

Summer 2007

Twentieth Times

Published Quarterly by the 20th Airlift Squadron Alumni Association
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Greetings,

Here it is, summer vacation again and the kids are free from the tedious routine of classroom lectures, science projects, final exams, report cards (or whatever they use these days), and the preparation for college attendance somewhere in these United States or where ever one may go. It seems to come upon us all at once and we're not ready. Not because we didn't know this was coming but more or less because we didn't want to think about it. I often think back and wonder "how did I ever get everything done and hold down a steady job". It must have been good planning.

Speaking of planning, there's an old saying, " People don't plan to fail, they just fail to plan". This often happens when we need to do things that occur at a later time. We put it off for awhile and all of a sudden the light bulb comes on and we're behind the eight ball.

I'd like to think that our **REUNION** is one of those situations. The fact that you don't read much about it is because we only inform you three times every other year as to when it will occur .I can say to you for sure, however, there is a lot of work and planning to put one of these events together.

Our **REUNION** this year will take place in Myrtle Beach, South Carolina **OCTOBER, 11 thru 14, 2007**. This **REUNION** will be made up of several events.

Our First Event: We will gather on the beach patio of the hotel on **Thursday evening at 6:00 PM** for a welcoming cookout. This is a great place to meet old friends and make new ones while enjoying the beach and music. Karaoke will also highlight the evening.

On **Friday** you will have the pleasure of doing anything you choose to do, all day and night. It's a free day for you to get together with other folks and plan, with hotel representatives, a day of enjoyment.

Our Second Event: Members will gather on **Saturday** (location to be announced at a later date) for our membership meeting at 9:30 AM. The meeting will cover: Old Business, New Business, Treasurers Report and Voting for Alumni Officers. The positions that will be open are :President ,Vice President Secretary and Editor. (Note: I will not be running for the position of Editor or any position.)

Our Third Event: at 6:00 PM, **Saturday Evening** we will gather in the hotel (in a room designated by the hotel at a later date) for Dinner and Dance. We will have a DJ that will put together a great evening for us.

Sunday: Check out.

I hope you will plan to attend this reunion as it gives promise for a memorable weekend.

For question's, contact one of the following officers:

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Preamble

Twentieth Times is published four times a year by the 20th Air lift Squadron Alumni Association. 914 s. Main St. Summerville, S.C. 29483. Tele: 843-871-2407 (John Mellert). Postage is paid at Summerville S.C. Membership dues in the 20th ALS Alumni Association is \$5.00 per year, the bulk of which goes to the production, printing and mailing of the Twentieth Times. The Twentieth ALS Alumni Association is a not for profit organization dedicated to providing a forum for free exchange of thoughts, ideas and Information. Members are encouraged to submit letters, articles and photos of general interest to members. The ideas expressed are those of the contributor and do not necessarily reflect the views of the alumni, the inactivated 20th Airlift Squadron, or higher authority. The Twentieth Times is mailed on or about the 20th of March, June, September and December. Copy deadlines for letters, articles, stories and etc. is 45 days prior to the mailing.

Reunion Up-date

Our reunion plans are going smoothly. As promised, here are some ideas regarding entertainment in Myrtle Beach. Brochures for the shows will be in your welcome packets. Some possibilities are: Dixie Stampede (Dinner and Show), Medieval Times (Dinner and Show), Alabama Theater-One Show (New), and Legends (Famous Impersonators) For your convenience, there will be a ticket booth in the hotel lobby. Last but not least there is Gambling. A Gambling boat that leaves Little River takes you off shore and you can arrange to be picked up at the hotel. If this doesn't work, then our Hospitality room will be open for your enjoyment.

Shopping is unlimited. Broadway at the Beach is a delightful place with many shops and great restaurants. A Tangier Outlet Mall is located in North Myrtle Beach. Along Hwy 501 there are a number of outlet stores and the Barefoot Landing contains shops, restaurants and the Alabama Theater.

Be sure your **Reunion Registration** is sent to me before October 3, 2007 and your **Hotel Reservations** are made before September 11, 2007.

See you at the beach!

Dave and Kaye

New Members

Mark Frye and Alden Scott.

**20th Alumni Association Reunion Registration
October 11-14, 2007**

Name _____
(Please print clearly the name to be used on the name tag)

Address _____

Crew Position _____

Spouse or Guest's Name _____

Registration is \$55.00 per person. This includes the Thursday night welcoming cookout, Dinner/Dance On Saturday Night, Southern Hospitality and Snacks.

No. of people in party _____ X \$55.00 per person= \$ _____

Donation to help defray the cost of the Hospitality Room= \$ _____

Total amount of enclosed check= \$ _____
(Make checks payable to: 20th MAS/ATS Alumni)

Mail To: Kaye Mellert,
20th MAS/ATS Alumni Association
914 S. Main St.
Summerville, S.C. 29483

Questions: Call 843-871-2407 or e-mail: KIMELLERT@bellsouth.net

This form must be received NO LATER THAN October 3, 2007

Hotel Reservation's must be made with the Coral Beach Resort and Suites, Myrtle Beach, S.C .by calling **1-800-843-2684**. Please mention 20th Airlift Alumni when making reservations. The cut off for reservations is **September 11**, 2007. Accommodations are available for: ANGLE ROOM at \$58.00, ANGLE EFFICIENCY at \$69.00 and OCEAN FRONT at \$78.00.

A Suspense Story

The Gimli Glider Incident

From an article published in Soaring Magazine by Wade H. Nelson.

If a Boeing 767 runs out of fuel at 41,000 feet, what do you have?

Answer: A 132 ton glider with a sink rate of over 2000 feet-per-minute and marginally enough hydraulic pressure to control the ailerons, elevator and rudder. Put veteran pilots Bob Pearson and Maurice Quintal in the cockpit and you've got the unbelievable but true story of Air Canada Flight 143, known ever since as the Gimli Glider.

Flight 143's problems began on the ground in Montreal. A computer known as the Fuel Quantity Information System Processor which manages the entire 767 fuel loading process. The FQIS controls all of the fuel pumps and drives all the 767's fuel gauges. Little is left for the crew and refuelers to do but hook up the hoses and dial in the desired fuel load. But the FQIS was not working properly on Flight 143. The fault was later discovered to be a poorly soldered sensor. A highly improbable, one-in-a million sequence of mistakes discovered by Air Canada technicians investigating the problem defeated several layers of redundancy built into the system. This left Aircraft #604 (flt. 143) without working fuel gauges.

In order to make their flight from Montreal to Ottawa and on to Edmonton, Flight 143's maintenance crew resorted to calculating the 767's fuel load by hand. This was done using a procedure known as dipping the tanks. Dipping can be compared to calculating the amount of oil in a car's engine based on the dipstick reading. Among other things, the specific gravity of jet fuel is needed to make the proper dip calculations. The flight crew had never been trained how to perform the dipped calculations. To be safe they re-ran the numbers three times to be absolutely, positively sure the refuelers hadn't made any mistakes, each time using 1.77 lbs/liter as the specific gravity factor. This was the factor written on the refuelers slip and used on all of the other planes in Air Canada's fleet. The factor the refuelers and crew should have used on the brand new, all metric 767 was .8kg/liter of kerosene.

After a brief hop, flight 143 landed in Ottawa. To be completely safe, Pearson insisted on having the 767 re-dipped. The refuelers reported the plane as having 11,430 liters of fuel contained in the two wing tanks. Pearson and Quintal, again using the same incorrect factor used in Montreal, calculated they had 20,400 kilos of fuel aboard. In fact, they left Ottawa with only 9,144 kilos, roughly half what would be needed to reach Edmonton.

Lacking real fuel gauges Quintal and Pearson manually keyed 20,400 into the 767's flight management computer. The flight management computer kept a rough track of the amount of fuel remaining by subtracting the amount of fuel burned from the amount (they believed) they had started with. Their fate was now sealed.

According to Pearson, the crew and passengers had just finished dinner when the first warning light came on. Flight 143 was outbound over Red Lake at 41,000 feet and 469 knots at the time. The 767's Engine Indicator and Crew Alerting System beeped four times in quick succession, alerting them to a fuel pressure problem. "At that point" Pearson says we believed we had a failed fuel pump in the left wing and shut it off. We also considered the possibility we were having some kind of a computer problem. Our flight management computer showed more than adequate fuel remaining for the duration of the flight. We'd made fuel checks at two waypoints and had no other indications of fuel shortage. When a second fuel pressure warning light came on, Pearson felt it was too much of a coincidence and made a decision to divert to Winnipeg. Flight 143 requested an emergency clearance and

began a gradual descent to 28,000. Pearson says, "circumstances then began to build rapidly." The other left wing pressure gauge lit up and the 767's left engine quickly flamed out. The crew tried crossfeeding the tanks, initially suspecting a pump failure.

Pearson and Quintal immediately began making preparations for a one engine landing. Then another fuel light lit up. Two minutes later, just as preparations were being completed, the EICAS issued a sharp bong – indicating the complete and total loss of both engines. Quintal said, "It's a sound that Bob and I had never heard before. It's not in the simulator." After the "bong," things got quiet. Real quiet. Starved of fuel, both Pratt & Whitney engines had flamed out. Pearson's response, recorded on the cockpit voice recorder was "Oh F---."

At 1:21 GMT, the forty million dollar, state-of-the-art Boeing 767 had become a glider. The APU, designed to supply electrical and pneumatic power under emergency conditions was no help because it drank from the same fuel tanks as the main engines.

Approaching 28,000 feet, the 767's glass cockpit went dark. Pilot, Bob Pearson was left with a radio and standby instruments, noticeably lacking a vertical speed indicator- the glider pilot's instrument of choice.

Hydraulic pressure was falling fast and the plane's controls were quickly becoming inoperative. But the engineers at Boeing had foreseen even this most unlikely of scenarios and provided one last fail safe item, --- The RAT. This is the Ram Air Turbine, a propeller driven hydraulic pump tucked under the belly of the plane. The RAT can supply just enough hydraulic pressure to move the control surfaces and enable a dead stick landing. The loss of both engines caused the RAT to automatically drop into the airstream and began supplying hydraulic pressure.

As Pearson began gliding the big bird, Quintal got busy in the manuals, looking for procedures dealing with the loss of both engines. There were none.. Neither he or Pearson nor any other 767 pilot had ever been trained on this contingency. Pearson stated he was thinking "I wonder how it's all going to work out."

Controllers in Winnipeg began suggesting alternate landing spots, but none of the airports suggested, including Gimli, had the emergency equipment Flight 143 would need for a crash landing. The 767's radar transponder had gone dark leaving controllers in Winnipeg using a cardboard ruler on the radar screen trying to determine the 767's location and rate of descent.

Pearson glided the 767 at 220 knots, his best guess as to the optimum airspeed. There was nothing in the manual about minimum sink. Boeing never expected anyone to try gliding one of their jet airliners. The windmilling engine fans were creating enormous drag, giving the 767 a sink rate of somewhere between 2000 and 2500 fpm (feet per minute). Co-pilot Quintal began making glide-slope calculations to see if they could make Winnipeg. The 767 had lost 5000 feet of altitude over the prior ten nautical (11 Statute) miles, giving a glide ratio of approximately 11:1. ATC controllers and Quintal both calculated that Winnipeg was going to be too far a glide. The 767 was sinking too fast. "Were not going to make Winnipeg" he told Pearson. Pearson trusted Quintal, and immediately turned north. Only Gimli, the site of an abandoned Royal Canadian Air Force Base remained as a possible landing spot. It was 12 miles away.

It wasn't in Air Canada's equivalent of Jeppesen manuals but Quintal was familiar with it because he had been stationed there when in the service. Unknown to him and the controllers in Winnipeg, Runway 32L of Gimli's twin 6800 foot runways had become inactive and was now used for auto racing. A steel guard rail had been installed down most of the southeastern portion of 32L, dividing it into a two lane dragstrip. This was the runway Pearson would ultimately try to land on, courting tragedy of epic proportions.

To say that runway 32L was being used for auto racing is perhaps an understatement. Gimli's inactive runway had been "carved up" into a variety of racing courses, including the aforementioned dragstrip. Drag races were perhaps the only auto racing event not taking place on July 23rd, 1983 since this was "family day" for the Winnipeg Sports Car Club. Go-cart races were being held on one portion of runway 32L and just past the dragstrip another portion of the runway served as the final straightaway for the road course. Around the edges of the straightaway were cars, campers, kids and families in abundance. To land an airplane in the midst of all this activity was certain disaster.

Pearson and Copilot Quintal turned toward Gimli and continued their steep glide. Flight 143 disappeared below Winnipeg's radar screens, the controllers frantically radioing for information regarding the number of souls on board. Approaching Gimli, Pearson and Quintal made their next unpleasant discovery: The RAT didn't supply hydraulic pressure to the 767's landing gear. Pearson ordered a "gravity drop" as Quintal thumbed frantically through the Quick Reference Handbook, or QRH. Quintal soon tossed the QRH aside and hit the button to release the gear door pins. They heard the main gear fall and lock in place. But Quintal only got two green lights, not three. The nose gear, which fell forward against the wind, hadn't gone over center.

Six miles out Pearson began his final approach onto what was formerly RCAF B Gimli. Pearson said his attention was totally concentrated on the airspeed indicator from this point on. Approaching runway 32L he realized he was too high and too fast, and slowed to 180 knots. Lacking divebrakes, he did what any sailplane pilot would do: He crossed the controls and threw the 767 into a vicious sideslip. Sideslips are normally avoided on commercial flights because of the tremendous buffeting it creates, unnerving passengers. As he put the plane into a slip some of the passengers ended up looking at nothing but blue sky, while others were looking down at a golf course. Quintal said it was an odd feeling. The left wing was down, so I was up compared to Bob. I sort of looked down at him, not sideways.

The only problem was that the slip further slowed the RAT, costing Pearson precious hydraulic pressure. Would he be able to wrestle the 767's dipped wings back up before the plane struck the ground? Trees and golfers were visible out the starboard side passenger windows as the 767 hurtled toward the threshold at 180 knots, 30-50 knots faster than normal. The RAT didn't supply "juice" to the 767's flaps or slats so the landing was going to be hot. Pearson didn't recover from the slip until the very last moment. A passenger reportedly said, "I can see what clubs they are using." Quintal suspected Pearson hadn't seen the guardrail and the multitude of people and cars down the runway. By this time, it was too late to say anything. A glider only gets one chance at a landing and they were committed. Quintal bit his lip and remained silent.

Why did Pearson select 32L instead of 32R? Gimli was uncontrolled so Pearson had to rely on visual cues. It was also approaching dusk. Runway 32L was a bit wider, having been the primary runway in prior years. Light stantions still led up to 32L and the faded X painted on 32L indicating its inactive status, was almost non-existent. Having made an initial decision to go for 32L the wide separation of the runways would have made it impossible to divert to 32R at the last moment. Pearson said he never saw 32R, focusing instead on airspeed, altitude and the plane's relationship to the threshold of 32L.

The 767 silently leveled off and the main gear touched down as spectators, racers and kids on bicycles fled the runway.

The gigantic 767 was about to become a 132 ton, silver bulldozer. Pearson stood on the brakes the instant the main gear touched down. An explosion rocked through the 767's cabin as two tires blew out. The nose gear, which hadn't locked down, collapsed with a loud bang. The nose of the 767 slammed against the tarmac, bounced then began throwing a

three hundred foot shower of sparks. The right engine nacelle struck the ground. The 767 reached the tail end of the dragstrip and the nose grazed a few of the guardrail's wooden support poles. Pearson applied extra right break so the main gear would straddle the guardrail. Would all the sports car fans be able to get out of the way or would Pearson have to veer the big jet off the runway to avoid hitting stragglers?

The 767 came to a stop on it's nose, main landing gears and right engine nacelle less than a hundred feet from spectators, barbecues and campers. All the race fans had managed to flee the path of the silver bulldozer. The 767's fuselage was intact. For an instant, there was silence in the cabin. Then cheer and applause broke out among Flight 143's passengers. They'd made it; they were all still alive. But it wasn't over yet. A small fire had broken out in the nose of the aircraft. Oily black smoke began pouring into the cockpit. The fiery deaths of passengers in a Air Canada DC-9 that made an emergency landing in Cincinnati a month before was on the flight attendants minds and an emergency evacuation was ordered. The unusual nose-down angle the plane was resting at made the rear emergency slides nearly vertical. Descending them was going to be treacherous.

The only injuries that resulted from Pearson's dead-stick landing came from passengers exiting the rear emergency slide hitting the asphalt. Non of the injuries were life-threatening.

The fire in the aircrafts nose area was extinguished by members of the Winnipeg Sports Car Club with hand-held fire extinguishers. Pearson had touched down 800 feet from the threshold and used more than 3000 feet of runway to stop. A general aviation pilot who viewed the landing from a Cessna on the apron of 32R described it as "Impeccable". The 767 was relatively undamaged.

Air Canada Aircraft #604 was repaired sufficiently to be flown out of Gimli two days later. After approximately \$1M in repairs the aircraft re-entered the Air Canada fleet. To this day Aircraft #604 is known to insiders as "The Gimli Glider."

The avoidance of disaster was credited to Capt. Pearson's knowledge of gliding which he applied in an emergency situation to the landing of one of the most sophisticated aircraft ever built. Capt. Pearson strongly credits Quintal for his cockpit management of "everything but the actual flight controls" including his recommendation of Gimli as a landing spot.

Captains Pearson and Quintal spoke at the 1991 SSA Convention in Albuquerque about their experiences. Pearson was, at the time still employed and flying for Air Canada, and occasionally flying his Blanik L-13 sailplane on weekends. He has since retired to raise horses. Captain Maurice Quintal is now a A-320 pilot for Air Canada and will soon be captaining 767's, including Aircraft #604.

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An amusing side note to the Gimli story is that after flight 143 had landed safely, a group of Air Canada mechanics were dispatched to drive down and begin effecting repair. They piled into a van with all their tools. They reportedly ran out of fuel en-route, finding themselves stranded somewhere in the backwoods of Manitoba.

Thank's to Al Lamarche for this article.

Until next time,
Bob.

