

**CIVIL AVIATION TRIBUNAL**

BETWEEN:

**Frank Ferrara, Applicant**

- and -

**Minister of Transport, Respondent**

**LEGISLATION:**

*Aeronautics Act*, R.S.C. 1985, c. A-2, s. 7.1(1)(b)

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**Review Determination  
Pierre J. Beauchamp**

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**Decision: August 7, 2002**

*I confirm the Minister's decision to issue First Officer Ferrara an unsatisfactory assessment of his B-757 pilot proficiency check dated June 20, 2001.*

A **review hearing** on the above matter was held Thursday, January 24, 2002 at 10:00 hours at the Federal Court of Canada building, in Montréal, Quebec.

## **BACKGROUND**

Mr. Ferrara is a first officer with Canada 3000. On June 20, 2001, he submitted to a recurrent pilot proficiency check (PPC) to maintain his qualifications as a first officer on the Boeing 757.

This check ride was administered by company check pilot (CCP) Captain Chris Minto in a B-757 flight simulator.

Mr. Frank Ferrara was acting as first officer and PNF<sup>[1]</sup> during the first portion of the check flight.

After completion of a number of exercises directed at the renewal of the captain's PPC, the check ride was terminated and both the captain's and First Officer Ferrara's performances were judged to be unsatisfactory.

This unsatisfactory assessment resulted in a suspension of their PPC.

Subsequent to this failure, Mr. Ferrara requalified as a first officer on the B-757 by successfully completing a new PPC ride.

Nonetheless, he has asked the Civil Aviation Tribunal for a review of this suspension.

## **EVIDENCE**

The facts of this case are basically uncontroverted and were established by the testimony of Captain Chris Minto and First Officer Frank Ferrara, the Applicant.

Captain Minto was a Canada 3000 pilot, who on June 20, 2001 was acting as a delegate of the Minister of Transport, to conduct a PPC in a B-757 simulator, when Captain Bill Cody also of Canada 3000, acted as captain and the Applicant acted as first officer.

Captain Minto utilized a document entitled B-757 PPC/IFT script "1" which outlines the sequence of events planned to assess the competency of the captain and first officer.

The ride had proceeded normally for both candidates up to and including a take-off followed by an engine failure and restart, and radar vectors to the southwest of the Los Angeles (LAX) airport for a VOR07R approach.

During the downwind phase of the approach, while under radar guidance at 4,000 feet ASL, control was passed to the Applicant who became the PF while Captain Cody set up the approach in the flight management system (FMS). During that time, Mr. Ferrara had slowed the aircraft to 180 Kts with 5° of flaps selected.

Mr. Ferrara's evidence is clear as to the series of events that next followed and was not contradicted by the Minister's witness, whose recollection of the exact moment of the transfer of control back to the captain was not as vivid.

Mr. Ferrara testified that some 25 nautical miles from the airport, the aircraft was vectored onto an intercept heading for the final approach course of the VOR approach, and approach clearance given.

The aircraft intercepted the final approach course on autopilot, and control of the aircraft was returned to the captain.

Mr. Ferrara's evidence is clear: at that point they were situated 11.2 nautical miles from PIEKA<sup>[2]</sup> intersection at 4,000 feet on a 068° track inbound, LNAV and Altitude Hold selected, speed 180 Kts, flaps at 5°.

That is the briefing he gave the captain as he assumed control, and Captain Cody then requested the pre-descent and approach checklists.

First Officer Ferrara asked the captain to stand by as he adjusted his airspeed and altimeter bugs and identified the appropriate NAVAIDS for the approach. This process took approximately

30 seconds or somewhere between 30 seconds and 45 seconds, according to his uncontradicted testimony.

He then proceeded to carry out the pre-descent and approach checklists. During the pre-descent checklist, at the "Recall" item, it was noted on the EICAS<sup>[3]</sup> that fuel cross-feeding had been initiated, and he reconfigured the fuel system to normal. The whole pre-descent checklist apparently took up a total of another 30 to 45 seconds. This was immediately followed by the approach checklist which took up a further 15 seconds. Both checklists were carried out according to the B-757 normal checklists (Exhibit D-3) and following the normal standard operating procedure of challenge and response and participation of both crew members.

Following the end of these checklists, First Officer Ferrara proceeded to rearrange his approach charts on the yoke and it is while he was doing this that the check pilot signalled an end to the ride, as the aircraft had left its altitude of 4,000 feet and descended, at that point, to 3,300 feet.

The evidence is also uncontroverted that the captain, without following proper standard operating procedures (SOPs) as they relate to altitude changes, selected 3,200 feet in the altitude window, a shallow descent rate using the V/S<sup>[4]</sup> selector; he neither called nor pointed the new altitude and V/S as he was required to do.

Captain Minto's evidence is that at that point Mr. Ferrara's head was turned as he was rearranging his approach charts.

When the error was pointed out by the check pilot to both candidates, as the ride was stopped at 3,300 feet, Captain Cody immediately claimed full responsibility for the altitude deviation and both witnesses are clear that the captain never called the altitude change nor the descent rate as he was required to do.

Nonetheless, Captain Minto assessed the ride as a failure to both crew members in accordance with section 9.1.6 of the *Approved Check Pilot Manual*.<sup>[5]</sup>

A total of approximately two minutes had elapsed since the change of control of the aircraft from the Applicant to the captain. The aircraft at that moment was situated a few miles west of PIEKA.

## **SUBMISSIONS**

Mr. Pratt's submission was succinct and to the point. The crew descended below a safe and cleared operating altitude when the aircraft departed 4,000 feet for 3,200 feet outside PIEKA and that justified an unsatisfactory assessment.

The fact that Mr. Ferrara did not intervene can only be interpreted in three ways:

- he did not notice airspeed and altitude for two minutes while the aircraft descended;
- he noticed the new altitude selected and agreed with it so he did not speak up; or
- he saw the new altitude and did not agree with it and did not speak up.

Under any of these scenarios he is at fault: you fly as a crew, you fail as a crew: so say sections 9.1.6 and 9.1.7 of the ACPM.

Mr. Balogh, acting for Mr. Ferrara, sees the evidence quite differently. He submits that the standard applied by the check pilot was not the correct one in that you do not necessary fail as a crew: in the context of this ride where the altitude deviation was initiated by the captain without his notifying his first officer (the Applicant) as he was required to do by the SOPs, he left the latter out of the loop, and in such a way that Mr. Ferrara who was, during the descent, occupied by reasonable activities, cannot be faulted for his failing to monitor and intervene during this descent.

Finally, there is no evidence, other than the concept of "failing as a crew," that the Applicant failed to meet the standard that was expected of him, both when he acted as PF or as PNF. The ride as it related to him should therefore not have been assessed as a failure.

## **THE LAW**

Paragraph 7.1(1) of the *Aeronautics Act*:

7.1 (1) Where the Minister decides

(a) to suspend, cancel or refuse to renew a Canadian aviation document on medical grounds,

(b) to suspend or cancel a Canadian aviation document on the grounds that the holder of the document is incompetent or the holder or any aircraft, airport or other facility in respect of which the document was issued ceases to have the qualifications necessary for the issuance of the document or to meet or comply with the conditions subject to which the document was issued, or

(c) to suspend or cancel a Canadian aviation document because the Minister is of the opinion that the public interest and, in particular, the record in relation to aviation of the holder of the Canadian aviation document or of any principal of the holder, as defined in regulations made under subsection 6.71(2), warrant it, the Minister shall, by personal service or by registered mail sent to the holder or to the owner or operator of the aircraft, airport or facility, as the case may be, at the latest known address of the holder, owner or operator, notify the holder, owner or operator of the Minister's decision.

Sections 9.1.6 and 9.1.7 of the *Approved Check Pilot Manual*, Chapter 9 Flight Check Assessments:

9.1.6 During a flight check, a flight sequence may involve duties and/or responsibilities for crewmembers other than the pilot flying (PF). Such a sequence that is rated as 'unsatisfactory' for the PF may, due to inappropriate action on the part of other crewmembers (i.e., the pilot not flying [PNF]), be rated as 'unsatisfactory' for the PNF also. In such a case, it is possible that an assessment of 'failed' may be given to more than one crewmember involved in the same flight sequence.

9.1.7 During a PPC, a 'U' assessment of an Instrument Rating related sequence constitutes a failure of the Instrument Rating and the PPC. The ACP shall assess the PPC as 'failed' at the bottom of the Flight Test Report Pilot Proficiency Check (form 26-0249/26-0279). Appropriate administrative action must be carried out in the suspension of any currently existing PPC and Instrument Rating in accordance with section 2.5.

*Where the PNF is assessed a 'U' on an Instrument Rating related sequence, the above failure and associated suspension activity is relevant to the PNF as well.*

## **DISCUSSION**

There are basically two questions that arise out of the Applicant's submission.

The first underlying question, notwithstanding the captain's admission, is whether when cleared for the approach at 4,000 feet approximately 25 nautical miles southwest of the Los Angeles airport, the pilot, crew or aircraft could legally descend out of 4,000 feet having intercepted the inbound course for the VOR approach at approximately 12 miles west of PIEKA.

An approach clearance does not relieve the pilot from his obligation to maintain obstacle clearance, and in the present case, it required that from that point on, that is from the point where transfer of that obligation was affected from approach control (under approach radar vectors ATC [air traffic control] assumes the obligation for terrain clearance) to the pilot, the crew maintain minimum published safe altitudes.

Obstacle clearance in this case would be assured by maintaining the minimum quadrantal altitude of 5,100 feet for the area bounded by the 345° radial to the 230° radial of the LAX VOR. ATC may have lower radar vectoring altitudes than the quadrantal altitude such as 4,000 feet in present case, but this then becomes the minimum descent altitude until such a point where a lower safe altitude is permitted.

### **APPROACH CLEARANCE PROCEDURES**

#### *A. General*

[...] Within controlled airspace, ATC is not permitted to approve or assign any IFR altitude below the 'Minimum IFR Altitude'. To ATC, the 'Minimum IFR Altitude' is the lowest IFR altitude established for use in a specific airspace and depending on the airspace concerned this may be:

- a/ minimum en route altitude (MEA);
- b/ minimum obstruction clearance altitude (MOCA);
- c/ minimum sector altitude (...);
- d/ geographic area safe altitude (GASA);
- e/ 100 NM safe altitude (...); or
- f/ minimum vectoring altitude.

[...]

On occasion a clearance for an approach may *not include altitude instructions*. The pilot may receive this clearance while the aircraft is still a considerable distance from the facility, in either a radar or non-radar environment, and within or outside controlled airspace. In these cases the pilot can descend to an *appropriate minimum IFR altitude* [...]

Having determined the minimum altitude that provides the required obstacle clearance, the pilot may descend to this altitude when desired.

[...]

### B. *Straight-in Approaches*

ATC uses the term 'straight-in-approach' to indicate an instrument approach wherein the pilot begins a final approach without first executing a procedure turn. Straight-in approaches are approved [...] when aircraft are radar-vectorred by ATC to a point where a straight-in approach may be commenced and where ATC clearance for a straight-in approach has been given. [...] Minimum IFR altitudes or higher must be maintained during straight-in approaches until it is appropriate to follow altitudes published on the instrument approach chart.<sup>[6]</sup> [emphasis added]

The confusion in this case obviously arose out of the fact that the approach chart shows a minimum crossing altitude of 3,200 feet at PIEKA. However one is only authorized to that lower altitude if the aircraft is on a recognized and approved safe transition course. There are two such transitions shown on the approach chart: one from the south between Tandy and PIEKA and one from the north between Sadde and PIEKA.<sup>[7]</sup> Only on these transition courses is the aircraft permitted to descend below the minimum quadrantal or radar vectoring altitude once an approach clearance is given.

Unfortunately for our crew there is no such lower transition course and altitude on the inbound course for the approach west of PIEKA. As the check pilot pointed out correctly, the crew was therefore required to maintain 4,000 feet until PIEKA and then descend for the approach, which the captain failed to do.

This brings us to the second question, which is whether this obligation and failure on the part of the captain and PF also applied to the first officer, the Applicant, in the particular circumstances of this case.

Let me say at the outset that I do not view sections 9.1.6 and 9.1.7 as meaning "you fly as a crew, you fail as a crew." Section 9.1.6 clearly states only that "**it is possible** that an assessment of 'failed' **may** be given to more than one crewmember involved in the same flight sequence."<sup>[8]</sup>

The use of the conditional terms 'it is possible' and 'may' clearly indicates that the regulator has envisaged the possibility of the simultaneous failure of more than one crew member but only in the case of each candidate's lack of appropriate response to a given situation.

Section 9.1.7 in both its incarnations<sup>[9]</sup> simply delineates the administrative procedure to be followed in the case where one, or more than one crew member, fails a ride as delineated at section 9.1.6. It certainly does not imply or mean that in a multi-crew aircraft the whole crew will always fail where an assessment of unsatisfactory has been attributed to one of the crew members.

Let us now turn to the particulars of this case and see whether the Minister has established by a preponderance of the evidence that the decision of Captain Minto to fail First Officer Ferrara also was justified.

It is clear from the evidence that the captain initiated this descent from 4,000 feet toward 3,200 feet which he had selected in the MCP altitude window, by the use of the vertical speed [V/S] mode of the autopilot and the selection of a shallow rate.

It is also an admitted fact that at this point the captain deviated from SOPs by failing to advise (call and point) the FO of the initiation of the descent.

No one established exactly what the selected rate was, but it is agreed that it was somewhere less than 1,000 feet/minute somewhere around 500 feet/minute. In that case, from the initiation of the descent by the captain to the end of the ride, the elapsed period of time was over a minute.

Also it is clear from the evidence that from the changeover of control from the first officer (the Applicant) to the captain, the FO carried out the following actions:

- he reset his airspeed and altimeter bugs (which implies he at least looked at his altimeter to reset the MDA altitude on his altimeter bug);
- he identified the appropriate NAVAIDS for the approach. In this case only the VOR needed to be identified;<sup>[10]</sup>
- he carried out the pre-descent check which entailed a resetting of the fuel system, selection of two fuel pumps on and cross-feed closed, and included cross-checking bugs that is, again, both the airspeed and altimeter bugs already alluded to;
- he carried out the approach check which he testified only took a few (15) seconds. The last check also includes the checking of the altimeter settings. There are three altimeters on the B-757, the captain's, the stand-by and the first officer's;<sup>[11]</sup> the checklist calls for both pilots to cross-check the altimeter settings which means that both pilots physically check and call and compare the altimeter settings on all three altimeters;
- he rearranged his approach charts on his control yoke, and that is when the ride was stopped.

Now it is well accepted that situational awareness is of paramount importance during an approach procedure, particularly when the aircraft closes in both on the airport and the ground. At no time are the pilots of a multi-crew aircraft relieved of this obligation which can only be

achieved by a constant monitoring of flight instruments, particularly in a case like this where there are no unusual, abnormal or emergency circumstances, which could momentarily distract the PNF from his obligations to monitor the PF's actions.

It is clear that the captain here deviated from his company's SOPs and from general rules of airmanship.

I cannot accept however, given the amount of time involved, that those actions relieved the FO from his obligation to intervene when the departure from the cleared altitude of 4,000 feet occurred.

The Applicant argues essentially that given the workload he was assigned at the time and which was described above, he should be excused for not having noticed the said altitude excursion since the captain did not follow the required procedure of calling the altitude change and getting confirmation from him.

Given the circumstances of this case I agree with the representative of the Minister that there can only be three possible explanations for the Applicant's actions or non-action as the case may be:

- a. he did not notice the altitude excursion for a period of time that was more than one minute;
- b. he noticed the new altitude selected on the MCP and the descent and agreed with it and so felt no need to speak up; or
- c. he noticed the new altitude selected on the MCP and the descent and did not agree with it but did not speak up.

One can discard the third possibility immediately because in his direct testimony on a question from his lawyer as to what would have been a correct altitude for this phase of flight, the Applicant answered 2,000 feet. Now 2,000 feet is the authorized altitude only once the aircraft has passed (east) PIEKA, and, as mentioned earlier, the crew, once approach clearance was received in that position, was not relieved from maintaining 4,000 feet until PIEKA. Only then could it commence descent to 2,000 feet until the FAF (5 DME)<sup>[12]</sup> and then on to the minimum descent altitude [MDA] of 600 feet.

With regard to the first possibility, I find inconceivable that if the captain initiated the descent while Mr. Ferrara was carrying out the functions he described above, he did not notice the descent:

1. On setting the bugs, he had to look at both his airspeed indicator and altimeter;
2. The identification of the sole NAVAID (LAX VOR 113.6) would have taken but a few seconds, and during this time only his ears are concerned. He was not relieved during that period from his obligation to visually cross-check his instruments;
3. The pre-descent check, which apparently took a little longer than usual because of the resetting of the fuel system nonetheless according to the Applicant's own testimony, took no more than 30 to 45 seconds. This check also includes a cross-check of the airspeed and altimeter bugs, which in the case of the PNF (the Applicant), would oblige him to



call, look at and cross-check all three or at least two [the FOs and stand-by] altimeters in order to ensure that the bugs were properly set. If he carried out his duties correctly, he again had to have looked, at the very least, at his own altimeter; how then could he not notice the descent?;

4. The approach check, which at its last item specifically requires the cross-check of the altimeter settings. The same reasoning applies here.

We are left therefore with the inescapable logical conclusion that up to this point (end of the approach checklist) either the captain had not yet started the descent; or the descent had been initiated, noticed by the FO (because if unnoticed he was not carrying out his duties correctly which in this case would entail his responsibility anyway) and either he did not intervene because as discussed above he agreed with it (possibility (b)), or because he failed to do so when he should have (possibility (c)), which is also a failure point.

There is one last possibility and that is that up to the end of the accomplishment of the last checklist when all the FO's duties has been accomplished and he only had to rearrange his charts on the yoke as he testified, the descent had not yet been initiated.

In this case we are now at 4,000 feet, the captain has yet to select 3,200 feet on the altimeter window and vertical speed to a shallow rate, and all the FO has to do is rearrange his charts on the yoke which he will now do. At this point the captain starts his uncalled descent unnoticed by the Applicant.

The evidence is clear that a shallow descent was initiated, that is, less than 1,000 feet/minute. A normal descent rate is usually 700 feet/minute so a shallow rate would have been less than that, as Captain Minto testified, around 500 feet/minute. So from the evidence in that context for at least one minute [4,000 - 3,300 = 700] at a rate of descent of 700 feet/minute or more than one minute at a shallower rate which is more probable from the evidence, Mr. Ferrara lost complete situational awareness. In the context of a non-precision approach on a check ride, this situation is not only unacceptable, but highly improbable.

Suffice to say given the above discussion that the Applicant's failure to notice the descent or to intervene in such a way as to call the attention of the captain to the unauthorized descent amply justified the unsatisfactory assessment that he was also attributed during the check ride.

## **CONCLUSION**

**For all of the above reasons, I confirm the Minister's decision to issue First Officer Ferrara an unsatisfactory assessment of his B-757 pilot proficiency check dated June 20, 2001.**

Pierre J. Beauchamp  
Member  
Civil Aviation Tribunal

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<sup>[1]</sup> PNF: 'pilot not flying', which, in a multi-crew aircraft, is the pilot, part of the crew, who does not manipulate the flight controls; his/her function is to support the PF (pilot flying) in the execution of the tasks and functions required of the two-pilot crew.

<sup>[2]</sup> PIEKA: located 14.2 DME from LAX, minimum crossing altitude 3200. See Exhibit M-3: LAX approach chart VOR-7L,R.

<sup>[3]</sup> EICAS: Engine Indicating and Crew Alerting System.

<sup>[4]</sup> V/S: vertical speed selector on the mode control panel (MCP). See Exhibit D-5.

<sup>[5]</sup> ACPM, *Approved Check Pilot Manual*, Chapter 9 Flight Check Assessments. See Exhibit D-1.

<sup>[6]</sup> See *Instrument Procedures Manual*, Third Edition 1995, issued under the authority of Transport Canada, TP 2076E, p. 4-26, 4-27, 4-28.

<sup>[7]</sup> See M-3, LAX VOR-7L,R.

<sup>[8]</sup> See D-1 and D-2.

<sup>[9]</sup> Section 9.1.7 was amended between the time of the check ride on June 20, 2001 and the time of the hearing. See revision dated November '01, D-2.

<sup>[10]</sup> See Exhibit M-5.

<sup>[11]</sup> See D-5.

<sup>[12]</sup> Final approach fix minimum altitude 2,000 feet. See M-3.