally. Instead he brought the incident to the attention of James Morrison, the Air Ontario vice-president of flight operations. Captain Stewart stated that he felt he had fulfilled his responsibility by bringing this situation to the attention of Air Ontario senior management and he denied that Captain Joseph Deluce's involvement influenced his decision:

> Q. ... The fact that Joe Deluce was involved, was that an influencing factor in not conducting a more thorough investigation?
>
> A. No, I don't think so. You remember what I said was we had this discussion in Jim Morrison's office between myself, Joe Deluce, the chief pilot, and Jim Morrison, the vice-president of flight operations.
>
> And I felt that the fact that Jim was there and was very aware of what was going on, and he being Joe Deluce's supervisor, and the fact also that I had brought to the attention of management, of senior management in fact that there had been an allegation of a fairly serious occurrence, that that was really all I had to do. My responsibility was done.
>
> I told them of the problem. It's not really up to me to tell them how they should fix up that problem.
>
> (Transcript, vol. 95, pp. 189–90)

Mr Morrison subsequently asked Captain Joseph Deluce to explain his perspective on the occurrence in writing. In a written statement, Captain Deluce denied that the approach and landing were in any way unsafe. First Officer Burton was then supplied by Mr Morrison with a copy of Captain Deluce's statement and asked for his comments. He agreed with the statement made by his chief pilot and instructor.

Captain Stewart was questioned on the witness stand regarding the conduct of this investigation:

> Q. Do you think, sir, that giving someone like the First Officer Burton a copy of the Deluce report for comment is a proper way to conduct an investigation?
> A. No, probably not.
> Q. Not probably. I suggest to you, sir, that it is highly improper. Would you agree with me?
> A. I would think that you would ask the first officer for an independent opinion.
>
> (Transcript, vol. 95, p. 192)

Since First Officer Burton was the pilot being trained during the alleged unstabilized approach, one might expect that he would also deny that the approach and landing were unsafe. However, in the interest of ensuring an unbiased and fair process in the investigation of this alleged incident, one would be hard pressed indeed to accept a simple concurrence as to the facts rather than an independent statement.

Captain Joseph Deluce in his testimony stated that, at the time, he felt that he was being "set up" by Captain Stewart:

> A. ... To me, I felt very much like I was being set up. And I was concerned because what can you do?
> Q. Being set up by whom, sir?
> A. ... at the time, I thought it was Ron Stewart. I was concerned, and I filled out a report, and I advised Steve that he better do the same thing.
>
> (Transcript, vol. 112, p. 81)

Captain Deluce's stated perception that Captain Stewart was "setting him up" implies that Captain Stewart was acting maliciously when he made his report to Mr Morrison. This was denied by Captain Stewart on the witness stand. Clearly the investigation of the alleged incident was mishandled. The most obvious inference from the evidence is that everyone involved in Captain Stewart's investigation was sensitive to the fact that the subject of the investigation was Captain Joseph Deluce, Air Ontario chief pilot, check pilot, and company shareholder. This situation illustrates the highly undesirable perception that can result from an individual, however well-motivated, wearing at the same time the many

hats of a significant shareholder, the chief pilot, the training pilot, the company check pilot, and line pilot of an air carrier.

Having reviewed the evidence from these three incidents, I have no doubt that the Air Ontario flight safety organization was, for a substantial period of time prior to the Dryden crash, inactive as a result of there being no designated safety officer and owing to the low priority assigned to this position by Air Ontario management. When active, Captain Stewart's position as FSO was obviously at times made ineffective because of the inconsistent positions taken by management in dealing with certain incidents.

Captain Ronald Stewart's Post-Accident Survey of F-28 Pilots

As the Air Ontario Flight Safety Officer (FSO), Captain Stewart headed up Air Ontario's internal investigation into the F-28 accident at Dryden. As part of his investigation, he drafted an F-28 pilot questionnaire. During his testimony, he explained his rationale for so doing as follows:

> A. Well, a survey is done simply to find out attitudes, opinions, safety deficiencies, perhaps. A survey can be designed for many different reasons. But, basically, you ... suspect that there's a problem, you go out and you survey a group of people and you determine whether or not in fact there is a problem.
>
> (Transcript, vol. 74, p. 94)

Captain Stewart pointed out that other carriers carry out these types of surveys and gave as an example a fairly extensive Air Canada survey conducted in 1984–85 involving a large proportion of its pilot population. Air Canada had questioned its pilots regarding its training standards and training procedures, and looked "for recommendations on the ways that they could improve the training in Air Canada" (p. 94).

Specific to the pilot survey conducted following the Dryden accident, Captain Stewart in his testimony referred to "rumours ... surrounding the F-28 operation." He stated his reasoning for his decision to conduct a survey of the Air Ontario F-28 pilots as follows:

> A. ... After the accident, there was many rumours ... surrounding the F-28 operation and what was wrong with it, and I wanted to get to the bottom of it to see if there was any basis for fact.
>
> Also, I had some specific questions, some concerns that had been raised during the investigation, during the on-site investigation out in Dryden, with respect to ... de-icing on aircraft with an engine running and also with respect to, in quotation marks,

"hot refuelling," and I wanted to learn what the pilot viewpoints were on those two issues as well.

Q. Now, what use was going to be made of this survey by you once you had it completed?

A. Well, what I intended to use this for was simply to assess whether or not the rumours were true and, assuming the worst, make recommendations to the president with respect to the operation.

(Transcript, vol. 74, p. 98)

The evidence is that Captain Stewart began his pilot survey by telephoning F-28 pilots. He stated that it took him "approximately half an hour to an hour to complete each telephone survey." The actual questionnaires were not distributed but rather the questions were read over the telephone, and Captain Stewart recorded in handwritten notes his impression of the conversation with each pilot. He recalls it as a time of very deeply felt emotion and he made the point that the survey was conducted against such a background. Participation in the survey by the F-28 pilots was optional and confidentiality was extended to each of the pilots by Captain Stewart. He explained:

A. ... I told them that the survey was confidential, that what they said to me wouldn't go any further than me, and that they could be free and open ... with their responses to me. And I also told them that their participation was optional, if they didn't want to participate, that was fine.

Q. Now, what did you mean by confidential, sir, when you told them that the survey would be confidential?

A. Right, what I was saying is that, if they had any comments with respect to the operation or perhaps supervisors or management or whatever, that it wouldn't go any further than me, I wouldn't be going to tell the president that Joe Blow said this about you and that about the company, but what I wanted to find out was the pilots' feelings and thoughts on the safety of the F-28 operation.

Q. Now, sir, why did you promise them confidentiality?

A. Because, by promising them confidentiality, I felt that I would get more open and honest responses.

(Transcript, vol. 74, pp. 103–104)

Captain Stewart added that no Air Ontario pilot to his knowledge had ever been disciplined on the basis of information contained in a pilot report filed with the company.

After five pilots had been interviewed by telephone, Captain Stewart had a conversation with his superior, James Morrison, then vice-president of operations. The "quite an emotional discussion" centred around the survey, and certain negative views about the pilot surveys

were expressed by Mr Morrison, whom Captain Stewart described as "very upset." Captain Stewart testified as follows:

> A. ... I remember now that it was quite an emotional discussion ... Jim was very upset that I would be doing something behind his back. I guess maybe he hadn't read my proposal thoroughly enough and didn't realize that perhaps there would be occasions when I would be doing surveys and that sort of a thing, but I guess he felt that I was stepping on his toes and what I was doing was going to cause him a lot of problems. He was very upset.
>
> (Transcript, vol. 74, p. 108)

Although he stated that Mr Morrison did not order him to stop doing the survey, Captain Stewart in fact terminated his pilot survey program after this meeting. He said:

> A. Well, as a result of the conversation, I, well, after I left his office, went to my office, sat down and thought about it again. I thought, you know, this darn survey isn't going all that well, it's got the problems that I previously described to you, I've learned what I want to know about the operation, so ... I stopped.
>
> (Transcript, vol. 74, p. 109)

Based upon the five completed pilot surveys, Captain Stewart formed certain opinions about practices within the Air Ontario F-28 program:

> A. ... They confirmed that there was some practices that were going on in the operation that – that were suspicious, at least. I wouldn't go out and say that they were unsafe, because – I don't know if everybody in this room would understand my viewpoint, but I don't view an operation as safe or unsafe, but at one end, you have a totally accident-risk-free operation. At the other end of the spectrum, there's no question that there's going to be an accident, it's just a matter of time. And where I would place the F-28 operation on that continuum would be very ... close to the top; however, there were some questions and they were legitimate, there were some concerns and they were legitimate concerns.
>
> (Transcript, vol. 74, p. 111)

After visiting the Dryden accident site, Captain Stewart recorded his personal observations about Air Ontario's servicing of the F-28 at Dryden specifically and about its F-28 program generally. He prepared a written memorandum dated April 3, 1989, and addressed to Mr William Deluce, the president of Air Ontario and the person to whom he was to report directly within the company flight safety system. Rather

than sending the memorandum, he subsequently met with Mr William Deluce and discussed with him what he perceived to be the F-28 program difficulties.

During his testimony, Captain Stewart was questioned regarding notes he had prepared to brief Mr William Deluce. These handwritten notes are reproduced in their entirety below:

Arguments

JET PROGRAM

- I believe this was a preventable accident.
- There is lots of info available about ice contamination and how it affects hard wing a/c – some from Fokker
  – Air Canada
  yet there was one of our Capt's out there doing tests to see how much ice the F28 could handle
- When you set up the DHC-8 program an expert "Walter Wolfe" was hired to head up the program.
- In retrospect that was a very wise move
  Now the program is up and running on its own without Walter
- We should have followed the same procedure with F28 program even if we could contract a Piedmont or Air Canada person for a period of time 1.5–2 yrs at which time the position could revert to internal personnel.

Jet Program cont'd.

- initially our experience on Jet OPS & F28 OPS very low
- we could really use outside assistance while our experience is growing
- A tightly written & controlled SOP is required.
- Whatever way you decide to go I recommend closer ties w/ Air Canada to draw on their experience on Jet OPS (DC-9)

Operations

- Some F28 pilots (captains) did not know de-icing was avail at Dryden. We have no way presently of informing the flight crews of the availability of these services – This check list to go in Route Manual
- we often get these fuel load/pax load last minute changes and need a procedure/policy to advise flight crews and how to handle situation
- Experience level very low
- Start up new program.
- need to buy experience
- recommend hiring outside co for Chief Pilot – /VP in charge of flt ops/Chief Training Pilot
- Recommend closer liaison w AC to rely on their experience in Jet Ops
- if we decide to change types
  ie BAC 146 – F100

- Operational Control and Communications
- Load info vs fuel planning believed
- SOC – prepare a list of
  Primarily scheduled but consider expansion to charter.
  √ list of facilities/services/equip avail

(Exhibit 766)

Captain Stewart expanded upon his notes by stating that he had recommended to company president William Deluce that, unless good outside expertise was brought in to get the F-28 program running, the F-28 program should be discontinued:

> A. I felt that there was not enough background experience in the program, that the chief pilot needed some advice, some outside help.
>
> Somebody that was very experienced in swept wing jet operations, I felt, should be involved in the program on a day-to-day basis to assist and get the program running. And I felt that if they couldn't provide this sort of an individual or individuals, if they could not recruit these individuals into the program, that they should perhaps considering winding down the program.
>
> Q. All right. Not to muddy the verbal conversation you had with Bill Deluce, did you in fact make a recommendation to him that unless he secure good outside expertise, that the F-28 program should be discontinued?
>
> A. Yes, I did.
>
> (Transcript, vol. 95, pp. 109–10)

Captain Stewart made observations regarding the role that, in his opinion, Air Canada should have played in the F-28 program:

> A. Well, just another source of information. Air Canada operated the DC-9 which is also a swept wing jet, tail-mounted engines, no leading edge devices, fairly similar type to the F-28, I thought, and I knew that there must be some vast experience in that operation that we could maybe use.
>
> Q. Which was not solicited by Air Ontario?
>
> A. I don't believe that it was, no.
>
> (Transcript, vol. 95, p. 110)

In testimony, Captain Stewart elaborated on the importance of Captain Wolfe's role in the introduction of the Air Ontario Dash-8 program. Captain Stewart compared the F-28 and Dash-8 programs at Air Ontario and commented upon the serious error which, in his view, was made by Air Ontario in failing to bring in F-28 expertise for the introduction of the F-28 jet program:

A. [Captain Walter Wolfe] ... was one of the original Dash-8 pilots, I believe, working for possibly Air Dale up in Sault Ste Marie, but I'm not positive on that, and then he went from there to, I believe it was Air Atlantic, and flew the Dash-8 for a number of years.

When he came to Air Ontario, he was one of the most experienced Dash-8 pilots available anywhere. He became the chief pilot at Air Ontario and helped to set up the Dash-8 program complete with the training, and all the line indoctrination, training, the basic training, simulator training, the SOPs, and probably some involvement in the MEL, this type of thing.

(Transcript, vol. 95, p. 119)

Captain Stewart believed that Air Ontario's Dash-8 implementation program was excellent, partially attributable to the expertise brought into the company by Captain Walter Wolfe. He maintained that similar expertise should have been brought in in order to improve the F-28 program. He described the discussion with Mr William Deluce as follows:

A. He asked me several questions as we went along and we had good discussion of all the points. And at the end, he didn't commit himself one way or the other while I was there, but he gave me a fair hearing.

(Transcript, vol. 95, p. 131)

Finally, from his investigations Captain Stewart noted that information about the availability of ground equipment at on-line stations and at charter destinations had not been disseminated to flight crews:

Q. ... You recommend essentially that a checklist be prepared of all stations outlining things which are available at those stations, correct?

A. That's correct.

Q. And the example you cite is Dryden, where you have noted fuel, Jet A, DC ground power available, yes. AC ground power, no. De-icing, yes. Laboratory service, no, and commissary, no.

Now, did Air Ontario have an inventory of this type of information for the various places it flew to as at that point in time?

A. I believe that they did in SOC. What I was recommending here is that they disseminate this information to the operating crews.

Q. Why?

A. Otherwise, how would the crew know what services were available when they got into a particular station? We don't carry the government supplement ... the VFR – or the IFR supplement as a matter of course.

Q. The Canadian Supplement, you are talking about?
A. That's correct. And beyond that, we have destinations that are not in Canada, so that –
Q. You are talking of ones like charter?
A. Charter destinations, say Atlantic City where we go there often enough that we should know what's available there.

I felt that this should go in the route manual as a route bulletin listing all of the stations that we regularly visit and what services would be available at those stations so that the flight crews would have a handy reference.

(Transcript, vol. 95, pp. 110–12)

Air Canada's Flight Safety Organization, and Its Involvement with Air Ontario

Background

The evidence indicates that after 1985 there was some contact between the flight safety organizations of Air Ontario, including that of its predecessor airlines, and Air Canada. Captain Stewart testified that he had visited Air Canada's Montreal facility four or five times to consult with Air Canada flight safety personnel, Mr Jack Mitchell and Mr Jack Galliker, regarding matters such as what Captain Stewart was doing with the "computerized incident reporting system [and] other safety problems" (Transcript, vol. 95, pp. 32–33). Captain Stewart testified that their expertise would have been beneficial to Air Ontario. He further testified that the only other contact that he had with Air Canada was when it conducted a post-crash audit on Air Ontario.

Mr Mitchell, who has been director of flight safety for Air Canada since 1983 and who was called as a witness, described the flight safety organization at Air Canada and its relationship to that of Air Ontario. Captain Stewart's position was similar to the position occupied in Air Canada by the manager of flight operations safety, who reports directly to the senior vice-president, flight operations, and functionally to the corporate director of flight safety, Mr Mitchell.

The everyday duties of Air Canada's flight safety organization were summarized by Mr Mitchell as planning, investigation of incidents and accidents, and liaison with government agencies. Part of the planning function was the creation of the Air Canada Flight Safety Board. The board is chaired by the company president and meets quarterly. One of its main functions is to review the incidents and accidents investigated by the flight safety group. Such reviews allow for "trend analysis" and coordinated follow-up action flowing from the incident reports.

At Air Canada, in addition to these quarterly meetings that are attended by senior management personnel, members of the flight safety organization attend the regular morning meetings of the flight operations department. Mr Mitchell described the benefits of such daily sessions as follows:

> A. ... it's a particularly useful source of information from the flight safety point of view, first of all, to establish what incidents have been occurring, which we should have prior knowledge of by other communication means that we have, but sometimes there were items coming up which were of interest to us.
>
> And, particularly, it's useful to us to hear the report from the maintenance personnel when they come on the line to find out what sort of action they've been taking against an incident that may have occurred during the last 24 hours.
>
> (Transcript, vol. 119, pp. 19-20)

In addition to Air Canada's daily flight operations meetings, there are also daily meetings of flight safety personnel. These meetings are mainly to exchange flight safety information and to analyse information gleaned from various departments of the company. Members of the flight safety organization have access to all departments of the Air Canada organization.

Categorization of Aviation Occurrences at Air Canada

Within the Air Canada flight safety system, aviation occurrences are categorized from A to G depending on their severity or importance, category A being a catastrophic crash. This categorization allows for the appropriate allocation of resources for response to and follow-up of safety concerns.

Mr Mitchell, when questioned about what Air Canada's flight safety organization's response would have been to the Air Ontario HS-748 incidents described above, stated that he thought the initial response would have been to "categorize that as a Category C occurrence" (Transcript, vol. 119, p. 34).

He described a category C occurrence by referring to the Air Canada Flight Operations Manual, commonly referred to as the 550 manual:

> *Category C:*
> IN OPERATION ACCIDENTS OR INCIDENTS OF A POTENTIALLY HAZARDOUS NATURE: Accidents or incidents reported from the aircraft indicating any type of emergency condition,

necessitating assistance or guidance, and that might result in a catastrophic or major accident.

(Exhibit 920)

Mr Mitchell described the steps to be taken by the flight safety personnel in the case of a category C occurrence as follows:

A. Well, we would obviously discuss it between some of the flight safety personnel and decide what action needs to be taken, and one of the first actions, most likely, would be to ensure that we get the flight data recorder and the information that it contains so that we can investigate the occurrence ... in more detail and with more precise accuracy than maybe a verbal description contained.

(Transcript, vol. 119, p. 34)

He stated that the information from the aircraft flight data recorder is used to test the accuracy of the statements of the crew members, all of whom would be interviewed as a matter of course. Such interviews of crew members are always conducted on an individual basis. These procedures are quite unlike those followed by Air Ontario after the three incidents described earlier in this chapter.

In addition to analysing the flight data recorder and interviewing crew members, the Air Canada flight safety group is able to call upon the maintenance and flight operations departments for input during its investigation of an occurrence. Once the Air Canada flight safety group has completed the investigation, a report is submitted to the Air Canada Flight Safety Board. Appropriate follow-up is then decided upon, and the necessary corrective action taken.

The Air Canada flight safety department does not suggest or determine any disciplinary action to be taken by the company against any employee. Mr Mitchell explained the reasons for the flight safety department's non-involvement in disciplinary matters as follows:

A. ... it's felt that the two would be of conflicting interest.

It wouldn't be to our benefit, from the flight safety point of view or from the point of view of improving the safety, to get involved in any disciplinary action from the flight safety point of view.

Q. And who takes care of discipline involving pilots?

A. That would be taken care of by the branch concerned, either flight operations, technical operations or in-flight service, if they are involved.

(Transcript, vol. 119, p. 43)

If the applicable policies and procedures of Air Canada's flight safety department had been in place at its majority-owned subsidiary, Air Ontario or its predecessor airline, when the three Air Ontario incidents discussed above occurred, they would probably have been investigated more appropriately.

Air Canada Internal Incident-Reporting Procedures

In the mid-1980s Air Canada introduced an anonymous incident-reporting system. Pilots can use one of two methods: they telephone and have their comments recorded on a dedicated recorder unit, or they can complete a form located on the back of a company monthly publication distributed to pilots and mail it to the Air Canada flight safety department. Mr Mitchell in his evidence described the purpose of the system, to whom it was available, and how it fit into the regulatory scheme. He stated that this system was introduced to "provide an extra source of information ... on potential problems which couldn't be identified in any other way" (Transcript, vol. 119, p. 45).

Interestingly, Mr Mitchell stated that the Air Canada flight safety group does not receive many anonymous reports, and he indicated an Air Canada pilot preference for the CTAISB (Canadian Transportation Accident Investigation and Safety Board, now called Transportation Safety Board or TSB) confidential reporting system:

> A. ... We thought when we first introduced the system, that we would have quite a heavy response to it, and we did get a few initially, but they sort of tapered off. We don't get that many these days.
>
> In fact ... I think it was about two years ago, we opened up the system to include our cabin crews as well in the anonymous reporting system. There again, it started off in a promising manner but has tapered off ... you have to remember that there are other anonymous reporting systems in operation.
>
> There's the one through the CTAISB which some pilots use. Rather than going through the company anonymous reporting system, it's ... always a little bit suspicious about that, so they report it direct to CTAISB and we do get some feedback from CTAISB where they are investigating an incident and trying to get some more information on an incident of that nature, but usually when it's anonymous, there's very little available on it right from the start.
>
> (Transcript, vol. 119, pp. 45–46)

Mr Mitchell went on to discuss some of the difficulties involved in following up anonymous reports. The primary problem is how to confirm the truth of the facts reported by an unknown complainant.

Nevertheless, the anonymous reporting system has merit in that it brings forward operational problems that might not otherwise be discovered and to which competent FSOs can direct their investigative skills. Although the FSO at Air Ontario deserves full credit for setting up a confidential pilot reporting system, his follow-up of the April 4, 1989, incident report was not completed, and most certainly the support he received from the vice-president of operations, Mr Morrison, regarding this incident left much to be desired.

Flight Safety: Relationship between Air Carrier and Regulator

Mr Mitchell, when asked whether flight safety organizations should be a regulatory requirement for air carriers in Canada, stated that "somewhere it should be laid down that there should be a safety officer in all airlines, whether he is a full-time safety officer or part-time, I think there should be someone" (Transcript, vol. 119, pp. 57–58).

Mr Mitchell stressed the fact that, in addition to the relationship with Transport Canada in the area of flight safety, there are flight safety–oriented organizations to which Air Canada FSOs belong and courses they attend. He mentioned specifically the safety courses given by the University of Southern California, the Safety Committee of the Air Transportation Association of Canada, the Flight Safety Foundation, the International Society of Air Safety Investigators, and others.

As well, he outlined the flight safety department's involvement when new aircraft types are introduced into the Air Canada fleet. He described the role as follows:

> A. ... with the introduction of new aircraft, there is an introduction committee that is formed. And these are representatives from various branches which have an interest in ensuring the smooth introduction of an aircraft into service.
>
> And flight safety always has a representative on all of those meetings. One reason is to gather the latest information on the aircraft, which may be of use to flight safety, and also to ensure that any actions which flight safety has to take with the introduction of a new aircraft are part of the program and are completed on schedule.
>
> Q. And so with the introduction of the A320, was there such an introductory committee?
>
> A. Yes, there was, and Mr Galliker was a member of that committee.
>
> (Transcript, vol. 119, pp. 74–75)

Given Air Canada's substantial experience with jet aircraft and the introduction of new aircraft into service, as well as its position as majority shareholder in Air Ontario, it is difficult to understand why it failed to share the benefits of this experience and to ensure that there was an FSO and an appropriate flight safety organization in place at Air Ontario during and following the introduction of the F-28 jet aircraft into its fleet.

Air Canada's Assistance to Air Ontario

Mr Mitchell testified that he first learned of Air Canada's acquisition of feeder airlines in 1987. He stated that, at that time, there was some discussion between himself and Captain Charles Simpson, vice-president of flight operations for Air Canada, about the possibility of offering flight safety assistance to the connectors. He expressed it this way:

> Q. And what ways did you mention that you could assist Air Ontario?
>
> A. Well, flight operations felt that perhaps they might be able to offer some type of training to Air Ontario, and flight safety was interested in letting Air Ontario know that we had various publications and information which might be of use to them, and also, of course, the seminar which they had already had previous to that date, but there was some interest in discussions which took place between Air Ontario and Air Canada on maybe holding another seminar.
>
> (Transcript, vol. 119, pp. 87–88)

The "previous" seminar mentioned by Mr Mitchell was an Air Canada accident management seminar that had been given to personnel of Air Ontario Limited in 1985. Captain Simpson and Mr Mitchell discussed the advisability of repeating this seminar.

They also considered conducting an "operational review" of Air Ontario at this time. Mr Mitchell stated that an audit of Air Ontario was not discussed. He described what was contemplated as follows:

> Q. ... When you were discussing this with Captain Simpson, did you ever discuss the possibility of doing an audit of Air Ontario or any of the connector carriers?
>
> A. No, not really an audit. We felt that there was a need for us to have some communication with Air Ontario to establish how they were organized and what they were doing and who did what and how well it was being done.
>
> (Transcript, vol. 119, p. 92)

These discussions culminated in a meeting of Air Canada and its several connector airlines on August 18, 1987. In attendance at this meeting for Air Canada were members of the flight safety, flight operations, and training departments. Mr Mitchell recalled the presence from Air Ontario of Mr Thomas Syme, vice-president of operations, and Captain Robert Nyman, director of flight operations. Mr Mitchell described the meeting as exploratory, its purpose being "to sit down with some of our allied carriers and discuss what sort of things Air Canada had available which may be of use to them, and primarily what we could do for them, and give them the opportunity to maybe tell us what they could do for us as well." Mr Mitchell stated that some kind of commercial arrangement between Air Canada and the connector carriers for certain services was considered at the time, "especially in relation to the more expensive packages. If flight operations were to provide some training, for instance, that would probably be a cost item." With respect to flight safety items, Mr Mitchell testified that "there was never any consideration given at that time to charging them for those services" (Transcript, vol. 119, p. 95). The nature of the flight safety assistance Air Canada thought it might provide to the connectors was described as technical information relating to flight safety, as well as playback facilities for flight data recorders.

Mr Mitchell stated that Air Canada ran an accident-response seminar for Air Ontario personnel at Air Ontario's request in May 1989, following the Dryden crash. Air Canada had previously run an accident-response seminar in 1985 for the predecessor corporation, Air Ontario Limited.

Mr Mitchell was questioned about the relationship between the Air Canada and Air Ontario flight safety departments during the period between the initial meeting of the two departments in August 1987 and the accident-response seminar held in May 1989. He testified that at the time of the 1987 meeting he was under the impression there was an FSO in place at Air Ontario, when in fact there was not. He assumed that appropriate computer recording and trend analysis, similar to that done at Air Canada, was being carried out at Air Ontario. It was not. The only flight safety integration between the companies appears to have been the establishment of an accident-response plan. An accident-response plan cannot be equated to a flight safety organization; one is designed to respond to accidents, the other to prevent accidents.

When asked about the degree of integration between the flight safety organizations of the parent, Air Canada, and its feeder, Air Ontario, Mr Mitchell conceded that there was none. In testimony, he explained that there was no formal reporting relationship between the Air Ontario FSO and himself:

> A. No, that was left up to the flight safety officer in Air Ontario for him to observe what was going on in that area, and they didn't sort of share any of that information with Air Canada. Neither was it requested by ourselves. Only in the event of a larger or major catastrophe that might require our assistance.
>
> (Transcript, vol. 119, p. 106)

Mr Mitchell's explanation for the lack of a more comprehensive and formalized flight safety reporting relationship between Air Canada and Air Ontario was that "it was in the formative stages, so it was a matter of developing the systems in the time that it was available. And these things were progressing." He stated that except in the event of a major accident, there was no exchange of flight safety information or occurrence reports between the two entities.

Mr Mitchell advanced the reason for Air Canada not pursuing the flight safety organization issue at Air Ontario as follows:

> A. ... there seemed to be a safety organization in place, and their handling of the data within their own organization where the action needs to be taking place in the event that there is something that requires some action ... seemed to be well under way, and it didn't require Air Canada to get involved in it at that stage.
>
> (Transcript, vol. 119, p. 107)

Mr Mitchell's view of the Air Ontario flight safety organization was erroneous, inasmuch as the evidence clearly indicates that Air Ontario had no effective flight safety organization in place during the critical period of the introduction of the F-28 jet aircraft into its fleet. The evidence also demonstrates that Air Canada had little involvement in the flight safety aspects of its subsidiary, Air Ontario, and that Air Ontario's management did not adequately support its existing flight safety organization. Furthermore, Air Canada did not impress upon Air Ontario its own more developed flight safety ethic.

Air Canada's Operational Review of Air Ontario (Autumn 1989)

An operational review of Air Ontario was conducted by its parent, Air Canada, in the fall of 1989, six months after the Dryden crash. This review was not specific to Air Ontario and was part of a similar review of all Air Canada feeder airlines.

As already stated, Captain Stewart returned to the position of Air Ontario FSO in February 1989, approximately one month before the accident. Air Canada's post-Dryden operational review of Air Ontario,

which was conducted in the fall of 1989, included a review of the then existing flight safety organization. Mr Mitchell was asked about the findings of Air Canada; the Air Canada report, which was read into the record, stated:

> Air Ontario employs a Flight Safety Officer who reports direct to the President. This is an ICAO recommended reporting relationship and is the most favoured in the industry. A Pilots to Flight Safety Officer Incident/Accident Reporting System is in place. Judging by recently published statistics, this system is functional.
>
> Air Ontario maintains an Aircraft Accident Alarm Plan. The plan is of good standard with check lists for Management and the Control Centre (SOC).
>
> (Transcript, vol. 119, pp. 153–54)

Mr Mitchell testified that in September 1989 Air Canada found the flight safety organization of Air Ontario to be "quite commendable" (Transcript, vol. 119, p. 153).

General Conclusions

The evidence before me demonstrated that the lack of continuity in the position of a flight safety officer, the lack of adequate support of the FSO position by senior management, and the lack of a flight safety organization within Air Ontario over the material time span was a managerial omission. That the majority owner Air Canada did not know of this situation indicates, at worst, a lack of concern on the part of parent corporation, or, at best, a lack of proper supervision on its part.

It appears from the evidence that the establishment of a company flight safety organization has the potential to enhance flight safety. With the advent of inexpensive information management systems, it cannot be considered an extraordinary burden on a carrier to set up at least an occurrence-reporting and investigating system and an information dissemination system. Considering the safety implications, it cannot be considered overly burdensome for an air carrier to appoint a flight safety officer with appropriate compensation for the work performed to oversee whatever flight safety organization is put in place.

Many air carriers have flight safety departments within their organization with detailed job descriptions for the flight safety officers. Transport Canada has, at headquarters and in its regions, flight safety officers ready and anxious to provide any assistance a carrier may require to set up an air carrier flight safety department.

Certain fundamental aspects of a successful flight safety organization were brought to light during testimony, the principal one being the

independence of the flight safety officer in carrying out his or her duties. This independence includes access to all departments within the corporation. Another fundamental aspect of a successful flight safety organization is direct and unfettered access to senior corporate management, including the president. This direct access means direct action at an effective management level with respect to the oversights and failings of managers and supervisors at all levels.

Findings

- The single most significant determinant of an air carrier's flight safety ethic is the actual commitment of the air carrier to flight safety as reflected in the example set by senior management of the air carrier.

- An effective flight safety organization with a dedicated flight safety program and dedicated flight safety personnel is vital to the safe operation of an air carrier.

- Captain Stewart, the flight safety officer (FSO) for Air Ontario prior to the fall of 1987, resigned at that time from the FSO position primarily because of the lack of direct access to and support from the company president.

- The management of Air Ontario assigned a low priority to the importance of filling the vacant position of flight safety officer.

- The management of Air Ontario failed to have in place a flight safety officer and a flight safety organization between the fall of 1987 and February 1, 1989, a period that included the critical phase of the introduction of the F-28 jet aircraft into its fleet, and its scheduled operations with the F-28 aircraft from June 1988 to February 1989.

- The total absence of a flight safety officer and flight safety organization within Air Ontario, from the date the F-28 jet program was introduced until shortly before the crash of C-FONF, must be regarded as a serious omission on the part of Air Ontario management.

- The merger of Austin Airways and Air Ontario Limited, which resulted in a long period of instability for the new entity, Air Ontario Inc., was, among other things, marked by frequent changes in senior management personnel, continuous management restructuring, problems associated with the integration of the seniority lists, displacement of personnel, and the integration of operations and

training programs. This period of instability carried over into the introduction of the F-28 program and had an impact on flight safety.

- The two HS-748 takeoff incidents with contaminated aircraft, which occurred on November 29, 1986, and December 15, 1987, involving Captain Joseph Deluce and Captain James Deluce (flying as first officer) and First Officer Scott Jensen, respectively, were not properly investigated by the responsible Air Ontario officials who undertook such investigations.

- As the pilot-in-command of an Air Ontario HS-748 aircraft on December 15, 1987, at Pearson International Airport in Toronto, Ontario, Captain Joseph Deluce committed an error in judgement in commencing a takeoff in the circumstances.

- The Canadian Aviation Safety Board did not investigate the December 15, 1987, Air Ontario HS-748 incident, although it was reported to it. The lack of response by CASB was inappropriate in the circumstances.

- Transport Canada regulatory authorities did not take any action in the December 15, 1987, Air Ontario HS-748 incident and did not implement measures to prevent a recurrence. Such lack of response was inappropriate in the circumstances.

- It is probable that had the November 1986 incident at Kingston Airport involving Captain Joseph Deluce been properly investigated and had Captain Deluce been appropriately sanctioned and properly instructed with regard to the dangers of takeoff with contaminated aircraft surfaces, the December 15, 1987, incident at Pearson International Airport may not have occurred.

- Had both HS-748 incidents been properly investigated and information with respect to the dangers of takeoff with contaminated aircraft surfaces been disseminated to Air Ontario operational personnel, including its pilots, there would have been a heightened awareness among Air Ontario pilots of the very serious problems associated with aircraft surface contamination.

- The third alleged incident involving Captain Joseph Deluce, as pilot-in-command of an Air Ontario F-28 aircraft, was anonymously reported to have occurred at Pearson International Airport in Toronto on April 4, 1989, and was referred by Captain Stewart, the Air Ontario flight safety officer, to the vice-president of flight operations, Mr Morrison. I infer from the evidence that both Captain Stewart and

Mr Morrison were highly sensitive to the fact that the pilot-in-command involved in this alleged incident was Captain Joseph Deluce, and that this sensitivity militated against their conducting a thorough investigation.

- When a person has significant shareholdings in an air carrier and, at the same time, occupies managerial positions such as chief pilot, training pilot, company check pilot, as well as being a line pilot of the carrier, there is the potential for conflict of interest and the possibility of creating an atmosphere of intimidation among other personnel. In such circumstances, air carrier management must be especially vigilant to safeguard against the occurrence of such conflicts.

- Current Canadian legislation does not address the need for either a dedicated air carrier flight safety program or a flight safety managerial position as an essential element for the safe operation of Canadian air carriers.

RECOMMENDATIONS

It is recommended:

MCR 100 That Transport Canada proffer for enactment legislation to amend Air Navigation Order Series VII, No. 2, section 5, to include the position of flight safety officer as a required air carrier managerial position.

MCR 101 That Transport Canada proffer for enactment legislation to amend Air Navigation Order Series VII, No. 2, section 5, to require the appointment by an air carrier of a person to the position of flight safety officer for the carrier, the qualifications of such person and the description of the duties and responsibilities of such position to be determined by Transport Canada after consultation with the air carrier industry, and to provide that the flight safety officer shall have direct access on a continuing basis to the chief executive officer of the air carrier in flight safety–related matters.

MCR 102 That Transport Canada initiate a program of consultation with Canadian air carriers and the Transportation Safety Board of Canada with a view to having air carriers institute,

staff, and operate, on a continuing basis, an effective flight safety program that is based upon the "Flight Safety Functions," identified in the International Air Transport Association Technical Policy Manual, OPS Amendment No. 37, July 1989, referred to in chapter 24 of my Final Report, Flight Safety.

MCR 103 That Transport Canada institute a program for the monitoring of the flight safety programs of Canadian air carriers, with a view to ensuring that each air carrier has in place an effective flight safety program that is appropriate for the size and scope of the carrier's operations.

25 MANAGEMENT PERFORMANCE

During this Inquiry, management effectiveness was reviewed in the context of Air Ontario's introduction of the F-28 aircraft into commercial service. By analysing Air Ontario's planning and implementation of the F-28 program, and the certification and inspection of the F-28 program by Transport Canada, deficiencies in the air transportation system became apparent.

Owners and managers of air carriers must operate within the bounds of the Air Regulations and the authority delegated to them as licence holders. The regulator and the air carrier functionally meet at three principal stages:

- at the approval or certification stage of the air carrier's proposed operation;
- during the inspection or monitoring of an air carrier operation; and
- when the regulator pursues an enforcement action against any air carrier or air carrier employee who has breached the *Aeronautics Act*, the Air Regulations, or the Air Navigation Orders (ANOs).

The evidence before me disclosed that there were weaknesses in each of these three functional stages – certification, inspection, and enforcement – as they applied to the Air Ontario F-28 program. Irregularities in the F-28 program, which could have led to enforcement action but were undetected during routine regulatory inspection, could have been avoided entirely if proper care had been taken by Air Ontario and Transport Canada in the planning, implementation, and certification stages of that program.

An example of this can be seen in the irregular maintenance deferral practices discussed previously. The practice by some Air Ontario F-28 maintenance personnel of deferring the maintenance of essential aircraft equipment without an approved MEL, and the practice by some Air Ontario F-28 pilots of noting maintenance defects on loose pieces of paper, instead of promptly recording them in the aircraft journey log, would both appear to violate ANOs and could have given rise to enforcement action. Neither of these practices was detected during routine Transport Canada inspections, yet the inspectors involved knew or ought to have known that, for a period of six months, Air Ontario F-28 C-FONF was operated without either an approved MEL or an

adequate store of spare parts. Further, the inspectors knew or ought to have known that, under such circumstances, aircraft serviceability would have been a serious problem.

What is most significant is that Air Ontario was allowed by Transport Canada to operate the F-28 aircraft in commercial service without an approved F-28 MEL or adequate supporting spare parts. It is true that there is no regulatory requirement for an MEL in Canadian commercial air carriage, and I have already questioned the wisdom of this situation. Air Ontario had planned to have an F-28 MEL developed and approved by February 28, 1988 – weeks before F-28 commercial service was to have started – yet that goal was not achieved until December 1988, months after commercial service began. Adequate supporting spare parts are required by regulation, and Air Ontario had planned to have them prior to commencing commercial F-28 service; this goal was also not achieved.

Had Air Ontario taken steps to implement its F-28 Project Plan in accordance with the schedule presented to Transport Canada and had Transport Canada monitored the progress of the Project Plan properly, withholding the necessary regulatory approval until all operational prerequisites were in place, the problems that were later manifested – for example, the irregular maintenance deferrals – could have been avoided.

Other deficiencies in the Air Ontario F-28 program that were discussed at length above include:

- the failure to make operational accommodation for the lack of F-28 ground-start facilities at Dryden;
- the untimely production, lack of coordination, and insufficiency of key operational manuals;
- the failure to develop and methodically disseminate operational guidance on refuelling and de-icing with main engines running;
- the failure to install a flight attendant shoulder harness on the F-28 aircraft; and
- the inadequacy of training and procedures within SOC.

All should have been addressed by Transport Canada and corrected by Air Ontario prior to the regulatory approval of Air Ontario's commercial F-28 service.

For this reason, I will conclude my examination of Air Ontario and its F-28 program by concentrating on the actions of the air carrier and the regulator during the planning, implementation, and certification stages.

Certainly, it may be argued that the Air Ontario F-28 program was not the only matter of concern to either Air Ontario management or Transport Canada inspectors. Air Ontario had hundreds of employees, operating many aircraft and aircraft types, and serving many cities. The

F-28 program was a relatively small, though significant, part of Air Ontario's overall operation. Transport Canada inspectors were similarly responsible for many air carriers operating hundreds of aircraft. Nevertheless, these facts in no way mitigate the responsibility that Air Ontario and Transport Canada had to ensure that the Air Ontario F-28 program was properly carried out.

It must also be noted that the findings of this Commission regarding the inadequacies of the Canadian air transportation system are the chance product of the tragic crash of Air Ontario flight 1363 on March 10, 1989.

Certification

The regulatory scheme in Canada is designed to give Transport Canada the ultimate authority over the licensing of commercial air carriers. The criteria and procedures for licensing air carriers operating large aircraft are set out in ANO Series VII, No. 2, and in Transport Canada internal policy and procedures manuals. The approval process requires that the operational soundness of a prospective air carrier operation be assessed by both the Air Carrier and the Airworthiness branches of Transport Canada's Aviation Regulation Directorate. The process is described in the Air Carrier Certification Manual of Transport Canada – Aviation Regulation Directorate (both the 1987 and 1990 editions):

> The applicant's ability to conduct the proposed operation safely, involves a determination as to whether or not his Company facilities and organizational structure, including properly licensed and qualified personnel, meet the applicable statutory and DOT policy requirements. This determination necessitates that DOT inspectors, as the first step, make themselves thoroughly familiar with all aspects of the proposed operation; identify all applicable requirements and then, measure the applicant's facilities and organizational structure (including properly licensed and qualified personnel in sufficient numbers) against the requirements.
>
> ...
>
> The tests of adequacy and capability apply not only in the case of an applicant for an Operating Certificate but also to any incumbent holder of such certificate. The basic intent of all inspection relative to certification is an on-going process of determining whether or not the Company meets and continues to satisfy the requirements.
>
> (Exhibits 1026, pp. 6–7; 1031, pp. 7–8)

An air carrier begins the certification process by filing with Transport Canada a written application for an operating certificate or an amendment to an operating certificate. As I have described earlier, this written

application would typically detail the specifications of the aircraft to be operated, the airports into which the aircraft is to be operated, the operations personnel involved with the program, and the maintenance facilities that will service the aircraft. Further, the proposed operation may also be described in narrative form. When Transport Canada receives the air carrier's application, regulatory personnel verify the contents of the application and assess the suitability of what is described. In this regard, the Air Carrier Certification Manual states:

> It is essential that inspectors ensure that the applicants' forms are properly completed and so verified by inspecting his aircraft facilities and by reviewing the applicants supervisory personnel.
>
> The importance of properly investigating the facilities to be provided and the operational feasibility of the proposed operation cannot be over emphasized.
>
> (Exhibits 1026, p. 7; 1031, p. 8)

Regulatory personnel are therefore charged with the responsibility of deciding whether the carrier has qualified management personnel and a training, operational, and maintenance infrastructure that will support adequately the safe conduct of the prospective operation. In short, the air carrier must be able to demonstrate to Transport Canada that it is able to operate the service safely, properly, and in accordance with the prescribed standards and procedures.

After what should be a very rigorous appraisal process, an operating certificate may be granted for the proposed air carrier operation. In addition, Transport Canada may impose special operating limitations upon a carrier; these are included on the face of the operating certificate or within the air carrier's approved operating specifications.

Once issued, the operating certificate can be rescinded or suspended for cause, as detailed in section 704 of the Air Regulations:

> 704. The Minister may cancel or suspend an operating certificate where
>
> (a) the holder of the operating certificate has failed to conduct the commercial air service in a safe and proper manner or to maintain adequately the equipment required in connection therewith;
>
> (b) the operation in respect of which the operating certificate was issued is discontinued; or
>
> (c) the Minister, on reasonable grounds, believes the holder of the operating certificate has contravened
>
> (i) any operations specifications,
>
> (ii) any provision of these Regulations, or
>
> (iii) any order or direction made pursuant to these Regulations.

This certification process should be considered as a very important regulatory function.[1] If the capability of a carrier to perform a given operation is assessed properly at the approval stage, many downstream safety problems can in all probability be avoided.

In pragmatic terms, an air carrier is much more amenable to the suggestions or requirements of the regulator while it is waiting for approval of its operating certificate than after that certificate is granted. Without the operating certificate, the air carrier cannot operate; therefore, there is a large incentive for the carrier to satisfy any and all regulatory requirements imposed upon it. The evidence revealed that the withdrawal or suspension of the operating certificate is considered to be a drastic enforcement tool which the regulator is loath to use. Therefore, while the regulator has the undivided attention of the carrier during the approval stage, the regulator should be extremely vigorous in reviewing the request for an operating certificate or amendment to an operating certificate, and insist that all operational prerequisites be in place before any such licence is granted.

Approval of the Air Ontario F-28 Program

Transport Canada was responsible for assessing Air Ontario's management and operational infrastructure prior to granting it a licence to operate the F-28 aircraft. Transport Canada failed to carry out this responsibility.

Air Ontario made a number of representations and undertakings about the operational infrastructure that was to support the proposed F-28 program in its January 24, 1988, application to amend its operating certificate. Certain facilities and personnel were represented to be in place prior to the commencement of F-28 commercial service. In particular, I note the following:

- There were to be 11 flight operations officers (dispatchers) who would be trained to be familiar with the F-28 aircraft and its systems, with special emphasis on flight planning, performance, and MEL procedures.
- By emphasizing that operations officers would be trained on MEL procedures, it is implied that there would be an MEL in place for use in the operation of the F-28 aircraft.

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[1] The three regulatory functions being certification (approval), inspection (monitoring), and enforcement.

- Air Ontario nominated Captain Claude Castonguay as an air carrier check pilot and described him as the company check pilot to be involved in the first revenue flight of aircraft C-FONF, implying that Captain Castonguay would have an ongoing role in the F-28 program.
- An "adequate spares package" was to be provided as part of the aircraft lease agreement.

Had Transport Canada officials carefully inspected the facilities and personnel in place at Air Ontario prior to the licensing of the F-28 service, using Air Ontario's application as a checklist, they would have discovered that:

- There was no meaningful training of dispatchers in Air Ontario system operations control (SOC) regarding F-28 flight planning, performance, and MEL procedures.
- There was no approved F-28 MEL in place.
- Captain Castonguay had resigned from Air Ontario as of February 29, 1988, less than six weeks after commencing his employment as the F-28 company check pilot, citing that he was not given adequate company support.
- The spares package in place at Air Ontario could not have adequately supported the aircraft C-FONF, particularly given that there was no approved MEL in place.

These and other operational deficiencies should have been remedied prior to the licensing of Air Ontario's F-28 service.

The evidence revealed several flaws in the selection and monitoring, by both Air Ontario and Transport Canada, of the Air Ontario management personnel responsible for the F-28 program. Certainly, it is a fact that management personnel who are unqualified or otherwise unable to perform their delegated tasks will diminish the overall effectiveness of any corporation. The selection of qualified and competent management personnel is particularly important in the aviation industry, in part because of the potential severity of the consequences of mismanagement, and also because of the extensive delegation of flight safety responsibility by Transport Canada to individual air carriers.

For the air transportation system to work, initiatives like the Air Ontario F-28 program must be managed by individuals with sufficient training, experience, and ability. Further, there must be management checks or safeguards within the corporate organization to ensure that if there is a failing on the part of any one manager, other individuals – in particular, more senior managers – will intervene to correct any problems.

The remainder of this chapter will examine the performance of Air Ontario management personnel with direct responsibility over the F-28 program.

The Planning and Implementation of the F-28 Program

The primary responsibility for the day-to-day coordination and implementation of the F-28 Project Plan was that of the project manager, Captain Joseph Deluce. Although the role of the project manager was never formally defined, Captain Deluce was described by Mr Syme, as the prime coordinator of the plan. Mr Syme further stated:

> A. ... In flight operations matters relating to the plan, he would have reported to Bob Nyman. In his coordinating role and facilitating role with respect to the plan outside of flight operations, he interfaced directly with myself.
>
> (Transcript, vol. 98, p. 53)

Mr Syme went on to describe the project manager as a "cross-departmental" facilitator (p. 175), and further:

> A. ... Joe was responsible for communicating to me, from his perspective, when the plan was getting off the rails or when the implementation date – you know, the assessment of the likelihood of the implementation date of the aircraft.
>
> (Transcript, vol. 98, p. 176)

When Captain Deluce became the F-28 chief pilot, he was charged with the additional responsibilities set out as follows in the Air Ontario Flight Operations Manual:

> 3.4 CHIEF PILOT – DUTIES, RESPONSIBILITIES AND AUTHORITY
>
> 1. The Chief Pilot is responsible to the Director of Flight Operations for the safe and efficient operation of Company aircraft, the administration of matters concerning pilots, pilot training, examinations, competency tests, enroute operations and operating limitations of aircraft and crew members.
>
> 2. He will set up such controls and checks to assure that D.O.T. and Company regulations, policies and standards are adhered to and to administer such disciplinary or other action as may be required for any infractions of Company policy or regulations or for failure to meet Company standards.

More specifically he will:

3. Establish such courses of ground school (in cooperation with the Training Manager), aeroplane simulator and flight training as are required to maintain pilot competency, to promote pilots from First Officer to Captain's rank, to convert pilots from one aircraft type to another and to check pilots out on appropriate routes.

4. Establish examinations (in cooperation with the Training Manager, Check Pilots and Training Pilots) that are acceptable to the D.O.T. to serve as tests of knowledge of pilot personnel.

5. Ensure compliance with ANO VII No.'s 2 and 3 in regards to the requirements for pilot proficiency checks, instrument checks, initial and recurrent ground and flight training and examinations.

6. In cooperation with Training and Check Pilots, write and update Standard Operating Procedures Manuals for each aircraft type.

7. Ensure that licensed personnel hold valid licenses, ratings and certificates.

8. Ensure the maintenance of current records on Company pilots, including:
   - personal file
     - employment history with the Company
     - garment purchase summary
     - vacation/L.O.A./sick leave history
     - loan card
     - pay and promotion memo's
     - photocopies of pilot licence, LVC, PPC card, radio licence, immunization record, first aid training etc.
     - warning reports
     - etc.
   - training file
     - training sessions, ground and air
     - etc.
   - training sessions, ground and air
   - check flights
   - examination results
   - flight times
   - information updates (biannually)
   - etc.

9. Ensure that D.O.T. approved CCP authorizations are kept valid.

10. Perform normal line pilot duties; and line checks, PPC's and instrument rides if so authorized.

11. Train and check pilots to assure retention of proficiency for the duties assigned, including:

    - line pilots
    - training pilots
    - check pilots

12. Be responsible for the overall supervision of crew scheduling and routing to assure that work available is equitably assigned to pilots in a manner which will enhance safety, permit planning as far in advance as is possible and which will not exceed D.O.T. or Company limitations of pilot time.

13. Check and approve flight crew expense claims as required.

14. Formulate and distribute information memos as required pertaining to Flight Operations.

15. Be responsible for the supervision of all pilots regarding working conditions, granting of vacation requests, and personnel problems.

16. Conduct initial survey flights of new routes and to establish such enroute limitations, procedures and checks as may be required to conduct safe operations over such routes.

17. Conduct such initial flights on new equipment as to become competent to serve as check pilot on such equipment and to establish procedures and regulations as are required to operate such equipment in service and to train and check out other pilots as may be required to operate such equipment.

18. Maintain a library of appropriate manuals as required by Transport Canada and Company policy, ensuring that amendments are inserted:

    - Flight Operations Manual
    - Crew Member Training Manual
    - Standard Operating Procedures Manuals
    - Aeronautics Act and Air Regulations
    - ANO VII No. 2 and ANO VII No. 3
    - AIP
    - Designated Airspace Handbook
    - Canada Air Pilot
    - L.E. Charts

19. While some of these duties may be delegated to other company personnel, ie., (Chief Training Pilot) the Chief Pilot will maintain overall responsibility.

(Exhibit 146, s. 3.4)

From this lengthy list of duties and responsibilities I note in particular the chief pilot's responsibility for "the safe and efficient operation" of the aircraft, including the writing and updating of standard operating procedures manuals for the F-28 and the formulation and distribution of information pertaining to F-28 flight operations.

The specific shortcomings in the F-28 program that should have been but were not addressed and remedied by Captain Joseph Deluce – as the F-28 project manager and F-28 chief pilot – include:

- the operation of the F-28 aircraft without an approved minimum equipment list;
- the deferral of the maintenance of essential aircraft equipment absent an approved minimum equipment list;
- the operation of the F-28 aircraft without a single standardized aircraft operating manual, with an appropriate amendment service;
- the operation of the F-28 aircraft without standardized operational procedures, disseminated to all relevant operational personnel, regarding the de-icing of F-28 aircraft with a main engine running;
- the operation of the F-28 aircraft without standardized operational procedures, disseminated to all relevant operational personnel, regarding the refuelling of F-28 aircraft with a main engine running;
- the operation of the F-28 aircraft without standardized procedures, disseminated to all relevant operational personnel, to accommodate for the lack of ground-start facilities in Dryden and aircraft operations with an unserviceable auxiliary power unit;
- the operational control of F-28 aircraft by flight operations officers who were inadequately trained generally, and who were inadequately trained specifically with regard to F-28 operating procedures; and
- the operation of the F-28 aircraft without standardized operational procedures, disseminated to all relevant operational personnel, regarding takeoffs from slush-covered runways.

The fact that Captain Deluce did not fulfil certain aspects of his management duties and responsibilities represents a failure in the air transportation system. While a finding of pilot error should only be the starting point in the analysis of an aircraft accident, it is equally true that the identification of the management failings of one air carrier manager should only be the starting point in an examination of the management organization within which that individual worked. In analysing the

failure of Air Ontario management, the following issues were explored in evidence:

- **The Performance of the F-28 Project Manager and F-28 Chief Pilot** What were the duties and responsibilities of this individual who was immediately responsible for the day-to-day operation of the F-28 program? How did he fail to fulfil these duties?

- **The Role of Supervisors** What management safeguards were in place to recognize the difficulty that the F-28 project manager and F-28 chief pilot was experiencing? Why did the supervisors not intervene?

- **The Management Selection Process** To the extent that the individual was not able or qualified to perform his required duties as F-28 project manager and F-28 chief pilot, how and why was he selected for the management position?

The Performance of Captain Joseph Deluce, F-28 Project Manager and Chief Pilot

Captain Joseph Deluce was given a great deal of responsibility in the period from October 1987 until June 1989. On the recommendation of his brother, CEO William Deluce, Captain Joseph Deluce, then a line pilot on the HS-748 aircraft, was selected as the F-28 project manager. He initially assisted chief operating officer Thomas Syme in formulating the first F-28 Project Plan and then, in consultation with managers from the maintenance, flight operations, and marketing departments, he produced the revised F-28 Project Plan of December 28, 1987. He was formally appointed F-28 project manager in early January 1988. As project manager it was his responsibility to coordinate and facilitate the completion of the various tasks on the Project Plan.

While Captain Deluce was coordinating the implementation of the F-28 program, he was also training on the aircraft. To increase his experience on the F-28, he flew 59.2 hours with TimeAir in western Canada. Because of the Air Ontario pilot strike in the spring of 1988, he interrupted his flying with TimeAir to fly Air Ontario HS-748 aircraft in Northern Ontario. Following the pilot strike he became involved in importing from France the first F-28, C-FONF. Many items on the F-28 implementation plan were still outstanding when Air Ontario commenced F-28 commercial service in June 1988. Instead of concentrating his managerial efforts on completing the tasks necessary for the safe and efficient operation of the F-28 – tasks that should have been completed before commercial service began – Captain Deluce was flying the line and training and checking the F-28 pilots. In fact, during the period from

June until September 1988, Captain Deluce logged over 220 hours on the F-28, a normal full-time flying schedule for most commercial pilots.

The most critical period in the F-28 program, in my view, occurred in late 1988. In November 1988, the second F-28, C-FONG, was imported from France. In December 1988 Mr James Morrison reorganized the flight operations department so that Captain Joseph Deluce formally became the F-28 chief pilot. At about the same time, Air Ontario lost its access to the Piedmont/USAir F-28 flight simulator, and Captain Deluce commenced the flight training of Air Ontario crews on the F-28 aircraft in Winnipeg at night. Captain Deluce at this time was wearing many hats, too many in my view. He was the F-28 chief pilot, an F-28 training pilot, an F-28 company check pilot, and the Convair 580 chief pilot. In addition, there were still critical items outstanding from the F-28 implementation plan, and as the F-28 project manager it was still his responsibility to see that they were completed.

The fact that Captain Joseph Deluce was overburdened did not go undetected by his fellow pilots. Captain Erik Hansen, one of Air Ontario's most senior pilots, testified that, in his opinion, Captain Deluce was wearing "too many hats" and that he was spreading himself too thin (Transcript, vol. 94, pp. 118–19). Further, Captain Hansen testified that he spoke with Captain Deluce about these concerns, advising him "you need help" (Transcript, vol. 94, p. 158). Captain Deluce, when asked about his workload during the critical period and about Captain Hansen's comments, admitted that he had "a lot on my plate." He testified as follows:

> A. I can't deny the fact that I was very busy. What can I say? I ... worked very hard. I tried to deal with ... the operation in the best way that I could, and –
> Q. Were you overworked, sir, at that time? Did you have too much on your plate?
> A. Well, that's a difficult question to answer. I guess, if I had to describe it, I would have to talk about the whole process, and –
> Q. In hindsight, do you think that you had too much on your plate, Captain Deluce?
> A. Maybe I should describe how I viewed being taken onto projects .... [I]n taking on any new project or new job, one anticipates having to do a lot of work.
>
> ...
>
> Myself, I usually, when I have taken on a new job, I kind of put in my mind a year's time frame where you're really going to have to put a lot of extra effort into things, and at about that time, you would feel like it would ... you know, you've gone through the learning curves and ... you would be getting on top of things and things would settle down. And that happened with the project itself, and ... at the end of that year, there were

> a few items outstanding before I took the chief pilot's job, but ... they were items that could have been addressed by a new chief pilot or a combination of check pilots.
>
> I took a considerable amount of time off at that point to, you know, re-energize myself ... and to start into the new year with renewed energy, and with the circumstances as they fell ... losing the simulator slot and having to reorganize an airborne training program and to do the training myself and that running through into the end of February and then the accident happening ... and then everything that happened after that, I had a lot on my plate. I admit that.
>
> (Transcript, vol. 114, pp. 30–31)

While the loss of access to the Piedmont/USAir simulator did represent a critical juncture in the Air Ontario F-28 program, the evidence revealed that there were operational problems with the program from the commencement of commercial service in June 1988.

The evidence clearly shows that, throughout the period from early 1988 up to and including March 10, 1989, Captain Joseph Deluce was overburdened by his multiple duties and responsibilities. I make no assessment of Captain Deluce's ability to perform adequately in any one of the multiple positions that he held if unencumbered by other duties. However, it was his clear responsibility to advise his superiors, at an early stage, that he was unable to carry out all of his tasks. This he did not do.

The Role of Senior Flight Operations Managers

Captain Joseph Deluce, as a relatively young, inexperienced manager, took on more responsibility than he could reasonably handle. It is surprising that senior operational managers at Air Ontario did not recognize that Captain Deluce was in some difficulty, that the F-28 program was suffering as a result, and that immediate steps had to be taken to remedy the situation.

I am of the view that a reason for the lax supervision of Captain Joseph Deluce was the fact that the company as a whole was undergoing great change. Managers who should have been scrutinizing the F-28 program were occupied by the management of the newly merged company. As described in the early chapters of this part of the Report, Air Ontario's managerial resources were greatly taxed during the functional merger of the two regional carriers. The divestment of northern operations, the depletion of up to one-third of its employee group, the consolidation of its operation in London, Ontario, the merger of two disparate pilot groups, a lengthy pilot strike, the cultivation of a new relationship with the new controlling shareholder, Air Canada, the

rationalization of its aircraft fleet, and the introduction of a new aircraft type all represented significant challenges to Air Ontario management in the 18 months following the merger.

While management distraction is a partial explanation for the lack of scrutiny of the F-28 program, it appears from the evidence that Captain Deluce was as disinclined to be supervised and to take advice from any source as some of his superiors were disinclined to give advice to him. There were a number of examples of this state of affairs.

When Captain Nyman learned that there were two different aircraft operating manuals, the Piedmont manual and the USAir manual, being used by Air Ontario F-28 pilots, he immediately asked Captain Deluce to place a copy of the Piedmont manual in both F-28s (Transcript, vol. 109, pp. 67–68). This measure could have served as an interim solution – though an inadequate one – pending the completion of the Air Ontario F-28 aircraft operations manual. Neither Captain Nyman nor Captain Deluce did anything to follow up this request.

Captain Robert Perkins, a senior Air Ontario pilot, an F-28 captain, and a F-28 company check pilot,[2] testified that in December 1988 he advised Captain Joseph Deluce that they should either develop their own Air Ontario F-28 operations manual or subscribe to an amendment service for the Piedmont F-28 operations manual (Transcript, vol. 44, p. 94). In fact, Captain Perkins and another Air Ontario pilot, Steven Burton, were enlisted to assist in the production of the F-28 aircraft operating manual. However, no amendment service to the Piedmont manual was ever obtained by Air Ontario, and the Air Ontario F-28 operating procedures manual was not submitted to Transport Canada for approval until June 7, 1989, the same month that Air Ontario discontinued its F-28 service and three months after the crash of C-FONF.

Interestingly, when the Air Ontario director of flight operations, Captain Clifford Sykes, attempted to intervene in the F-28 operations, Captain Deluce responded with vigour. The following excerpt from a post-crash memorandum (dated March 31, 1989) from Captain Deluce to Captain Sykes, his superior, provides a revealing glimpse into their working relationship:

> The second comment I would like to make relates to your comments to other pilots on the operation of the FK28. As Chief Pilot it is very clear to me that I am responsible to the Director of Flight Operations for many things. A large list is contained in the Flight Operations Manual. I'm responsible for setting up standards and monitoring

[2] Captain Perkins was granted "B" authority CCP status on January 30, 1989 (see chapter 20, F-28 Program: Flight Operations Training).

> standard operating procedures with the assistance of the check pilots. These standards can only be maintained if changes warranted come out directly from me. Interference from you and direct communications with crews on SOP type items or systems will ensure a brake [sic] down of the system and lead to many different procedures. I am very interested in any comments you have about what you see on the line but I would appreciate these comments coming directly to me. I will research these items and correct any that need correction and advise you. You are not an experienced F-28 pilot, nor a check pilot, nor a training pilot on that aircraft. Don't be drawn into the trap if [sic] thinking you are and passing on incorrect information. Besides I'm responsible to you to do a job. Help me do it but don't do it for me.
>
> (Exhibit 897)

Captain Deluce properly identified in this memorandum the importance of flight standards and some his duties and responsibilities as chief pilot. However, he failed to mention that, at the date of his memorandum, March 31, 1989, although he was responsible for them, there were still no Air Ontario standard operating procedures in place for the F-28 aircraft. What I find most revealing is the tone Captain Deluce took with his superior. The working relationship reflected in this memorandum does not, in my view, reflect the usual subordinate/superior relationship that one would expect to find in any organization.

It would appear that Captain Joseph Deluce had more influence within Air Ontario than his position on the organization chart would indicate. His direct line supervisors, Captain Nyman, Captain Sykes, and Mr Morrison, seemed unwilling or unable to exert any influence over Captain Joseph Deluce. Indeed, when Captain Deluce was involved in a number of flight safety–related incidents as a line pilot, he appears to have been immune from criticism by his superiors.

Captain Nyman's handling of Captain Deluce's December 15, 1987, HS-748 icing incident is telling (see chapter 24, Flight Safety). After what was a very serious incident, one which could easily have resulted in a serious accident and which was similar to an equally serious icing incident involving Captain Deluce the previous year, Captain Nyman, as the director of flight operations, did nothing to criticize or discipline Captain Deluce.

Captain Nyman's treatment of an incident involving pilot Keith Mills presents an interesting contrast to his treatment of Captain Deluce's incidents. Following an HS-748 aircraft runway-overrun incident at Marathon, Ontario, on May 15, 1988, in which Keith Mills was the captain, Captain Nyman ordered Captain Mills to undergo 50 hours of line indoctrination. In meting out this discipline, Captain Nyman advised Captain Mills that, had it not been for his previously good

record, the discipline would have been even more severe, including a period of suspension without pay. In his testimony Captain Nyman acknowledged that, as director of flight operations, his disciplinary response to an incident includes a consideration of the pilot's safety record. Given that testimony by Captain Nyman, it is indeed curious that Captain Deluce's two virtually identical icing incidents, involving potential loss of life, failed to attract any discipline at all.

Not only was Captain Deluce not disciplined for his second icing incident, but, when he was considered for and granted the position of F-28 chief pilot, his incident/accident record was not even taken into account. These incidents should have alerted the company's senior managers that Captain Deluce, at the very least, may not have been capable, as the F-28 chief pilot, of commanding the respect of F-28 flight crews on questions of flight safety.

Some months following his appointment as F-28 chief pilot, Captain Deluce was implicated in an anonymous incident report involving a destabilized approach of an F-28 aircraft. The alleged incident, which was reported to have occurred at Pearson International Airport on April 4, 1989, 25 days after the Dryden crash, was brought to the attention of the vice-president of flight operations, James Morrison. Mr Morrison, in examining the alleged incident, simply accepted Captain Deluce's denials thereof without further investigation. Given Captain Deluce's previous history, Mr Morrison should have investigated the matter thoroughly. When questioned on his own handling of this anonymous incident report, Mr Morrison criticized flight safety officer Ronald Stewart for performing an inadequate investigation. However, it is not the role of a flight safety officer to investigate incidents for the purposes of discipline. Such investigations are more appropriately conducted by flight operations management personnel, like the chief pilot or the director of flight operations. Mr Morrison was certainly able to direct an investigation into this matter, yet he chose not to.

In spite of frequent assertions by Captain Nyman and other members of Air Ontario senior management that Captain Joseph Deluce was treated like any other pilot, the preponderance of evidence suggests otherwise. I am of the view that, given Captain Deluce's flying record, had he not been a member of the family that owned and operated Air Ontario, it is unlikely that he would have been selected as the F-28 chief pilot and F-28 project manager – two critical management positions.

Air Ontario Management Selection: "Best Man for the Job"

It is the responsibility of any chief executive officer to determine the needs of his company and to take appropriate steps to meet these needs.

Senior management selection is one of the most important responsibilities of the CEO.

Although the Air Ontario president and CEO, Mr William Deluce, delegated more authority to others in the management of Air Ontario Inc. than he had in the earlier history of his company, he testified that he was still active in selecting his managers. When asked about the basis of his selection of his senior managers, Mr William Deluce testified that his sole criterion was to appoint "the best man for the job" (Transcript, vol. 151, p. 175). If this criterion was in fact followed, then Mr William Deluce was doing what chief executive officers are expected to do: exercise his judgement in the selection of his managers.

There was much testimony regarding the criteria for the selection of managers at Air Ontario. In particular, questioning centred on the selection of Deluce family members and former Austin Airways personnel to key management positions.

Mr William Deluce rarely went outside the sphere of his family companies in search of new management candidates, preferring instead to promote managers from within his company. In his selection of operational managers, I find from the evidence that there was, in the merged company, Air Ontario Inc., a definite preference for former Austin Airways personnel – individuals with whom Mr Deluce had a long familiarity – as opposed to former Air Ontario Limited personnel. In my view there is nothing inherently wrong with this approach to the selection of managers, as long as the selected individuals perform effectively as managers.

Mr Syme and Mr William Rowe both described their own concerns regarding the possibility of nepotism – "undue favour from holder of patronage to relatives" and "favouritism shown to relatives in conferring offices or privileges" (Concise Oxford Dictionary) – being the basis of some management selections. Mr Rowe, the Air Canada representative on the Air Ontario board of directors, stated that he did not want there to be a perception that Air Canada supported nepotism in management selection. Further, he expressed Air Canada's concern that the long-term senior management at Air Ontario be secured and not be merely dependent on the Deluce family. Mr Syme, though denying any nepotism in management selection, testified that he was aware of resentment among junior managers and employees who felt nepotism was a basis for management selection at Air Ontario.

Nepotism is often viewed as a pejorative term, and questioning of Air Ontario management witnesses in this regard may have implied that there was something inherently wrong in Mr William Deluce sponsoring the appointment of his brothers Bruce and Joseph to key management positions. Again, I am of the view that there is nothing inherently wrong in the selection of family members to significant management positions,

as long as those selected are the best individuals available to fill the position and have not been shown undue favour. Certainly a chief executive officer must be given discretion to manage his company in the manner that he sees fit. A CEO is accountable to his shareholders by way of his board of directors. If a board of directors is unhappy with the performance of the CEO, it can, at least in theory, take appropriate action, including the CEO's removal. Such removal may in actual practice be difficult to accomplish where the CEO holds a substantial interest in or is in a position to exercise control of a company.

What is more important than the issue of nepotism is the effectiveness of Air Ontario management as it relates to the crash of flight 1363. After an extensive review of the evidence, I find that the deficiencies in the F-28 program were ultimately attributable to bad management. There can be no doubt that those managers responsible for the Air Ontario F-28 program were not discharging their duties and responsibilities effectively.

Captain Joseph Deluce was the manager principally responsible for the implementation of the F-28 program and the ongoing F-28 operation. The question to be answered, therefore, is whether Captain Deluce was the best man for the job of F-28 project manager and chief pilot. To answer the question, the circumstances surrounding his selection should be considered.

In the autumn of 1987, when the F-28 program was in its earliest planning stages, CEO William Deluce suggested to group vice-president Thomas Syme that Joseph Deluce be made the project manager of the F-28 program. Having regard to the evidence surrounding this management selection, I am satisfied that Joseph Deluce was appointed project manager without Air Ontario management having considered other candidates or critically discussing the appointment.

With the reorganization of the flight operations department in 1988, there was a formal posting of the position of F-28 chief pilot. Initially, Captain Joseph Deluce was the only applicant for the position. Somewhat surprisingly, he encouraged Captain Erik Hansen, a former Air Ontario Limited pilot with far more experience than Captain Deluce, also to apply for the position. Interviews were conducted of the two candidates by the vice-president of flight operations, James Morrison, the director of flight operations, Robert Nyman, and the vice-president of human resources and corporate affairs, Jack McCann. Captain Joseph Deluce was selected as the chief pilot for the F-28. It is significant that while Joseph Deluce was performing the function of F-28 chief pilot from as early as July 1988,[3] there was no formal posting for the position until August 1988.

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[3] Thomas Syme in Transcript vol. 99 at p. 148

As the F-28 project manager, Captain Deluce was to coordinate operational and commercial aspects of the plan. In an undated status report written by him in late June or early July 1988 – after approximately one month of F-28 commercial service – Captain Deluce identified a number of F-28 program requirements that had not yet been completed (Exhibit 807). Included among these outstanding items were:

- Air Ontario F-28 training syllabus
- F-28 training manual
- F-28 standard operating procedures manual (SOPs)
- Securing appropriate F-28 spares

As has been noted elsewhere, two of these four items (completing the F-28 SOPs manual and securing appropriate spares), in addition to many others, were in fact still outstanding at the time that Air Ontario discontinued F-28 service, approximately one year later.

In the same status report, the F-28 project manager, Captain Joseph Deluce, pointed to scheduling reliability as the single most important problem with the F-28 program at that early stage. Inexperienced flight crews, low levels of expertise among maintenance personnel, and insufficient spares were identified as causing the reliability problems. To overcome the problems of inexperience and lack of expertise, Captain Deluce suggested that aircraft utilization, which he described as "poor," be significantly increased. He wrote:

> The second important problem with the F-28 is its poor utilization. The F-28 is presently only being scheduled for 1300 hours air time and there are approximately 200 additional hours of air time developed in the charter side of the operation. I can appreciate being reluctant to increase utilization until reliability improves but there should be some definite plans to increase it. The more experience we have operating the aircraft, the faster our learning curve and the more reliable our F-28 operation will become.
>
> Another factor of importance is that our economic analysis was based on much higher utilization and will be severely hampered by lower utilization.
>
> ...
>
> Increased utilization with adequate backup is also an important recommendation. It will speed up both flight crew and maintenance learning process. It will spread our lease costs over more flying and thereby decrease our cost of operations/hour.
>
> (Exhibit 807)

Captain Deluce was suggesting that, if they did not fly the F-28 more, their profit projections would not be realized. Further, he was suggesting that, because there was a lack of experience and expertise on the F-28,

they should fly the plane more to gain experience. I find these two suggestions to be very troublesome. One would expect that any financial pressure would come from the commercial side of Air Ontario management, not the operational side. I find it curious that an individual who should have been concentrating on the operational deficiencies in the program, which were numerous, should be so concerned with meeting the company's profit projections for the aircraft. In the normal course one would expect, and rely upon, operational management to advocate conservative operational practice in the face of pressures from the financial side of the organization. In this case, in fact, the roles were reversed: the more conservative judgement of Mr Thomas Syme carried the day and the more restrictive F-28 utilization continued.

I find it ironic that Mr Syme, who had no real operational experience and who personally generated the financial projections for the F-28 acquisition, was directing Captain Joseph Deluce, described as the de facto chief pilot at this point, to take a more cautious and conservative approach to F-28 operations.

It has been demonstrated throughout this part of the Report that, when Captain Deluce was unchecked in his supervision of the F-28 program, pilots were left to determine their own standards and operational practices, and prudence and conservatism were often lost in the pilots' collective enthusiasm to see their first jet operation succeed.

Regulatory Requirements

ANO Series VII, No. 2, section 5, requires that air carriers have qualified managerial personnel employed on a full-time basis in the positions of managing director, director of flight operations, director of maintenance and engineering, chief pilot, and chief maintenance inspector or their equivalent. The ANO does not detail any qualifications for the director of flight operations or the director of maintenance and engineering. Instead, there is simply a statement that the individuals filling these management positions must have qualifications, background, and experience which "are satisfactory to the Director [of Civil Aviation]."[4] There is no further elaboration as to what is a "satisfactory" standard. The role of the director of flight operations is similarly undefined.[5]

Only marginally more helpful are the criteria for chief pilots and chief inspectors of maintenance. These criteria require, in essence, that chief pilots and chief inspectors be licensed to operate or maintain large aircraft, that they have knowledge of the operation of their air carrier,

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[4] ANO Series VII, No. 2, s. 6(1)

[5] Passing reference is made to the director of flight operations position in ANO Series VII, No. 2, section 15, in the context of operational control and flight watch.

and that they have knowledge of their regulatory obligations "necessary for the proper performance of [their] duties." Neither the Air Regulations nor the ANOs specify the role or duties of the chief pilot and chief inspector.

Of the named mandatory managerial positions, the most enigmatic is that of the managing director. This position is undefined, but, given the structure of section 5 of ANO Series VII, No. 2, it can be inferred that the managing director is to perform some sort of senior management supervision of both the maintenance and the flight operations departments. Curiously, the reference in section 5(1)(a) is the only reference in the entire ANO Series VII, No. 2, to the managing director position. There is no definition of the role of the managing director, nor is there a statement of required qualifications. If the regulator is of the view that such a position is to be required of all Canadian air carriers, then the position should be defined in a meaningful way.[6]

Alternatively, if no function or qualification is to be specified for the managing director position, the reference in the ANO to the position should be eliminated. This criticism, though directed at only one example of vagueness in the ANO, is applicable to the entire aviation regulatory regime. Time and again I heard evidence of vague and imprecise regulation which defied meaningful interpretation. Such regulation serves no useful purpose: it provides no assistance to the good faith operator who seeks to understand what the regulator expects of it; and it is similarly unhelpful to the front-line Transport Canada inspector who seeks to monitor air carrier operations and to enforce minimum standards.

I am of the view that the ANO, in its present form, has no meaningful standard by which air carrier management is to be scrutinized and approved. This problem with the ANO was acknowledged by some of the Transport Canada witnesses who appeared before me, including Mr Neale MacGregor, Transport Canada regional manager air carrier operations in Pacific Region. Mr MacGregor testified that, in the absence of precise regulation or direction from Transport Canada headquarters, his group, on its own initiative, began interviewing chief pilot candidates before approving them:

> A. ... I think we need to be tougher with management ... We implemented a system whereby we do reject chief pilots, even though the order doesn't say we can. We do.
> Q. Which order are you referring to?

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[6] The Canadian regulatory regime will be discussed at length in chapter 34, Operating Rules and Legislation.

A. The Air Nav Orders, 2, 3 and 6, that lay out the requirements for chief pilots.

...

A. ... We do have the candidate for chief pilot and operations manager come in. At least two inspectors interview the individual. If I'm present, I also take part. And we also give them an exam and we've rejected quite a few. And I think we have to be tougher in that area.

Q. What characteristics are you –

A. Get responsible people in those positions.

Q. ... What characteristics are you looking for when you interview for chief pilots?

A. Well, I think it has to be a very sound individual, someone who has a good knowledge of aviation and sound practices. Somebody has a backbone not to knuckle under to management in every instance.

We do spell out that it's a job that we are approving. If you foul up, don't ever look for that authority again, no matter what carrier you are with.

We look for a good solid background in aviation and in the individual himself. If he has had violations against him, I don't believe that person should wear a collar forever, but he has to be accounted for. He is accountable.

(Transcript, vol. 141, pp. 78–79)

While Mr MacGregor is to be commended for his initiative in identifying a deficiency in the ANO and attempting to rectify the deficiency by way of internal regional policy, I am of the view that this ad hoc type of solution to the problem of imprecise regulations is altogether undesirable and unacceptable. It is the responsibility of Transport Canada senior management at headquarters, not individual regional managers, to establish regulatory standards of universal application. Without leadership from Transport Canada senior headquarters management, an air carrier operating in good faith would be vulnerable to an unfair application of idiosyncratic standards at the regional level. The acceptability of an individual candidate for chief pilot could, for example, vary greatly from region to region or inspector to inspector.

Transport Canada's standards for the selection of air carrier management are clearly deficient; the method by which Transport Canada applies these standards is equally lacking. Regardless of the deficiencies of ANO Series VII, No. 2, the requirement that the qualifications, background, and experience of management candidates be satisfactory to the director must nevertheless be applied.

Air Ontario described the structure of its flight operations management, and the positions involved, in its Flight Operations Manual, which

was submitted for regulatory approval in September 1987, and finally approved in February 1988.[7] In the manual, the duties and responsibilities for the director of flight operations, the chief pilot, and indeed all operational positions – except the vice-president of operations – are defined as per the requirement of the ANO. Presumably, the qualifications of the individuals performing the flight operations management functions were appropriately reviewed by Transport Canada and found to be satisfactory.

Further evidence of a regulatory review of the Air Ontario management is seen in the Air Ontario application to add the F-28 to its operating certificate. The application, dated January 24, 1988, lists four supervisory managers with a notation that their résumés were on file with Transport Canada. Again, because the Air Ontario operating certificate was amended to include the F-28 aircraft in June 1988, presumably the qualifications of the named supervisory managers were scrutinized and found to be acceptable.

Similarly, in November 1988, when Captain Joseph Deluce formally became the F-28 chief pilot, his qualifications were submitted to Transport Canada for review. In this résumé, which was signed by Captain Joseph Deluce and Mr James Morrison, Air Ontario vice-president of flight operations, there is a statement that the chief pilot nominee, Captain Joseph Deluce, is suitable for the duties of chief pilot as laid out in the Air Ontario operations manual and that he meets the requirements set out in schedule A to ANO Series VII, No. 2.

These were the only examples cited at this Inquiry of a Transport Canada review of the management personnel requirements of Part I of ANO Series VII, No. 2.

On the basis of the evidence, I would have to say that there are deficiencies in both the substance of the ANO criteria for management and the method of review and enforcement of the criteria. To reiterate my earlier comments, the ANO Series VII, No. 2, management criteria are deficient because the ANO does not adequately define, in function and qualification, the required management positions.

It is the responsibility of Transport Canada headquarters to promulgate comprehensive, well-defined operational standards, including standards for operational managers.

Mr Syme testified that his principal indicator of the F-28 program being on track was the successful amendment of Air Ontario's operating certificate. Mr Syme's evidence suggests that, for him, the approval of the regulator was the external check he relied upon. Having reviewed the Air Ontario F-28 program and the role of Transport Canada in

[7] See chapter 32, Audit Program, for a description of the circumstances surrounding the delay in manual approval.

licensing the F-28 operation, notwithstanding several material deficiencies, I am of the opinion that the reliance of Mr Syme, and indeed the reliance of the travelling public, on Transport Canada to provide an external check and assure a level of safety and integrity of air carrier operation was misplaced.

Findings

Transport Canada's Review of the Air Ontario F-28 Program

- The air carrier certification process is a very important Transport Canada regulatory function which, if properly performed, provides the opportunity for the regulator to interdict, at the approval stage, potential safety problems.

- Transport Canada should have withheld the necessary regulatory approval of the Air Ontario application for amendment of its operating certificate to include the F-28 aircraft until all operational prerequisites were in place at Air Ontario.

- The review by Transport Canada of Air Ontario's application for an amendment of its operating certificate to include the F-28 aircraft was wholly inadequate.

- Some of the material representations made in Air Ontario's application in January 1988 for an amendment to its operating certificate to include the F-28 aircraft were no longer valid in June 1988 when F-28 commercial service commenced. This fact went undetected by Transport Canada.

- The regular inspection and audit functions of Transport Canada should have detected the material discrepancies between what was represented in Air Ontario's application for the operating certificate amendment and that which was actually in place at the air carrier when commercial F-28 service commenced in June 1988 and thereafter.

- Air Navigation Order Series VII, No. 2, does not adequately describe the qualifications, duties, and responsibilities of the mandatory air carrier management positions of managing director, director of flight operations, director of maintenance, chief pilot, and chief inspector.

The treatment of these positions in ANO Series VII, No. 2, is so ill-defined and vague as to provide little meaningful assistance or guidance to either the regulator or the air carrier.

Air Ontario Management Supervision of the F-28 Program

- It was the duty of the Air Ontario senior management to ensure that the implementation and operation of the F-28 program under the direction of Captain Joseph Deluce, as the F-28 project manager, was properly monitored and supervised.

- The senior management of Air Ontario failed to supervise properly and effectively the implementation and operation of the Air Ontario F-28 program under the direction of the F-28 project manager, Captain Joseph Deluce, as it was their duty to do.

- The lack of proper monitoring and supervision of the F-28 program by senior Air Ontario management contributed to the deterioration of that program's operational standards to unacceptable levels.

- Of the senior Air Ontario management personnel who testified, Mr William Deluce, Mr Thomas Syme, Mr James Morrison, Mr Kenneth Bittle, Captain Robert Nyman, and Captain Joseph Deluce were the Air Ontario senior managers principally responsible for the Air Ontario operation in general and the F-28 program specifically.

- As the F-28 project manager and F-28 chief pilot, Captain Joseph Deluce was the manager having direct day-to-day responsibility for the implementation and operation of the F-28 program. The deficiencies noted in the F-28 program reflect poorly upon his performance as the responsible manager.

- The demonstrated deficiencies in the Air Ontario F-28 operation were, at least in part, attributable to the lack of a program manager possessing substantial experience on the F-28 aircraft and to ineffective management of the program.

- The senior management of Air Ontario did not exercise good judgement in allowing the obvious overburdening of its F-28 program manager, Captain Joseph Deluce, with several other onerous and concurrent responsibilities, including those of F-28 chief pilot, F-28 training pilot, F-28 company check pilot, Convair 580 chief pilot, and F-28 line pilot.

- The merit principle was not always the primary criterion for management selection at Air Ontario. It is a compelling inference from the evidence that Mr Bruce Deluce and Mr Joseph Deluce were selected for key Air Ontario management positions, in part because they were members of the family which had a significant ownership interest in the company. Certainly an ownership interest should not disqualify an individual from management positions within an airline; however, the merit principle should be one of the primary hiring criteria.

- The dislocation among both the employee and management groups at Air Ontario, in the period following the merger of Air Ontario Limited and Austin Airways Limited, and the demands upon senior management created by the merging of the two disparate air carrier operations contributed to the poor management and supervision of the F-28 program.

- The lack of senior management supervision of the F-28 program was partially attributable to senior management involvement with other pressing concerns, and partially to an apparent unwillingness or inability on the part of senior Air Ontario management to scrutinize the performance of its F-28 program manager.

- Captain Joseph Deluce, as the F-28 program manager, was as unwilling to accept advice from his management supervisors as they were unwilling or unable to exert any influence over him.

- The F-28 project manager, Captain Joseph Deluce, although clearly a well-intentioned individual, ought to have recognized his own human limitations and not allowed himself to become so overburdened with multiple responsibilities that he became overwhelmed by them, as indeed occurred.

- Air Ontario was not ready in June 1988 to put the F-28 aircraft into service as a public carrier.

RECOMMENDATIONS

It is recommended:

MCR 104 That Transport Canada ensure that Air Navigation Order Series VII, No. 2, section 5, be amended to provide a clear statement of the duties, responsibilities, and qualifications for all air carrier management positions set out therein.

MCR 105 That Transport Canada develop standard criteria for the qualifications of all air carrier management positions set out in Air Navigation Order Series VII, No. 2, section 5. Such criteria should include consideration of the following attributes of the respective management candidates:

- aviation and management experience;
- flying experience;
- professional licences, such as aircraft maintenance engineer or airline transport rating;
- incident and occurrence record;
- knowledge of the *Aeronautics Act*, Air Regulations, and Air Navigation Orders, including air carrier certification requirements and procedures; and
- knowledge of the appropriate air carrier manuals necessary for proper performance of duties and responsibilities.

MCR 106 That Transport Canada ensure that, once standard criteria referred to in MCR 105 are established and published, all air carrier management candidate approvals be subject to such criteria being fully satisfied.

MCR 107 That Transport Canada ensure the ongoing and adequate surveillance and monitoring of new aircraft implementation programs by Canadian air carriers.

MCR 108 That Transport Canada proffer for enactment legislation imposing upon an air carrier concurrent responsibility with the pilot-in-command for the safe and proper crewing, dispatch, and conduct of a flight over which the air carrier exercises any degree of operational control. (The adoption of the United States Federal Aviation Regulation 121 would address this area of concern.)

MCR 109 That Transport Canada ensure that the investigation of any violation of the Air Regulations or Air Navigation Orders committed by an air carrier pilot or an aircraft maintenance engineer include an examination of the air carrier's contribution to the circumstances or environment that may have led to such violation. Where such an investigation reveals that the air carrier's contribution was significant, appropriate and parallel enforcement action should be taken against the air carrier as well as against the individual.

26 THE ROLE OF AIR CANADA: PARENT/SUBSIDIARY IMPLICATIONS

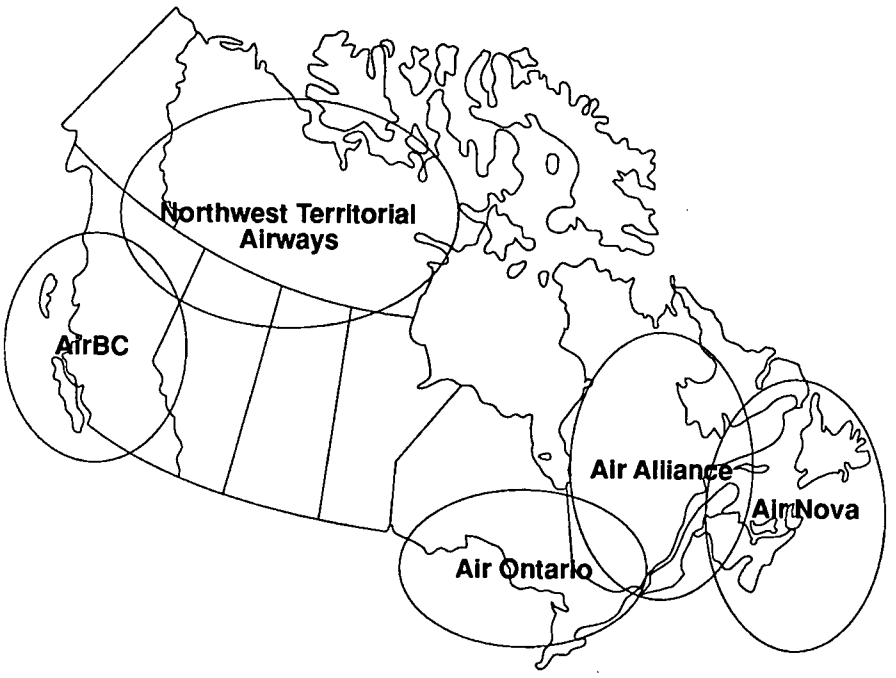
One of the focal points of aviation accident investigative scrutiny is the management of the air carrier under whose operational control the aircraft was being flown at the time of the accident. A proper assessment of the operational environment surrounding the Dryden accident required that the investigation go beyond the management of Air Ontario Inc., the operator immediately involved. A controlling interest in Air Ontario is, and was on March 10, 1989, owned by Air Canada. More significantly, Air Ontario's corporate vision, in large measure, was to serve the competitive requirements of Air Canada which were heightened and refocused by the deregulation of the Canadian airline industry. Further, Air Ontario was marketed as part of Air Canada's transportation network. For these reasons, I felt it necessary to review the respective roles of Air Canada and Air Ontario management as part of a system-failure investigation of the Dryden accident.

Air Canada is Canada's largest airline. According to its 1990 Annual Report, Air Canada's passenger route network offers scheduled service to 24 North American cities. Through its domestic connector carriers, another 57 Canadian communities and 12 cities in the United States are linked to the Air Canada network. Further, 26 cities in Europe and the Caribbean are served by Air Canada. Air Canada holds equity interest, directly or indirectly, in five Canadian regional airlines: AirBC, Northwest Territorial Airways, Air Ontario, Air Alliance, and Air Nova (figure 26-1).

A great deal of evidence was heard about the commercial rationale behind the new Air Canada/Air Ontario parent/subsidiary relationship and how Air Canada management set about marketing Air Ontario as being part of Air Canada's transportation network. The evidence also revealed that these initiatives were not in any way directed towards verifying and monitoring the operational procedures and flight safety standards of its new subsidiary. On the contrary, Air Canada deliberately maintained its corporate distance from the operational end of Air Ontario.

Air Canada's lack of involvement in the operational end of Air Ontario allowed Air Ontario to operate, in some instances, to lower

Figure 26-1 Air Canada Connector Carriers



levels of flight safety than those existing within Air Canada, notwithstanding the significant amount of marketing energy expended to convince the travelling public otherwise. The evidence regarding these different safety levels therefore raises the question whether Air Canada, as a licensed air carrier having a majority interest in and effective control of a feeder airline, and marketing the feeder airline as part of its own system, had any obligation to take a more active role with Air Ontario operations.

I would stress that my reference to the term "obligation" is not to any specific regulatory or legal obligation on the part of Air Canada to assume responsibility for Air Ontario's operational procedures. Despite Air Canada's majority interest, the fact is that Air Ontario operated as a distinct legal entity under its own operating certificate. Similarly, Air Ontario's relationship with the regulator was direct and independent of Air Canada. My reference is, rather, to an obligation based on common sense and corporate integrity. I must say I found it neither sensible nor forthright that Air Canada expended virtually none of its operational

expertise on Air Ontario's operations while portraying that operation to the public as part of its own.

Particularly offensive to this sense of obligation, and specifically related to this Inquiry, was the lack of application of Air Canada's extensive expertise in scheduled jet transport operations to the fledgling Air Ontario F-28 program. The evidence disclosed that Air Ontario's management had virtually no experience in this type of operation, a fact of which Air Canada was or should have been aware.

Air Canada management witnesses offered explanations for this lack of operational involvement that were founded on a variety of internal corporate concerns. I have no reason to question either the sincerity of the explanations or the legitimacy of the concerns. However, I did find them at odds with Air Canada's professed commitment to the primacy of flight safety, as expressed in the following excerpt from the evidence of Mr William Rowe, an Air Canada vice-president and representative on Air Ontario's board of directors:

> A. ... You must understand, Counsel, and I'm sure you do, that the reputation for safety and concern for safety is paramount in the operation of an airline. There is no permissiveness in that regard.
>
> (Transcript, vol. 121, p. 108)

How the professed concern for flight safety appears to have become inappropriately subordinated to other corporate ends is addressed in this chapter. A full understanding requires a review of the options that were open to the management of Air Canada at the time of the deregulation of the airline industry and of the choices that were taken. The testimony surrounding the corporate decisions taken by Air Canada vis-à-vis Air Ontario also contains, in my view, an interesting chapter of Canadian aviation history.

The Coming of Deregulation

By the early 1980s it was becoming clear to the management of Air Canada and other carriers that the Canadian government was contemplating the adoption of a policy that would largely deregulate the Canadian airline industry. As a result of observation of the prior United States experience with deregulation it was also clear that, once implemented, any such policy would significantly affect the industry's commercial and operational parameters and, in turn, the competitive position of Air Canada and other carriers.

While endorsed by Air Canada, deregulation, introduced by the Canadian government in 1985, would require hard management

decisions to maintain and perhaps enhance the corporation's share of the Canadian market in competition with this country's other major carriers. As stated, my present concern is with the effect of these management decisions, made to satisfy new competitive demands, on operational aspects of the commercial air transportation system.

An important point to note at the outset is that the policy of deregulation was to apply only to the commercial or "marketplace" side of the industry and not to the operational side. Transport Canada was to maintain its regulatory responsibility over the safety of air transportation. That is, the licensing of pilots and aircraft maintenance engineers, the granting of operating certificates, the certification of aircraft types, and all of the traditional safety-related functions of the regulators were to remain the responsibility of Transport Canada. It was, in short, the government's intention that safety obligations were not to be compromised under the new policy (see chapter 29, Economic Deregulation and Deficit Reduction).

To what degree was this non-compromise of safety possible within the new regime? More precisely, was it realistic to expect that when the commercial side of a heavily regulated industry was detached from the overall regulatory framework, the still-regulated operational side would remain unaffected? To put this question into context, a brief description of the operation of the old commercially regulated regime and the forces acting for change follows.

The Regulated versus the Deregulated Aviation Industry

In the commercially regulated regime that existed prior to 1985, it was generally felt that, along with the application of operational regulations and constraints on carriers, the regulators should grant to the carriers a degree of monopoly protection to ensure a more stable marketplace within the airline industry. The principal method by which this protection could be assured was by granting a measure of exclusivity of operation over licensed routes or markets. In turn, the principal method of assuring exclusivity was by putting strictures on access to these markets by would-be competitors.

Prior to deregulation in Canada, carriers wishing to compete with an existing licence holder for the right to provide a commercial air service on a particular route could apply to the regulator for a licence to do so. However, the applicant would be under an onus to prove to the commercial regulators that its proposed service met the test of "public convenience and necessity" in order to be granted a licence. Needless to say, any existing licence holder for the same service could oppose such applications, which, in turn, often meant lengthy and expensive regula-

tory hearings. The vigour of the opposition to new licence applications was generally commensurate with the profitability of the service in question. Indeed, a more expeditious method of establishing or expanding a commercial air service was simply to purchase the carrier already holding the desired licences.[1]

Mr Rowe described how a route came to be serviced under the old system:

> A. Well, under a regulated environment, one has to apply for a licence to fly a particular route, that is, between pairs of cities or multiple pairs, as the case might be.
>
> That was regulated by a transport commission in Ottawa, to which one applied. One had to show the need for, demonstrate the need for, the service itself and your ability to actually take the service on.
>
> Often, this took quite a political-type role, because the communities themselves had a vested interest in the service. If there was no service previously, obviously, there would be quite strong pressures by those communities to get a service and, hence, a very strong support. If there was existing service there, there might be some opposition because of worries of diminishing the existing carriers' service, if it was deemed to be satisfactory by the communities themselves.
>
> So there was quite a play – interplay, both on the commercial side, that is, looking at the viability of the routes themselves, as well as considerable political pressure by both community – by the communities involved.
>
> (Transcript, vol. 121, pp. 15–16)

In a regulated environment an objective of carriers is to ensure marketplace stability on the economically attractive routes. An objective of the regulator is to provide adequate routes for smaller communities.

Smaller communities, even in a regime of regulated fares, often did not provide adequate "load factors" to make them economically attractive to larger carriers like Air Canada. This load-factor problem intensified proportionately as larger jet aircraft were forced to compete with smaller commuter aircraft. To the political leaders in these smaller communities, however, adequate air transportation service was viewed as essential to economic growth and, consequently, they would apply pressure to achieve it. As might by expected, adequate service became

[1] As can be seen in chapter 13, Corporate History, this was the method chosen by the Deluce family to transform their original holdings in White River Air Services to the largest air transportation network in Northern Ontario.

synonymous with jet service – and, ideally, from the community point of view, Air Canada jet service. Mr Rowe explained the problem:

> A. It became apparent about this time that there was increasing pressure by a number of communities for service ... airline service, for economic development. It became almost a tenet of economic development that airline service was an absolute essential ingredient.
>
> Simultaneous with that, the ... use of larger aircraft precluded frequency of service to an area, because you were using a large aircraft on a very small population base, and, hence, at one time when we may have had seven services to a particular spot with a smaller aircraft, as that aircraft was phased out and larger ones phased in, the service frequency fell quite markedly.
>
> It also became, of course, more expensive on shorter-haul routes to use larger aircraft and jet aircraft, in particular. And, simultaneously, there was this ... pressure for economic development, with the airline being the ingredient itself.
>
> (Transcript, vol. 121, pp. 24–25)

This sensitivity to the jet bias of smaller communities carried over after the inception of deregulation and became a competitive factor, as in the marketing considerations behind the choice by Air Ontario of the F-28. Mr Thomas Syme, chief operating officer of Air Ontario, was asked to expand on the considerations contained in the F-28 acquisition proposal:

> Q. "In addition, acquisition of F-28 aircraft by Air Ontario presents certain longer-term benefits to Air Canada in its route rationalization efforts. Air Canada's reduction in frequency or even eventual withdrawal from certain markets in Ontario would be far more palatable in both a commercial and political sense if Air Ontario could offer a mixed jet/turboprop replacement service."
>
> Could you elaborate upon that particular aspect of the acquisition proposal for us?
>
> A. I guess the underlying issue there is that at that time, there existed a ... a fairly strong bias in the market-place for jet equipment over turboprop equipment. And ... the statement just reflects that.
>
> Q. In particular, what is meant by political sense? What are the political considerations?
>
> A. The airline industry seems to be one that attracts a lot of political attention. And as Air Canada pulled out of markets in northern Ontario, that was of great interest to the local politicians.

> And one of the issues that they raised was the loss of jet service, and what is being suggested here, that if we are able to offer alternate jet service, that that will thereby reduce the political sensitivity.
>
> (Transcript, vol. 98, pp. 135–36)

In the regulated environment, when the servicing of marginal markets with existing equipment proved to be an economic strain on Air Canada, a process of "cross-subsidization" was employed. Mr Rowe explained:

> Q. ... Was there any kind of subsidy given to Air Canada under the old regulated environment if indeed the politicians deemed that a flight from Sudbury to Toronto was necessary?
>
> A. No, not that I'm aware of, Counsel. There was a formula – or I shouldn't use the word "formula." There was a methodology of cross-subsidization. In other words, carriers, trunk carriers, such as ourselves, were granted either exclusivity or rights with some limitations to rather lucrative routes, and it was generally expected that we would use ... the proceeds from those routes to cross-subsidize less economic routes.
>
> And it was a principle, I suppose, which the airline industry grew up in a regulated environment. It was one of the principles of regulated environment, cross-subsidization.
>
> (Transcript, vol. 121, pp. 19–20)

By the decade of the 1980s this degree of commercial regulation was widely viewed as being economically counter-productive and archaic in a mature industry. By adopting the policy of deregulation, the government hoped to achieve an efficient allocation of resources within the airline industry through the mechanism of a more unfettered marketplace. The expectation was that increased competition would result in lower fares for the travelling public. One of the principal means employed to achieve this end was to reduce the regulatory constraints on carriers that wanted to establish a commercial air service.

Under the new policy, instead of the former requirement to establish "public convenience and necessity," an applicant seeking to operate a commercial air service had only to show that the carrier was "fit, willing and able" to service a particular market. In essence, a carrier was now to establish to the satisfaction of Transport Canada that it was properly insured and could operate safely. From a number of perspectives, deregulation was going to represent a substantial change in the airline industry.

The Impact of Deregulation

Existing airlines, large and small, were faced with the prospect of

altering their operating and marketing strategies significantly in order to accommodate the change from a regulated to a deregulated marketplace.

Two features of the new commercial environment had an impact on Air Canada. First, its relatively large equipment and high unit labour costs would result in some of its already marginally economic routes to smaller communities becoming even less tenable. With open access and unregulated fares now available on the economically attractive routes, Air Canada's ability to maintain the level of profitability it had enjoyed under the protection of a regulated environment was in doubt. Without these protected proceeds from the more lucrative routes, the ability to provide cross-subsidization to less profitable routes would similarly be gone. These routes would be lost to smaller carriers, which could now compete openly and, with smaller equipment, could accommodate the lower, now unsubsidized, load factors.

At the heart of this competitive advantage enjoyed by the newer carriers was their ability to offer more frequent service to less populous markets through the use of smaller equipment. With fewer seats, the smaller aircraft could operate closer to capacity more often than the larger Air Canada jets.

In the world of airline marketing, according to Mr Rowe, "frequency always wins." His evidence on the topic was helpful in understanding the trunk airline's dilemma:

> A. ... Certainly the advent of additional competition on prime routes, the ... larger and more expensive aircraft entering the fleet, made it quite evident that frequency of service to smaller communities simply could not be provided by carriers the size of Air Canada and would be probably ... even less so in the future. So we had to start laying the groundwork for what we perceived to be and the industry perceived to be an evolving picture, and in a very drastically changing environment.
>
> ...
>
> ... the prime ingredient of commercial viability in the airline business is frequency of flights and frequency has to be a function of size of population, things of that nature, and size of aircraft, and it was apparent that to serve smaller centres with any decent frequency, one had to have smaller aircraft.
>
> (Transcript, vol. 121, pp. 37–38)

The loss of these smaller markets may have been acceptable to Air Canada had they represented intraregional traffic only. However, many of the passengers on these smaller or "spoke" routes were potential connecting or "feed" traffic to Air Canada's trunk routes out of "hub" airports such as Toronto's Lester B. Pearson International Airport.

This connecting traffic was considered essential to the economic health of Air Canada. The incorporation of regional feed traffic into Air

Canada's overall route structure represented the second and by far the most significant area of management concern resulting from deregulation. Accordingly, management set about devising the means to ensure that the feed came Air Canada's way and not to competing trunk carriers (see figure 26-2).

Control of the Feed

Air Canada's dilemma at the advent of deregulation can be described as follows. On the one hand it could not economically operate its relatively large jet equipment in the smaller, low load-factor routes with sufficient frequency to remain competitive with carriers using smaller, usually turboprop, aircraft. On the other hand, if it left these routes to the smaller operators, there was the distinct possibility that in the now deregulated environment it would lose essential connecting traffic from these markets to another trunk carrier.

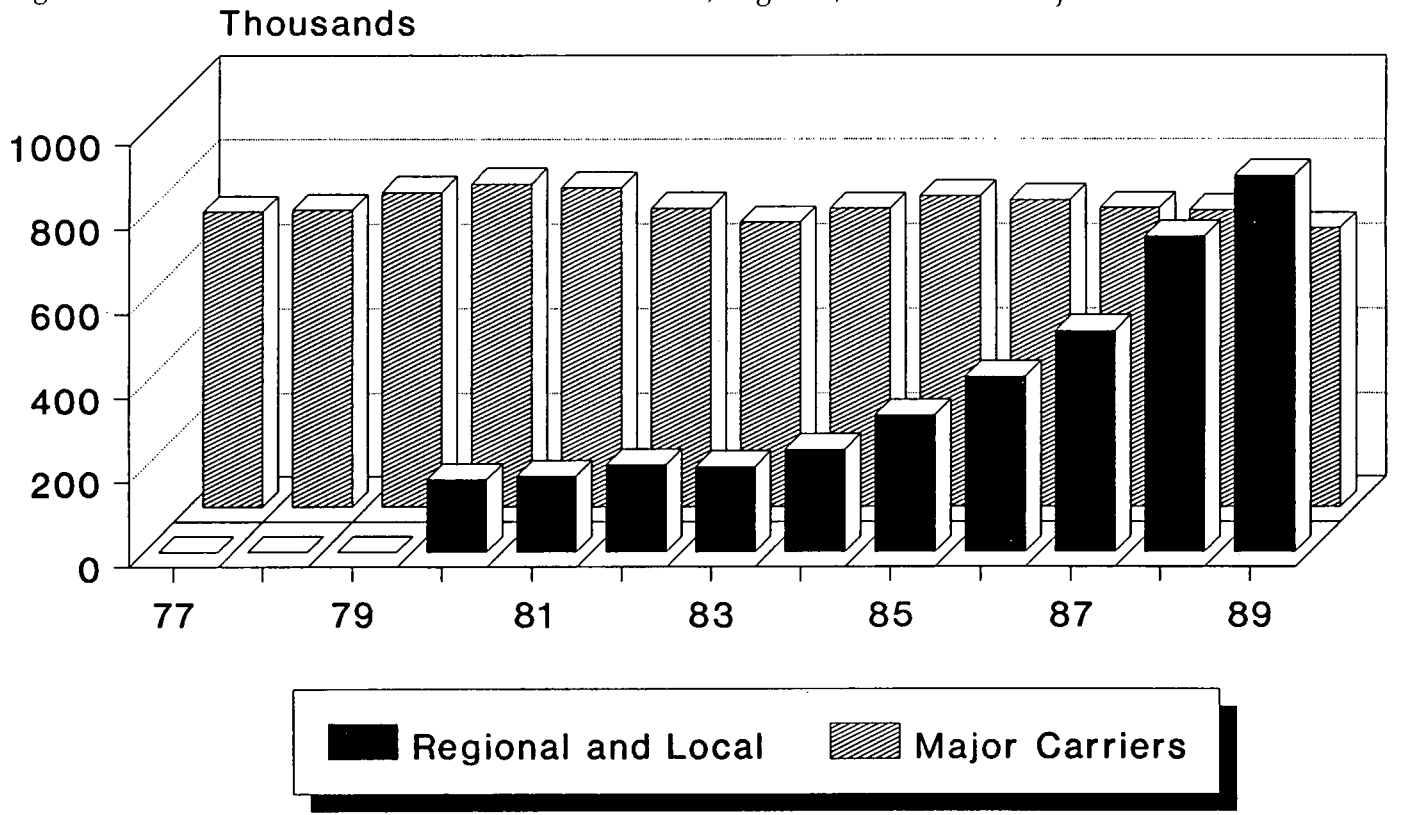
With the advent of a deregulated commercial marketplace, both trunk and regional carriers were free to enter and compete on all routes with relative ease. Further, extended possibilities for commercial arrangements between the two types of carriers became available. In the context of regional markets, the abandonment of regulation meant that a trunk carrier could capture the feed traffic of a particular region either by operating its own aircraft on less travelled routes or, more likely, by gaining control of a regional carrier already serving these markets.

Given the necessity of feed control, Air Canada could not allow regional carriers to fall under the control of rival trunk airlines. By one means or another, sufficient regional connecting traffic across the country would have to come under Air Canada's control. The Ontario Region, given its large population base, would naturally become the object of considerable interest in this regard.

The problem of controlling the flow of feed traffic from marginally economic markets did not suddenly arise for Air Canada because of deregulation. It existed in the regulated environment, but was then capable of easier resolution. Air Canada had previously dealt with feed control in southern Ontario, for example, by entering into a commercial agreement, in 1975, with Great Lakes Airlines, a predecessor corporation to Air Ontario (see chapter 13, Corporate History).

Great Lakes Airlines was a regional carrier that had licences to serve regional markets out of its base in London. One of Great Lakes's main

Figure 26-2 Historical Air Carrier Aircraft Movements, Regional/Local versus Major Carriers



Source: Transport Canada: Aviation Forecasts 1990–2003

routes was London, Ontario, to Toronto, a route flown by many connecting passengers to Toronto, but one that Air Canada could not economically serve with its larger equipment. As the evidence disclosed, the objective of Air Canada's commercial agreement with Great Lakes Airlines was the same as that which followed deregulation: to ensure by means of through-ticketing, coordinated connections, and ease of transfer that connecting passengers from Great Lakes were carried onwards from Toronto by Air Canada. The commitment of the trunk carrier, however, was quite different from that required after deregulation.

The 1975 arrangement between Air Canada and Great Lakes Airlines consisted of a straightforward interline agreement between the parties with no equity participation. The limited flexibility of regional carriers within a regulated environment meant that their "loyalty" to the trunk could in large measure be secured through a simple interline agreement, without the necessity of actual equity involvement. Given the degree of route monopoly prevalent in the regulated environment, there was little fear of overbidding or concern that one party would rescind the agreement. This being the case, the trunk carriers would naturally opt for a commercial arrangement with the regional carrier that allowed the trunk carrier to secure the commercial objective of feed control without requiring any financial outlay to secure an equity position.

This method of feed control by trunk airlines, employing simple contractual or non-equity relationships with regional carriers, became more precarious after deregulation. The pre-deregulation absence of equity involvement on the part of the trunk carriers is the essential difference between the trunk/regional arrangements entered into before deregulation and those consummated after. As Mr Rowe explained:

> A. ... we followed common practice in the United States or that had evolved in the United States earlier, and that was entering into contractual agreements with carriers that were very, very much tighter and more definitive than heretofore, and covering a wider variety of services. As a matter of fact, covering, for example, all ground handling services, things of that nature, trying to tie the smaller carrier very closely in with us.
>
> Also following experience in the United States, exploring the possibility of equity investment in the carriers, again to exert commercial control.
>
> (Transcript, vol. 121, pp. 36–37)

Mr Rowe summarized the rationale for equity participation by the trunk carriers as follows:

> A. For control of the company and to ensure that a company didn't change its allegiance, as happened numerous times in the United

> States. That's how the equity program evolved in the industry in total, not just in Canada.
>
> (Transcript, vol. 121, p. 41)

Air Canada faced a dilemma with respect to feed control at the advent of deregulation. Because the simple interline agreement had become too problematic a device, there were two possible options. First, Air Canada could purchase its own smaller commuter aircraft to service the low volume routes instead of using its existing fleet of large aircraft. Second, it could purchase an equity interest in an existing regional carrier already providing service with appropriate equipment on feeder routes.

Mr Rowe expanded on the relative merits of these two options. While Air Canada could have bought and operated its own feeder aircraft, there were "pros and cons" to such a decision:

> A. The pros and cons were firstly, the cost of the capital involved to do that. It's always nicer to share that cost with someone else, and that was one of the prime reasons.
>
> A second reason was that we would have absolutely imposed our own style and hierarchy and bureaucracy of a very large company upon a smaller situation, and would virtually have reverted to what we had seen previously, an era we had to withdraw from when we simply couldn't afford to operate some routes because of our own cost and operating style.
>
> So it was deemed to be much more efficient to go to a different scale. It's a scale thing, I think.
>
> (Transcript, vol. 121, p. 43)

With the "cons" thus outweighing the "pros" with regard to the first option, Air Canada was left with the second option of securing equity interests in existing regional carriers, and it set about to purchase those interests where available. Such purchases within the heavily populated regions of Ontario loomed as an absolutely essential aspect of Air Canada's feed control program.

In Ontario, at the inception of deregulation, the bulk of the potential connecting traffic within the province was carried by the two predecessor corporations of Air Ontario Inc., Austin Airways and Air Ontario Limited. This fact made control of these two regional carriers vitally important to the competitive positions of the Canadian trunk carriers. It also put the owners of Austin Airways and Air Ontario Limited in an extremely favourable bargaining position.

Air Canada, having settled on the strategy of gaining equity participation in existing regional carriers, was faced with an additional issue that required further Air Canada management consideration: whether to acquire a non-controlling or minority shareholding position in the

targeted regional carriers or to purchase a majority interest.[2] Eventually, through some intermediate steps detailed in chapter 13, Corporate History, Air Canada came to own a controlling 75 per cent interest in voting stock of Air Ontario, with the Deluce family owning the minority 25 per cent interest. In addition, Air Canada obtained a substantial number of non-voting Air Ontario preference shares, which resulted in the trunk carrier owning more than 90 per cent of the total equity of its feeder.

The rationale behind Air Canada's decision to purchase a majority interest in Air Ontario eventually determined the commercial and operational relationship in the new parent/subsidiary arrangement. More particularly, it influenced the degree of involvement by Air Canada in the affairs of Air Ontario.

As the evidence disclosed, there was significant involvement by Air Canada on the commercial side of its new regional subsidiary, Air Ontario, and virtually none on the operational side. The evidence also disclosed that this lack of operational involvement by Air Canada, combined with the increased demands of the new trunk/feed relationship, may have had a detrimental effect on the safety of Air Ontario operations. Air Canada's rationale for its non-involvement in the operational aspects of its subsidiary was grounded in concerns related to its now majority ownership of Air Ontario. These concerns were explored during the course of the hearings of this Inquiry.

Minority versus Majority Equity Interest

To the major carriers, there were pitfalls in having either a majority or a minority ownership stake in regional carriers. Mr Rowe offered the following explanation of the negative aspects of a minority position and why Air Canada opted for a majority position in Air Ontario:

> Q. ... Could you tell the Commissioner why this change in thinking between a minority and a majority interest, equity interest?
> A. With a minority interest, one is always subject, of course, to the whim of the majority holder. Over time, this proved to be less satisfactory to the larger carrier, simply because in the deregulated environment, there was this freedom to move, freedom to do whatever one wished to do.

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[2] As explained in chapter 13, Corporate History, early in 1986 Air Canada and Pacific Western Airlines, had each purchased a minority interest of 24.5 per cent in Air Ontario Limited. This gave the two major carriers a 49 per cent interest in Air Ontario Limited, with the remaining 51 per cent under the control of Delplax Holdings, a corporation in turn owned equally between some Deluce family members and Mr James Plaxton.

> In many cases, the larger carrier would want the smaller carrier to operate within a defined area for economic reasons more than anything else, and also, for the reasons that expansion required capital, increasing amounts of capital, because the newer aircraft, even though they were small, were getting increasingly expensive.
>
> (Transcript, vol. 121, pp. 41–42)

In short, Air Canada wanted to have a strong influence upon the growth ambitions of its feeder in order to protect its own interest.

Despite the seemingly overriding advantages to majority control in a deregulated marketplace, there was one significant potential drawback, which, if realized, could put the trunk carrier back into a similarly untenable economic position with regard to smaller routes than it had faced prior to deregulation. This drawback lay in the area of employment law and the prospect of having Air Canada's unionized, high-unit labour costs and working conditions imposed on Air Ontario because of the new ownership structure. It was referred to throughout the evidence as the "common employer" issue and centred around an application, by the unions involved, to the Canada Labour Relations Board for a common employer declaration. Mr Rowe verified that this issue was a concern for Air Canada:

> Q. Mr Syme [chief operating officer for Air Ontario Inc.], in his testimony, mentioned that there were advantages to a minority relationship in that it was a method whereby a common employment application may not be successful in that there was only a minority interest.
>
> Do you recall that being a concern or a consideration on the minority versus majority aspect?
>
> A. Yes, it was.
>
> (Transcript, vol. 121, pp. 47–48)

Once Air Canada's majority ownership of Air Ontario became a fact, however, the common employer issue had to be faced by Air Canada, and strategies were developed to deal with it.

Implications of Common Employment

Collective bargaining agents dealing with employers with shared ownership (typically parent/subsidiary relationships), who believe the employers to be under "common control or direction," can apply to a labour relations tribunal having jurisdiction for a declaration that they constitute a single employer for the purposes of collective bargaining. The essential test to establish common employment is common direction and control of the employers. The appropriate tribunal in the case of Air

Ontario and Air Canada, both being federal works, undertakings, or businesses, was the Canada Labour Relations Board (CLRB).

Such applications can be launched by any trade union representing employees within the corporations and, if successful, the decision may apply to all other bargaining units. In fact, such an application was launched by one of the certified bargaining units, the International Association of Machinists and Aerospace Workers (IAM), in September 1987, shortly after the merger of Austin Airways and Air Ontario Limited to form Air Ontario Inc. as "controlled" by Air Canada.[3]

After IAM launched the application, "one of the paramount considerations" of Air Canada management, to quote Mr Rowe, was the possibility that the CLRB might make a single-employer declaration if there was sufficient evidence of day-to-day control and direction over the operations of Air Ontario by Air Canada (Transcript, vol. 118, p. 50). In proceedings before the CLRB, Air Ontario argued in opposition to the IAM application that, despite its majority ownership, Air Canada had no day-to-day involvement at Air Ontario.[4]

It appears that the single-employer problem was also a consideration behind the seeming reluctance of Air Canada's flight operations department to do an operational review of Air Ontario after the 1987 purchase and merger. This operational review by Air Canada did not occur until well after the Dryden crash, in the fall of 1989. Captain Charles Simpson, vice-president of Air Canada flight operations, was questioned on this delay:

> Q. ... Sir, would you comment on one point: Was the apprehension of having a common employer application before the Canada Labour Relations Board a factor which gravitated against an early flight operations review being conducted?
>
> A. I would give a qualified "yes" to that. Certainly, in the very beginning, when we were very new in the connector business and there ... was talk of the common employer status case, we were proceeding slowly ... it wasn't so much we couldn't do an operational review as ... we did not want to become involved in their work. They were an independent airline, they were operat-

[3] The application in fact did not succeed: CLRB decision no. 771, December 29, 1989. The board in essence held that the tests for common employer were made out; however, it did not exercise its discretion to issue the common employer declaration. It so held on the grounds that bargaining rights had not been, nor were they likely to be, affected by the status quo.

[4] CLRB decision no. 771, p. 26: counsel for Air Ontario, to quote from the board's decision, argued that "Potential control should not be viewed as actual control and that, in fact, there was no working relationship between Air Canada and Air Ontario except for the commercial agreements."

> ing independent of Air Canada, and we did not want to confuse that issue.
>
> But, certainly, in the first few months, we were not gearing up to do a review, one of the reasons being the common employer status case was being pursued.
>
> (Transcript, vol. 118, p. 168)

Mr Rowe offered an additional explanation for this managerial distance – to give the management of the newly created Air Ontario Inc. more flexibility to make decisions, unfettered by what he described as the Air Canada bureaucracy. I found this explanation, although plausible, to be somewhat disingenuous and obviously secondary to the "paramount" concern about common employment.

Air Canada's common employment concern was in fact well grounded in light of the economics of a deregulated airline industry. As already stated, Air Canada was faced, under deregulation, with the necessity of operating its feeder routes at a lower-unit labour cost in order for these routes to be economically viable. The fear was that this would not be possible should Air Canada's wage structure and working conditions be imposed on Air Ontario, since this would simply reintroduce marginal economics to these routes, much as was the case on the eve of deregulation.

Mr Rowe explained that feeder routes such as Sudbury–Toronto, if made less viable economically because of extra costs, would fall prey to the new "deregulation" competitors. Thus, Air Canada would not only face the same dilemma as at the outset of deregulation – namely, losing the "Sudbury" feed – it would now have no method of regaining it economically.

The competitive position of carriers under deregulation was affected beyond the direct imposition of higher wages through collective bargaining. The unit labour cost was also being affected by the concomitant imposition of more narrowly defined working conditions on employee groups. This problem manifested itself in the Northern Ontario (Austin Airways) operations that became incorporated into the merged Air Ontario Inc. route network and eventually led to the divestment of these operations (see chapter 13, Corporate History). In that case, both Air Canada and Air Ontario management perceived that once the working conditions of the Air Ontario collective agreement were imposed on the old Austin route structure, those routes could no longer be operated economically. They saw, for example, that once the loading and unloading of aircraft and other "bush" activities fell outside of the pilot's new scope of employment, the cost of supplementing the labour force to do that work would render the operation unviable. This diminished profitability would in turn result in these routes falling prey to the now unimpeded competition. As Mr Rowe put it:

A. ... At the time of the organizing, a delineation of duties took place, and the multiple duties that the pilots once had were not carried forward any further. They had refused to continue in that line.

... that whole cost structure was now going to be eroded by virtue of the union contract and the ... results of the merger, and be attacked from a competitive position of much less expensive operators and smaller entities.

We then decided that it would be best to divest ourselves of the routes of Austin as much as possible, while they ... still had value, and while there was a buyer available for them.

(Transcript, vol. 121, p. 149)

A fascinating sidelight involving the economics of deregulation is the process by which the traffic from these former, now uneconomic, Austin routes came to be regarded as potential feed to Air Ontario. As was the case with the original Air Canada/Great Lakes arrangement in 1975, commercial agreements were entered into between Air Ontario and the purchasers of these northern routes, with the same lack of equity involvement. This cascading method of feed control was described by Mr Rowe, using the example of the sale in late 1988 by Air Ontario to Bearskin Airlines, a Northern Ontario operator, of the Pickle Lake to Thunder Bay route:

A. It was hoped under this scheme or the plan that Air Ontario would enter into agreements with some of the successor carriers that would guarantee the continuance of feed to Air Canada, which incidentally was quite minimal from many of these areas, and where opportunity existed, for continuance of feed from these areas to Air Ontario.

Q. And how was this Pickle Lake to Thunder Bay feed captured or ... what was the thrust?

A. Oh, eventually, it worked out for the instance you mention that there was a formal commercial agreement between Air Ontario and Bearskin Airlines.

Q. I see, and was there ever any equity interest taken by Air Ontario in Bearskin?

A. No.

(Transcript, vol. 121, p. 153)

Air Canada's lack of operational commitment to the Air Ontario operation resulted in a lower level of flight safety being available to Air Ontario passengers than that available to Air Canada passengers. On the commercial side, however, full advantage was taken by Air Canada of the new parent/subsidiary relationship to increase its market share. The evidence before me shows that Air Canada operates at a significantly

higher level of safety than that required by Transport Canada; Transport Canada regulatory standards represent the threshold level of operational safety. Air Canada management, while imposing on Air Ontario its own high marketing standards, required Air Ontario only to comply with Transport Canada's threshold operational safety standards. The evidence is overwhelming that the joint Air Ontario/Air Canada initiatives in the marketing of Air Ontario service to the public were designed to create the public impression that the Air Ontario operation was in fact an Air Canada operation. The average air traveller would be completely unaware of the double standard applied by Air Canada in the area of operational safety. These factual circumstances raise the question of what obligation, if any, does a licensed air carrier, holding a majority interest in a regional feeder airline, have to the air travelling public? This question and the Air Canada/Air Ontario relationship are addressed in greater detail later in this chapter. This double standard of safety arose, I find, in part from Air Canada's concern with common employment. I shall now deal with Air Canada's inappropriate lack of operational involvement with Air Ontario, given its emphasis on and attention to common marketing.

The Commercial Relationship

Under deregulation, marketing strategies became not merely a matter of maintaining control over potential connecting passengers but of competing for them. To this end, Air Canada engaged in a marketing strategy to portray to passengers a close identity between itself and its new subsidiary airlines: in essence, that to fly Air Ontario was to fly Air Canada.

This intention is set out clearly in the recitals to the commercial agreement, entered into in January 1987, governing the relationship between Air Canada and Air Ontario.[5] The recital in question was put to Mr Rowe:

> Q. ... "AND WHEREAS Air Canada and Austin (being Air Ontario) wish to establish a consistent image for Air Canada connectors

[5] Exhibit 783. As explained in chapter 13, Corporate History, Air Canada purchased Austin Airways in late 1986 and was by that time a minority owner of Air Ontario Limited. Austin and Air Ontario Limited were merged to form Air Ontario Inc. in June 1987. The commercial agreement of January 1987 was originally entered into between Air Canada and Austin Airways. The agreement survived the merger of Air Ontario Limited and Austin, and governed the commercial relationship between Air Canada and Air Ontario Inc. from the merger onwards. Accordingly, references to Austin Airways have been substituted by Air Ontario.

in order that a homogeneous products can be delivered to air travel customers in Canada."

Could you describe for the Commissioner what you took to be the meaning of homogeneous product?

A. We wished the product, Your Honour, to be as similar to that experienced on Air Canada as possible, given the limitations of the aircraft involved and the communities being served.

(Transcript, vol. 121, pp. 161–62)

This expression of intent was given force throughout the commercial agreement and resulted in a far deeper integration between the companies than in any previous arrangement.

The lengths to which the two parties went to indicate to the travelling public this degree of integration can be seen throughout the agreement. Several items were directly related to the public perception of the two carriers.

Common Livery

The colour scheme of Air Ontario was to match that of Air Canada and the term "Air Ontario–Air Canada Connector" was to be displayed along with an agreed-on logo.

Interiors

Seat material and carpeting were to be provided by Air Canada and were to be "similar to Air Canada hospitality class."

Use of Air Canada's AC Designator

Air Ontario was granted the right to use the AC designator beside its flight numbers. Mr Rowe explained the significance of this practice, known as "code-sharing," particularly in the connector airline area:

Q. Now, I take it the AC or the company's designator is a rather important proprietary item?

A. That's correct.

Q. And could you explain for the Commissioner the significance of giving this over to the connector, Air Ontario?

A. Your Honour, in the airline industry, there developed a ... marketing practice of the use of the company's designator on carriers other than its own, from a marketing point of view, to simply enhance the reach of the marketing of that carrier into areas it did not serve.

...

In the connector area, it identifies that carrier closely with Air Canada. And since we are providing services, customer services such as check-in, telephone numbers for reservations, et cetera,

it becomes a ready identification for the public to know where to go.

(Transcript, vol. 121, pp. 170–71)

Standards of Service

Air Canada was obliged to develop minimum standards for inflight service, customer service, and passenger and baggage handling for Air Ontario.

Timetables

Air Ontario flights were to be included in Air Canada's published timetable, both those connecting to Air Canada and those served by the two carriers. The importance to Air Ontario of this practice was expressed by Mr Rowe as being "absolutely vital":

A. It's vital, absolutely vital, to them.
Q. Just explain that, please.
A. Well ... you must have your product distributed as widely as possible, and this is to be associated with a major carrier who has a wide distribution network. It's absolutely essential to be included in his network.

(Transcript, vol. 121, p. 176)

Needless to say, once Air Ontario's flights were included in the Air Canada timetable there was heightened concern about Air Ontario's on-time performance. If this was poor it would have reflected badly not only on the parent corporation but on the entire parent/feeder network as well, and the evidence disclosed that there were daily conferences between the operational control centres of the two corporations regarding scheduling and on-time performance.

Computer Services

Air Canada's computer reservation services were to be shared by Air Ontario, and the complete Air Ontario schedule was to be included. Air Ontario flights were to be treated as equivalent to those of Air Canada for purposes of display on all computer reservation terminal (CRT) screens. Mr Rowe described the commercial importance of this arrangement:

A. Well, Your Honour, it's all part of the electronic distribution network that is so essential for the airline industry in the sale of its products. To be listed in the carrier's electronic distribution system allows access by all travel agents and other sellers of the product to know of your product and be able to access the inventory.

> Also, the sets provide other ancillary services that may be useful to the carrier in the managing of its entity.
>
> (Transcript, vol. 121, pp. 176–77)

As to the importance of equivalency of CRT display, Mr Rowe stated:

> A. Your Honour, I would ask you to recall my earlier mentioning of services to smaller communities wherein we might provide two flights a day and the connector carrier provide many others.
>
> This would allow a proper sequencing of flights so that the customer would get a display by hour of day instead of by carrier and, hence, be of better service to that customer in selecting the type of service they need.
>
> (Transcript, vol. 121, pp. 177–78)

Telephone Answering

Air Canada was to provide Air Ontario customers with the same telephone answering services as for its own customers. The phone was to be answered "Air Ontario – Air Canada Connector" for the purposes of flight bookings. In fact this answering method never came to pass and the telephone calls to Air Ontario were answered simply with "Air Canada."

Ticketing

Air Canada was to provide ticketing services for Air Ontario customers and the tickets were to be issued on Air Canada stock. Mr Rowe testified that the intention of this provision at the time of the writing of the contract was identification between the carriers. The relevance of the provision lessened with the introduction of standardized International Airline Transport Association ticket stock, which came to replace the old Air Canada stock.

Ground Handling

At points served by both carriers, ground handling was to be done by Air Canada. Air Canada agreed it would endeavour to ensure that Air Ontario's passengers, cargo, crews, and baggage received the same treatment as Air Canada's.

Aircraft Services

Under the commercial agreement, Air Canada, in keeping with the spirit of providing to Air Ontario passengers equivalency of service, agreed to provide a number of ground-handling services at stations where Air Canada had facilities. This extended to items such as allowing Air Ontario to park its aircraft "as close as reasonably possible" to its terminal building slots to minimize the exposure of Air Ontario

passengers to inclement weather. Air Canada was also bound, at stations of mutual use, to de-ice Air Ontario aircraft on Air Ontario's request.

Advertising

The terms of the commercial agreement also called for Air Canada's *Enroute* magazine to feature Air Ontario, its new relationship with Air Canada, and its new route system.[6] Mr Rowe was shown the following section of the agreement and was asked to comment on its commercial significance:

> Air Canada will use its best efforts to feature Austin in its inflight magazine including, in particular:
> (a) Austin's [Air Ontario's] scheduled air services on the Air Canada route map and illustrating the various types of aircraft operated by Austin in support of its scheduled passenger service.
> (b) Austin's name on the cover of the magazine.
> (c) A feature article on Austin, its services and its relationship with Air Canada to be included in the first edition published after start-up.
>
> (Exhibit 783, tab E, pp. 5–6)

A. Your Honour, it would be relevant to the promotion of Austin's [Air Ontario's] services and the identification of Air Canada with Austin Airways, similar to that which we would have with any affiliated group with our company. It's strictly a commercial identification and advertising mechanism.
Q. Identification between the connector and the parent, you're talking about?
A. Yes, that's correct.

(Transcript, vol. 121, p. 185)

Aeroplan

Air Ontario passengers would receive equivalent Aeroplan points. The competitive advantage offered by these in the context of a parent/subsidiary relationship was explained by Mr Rowe as follows:

A. ... Your Honour, they are primarily a brand name loyalty device, that is, adhering the loyalty of customers to the use of the Air Canada product in its many forms. And Austin [Air Ontario], of course, would benefit immensely by that.

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[6] *Enroute* is Air Canada's onboard publication, a copy of which is available free of charge to Air Canada passengers. Passengers can find a copy in the seat pouch on every Air Canada and Air Ontario flight.

Q. When you say benefit, are you talking about a competitive advantage to other carriers on routes?
A. Yes, that's correct. Austin [Air Ontario] would have a competitive advantage, we believe, at any rate.
Q. Well, that's the point of the exercise, I take it?
A. That's right.

(Transcript, vol. 121, p. 186)

The object of this marketing exercise was clearly to convince the travelling public that the choice of Air Ontario as a carrier was the same as choosing Air Canada. Given the record of years of familiarity and trust between Air Canada and the Canadian air-travelling public, this marketing technique was of no small significance. That the strategy worked is evidenced by the testimony of some passengers on flight 1363 who thought they were in fact travelling on Air Canada, right up to the point when they were about to board the aircraft at Dryden. Passenger Michael Ferguson stated the following:

A. We arranged the flight through a local travel agent in Thunder Bay.
Q. Can you tell me who you arranged it through?
A. It was Go-Rite Travel.
Q. All right. Now, what airline did you believe that you were flying on?
A. Air Canada.
Q. And when did you first learn that you were flying on Air Ontario flight?
A. After we cleared the security area and we were walking on to the tarmac towards the plane.

(Transcript, vol. 13, p. 3)

Mrs Susan Ferguson, who was accompanying her husband, gave similar evidence. This testimony was not surprising since, on the face of the passenger tickets, the flight was described as "AC 1363."

I cannot but conclude that Air Canada was holding out to the public that Air Ontario was de facto an Air Canada operation or an extension of Air Canada. Obviously, there were good business reasons for doing so. Yet it strikes me that, if Air Canada was seeking to improve its competitive position in the deregulated environment by marketing Air Ontario as an extension of itself, then there was a concomitant responsibility to ensure that Air Canada operational standards, and not just its colour schemes, were being matched by its regional feeder.

The Operational Relationship

At the time of purchase of its controlling interest in Air Ontario, Air Canada had years of experience in scheduled jet operations and a worldwide reputation in the safe operation and maintenance of jet transport aircraft. The management of Air Ontario had neither. Yet, when Air Ontario commenced its scheduled jet operations, carrying the very passengers Air Canada wanted in its network, Air Canada management consciously and deliberately avoided any involvement in the operations of Air Ontario. This position was based on real concerns created by deregulation regarding profitability. When weighed against Air Canada's own espousal of the primacy of flight safety and the legitimate expectations of Air Ontario passengers, I find this non-involvement inappropriate.

The effect of this non-involvement in the functioning of the air transportation system was evident in the differences in operational standards acceptable to Air Canada and to Air Ontario.

The principal Air Canada witness called on the subject of operational differences between Air Canada and Air Ontario was Captain Charles Simpson, vice-president of flight operations for Air Canada. In the areas of maintenance and operational control it was readily apparent from his and other evidence that Air Canada operates to standards that are higher than the threshold minimums required by Transport Canada.[7] Captain Simpson confirmed this interpretation in his evidence:

> Q. In your evidence, and you probably have stated this already, sir, but you would agree with me that the standards set by Transport Canada for the industry, for the aviation industry, are minimum standards?
> A. That's correct.
> Q. And I think you would also agree with me that Air Canada's standards are higher than Transport Canada's standards?
> A. We believe so.
>
> (Transcript, vol. 123, p. 97)

As already mentioned, some passengers on Air Ontario flight 1363 believed they were in fact flying with Air Canada. This misconception was clearly the result of the marketing effort of Air Canada and Air Ontario and is proof of its effectiveness. The marketing of the Air Canada image to its new feed passengers included not simply efficient

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[7] The requirements for all aspects of a commercial air carrier operation using aircraft weighing more than 12,500 pounds are set forth in Air Navigation Order, Series VII, No. 2. The adequacy and other aspects of these obligations are dealt with in chapter 34, Operating Rules and Legislation.

point-to-point and connecting travel but also the Air Canada reputation for safe travel. When this proposition was put to Captain Simpson he testified as follows:

> Q. And if I buy an Air Canada ticket, part of the product that I buy is that very high standard that Air Canada keeps, is that not correct?
> A. We believe so.
> Q. And that's a selling point for Air Canada, is it not?
> A. I think so.
> Q. Passengers can have confidence in Air Canada?
> A. Yes.
> Q. But if I buy an Air Canada ticket, I might end up on one of the feeder carriers, and I might only find out that I am on one of the feeder carriers when I get my boarding pass, is that not correct?
> A. Yes that's correct.
> ...
> Q. And you would agree with me that as far as a lot of passengers are concerned, they consider themselves Air Canada passengers?
> A. Correct.
> Q. And I take it, and my friend Mr Knutsen covered this, but I would like to make it clear because I think it's important, that you believe, Air Canada believes, that Air Canada passengers that fly on Air Canada connectors are entitled to the same standards of safety as Air Canada passengers that fly on a DC-9 or a 767 on Air Canada?
> A. That's correct.
>
> (Transcript, vol. 123, pp. 98–99)

To get an understanding as to the quality of operational differences between the parent and subsidiary airlines, Captain Simpson was first presented with a number of examples brought out in evidence and then asked for comment.

Auxiliary Power Unit

In light of the evidence surrounding the inability of C-FONF to restart its engines in the event of a shutdown in Dryden because of its unserviceable APU and the lack of ground-start capability, I heard with considerable chagrin that Air Canada would not itself have dispatched the aircraft into Dryden under similar circumstances. Captain Simpson stated this to be Air Canada policy:

> Q. All right. And under the Air Canada dispatch system, is it not a fact that you would not dispatch an aircraft with an inoperative APU to a station that has no ground support in order to start the aircraft?

A. That's right. It's a policy.

(Transcript, vol. 123, pp. 116–17)

The Introduction of Jet Service

Specific to the introduction of the F-28, Captain Simpson was asked about certain shortcomings in the program. Prior to testifying, he was unaware of any difficulties in the program. He was not familiar with the evidence before the Commission.

Minimum Equipment List

Captain Simpson was made aware of the fact that Air Ontario operated C-FONF for the first six months of revenue service with no approved Minimum Equipment List (MEL). His evidence was that Air Canada would not commence revenue service with an aircraft in the absence of an approved MEL, and it certainly would not tolerate use of an aircraft without one. When asked about the importance of having a workable MEL prior to the commencement of revenue service, Captain Simpson offered the following rationale and example, which I felt put the issue into useful context:

Q. Sir, why is it important for an airline to have an MEL at the time an aircraft is put into operation? Why is that important?

A. Well, in order to be able to operate the airplane, you from time to time will have some minor deviations on it where you may want to move the airplane back to a main station to get it fixed. It may be something of an insignificant nature, but without any document that allows you to do it, you're not allowed to operate the airplane.

So it's a straight case of – and, as far as the pilot is concerned, both pilots and maintenance personnel need some guidance, so this is the document by which they can look at their airplane and decide if it can be dispatched in that condition.

For example ... you might have a problem with the reverse mechanism on an engine. It's not required, it's not part of the certification, but to operate the airplane, there are certain things that have to be checked.

So you go to the MEL list. It says what maintenance have to do. It says what operations have to do. And then the airplane may be moved.

Q. To the best of your knowledge, sir, has Air Canada ever operated an aircraft in revenue service without an approved MEL?

A. Not to the best of my knowledge.

(Transcript, vol. 118, pp. 112–13)

Captain Simpson, in addition, provided his views on the operation of an aircraft in revenue service in the absence of an MEL:

> Q. Captain, with your background and knowledge and experience, how would you view the operation of a new aircraft for six months with no MEL?
> A. Well –
> Q. When I say the operation, I'm talking revenue operation.
> A. Yeah. Well, I would be surprised that Transport Canada would allow that to go on, as the regulatory authority.
> Q. Would you permit that as a senior officer –
> A. No.
> Q. – of your airline?
> A. No. We would not accept that, as an airline.
>
> (Transcript, vol. 118, pp. 116–17)

Manuals

The evidence before this Commission is that Air Ontario did not have in place its own F-28 operating manual prior to the commencement of revenue service with the F-28; in fact, although an operating manual for the F-28 was drafted, it was not submitted to Transport Canada for approval until June 1989, the same month Air Ontario discontinued F-28 operations. In addition, some of the Air Ontario pilots were using the Piedmont Airlines F-28 Operations Manual and others were using the USAir F-28 Operations Manual, a fact that could lead to operational mistakes or confusion.[8]

Captain Simpson stated that Air Canada would not have allowed an aircraft into revenue service without developing its own aircraft operating manuals or standard operating procedures. Air Canada, for example, has its engineering department calculate slush-correction factors for each aircraft type adapted to Air Canada's own operation. All such work is completed and inserted into the aircraft operating manuals prior to the entry of the aircraft into revenue service. As I did in the preceding section, I found Captain Simpson's testimony regarding these matters particularly telling, having in mind his vast experience and the practices of Air Canada:

> Q. How would you view, sir, crews operating for approximately 12 months on new equipment without an approved AOM?

[8] This problem stemmed from the takeover of Piedmont Airlines by USAir during the course of the Air Ontario F-28 training program. The first groups of Air Ontario pilots were trained to the Piedmont manual, the latter groups to the USAir manual. See chapter 19, F-28 Program: Flight Operations Manuals.

A. I would be quite surprised that the regulatory authority would allow that to happen.
Q. Would you view that as highly abnormal?
A. Yes.
Q. ... How would you view, sir, having crews operate a new aircraft in a fleet with an unapproved AOM from another carrier, with no amendment service being provided?
A. Highly abnormal.

(Transcript, vol. 118, p. 119)

The evidence is that Air Ontario crews operated the F-28 aircraft for approximately 12 months without an approved aircraft operating manual, using an aircraft operating manual from another carrier, with no amendment service.

Aircraft Defects (Snags)

The evidence on aircraft defects revealed that a practice developed within Air Ontario of some F-28 flight crews recording aircraft defects or snags on pieces of paper and passing them on to subsequent crews rather than entering the defects in the aircraft journey logbook as required by the Air Regulations (see chapter 16, F-28 Program: APU, MEL, and Dilemma Facing the Crew). The object of this practice was to prevent the grounding of an aircraft during a day's operation, away from the maintenance base. This practice arose in part from the absence of an approved minimum equipment list.

It is clear that Air Canada would not tolerate the passing of snags on pieces of paper between pilots; it would expect its pilot to enter a defect in the journey log of the aircraft as soon as the defect was discovered. As Captain Simpson explained:

Q. Again, from your experience and background, sir, would you – how would you view the practice of crews passing snags on pieces of paper and not noting them in the journey logbook at the time they arise?
A. I don't know what kind of a snag they would pass on a piece of paper. I would like to think if there's something wrong with the airplane, they would put it in the logbook.

I would hate to think that my own crew members would do such a thing.
Q. Would that kind of a practice be condoned by Air Canada?
A. No, because I think you are putting a liability on the next pilot.

(Transcript, vol. 118, p. 117)

Refuelling

While flight 1363 was at the Dryden station stop it was refuelled with an engine running, a procedure referred to as "hot refuelling." During the

procedure the passengers remained on board. Leaving passengers on board during "hot refuelling" was regarded as unsafe by Air Canada and was not a permitted practice. Captain Simpson's attention was directed to Air Canada aircraft flight manuals, and he was asked to describe both the Air Canada hot refuelling procedures and the circumstances under which they were to be used:

> Q. And could you tell us generally, what is the policy, for example, on the L-1011, and then you can tell us what the policy is for Air Canada.
>
> A. Well, I included it as an example that while we don't refuel with an engine running, it is possible to do that. And we have very specific instructions laid out on how it has to be done.
>
> For example, the procedures to be used when it is necessary to refuel, obviously if you have to refuel and you don't have the capability of starting the engine because of no APU or no ground power, number 2 engine is left running. It must be noted this is a special procedure and must only be used when the aircraft APU is unserviceable, so it lays down the conditions. It's not a frivolous procedure. In fact, it's one that's very rarely ever used.
>
> And at the very bottom of that section, we must ensure that prior to refuelling, apologize for the inconvenience and deplane all passengers and cabin crew. And they can't be reboarded until the refuelling is complete.
>
> (Transcript, vol. 118, pp. 125–26)

Passengers remained on board during the hot refuelling of flight 1363 in Dryden on March 10, 1989 (see chapter 5, Events and Circumstances Preceding Takeoff).

De-icing

Air Canada's de-icing procedures, as attested to by Mr Paul Lefebvre, an Air Canada station attendant, allowed for either or both the maintenance personnel and the aircraft captain to make the decision regarding the need for de-icing. As well, subsequent to spraying, it is Air Canada policy that an independent check be carried out on its aircraft to ensure that the de-icing was effective.

Air Canada de-ices other carriers' aircraft under ground-handling contracts, including those of Air Ontario, pursuant to the procedures of those carriers. Mr Lefebvre testified that Air Canada does not carry out an independent check of the aircraft surfaces after such contract de-icing, nor is such a check carried out by Air Ontario or any other carrier, either by ground personnel or flight crews. Mr Lefebvre recalled occasions when an independent check of his own work disclosed an incomplete

job, and he was of the firm opinion that the check was a worthwhile safety feature.

Mr William Deluce, president and chief executive officer of Air Ontario, acknowledged during the course of his evidence that he had become aware of the lack of an independent checker in his corporation's de-icing procedures only as a result of the evidence before this Commission. He assured the Commission that a suitable arrangement would be sought with Air Canada for the checking procedure to be included as part of Air Ontario's de-icing procedures.

Operational Control and Flight Planning: Air Canada versus Air Ontario

It was the opinion of Captain Simpson, after examining the Air Ontario flight release issued to Captain Morwood on the day of the accident, that the information contained in it was minimal compared with that issued to Air Canada flight crews (see chapter 23, Operational Control). The lack of sufficient information in the Air Ontario flight releases was noted during the Operational Review of Air Ontario carried out by Air Canada in the fall of 1989, some months after the Dryden accident. The lack of information concerning such matters as fuel burns, flight levels, and wind components was targeted for correction subsequent to this review.

It was obvious from Captain Simpson's description of the Air Canada information package (AFPAC) given to its pilots prior to flight departure that Air Ontario's flight release paled in comparison.[9] Air Canada's AFPAC was described by Captain Simpson as a combination flight release and flight plan, containing all information relevant to weather, altitude, fuel consumption at various points, headwind and shear component, taxi fuel, landing weight, NOTAMs (notices to airmen), as well as all the relevant alternate, terminal, and passenger information required to minimize the workload of the flight crew.

Air Canada exercises its delegated responsibility of operational control over its flights through a full co-authority dispatch system that closely integrates the role of flight crews and dispatchers. The operational flight plan is generated and signed by both the dispatcher and the flight crew members. Flight planning is considered a joint responsibility, and, in the case of a dispute, the most conservative approach prevails. This was by no means the case at Air Ontario, which fulfilled its operational control

[9] AFPAC is the designator for Automatic Flight Planning, Air Canada. Captain Simpson described in great detail how the information for the flight crews comes to be generated and how it is distributed to flight crews (Transcript, vol. 118). An Air Canada AFPAC was entered as Exhibit 899.

obligations pursuant to the less sophisticated "pilot self-dispatch" system, a system sanctioned by Transport Canada.[10]

The Air Canada co-authority system of operational control would obviously have been better for Air Ontario. Such a co-authority system, however, requires dispatchers who are very well qualified.

The essence of the testimony of Mr Daniel Lavery, the Air Ontario dispatcher responsible for flight 1363 on March 10, 1989, and his superiors was that his training could only be described as rudimentary. Along with the errors contained in the flight release for flight 1363, the aircraft was dispatched into Dryden with an unserviceable APU at a time when the latest Dryden terminal forecast called for freezing precipitation. A senior Air Canada dispatcher gave evidence that an experienced Air Canada dispatcher would have had flight 1363 overfly Dryden on the day of the accident.

Somewhat ironically, Captain Simpson had occasion to meet with a group of Air Ontario pilots in November 1988 during an Canadian Air Line Pilots Association (CALPA) annual meeting. Captain Simpson described the meeting as informal, but the pilots expressed an interest in Air Canada's intention towards Air Ontario with regard to, among other things, training and dispatch. The Air Ontario pilots had been introduced to Air Canada's system of operational control as a result of being in the Air Canada system and they enquired whether it was to become available to them.

As might be expected, the pilots were impressed with the amount of information Air Canada's flight planning facility made available to flight crews as compared with their own. They were interested in knowing whether it was the intention of Air Canada, as Air Ontario's parent corporation, to make its superior flight planning facilities available to Air Ontario crews. As Captain Simpson described it:

> A. ... The whole thrust of their argument was that it would be nice to have the Air Canada system, because they flight planned in our area in Toronto where they had access toall the information, and you know, after you have seen Paree, it's hard to get you back on the farm.
> Q. Very true.
> A. They had seen a much nicer system.
> Q. They had seen Air Canada.
> A. That's right.

[10] The Air Ontario dispatch system was described as a "hybrid" between a pilot self-dispatch and a full co-authority dispatch system by Mr Robert Nyman, Air Ontario director of flight operations (Transcript, vol. 108). The complete description of the difficulties with Air Ontario dispatch is contained in chapter 23, Operational Control.

Q. And they asked you for the Air Canada system?
A. They did.

(Transcript, vol. 123, p. 116)

Captain Simpson did not assign a high priority to the meeting and did not raise the concerns addressed by the pilots to anyone at Air Canada, to the Air Canada representatives on the Air Ontario board of directors, or to Mr Larry Raymond of Air Ontario, as had been suggested by the pilots prior to the accident. Captain Simpson was questioned on the lack of follow-up to this meeting:

Q. Would it be fair to say that you just didn't follow up on the meeting?
A. No, I gave consideration to it, and, in due course, we would talk about it. That meeting with the pilots was not to identify a serious safety problem. There was no urgency to the matter. And, to some degree, sir, it was a bitching session on their part to get the Deluces to spring for more money.

(Transcript, vol. 123, p. 126)

The Air Ontario pilots were in fact raising problem areas that later manifested themselves as legitimate safety concerns. However, the informality of the meeting must be kept in perspective. As Air Ontario captain Monty Allan explained, "he made us no promises, and we had no firm expectations. It was an informal meeting" (Transcript, vol. 91, p. 156).

Dispatcher Training

Air Canada's dispatch and flight-following departments are of genuine assistance to its pilots, a result in large part of the superior training Air Canada's dispatchers receive and the superior operational flight release information provided to its flight crews.

Compared with Air Ontario, Air Canada dispatchers receive extensive training, both on the job and through courses. There can be no doubt from the evidence that Mr Lavery did not meet the minimum dispatch standards set forth in ANO Series VII, No. 2. Indeed, it was the opinion of Mr Adrian Sandziuk, an experienced Air Canada dispatcher, that flight 1363 would have been better off with no dispatcher being involved at all; at least in that scenario the pilot would have been forced to do his own calculations. He considered it "unbelievable" that Air Canada would allow Air Ontario to permit a dispatcher with two weeks' training to have flight watch over a transport category jet operation. Mr Sandziuk also stated that Air Canada had the resources and expertise to bring Air

Ontario's "terribly inadequate" flight watch up to an acceptable standard (see chapter 23, Operational Control).

These examples of operational discrepancies show undeniably that Air Ontario operated to lower operational standards than Air Canada, although for the most part within standards set and authorized by Transport Canada. This conclusion was put to Captain Simpson and he agreed:

> Q. ... Would you not agree with me from the series of examples I have given you, and there are others, that Air Ontario, at that time, was not meeting Air Canada standards?
> A. That is correct.
>
> (Transcript, vol. 123, p. 108)

Flight Safety Overview

There were other areas besides direct operational involvement in which Air Canada could have exercised some influence over the safety of operations at Air Ontario. It could, for example, have conducted a timely operational review of Air Ontario, particularly at the commencement of jet operations, and it could have ensured the presence of a properly functioning flight safety department.

It is regrettable that Air Canada did neither.

Operational Review

The evidence shows that Air Canada had decided to do an operational review of Air Ontario shortly after its purchase of the 75 per cent interest in January 1987. Such a review, however, did not occur until the fall of 1989.

Captain Simpson agreed that it would have been desirable for Air Canada to have done an assessment of Air Ontario at the time of the purchase of Air Canada's controlling interest in order to ascertain any operational deficiencies:

> Q. Would it not have been desirable for you to do an assessment at the time you purchased it in order to determine whether or not there were deficiencies?
> A. That's right, and shortly after the purchase, we had made that decision to do an assessment.
>
> It appears to have been a long time from the time we made the decision till the time we did it. It involved some of the personnel problems in our own airline. We didn't have the personnel available. So while it appeared to be a long period of time before we completed our own operational review, from

> time of purchase, I had personally recommended that we examine that aspect.
>
> (Transcript, vol. 123, pp. 108–109)

Aside from the labour relations or "common employer" concerns discussed above, an additional reason given by Captain Simpson for the delay in conducting Air Canada's operational review of Air Ontario was the fact that Transport Canada was doing its own audit of Air Ontario in the fall of 1988 and he did not want an overlap. Captain Simpson was under the misapprehension that Transport Canada had performed "quite a decent audit" of Air Ontario:

> A. ... In the fall of '88, the – Transport Canada were doing an audit on Air Ontario, and I had suggested to all our people that we shouldn't become involved until the audit was over.
> Q. That is, the Transport Canada one?
> A. The Transport Canada audit, which, incidentally, was quite a decent audit, gave the airline reasonably good marks. So, of course, then the – in the early winter, the accident occurred and personnel from Air Ontario were deeply involved in that, so our audit didn't take place until the summer of '89.
>
> (Transcript, vol. 118, pp. 167–68)

In fact the evidence irrefutably disclosed that the Transport Canada audit of Air Ontario was anything but a "decent" audit; to the contrary, that audit can only be described as a travesty, both in its execution and in its long-delayed delivery. The audit, incredibly, did not assess Air Ontario's new F-28 jet program (see chapter 33, Audit of Air Ontario Inc., 1988).

Air Canada's reliance on an audit that did not even assess the F-28 program, the very operation where Air Canada's assistance was most urgently needed, represents yet another of the ironies underlying the tragedy at Dryden. It is illustrative of a degree of corporate inattentiveness unbecoming to Air Canada's otherwise hard-won worldwide reputation for safety.

As has already been pointed out, Air Canada finally did conduct an operational review on Air Ontario in the fall of 1989. By that time the remaining F-28 C-FONG had left the fleet, and the F-28 service had ceased.

I found Captain Simpson's very frank and unequivocal answers as the head of flight operations for this country's largest carrier illuminating as to his perception of both the regulator's and the operator's function in this area.

Flight Safety Organization

The evidence describing the operation of the Air Canada Flight Safety Department and its role within the organization is discussed in chapter 24, Flight Safety. Most revealing was the fact that neither Mr Rowe, the Air Canada representative on the board of directors of Air Ontario, nor Mr Jack Mitchell, Air Canada's director of flight safety, appeared to have been aware that, for well over a year, and, more importantly, during the introduction of the F-28, there was no flight safety officer or flight safety organization in place at Air Ontario.

As outlined in chapter 24, the only meaningful contact between Air Canada and Air Ontario in the area of flight safety consisted of two accident response courses: one in 1985, in fact given to a predecessor corporation, Air Ontario Limited, and one in May 1989, after the Dryden accident. The latter course was at the request of Air Ontario.

The evidence indicates that it was only in the event of a major accident that there were to be any intercorporate dealings between the respective flight safety departments of Air Ontario and Air Canada. Participation in post-accident response courses, however, can hardly be equated to participation in operational flight safety programs.

Having listened to the evidence of Mr Mitchell, I was most impressed by Air Canada's flight safety organization and the corporation's dedication to flight safety. I therefore have had a great deal of difficulty understanding Air Canada's failure to assure itself that there was in place at Air Ontario a functioning flight safety department. The only explanation appears to be that Air Canada's management was so determined to avoid a single employer declaration under the Canada Labour Code that flight safety and operational monitoring of Air Ontario were relegated to the bottom of the priority bin.

Parent-Feeder Operational Standards

The role and obligations of a parent carrier with respect to its operating feeder carriers has been a difficult issue to address. Intuitively, one is drawn towards the position that it should be mandatory for a parent carrier, whose operational standards are higher than those required by Transport Canada regulations, to impose its own operational standards on its feeders, notwithstanding the economic implications. This is particularly so where the parent is holding out the feeder operation to the public as being its own operation, as is the case with Air Canada and Air Ontario. Upon reflection, however, it becomes clear that to impose such a requirement without any reservations would be tantamount to establishing one operational standard for both the parent and the feeder;

that is, the higher parent-carrier–generated standard in place of the Transport Canada threshold standard now followed by the feeders. Within the aviation industry, feeders would obviously operate to one of these standards, but most likely to the Transport Canada threshold standards, depending on ownership considerations, as indeed was the case with Air Ontario. Given the attendant cost differences associated with the two operational standards, a requirement that the feeder carrier operate to the parent carrier's operational standards would be seen as clearly discriminatory if it is not confined to those parent-feeder relationships in which the feeder is held out to the public as being part of the parent carrier's operation. Even within that relationship, the imposition of the parent carrier's higher operational standards upon the feeder must be tempered by the tests of relevance and reasonableness. Having made these observations, I strongly encourage a dialogue between Transport Canada and the Canadian air carriers on this subject.

Conclusions

Subsequent to the Dryden accident, Air Canada proceeded to take a long look at its connector carrier network, as evidenced by the series of operational reviews commenced in 1989. The latest information available to the Commission is to the effect that Air Canada was, in June 1991, in the process of purchasing all equity interests in its connector carriers not already owned by it, including the minority equity interest of the Deluce family. In addition, with its corporate reorganization of April 17, 1991, Air Canada announced its creation of a single corporate entity within Air Canada to manage the company's connector carrier interests. Whether these initiatives will result in a more appropriate level of corporate overview of Air Ontario by Air Canada remains to be seen. It is to be hoped that this will be the case and that the lessons from the Dryden tragedy will be not be lost on Air Canada's management.

Those lessons, as clearly demonstrated from the evidence outlined in this and other chapters, can be distilled into one overriding theme. Simply stated, in the pursuit of its corporate objectives, management must remain true to the primacy of safety considerations. The corporate mission statements of Air Canada and Air Ontario both contain words to this effect. The evidence disclosed that other corporate concerns, important in their own right, were allowed to intervene and subordinate safety. The difference between the attention and resources expended by Air Canada and Air Ontario on marketing, as compared with safety of operations, must, when held up to their respective mission statements, be described as inadequate and short-sighted.

Aviation safety should not be looked on as merely a selling point or marketing device, nor should it be viewed as some abstract goal by which to satisfy the minimum standards required by the regulator in order to maintain an operating certificate. Rather, to maintain its place of primacy within an organization, aviation safety must be viewed, from management on down, as an obligation of trust to the travelling public; and management must set the example. Here management fell short of the mark.

FINAL REPORT

TECHNICAL APPENDICES

1 Occurrence No. 825-89-C0048: Structures/Site Survey Group Report LP 38/89: Accident: Fokker F28, Mk 1000, Registration C-FONF, 10 March 1989
Canadian Aviation Safety Board Investigation Team

2 Fokker Aircraft B.V. Amsterdam, Fokker Aerodynamics, Report No. L-28-222: Note on the Aircraft Characteristics as Affected by Frost, Ice or Freezing Rain Deposits on Snow

3 Fokker Aircraft B.V. Amsterdam, Report No. VS-28-25: Flight Simulator Investigation into the Take-off Performance Effects of Slush on the Runway and Ice on the Wings of a Fokker 100

4 A Report on the Flight Dynamics of the Fokker Mk 1000 as They Pertain to the Accident at Dryden, Ontario, March 1989
J.M. Morgan, G.A. Wagner, R.H. Wickens

5 Wind Tunnel Investigation of a Wing-Propeller Model Performance Degradation due to Distributed Upper-Surface Roughness and Leading Edge Shape Modification
R.H. Wickens and V.D. Nguyen

6 Freezing Precipitation on Lifting Surfaces
Myron M. Oleskiw

7 Human Factors Aspects of the Air Ontario Crash at Dryden, Ontario: Analysis and Recommendations to the Commission of Inquiry
Robert L. Helmreich

DSS cat. no. CP32-55/4-1992E
ISBN 0-660-14383-6