MODIFIED LESSON INSTRUCTIONS AND INSTRUCTIONAL GUIDES – TPS 4 AND 5 OF EO M230.01

A-CR-CCP-802/PG-001

EO M230.01 – DISCUSS AIRCRAFT FLOWN WWII

1. **Performance.** Discuss Aircraft Flown During WWII.

2. **Conditions**

   a. Given:

      (1) Supervision; and

      (2) Assistance as required.

   b. Denied: N/A.

   c. Environmental: Suitable classroom facilities/training facilities large enough to accommodate the entire group.

3. **Standard.** The cadet shall discuss aircraft flown during the Battle of Britain.

4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Discuss the importance of the Battle of Britain, to include: a. the duration of the battle fought from August 8, 1940–October 31, 1940; and b. the battle between the Allied Forces and Axis powers.	Interactive Lecture	5 min	C3-078
TP2	Discuss the aircraft flown during the Battle of Britain, to include: a. the Hawker Hurricane Mark 1; and b. the Spitfire Mark 1.	Interactive Lecture	5 min	C3-078

5. **Time**

   a. Introduction/Conclusion: 5 min

   b. Interactive Lecture: 10 min

   c. Total: 15 min

6. **Substantiation.** An interactive lecture was chosen for this lesson to present background material to the cadets and promote an interest in aircraft flown during WWII.

7. **References.** C3-078 Canadian War Museum. (2004). *The Invasion Threat to Britain and the Battle of Britain, 1940.* Retrieved 16 February 2007, from http://www.warmuseum.ca/cwm/newspapers/operations/Britain_e.html.

8. **Training Aids.** Presentation aids (e.g. whiteboard/flipchart/OHP/multimedia projector) appropriate for the classroom/training area.

9. **Learning Aids.** N/A.

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10. **Test Details.** N/A.

11. **Remarks.** N/A.

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ROYAL CANADIAN AIR CADETS

PROFICIENCY LEVEL TWO

INSTRUCTIONAL GUIDE

SECTION 1

EO M230.01 – DISCUSS AIRCRAFT FLOWN DURING WWII

Total Time: 15 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-802/PG-001, Chapter 4. Specific uses for said resources are identified throughout the Instructional Guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy the handouts at Figure 10A-5 The Hawker Mark 1 Hurricane and Figure 10A-6 The Spitfire for each cadet, located at the end of this document.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for this lesson to present background material to the cadets and to promote an interest in aircraft flown during WWII.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall be expected to discuss aircraft flown during WWII.

IMPORTANCE

It is important for cadets to know about the aircraft flown in WWII so that they can better understand Canada's role during these conflicts and to commemorate the fallen men and women who gave their lives during these conflicts.

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Teaching Point 1 **Discuss the Importance of the Battle of Britain**

Time: 5 min Method: Interactive Lecture

THE BATTLE OF BRITAIN

The Battle of Britain was fought from August 8, 1940 until October 31, 1940.

The Battle of Britain was the first major battle to be fought wholly in the air, with both sides having roughly the same number of fighter aircraft.

It was the largest and most sustained bombing campaign yet attempted and the first real test of the strategic bombing theories that had emerged since the previous World War.

Duration of the Battle of Britain

The battle can be roughly divided into four phases:

- July 10–August 11: Kanalkampf, the Channel battles,
- August 8–August 23: Adlerangriff, the early assault against the coastal airfields,
- August 24–September 6: the Luftwaffe targets the airfields – the critical phase of the battle;
- September 7 onward: the day attacks switch to British towns and cities.

The Battle of Britain marked the first time that the Nazis were stopped and that air superiority became clearly seen as the key to the war. Though the battle was small in the number of combatants and casualties, had the Germans won, the war would have taken a very different path.

The British victory marked the first failure of Hitler's war machine.

The Royal Air Force lost 375 pilots and 358 pilots were wounded.

ALLIED FORCES AND AXIS POWERS

The Battle of Britain was between the United Kingdom and Germany and Italy.

The Battle of Britain is the name commonly given to the attempt by the German Luftwaffe, as part of German Blitzkrieg tactics, to gain air superiority over the Royal Air Force (RAF), before a planned sea and airborne invasion of Britain (Operation Sealion).

Neither Hitler nor the German Wehrmacht believed it possible to carry out a successful amphibious assault on the British Isles until the RAF had been neutralized.

Secondary objectives were to destroy aircraft production and ground infrastructure, to attack areas of political significance, and to terrorize the British people with the intent of intimidating them into seeking an armistice or surrender.

The RAF roll of honour for the Battle of Britain recognizes 510 overseas pilots as flying at least one authorized operational mission with an eligible unit of the Royal Air Force or Fleet Air Arm between July 10 and October 31, 1940. This included pilots from Poland, New Zealand, Canada, Czechoslovakia, Belgium, Australia, South Africa, France, Ireland, the United States of America, Jamaica, Palestine and Southern Rhodesia (Zimbabwe).

The highest scoring unit during the Battle of Britain is remarkably the No. 303 Polish Fighter Squadron.

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CONFIRMATION OF TEACHING POINT 1

QUESTIONS

Q1. What were the dates of the Battle of Britain?

Q2. Who was the battle between?

Q3. What were two of the other countries involved in the Battle of Britain?

ANTICIPATED ANSWERS

A1. The Battle of Britain was fought from August 8, 1940 until October 31, 1940.

A2. The Battle of Britain was between the Allied Forces and Axis powers.

A3. Poland, New Zealand, Canada, Czechoslovakia, Belgium, Australia, South Africa, France, Ireland, the United States of America, Jamaica, Palestine and Southern Rhodesia (Zimbabwe).

Teaching Point 2 **Discuss the Aircraft Flown During the Battle of Britain**

Time: 5 min Method: Interactive Lecture



Distribute handouts to the cadets of Figure 10A-5 The Hawker Mark 1 Hurricane, located at the end of this document.

HAWKER HURRICANE MARK I

- The Hawker Hurricane Mark I was a single-seater fighter with a Rolls-Royce Merlin engine.
- It was a low-wing all-metal cantilever monoplane armed with eight Browning machine-guns – four in each wing set to fire forward outside the airscrew disc.
- The maximum speed was 539 km/h.
- The Hurricane was regarded as less 'twitchy' than the Spitfire and provided a more stable gun platform.
- The RAF's preferred tactic was, if possible, to deploy the Hurricane's awesome fire power against formations of less-agile bombers and to set up the Spitfires against fighter escorts waiting to pounce from a higher altitude.



Distribute handouts to the cadets of Figure 10A-6 The Spitfire, located at the end of this document.

THE SPITFIRE MARK 1

- The Spitfire Mark 1 was a similar single-seater fighter with a Rolls-Royce Merlin engine.
- It was a low-wing all-metal cantilever monoplane armed with eight Browning machine-guns – four in each wing set to fire forward outside the airscrew disc.

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The Spitfire's one-piece sliding moulded canopy gave the best visibility, the pilot having a better chance of spotting an enemy.

The maximum speed was 589 km/h.

QUALITIES OF BOTH AIRCRAFTS

In both these aircrafts the armour in the front and back protected the pilot.

The Spitfire and Hurricane would out-turn the Bf-109E or Emil (German Aircraft) because the Bf-109 pilots were afraid to push the plane to its limits due to the fact that the Bf-109 did not give the pilot any warning that it was going to stall, unlike the Spitfire and Hurricane, which gave the pilot plenty of warning that the plane was about to stall by shaking violently.

Both the Spitfire and Hurricane were slower in a power dive and had the drawback of being equipped with a float-type carburetor, which cut out under negative g-forces.

Both the RAF fighters were easy to fly and forgiving with both rough handling and novice pilots.

The Hurricane was a superbly steady gun platform and the closely clustered .303 machine guns in each wing proved very destructive.

A drawback to the Hurricane was the presence of a fuel tank just behind the cockpit firewall, which could catch fire and within a few seconds severely burn the pilot before he managed to bail out.

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

Q1. What was the maximum speed of the Hawker Hurricane?

Q2. What was the maximum speed of the Spitfire Mark 1?

Q3. What was a drawback to the Hurricane?

ANTICIPATED ANSWERS

A1. The maximum speed of the Hawker Hurricane was 539 km/h.

A2. The maximum speed of the Spitfire Mark 1 was 589 km/h.

A3. A drawback to the Hurricane was the presence of a fuel tank just behind the cockpit firewall, which could catch fire and within a few seconds severely burn the pilot before he managed to bail out.

END OF LESSON CONFIRMATION

QUESTIONS

Q1. What were the dates of the Battle of Britain?

Q2. Who was the battle between?

Q3. Name two Allied aircraft flown during the Battle of Britain.

ANTICIPATED ANSWERS

A1. The Battle of Britain was fought from August 8, 1940 until October 31, 1940.

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A2. The Battle of Britain was between the Allied Forces and Axis powers.

A3. Hawker Hurricane and Spitfire Mark 1.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

It is important for cadets to know about the aircraft flown in WWII so that they can better understand Canada's role during these conflicts. Learning about Canada's aviation history may assist the cadets in understanding the meaning of the parades used to commemorate the fallen men and women who gave their lives during these conflicts.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

C3-078 Canadian War Museum. (2004). *The Invasion Threat to Britain and the Battle of Britain, 1940.* Retrieved 16 February 2007, from http://www.warmuseum.ca/cwm/newspapers/operations/Britain_e.html.

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AIRCRAFT FLOWN DURING WWII



Department of National Defence. (2006). Canadian Forces Aircraft. Retrieved 20 March 2007, from http://www.airforce.forces.gc.ca/equip/grfx/equip_gallery/historic_gallery/wallpaper/harvarda9.jpg

Figure 10A-5 The Hawker Mark 1 Hurricane

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Chapter 10, Annex A



Department of National Defence. (2006). Canadian Forces Aircraft. Retrieved 20 March 2007, from http://www.airforce.forces.gc.ca/equip/historical/spitfirelst_e.asp

Figure 10A-6 The Spitfire

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