Take Flight

toward a career in aviation and aerospace

Essential Skills Volume 4 - Other Skills

FOR USE WITH THE AVIATION AND AEROSPACE ORIENTATION PROGRAM

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Using the Aviation and Aerospace Orientation Program Essential Skills Workbook

The Aviation and Aerospace Orientation Program Essential Skill workbook is not intended for use as a self-directed independent learning tool. It has been designed to augment the Aviation and Aerospace Orientation Program curriculum and support the learner in attaining Essential Skills that are paramount for success in the workforce. The activities serve to strengthen foundational skills and reinforce basic concepts.

There may be activities in the workbook that require students to solve mathematical calculations or respond with a long passage. While there is space allotted for the activities within the workbook, it may be necessary for the student to work on a separate page/notebook.

Where applicable the workbook is accompanied by an Answer Guide containing sample answers/responses. These Answer Guides also cross-reference the workbook topics to the Aviation and Aerospace Orientation Program curriculum.

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Section One: Writing, Thinking Skills, Computer Use & Working with Others

Essential Skills are skills that have been identified by employers as necessary requirements for individuals to function on the job. This workbook incorporates a variety of Essential Skills; namely, Writing, Thinking skills, Computer Use and Working with Others.

Writing involves writing text and completing forms. Record-keeping is vital in the aviation industry, so being able to write to document your work or complete legal documentation is crucial. Since most of this record-keeping is done on a computer, an aviation technician must possess basic computer skills. It becomes evident to see how these items are interrelated. For example, it is necessary to have a certain level of thinking and computer skills when you are writing a form or completing online. And, as in most occupations today, being able to work as part of a team will make you an important asset to your company.

Questioning Skills

Chinese Proverb

"He who asks a question is a fool for five minutes;
he who does not ask is a fool forever."

Close-Ended Questions

- Require simple answers such as "yes" or "no"
- Are used to discover basic facts about a subject

Open-Ended Questions

- Require thought to answer
- Force the responder to think and organize information
- Provide the questioner with more information

Bloom's Taxonomy is a way of organizing thinking skills into six categories. Each category is more challenging than the previous and each has key words that could help a learner compose questions.

1. Knowledge: define, list, name, who, what, when, where, tell…
2. Comprehension: summarize, discuss, describe, compare, explain…
3. Application: illustrate, modify, use, demonstrate, examine, classify…
4. Analysis: infer, separate, categorize, arrange in order…
5. Synthesis: combine, integrate, substitute, create, design, invent…
6. Evaluation: decide, recommend, argue, convince, justify, judge…

Activity 1-1 – Developing Questions

Your local airport is advertising for summer help and you have been selected for an interview. Compose seven questions you will ask in that portion of an interview where candidates are invited to ask questions. At least five of your questions must be open-ended.

More Questions

You Got the Job!!!!!

BUT…

Your mother knows that young workers are injured much more often than experienced workers.

1. Get the Facts:
The Association of Workers' Compensation Boards of Canada, AWCBC, has a link on its home page leading you to Young Worker Resources.

   a. Find three facts that will help your mother deal with her concerns.

   _____

   _____

   _____

   b. List the web page or pages where you found these facts.

   _____

   _____

   _____

2. Be Proactive:
There are several websites that suggest questions to be asked regarding safety.

   a. Using those questions as a guide, compose seven questions regarding your personal safety as an airport employee.

   _____

   _____

   _____

   _____

   _____

   b. List the websites that you used as references.

   _____

   _____

   _____

   _____

3. Learn From Others:

   In small groups, share the questions you composed. After everyone has shared, revise your work if necessary.

4. Submit Your Work for Evaluation:

   Submit your work according to the requirements your teacher established at the beginning of this assignment.

Writing Notes

According to the Essential Skills profile of Aircraft Mechanics and Aircraft Inspectors, a typical writing task would be to write notes to co-workers or to write notes to remind oneself of important information.

Writing Skills

Purpose:	All writing starts out with a reason. "**Why** am I writing?"
Audience:	Every piece of writing is intended for a specific individual or group. "**To whom** am I writing?"
Format:	Once purpose and audience are established, the appropriate format can be chosen. "**How** will I write this?"

Notes

- May be in point form
- Must be legible
- Need to include all pertinent information

Activity 1-2 – Notes

1. You have just taken a phone message from a supplier of essential parts regarding a delivery delay. The supplier has given you a reason, a revised delivery date, and a bonus to compensate for the inconvenience. Write a note to the line maintenance mechanic who is responsible for scheduling to inform him or her of the change. Don't forget to include the supplier's name, contact information and the parts that will be delayed.

2. While completing the task described above, you were interrupted and told to do another task immediately. Write a note reminding yourself what you must do regarding the phone message.

Logbooks

Logbooks are a critical component of the aviation industry. Many workers in the aviation field use logbooks on a daily basis. A few such uses include recording:

- Flying hours
- An aircraft's maintenance
- Crew changes
- FAR 121 duty limitations
- Radio maintenance
- Work completed daily
- Inspection outcomes

It is the Law

In particular cases, a logbook could become a legal document.
Take care to:

- Be as accurate as possible
- Write legibly
- Safeguard the logbook from damage
- Record dates and times
- Record proper names of everyone mentioned

Activity 1-3 – Writing in a Logbook

You are a student working for the summer at a small, fly-in fishing operation. Your duties include the following:

- General maintenance of the grounds
- Fuelling planes
- Weighing and loading cargo
- Manning the radio when the boss is not available
- Selling bait, tackle and fishing licences
- Keeping an accurate logbook of tasks completed each day

On June 30th, one of the busiest days of the summer, you completed the following tasks:

- Cut the grass
- Fuelled, weighed and loaded three parties of fishermen outbound for three different lakes
- Sold bait, tackle and fishing licences

1. Create all the logbook entries for June 30th.

Reporting an Injury

In Canada, every province and territory manages its own workers' compensation program, but there is a national resource called the Association of Workers' Compensation Boards of Canada. Through the website www.awcbc.org all the provincial and territorial boards can be accessed.

When a worker is injured, in any province or territory, it is the worker's responsibility to fill out the appropriate forms, which are quite similar across the country. One of the most important sections is the description of the accident.

Prince Edward Island requests the injured worker to "Describe fully what happened to cause this injury/accident or occupational disease. **Please mark the affected area(s) below.** Describe what you were doing and include any tools, equipment, materials, that you were using. *Attach an extra page to fully explain if necessary."*

A Model

On January 12, 2008 while working for the XYZ Conservation Authority, I was asked to perform a hydraulic ice study in a local watercourse. I had to drill a series of twenty holes through the ice, using a gas driven ice auger. For every hole, the auger had to be started by pulling the recoil starting cord. Because of the length of the auger, this operation was performed over my head. The auger was not functioning properly therefore requiring several pulls per hole. The temperature that day was –24 degrees. The repetitive nature of this action caused stiffness and severe pain in my right shoulder, which was later diagnosed as a rotator cuff tear.

Activity 1-4 – Writing an Injury Report

Your mother was right! You have been injured on your first job.
You were told to take one of the trucks and go to the far end of the runway to chase some deer away. While attempting to park just off the end of the runway, you rolled the truck and were injured.

1. In at least one well-developed paragraph, describe the accident fully as required on a Workers' Compensation form.

Email Format

Email in the workplace is very different from personal email.

There is no "4u" or "☺" in a business or workplace email.

Tips to Remember

- Be specific in the subject line. Busy people use subject lines to determine if they should take the time to even read the message.
- Be concise, but don't be afraid to use more than three words.
- Start your email with a salutation, "Dear John:", or use John's name in the first few words: "I was wondering, John, if you …."
- Deal with one topic only.
- Make your message easy to read: Use numbered or bulleted lists.
- End with a friendly closing and your name.

Model Message

To: <johnsmith@hotmail.com>
From: <kayspeare@canadaweb.ca>
Subject: INTRODUCING NEW IMPROVED RIVET DESIGN
Cc:
Bcc:
Attached:

Dear John:

I wanted you to be the first to examine our recently patented rivets designed for use with aluminum alloy stock. I am convinced that your helicopter assembly plant would benefit from switching to this new design. Some of the features include

- Heads have been widened
- Flares extend further
- Material strength has been improved

Knowing that the ability of rivets to withstand and absorb vibrations is critical, you may want to examine our test results as soon as possible. I am reserving a day, May 7, for you to visit our plant. Please confirm by May 1st. Looking forward to seeing you then.

Kay

Get the "Mess" Out of Message

Whether you are sending an email across town or across the world…

Whether you are writing a memo to your co-worker or your boss…

The Message Must Not Be A Mess!

Information Messages

- Open with the main point you are trying to communicate.
- Keep the tone friendly, but professional.
- Explain your main message in the body.
- Make your points easy to understand by listing when possible.
- Avoid accusations, humorous comments, and negativity.
- Close with an optimistic statement or a request for an action.
- Give an end date if action has been requested.
- Sign off with your name and other contact information if desired.

Activity 1-5 – E-mail Communications

1. Examine the message that was used in the email model on the previous page. List all the criteria for Information Messages that were used in that model.

_____

_____

_____

_____

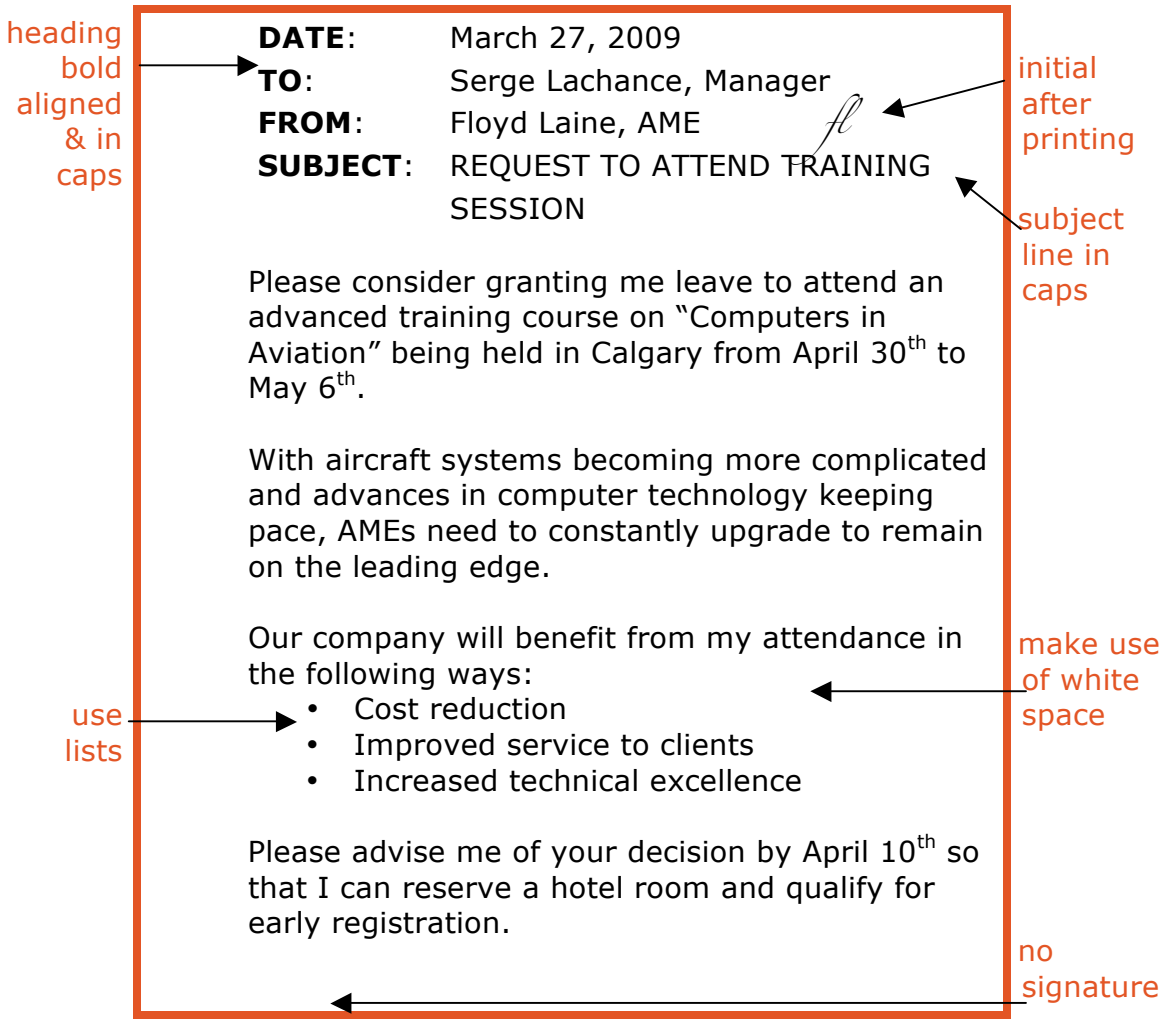
_____

2. You have a part-time job as a mechanic's helper at an aviation repair shop. The head mechanic, Jean Lefevre, has just told you why a customer's Piper PA-12 Super Cruiser will not be repaired this week as promised. Jean has asked you to draft an email message for his approval. The message to the customer must explain the reason for the delay without alienating him.

3. You are a co-op student working for a small aviation company. The boss was flying you to a remote airstrip to complete some necessary maintenance work, when both of you spotted what appeared to be wreckage in a section of dense bush. You called in a report, but when you returned to base, the local police asked you to send a complete report by email. Compose that email message.

Memo Format

Memos are hard-copy messages normally sent within an organization. The content of memos is organized in a similar manner as that of emails and, although the format can vary from company to company, a common format is shown below.



Activity 1-6 – Memo Writing

1. You have been informed that you must attend a WHMIS session and you must therefore send a memo to your boss to request the day off. Write a memo to your boss.

2. In your fourth summer working at the airport, you have been put in charge of a group of sixteen year old students who were hired to do manual labour tasks. For their first day at work, you have prepared a memo for them, outlining their duties and responsibilities. Write the memo to the summer students.

Memos and Emails

Request Messages

- Use the direct approach.
- Make your request in the first paragraph.
- Explain your request in the body of the text.
- Include all the important information: dates, times, cost, etc.
- Show how granting your request will benefit the reader.
- Format your information in reader-friendly ways: lists, charts, bold, underscoring, italics, etc.
- In the closing, if appropriate, give an end date with a reason for it.

Reply Messages

- Reply to the request immediately in a polite and friendly manner.
- Answer questions in a list in the same order that they were asked.
- Explain your reasons, if necessary, in the body of the text.
- Be appreciative.

Activity 1-7 – Memos and E-mails

1. Examine the model of a memo on the previous page. Using the criteria for "Request Messages" as listed above, name the criteria that the model illustrates.

2. As a co-op student working for a small, local aviation company, you have been told to send an email to the editor of the latest Aviation Safety Letter at Transport Canada. There is an article your boss wants to reprint and pass out to customers, but she needs to make sure that there are no restrictions on reproductions because of copyright. Compose one email that you would send to the Aviation Safety Letter Editor.

3. Prepare a memo that you could send to a Guidance Councillor at your school, asking for information about careers in aviation. Be sure to ask at least five questions.

4. Assume you are the Guidance Councillor and reply to the above memo.

Business Letters

1. Mountain View Transport
   1923 McLeod Trail
   Calgary, AB T3W 5E4
2. August 26, 2009
3. Ms. Anna Casey
   Box 204
   Hare Bay, NL A0G 4P4
4. Dear Ms. Casey:
5. The management team at Mountain View Transport is pleased that you have accepted our offer of employment. There are a few details that were not covered in the interview, which I'd like to mention now.
6. Although your duties were to begin on October 10th, starting on the 12th would avoid the conflict with Thanksgiving weekend, and thus be better. I am enclosing a contract for your signature. Please peruse it carefully and note the following points:
7.
   - Health care package now includes dental coverage
   - Holidays will be three weeks per year until 2012
   - We reserve the right to transfer you to our B.C. office with 60 days notice

   When you let me know which date you prefer to fly to Alberta, I will book your ticket. Since it's expensive to ship larger items by transport, you might consider renting a furnished spot until you get established.
8. If you have further questions, contact me by phone (403-555-5555) or at my email address. (black.debra@mountainview.ca) We are all looking forward to working with you.
9. Yours truly,
10.
11. Debra Black
    Human Resources Manager
12. Enclosure

More about Letters

The purpose of a business letter is to get a message across simply, directly, and pleasantly. Examine the model letter on the previous page. Some of the important features include:

1. Return Address: Your address is crucial if you hope the person will respond. Businesses may replace the return address with letterhead.

2. Date: Place one space below return address or letterhead.

3. Inside Address: Name the recipient of the letter and give his or her address and title.

4. Salutation: Followed by a colon.

5. Opening Paragraph: Begin immediately with the main reason for sending the letter.

6. Body: Explain the background behind your opening statement. Include everything that is pertinent.

7. Readability: Make it easy for the reader to understand your message by means of lists, charts, use of bold etc.

8. Closing Paragraph: Mention an end date with reasons, if that applies, and/or give additional contact information.

9. Closing: Followed by a comma.

10. Signature: Sign in ink after the letter is printed.

11. Typed Name: Type your name and title.

12. Enclosure: Notation used if something is included in the mailing.

A well written, well formatted letter projects a desirable image. Notice that

- The text is aligned to the left margin.
- The tone is kept polite and positive throughout.

Activity 1-8 – Letter Writing Activities

1. You are a student working part-time at your local airport and you have been noticing a trend, which is very worrisome. A number of pilots do not seem to be particularly careful about weight and balance when loading their own small planes. You recently attended a safety workshop put on by Transport Canada that dealt extensively with the dangers of flying an improperly loaded aircraft.

   Pilots are calculating fuel load weights, but they do not always weigh baggage, especially smaller items. Another common mistake that you have observed is that really overweight people are rarely weighed. Pilots are simply using the average weight standards and not taking into account the additional fifty or sixty pounds per person that overweight passengers might add to the load. This means that three obese passengers would be the equivalent of four of average weight.

   Finally, you know that the trend, to simply toss small bags into planes without properly securing them, could cause a serious hazard if the plane hits turbulence or has a rough landing.

   Although being a whistle-blower is a concern for you, it would be more upsetting if an accident happened and you hadn't taken any action. Therefore, you have decided to write a letter to Transport Canada reporting the situation.

   Your letter will be evaluated for both content and format.

2. Adhering to the proper format, write a letter to an aviation company requesting information on summer job opportunities for next summer. Remember, thirty other students from your area may also be contacting that company, so make your letter unique. Concentrate on an opening that catches the reader's attention. Inform the reader of at least five qualities that would make you an outstanding employee and indicate that you have sent your resume along with the letter.

3. As a summer student who has worked for the XYZ Company for the past four summers, you have been asked to prepare a letter for your supervisor's approval. You are to invite students taking the Aviation and Aerospace Orientation Program course in September to attend a seminar being held at the airport. Your company will be introducing a new line of tools, and there will be workshops, displays, and snacks. You will be sending registration forms along with the letter, which will be addressed to the Aviation and Aerospace Orientation Program teacher at your former high school.

Writing Summaries

To Summarize

- Read, listen or watch the piece several times.
- State in one sentence what the main idea is.
- Express, in your own words, the examples that are used to prove the main idea.
- Do not insert additional facts, your opinion, or original thoughts.

Activity 1-9 – Summary Writing

1. On the Internet, go to www.safemanitoba.com and click on "Programs". Choose the video, An Average Day, which is about seven minutes long, and view it online. Choose one of the chapters, either Steve's, Jennifer's or Eric's story, and, in a short paragraph, summarize it.

2. Find Transport Canada's website and click on the "Air" division. From there choose "Info Sheets", and pick "Canadian Women in Aviation". In a complete paragraph, summarize the main points of this article. You may find it helpful to print the "printable version", and use the skills of highlighting and underlining to help you organize the points you want to include and their organization.

3. Following the same pathways as above, choose "Transport Canada's Role in Air Accidents" and read it several times. In this case, use the headings and subheadings to identify the major ideas. In a short paragraph, summarize the article.

Be Creative!

4. Return to the video An Average Day at www.safemanitoba.com. Your task will be to write a synopsis or summary of a new episode of the video. This is a different kind of summary. You will not be summarizing someone else's work, but rather creating your own main and supporting ideas.

   In less than a page, writing in complete sentences and paragraph form, create a fourth chapter for the video, An Average Day. This segment should be about workplace safety for young workers in the aviation field.

Critical Thinking Using an Aviation Safety Letter

On a regular basis, Transport Canada publishes an Aviation Safety Letter in which a variety of safety issues are examined. Issue 2/1999 described a tragedy at Eindhoven Air Base in the Netherlands in which thirty-four people died and seven were seriously injured. A portion of that article is reproduced here.

> The Hercules arrived ahead of schedule at Eindhoven, and was cleared for a visual approach to Runway 04. The airport bird control officer had previously been asked to report to the tower when it was assumed that the Hercules would arrive later in the day, although normal procedure required him to be on the field monitoring bird activity during flight operations. These circumstances required the bird control officer and air traffic control (ATC) staff to fire pyrotechnics from the tower to disperse a flock of birds that was observed shortly before the Hercules was to land. The bird control officer and the ATC staff failed to detect that a large, mixed flock of lapwings and starlings was sitting near the runway in grass, which had recently been mowed but had not been raked.
>
> Just prior to touchdown, approximately 500 to 600 of these small birds were observed by the flight crew, who elected to carry out a missed approach. During the overshoot, the No. 1 and No. 2 engines were severely damaged by bird ingestion. The crew also feathered the No. 3 engine, likely believing that this engine was also damaged. With only the No. 4 engine producing power, the aircraft yawed approximately 70 degrees to the left, banked approximately 35 degrees to the left, lost altitude and crashed to the ground. The fuel tanks ruptured and flames engulfed the aircraft.
>
> While the aircraft was still airborne, ATC staff activated the crash alarm, and emergency response staff reacted immediately. A misunderstanding during the initial calls resulted in the assumption that only the flight crew was on board the aircraft, with the result that backup fire fighters did not respond. A further assumption that the flight crew could not have survived the fire led to the decision not to enter the severely damaged aircraft. Because of these assumptions, more than 25 minutes were lost in the rescue effort. Meanwhile, survivors were unable to evacuate the aircraft because the doors had been damaged in the crash. Survivors were evacuated to the local hospital 40 minutes after the accident.
>
> (Reprinted with permission from Transport Canada)

The article continues with an evaluation of ways in which this accident could have been prevented.

Activity 1-10 – Critical Thinking

1. From your reading of the facts in the tragedy described above, explain how changing any of at least three different actions, could have prevented the accident.

2. Try to discover the current thinking on overshooting or continuing with the landing when flocks of birds are present on or near the runway.

Critical Thinking Using an Aviation Safety Vortex

Transport Canada regularly publishes Aviation Safety Vortex to provide a forum for the discussion of helicopter safety. In an article entitled "Passenger Briefing—A Must Prior to Flight", a fictitious story is told of a helicopter crash and the pilot's subsequent trial for acting in an unprofessional manner and for gross negligence. The story ends with the supposed summation of the prosecuting attorney. Speaking to the jury, the prosecutor states:

> Ladies and gentlemen of the jury, you have listened to testimony in respect to the helicopter accident of September 10, which resulted in the tragic and senseless deaths of three passengers. We have established that all three died not on impact but as a result of post-impact circumstances. In fact they were not even seriously injured as a result of the initial impact. One safely escaped from the wreckage, only to be struck and killed by one of the still-turning rotor blades. Another died because he was unfamiliar with and could not open the seat-belt buckle. The last died because he didn't know how the door release operated or how to activate the emergency release. The question that you must answer is who is responsible for these three tragic deaths? The answer, ladies and gentlemen of the jury, is the pilot is responsible, for he failed to carry out his duties as a professional pilot.
>
> (Reprinted with permission from Transport Canada)

Activity 1-11 – Critical Thinking

1. The helicopter pilot who was found guilty in the story had neglected to brief his passengers on the safety issues connected with flying, landing and deplaning from helicopters. Work with a partner or a small group to develop a list of at least twelve issues that should be included in a thorough safety briefing.

2. Assume you have just read a recent Aviation Safety Vortex issue and there was an article about the often-neglected survival kit. The article recounted how CAR 602.61 states that "no person shall operate an aircraft over land unless there is carried on board survival equipment, sufficient for the survival on the ground of each person on board, given the geographical area, the season of the year and anticipated seasonal climatic variations, that provide the means for a) starting a fire; b) providing shelter; c) providing or purifying water; and d) visually signalling distress."

   Working with a partner or with a small group, develop a list of essential items that should be included in a Survival Kit to be used in the winter in remote northern areas of Canada.

Explore a Website

A fascinating website called Beaver Tails can be found if you Google "DHC-2". Here you will find more information about the de Havilland Beaver aircraft, than you ever thought possible to collect. The website was established and is maintained by Neil Aird.

Scroll down the very long home page and you will discover a Master Index. The very first Beaver listed in the index is the CF-FHB.

Activity 1-12 – Computer Use

1. Read and view everything on the website about the CF-FHB and then listen to the interview of Russ Bannock, who was the test pilot for this very first Beaver. Note that the first photo of the CF-FHB is labelled "A National Treasure".

   Write a short, five-paragraph essay in which you agree or disagree with this assessment. Is the Beaver aircraft a national treasure? The first paragraph should introduce your topic; the next three paragraphs should each develop one of the three reasons for the opinion you hold; and the last paragraph should wrap up your mini essay in two or three sentences.

2. On the same website as above, go to the link "Aviation Paintings" and examine the collection of artwork that is displayed. Write a well-

developed paragraph that explains why you prefer one of the paintings over the others.

3. Skim through the rest of this website. It is huge! Write a well-developed paragraph explaining what you think of a person who would devote his life to the establishment of this collection of information.

4. Another website to examine can be found at www.bushplane.com. This website is devoted to introducing and explaining some of the features of the Canadian Bushplane Heritage Centre at Sault Ste. Marie, Ontario. Evaluate the effectiveness of this site using the following headings: Content, Illustrations, Organization, Links.

Drama

Tableau

- Extremely impressive dramatic form.
- Does not require experience.
- Can be performed by amateurs believing they don't have any talent.
- A group poses itself in a scene, remaining motionless for 1-2 minutes.
- Performers may or may not use props.
- Most effective if a series of scenes (4-8) are prepared and then actors move in slow motion from one scene to the next, **holding the pose of each scene for at least a minute.**

Role-Playing

- Group decides on a story line for a scene.
- Actors play out the scene as if it was really happening.
- Actors may speak or may play it as mimes. (No speaking)
- Think of the game **Charades**: That is role-playing.

Activity 1-13 – Working With Others

Go On…Try At Least One!

1. Working in groups, create a tableau of one or more scenes showing a safety issue for young workers in aviation.

2. Working in groups, role-play a safety issue scene.

3. Choose a tableau or a mimed role-play that has been performed for the class. Retell what you have observed, and let the actors be the judges of whether or not you have been accurate.

4. Role-playing is a great preparation for a first interview. Role-play the interview for a summer job at the airport. Work in pairs. Each person should take a turn playing both roles: interviewer and interviewee. Evaluate each other's performance.

Video Resume

The latest trend for job-searchers is the creation and posting of a video resume. Although mainly concentrated in creative fields such as advertising and journalism, there are resumes online promoting people in engineering and mechanics. Alison Doyle, on the website About.com Job Searching, http://jobsearch.about.com/od/videoresumes/a/videoresume.htm, listed the following tips:

Video Resume Tips

- Dress professionally in business attire, just as if you were going to an in-person interview.
- Keep your video resume short: one to three (1-3) minutes.
- Look at the camera not at the desk or table below you.
- Don't speak too fast.
- Make sure there isn't any background noise and that the wall behind you isn't too busy.
- Practice what you're going to say ahead of time.
- Start by mentioning your name (first and last).
- Focus on your professional endeavours, not your personal ones.
- Discuss why you would be a good employee and what you can do for the company that hires you.
- Thank the viewer for considering you for employment.

Will video resumes become more common in the Aviation industry? No one knows for sure.

Activity 1-14 – Career Preparation

1. On the Internet, search for sites where you can view video resumes. Preview at least three. Write down the addresses and a brief comment on each of the videos that you viewed.

2. Prepare a script for your two-minute video resume. Assume you will use this resume in two ways: to include as a link in your bursary and scholarship applications, and to use as a job-search tool.

3. Are you really keen? Prepare a two-minute video resume.

What's In Your Future?

The Essential Skills Profile of Aircraft Mechanics and Aircraft Inspectors, compiled by Human Resources and Skills Development Canada, conclude the eighteen-page profile as follows:

> **Future Trends Affecting Essential Skills**
> In the future, aircraft mechanics and aircraft inspectors will need improved computer use and continuous learning skills. They will need to be able to access electronic information posted on the intranet by their own organizations and on the Internet by manufacturers and regulatory bodies. They will need strong continuous learning skills to keep abreast of current knowledge of changing regulations, repair and inspection practices.

The compilation of the profile, including this prediction, was based on interviews of aircraft mechanics and aircraft inspectors working in the field, as well as consultation with industry experts.

Activity 1-15 – Continuous Learning

1. On the Internet, search for "Essential Skills Canada HRDC", which should lead you to a page where you can search by code. The code for Aircraft Mechanics and Aircraft Inspectors is NOC 7315. Skim through the profile to find the section on "Continuous Learning".

   a. List three reasons why practitioners in this field must continually update their skills.

   _____

   _____

   _____

   b. Name six types of materials that workers could read at work to help them remain current in their field.

   _____

   _____

   _____

   c. Give an example of two materials that workers could obtain on their own initiative.

   _____

   _____

2. In a short paragraph, explain what you think "Continuous Learning Skills" are.

   _____

   _____

   _____

   _____

   _____

3. In the excerpt quoted above, the prediction is that workers in these aviation fields will need "improved computer use …skills". Skim through the profile and find the section on Computer Use.

   a. Name four kinds of computer skills that aircraft mechanics and aircraft inspectors must currently have.

   _____

   _____

   _____

   _____

b. Of the computer skills you now have, which is your weakest skill?

c. In a brief paragraph, explain how you could work on improving your weakest skill.

Section Two: A Project – An Oral Presentation

Step One: Define the Task

Note: The next eleven pages will take you through a step-by-step guide to creating an effective oral group presentation, where each member of the group will have the experience of working on every portion of the project. If a presentation is not your teacher's goal, most of the pages can be adapted to single, short assignments.

Option 1:

The class should be divided into groups and assigned one of the following regulatory bodies to research:

- Transport Canada (Canadian regulatory body that administers the Canadian Aviation Regulations—CARs)
- Federal Aviation Administration (American regulatory body that administers the code of Federal Regulations—CFRs)
- European Aviation Safety Agency (European Union regulatory body that administers civil aviation safety and environmental protection regulations)
- International Civil Aviation Organization (Specialized Agency of the United Nations that deals with civil aviation, globally)

Option 2:

Students could work individually, in pairs, or in groups to research aviation programs at two colleges, so that the programs could be compared.

Option 3:

Students could work individually, in pairs, or in groups to research an aviation company that operates in their area.

Step Two: Think—Pair—Share

When starting a research project, one great strategy is to determine what you already know about the subject, and then try to establish what you want to know about it.

Creating—composing—posing questions is often the most effective means to decide the direction of your research.

1. **Think** about your topic. What is the big question you are trying to answer? Some possibilities might be:

   Option One: "How does the role of the regulatory body I've chosen, relate to occupations within the aviation industry?"

   Option Two: "Which of these two colleges will best meet my needs, and why this one?"

   Option Three: "What are the possibilities of summer employment at this aviation company, and why would I like to work here?"

2. Brainstorm as many ideas as possible. Let your mind roam freely and jot down whatever occurs to you.

3. Create at least seven challenging questions. (See Section 1, Page 1 for a review of questioning skills.)

4. **Pair** up with your partner or the members of your group.

5. **Share** by reading your questions aloud. The group should discuss the merits of each question, and decide on the collection of questions that will be the starting points for the research.

Step Three: Collect the Facts

1. Search

- Classroom resources
- Magazines
- Books
- Websites
- Data bases

This is called "Secondary Research". You are merely reporting on information that someone else has collected and presented.

Keep Collecting

The best facts are those you collect yourself. Conducting "Primary Research" means that you do the experiment, conduct the survey, visit the site, or question the experts in the field.

2. Research means "search again". Dig deeper.

So…if possible…interview persons working in the field, either by phone, in person or even by computer, with or without webcam.

Interview Tips

- Make an appointment specifying the amount of time you want.
- Ask for a specific person by name whenever possible.
- Ask permission to tape the interview, allowing you to concentrate on the person, rather than on what you are jotting down.
- Prepare for the interview by knowing as much as you can about the topic before you conduct the interview.
- Ask open-ended questions.
- Be pleasant, but don't stray off topic. Busy people operate on a schedule. Stay within the timeframe you have established.
- At the end, offer the person the chance to add any comments.
- Don't forget to say "Thanks".

3. Take Notes:

- "Paraphrasing" means putting into your own words and it is more than merely changing a few words in a selection.
- Always jot notes down in your own words.
- Take notes from the Internet the same way that you take them from printed text. Don't copy a whole file from the Internet into your Word program.
- If you want to make a specific quote, put those words down exactly, in quotation marks, and record the source in brackets immediately following the quote.
- Notes taken to prepare for an oral presentation do not need to be written into sentence and paragraph form.
- The more sources you consult, the easier it will be to avoid **plagiarism**

Plagiarism

Plagiarism

Plagiarism is the failure to acknowledge that you are using other people's words or ideas. Simply changing a few words is not sufficient. If the idea is unique, you must give credit to the creator, even if you express that idea completely in your own words. If the idea is commonplace, but you use mostly someone else's words to express it, you must also give credit to the author of the words you have used.

Make Work Your Own:

- Combine ideas from several sources.
- Add original ideas of your own.
- Invent a unique approach to an established idea.
- Create your own organization for the ideas.

Example:

The following excerpt is from an article, "A Cold Wind Blowing" in the magazine Vortex, Issue 1/2003 published by Transport Canada.

> We hear about wind chill on radio and television weather forecasts all winter long. It's a popular topic of conversation in coffee shops and on buses, at breakfast tables and supermarket checkout counters, and gets generously sprinkled throughout our winter vernacular. It gets exaggerated and substituted for actual temperatures, as if having the highest wind chill value won some sort of morose, climatic door prize. It is repeatedly described using adjectives like bitter, chilly, icy, biting, arctic, raw, frosty, freezing, frigid, and poetic expletives deemed unprintable in a family helicopter safety publication. But what is it??
>
> (Reprinted with permission from Transport Canada)

The following paragraph has had a few words changed, but essentially it remains the same. For this reason it is a **plagiarized** account, and the writer would be in trouble unless he or she indicated the original source.

> In the winter we listen to wind chill reports from radio and television announcers and talk about it everywhere. It gets blown out of proportion and mentioned instead of the actual temperature. It's explained using words like bitter, chilly, icy, frosty, freezing and sometimes by swear words. What really is it?

Step Four: Acknowledge Your Sources

As mentioned previously, writers and researchers who quote or adapt other people's words or ideas must acknowledge these sources. There are several different systems, which have been developed to document sources, but the most common are the MLA (Modern Language Association) system and the APA (American Psychological Association). Some companies even have their own formats that they prefer.

Normally a reference is documented twice. A brief reference (or citation), such as the author's name or the first few words of the title, and a page number, are placed in brackets immediately following the quote or reference. (Smith, 321)

At the end of an essay or report, the writer must create a complete listing of all the materials that have been used. This is called a "Bibliography" (or reference list) if it refers to all the references consulted, even if they weren't actually cited, or a "Works Cited" page for the materials referred to in the essay or report.

A simplified system, which can be used for this project, follows:

Book	Joels, Kerry Mark and Gregory P. Kennedy. *The Space Shuttle Operator's Manual*, New York: Ballantine, 1988.
Magazine	Rennick, Sydney. "Flight Planning Issues". *Aviation Safety Letter*, Ottawa: Queen's Printer, Issue 2/2007.
Website	"Transport Canada's Role in Air Accidents", Retrieved August 25, 2008 http://www.tc.gc.ca/mediaroom/infosheets
Interview	Smith, Helen. Personal Interview. September 20, 2009.

Tips

- Author's last name, comma, first name comes first if it is known.
- Titles of books, movies, magazines are in italics.
- Titles of articles, chapters, websites are in quotation marks.
- "Works Cited" and "Bibliography" pages are arranged alphabetically by the first word.

Step Five: Organize Your Facts

Say what you're going to say; say it; say what you said.

- Since this will be an oral presentation, your facts may stay in point form.
- Type all the facts you have collected in a double-spaced, bulleted list.
- Create a "Works Cited" page.
- The facts and "Works Cited" will be transferred to one file and provided to your instructor (as email attachment, if possible).

Some Discussion Skills

- Looking at the speaker and listening to his or her words.
- Interjecting when there is a natural break; not interrupting.
- Asking questions to clarify.
- Summarizing the points made so far.
- Being inclusive; inviting shy participants to contribute.
- Staying on track.
- Connecting ideas.
- Trying to work out a consensus whenever possible.
- Maintaining a positive attitude even if consensus is not attained.

Activity 2-1 – Discussion

For Groups:

The groups will meet to share each member's research results and discuss the plan for sharing results with the rest of the class. Items on the discussion agenda should include which facts to be used, how many PowerPoint slides this will entail, and who will be preparing each slide. Each student should prepare a minimum number of slides.

Each student will submit a one-paragraph summary of the group's discussion, prepared using word processing software. One requirement will be to report on how members of the group made use of the discussion skills. Certain keyboarding criteria should be established for the typed assignment: double-spaced, title centered, font and size specified, etc.

For Individuals:

Organize the facts for your report based on your teacher's requirements.

Step Six: PowerPoint

PowerPoint is an efficient, effective way to present information to a small group or a class.

Activity 2-2 – Preparing Presentations

1. Create a PowerPoint presentation about your assigned topic. (For people who have had no experience using PowerPoint, the following steps may be helpful.)

   - Choose "PowerPoint" from the desktop or from the list of programs available on your computer.
   - Choose "Auto Content Wizard" from the "New Presentation" task pane if you have never prepared a PowerPoint presentation. You can also click on "New File" in the "File" menu list and choose "Auto Content".
   - Under "Type of Presentation", click "General" or "Generic" and click on next to advance to the next step.
   - For the "Type of Output", choose "On-Screen Presentation".
   - Fill in your title and include page numbers, but not the date last updated.
   - Click on the text box and type the names of all group members on the title slide.
   - On the slide named "Introduction", enter the purpose of your project.
   - Under "Topics of Discussion", list the three to five main ideas you wish to convey.
   - On slides four to six, enter one main idea per slide, with its support.
   - If you have more than three main ideas, add additional slides to accommodate the extras by clicking on "New Slide".
   - Delete original slide eight by going to "Edit" and clicking on "Delete Slide", and delete the last slide, "Next Steps".
   - Change the title of "What This Means" to "Conclusion".
   - Most of the functions used in Word are also available in PowerPoint.
   - Under each slide is a section "Click to Add Notes". Here the presenter can keep additional information that will be useful if questioned about a point.
   - Change the layout on at least one slide.
   - Add at least one "AutoShape" by clicking on the AutoShape selection, then click on presentation and drag to appropriate size. Add at least one text effect by clicking on the stylized "A" (on the "Drawing" toolbar).
   - Be certain to "Save" your presentation. Click "Save" on the File menu.
   - Print your presentation as an "Outline Page" for submission to your instructor. Select "Outline Page" from the "Print What?" drop-down menu (bottom right) in the Print dialogue box.

Step Seven: Presentation

The Essential Skills Profile for Aircraft Mechanics and Aircraft Inspectors lists eight types of oral interaction, that are required in these occupations:

- Interact with co-workers
- Interact with those you supervise or direct
- Interact with supervisor/manager
- Interact with peers and colleagues from other organizations
- Interact with customers/clients/public
- Interact with suppliers/servicers
- Participate in group discussions
- Present information to a small group

Almost every college course, including Aviation courses, will require oral presentations.
Therefore, every member of the group should participate in the presentation.

Speaking Skills

- Be well prepared (presentation should have a catchy introduction; clearly stated main ideas supported with examples; and a conclusion which reviews the main points and sums up).
- Do not read notes.
- Do not memorize your talk.
- Use key words from your slides to speak about the main ideas.
- Speak clearly, not too fast and not too slowly.
- Be enthusiastic and make your voice reflect your enthusiasm.
- Look at individual people in all parts of the audience.
- Use a suitable volume, so that all persons can hear you.
- Everyone gets nervous, even experienced speakers.
- If you make a mistake, don't fret. Keep on going.
- Get your audience involved. Ask for a show of hands or ask a specific question of an audience member.

Step Eight to the Teacher: Evaluation

1. Peer Evaluation

The points that were made in the "Speaking Skills" chart on the previous page can be used as the criteria for an evaluation checklist. At least five members of the audience could be assigned to evaluate each presentation. A sliding scale from one to five is an easy format to use, and the final mark could be an average of the peer evaluations and the teacher's evaluation.

2. Self Evaluation

One technique is to have the student send a memo to his or her instructor commenting on what was learned, how well the group interacted and the effectiveness of the actual presentation.

3. Teacher's Evaluation

The teacher will have the opportunity to evaluate students on several aspects of this project: students will have submitted a list of facts and a "Work Cited" page, a one-paragraph summary of the group discussion, the "Outline Page" of the PowerPoint slides that they prepared, and all students should have participated in the presentation.

Last But Not Least

Titles are often written *after* the article is completed.

First Lines may be composed *last*.

Introductions are usually created after the body of text has been *finished*.

So…

One way to wrap up this project, or to wrap up the Semester, is to have students create a cover for a textbook to be used in this course.

Graphic Design

Examine the cover of the Aviation and Aerospace Orientation Program binder, which is an excellent model of a cover for the following reasons:

- The colours are sky blue and cloud white.
- There are three strong images symbolic of the content of the binder.
- The map of Canada reflects the national extent of CCAA.
- The huge semi-transparent image, of a jet engine fan, stands for the concept of aviation.
- The trail of jet exhaust gives the feeling of motion or momentum to the whole design.
- The design is balanced. Most of the space has been filled, yet it does not appear to be cluttered.
- The text that is present is legible and is the right size for the size of the binder.
- The CCAA logo has been incorporated.
- The symbolism is sophisticated. At first glance, one might not realize that the pale white circle is a jet engine fan.

Activity 2-3 – Cover Design

Design a cover for a textbook that will be used in the Aviation Maintenance Orientation Program. The best designs will include a symbol or symbols that stand for the concepts inherent in the aviation industry. Your cover will be evaluated according to the standards on the rubric found on the following page.

Rubric for the Design of an Aviation Maintenance Textbook

	Excellent	Borderline	Unacceptable
GRAPHICS	Several images, which would include abstract graphics, symbolic of the content and topic	Too few or too many images, which are simple and do not symbolize the topic, merely represent it	Either no images or images that have no connection to the topic
TITLE	A two-part title, which would use the name of the subject, plus a meaningful synonym, or a phrase that reflects the notion of a career in Aviation Maintenance	A two-part title, but the symbolism, if present, is simple	Either no title or merely the subject's name
DESIGN	Balanced and pleasing, making its point in an attractive and effective way. The font is legible and the overall design appeals to various learning styles.	Simple design that possibly seems incomplete. The font is not distinctive and the graphics only identify the subject in one way.	No variety. The font could be small or illegible. Space is unbalanced.
IDEAS	The best designs project a subtle message connecting the design to the text.	Simple, predictable, and the notions of aviation maintenance poorly shown	No understanding of aviation maintenance is shown.