

FLIGHT EDUCATION PROGRAM

Acronyms, Terminology, and Definitions

Clip 1,2,4,6,7

"Bird"	Another name for an airplane
404 LRP&T Sqn	404 Long Range Patrol and Training Squadron (Air/ground training –Aurora)
405 LRP Sqn	405 Long Range Patrol Squadron (Operational -Aurora)
413 T&R Sqn	413 Transport and Rescue Squadron (Hercules and Cormorant aircraft)
Acoustics	The underwater science of transmission and reception of sound waves
Advanced Training	Training given to air crews that is more specified
Aircrew	The flight crew manning an aircraft
Aircraft Environment	The inside of an aircraft that the crew uses
Aerodrome	Airfield
Argus Aircraft	Long Range Land Based Patrol Aircraft used 1958-1981 before the Aurora
ASW	Anti-Submarine Warfare
ATF	Aircraft Transport Flight
Aurora Aircraft	Long Range Land Based Patrol Aircraft currently used by RCAF since 1980
Basic Training	Initial training given to aviators that is more general or “basic” in nature
BCATP	British Commonwealth Air Training Plan
Blockade (Cuba)	Naval ships, submarines and aircraft stationed to prevent shipping from passing
Capt	Captain
CMC	Cuban Missile Crisis
Col	Colonel
Commonwealth	Countries / Territories of the British Empire
Cormorant Aircraft	Helicopter used for search and rescue squadrons
Cuban Missile Crisis	October 1962, Confrontation between U.S./West and the Soviets over missiles
CWO	Chief Warrant Officer
Fighter / Bomber	Multi-Role aircraft that was used as a fighter or bomber
Flight Engineer	Flight crew member who monitors and operates specific aircrafts systems
Flight Sim	Flight Simulator
Ground Crew	The technicians that maintain and service the aircraft
Hercules Aircraft	Heavy lift cargo aircraft used for transport and search and rescue
Flying Boat	Aircraft able to land and takeoff on water
Hydrophone	Underwater microphone on a sonobouy used to detect underwater sound
ILS	Instrument Landing System
Lancaster Aircraft	WW2 Heavy bomber converted to an ASW role 1950’2, prior to the Neptune
Lt	Lieutenant

Maj	Major
MWO	Master Warrant Officer
NATO	North Atlantic Treaty Organization
Nav	Navigator
Navigator	Person responsible for tracking the position of the aircraft at all times
Neptune Aircraft	Medium Range Land Based Patrol Aircraft from 1955 to 1968 before the Argus
Op	Operation, Operator
Operational Squadron	Combat ready squadron
Periscopic Sextant	Instrument mounted through the aircraft roof to allow celestial navigation
Posthumously	Award given after death
Prop	Propeller
Propeller Pitch	Angle of the propeller as it cuts through the air
RAF	Royal Air Force
RCAF	Royal Canadian Air Force
RPM	Revolutions Per Minute
SAR	Search And Rescue
Sgt	Sergeant
Sonobuoy	An air-droppable buoy that receives and transmits underwater data to an aircraft
Sonogram	Images displayed in the aircraft produced by underwater sound waves
Soviet Union	USSR - Union of Soviet Socialist Republics (Russia)
Torque	Unit to describe the force available to turn the shaft of the engine
V.C.	Victoria Cross – highest award for valour in the Commonwealth
War Footing	*Ready in case a war begins
Warhead	The explosive head of a missile or torpedo
Wet Power	Maximum amount of thrust through large amounts of fuel usage
WW 2	World War 2

Clip 9

Flight Simulation– How a Plane Flies

AEA	Aerial Experiment Association formed by Alexander Graham Bell
Aerodynamic	Design of a body moving through air to create greatest lift and least drag
Ailerons	Control surfaces that alter lift on a wing to cause it to bank
Air Speed Indicator	Instrument to tell you how fast you are travelling through the air
Air to Air Refueling	Refueling of one aircraft by another while in the air
Aircraft "Clean"	Shape as aerodynamic as possible to reduce as much drag as possible
Aircraft "Messed Up"	*Protruding items (such as tanks and missiles) that create additional drag
Barometric Altimeter	Indicates the altitude or height of an aircraft above mean sea level
Analog instruments	Representative mechanical instruments that mainly work by use of air pressure

Angle of Attack	The angle the wing's leading edge makes to the trailing edge
Attitude Indicator	Instrument used to indicate the orientation of the aircraft relative to the horizon
Attitude of a wing	The orientation of the wing or aircraft in relation to the horizon
"Blockiness"	Square or "dirty" style design subject to drag
Cruising Speed	Speed of aircraft that is the most efficient or economical
Efficient	The point where an aircraft is best in combining the four aspects of flight
Elevators	Control surfaces that cause the plane to go up or down, through its "lateral axis".
Evolution of Aircraft	How aircraft and aeronautics advanced through history
Flaps	Surfaces on wing trailing edge that generates greater lift, but creates more drag
Float	Airplane "floats" over the runway on landing due to moving air between the two
Fuselage	Enclosed main body of the aircraft that protects the crew, passengers, or cargo
Gear	The landing gear or wheels and supports that hold up an aircraft on the ground
Glide Path	An aircraft's line or angle of descent
Horiz. Situation Indicator	Allows pilot to tune into radio frequencies to plot location on earth (HSI)
Horizontal Stabilizer	Horizontal surfaces at rear of plane designed to keep aircraft "stable" or straight
ILS	Instrument Landing System, allows pilots to follow a "glide path" to a runway
John D McCurdy	First British subject (from NS) to fly a heavier-than-air powered flight in 1909
Knots	Nautical Miles per hour (1 knot = 1.85 km/h approximately)
Mono Wing	Single lifting wing on a plane
Nacelle	An enclosed streamlined housing that is designed to enclose landing gear or fuel
Power-to-weight ratio	Power of the aircraft engine in comparison to the weight it has to lift
Powered Flight	An aircraft that is able to fly by using its own power source
"Punch Up"	Land so hard that the landing gear is pushed or "punched" up through the wings
Radome	An aerodynamic shell or cover over an external radar antenna
Rake	The angle of a wing in relation to the fuselage, also known as "swept wings"
Rudder	Vertical control surface that moves or "kicks" the aircraft nose right or left
Silver Dart	The first powered aircraft to fly in Canada (or the British Empire)
Speed Brakes	Control surfaces that increase drag and slow aircraft down
Speed of Sound	At sea level, 343 m/s or about 1225 km/h, and known as Mach 1
Spoiled Lift	When a wing loses ability to overcome weight and drag, AKA stall
Stabilized flight	Aircraft flying straight through the air, not going up or down, or left or right
Struts	Aircraft structural parts that connect wings together or other exposed areas
Vertical Speed Indicator	Indicates how fast the plane is going up or down in feet or meters per minute
Yoke	Control stick pilot uses to move the elevator and ailerons
Wing Leading Edge	Front of wing that separates the air travelling over and under it
Wing Trailing Edge	That part of the wing where the air over and under wing rejoins - at rear of wing
Wing Warping	Pulleys and cables used to twist the trailing edges of the wings

Wings Lifting bodies or surface(s) on an aircraft
Wright Brothers First men to fly and prove heavier-than-air was possible, in 1903

Clip 11

Air Cooled Engine An engine that is cooled by the movement of air around it
Bernoulli (Daniel) (Born 1700) Devised Bernoulli's Principle in relation to fluid and aerodynamics
Centrifugal Flow Engine Compressors take air and force it outward away to create compression
Fixed Pitch Propeller Simplest type of propeller, pitch angle cannot be changed, a constant-speed prop
Horsepower Unit of measurement for engine power, the rate at which work is accomplished
Lift A force that is opposite to weight, an aircraft needs more lift than weight to fly
Newton (Sir Isaac) (Born 1642) Devised laws explaining how objects move
Reciprocating Engine An engine that uses internal pistons to create power to turn a shaft
Reverse Pitch A propeller pitch angle reversed so the thrust works with drag, used in braking
Shaft Horsepower The amount of power delivered to the shaft of an aircraft engine
Supercharger A compressor that increases the density of air available to an engine for use
Thrust A force that is opposite of drag, an aircraft needs more thrust than drag to move
Turbo Propeller Engine A Turboprop engine has a turbine to turn the propeller (similar to a Turbojet)
Turnbull (Wallace R.) (Cdn) Successfully developed the first electronically controlled VPP
Variable Pitch Propeller A prop that can have its pitch angle changed to be more efficient in the air
VPP Variable Pitch Propeller
Work A force has had an effect on an object moving in the direction of the force

Power and Thrust (Different Aircraft Power Sources)

Clip 8, 15

Bail Out To eject or "punch out" with aid of ejection seat, or to jump out of an aircraft
Barometric Capsule An instrument used to measure barometric (air) pressure
Canopy A transparent enclosure over a cockpit protecting the pilot
Cockpit The location (also called the "flight deck") where the pilot controls the aircraft
Counter Rotating Propellers moving in opposite directions to allow for stability, counters "yaw"
Crash Test Dummy A full scale life-like mannequin used on tests that have potential harm to people
Echo Sounding Type of sonar that determines range to an object by sending out a "ping"
Ejection Seat Seat designed to "thrust" or eject aircrew safely from the aircraft
Electrolyte Products or minerals in a fluid, such as water, that carries an electrical charge
Free Fall Controlled falling to earth from an aircraft before deploying a parachute
Goes Active When the transducer signals the torpedo electronics the target has been acquired
Jettison To get rid of something that is no longer needed or required
Multi-engine An aircraft that has more than one engine
Parachute A device designed to slow an object through air by creating drag

Ejection Seats and Torpedoes (Thrust and Motion)

Torpedo	A self-propelled weapon designed to travel through water
Transducer	An electronic device that translates one signal into another
Warhead	The part of a torpedo or missile containing the explosive charge

Clip 10,12

Aeronautics	The science and study in the creation and design of air flight capable machines
Ailerons	Control surfaces that alter lift on a wing to cause it to bank by changing air flow
Air Defense Fighter	An aircraft designed to protect an area by intercepting and removing the threat
Air Speed	The speed of aircraft through the air
Angle of Bank	The angle formed from the tip of one wing to the tip of the other from the horizontal
Aviation	The practical design and creation of basically heavier-than-air aircraft
Carbon Fiber	Material composed of graphite or carbon atoms, strong, lightweight
Coordinated Turn	Making a smooth turn using ailerons, rudder, and power together
Drones	Another name for an Unmanned Air Vehicle (UAV) or pilotless aircraft
Elevators	Control surfaces that cause the plane to go up or down, through its "lateral axis"
Flaps	Surfaces on wing trailing edge that generates greater lift, but creates more drag
Ground Speed	The speed of an aircraft over land or water
Head Wind	The speed of moving air from in front of an aircraft, slows down a plane
Knots	Nautical miles per hour (1 knot = 1.85 km/h = 1.51mph)
Pitot Tube	An open ended, instrument outside the aircraft used to measure the flow of air
Rudder	Vertical control surface that moves or "kicks" the aircraft nose right or left
Servos	Small device used to control operations through electronic inputs or feedback
Slip stream	Area behind a moving object where air is moving at a comparable speed to it
Statute Miles	Also referred to as miles, approximately 1.6 km, or 5280 feet or 1600 meters
Tail Section	The back end of an aircraft where the elevator, rudder and stabilizers usually are
Tail Wind	The speed of moving air from behind an aircraft, pushing the plane along faster
UAV	Unmanned Aerial Vehicle - controlled by radio signals or pre-programmed

Airframe Design and Technology (The 4 Components of Flight)

Clip 13, 14

Auto rotation	Rotation of the rotor blades caused by the movement of air past them
"Canopy"	In this case, a nickname for a parachute
Collective	Primary control that changes the pitch and angle of the rotor blades
Counter Force	A force that counters, or goes in the opposite direction
Cross of Valour	Highest award in peacetime for "conspicuous courage...of extreme peril"
Cyclic	Helicopter primary control that allows pilot to move left, right, forward or back
Daniel Bernoulli	(Born 1700) Devised Bernoulli's Principle in relation to fluid and aerodynamics
Fixed Wing	An aircraft or plane, that uses wings fixed to the main body to create flight or lift

Rotary Wing Aircraft (Helicopters), SAR, and Parachutes (Components of Flight)

Hypothermia	A person's core body reaches lower temperatures to point of being dangerous
Mechanical Power	Power in mechanical systems through the use of a force and motion
Night Vision Goggles	Special goggles that require very little light to allow user to see at night
Ram Air Parachute	Also known as a para-foil, has two layers of fabric, and create lift rather than drag
Rotary Wing	Aircraft gets lift from rotary wings (blades) revolving around a central point
SAR	Search And Rescue
Sprag Clutch	A one-way, freewheeling clutch that resembles a roller bearing
Tail Rotor	A rotor mounted vertically at the tail to prevent aircraft rotation from main rotor

Cip 5

Greenwood Military Aviation Museum - Wrap-Up (Aircraft Over The Years)

Avro Anson	Light bomber, became the mainstay BCATP training aircraft during WW2
Dacron	A widely used fabric material used to cover aircraft wings and fuselage
Display Aircraft	AKA "Static Display" – restored aircraft available for viewing
Fabric	A nonmetallic material used to cover the framework of an aircraft
Glider	Heavier-than-air aircraft designed for unpowered flight
Restoration	To repair or reassemble an aircraft that had previously been taken out of service