DEATH IN THE SKY: A SNOWBIRD FALLS

**Introduction**

“All he wanted to know was where his buddy was.” — Harold Ray, talking about surviving pilot Captain Chuck Mallet when he was found after the crash, quoted in “Aging planes not to blame for crash, Snowbird says,” written by Dawn Walton, *The Globe and Mail*, December 13, 2004

The Snowbirds are a team. They’re a family. And they’re friends. Captain Chuck Mallet had just parachuted to safety after a mid-air two-plane crash on December 10, 2004, and all he could do was plead for information about the pilot of the other plane.

Mallet and his opposing solo, Captain Miles Selby, had been flying their Tutor jets in the cold, clear prairie sky near Mossbank, about 65 kilometres south of Moose Jaw, Saskatchewan. They were practising a head-on, intersecting loop manoeuvre, a stunt they had performed together countless times. It requires the pilots to hurtle toward each other at 600 km/hr—close to the speed of sound. In this manoeuvre, they pass each other and then fly up 800 metres. The planes then fly upside down to pass each other at the top of the loop, and finally descend for another pass at the bottom of the loop. They are supposed to leave 10 metres between their planes.

This time they got too close. The planes collided at the top of the loop. Mallet was thrown free of his plane. Selby was killed on impact. The debris from the planes was spread across two kilometres of cold prairie farmland.

Who are these people, who risk their lives in the dangerous pursuit of perfection in the sky? Mallet and Selby are members of the Snowbirds, and they are Canada’s own. For more than 35 years, the very best jet pilots of the Canadian Forces have performed as the 431 Air Demonstration Squadron, otherwise known as the Snowbirds. Every year, the nine-pilot team demonstrates precision flying skills for upward of three million people. The squadron criss-crosses North America, giving as many as 70 shows per season. When the Snowbirds perform, they demonstrate the professionalism, teamwork, and skill of the Canadian Forces.

The death of Selby focused the eyes of the nation on the Snowbirds. People began to ask questions. Are the performances of the Snowbirds worth the risk of pilots’ lives? Are they worth the $10-million expense of maintaining the program? Are the Tutor jets too old? Can we afford to buy new jets?

To Consider

1. Summarize the Snowbird accident that occurred in December 2004.

2. Why have the Snowbirds been called a symbol of Canada?

3. Have you ever seen the Snowbirds perform? What did you think? Did the show make you feel proud to be a Canadian? Explain.

4. When an air force pilot dies as a member of an aerobatic flying demonstration team it is a terrible thing. When such a pilot dies in battle defending his or her nation it is also a terrible thing. How are the two situations different?
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[Video Review]

Part I

1. Who are the Snowbirds?

2. What threatens their future?

3. What happened in December 2004?

4. How many Snowbird pilots have died in flying accidents in 35 years? _____

5. Why do pilots hope the Snowbirds continue?

Part II: The Numbers

1. How many jets fly on the Snowbird team? ______

2. How many kilometres per hour can the Snowbird jets travel? ______

3. For how many years have the Snowbirds been flying? ______

4. About how many millions of people have watched the team perform? ______

5. How old was Captain Miles Selby when he crashed? ______

6. How many planes were involved in the crash? ______

7. How many other crashes have the Snowbirds experienced? ______

8. How many minutes did it take for military rescuers to appear? ______

9. Within how many minutes did a local civilian ambulance pick up Captain Chuck Mallet? ______

10. How many millions of dollars does the Snowbird program cost the Canadian military? _____

11. How many Snowbird accidents have occurred in the past 15 years? ______

12. Captain Miles Selby will always be remembered as the superb jet pilot Snowbird Number ______.

Update

As this issue of News in Review was being prepared, there was an ongoing investigation of the tragic crash. Results will be known later in 2005.

Quote

We have lost a pilot, an officer, a fighter pilot, a teammate, a comrade, a warrior, an opposing solo, a friend, a son, and a husband. The world and our hearts are emptier and colder. We have lost Snowbird eight.” — Major Ian Mclean (Snowbird Commander), “Death in the Sky: A Snowbird Falls” video, News in Review, February 2005

Part II Answers

1-(9), 2-(600) 3-(35), 4-(116), 5-(31), 6-(2), 7-(9), 8-(46), 9-(18), 10-(10), 11-(3), 12-(8)
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Snowbird History

Have you ever been on an airplane? Even if you haven’t, you have certainly benefited from air travel in Canada. Letters and courier packages from distant places usually travel by air. Light goods are transported by air for sale to restaurants and stores. In many places in the North, supplies arrive by air, as do people such as doctors and nurses. The airplane is essential to transportation in Canada.

Canadian Aviation History

In 1909, the Silver Dart flew for less than a kilometre. It was the first flight in Canada. The airplane rapidly became more common.

- About 22,000 Canadian volunteers served in Britain’s Royal Flying Corps and Royal Naval Air Service in the First World War (before Canada had an air force), starting in 1914. Canada had 152 war aces, including Billy Bishop.
- Wilfrid “Wop” May was the legendary bush pilot who delivered the first life-saving cargo of vaccine to northern Alberta in an open-cockpit Avro Avian in 1929. He was a fearless pilot who helped connect Canada’s north to the rest of the country.
- By the 1930s, more freight was travelling by air in Canada than in the rest of the world combined.
- In the Second World War, which began in 1939, Canadians volunteered for both the British and the Royal Canadian Air Forces (RCAF). Nearly 18,000 died while serving in the RCAF in Europe.
- Canadians have flown planes to fulfil Canada’s peacekeeping duties in Korea (1950), the Suez (1956), and Kosovo (2003).
- In the 1990 Gulf War, Canadians flew some 2,700 missions.

Snowbird History

The Snowbirds have deep roots that began long before they acquired their name. Aerobatic flying started when the First World War heroes of the skies returned after the war. People back home wanted to see the spectacular stunts their war heroes could perform.

- In 1929, a small group called the Siskins performed demonstration flights for three years. They flew propeller planes.
- The Golden Hawks were formed in 1959 to commemorate the 50th anniversary of the Silver Dart, the first powered flight in Canada, and the 35th anniversary of the Royal Canadian Air Force. The team flew six F-86 Sabre jets before being disbanded in 1963.
- Col. Owen Bartley Philp formed and commanded the Golden Centennaires, an air force aerobatic team for the 1967 Centennial celebrations.
- He then formed the Snowbirds in 1970, using 18 repainted RCAF training jets: the CT-114 Tutors that are still in use today.
- The volunteer formation-flying team was based in CFB Moose Jaw, which is the air force’s training centre. The pilots practised after their regular work hours.
- In July 1971, they held a contest at the base’s elementary school to name the team. They chose “Snowbirds.”
In 1974, the Snowbirds began performing aerobatic stunts for the public. Soon after, the buzz began and their fan base grew.

In 1977, the Snowbirds became a permanent unit in the air force.

In 1978, they received the official designation of “431 Air Demonstration Squadron.”

In 2001 Major Maryse Carmichael, 29, of Quebec City, became the first female Snowbird. She called it “a dream come true.”

Accidents
Miles Selby’s isn’t the only death connected with the Snowbirds. Accidents happen when pilots fly so very fast, so close together. Why do planes crash? Sometimes it’s equipment failure. Sometimes it’s the blinding sun, lost horizon, or rough winds. Sometimes it’s pilot misjudgement. The Snowbirds have had a number of accidents over the years. Usually the pilots can land their planes safely. Other times they have ejected or been thrown from their planes and have parachuted to the ground. In the following cases, the pilots were not so lucky.

Capt. Miles Selby, #8, Opposing Solo, killed in a mid-air crash while training near Mossbank, SK, 2004, age 31

Capt. Michael VandenBos, #2, Inner Right Wing, killed in a mid-air crash while training just south of Moose Jaw, SK, 1998, age 29

Capt. Shane Antaya, #2, Inner Right Wing, killed during an air show when his plane dove into Lake Ontario at the CNE in Toronto, 1989, age 26

Capt. Wes Mackay, #8, Lead Solo, killed in a motorcycle accident after an air show in Latrobe, Pennsylvania, 1988, age 28

Capt. Gordon de Jong, #8, Lead Solo, killed during an air show in Grande Prairie, AB, 1978, age 32

Capt. Lloyd Waterer, #8, Lead Solo, killed during an air show in Trenton, Ontario, 1972, age 24

Activities
1. A turning point is an event that causes far-reaching changes. Choose one event in the history of aviation that you see as a turning point. Explain your choice.

2. Create a timeline called the History of Aviation in Canada or the History of the Snowbirds. Include events listed above. Research two other significant events to add to your timeline. Consider adding illustrations to your timeline.

3. Would you say that the number of Snowbird pilots killed is acceptable or not acceptable? How would you prevent future deaths?

4. Before Maryse Carmichael became a Snowbird, she flew the VIP Challenger, the jet that takes the Prime Minister and Governor General around the world. When asked how she felt about being a role model for girls, Carmichael replied that she hoped she was a good role model for boys, too. “If you work hard,” she says, “the results will come. No doubt about it.” In what way is Carmichael a role model for young people?
Maj. Ian McLean was the commanding officer of the Snowbirds when Miles Selby went down. As lead pilot, he flew with Selby nearly every day. This is part of what he said about the fallen Snowbird at his memorial service: “I stand here today as Snowbird 1 in a world that is emptier and colder today than it was last Friday. We have lost one of our own. . . . I paid absolutely no attention to what [Selby] was doing, and that was the ultimate compliment one Snowbird pilot can pay another.”


Miles Selby
Miles Selby was only 31 years old when he died. He had joined the Canadian Forces as a young man, in 1991. After training as a fighter pilot, he was posted to Cold Lake, Alberta. He became a seasoned pilot while flying missions in Kosovo and the Balkans. In the second year of his three-year tour of duty with the Snowbirds, Selby had already logged more than 2000 hours of flying time with the military. He left behind his wife of two years, Julie.

The Memorial Service
More than 1000 people attended the memorial service for Selby in Moose Jaw, including Defence Minister Bill Graham and Saskatchewan Lieutenant-Governor, Linda Haverstock. It was held at 15 Wing Moose Jaw, the Snowbird’s training centre, in an airplane hangar for the Tutor jets.

As part of the service, the Snowbirds flew their planes, performing the Missing-Man Formation. They flew past in the Diamond nine-jet signature formation of the Snowbirds. But as they came abreast of the mourners, one jet peeled away, representing Selby, the pilot who had died. Later, another memorial service was held in Selby’s hometown of Tsawwassen, BC.

Response
1. Selby’s lead pilot, Maj. Ian McLean, said that he didn’t pay attention to what Selby was doing. Why is that a compliment?

2. Why would such important people as the Defence Minister and Saskatchewan’s Lieutenant-Governor attend the memorial service?

3. Why would the Missing-Man Formation be both meaningful and heartbreaking for the family and friends of a performance pilot?

4. In your notebook, explain why the family would want to hold a second memorial service in Selby’s hometown.
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**Life of a Snowbird**

In 2002, Robert Reichert was flying upside down just 150 metres above the ground when his seatbelt came undone. He was thrown out of his seat and pinned to the canopy, the transparent roof of the pilot’s cabin. Did he panic? Considering that he was hurtling along at about 650 kilometres an hour, upside down, and out of control, could you blame him for panicking? No. But Reichert was a Snowbird, a pilot trained to react even when in crisis. Reichert reached up into the cockpit and jammed the control stick to the left. This flipped the plane right side up, and, somehow, Reichert came in for a safe landing.

**Training to Avoid Problems**

Not every day provides the Snowbirds with such dangerous situations. But that’s only because the Snowbirds train endlessly to identify minor problems and eliminate them before they become big problems. Every day during practice season, the Snowbird pilots are up at the crack of dawn. They fly twice each day, focusing on the parts of the routine that need work. A video technician tapes the practice sessions. After flying, the team members scrutinize the videotapes to identify problems and fix them. With minor adjustments, the pilots can make the formations work beautifully. By being aware of minor problems, they can eliminate them, or know how to deal with them should they crop up again.

**The Season**

Every season brings the challenge of easing in new members of the squadron and learning a new routine. The team practises and analyzes problems from December until early spring. Their goal is to prepare new stunts for the air-show season, which lasts from May until October.

The Snowbirds are much sought-after. They’re the only aerobatic team to fly nine-member formations in North America. So they draw big audiences wherever they go. The difficulty is deciding where to go. Canadian air shows are always their first choice. But they also perform at U.S. air shows whenever they fit into the schedule. About 1.5 million Canadians and 1.5 million Americans see their shows every year.

The air-show season is very busy. Each of the planes carries the pilot and one crew member from show to show. All the spare parts and equipment required for the trip must be packed into the tiny compartments on the planes. Unlike the flying squadrons from some other countries, the Snowbirds do not have the luxury of a Hercules aircraft to accompany them and carry their belongings and equipment.

After every show, the Snowbirds take the time to meet fans and sign autographs. They understand that they are Canada’s ambassadors, so they always do their best to perform to the best of their ability and to extend a friendly Canadian hand to their fans.

Perhaps the hardest part of Snowbird life is the continual separation from loved ones. Snowbirds live an intense life. They are on the road for half of each year, sleeping in motels far away from their spouses and children.
Flying
Jet flying as a Snowbird is more demanding than any other type of flying. You must handle your plane with both precision and daring. You need to have nerves of steel. Above all, you must trust the other pilots.

Flying aerobatics in a jet is extremely exciting—think of the most exciting roller coaster ride you know and imagine yourself driving like that! But unlike amusement park rides, flying in formation is extremely dangerous. With only metres between each plane, being even a little off could cause a crash.

The lead Snowbird gives the orders. Everyone else follows exactly. All pilots have their eyes pinned on the lead, making sure they’re not too wide, too high, too low, too far ahead, too fast, or too slow.

To Consider
1. What would you like most about the Snowbird’s job? What would you find most difficult?

2. Explain what Betty Reichert meant in her statement. In your explanation, refer to the accident described at the beginning of the previous page. It involves Robert Reichert, Betty Reichert’s grandson.

3. Flying is only part of the Snowbird’s job. Snowbirds have to be as good speaking with the public and with the media as they are good at flying. Why might that be?

4. The Snowbirds aren’t the only professionals to use the video camera to assess performance. NHL hockey coaches use video to assess their teams’ performances. They also use it to assess the potential of players on junior teams. Think of at least one other type of professional who might use video cameras for work. Describe how this technology might help them in their work.

Quote
“When he tried out for the Snowbirds, I was worried. You can cross the street against a red light once. But to keep crossing the street against the red light increases your chances [of dying]. That’s how I thought of the Snowbirds.” — Betty Reichert, grandmother of Robert Reichert, in the CBC video “1800 Seconds: Chasing Canada’s Snowbirds,” EMG Snowbirds Productions Inc., 2002
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Flying the Tutor

If you ever were to get a chance to fly with a Snowbird, the number of buttons, knobs, and dials on the control panel would amaze you. But you wouldn’t find a flight computer. Flying a Tutor jet is a hands-on, rough-and-tumble experience. You might compare it to driving an extremely powerful motorcycle on a race track. No automatic shifting. No cruise control. No modest speeds. It is a true test of a pilot’s abilities. The Snowbirds push their vehicles to the limit and depend on their instincts and skills to take them through the impossibly tight corners.

The Tutor Jet

The Canadair CT-114 Tutor dual-seater jet was used for years to train Air Force pilots. It can reach speeds of up to 750 km/h, though the Snowbirds tend to stick with 650 km/h during performance.

Certain modifications are required before a Tutor can be used by the Snowbirds. The biggest job is to change the cockpit so that it can be flown from the right seat as well as the left. The J-85 engine is tuned to enhance performance in low-level flying. The jets are painted in the highly recognizable red-and-white pattern used by the Snowbirds. Finally, the jets require an external smoke tank for creating long white or red streams of colour. The external diesel fuel tank is attached to the outside of the plane. From there, fuel is sprayed into the plane’s exhaust, where it vaporizes.

Maintenance

The Tutor is a Canadian jet. It was designed in the early 1960s, and the last one rolled off the assembly line in 1967. The Air Force stopped using the Tutor for training purposes in 2000. These are old jets. They were flying before most of their current pilots were born. They were originally set to be retired in 2002. Why are they still being used? Money. It costs a great deal to replace a whole squadron of jets, and the military just doesn’t have the money.

So, instead, the Air Force spends money to maintain a fleet of older jets. In 2001, the Snowbirds were assigned a dedicated maintenance crew because so much work is required just to keep the planes in the air. Compare the situation with that of an older car. You can keep an older car running, but every year it will need more and more maintenance.

Despite their age, the Tutors are kept in top shape. All necessary parts are replaced every year. When parts are not available, the maintenance crew improvises. They even make their own spare parts. If necessary the Tutor is expected to be able to continue flying until 2020. If they’re kept in use for that long, however, they will have to be updated with GPS, which is now standard in all airplanes flying in North American airspace. The military is also costing out other needed upgrades.

Formations

The Snowbirds are low-flying stunt performers. To present a formation the jets fly in perfect unison in an established pattern. For example, The Big Diamond is a formation. The nine Snowbirds fly extremely close to each other in a diamond shape. Their wings overlap, and only a metre or two separate the planes.
Manoeuvres involve some sort of change in a formation. For example, in the Bomb Burst, all nine planes fly down together toward the ground. At the last moment, they split up to fly off in all directions, leaving just their smoke trails behind them. Other stunts include the Maple Leaf Burst, the Lag Back Cross, Inverted Flight, the Cork-screw, and the Double Diamond Loop. The formations and stunts chosen for each year’s show vary from year to year.

**Further Research**
Want to fly a Snowbird? Try out the flight simulator you can use on your home computer. It’s available at www.snowbirds.dnd.ca/multimedia/fltsim_e.asp.

**Inquiry**
1. How fast does the Tutor jet fly? ________
   Compare this with speeds that you know. Research any that you don’t know:
   - What is the speed limit for the road your school is on? ________
   - What is the speed limit for the nearest highway? ________
   - How fast can a roller coaster travel? ________
   - How fast can a snowmobile travel? ________
   - At what speed does a 747 cruise? ________
   - What is the speed of sound? ________

   Make sure all researched figures are in km/h for a better comparison. If it is necessary to convert figures to metric, use a calculator or the converter at www.sciencemadesimple.com/conversions.html.

2. Explain why it is so expensive to maintain the Tutor jets.

3. Research one of the Snowbird manoeuvres or formations. Some formations are shown at www.snowbirds.dnd.ca/forms_e.asp. Describe the manoeuvre or formation of your choice. Alternatively, draw a diagram of the formation or manoeuvre.
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Becoming a Snowbird

They make it look effortless. The Snowbirds fly in perfect formation, looping and diving, all in perfect synchronization. It is almost a ballet in the sky. Ballet dancers train for years to build up the muscles and strong sinews needed to twirl through the air so gracefully. And so do the jet pilots in the Canadian Forces. They train for years, honing their skills, practising their manoeuvres, and improving their precision. Their goal? To be good enough to be chosen as a member of the highly prestigious Snowbirds, North America’s only nine-plane aerobatic flying team.

Making Your Dream a Reality

How do you earn the right to wear the red uniform of the Snowbirds? The road to becoming a Snowbird is long, but pretty much anyone can do it as long as they have 20/20 vision without glasses or contact lenses. You can begin now by reading and learning as much as you can about flying. Stay in school and get a university degree.

After signing up, you would begin your basic officer training. Then you would take basic pilot training in Moose Jaw, Saskatchewan. This is where all Air Force pilots receive their training, and it’s also the base for the Snowbirds. After you qualify as a pilot, you would work as a fighter pilot. You would fly missions for Canada, perfecting your flying skills.

Finally, after you feel you’re one of the best, you might be ready to apply to be a Snowbird. Only the best candidates are selected to try out. The competition is fierce, and the tryouts to test formation-flying proficiency are tough.

Responding

1. Former Snowbirds are sometimes asked what they thought of their tour of duty with the Snowbirds. They almost always answer with something like, “It’s the best job you could ever have.” Why do you think they always have such a positive response?

2. Why do you think a stay on the Snowbird team is limited to three years?

3. Find out about becoming an Air Force pilot at www.recruiting.forces.ca/engraph/airforce/jobs_e.aspx.
   a) Summarize what the site says you would get out of becoming a pilot.
   b) What are the requirements for joining?
   c) Summarize the stages of basic officer training.
   d) Summarize the stages of pilot training.
   e) Do you think you have the “right stuff”? Why or why not?

4. Check out any one of the Air Force jobs at www.recruiting.forces.ca/engraph/airforce/jobs_e.aspx. Choose one position that appeals to you. Describe the responsibilities. What makes this job different from a similar civilian job? For example, explain how a job as a pharmacist in the Air Force would be similar and different from a job as a pharmacist at your local pharmacy.
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Activity

“Given that Ottawa has four submarines in dry dock, helicopters too old to fly, rescue craft rusting out, and no idea of how it will pay for its new 5,000-strong peacekeeping brigade, does it make sense to spend a small fortune to keep the Snowbirds aloft? And does it make sense to risk the lives of Canada’s most talented military pilots on what amounts to entertainment?” — Editorial, The Globe and Mail, December 15, 2004

“There is nothing I’ve ever seen more graceful and beautiful than those small red and white jets wingtip to wingtip, rolling and looping in what seems like inexorable slow motion, as if joined as one. It’s sad that I never think to say thank you, before times like this, to those men [and women] for putting me so in touch with the kind of dignified pride that defines what it is to be Canadian. For wearing the uniform that has inspired legions of youth to dream.” — Gary Porter, Halifax, NS, on a National Defence Site List (December 10, 2004), http://snowbirdsapp.dnd.ca/guestbook/message_view_f.asp?page=18

Part I: Facts and Arguments Related to the Snowbirds

<table>
<thead>
<tr>
<th>Pro</th>
<th>Con</th>
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<tr>
<td>• The Snowbirds boost Canadians’ national pride.</td>
<td>• Some of Canada’s best military pilots are not being used to fulfil Canada’s military obligations.</td>
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<tr>
<td>• They represent Canada in other countries.</td>
<td>• They get killed in crashes.</td>
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<tr>
<td>• They inspire young Canadians to consider a career in the military.</td>
<td>• The program glorifies fighter pilots.</td>
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<tr>
<td>• They inspire military pilots to excel.</td>
<td>• It costs Canadian taxpayers $10-million to finance the program.</td>
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<tr>
<td>• They’re good entertainment.</td>
<td>• In the decade from 1992 to 2002, the Air Force budget shrank by 20 per cent.</td>
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<tr>
<td>• They boost tourism to Canada because people travel to see the air shows.</td>
<td>• The Tutors are old. Replacing a whole squadron of jets will be extremely costly.</td>
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<td>• The air-show industry benefits by the big audiences that the Snowbirds attract.</td>
<td>• The military is badly in need of equipment to fulfil Canada’s military obligations.</td>
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Consider the following individuals. What point of view might each one take about the Snowbirds? From the chart on the previous page, choose facts and arguments each individual might choose to support their opinion. Think of another argument he or she might use.

• Chris, a Canadian military fighter pilot
• Jerome, a peace activist
• Gustav, an air show operator
• Yvette, a government accountant looking for ways to trim the federal budget
• Céline, the owner of a bed and breakfast close to an air-show location
• Filippo, a teenager thinking of becoming a fighter pilot
• Janice, a working adult who pays taxes

Part II: Finding Solutions
It costs a great deal of money to run the Snowbirds program. Take one of the roles listed above. In a small group, discuss the following possible courses of action while in role.

• Buy new jets.
• Find a public sponsor for the Snowbirds.
• Reduce the size of the team to four or six members.
• Replace the Tutors with modern jets (cost: about $300-million).
• Replace the jets with propeller-driven planes (cost: about $150-million).
• Get other government departments besides the military to help fund the program (for example, Heritage Canada, because of the Snowbirds’ value in boosting tourism and Canada’s image abroad).
• Any ideas you have for saving the Snowbird program.

Part III: Expressing Your Opinion
What’s your opinion? Write a letter to the Snowbird organization or your member of Parliament to express your opinion about whether or not the Snowbird program should be continued. Present what you think would be one way to solve the financial difficulties. Support your opinion with facts and arguments.

The Snowbirds
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