**Appendix**

Interview administered to Retired Captain, Guy Avis on November 10, 2011

**Interviewer:** What year did you become a commercial pilot and with what airline?

**Pilot:** Firstly, I started as an instructor in 1969, instructing new students on small aircrafts where they would be flying solo. With this position, I taught purely technical skills. I obtained my first commercial airline pilot position in 1972 with MidWest airlines, and through the years I also worked for TransAir, Canadian Airlines, Pacific Western Airlines, and finally Air Canada.

**Interviewer:** What does Crew Resource Management (CRM) mean to you?

**Pilot:** It means that the captain and first officer divide duties and delegate tasks in such a way that the airplane can be flown successfully. By dividing the duties between pilots, mental work overload does not occur. In other words, it is an optimum use of the resources at hand. For example, if there was a medical emergency in the back of the airplane, as a team, including both pilots, and flight attendants, would collaboratively assess the imminent danger to the patient and decide if the flight could continue to the original destination.

**Interviewer:** As you shifted airlines companies, did you notice any change in policy or training regarding CRM?

**Pilot:** Yes, CRM training has changed dramatically, especially within the last ten to fifteen years due to computer technology incorporated more and more into the aircraft. Before, when I used to fly the plane with a ‘stick-shift’ I considered myself physically engaged as a pilot, now with the current computer technology, I think of myself as more of a manager of the computer system. In terms of CRM, different pilots and first officers reacted differently to the automated computer system. For example, some pilots would overestimate their ability to fly the aircraft with minimal managerial skills, and I, myself, was initially skeptical – I found it very difficult to trust the computer after the years of physically flying the aircraft myself. As a team member, I often found myself mentioning to other pilots “check this or check that” more than I probably had to, and in reaction some first officers would be perturbed that I was so paranoid about a possible computer failure.

**Interviewer:** I noticed very little mention of “CRM” in your airline manuals – out of a total of eight manuals, only two touched on CRM briefly[[1]](#footnote-1) (*Boeing 737 Operations Manual*, 1995 and *Canadian Airlines Flight Operations*, 2000). How were you taught CRM principles – for example, workshops, online training?

**Pilot:** CRM was never emphasized in the manuals – maybe the airline company felt it was something that could not be taught by reading it. Towards the end of my career in 2001, I found there were more and more scheduled classroom days for CRM training. We also practiced CRM principles in simulator training and we would be tested to see if we were overloading ourselves or our partners – obviously, with successful use of CRM, neither of the partners would be overloaded to an unmanageable degree.

**Interviewer:** How did CRM come into play during 9/11?

**Pilot:** Ironically, our flight landed in Vancouver, BC minutes after the 9/11 attacks had occurred in New York City. Even though the first officer and I had received notice of the attack once we had arrived to the gate, we were informed not to notify passengers because they had all safely arrived at their destination. If we were flying elsewhere and had remaining time left in the flight, we would have been obligated to communicate to passengers that “air traffic controllers have advised us to land at the nearest suitable airport.” Never would we explain to passengers the exact event – this would result in chaos, and flight attendants and most likely the cockpit members would experience an overload.

**Interviewer:** Were there any near accidents or errors that were made, but saved by principles of CRM?

**Pilot:** In my 29 years of flying, I never experienced a ‘near-accidents’ per se. However, there were many times that communication from air traffic controllers prevented accidents, that I nor my co-pilot could have predicted. For example, the air traffic controller would communicate that “traffic at 12 o’clock, going west at an unknown altitude” may be flying towards us, and we were advised to change our flight path accordingly.

**Interviewer:** In terms of interpersonal relationships among crew members during the flight, what has been the biggest change you have witnessed over the 29 years of your career?

**Pilot:** During the 1950s and 1960s, the captain of the aircraft was referred to as a ‘god’, but now, things have changed – all crew members are advised by the airline to challenge the pilot if they deem it necessary. There has been an equalizing of the status between the captain and first officer, because it has been largely agreed upon that no one is perfect, including the captain, and at some point in time, everyone makes mistakes. Therefore, effective communication and enhanced interpersonal relations amongst crew members is crucial.

1. One manual simply listed CRM as a pilot training principle, and the *Flight Operations* Manual simply stated that, “the Captain will determine the Pilot Flying and the Pilot Not Flying, and at all times there will be a clear understanding of who is in control.” [↑](#footnote-ref-1)