DA → 09:00
- North exit of ATL
- Left toward fence line
- Airport Fire Department

Erik Nielsen Whitehorse International Airport

AIRSIDE VEHICLE OPERATOR'S PERMIT (AVOP) Program

A2G

Restricted to Apron 2 and Taxiway Golf

DA

Restricted to Apron 1

DR

Restricted to Aprons 1, 2, Taxiways Echo and Golf

D

Unrestricted

AIRSIDE VEHICLE OPERATOR'S PERMIT (AVOP)

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The Erik Nielsen Whitehorse International Airside Vehicle Operators Program (AVOP) is designed to create a safe and secure operating environment for all airport users. This manual educates and tests vehicle operators on proper motor vehicle operation and other vehicle safety issues in a dynamic airside environment.

NOTE: A non-Erik Nielsen Whitehorse International Airport (ENWIA) AVOP will NOT be accepted.

SECTION ONE – ADMINISTRATION

AIRSIDE VEHICLE OPERATOR'S PERMIT AUTHORITY

No person shall operate a vehicle on the airside area of any Yukon airport/aerodrome unless:

- that person is in possession of a valid Airside Vehicle Operator's Permit and a valid Yukon drivers licence (or equivalent) that is appropriate to the vehicle being operated; OR
- that person who has themselves a valid drivers licence and is escorted by an individual with the above qualifications; OR
- that person is authorized by the Airport Manager or designate to operate a vehicle in that area and has a valid drivers licence.

An Airside Vehicle Operator's Permit is issued by the ENWIA Safety and Security unit on the basis of applicant knowledge of the local airport traffic directives for the ENWIA and written and/or practical examinations.

An application for an AVOP must be made to the ENWIA Safety and Security unit in writing and must include the address of the applicant and reasons for the application see Appendix D.

This study material will assist in preparing for the exam but **will not** provide all the skills necessary to pass the full "DR" or "D" exam. It is the applicant's responsibility to be trained and ready for the examination(s).

Erik Nielsen Whitehorse International Airside Vehicle Operators' Permits are broken down into the following categories:

A2G Choose this AVOP if operating motor vehicles on Apron 2 or Taxiway Golf. The vehicle is not required to have a radio however an amber beacon is recommended.

DA Choose this AVOP if operating motor vehicles on Apron 1. The vehicle is not required to have a radio; however, an amber beacon is required.

DR Choose this AVOP if operating properly equipped and marked motor vehicles as per the Airside Traffic Directives on Apron 1 or 2 or Taxiways Echo or Golf or the threshold of Runway 01. This requires a Radiotelephone Operators Restricted Certificate (see below).

D Choose this AVOP if access is required to all manoeuvring areas including the main runways for dolly departures or other aviation specific requirements. In addition to the full "D" AVOP, the vehicle must also be properly equipped and marked as per the Airside Traffic Directives.

The "A2G", "DA", "DR" or full "D" indicator on a Restricted Area Identification Card indicates that the bearer of the pass also holds an AVOP, which is a separate document and must be carried on the person at all times while operating at the airport.

AVOP REQUIREMENTS

Requirements for an "A2G" (Apron II (2) and Taxiway Golf) AVOP:

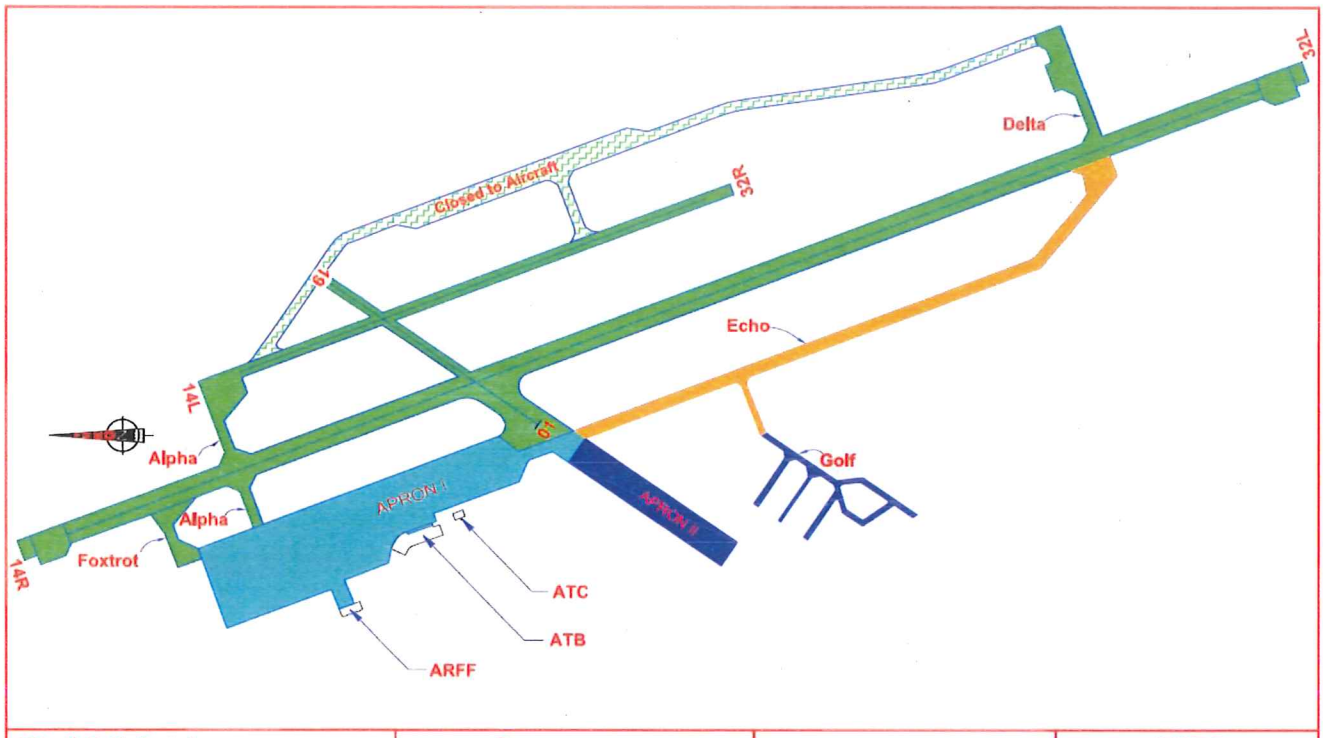
- Submit an AVOP application form;
- Provide proof of a valid drivers license (Yukon or equivalent);
- Agree by signing a document with Terms and Conditions specific to Apron II and Twy Golf.

Requirements for a "DA" (Apron 1) AVOP:

- Submit an AVOP application form signed by your employer (or self if applicable);
- Provide proof of a valid drivers license (Yukon or equivalent);
- Successfully complete an AVOP written exam.

Requirements for a "DR" (Restricted) or full "D" (Unrestricted) AVOP:

- Provide an AVOP application form signed by your employer (or self if applicable);
- Provide proof of a valid drivers license (Yukon or equivalent);
- Successfully complete an Industry Canada Restricted Operator Certificate with Aeronautical Qualifications exam, or produce a valid ROC-A license;
- Successfully complete an AVOP written exam;
- Successfully pass an AVOP practical examination;



ATC - Air Traffic Control
ATB - Air Terminal Building
ARFF - Aircraft Rescue Fire Fighting
A2G - Golf and Apron II
DA - Apron I
DR - Echo
D - Everywhere

Yukon
Highways and Public Works
Aviation Branch

ENWIA
AVOP
Designated Areas

AVOP	
drawn:	Bruce Binder
checked:	Doug Burgis
date:	August 2013
scale:	NTS
drwg:	Figure 1

TESTING

Written and practical exams for CYXY AVOP's will be administered by appointment only on Tuesday, Wednesday or Thursday between the hours of 0900 and 1400 excluding holidays. Call (867) 667-8453 to make an appointment.

Location: Airport Fire Station, Erik Nielsen Whitehorse International Airport, 75 Barkley-Grow Crescent, Whitehorse.

Practical or "road" examinations are conducted by the ENWIA Fire Chief or designate.

- Practical exams will be conducted in an Airport Vehicle identified as "Training 5".
- Applicant will not drive "Training 5" as this is not a driving exam.
- Applicant will be examined on their ability to communicate clearly and effectively to ENWIA Ground Control, in a dynamic airport environment.

See Appendix A and B for practice exams.

FAILURE, RE-WRITES AND SUSPENSIONS

Failure: Any exam failure will result in a 7 day waiting period before re-taking the exam. Booking an appointment for a re-write can be done immediately.

Re-write: An applicant who fails the examination more than two times in a 30 day period must have a minimum of a 30 day cooling off period before the 3rd exam can be written (fees shall be charged for each re-write/re-exam).

Recurrent Training: Recurrent training may be required or recommended due to alterations to the airport site, operations, procedures, traffic directives or rules or repeated infractions.

Suspension: A suspension issued by the ENWIA Manager or designate, will require a re-write of the written and re-examination of the practical exams (fees shall be charged for these re-writes/re-exams). The Industry Canada issued Restricted Operator Certificate will NOT have to be re-written.

> **NOTE: The permit and the ability to hold an AVOP is revoked immediately upon suspension.**

RESTRICTED OPERATOR CERTIFICATE

Industry Canada oversees the *Restricted Operator* (ROC-A) certification with Aeronautical Qualification program. Applicants are encouraged to consult the Whitehorse district office of Industry Canada for additional details at (867) 667-5102.

COST RECOVERABLE FEES

All written and practical examinations will have a flat fee of $ 20.00 (plus GST) for each examination. To encourage applicants to obtain the best possible results all re-writes will be charged at the initial examination fee rate. The Industry Canada *Restricted Operator Certificate* with *Aeronautical Qualification* examination may also be administered by the Fire Chief or his designate. This examination will is also a flat fee of $20.00 plus GST.

DEMERIT SYSTEM

During the year following the coming-into-force-date of April 1, 2011, the AVOP Safety Committee will hold quarterly reviews regarding the effectiveness of this program. After this initial review the document will be reviewed every six months. Continued feedback from all permit holders is encouraged in order to provide the best possible delivery and ensure that the airside safety objectives are met.

ENFORCEMENT

Airport Traffic Directives provide a safe, secure working environment in a dynamic airside operating environment. Operating a vehicle airside is serious business and the "rules of the road" must be followed, just as they should on any city street.

The Airside Management Unit has the authority to issue notices of infractions to AVOP holders who violate any of the Traffic Directives contained herein. Individuals shall not interfere with personnel authorized to enforce the Traffic Directives. Enforcement personnel may set up airside checkpoints to check for compliance. All airside vehicle or equipment operators are required to comply once selected by a check point.

The AVOP privilege can be suspended or revoked for just cause. Any violations will be kept on file, and if the violations continue, the AVOP may be cancelled permanently. Examples of violations resulting in demerit points are noted in Appendix C.

NOTIFICATIONS

An operator found in violation of any Traffic Directive will be issued an AVOP Violation Notice. There are three types of AVOP violations: Minor, Major, and Gross Misconduct. See Appendix C.

Violation demerit points are cumulative. Multiple points are given for a single driving incident in which the operator violates more than one directive.

When an individual receives a suspension they will be sent a written notice of suspension, including the nature of the violation(s), the demerit points associated, the effective start date, and the duration of the suspension. A copy of this letter will be provided to the individual's employer.

APPEAL PROCESS

A violation may be appealed. An appeal must be a written submission provided to the Manager, Safety and Security (MSS) or designate within 7 days of the date of the violation. The appeal must contain the operator's version of the events related to the violation and their

grounds for appeal. **Operational necessity is not grounds for an appeal.** The MSS will investigate the incident and provide the appellant a letter indicating their decision within 5 working days.

If an AVOP holder disagrees with the decision made by the MSS or designate, they may send an appeal to the Airport Manager (aviation@gov.yk.ca) within 7 days of the MSS decision. The appeal will be reviewed by senior members of the Apron Management Unit who will make recommendations to the Airport Manager who will provide a final decision to the appellant.

GROSS MISCONDUCT

Gross Misconduct violations are hazardous and irresponsible actions that pose an unacceptable risk to airside safety. Violations will result in 10 demerit points and an automatic 20 day suspension of the AVOP and a review of the AVOP status by the MSS. Special conditions apply to the suspension and appeal process. Following a review of the AVOP status, the MSS may increase, reduce, or extend the length of the suspension. The violator may appeal in the normal manner, but the AVOP will not be returned until either the appeal is successful or the suspension has been served in full.

DEFINITIONS

Accident - an occurrence associated with the operation of an airport in which a person is injured or killed, or there is property damage

Aerodrome – any area of land, water (including frozen surface thereof) or other supporting surface used or designed, prepared, equipped or set apart for use either in whole or in part for the arrival and departure, movement or servicing of aircraft and includes any building, installations and equipment in connection therewith

Aircraft – any machine capable of deriving support in the atmosphere from the reactions of the air.

Airport - an aerodrome certified by Transport Canada.

Airport Manager – the Airport Manager of Erik Nielsen Whitehorse International Airport.

Airport Operator – the holder of an airport certificate, or the person in charge of such airport, whether, an employee, agent or representative.

Airport Traffic – all traffic on the manoeuvring area of an airport and all aircraft flying in the vicinity of an airport.

Airside – that area of an airport intended to be used for activities related to aircraft operation and to which public access is normally restricted.

Airside Management Unit – the persons responsible for developing, implementing and enforcing the airport traffic directives e.g. including but not limited to: Airport Security, ARFF, Airport Management, and Airport Maintenance staff.

Airside Vehicle Operator's Permit (AVOP) – a document issued on behalf of the Airport Manager or designate; certifying that the person named therein is authorized to operate motor vehicles in an airside area.

Apron – that part of an aerodrome, other than the manoeuvring area, intended to accommodate the loading and unloading of passengers and cargo, refuelling, maintenance, repair and servicing, and parking of aircraft, and any movement of aircraft, vehicles, and pedestrians to allow execution of those functions. All aprons at ENWIA are uncontrolled.

Apron Traffic – all aircraft, vehicles, equipment and pedestrians using the apron of an airport.

ARFF – means Aircraft Rescue Fire Fighting service personnel.
AVOP Safety Committee – means the ENWIA Manager, the Assistant ENWIA Manager, the Manager of Maintenance and the Manager, Safety and Security Yukon Airports.

Blind Transmission – a transmission from one station to another when two-way communication cannot be established and it is believed that the called station can hear transmissions, but is unable to transmit.

Controlled Airport – an airport at which an air traffic control (ATC) unit is provided.

Designate – means the person authorized to carry out the duties and responsibilities of the position.

Document of Entitlement – means authorization to enter and remain in a restricted area at the airport.

Enforcement Officer – an officer delegated the responsibility to provide safety and security services at an airport. In the case of Erik Nielsen Whitehorse International Airport, this includes, personnel working in the Airside Management Unit.

ENWIA – Erik Nielsen Whitehorse International Airport

Equipment – any motor vehicle or mobile device, either self-propelled or towed or of a specialized nature, used for runway and airfield maintenance or in the refuelling, maintenance, repair and servicing of aircraft including AVOP exam equipment and cargo and passenger handling equipment.

Flight Information Centre (FIC) formerly known as Flight Service Station – a facility from which aeronautical information and related aviation support services are provided to aircraft including airport and vehicle advisory services for designated uncontrolled airports.

Foreign Object Debris (FOD) – any material which if left on the road, apron or manoeuvring area on airside areas may cause an incident or accident to aircraft or vehicle or pedestrians.

Glide Path – that part of an instrument landing system that helps the pilot approach the runway on the correct descent angle to the designated touchdown zone.

Ground Control – referred to as Whitehorse Ground. The operating position in the control tower that provides clearances and instructions for the movement of airport traffic and information to all vehicular traffic within the airport perimeter.

Groundside – the area of an airport not used for activities related to aircraft operations and to which the public normally has access.

Hazard - any circumstance that poses the risk of an accident/incident

High Visibility Clothing – clothing which is reflective or coloured and which is easily seen in any setting.

Hold–Short – instruction to hold at least 67 m (220 ft.) from the edge of a runway while awaiting permission to cross or proceed onto a runway. A "Hold short" order must be repeated exactly as originally stated.

Incident - an event or sequence of events that may endanger human lives or threaten injury, or compromise the safe operation of an airport. This includes Emergencies and Non-Emergencies.
Intersection – the point at which a road, runway or taxiway meets or crosses another road, runway or taxiway.

Light Signal from Airport Control Tower – a signalling light used by the tower to control airport traffic when there is no radio communication or traditional communication systems have failed.

Localizer – that part of the instrument landing system that helps the pilot remain lined up with the centreline of the runway during the approach.

Manoeuvring Area – that part of an aerodrome excluding aprons intended to be used for the taking off, landing and movement of aircraft associated with taking off and landing i.e. runways and taxiways.

Marshaller – an individual tasked with the parking or directing the parking of an aircraft at an aircraft gate or stand.

MSS – Manager, Safety and Security

Near Miss – incidents with no visible injury or damage

Occurrence – means incident

Off the Runway – indicates a vehicle is at least 67 m (220 ft.) to the side of the nearest edge of the runway in use, wherever practical.

Operator – the person responsible for the operation and safety of the vehicle and equipment, usually referred to as the driver.

Restricted Area – an area of an airport designated as an area to which access by persons or vehicles requires the production of valid Restricted Area Identification Card.

Restricted Operator Certificate with Aeronautical Qualifications (ROC-A) – a document issued by Industry Canada certifying that the holder may act as an operator of any aeronautical/land radio station fitted with radiotelephone equipment only, transmitting on fixed frequencies and not open to public correspondence.

Safety Office – means the repository for safety related concerns, reports, inspections, audits, information and records. The Office is composed of the MSS, SSS and SSC

SSC – Safety and Security Coordinator

SSS – Supervisor, Safety and Security

Taxiway – that part of an aerodrome used for manoeuvring aircraft and airport equipment between the apron area and runway.

Threshold – the beginning of that portion of the runway usable for landing.

Vehicle Checkpoint – a location at which enforcement officers or the AMU can request proof of a Drivers Licence, an ENWIA AVOP or an RORC and ensure that the vehicle is properly equipped and marked as per the ENWIA Airside Traffic Directives.

Warning Devices – a siren and flashing red light.

SECTION TWO – AIRSIDE VEHICLE OPERATORS' PROGRAM

OPERATOR DUTIES

1. Before operating a vehicle on the manoeuvring area the operator must have a valid Airside Vehicle Operator's Permit and a Restricted Operator's Certificate with Aeronautical Qualifications.

2. The employee must have and carry a valid and current Drivers' License (minimum of Yukon Class 5 or equivalent) and their AVOP permit while operating at the airport. Employers or persons from non-ENWIA locations must ensure their employee's or they have an ENWIA AVOP and a valid and current driver's license as described elsewhere in this manual.

3. No person shall operate a vehicle in an airside area while prohibited from operating any vehicle imposed by a court, or judgment of any government having jurisdiction.

4. No person shall operate a vehicle on an airside area unless the AVOP identification is visible.

5. It is the employers' and the employee's personal responsibility to ensure that the employee is qualified and licensed as per *Yukon Motor Vehicles Act and Regulations* requirements to operate the motor vehicle or equipment for which they have been assigned in the course of performing their job duties.

6. Ground vehicles at ENWIA must be insured as per Yukon Government requirements (See Appendix E) and meet all safety guidelines as outlined in the *Yukon Motor Vehicles Ac and Regulations*.

7. Before operating a motor vehicle on the airside of ENWIA, the vehicle operator must become familiar with all of the applicable ENWIA directives, guidelines as well as the procedures laid out below in this manual and obtain authorization from the appropriate airport authority.

8. The vehicle operator must determine and, if requested demonstrate that his/her vehicle is operating satisfactorily and has the required safety equipment and markings prior to proceeding on airside. All operators are ultimately responsible for the condition of their vehicle and they shall notify their immediate supervisor of any equipment malfunction or deficiency.

9. Any obstruction or potentially hazardous condition on airside must be reported to the AMU in order that corrective action may be taken.

10. A valid Restricted Area Identification Card (RAIC) and/or document of entitlement must always be visible when operating in a restricted area. A person who is not in possession of a valid RAIC shall not enter or remain in any area of an airport that is designated by a sign as a restricted area unless authorized to do so. Persons not displaying valid RAICs should be considered unauthorized and be reported immediately to the AMU.

11. Unless designated A2G, all airside personnel working on airside areas are required to wear high visibility clothing.

12. All designated gates must be kept closed and locked to prevent unauthorized access to the airside.

13. Every operator of a vehicle on an apron shall acknowledge and obey any instruction received from an Apron Management Unit.

14. Vehicle Operators must always report on the radio to the ground controller before entering and immediately after leaving the manoeuvring area.

15. No person shall operate a vehicle in an airside area in a manner that is dangerous to aircraft equipment, persons or vehicles.

16. An AVOP may limit the holder to the areas of the airport where operation of a vehicle is permitted. This limitation recognizes that the operator will not require access to airside areas other than the apron and that vehicles used in the normal performance of his/her duties will not normally be equipped with safety and radio equipment necessary for safe vehicle operation on airport manoeuvring areas.

17. Smoking is prohibited anywhere airside. This directive applies to persons both inside and outside vehicles and equipment.

18. No person shall throw, deposit or knowingly leave on a road, apron or manoeuvring area at a airport any glass, nails, tacks, metal, chemical substance, other foreign object debris (FOD), trash or garbage or other material that may damage an aircraft or vehicle except in a container provided for that purpose

VEHICLE OPERATING PROCEDURES

1. Vehicles and pedestrians are permitted on the airport manoeuvring area only with authorization from the Airport Manager.

2. Headlights must be turned on whenever a vehicle is operating in the airport manoeuvring areas.

3. All vehicles that will be operated or driven on airport manoeuvring areas must be equipped with an operating beacon. The beacon (newer models are strobes, older models are rotating) shall be mounted on the vehicle in a location that will permit the beam to be seen by aircraft or ground traffic from any position with 360° visibility. The enclosing globe of the warning light shall be "aviation yellow" for all vehicles except airport rescue fire fighting vehicles (ARFF), which are to be equipped with a red warning light.

4. Aircraft have the right-of way at all times. Every vehicle operator must yield to the aircraft. Before entering an airport manoeuvring area, the vehicle operator shall always stop and check to ensure that aircraft are not approaching or departing.

5. Every vehicle operator on an airside area shall yield the right-of-way to an emergency vehicle with warning devices operating.

6. Every vehicle operator on an airside area, other then an emergency vehicle with warning devices operating, shall yield the right-of-way to:

    - ✈ vehicles and equipment engaged in snow removal, pavement ice control activities, other maintenance activities or airport emergency vehicles (without warning devices operating) and
    - ✈ vehicles towing aircraft

7. Every person operating a vehicle on an apron shall yield the right-of-way to pedestrians being escorted between an aircraft and the air terminal building or between two aircraft.

8. Restricted area entry is prohibited unless access is granted by Security prior to entrance or in the event that Emergency or maintenance vehicles are responding to an incident.

9. Every operator of a vehicle involved in an accident or incident in the airside area of an airport shall report the accident immediately to the AMU.

10. No person shall park an aircraft fuel servicing vehicle within 15 m (50 ft.) of any Airport Terminal Building, aircraft cargo building, aircraft hangar or any other airport structure designed to house the public that has windows or doors in any exposed walls.

11. No vehicle operations shall be conducted within 15 m (50 ft.) of an aircraft being fuelled or de-fuelled except for the purpose of servicing that aircraft.

12. Parking is permitted in designated parking areas only.

13. Vehicles and equipment must be backed into parking areas wherever possible. This is particularly important around air terminal buildings, loading areas, bridges and other heavy traffic areas.

14. Equipment and vehicles must be properly chocked or secured from movement when not in use

15. Equipment and vehicles shall not be parked or left unattended on vehicular routes or aircraft manoeuvring areas. Vehicles must be parked only in approved areas when not in immediate use.

16. No pedestrian on an apron shall impede, interfere with or obstruct in any way the free movement of apron traffic except in the course of his/her employment relating to the control of that traffic.
17. Foreign material such as mud and gravel can seriously damage aircraft engines therefore vehicle operators will ensure that the surfaces of manoeuvring areas are kept clean by checking that wheels and tires are clean before they enter these areas. If foreign material is deposited on these surfaces, operators shall notify one of the following: the Airport Manager

or designate, the Airport Maintenance Supervisor, Manager of Maintenance, Ground Control, or FSS and arrange for immediate removal.

18. Vehicle operators shall remain a safe distance from areas affected by jet blast or prop wash of manoeuvring aircraft, and not pass in front of or closely behind aircraft with engines running unless the wheels of the aircraft are chocked or the Marshaller waves permission.

19. Vehicles can seriously interfere with electronic equipment therefore no vehicle should proceed closer than 150 m (500 ft.) from an Instrument Landing System (ILS) transmitter building except with permission of the Control Tower or FIC. The location of sensitive air navigation equipment and related zones of restricted vehicle operation are indicated on the airport site plan of the local Airport Traffic Directives See Appendix F Airport Site Plans.

20. Operators shall use service and perimeter roads to reach field locations when these roads are available and time permits.

21. Except for trained airport staff doing Runway Surface Condition Inspections, no person shall operate a vehicle at an airport at a rate of speed that exceeds the speed limit posted or where no speed limit is posted 50 km/h (30 mph). Maximum speed on any apron is 25 Km/h (15 mph).

22. No person shall operate a vehicle at an airport in a manner considered unsafe as defined in the Yukon *Motor Vehicles Act and Regulations*. This includes but is not limited to:
    - ✈ Unnecessarily driving backwards
    - ✈ Weaving across manoeuvring or apron areas
    - ✈ Doing doughnuts or similar reckless behaviour

23. Operators and vehicles will remain clear of the scene of an accident or an aircraft carrying VIP's unless authorized by the Airport Manager or designate.

24. Aircraft fuelling vehicles which have an overall height in excess of 3.5 m are permitted to mount 360° beacon lamp on the vehicle cab provided that tail signal lamps are operated in conjunction with the 360° beacon lamp to provide adequate indication to the rear of the vehicle.

25. All self-propelled vehicles must be equipped with working head, tail and parking lamps and, if licensed for non-airside areas, a license plate lamp. Vehicles with a cab must also be equipped with a rotating or flashing beacon lamp mounted on top of the vehicle. Vehicles without a cab must be capable of operating the parking and tail lamps so that they flash on and off in unison.

26. Whenever a self-propelled vehicle is moving from one place to another on the airport apron, those vehicles equipped with a flasher or beacon lamp must be in operation. The purpose is to indicate to taxiing aircraft that the vehicle is being operated in the active apron area. These lamps **must not** be left flashing when the vehicle is stationary within the vicinity of a parked aircraft and is servicing the aircraft. Improper use of flashing lamps is potentially distracting to taxiing aircraft and down-grades their value as a warning indicator that the vehicle is in motion.

27. Headlamps and non-flashing tail and parking lamps **must** be operated during hours of darkness and reduced visibility and may be left on as required while engaged in service to parked aircraft. All vehicle lamps should be turned off when the vehicle is parked in approved parking locations.

28. All non-self-propelled equipment are required to carry a strip of yellow reflective material along the full length of the equipment and diagonal yellow and black panels on the front and rear lower corners. See Fig. 2.

29. The presence of unlit equipment on airport aprons can be a significant hazard to taxiing aircraft. It is important that the reflective material on all equipment should be clean, in good condition, and free of snow and ice at all times.

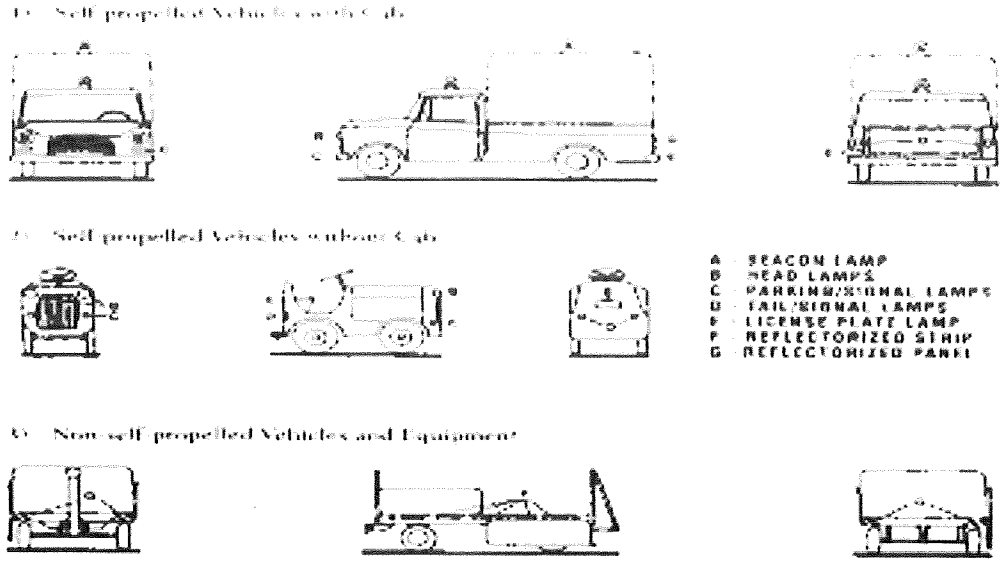
30. Occasional use on apron areas by vehicles or equipment not equipped with standard safety markings may be permitted while under escort of a vehicle so equipped.

31. Vehicles must not be left unattended on manoeuvring areas.

32. Snow windrows, gopher holes, large rocks, etc., are sometimes impossible to see from the air and pose a hazard to aircraft. Vehicle Operators are encouraged to take time to eliminate any such hazard.

33. If at any time a hazard does exist that cannot be fixed, the operator must immediately report the condition to the AMU.

Figure 2 – Equipment Markings



HELICOPTER AREAS

The paved surface areas designated for the parking of helicopters is designated by two yellow concentric circles with a large yellow "H" in the centre.

The paved surface area designated for the final approach or take-off is a white triangle.

All vehicle operations must remain outside the perimeter markings of helicopter arrival/departure areas and parking locations except when engaged in servicing these aircraft.

REDUCED VISIBILITY OPERATIONS PLAN (RVOP)

This section will be added at a later date.

MARKINGS, AIRSIDE LIGHTING AND SIGNS

Vehicle and aircraft movement on the ground is guided by pavement markings, lights and signs on the airside, which are different from those used on roads and highways. Vehicle operators must know the apron and airside layout, the location of operational parking stands and understand the pavement marking system and the colour code for airside lighting equipment.

a) MARKINGS

- **Runway Markings** are white
- **Taxiway and Apron markings** are yellow
- **Apron Safety lines** are red or white
- **Parking area boundary lines, vehicle and passenger corridor markings** should be white
- **Threshold Markings** commence 6 m from the threshold and consist of a pattern of stripes of uniform dimension disposed along the centre line of the runway
- **Displaced Threshold Markings** are **Arrows** located before the threshold to indicate the location of a permanently displaced threshold
- **Taxiway centrelines** provide guidance to aircraft leading from the runway to a point on the apron where aircraft stand markings commence
- **Aircraft Stand Markings** should be provided for designated parking positions on a paved apron. These may include stand identification e.g. a triangle and a number (visible from the cockpit of aircraft), the stand markings, lead-in lines, turn bar, turning lines, alignment bars, stop lines, and lead-out lines
- **Taxiway and Road Holding Position Markings and Signage** is provided prior to the entrance to a runway. Vehicles must stop and receive clearance before proceeding onto or across the runway.

b) AIRSIDE LIGHTING

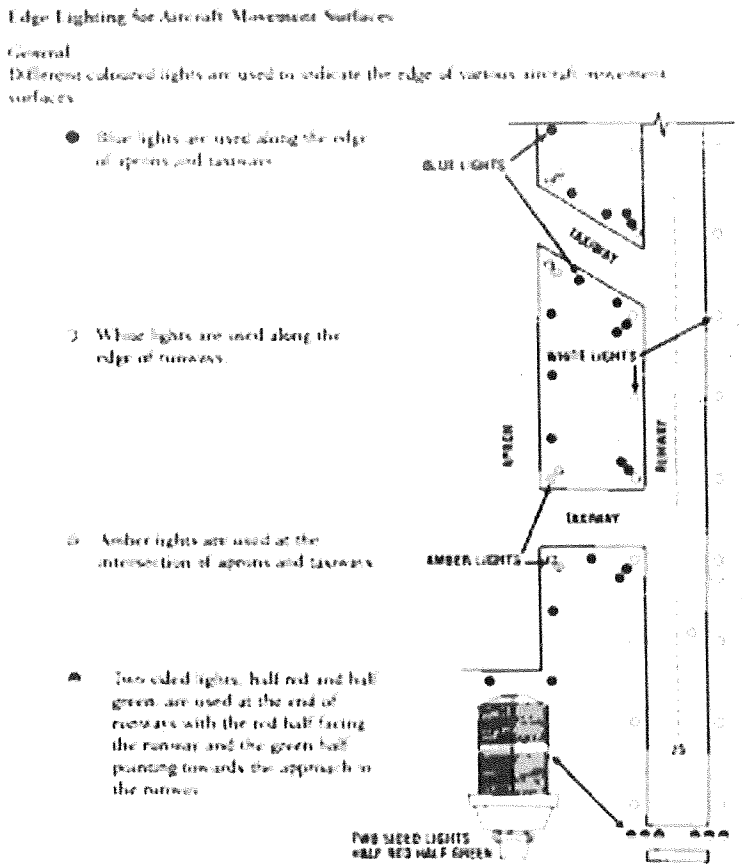
- **Apron lights** are blue.
- **Taxiway lights** are blue. A double set of lights at the intersection of the apron and taxiway shall be yellow (orange).
- **Runway Edge lights** are white and are spaced no more than 60 m apart. A double set of lights at the intersection of the runway and taxiway shall be blue.
- **Threshold Lights** are used at the end of runways and are two sided lights, half red and half green. The red half points in the direction of the runway and the green half points out toward the runway approach.
- **Displaced Threshold Lights** are blue lights between the beginning of the runway and the displaced threshold.
- **Aerodrome Beacon** is a flashing white light mounted adjacent to or located at the airport in an area of low ambient background lighting. Typically this is on the Air Terminal Building or

the Control Tower. It is provided for visual identification of the airport by aircraft but is also a good reference point for vehicles on the airfield.

- ✈ **Aircraft Beacon(s)** are red and when operating they indicate that the aircraft engines are about to start up or are in operation.

See Fig 3

Figure 3 Airside Lighting



c) SIGNS

Signs used on the manoeuvring area are designed and intended for the use and guidance of aircraft. They are also of value to vehicle operators to identify areas that should not be entered or as guides to vehicle operation while on these areas.

These signs are normally mounted on the left side of a runway or taxiway according to standards but can be on both sides of the runway or taxiway. They are located between 3m -

21m from the edge of the taxiway surface. ENWIA has both light emitting diode (LED) and fibre optic mandatory and information signs on the airfield.

- **Mandatory Instruction Signs** are white letters/numbers on a red background and may include:

  a) "Hold" signs used in conjunction with "Hold" lines (pavement markings) on a taxiway

  b) "Runway/Taxiway Designator" used to identify the runway by number and taxiway by letter. When these signs are red, they carry the combined message to "Hold Short" a well as identifying the runway ahead.

  c) "No entry" signs

- **Information Signs** with black letters/numbers on a yellow background include direction, destination and runway exit signs. Location signs are yellow letters on a black background.

  a) Location/Directional signs normally have an arrow indicating the direction of travel to exits, aprons, terminal buildings, or other facilities named on the sign.

  b) Information signs provide information of interest primarily to aircraft but may be helpful to vehicle operators as reference points.

SECTION THREE – AIRPORT TRAFFIC DIRECTIVES

MANOEUVRING AREAS

Air to Ground Radios

- All vehicles and equipment on **all manoeuvring** areas shall have a functioning two-way radio operated by a person with a valid radio-telephone operator's restricted certificate, or be escorted by a vehicle so equipped and staffed. Each operator shall ensure that the two-way radio is working before the vehicle enters the airport manoeuvring area. The radio frequency to be used is 121.9 MHz.

- Whenever non-radio equipped vehicles and equipment are operating in groups or fleets with a radio-equipped vehicle, they shall be under the control of a qualified employee responsible for requesting and acknowledging all ground control instructions.

- All traffic on the airport manoeuvring area must always obey the Control Tower instructions.

- Instructions from the Flight Service Specialist in the FIC should be responded to in the same manner as if used by a Control Tower.

- Before proceeding onto manoeuvring areas the vehicle operator shall contact the ground controller for permission to proceed to a specific location by a specified route. The vehicle operator shall acknowledge all instructions as understood, or request that the instructions be

repeated if not understood. The operator shall proceed, only along the specified route to the specified location unless alternate instructions are received from the ground controller.

- Aircraft being towed or vehicles towing an aircraft must always be in radio contact with ground control before entering and while within the manoeuvring area.

- Requests for permission to proceed into the manoeuvring area shall include:

    - the vehicle identification
    - its current location
    - the intended activity/work to be performed while in the manoeuvring area
    - the specific destination and intended route (otherwise, the ground controller will normally specify the route to be followed).

- When instructed to hold short of a runway, or awaiting permission to cross or to proceed onto a runway, the operator shall hold the vehicle 67 m (220 ft.) from the nearest edge of the runway, behind the Hold Line on taxiways or roadways. Taxiway holding positions are marked with two solid and two broken yellow lines, with the broken lines closest to the runway however exceptions to this occur. See Fig. 4

    Note: It is critical that the vehicle operator acknowledge this instruction by repeating the Hold Short order exactly as originally stated.

    Example:

    ATC, "Loader 154, Hold short of taxiway Golf on Echo"

    Equipment Operator, "Whitehorse Ground, Loader 154 wilco, hold short of taxiway Golf on Echo"

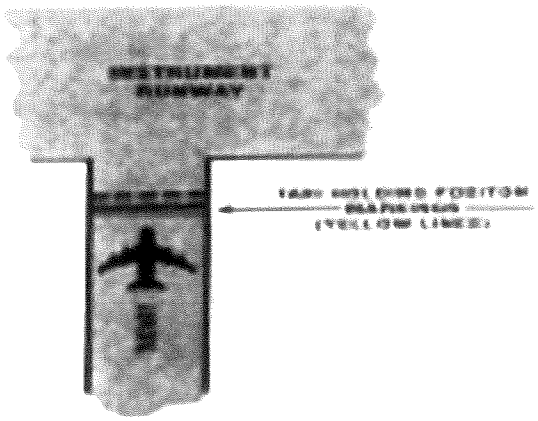
- This procedure also applies to the area extending from each end of the runway. The purpose is to permit an unobstructed aircraft approach to the runway for landing or to gain altitude after take off. Where the land falls away sharply off the end of a runway, this procedure may not apply.

- When instructed to leave the runway, vehicle operators shall acknowledge instructions and proceed to a taxi holding position or safe position off to the side of the runway at least 67 m (220 ft.) from the nearest edge of the runway. Once in a holding position, vehicle operators shall inform the ground controller that they are off the runway (Holding Short) and give their exact position.

- *Note: Vehicles and equipment may sometimes have to operate within 67 m (220 ft.) of the runway. When this happens, the operator must inform the ground controller of the approximate distance of the vehicle or equipment from the nearest runway edge.*

    In the course of moving from the manoeuvring area the vehicle operator must hold short of each intervening runway and receive permission to proceed before crossing the runway.

Figure 4 Hold Line Markings



- Equipment break downs shall be immediately reported to ground control specifying the location and difficulty and asking for assistance.

- While on the manoeuvring areas, vehicle operators shall always monitor the appropriate ground control frequency and acknowledge and comply with any instructions from ground control.

- The blinking on and off of runway lights is a warning signal for all vehicles to leave the runway immediately.

- **Flight Service Specialists** provide advisories according to "**reported**".

  Note: Vehicle Operators must understand the term "reported". Aircraft are not required to be radio-equipped and therefore, may arrive and depart without contacting the FIC. The phrase "no reported" traffic ***does not*** *necessarily mean "no traffic". It only means that no aircraft have made their presence or intentions know to the Flight Service Specialist. Thus Vehicle Operators;* ***must*** *always visually check and ensure that aircraft are not approaching or departing.*

Radio/Vehicle Failure

- If the radio fails while the vehicle is in the manoeuvring areas, turn the vehicle to face the control tower and flash the headlights off and on. The ground controller will respond using the following light signals:

  - flashing green light – proceed
  - steady red light – stop, hold your position
  - flashing red light – vacate the runway
  - flashing white light – return to starting point on the airport

- Do not leave vehicles unattended on manoeuvring areas.

- If vehicles or equipment break down, the vehicle operator shall immediately notify ground control or FIC of the location of the disabled vehicle or equipment and request assistance.

  Note: When you are not able to move your vehicle at least 67 m (220 ft.) from the runway edge, you must inform the ground control or Flight Information Centre of your approximate distance from the edge of the runway.

- If the vehicle radio fails while in the manoeuvring area, the vehicle operator must leave the manoeuvring area immediately and, **as soon as possible**, inform the ground control or FIC by telephone or other appropriate means.

- Vehicle operators shall immediately leave the runway when:
  - an aircraft makes a low pass: or
  - the runway lights are blinked on and off or
  - there is a flashing red light from ground control or FIC

- Operators and their equipment who have a need to work on airside areas but do not have radio communications with ATC, FIC or aircraft radio frequency monitoring capabilities, should be mindful of the following:

  - Prior to entering the strip, visually inspect the approach ends of the runway to ensure that no aircraft are about to use the runway

  - Keep a "heads-up" awareness for any aircraft that may need the strip while working on it; clear the runway immediately if an aircraft approaches to land or take off.

  - Be aware of the importance of runway and field conditions to a pilot, who may be using the runway in conditions of poor visibility. Aids such as threshold markers, cones, and windsocks become very important.

RADIOTELEPHONE PROCEDURES

VOICE TECHNIQUES

- Hold background, noise-cancelling microphones as close to the lips as possible. Hold most other microphones approximately 6.6 cm (2-3 inches) in front of the mouth.

- Listen first to ensure that you will not interrupt another transmission, then depress the "press to talk" (PTT) switch before beginning to speak and keep it depressed for the entire transmission. Avoid clicking on and off. When the transmission is finished, release the PTT switch immediately.

- Speak plainly and distinctly to prevent running consecutive words together. Do not shout, accentuate syllables artificially, or speak too rapidly.

- Use standard procedure words and phrases and standard airport terminology. Standard phraseology has been developed through years of practice to transmit instruction, and messages most efficiently and without misunderstanding, using the fewest words.

- There may be some areas on the airport where signals are not received due to obstructions (i.e. metal buildings, hill, etc.). These areas are referred to as blind spots and are indicated on the airport site plan. At ENWIA there is a blind spot at the southern end of taxiway "E" between the Land Treatment Facility road and threshold of 32L.

***Always*:**

- Repeat "Hold Short" instructions and the vehicle's call sign.
- Obtain permission before approaching closer than 67 m (220 ft.) to the side of a runway, taxiway or end of a runway and including any portion of an apron which is identified with a sign and/or pavement marking as being part of the manoeuvring area.
- Monitor the radio at all times when in the manoeuvring area.
- Do not leave vehicles or vehicle radios unattended while in the manoeuvring area except with permission of the ground controller.
- Advise ground control or FIC when your vehicle has left the manoeuvring area.
- Report completion of an activity only *after* it has been completed, i.e. report being off of a runway only *after* your vehicle is at least 67m (220 ft.) away from the runway edge not while you are still in the process of leaving.
- Ensure that you fully understand all instructions given by the ground controller or Flight Service Specialist before entering within 67m (220 ft.) of an aircraft manoeuvring area or crossing an active runway.
- In addition to any permission given by radio to proceed onto or within the manoeuvring area, check visually to ensure that you will not interfere with any aircraft on or approaching the path you have been given permission to follow.
- Always use the correct radio call sign for the vehicle you are operating in every radio transmission.

ICAO Phonetic Alphabet and Pronunciation of Numbers

Use the ICAO Phonetic Alphabet when phonetics are required for clarity in radiotelephone communications.

LETTER	WORD	SPOKEN AS
A	ALFA	(Al fah)
B	BRAVO	(BRAH VOH)
C	CHARLIE	(CHAR lee)
D	DELTA	(DELL tah)
E	ECHO	(ECK oh)
F	FOXTROT	(FOKS trot)
G	GOLF	(GOLF)
H	HOTEL	(Hoh TELL)
I	INDIA	(IN dee ah)

J	JULIET	(JEW Lee ETT)
K	KILO	(KEY loh)
L	LIMA	(LEE mah)
M	MIKE	(MIKE)
N	NOVEMBER	(No VEM ber)
O	OSCAR	(OSS cah)
P	PAPA	(Pah PAH)
Q	QUEBEC	(Keh BECK)
R	ROMEO	(ROW me oh)
S	SIERRA	(see AIR rah)
T	TANGO	(TANG go)
U	UNIFORM	(YOU nee form)
V	VICTOR	(VIK tah)
W	WHISKEY	(WISS key)
X	X-RAY	(ECKS ray)
Y	YANKEE	(YANG key)
Z	ZULU	(ZOO loo)

Taxiways are referred to when speaking by using the phonetic alphabet so that taxiway "A" is spoken as "Taxiway Alpha"

Pronounce numbers as

0	ZE_RO	5	FIFE
1	WUN	6	SIX
2	TOO	7	SEV-en
3	TREE	8	AIT
4	FOW-er	9	NIN-er

Note: Stress the syllables printed in CAPITAL letters. i.e. give the two syllables in ZE-RO equal emphasis, but give the first syllable for FOW-er primary emphasis.

Transmit all numbers, except *whole thousands*, by pronouncing each digit separately. Transmit *whole thousands* by pronouncing each digit in the number of thousands followed by the word "thousand".

Number	Spoken as
10	ONE ZERO
75	SEVEN FIVE
100	ONE ZERO ZERO
583	FIVE EIGHT THREE
12000	ONE TWO THOUSAND
38143	THREE EIGHT ONE FOUR THREE
118.1	ONE ONE EIGHT DECIMAL ONE
465.2125	FOUR SIX FIVE DECIMAL TWO ONE TWO FIVE

STANDARD PROCEDURES AND WORDS

While it is not practical to lay down a precise phraseology for all radiotelephone procedures, the following words and phrases should be used where applicable. Do not use words and phrases such as "OK", "REPEAT", "HOW IS THAT", or slang expressions.

Word or Phrase	Meaning
ACKNOWLEDGE	Let me know that you have received and understood this message
AFFIRMATIVE	Yes, or permission granted
BREAK	Changing contact (new conversation with another party)
CONFIRM	My version is...is that correct?
CORRECTION	An error has been made in this transmission or the message indicated). My correct version is...
HOLD SHORT	Stop 67m from the runway edge and wait for permission to proceed. Typically this is behind a hold line or sign.
HOW DO YOU READ	Can you hear and understand me?
I SAY AGAIN	I will now repeat my last word (sentence) for clarification
NEGATIVE	No, or permission not granted, or THAT is not correct, or I do not agree
OVER	My transmission is ended and I expect a response from you. (Normally used only under poor communication conditions)
OUT	This conversation is ended and no response is expected. (Normally used only under poor communication conditions)
READ BACK	Repeat all, or the specified part, of this message back to me exactly as received
ROGER	I have received all of your last transmission
SAY AGAIN	Repeat all, or the following part, of your last Transmission (Do not use the word "Repeat" by itself)
SPEAK SLOWER	(Self-explanatory)
STAND-BY	Wait and listen. I will call you again
THAT IS CORRECT	(Self-explanatory)
VERIFY	Check text with originator and send correct version
WILCO	Will comply

CALL-UP PROCEDURES

A "call-up" is a procedure used to establish two-way communication between an airport vehicle and ground control or FIC. Before making a "call-up", listen to avoid cutting into a transmission from other users. Proceed only when the frequency is not being used by others.

A call-up consists of:
a) call sign of the station called
b) identification of the station from which the call is made

On call-up, always use the call sign of the station called.
Examples:
a) Whitehorse GROUND, STAFF FOUR SIX"
b) Whitehorse RADIO, BLOWER ONE FOUR TWO"

If you do not receive a response to your call-up, wait for a reasonable time and call again.

ACKNOWLEDGEMENTS

An acknowledgement means a transmission has been received and understood. Never acknowledge until the transmission is fully understood.

Examples:
a) Whitehorse RADIO, STAFF TWO NINER, ROGER"; or
b) Whitehorse RADIO, STAFF TWO NINER, SAY AGAIN."

END OF TRANSMISSION

To end any two-way communication, say the name of the vehicle call sign.

Example:
"GRADER ONE FIVE SEVEN."

STANDARD PHRASEOLOGY

Examples:
a) **Authorization Request and Response**:

Vehicle Operator: "WHITEHORSE GROUND, (vehicle identification)".

Ground Controller: "(vehicle identification), WHITEHORSE GROUND".

Vehicle Operator: "WHITEHORSE GROUND, (Vehicle identification) requesting (location) VIA (route)".

Ground Controller: "(vehicle identification) NEGATIVE! HOLD YOUR POSITION."

Vehicle Operator: "WHITEHORSE GROUND, (Vehicle identification) holding position"

b) **Authorization Request when Accompanying a Non-radio-equipped Vehicle**
Use the term "plus one" or "plus two" because it indicates to the ground controller the number of vehicles in the group.

Vehicle Operator: "WHITEHORSE GROUND, (vehicle identification) PLUS ONE, REQUEST TO (location)...etc.

c) **Typical Ground Control Instructions**
"PROCEED ONTO RUNWAY 14R FOR INSPECTION, ADVISE WHEN OFF THE RUNWAY."
"HOLD SHORT RUNWAY 14R."
'TRUCK EIGHT THREE, GROUND, LEAVE RUNWAY ## AT (location) AND REPORT WHEN OFF THE RUNWAY."

d) **Request to Flight Service Station and Response**
Vehicle Operator: "WHITEHORSE RADIO, STAFF TWO SEVEN".

Flight Service Station: "STAFF TWO SEVEN, WHITEHORSE RADIO."

Vehicle Operator" WHITEHORSE RADIO, STAFF TWO SEVEN, REQUEST INSPECTION of THRESHOLD LIGHT RUNWAY 32L."

Flight Service Station: "STAFF TWO SEVEN, WHITEHORSE RADIO, NO REPORTED TRAFFIC, PROCEED TO THRESHOLD RUNWAY 32L, ADVISE WHEN OFF THE RUNWAY."

RADIO EXAM PROCEDURES

On-the-air radio exams, when necessary: should be short (not more than 10 seconds). The exam should not interfere with other communications.

The readability of signals may be reported in plain language, but most often is reported according to the following scale:

1. unreadable
2. readable now and then
3. readable but with difficulty
4. readable
5. perfectly readable

Examples of radio check communications:
Vehicle Operator: "(Site Name) GROUND, STAFF TWO SEVEN, RADIO CHECK."

Short response may be:
Ground Controller: "STAFF TWO SEVEN, (Site Name) GROUND, RADIO CHECKS":
or
Ground Controller: "STAFF TWO SEVEN, (Site Name) GROUND, COMMENCE EXAM COUNT".

Vehicle Operator: "EXAM COUNT, ONE, TWO, THREE, THREE, TWO, ONE."
Ground Controller" "READ YOU FIVE".

RADIO REGULATIONS

Radio communications between aeronautical stations should be restricted to those relating to safety and flight operations.

In accordance with section 32 (1) of the federal *Radio Communication Regulations*, superfluous communication as well as profane and obscene language is strictly prohibited and can result in fines.

Section 9 (1)*(a)* of the *Radio Communication Act* clearly states that no person shall knowingly send, transmit, or cause to be sent or transmitted any false or fraudulent distress signal, message, call or radiogram of any kind.

Penalties for these offences, in the case of an individual, on summary conviction, can include a fine not exceeding $5,000.00 or imprisonment for a term not exceeding one year, or to both, or, in the case of a corporation, to a fine not exceeding $25,000.00.

APPENDIX A

AVOP SELF-EXAM

The written AVOP exam will be based on a number of multiple choice questions taken from those contained in the following pages. The A2G designation will be exempt from examination. The DA designation test will be based on only the first twenty-five questions below. The other AVOP designations i.e. DR or D will be tested on a selection of 50 questions. The correct answer for each question is provided to check your own score and identify those parts of the manual which may need further study.

1) Who has the authority to suspend or cancel an AVOP at ENWIA?
   a. Minister of Highways and Public Works
   b. Airport Manager or designate
   c. your employer
   d. Police Constable

2) The person responsible for determining that his/her vehicle is operating satisfactorily and has the required safety equipment and markings is:
   a. the mechanic
   b. the operator of the vehicle
   c. the Police
   d. the Airport Manager or designate

3) If you encounter a condition on an aircraft manoeuvring surface that is likely to cause damage to an aircraft, you should report it to:
   a. the maintenance crew
   b. your immediate supervisor
   c. all aircraft operators
   d. any Airside Management Unit personnel

4) Who is responsible for reporting a vehicle malfunction or dangerous condition?
   a. any other driver
   b. the base supervisor
   c. the mechanic
   d. the vehicle operator

5) When are you required to wear a Restricted Area Identification Card?
   a. when you enter a restricted area of the airport
   b. when you enter the manoeuvring area
   c. anywhere on the airport
   d. when entering the Flight Information Centre

6) Where is a Restricted Area Identification Card carried?
   a. on the outside of the clothing
   b. in your wallet
   c. in your vehicle glove compartment
   d. not required to be carried

7) Who is responsible for ensuring a person found in the restricted area of ENWIA who is not wearing a Restricted Area Identification Card (RAIC) is reported?
   a. the Security Officer
   b. the company chief representative
   c. any valid RAIC holder
   d. any passenger

8) Who is responsible for ensuring that all gates to the airside of ENWIA are closed and locked?
   a. any person who has temporary control of or use of a gate giving airside access
   b. airport security staff
   c. airport management
   d. all of the above

9) There are many types of vehicles and equipment used on the airside of an airport. Who is responsible for ensuring that a vehicle operator knows how to operate the equipment he or she uses.
   a. the licensing authority
   b. the vehicle operator
   c. the vehicle operator's employer
   d. the security officer

10) No person shall drive vehicles and equipment on the apron at a rate of speed in excess of:
   a. 25 km/h (15 mph)
   b. 15 km/h (10 mph)
   c. 30 km/h (20 mph)
   d. no speed limit on apron

11) All vehicles with a cab operating without escort on apron I must be equipped with which of the following lights or markings?
   a. an amber flashing or rotating beacon, headlights, parking and tail lamps
   b. headlights, tail lamps and reflective tape on both sides
   c. a two-way radio on the citizens band or company frequency
   d. none of the above

12) All non self-propelled equipment used on apron1 at ENWIA must be equipped with safety markings. Which of the following most accurately describes those markings?
   a. yellow reflective stripe along the sides, and black and yellow patches at the front and lower corners.
   b. headlights, tail lamps and reflective tape on both sides
   c. both a and b
   d. any reflective material that can be seen from 300m at night

13) Which of the following traffic has first priority or right-of-way, under regular non-emergency circumstances, over all other traffic?
   a. maintenance vehicles in the performance of their duties
   b. emergency vehicles
   c. aircraft
   d. the vehicle approaching from the right

14) Which of the following examples most accurately describes the precaution which must be taken before operating a vehicle near radio navigational facilities?
   a. get permission from the Airport Manager or designate first
   b. drive a small vehicle so that the signal will be affected as little as possible
   c. get approval from Ground control or Flight Information Center
   d. stay away from this equipment at all times

15) Smoking on airside is:
   a. permitted
   b. permitted in vehicles only
   c. prohibited both inside and outside vehicles
   d. permitted if no aircraft are within 100 m of the smoker

16) It is permissible to operate a vehicle in front of or directly behind an aircraft with engines running when:
   a. not at any time
   b. the red, anti-collision beacon of the aircraft is turned off
   c. the Marshaller waves permission and the aircraft wheels are blocked (chocked)
   d. you have waited three minutes and the pilot has not indicated any intention to move the aircraft

17) When vehicles are parked in an approved parking space in the vicinity of Air Terminal Buildings or adjacent to heavy traffic areas, must be:
   a. left with beacon or flashing signal lamps in operation
   b. backed into the parking area
   c. driven in front first
   d. left with engine running

18) Whenever an aircraft carrying VIP's is at an airport, unauthorized personnel and vehicles are required to:
   a. remain clear of the aircraft unless otherwise authorized by the Airport Manager or designate
   b. drive slowly past the area but do not take pictures
   c. conduct normal vehicle manoeuvrings but do not stare
   d. there is no restriction of vehicle manoeuvring

19) Vehicle operators must ensure that mud and gravel are not deposited on aircraft manoeuvring surfaces because:
   a. this material can cause damage to taxiing aircraft and engines
   b. erosion could occur if too much dirt is removed from the runway edge
   c. the material can cause damage to aircraft in the air
   d. dirty vehicles are not permitted on airport property

20) If a vehicle operator notices foreign materials (mud, gravel, solid objects) on an aircraft manoeuvring surface, the vehicle operator is required to:
   a. report the nature and location of the material to the police
   b. stop and remove the material
   c. report the nature and location of the material to the AMU
   d. no special requirements exist for vehicle operators

21) If an aircraft or motor vehicle were to crash on the airport, unauthorized vehicle operators are required to:
   a. wait until crash firefighting and rescue operations are over before entering the area
   b. proceed immediately to the scene and render assistance
   c. stay away from the area unless authorized by your supervisor
   d. remain clear of the area unless otherwise authorized by the Airport Manager

22) Vehicle operators must always exercise caution:
   a. when vehicle corridor markings are obscured due to faded paint, snow cover or any other reason
   b. when entering and leaving the active apron and entering and leaving vehicle corridors
   c. when operating in front of or behind aircraft with engines running
   d. when any of the conditions indicated above are encountered

23)Which of the following most accurately describes that part of an aerodrome intended to be used for the taking off and landing of aircraft and the movement of aircraft associated with taking off and landing, excluding aprons?
   a. restricted area
   b. manoeuvring area
   c. airport area
   d. runway area

24)Which of the following most accurately describes the beginning of that portion of the runway usable for landings?
   a. taxiway
   b. apron
   c. threshold
   d. button

25)An airport at which an air traffic control unit is provided is called a:
   a. aerodrome
   b. controlled airport
   c. flight service station
   d. uncontrolled airport

26)At controlled airports, the control tower is responsible for directing which of the following traffic?
   a. vehicles and pedestrians on aprons
   b. aircraft, vehicles and pedestrians on manoeuvring area
   c. all vehicles, aircraft and pedestrians on the airport
   d. aircraft on manoeuvring areas but not vehicles

27)When required to operate a vehicle in the manoeuvring area of a controlled airport, the vehicle operator must first:
   a. notify the Airport Manager or designate
   b. consult his/her supervisor
   c. contact the ground controller by radio for permission
   d. contact apron management by radio for permission

28)The instructions of a ground controller:
   a. apply to vehicles on runways but not taxiways
   b. must be obeyed at all times
   c. are a guide only for vehicle operator information
   d. apply to aircraft only

29)Standard procedures for a vehicle operator who has received instructions from a ground controller is to:
   a. acknowledge all instructions as understood or request that the instructions be repeated.
   b. Proceed immediately according to instructions heard
   c. Always ask for a repeat of the instructions to ensure they are fully understood
   d. Do nothing if all instructions are not fully understood

30)When instructed by a ground controller to proceed into the manoeuvring area only along a specified route, the vehicle operator has the following options if he/she chooses to proceed:
   a. proceed as originally planned regardless of instruction from ground controller
   b. proceed as directed or do not enter the manoeuvring area
   c. question the reason why you may not use an alternate route
   d. drive on the unpaved edge of the runway to reach your destination

31)When a vehicle is towing an aircraft on the manoeuvring areas of an airport, the vehicle operator must:
   a. ensure that the towing vehicle is diesel powered only
   b. maintain radio contact with ground controller
   c. refrain from further radio contact with the tower after towing commences
   d. maintain radio contact with the pilot only

32)Which of the following should be included in a request to operate a vehicle in the manoeuvring area?
   a. vehicle identification and location
   b. requested destination and route within the manoeuvring area
   c. duration of time and purpose for being in the manoeuvring area
   d. all of the above

33)When told to "Hold Short" or when awaiting permission to cross a runway what must the vehicle operator do?
   a. stop at least 67m from the nearest edge of the runway or behind the solid yellow lines painted on the taxiway, verbally report and wait for permission from ground controller to proceed.
   b. stop at least 67m from the nearest edge of the runway or behind the solid yellow line on the taxiway. Look both to the right and left and proceed only if aircraft are not landing or taking off.
   c. Remain out of the manoeuvring area and do not proceed until the ground controller gives permission.
   d. Keep all future transmissions as brief as possible.

34)Which of the following is used to indicate the "HOLD" position on a taxiway?
   a. a sign to the side of the taxiway bearing the word "HOLD"
   b. a solid and broken yellow line across the width of the taxiway with the broken line closest to the runway
   c. two solid and two broken yellow lines across the width of the taxiway with the broken lines closest to the runway.
   d. all of the above

35)The colour of "HOLD" lines are:
   a. white
   b. green
   c. yellow
   d. red

36)As soon as a vehicle has left the runway of a controlled airport, the vehicle operator must:
   a. turn off the rotating beacon light
   b. reduce speed and use a lower gear
   c. stop and hold short of the apron until given permission to proceed
   d. advise the ground controller that you are off the runway and give your location

37)When instructed by the ground controller to "Leave (or) Get Off the Runway", the vehicle operator must:
   a. acknowledge the instruction
   b. proceed to a holding position or to a safe position off to the side of the runway at least 67 m from the nearest runway edge.
   c. inform the ground controller when off the runway and give your exact location
   d. all of the above

38)When is it permissible to operate closer than 67 m from the edge of a runway?
   a. when the work to be performed is closer than 67m from the edge of the runway
   b. during grass cutting only
   c. only on non-instrument runways
   d. when the ground controller has given permission

39)You are working in the manoeuvring area and your vehicle breaks down. You are unable to move the vehicle under its own power. What should you do?
   a. leave your vehicle with the lights on and walk to where you can get assistance
   b. wait until your shift ends and go home
   c. try and repair the vehicle on your own
   d. notify the ground controller of your location and difficulty and ask for assistance and stay with the vehicle until help arrives

40)Vehicle Operators must monitor the ground control frequency:
   a. when in the manoeuvring area
   b. at all times and in all locations of the airport
   c. only when on the apron
   d. when operating on aprons and service roads

41)A vehicle which is not equipped with a radio on the ground control frequency may be operated in the manoeuvring area when:
   a. the vehicle weight exceeds (14,000 lbs) – 6.500 kg
   b. a radio-equipped vehicle is not available
   c. it is under escort of a radio-equipped vehicle operated by a qualified employee responsible for requesting and acknowledging all ground control instructions
   d. no aircraft are scheduled to land or take off from the airport for at least thirty minutes

42)When leaving the manoeuvring area, every vehicle operator is required to:
   a. proceed to the Flight Service Station and sound the horn to indicate you are no longer in the manoeuvring areas
   b. advise the Flight Service Station by radio when you are off the manoeuvring area
   c. proceed directly to the vehicle fuelling location and refill the tank
   d. take a coffee break

43)When vehicles are operating in a group or fleet in the manoeuvring area under guidance of one radio equipped vehicle, the operator of the radio equipped vehicle is responsible to:
   a. display a red flag on the right front fender to indicate that the vehicle is radio equipped.
   b. display red flags on all vehicles in the group which are not radio equipped
   c. request and acknowledge all Flight Service Station advisories for all vehicles in the group
   d. ensure that all the operators of vehicles without a radio know the meaning of light signals used to direct vehicles during radio failure at controlled airports.

44)Manoeuvring surfaces at an airport that are designated by a letter are:
   a. aprons
   b. runways
   c. service roads
   d. taxiways

45)Runway edge lights are what colour:
   a. red
   b. white
   c. blue

d. amber (yellow/orange)

46)Taxiway edge lights are what colour:
a. red
b. white
c. amber (yellow/orange)
d. blue

47)Lights used to indicate the intersection of a taxiway and an apron are what colour:
a. amber (yellow/orange)
b. white
c. red
d. blue

48)Perimeter fence security gates must be kept closed at all times when not in use to:
a. keep wildlife and stray pets from entering airside
b. keep the public out
c. keep pedestrians off airside
d. all of the above

49)Two coloured (double faced) threshold marker lights are what colours:
a. blue and white
b. red and white
c. red and green
d. green and amber (yellow/orange)

50)The colour of threshold marker lights which face towards the runway is which of the following colours:
a. white
b. green
c. amber (yellow/orange)
d. red

51)The final approach and take off points on an airport for use by helicopters is identified by which of the following pavement markings:
a. a large, white "H" within a white circle or square or a yellow triangle
b. a silhouette of a helicopter within a white circle
c. a yellow triangle
d. a large, white "H" within a white cross

52)The pavement marking which indicates an apron location reserved for the parking of helicopters is:
a. a yellow triangle
b. a white "H" within a yellow triangle
c. a yellow "H" within two concentric, yellow circles
d. none of the above

53)When speaking into a microphone, you should always:

a. speak plainly and distinctly without artificially accentuating words or running words together.
b. speak rapidly and loudly to ensure that the message received is loud enough and does not take up too much time.
c. accentuate every syllable of every word in a loud clear voice and slowly so that nothing is missed by the ground controller or ground advisory.
d. speak in short sentences in a controlled manner

54)A radio "blind spot" is:

a. any place on the airport where radio signals to or from a vehicle cannot be received by the control tower or Flight Information Centre (FIC) or a vehicle.
b. any place where the vehicle operator cannot see the control tower or FIC.
c. any place in a vehicle where the vehicle operator cannot see the vehicle radio.
d. a hole in the ionosphere through which radio signals will not pass.

55)Circle the correct phonetic word for each of the following letters of the alphabet.

	a	b	c	d
A	Apple	Australia	Alpha	Able
B	Boston	Bravo	Baker	Baron
C	Canada	Charlie	Cocoa	China
D	Delta	Doughnut	Datsun	Dog
E	Ecuador	Easy	Echo	Empty
F	Fox	Frigid	Foxtrot	Fan
G	Golf	Golden	Gantry	Girl
H	Handle	How	Hostel	Hotel
I	Income	India	Item	Ink
J	Juliet	John	Jig	January
K	King	Kangaroo	Kilometre	Kilo
L	Love	Litre	Lima	Lost
M	Mary	Mexico	Matron	Mike
N	Nielsen	November	Nugget	Nancy
O	Oslo	Oboe	October	Oscar
P	Papa	Police	Peter	Poland
Q	Quart	Quebec	Quick	Queen
R	Romeo	Rose	Roger	Rat
S	Sugar	Sam	Sierra	Spitfire
T	Tang	Taxi	Tear	Tango
U	Uncle	Uniform	Unit	Under
V	Victor	Vision	Vapour	Vent
W	Walter	Whiskey	Wing	West
X	Xebec	Xanadu	X-Ray	Xerox
Y	Yak	Young	Yoke	Yankee
Z	Zebra	Zipper	Zip	Zulu

56)When speaking numbers, what is the correct way to say "2330":
   a. twenty-three, thirty
   b. two thousand, three hundred and thirty
   c. two-three-three-zero
   d. two-thirty-three-zero

57)When speaking numbers, what is the correct way to say "583":
   a. five hundred and eighty-three
   b. five-eighty-three
   c. fifty-eight-three
   d. five-eight-three

58)When speaking numbers, what is the correct way to say "12000":
   a. one, two thousand
   b. twelve thousand
   c. one-two-zero-zero-zero
   d. twelve-zero-zero-zero

59)In the space opposite to the following words and phrases, enter the number which corresponds to the correct meaning listed below:
   1. Repeat all, or the following part, of your last transmission.
   2. Wait and listen, I will call you again.
   3. Let me know that you have received and understood the message.
   4. My transmission is ended and I expect a response from you.
   5. Yes, or permission granted.
   6. Check text with originator and send correct version.
   7. I will now repeat my last word (sentence) for clarification.
   8. Repeat all, or the specified part of this message back exactly as received.
   9. My version is...is that correct?
   10. I have received all of your last transmission.
   11. An error has been made in this transmission, my correct version is...
   12. This conversation is ended and no response is expected.
   13. No: or permission not granted: or that is not correct" or I do not agree.
   14. Can you hear and understand me:

Acknowledge	_____	Affirmative	_____
Confirm	_____	Correction	_____
Verify	_____	How do you read?	
I say again		Negative	_____
Over	_____	Out	_____
Read back		Roger	_____
Say again	_____	Stand-by	_____

60)Before making a radio "call-up", the vehicle operator must:
   a. ask for a radio check
   b. click the switch to let others know your intention
   c. turn up the volume of the transmission to maximum
   d. listen to make sure the frequency is not in use

61)A "call-up" consists of:
   a. The call sign of the station called and the call sign of the station from which the call is made.
   b. The name/number (call sign) of your vehicle and your request
   c. The station called and your request
   d. No special procedures have been developed for radio "call-up"

62)If a vehicle operator does not receive a response to a "call-up", he/she should:
   a. repeat the call until he/she gets an answer
   b. wait a reasonable amount of time and call again
   c. try a different frequency
   d. proceed without approval

63)An "acknowledgement" means a message or instruction transmitted by radio has been received and fully understood. Vehicle operators entering or operating within the manoeuvring area should always:
   a. avoid requesting a repeat of the message because it requires too much radio transmission time.
   b. be careful if the message refers to runway crossing but do not be concerned if only taxiways are involved
   c. never acknowledge a message or instruction unless it is received and fully understood.
   d. respond according to past procedures if the message is not clear or fully understood.

64)When ground controllers or Flight Service Station specialists transmit directions or instructions that are not fully understood or not clearly transmitted, the vehicle operator must:
   a. assume that the portion of the message heard is adequate and proceed
   b. guess at what is meant on the basis of past experience
   c. request a repeat of the message and fully understand it before proceeding
   d. consult the manual for possible meanings for what was heard

65)When ground controllers or Flight Service Station specialists transmit directions or instructions which are heard clearly and full understood, the vehicle operator must:
   a. acknowledge the directions or instructions and then proceed
   b. proceed immediately according to directions/instructions
   c. ignore the direction/instruction if not suited to your needs
   d. call back to ensure that the instructions given were exactly what was wanted

66)When a vehicle operator wishes to end a radio transmission, the proper procedure is":
   a. say the name of the station called and the vehicle call sign
   b. stop transmitting
   c. say the vehicle call sign
   d. there is no standard procedure

67) Standard phraseology is used in radio communication with ground controllers and Flight Service Stations. What is the purpose of using these standard ways of say things?
   a. it is a habit of the old timers that is hard to change
   b. because this method of communications different
   c. a better system of spoken communications has not been developed
   d. to transmit clear instruction and messages efficiently in the time, with the fewer words and without misunderstanding.

68) Staff 27 is providing escort for two other vehicles which are not radio equipped. Staff 27 is required to identify himself/herself to ground controller as:
   a. staff 27 with grader and truck
   b. staff 27 escorting two other vehicles
   c. staff 27 plus 2
   d. staff 27

69) What is the correct meaning for the following ground control instruction to a vehicle? "Proceed to runway 14R-32L inspection, advise when off the runway".
   a. you are authorized to go to runway 14R-32L but not enter on to it. You are to advise ground control when you are off the runway.
   b. you are directed to inspect runway 14R-32L and must advise ground control if you drive off the edge of the runway
   c. you may not inspect runway 14R-32L and must confirm to ground control that you are off the runway at this time
   d. you are authorized to drive on runway 14R-32L for the purpose of inspecting that runway and are required to advise ground control by radio when you have left the runway

70) What is the correct meaning of the following ground control instruction "Hold Short runway 32L".
   a. stop and hold your vehicle 67 m from the nearest edge of runway 32L or behind the solid yellow line on a taxiway so marked until given permission to cross
   b. stop and hold your vehicle at the edge of runway 32L and await permission to cross
   c. stop and hold your vehicle at the taxiway leading to runway 32L and await further instructions.
   d. the term "Hold Short" applies only to aircraft and need not be obeyed by vehicle operators.

71) Which of the following "call-up" to ground controller is correct:
   a. (Site name) Ground, this is truck eighty-eight
   b. (Site name) Ground, staff twenty-nine
   c. (Site name) Ground, truck eight three
   d. (Site name) Ground, this is staff six eight

72) On-the-air radio exams, when necessary, should be:
   a. conducted only by a supervisor
   b. at least three (3) minutes long to ensure they need not be repeated
   c. short (not more than 10 seconds)
   d. conducted using the ICAO phonetic alphabet only

73) The readability of a radio signal may be reported numerically. A reported readability of five (5) means:
   a. readable now and then
   b. perfectly readable
   c. unreadable
   d. readable but with difficulty

74) The readability of a radio signal may be reported numerically. A reported readability of one (1) means:
   a. perfectly readable
   b. readable now and then
   c. readable but with difficulty
   d. unreadable

ANSWERS TO SELF EXAM

1) b
2) b
3) d
4) d
5) a
6) a
7) c
8) d
9) c
10) a
11) a
12) a
13) c
14) c
15) c
16) c
17) b
18) a
19) a
20) b or c
21) d
22) d
23) b
24) c
25) b
26) b
27) c
28) b
29) a
30) b
31) b
32) d
33) a
34) c
35) c
36) d
37) d
38) d
39) d
40) a
41) c
42) b
43) c
44) d
45) b
46) d
47) a
48) d
49) c
50) d
51) c
52) c
53) a
54) a
55) see manual
56) c
57) d
58) a
59) see manual
60) d
61) a
62) b
63) c
64) c
65) a
66) c
67) d
68) c
69) d
70) a
71) c
72) c
73) b
74) d

APPENDIX B

PRACTICAL EXAM EVALUATION FORM

Applicant'sName_____Restrictions_____

D, DA or DR PERMIT

1. AIRSIDE ENTRY / EXIT	YES	NO
• closes gate after entry	☐	☐
• secures gate	☐	☐
• wears security pass visibly displayed	☐	☐

2. EQUIPMENT	YES	NO
• turns lights on/off (beacon/flashing lights, other)	☐	☐
• on-before entering active apron area	☐	☐
• off – after parking/within aircraft perimeter	☐	☐

3. PARKING	YES	NO
• backs into defined parking spot	☐	☐
• turns head/uses mirrors for backing up	☐	☐
• parks only in spaces authorized for vehicle in use	☐	☐

4. DRIVE ALONG	YES	NO
• follows prescribed routes	☐	☐
• maintains speed but does not exceed	☐	☐
• proper clearance – parked aircraft	☐	☐
• right-of-way observance, aircraft, pedestrians, self, other vehicles	☐	☐
• obeys signs, signals, pavement markings	☐	☐
• maintains look-out for: other vehicles	☐	☐
aircraft	☐	☐
pedestrians	☐	☐
• exercises caution around corners, buildings, intersections, exits, other vehicles, aircraft	☐	☐

5. ORIENTATION: is able to locate (from the vehicle) YES NO
   - aircraft gates and operational stands by numbers
   - security gates
   - taxiway entrances
   - service roads
   - selected locations accessible by service road, (hangars, other aprons, assigned parking locations, cargo facilities, maintenance facilities, other)
   - restricted area (applicable to this exam)

---

6. EQUIPMENT YES NO
   - rotating beacon turned on

---

7. ROUTE PLANNING YES NO
   - able to describe available routes between various points on the airport (without map)
   - plans intended route before proceeding

---

8. COMMUNICATION PROCEDURES YES NO
   - listens out – transmits only on clear frequency
   - good microphone position, switching
   - clear speech
   - proper, standard phraseology
   - phonetic alphabet used properly
   - call-up, uses full vehicle identifier
   - request – vehicle ID, current location, destination activity, intended route and time in traversing area
   - acknowledge instructions correctly
   - ends transmissions correctly

---

9. DRIVE ALONG YES NO
   - obtains authorization before entering manoeuvring area
   - holds short: taxiway/runway
     runway/runway
     service road to taxiway/runway
   - follows approved route
   - maintains visual check for aircraft
   - uses service roads wherever possible
   - speed limits not exceeded
   - checks vehicle for mud, gravel before entering

---

10. RECOGNITION	YES	NO
• pavement marking and manoeuvring areas:		
runway headings	☐	☐
hold lines	☐	☐
helicopter pads	☐	☐
aircraft movement guidelines	☐	☐
threshold markings	☐	☐
• lights:		
apron/taxiway	☐	☐
runway intersections	☐	☐
threshold	☐	☐
• signs:		
mandatory: hold (runway intersection)	☐	☐
designator: runway/taxiway	☐	☐
directional	☐	☐
information	☐	☐

11. ORIENTATION: able to locate direction from vehicle	YES	NO
• aerodrome beacon	☐	☐
• control tower/FSS	☐	☐
• aprons, runways, taxiways	☐	☐
• company and other facilities/ATB	☐	☐
• restricted navigational aids and other facilities	☐	☐
• service roads	☐	☐

TOTAL MARKS: _____

APPENDIX C

DEMERIT POINT SYSTEM

The Airside Vehicle Operator's Permit (AVOP) Program Demerit Point System has four phases based on total points accumulated on the Driver's AVOP record. The length of time the demerits remain on file is determined by the severity of the infraction.

Phase 1: Point Accumulation begins

Phase 2: at 6 demerit points – 2 day AVOP suspension Phase

3: at 9 demerit points – 5 day AVOP suspension. Phase 4: at

10 demerit points or more –20 day suspension. In addition, the AVOP is suspended pending an investigation that may result in motor vehicle violation charges (s) and/or other directions to the permit holder and the employer from the Airport Manager or designate.

Minor Infractions

2 Points

- Failure to comply with Yukon Airport Traffic Directives beginning on page 20
- Failure to comply with Motor Vehicles Act
- Failure to comply with vehicle safety equipment and markers
- Driving under a moveable bridge without operational requirement
- Driving with an unsecured load
- Towing an excessive number of carts/dollies (maximum 4)

Failure to comply remains on record 6 months from date of issue. Demerits - 2 points each

3 Points

- Unauthorized driving behind aircraft with engines running
- Driving above speed limit (minor)
- Failure to obey signs, lights and barriers
- Failure to obey a stop sign / signal
- Failure to yield to aircraft or vehicular traffic
- Unsafe reversing of vehicle
- Unsafe movement of vehicle
- Improper parking of vehicle/equipment
- Failure to wear high visibility clothing
- Knowingly depositing, creating or failure to retrieve FOD

Failure to comply remains on record 6 months from date of issue. Demerits - 3 points each

Major Infractions

6 points

- Interfering with an emergency in progress (e.g. fuel spill / clean-ups) – including but not limited to deliberately entering an emergency scene without authorization
- Failure to display RAIC while in restricted areas
- Failure to maintain a proper escort (vehicle or aircraft)
- Failure to ensure vehicle is properly chocked or secured from movement
- Driving between enplaning or deplaning passengers and their gate or aircraft
- Improper driving for weather conditions
- Driving above speed limit (major)
- Unsafe operation of vehicle [1]
- Careless driving [2]
- Improper parking of vehicle/equipment causing damage
- Driving with an expired or otherwise non-compliant driver's license or uninsured vehicle
- Failure to yield right-of-way to aircraft/marshalling crew
- Failure to yield right-of-way to maintenance vehicles or to vehicles towing aircraft
- Failure to yield right-of-way to responding emergency vehicles
- Failure to comply with Enforcement Officer
- Driving between aircraft and Marshaller

[1] *driving without due care and attention*
[2] *driving without due care, attention, and regard for safety of aircraft, passengers, and others.*

Failure to comply remains on record 12 months from date of issue. A two day driving suspension will be issued for 6-8 demerit points, and a five day driving suspension for 9 demerit points. Demerits - 6-10 points each

Gross Misconduct

10 Points

- Driving above speed limit (major)
- Smoking Airside
- Dangerous Driving [1]
- Driving with suspended or otherwise invalid (restricted) driver's license
- Driving under the influence of drugs/alcohol
- Driving on manoeuvring area without proper permit (no AVOP)
- Failure to comply with Air Traffic Control authorization (incursion)
- Failure to report an accident on airside to Safety Office

[1] *Driving in a manner dangerous to others*

Failure to comply remains on record 18 months from date of issue. Twenty day suspension is possible additional penalties for 10 or more demerits. Demerits - 10 points each

APPENDIX D

Insert Application

APPENDIX E

Insurance requirements:

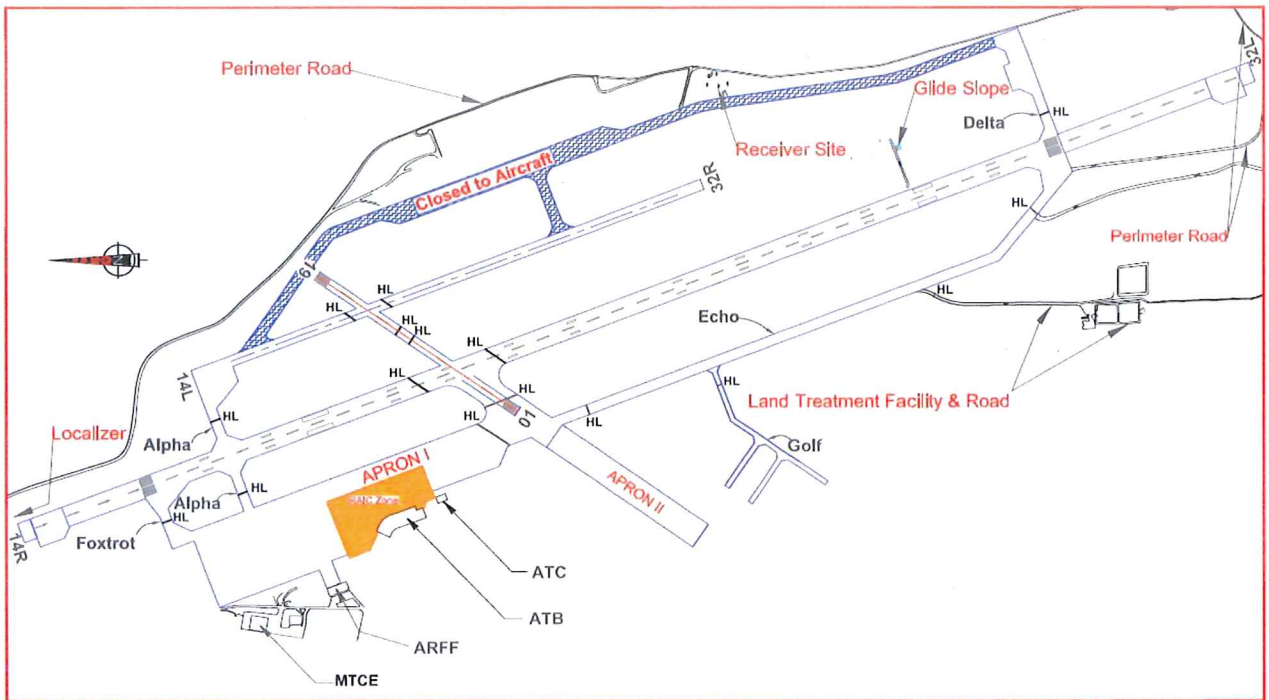
Automobile Liability Insurance covering all vehicles used on all manoeuvring areas and Apron 1 are required to be licensed under the Yukon *Motor Vehicles* Act with a minimum limit of $5,000,000.

The operators of vehicles operating only on Taxiway Golf and Apron II are strongly encouraged to be covered by a minimum $2 million liability insurance policy.

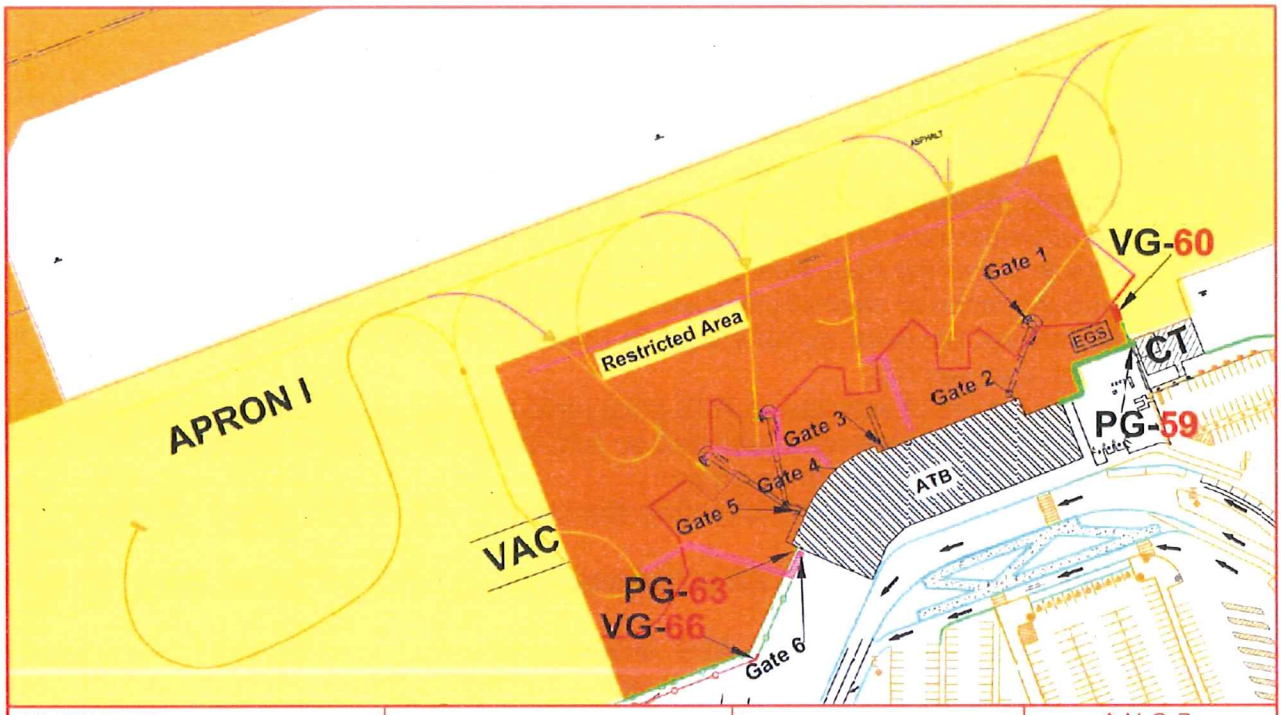
Non-Automobile Liability Insurance covering all operations, for unlicensed and/or unregistered vehicles used at Erik Nielsen Whitehorse International Airport has a minimum limit of $5,000,000.

APPENDIX F

Erik Nielsen Whitehorse International Airport Site Plans



ATC - Air Traffic Control	Yukon Highways and Public Works	ENWIA AVOP	AVOP
ATB - Air Terminal Building			drawn: Bruce Binder
ARFF - Aircraft Rescue Fire Fighting			checked: Doug Burgis
RAIC - Restricted Area Identification Card			date: August 2013
HL - Hold short line		Airport Site Plan	scale: NTS
MTCE - Maintenance Garage	Aviation Branch		drwg: Appendix D



VG - Vehicle gate	Yukon Highways and Public Works	Air Terminal Bldg	A V O P
PG - Person gate			drawn: Bruce Binder
CT - Control Tower		Aircraft Parking	checked: Doug Burgis
VAC - Vehicle Access Corridor			date: August 2013
EGS - Emergency Generator System			scale: NTS
ATB - Air Terminal Building	Aviation Branch		drwg: ATB Acft Pkg

APPENDIX G

A2G AVOP Requirements – Eric Nielsen Whitehorse International Airport (ENWIA)

1. Vehicle operators will only drive vehicles within the confines of Apron II and Taxiway Golf (hereafter referred to as "A2G").
2. Vehicle operators on A2G will comply with all posted signs.
3. Vehicle operators on A2G will ensure that the access gate of use is closed and locked securely after entry or departure from the A2G area.
4. Vehicle operators on A2G are responsible for the guidance and control of persons or animals allowed airside entry as part of his activity.
5. Vehicle operators on A2G will use headlights and four-way flashers while operating a vehicle within the A2G area. (The installation and operation of a 360 degree visible amber beacon or strobe light is encouraged for each vehicle operating on A2G.)
6. All vehicles operated on A2G must be licensed and insured as directed under the Yukon Motor Vehicles Act.
7. The operators of vehicles on A2G must have a driver's license appropriate for the vehicle being operated. Vehicles operated on A2G are encouraged to be covered by a minimum $2 million liability insurance policy.
8. Vehicle operators on A2G will refrain from driving vehicles on aircraft operating surfaces when possible.
9. Vehicle operators on A2G will limit vehicle activity during periods when surface rutting from wheels is a possibility.
10. While operating a vehicle on A2G, drivers must carry and be able to produce applicable license and insurance information upon request by a person with authority of jurisdiction.
11. Smoking is not permitted on airside.

Industry Canada Industrie Canada

RIC-21
Issue 3
February 2010

Spectrum Management and Telecommunications

Radiocommunication Information Circular

Study Guide for the Restricted Operator Certificate with Aeronautical Qualification (ROC-A)

Aussi disponible en français – CIR-21

Canada

Preface

Radiocommunication Information Circulars are issued for the guidance of those engaged in radiocommunications in Canada. The information contained in these circulars is subject to change without notice. It is therefore suggested that interested persons consult the nearest district office of Industry Canada for additional details. While every reasonable effort has been made to ensure accuracy, no warranty is expressed or implied. As well, these circulars have no status in law.

Comments and suggestions may be directed to the following address:

Industry Canada
Spectrum Management Operations Branch
300 Slater Street
Ottawa, Ontario K1A 0C8

Attention: Spectrum Management Operations

E-mail: spectrum_pubs@ic.gc.ca

All Spectrum Management and Telecommunications publications are available on the following website: http://www.ic.gc.ca/spectrum.

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1. Intent

The intent of this document is to provide study information for the ROC-A. Restricted Operator Certificates are issued for life and no revalidation is required. Contact your local district office of Industry Canada if your certificate is lost or requires replacement.

2. Background

An ROC-A is required by operators of radiotelephone equipment on board aircraft and at aeronautical land (fixed and mobile) radio stations using aeronautical mobile frequencies. The radiotelephone equipment at such stations shall be of a type that requires only simple external switching, has a power output not exceeding 250 watts effective radiated power (e.r.p.) – equivalent to 400 watts peak envelope power (PEP) – and where all frequency-determining elements are preset within the transceiver.

3. Candidate Requirements

3.1 Exam

Examinations for the ROC-A can be conducted at either a district office of Industry Canada or by one of its accredited examiners. These examiners are typically individuals who are engaged in the aeronautical industry.

Application for the examination can be made to either party. To find the nearest district office of Industry Canada, see Appendix F.

The examination may consist of written, practical and oral exercises. The candidate must satisfy an examiner that he or she:

- is capable of operating radiotelephone equipment;
- possesses a general knowledge of radiotelephone operating procedures and of international regulations applicable to the aeronautical service, specifically those regulations relating to the safety of life; and
- possesses a general knowledge of the *Radiocommunication Act* and the regulations made thereunder.

3.2 Eligibility

There are no nationality or age restrictions as to who may take the examination or hold an ROC-A. Candidates must attest that they do not have a disability that would impair their ability to operate a radio station safely.

3.3 Documentation

Identification must be presented at the examination. A valid passport, driver's licence, birth certificate, baptismal certificate, citizenship certificate or landed immigrant identification card will all be accepted as proof of identity, at the discretion of the examiner.

4. Regulations

4.1 Priorities of Communications - Aeronautical Service

The order of priority for transmission of messages in the aeronautical service is:

1. Distress communications.
2. Urgency communications.
3. Communications relating to radio direction-finding.
4. Flight safety messages.
5. Meteorological messages.
6. Flight regularity messages.
7. Messages relating to the application of the United Nations Charter.
8. Government messages for which priority has been expressly requested.
9. Service communications relating to the workings of the telecommunication service or to communications previously exchanged.
10. All other aeronautical communications.

4.2 Privacy of Communications

Radio operators and all persons who become acquainted with radiocommunications are bound to preserve the privacy of those communications. In accordance with subsection 9(2) of the *Radiocommunication Act*, no person shall divulge the contents, or the existence, of communications transmitted, received or intercepted by a radio station, except as permitted by the addressee of the message or his/her accredited agent, or to authorized officials of the Government of Canada, officers of the court or an operator of a telecommunications system as is necessary to forward or deliver the communication. These restrictions do not apply to a message of distress, urgency, safety or to messages addressed to "ALL STATIONS" (i.e. weather reports, storm warnings, etc.).

As outlined in section 9.1 of the Act, any person who violates the privacy of communications is liable, on summary conviction, in the case of an individual, to a fine not exceeding twenty-five thousand

dollars or to imprisonment for a term not exceeding one year, or to both, or, in the case of a person other than an individual, on summary conviction, to a fine not exceeding seventy-five thousand dollars.

4.3 Control of Communications

In communications between aeronautical ground stations and aircraft stations, the aircraft station shall comply with instructions given by the ground station in all matters relating to the order and time of transmission, the choice of frequency and the duration and suspension of communications. This does not apply in the cases of distress or urgency communications, where the control lies with the station initiating the priority call.

The operation of an aircraft station is under the control of the pilot or another person in charge of the station.

In communications between aeronautical ground stations and aircraft stations, it is normally the ground station that retains communications control. In communications between aircraft stations, however, the aircraft station **being called** is the controlling station.

If the station called is in agreement with the calling station, it shall transmit an indication that from that moment onwards it will listen on the working frequency or channel announced by the calling station. However, if the station called is not in agreement with the calling station on the working frequency or channel to be used, it shall transmit an indication of the working frequency or channel to be used.

Examples:

(a) Ground station calling an aircraft (the ground station has control of radiocommunications)

PIPER CHARLIE FOXTROT X-RAY QUEBEC QUEBEC
THIS IS
OTTAWA RADIO
GO AHEAD ON TOWER FREQUENCY ONE TWO TWO DECIMAL ONE
OVER

(b) Aircraft calling a ground station (the ground station has control of radiocommunications)

OTTAWA RADIO
THIS IS
PIPER CHARLIE FOXTROT X-RAY QUEBEC QUEBEC
ON FREQUENCY ONE TWO TWO DECIMAL ONE
OVER

(c) One aircraft to another aircraft (the aircraft being called has control of radiocommunications)

CESSNA CHARLIE FOXTROT X-RAY QUEBEC TANGO
THIS IS
PIPER CHARLIE FOXTROT X-RAY QUEBEC QUEBEC
ON FREQUENCY ONE ONE NINE DECIMAL SEVEN
OVER

PIPER CHARLIE FOXTROT X-RAY QUEBEC QUEBEC
THIS IS
CESSNA CHARLIE FOXTROT X-RAY QUEBEC TANGO
CHANGE TO SEARCH AND RESCUE FREQUENCY ONE TWO
THREE DECIMAL SIX
OUT

4.4 Superfluous Communications and Interference

Radiocommunications between aeronautical stations should be restricted to those relating to safety and flight regularity. In accordance with subsection 32(1) of the *Radiocommunication Regulations*, superfluous communication, as well as profane and obscene language, is strictly prohibited.

Any person who violates the regulations relative to unauthorized communications, profane or obscene language is liable, on summary conviction, in the case of an individual, to a fine not exceeding five thousand dollars or to imprisonment for a term not exceeding one year, or to both, or, in the case of a corporation, on summary conviction, to a fine not exceeding twenty-five thousand dollars.

The Act clearly states that all radio stations shall be operated so as not to interfere with or interrupt the working of another radio station. The penalties for doing so are the same as those noted above. The only situation under which you may interrupt or interfere with the normal working of another station is when you are required to transmit a higher priority call or message, for example, distress, urgency or other priority calls or messages.

4.5 False Distress Signals

Paragraph 9(1)*(a)* of the Act clearly states that no person shall knowingly send, transmit, or cause to be sent or transmitted any false or fraudulent distress signal, message, call or radiogram of any kind. Penalties for this offence, on summary conviction, in the case of an individual, can include a fine not exceeding five thousand dollars or imprisonment for a term not exceeding one year, or to both, or, in the case of a corporation, to a fine not exceeding twenty-five thousand dollars.

5. Operating Procedures

5.1 Speech Transmission Techniques

The efficient use of radio depends to a large extent on the method of speaking and on the articulation of the operator. As the distinctive sounds of consonants are liable to become blurred in the transmission of speech and as words of similar length containing the same vowel sounds are apt to sound alike, special care is necessary to ensure their proper pronunciation.

When using radio, the operator should speak all words plainly and clearly to prevent words from running together. Avoid any tendency to shout, accent syllables, or to speak too rapidly. The following points should be kept in mind when using radio:

Speed: Keep the rate of speech constant, neither too fast nor too slow. Remember that the operator receiving your message may have to write it down.

Rhythm: Preserve the rhythm of ordinary conversation and word pronunciation. Also, avoid the introduction of unnecessary sounds such as "er" and "um" between words.

5.2 Time and Date

The twenty-four hour clock system should be used to express time during radiocommunications. Time should be expressed and transmitted by means of four figures, the first two denoting the hour past midnight and the last two the minutes past the hour.

Examples:	12:45 a.m	is expressed as 0045
	12:00 noon	is expressed as 1200
	11:45 p.m	is expressed as 2345
	12:00 midnight	is expressed as 2400 or 0000
	1:30 a.m	is expressed as 0130
	1:45 p.m	is expressed as 1345
	4:30 p.m.	is expressed as 1630

Time is usually referenced to one standard time zone, Coordinated Universal Time (UTC) (often referred to as Greenwich Mean Time (GMT) or zulu time (Z)) to avoid confusion between different time zones. When operations are conducted solely in one time zone, local time may be used.

Where the date, as well as the time of day, is required, a six-figure group should be used. The first two figures indicate the day of the month and the following four figures indicate the time.

Examples: Noon (EST) of the 16th day of the month is expressed as.....161200 E
2:45 a.m. (PST) of the 24th day of the month is expressed as....240245 P

5.3 ITU Phonetic Alphabet

The phonetic alphabet adopted by the International Telecommunication Union (ITU) is used to avoid confusion when transmitting difficult or unusual words. This internationally recognized alphabet should be learned so that it is readily available whenever isolated letters or groups of letters are pronounced separately, or when communication is difficult. Call signs should also be spelled phonetically.

The ITU phonetic alphabet is:

Letter	Word	Pronounced as
A	Alfa	**AL** FAH
B	Bravo	**BRAH** VOH
C	Charlie	**CHAR** LEE or **SHAR** LEE
D	Delta	**DELL** TAH
E	Echo	**ECK** OH
F	Foxtrot	**FOKS** TROT
G	Golf	GOLF
H	Hotel	HOH **TELL**
I	India	**IN** DEE AH
J	Juliett	**JEW** LEE **ETT**
K	Kilo	**KEY** LOH
L	Lima	**LEE** MAH
M	Mike	MIKE
N	November	NO **VEM** BER
O	Oscar	**OSS** CAH
P	Papa	PAH **PAH**
Q	Quebec	KEH **BECK**
R	Romeo	**ROW** ME OH
S	Sierra	SEE **AIR** RAH
T	Tango	**TANG** GO
U	Uniform	**YOU** NEE FORM or **OO** NEE FORM
V	Victor	**VIK** TAH
W	Whiskey	**WISS** KEY
X	X-ray	**ECKS** RAY
Y	Yankee	**YANG** KEY
Z	Zulu	**ZOO** LOO

Note: The syllables to be emphasized are in bold.

Numbers are pronounced as follows:

0 -	ZE-RO	5 -	FIFE
1 -	WUN	6 -	SIX
2 -	TOO	7 -	SEV-en
3 -	TREE	8 -	AIT
4 -	FOW-er	9 -	NIN-er

Decimal - **DAY**-SEE-MAL
Hundred - **HUN**-dred
Thousand - **TOU**-SAND

5.4 Transmission of Numbers

All numbers except whole thousands should be transmitted by pronouncing each digit separately. Whole thousands should be transmitted by pronouncing each digit in the number of thousands followed by the word "thousand".

Examples:	10 becomes	-	one zero
	75 becomes	-	seven five
	100 becomes	-	one zero zero
	5,800 becomes	-	five eight zero zero
	11,000 becomes	-	one one thousand
	68,009 becomes	-	six eight zero zero nine

Numbers containing a decimal point shall be transmitted as above, with the decimal point indicated by the word "decimal".

Example:	121.5 becomes	-	one two one decimal five

Monetary denominations, when transmitted with groups of digits, should be transmitted in the sequence in which they are written.

Examples:	$17.25 becomes	-	dollars one seven decimal two five
	$0.75 becomes	-	decimal seven five

Altitude above sea level should be expressed in thousands plus hundreds of feet. Separate digits shall be used to express flight levels.

Examples:	2700	-	Two thousand seven hundred
	FL265	-	Flight level two six five

Aircraft type numbers, wind speed and cloud formation heights are expressed in group forms.

Examples:	Flight 320	-	Flight three twenty
	DC10	-	DC ten
	34BKN	-	Thirty Four Hundred Broken
	Wind 270/10	-	Wind two seven zero degrees one zero knots

Time: Coordinated Universal Time (UTC)

Examples:	0920Z	-	Zero niner two zero zulu
	09	-	Nine minutes past the hour

Aircraft headings are given in groups of three digits. If operating within the Southern Domestic Airspace, the heading is expressed in degrees "magnetic". If operating within the Northern Domestic Airspace, the heading is expressed in degrees "true".

Examples:	005 degrees	-	Heading zero zero five
	350 degrees	-	Heading three five zero

Aerodrome elevations are expressed in feet, prefixed by the expression "field elevation".

Examples:	150	-	Field elevation one five zero
	3500	-	Field elevation three thousand five zero zero

5.5 Procedural Words and Phrases

While it is not practical to set down precise phraseology for all radiotelephone procedures, slang expressions such as "OK", "REPEAT", "TEN-FOUR", "OVER AND OUT", "BREAKER BREAKER", "COME IN PLEASE", etc., should not be used. Appendix B contains a list of words and phrases that should be used where applicable.

5.6 Call Signs

A distinctive call sign is assigned to radio stations for identification purposes and should be used at least when initial contact is being established, and again when the communication is concluded. Aeronautical call signs should always be pronounced phonetically.

An aircraft's call sign can be the same as the aircraft's markings. The call sign and markings are assigned to the aircraft by Transport Canada.

5.6.1 Canadian Air Carriers

Canadian air carriers use their assigned company name as a call sign, followed by the flight number or the last three characters of the aircraft registration.

Example: AIR CANADA ONE FOUR NINE

5.6.2 Canadian Private Civil Registration

Canadian private aircraft use the manufacturer's name or their type of aircraft, followed by the last four letters of the registration.

Example: CESSNA-182 GFAC (spoken: CESSNA ONE EIGHT TWO GOLF FOXTROT ALFA CHARLIE)

5.6.3 Aeronautical Ground Stations

Aeronautical ground station identification comprises the name of the airport or its geographical location, followed if necessary, by a suitable word indicating the function of the station.

Examples:

Area control centre	-	Ottawa Centre
Surface movement control	-	Toronto Ground
Flight information service station	-	Ottawa Information
Clearance delivery	-	Edmonton Delivery
Approach control radar arrivals	-	Ottawa Arrival
Approach control radar departures	-	Winnipeg Departure
Precision approach radar	-	Montreal Precision
Community aerodrome radio station	-	Eskimo Tower
Private aeronautical station	-	Radio
Company Dispatch	-	Dispatch

5.7 Radiotelephone Calling Procedure

In general, it is up to the aircraft station to establish communication with the aeronautical ground station. For this purpose, the aircraft station may call the aeronautical ground station when it comes within the operational service area of the station. However, a ground station may also establish communication with an aircraft station within its operational service area.

When an aeronautical ground station receives calls from several aircraft stations at approximately the same time, it decides the order in which these stations may transmit their traffic. Its decision shall be based on the priority status of the messages.

5.7.1 Calling

Before transmitting, operators shall listen to the desired communication channel for a period long enough to satisfy themselves that their transmission will not cause harmful interference to communications already in progress. If such interference seems likely, operators shall wait for the first break in the transmission. A station which has distress, urgency or safety communications to transmit is entitled to interrupt, at any time, a transmission of lower priority that is in progress.

The call sign identifier of the station being called is **ALWAYS** spoken first, followed by the words "THIS IS" and the calling station's identifier.

Single Station Call

When an operator wishes to establish communication with a specific station, the following items shall be transmitted in the order indicated:

1. The call sign of the station called (not more than three times, once if radio conditions are good).

2. The words "THIS IS".

3. The call sign of the station calling (not more than three times, once if radio conditions are good).

4. The frequency on which the calling station is transmitting.

5. The invitation to reply ("OVER").

Example: TORONTO TOWER (repeated up to three times)
THIS IS
CESSNA ONE EIGHT FIVE - FOXTROT ALFA DELTA TANGO
ON FREQUENCY ONE ONE EIGHT DECIMAL SEVEN
OVER

All Stations General Call

When an operator wishes to establish communication with any station within range or in a certain area, the call should be made to "ALL STATIONS" using the same procedure as a single station call.

Example: ALL STATIONS, ALL STATIONS, ALL STATIONS
THIS IS
TORONTO AIR RADIO (three times if necessary)

Multiple Station Call

If more than one station is to be called simultaneously, the call signs of the desired stations may be transmitted in any convenient sequence followed by the words "THIS IS" and the originating station's call sign. In general, operators replying to a multiple station call should answer in the order in which they have been called.

Example: CESSNA FOXTROT NOVEMBER INDIA LIMA
PIPER FOXTROT X-RAY QUEBEC QUEBEC
PIPER GOLF LIMA LIMA DELTA
(All repeated three times if necessary)
THIS IS
TORONTO TOWER (three times if necessary)
OVER

5.7.2 Replying

Operators hearing a call directed to their station shall reply as soon as possible and advise the calling station to proceed with the message with the words "GO AHEAD", or not to proceed with the message with the words "STAND BY", followed by the anticipated number of minutes of delay.

Examples: PIPER FOXTROT X-RAY QUEBEC QUEBEC
THIS IS
TORONTO TOWER
GO AHEAD

PIPER FOXTROT X-RAY QUEBEC QUEBEC
THIS IS
TORONTO TOWER
STAND BY TWO MINUTES

When station operators hear a call but are uncertain that the call is intended for their station, they should not reply until the call has been repeated and understood. When station operators hear a call but are not sure of the identity of the calling station, they should reply immediately using the words "STATION CALLING", the *called* station's identification, and the words "SAY AGAIN" and "OVER".

Example: STATION CALLING CESSNA FOXTROT NOVEMBER JULIETT INDIA
SAY AGAIN
OVER

To terminate communications, simply conclude the transmission with the word "OUT" (which means "conversation is ended and no response is expected").

Example: TORONTO TOWER
THIS IS
PIPER FOXTROT X-RAY QUEBEC QUEBEC
RECEIVED RUNWAY CLEARANCE
OUT

5.7.3 Corrections and Repetitions

When an error has been made in transmission, the word "CORRECTION" should be spoken, followed by the last correct word or phrase and then by the corrected version of the transmission.

Examples: OVER OTTAWA AT TWO SEVEN CORRECTION TWO EIGHT
PROCEED TO DOCK FOUR CORRECTION DOCK FIVE

If the receiving station requires the repetition of an entire message, the operator should use the words "SAY AGAIN". If repetition of only a portion of a message is required, the receiving station should use the following:

1. SAY AGAIN ALL BEFORE ... (first word satisfactorily received); or
2. SAY AGAIN ... (word before missing portion) TO ... (word after missing portion), or
3. SAY AGAIN ALL AFTER ... (last word satisfactorily received).

Examples: VANCOUVER RADIO
THIS IS
STINSON FOXTROT ALFA BRAVO CHARLIE
SAY AGAIN ALL BEFORE "HANGAR"
OVER

WINNIPEG TOWER
THIS IS
CESSNA FOXTROT PAPA DELTA QUEBEC
SAY AGAIN "ALTITUDE" TO "DESCEND"
OVER

MONTREAL CENTRE
THIS IS
CESSNA FOXTROT X-RAY QUEBEC TANGO
SAY AGAIN ALL AFTER "FLIGHT PLAN"
OVER

5.7.4 Message Handling Procedures

When transmitting a message, the radio station operator should:

1. plan the content of the message before transmitting;
2. listen briefly before transmitting to avoid interference with other transmissions;
3. deliver the radio message clearly and concisely using standard phraseology whenever practical.

The message handling format generally consists of four parts:

1. the call indicating the addressee and the originator;
2. the addressee reply;
3. the message;
4. the acknowledgment or ending.

Examples:

Call-up by aircraft	SCHEFFERVILLE RADIO THIS IS PIPER FOXTROT ALFA BRAVO CHARLIE OVER
Reply by ground station	PIPER FOXTROT ALFA BRAVO CHARLIE THIS IS SCHEFFERVILLE RADIO GO AHEAD OVER
Message - Aircraft	SCHEFFERVILLE RADIO THIS IS PIPER FOXTROT ALFA BRAVO CHARLIE FOUR MILES AT ONE THOUSAND LANDING SCHEFFERVILLE OVER

Message	- Ground	PIPER FOXTROT ALFA BRAVO CHARLIE THIS IS SCHEFFERVILLE RADIO ROGER WIND - ONE SIX ZERO AT ONE FIVE ALTIMETER - TWO NINER NINER SEVEN OVER
Acknowledgment - Aircraft		SCHEFFERVILLE RADIO THIS IS PIPER FOXTROT ALFA BRAVO CHARLIE ROGER

On subsequent calls, the words "THIS IS" and "OVER" may be omitted and, if no likelihood of interference exists, the call sign for the station being called may be abbreviated as follows:

"SCHEFFERVILLE RADIO BRAVO CHARLIE CONFIRM RIGHT ON SIERRA"

5.7.5 Signal (or Radio) Checks

When your radio station requires a signal (or radio) check, follow this procedure:

1. Call another aircraft or aeronautical ground station on any appropriate frequency that will not interfere with the normal working of other aircraft or ground stations, and request a signal check.
2. The signal check consists of "SIGNAL (or RADIO) CHECK 1, 2, 3, 4, 5. HOW DO YOU READ ME? OVER."
3. Your station identification (call sign) should also be transmitted during such test transmissions.
4. Signal checks should not last more than 10 seconds.
5. When replying or receiving a reply to a signal check, the following readability scale should be used:

1. Bad	(unreadable)
2. Poor	(readable now and then)
3. Fair	(readable but with difficulty)
4. Good	(readable)
5. Excellent	(perfectly readable)

Communications checks are categorized as follows:

Signal check	-	If the test is made while the aircraft is airborne.
Preflight check	-	If the test is made prior to departure.
Maintenance check	-	If the test is made by ground maintenance.

Example: WATSON LAKE RADIO
THIS IS
CESSNA FOXTROT ALFA BRAVO CHARLIE
REQUEST SIGNAL CHECK ON FIVE SIX EIGHT ZERO

CESSNA FOXTROT ALFA BRAVO CHARLIE
THIS IS
WATSON LAKE RADIO
READING YOU STRENGTH FIVE
OVER

6. Emergency Communications

6.1 Emergency Conditions

In the aeronautical service, an emergency condition is classified in accordance with the degree of danger or hazard as follows:

Distress: A condition of being threatened by grave and/or imminent danger and requiring immediate assistance.

Urgency: A condition concerning the safety of an aircraft or other vehicle, or of someone on board or within sight, but which does not require immediate assistance.

6.2 Distress Communications

Distress communications should be conducted in accordance with the procedures outlined in this section. These procedures shall not, however, prevent a station in distress from making use of any means at its disposal to attract attention, make known its position and obtain assistance.

6.3 Frequencies to be Used

The first transmission of the distress call and message by an aircraft should be made on the air-ground frequency in use at the time. If the aircraft is unable to establish communications on the frequency in use, the distress call and message should be repeated on the aeronautical emergency frequency (121.5 MHz), or any other frequency available, in an effort to establish communications with any aeronautical ground station or other aircraft station.

6.4 Distress Signal

In radiotelephony, the spoken word for distress is "MAYDAY", and it should be used at the commencement of the first distress communication.

The distress signal indicates that a person or station sending the signal is:

1. threatened by grave and imminent danger and requires immediate assistance; or

2. aware that an aircraft, ship or other vehicle is threatened by grave and imminent danger and requires immediate assistance.

6.5 Priority of Distress

The distress call has absolute priority over all other transmissions. All stations which hear it shall immediately cease any transmission capable of interfering with distress traffic and continue to listen on the frequency used for the distress call.

6.6 Control of Distress Traffic

The control of distress traffic is the responsibility of the aircraft in distress or of the station which relays the distress message. These stations may, however, delegate the control of distress traffic to another station, such as an aeronautical station, which normally has a very efficient interface with air traffic control (ATC) and all search and rescue (SAR) organizations.

6.7 Distress Call

The distress call identifies the station in distress, and such calls shall be sent only on the authority of the person in command of the station. The distress call should comprise:

1. the distress signal "MAYDAY" spoken three times;
2. the words "THIS IS";
3. the call sign of the aircraft in distress spoken three times.

Example: MAYDAY, MAYDAY, MAYDAY
THIS IS
PIPER FOXTROT X-RAY CHARLIE CHARLIE
PIPER FOXTROT X-RAY CHARLIE CHARLIE
PIPER FOXTROT X-RAY CHARLIE CHARLIE

The distress call shall not be addressed to a particular station and acknowledgment of receipt shall not be given before the distress message is sent.

6.8 Distress Message

The distress message shall follow the distress call as soon as possible.

The distress message should include as many as possible of the following elements spoken distinctly and, if possible, in the following order:

1. the distress signal "MAYDAY";
2. the call sign of the station in distress (once);
3. the nature of the distress condition and kind of assistance required (i.e. what has happened);
4. the intentions of the person in command;
5. the particulars of its position (airspeed, altitude, heading);
6. the number of persons on board and injuries (if applicable);
7. any other information that may facilitate rescue;

8. the call sign of the station in distress.

Example:
MAYDAY
PIPER FOXTROT X-RAY QUEBEC QUEBEC
STRUCK BY LIGHTNING
DITCHING AIRCRAFT
POSITION: 20 MILES EAST OF WINNIPEG
ALTITUDE: 1500 FEET
AIRSPEED: 125 KNOTS
HEADING: 270 DEGREES
ONE PERSON ON BOARD
PIPER FOXTROT X-RAY QUEBEC QUEBEC

Note: If the aircraft can transmit the distress message immediately after the distress call, then items 1 and 2 may be omitted from the message.

6.9 Repetition of a Distress Message

The distress message shall be repeated at intervals by the aircraft in distress until an answer is received or until it is no longer feasible to continue. The intervals between repetitions of the distress message shall be sufficiently long to allow time for stations receiving the message to reply.

Any station that has heard an unacknowledged distress message, and is not in a position to render assistance, shall take all possible steps to attract the attention of other stations that are in a position to assist.

In addition, all necessary steps shall be taken to notify the appropriate search and rescue authorities of the situation.

6.10 Action by Station in Distress

When an aircraft is threatened by grave and imminent danger, and requires immediate assistance, the person in command should direct appropriate action as follows:

1. transmit the distress call;
2. transmit the distress message;
3. listen for acknowledgment of receipt;
4. exchange further distress traffic as applicable;
5. activate automatic emergency equipment (i.e. emergency locator transmitter (ELT)) if available and when appropriate.

6.11 Action by Stations Other than the Station in Distress

An aircraft station that is not in distress should transmit the distress message when:

1. the station in distress is not in a position to transmit the message; or
2. the person in command of the station not in distress believes that further help is necessary; or

3. although not in a position to render assistance, the aircraft station has heard a distress message which has not been acknowledged.

When a distress message is received and it is known that the aircraft is not in the immediate vicinity, sufficient time should be allowed before the distress message is acknowledged. This will permit stations nearer to the station in distress to reply.

6.12 Action by Other Stations Hearing a Distress Message

1. Continue to monitor the frequency on which the distress message was received and, if possible, establish a continuous watch on appropriate distress and emergency frequencies.
2. Notify any station with direction-finding or radar facilities and request assistance, unless it is known that this action has been, or will be, taken by the station acknowledging receipt of the distress message.
3. Cease all transmissions that may interfere with the distress traffic.

6.13 Distress Traffic

Distress traffic consists of all transmissions relative to the immediate assistance required by the station in distress. Essentially, all transmissions made after the initial distress call are considered as distress traffic. In distress traffic, the distress signal "MAYDAY", spoken once, shall precede all transmissions. This procedure is intended to alert stations not aware of the initial distress call and now monitoring the distress channel that traffic heard relates to a distress situation.

Any station in the aeronautical mobile service that has knowledge of distress traffic, and cannot itself assist the station in distress, shall follow such traffic until it is evident that assistance is being provided. All stations that are aware of distress traffic, and that are not taking part in it, are forbidden to transmit on the frequencies being used for distress traffic until a message is received indicating that normal working traffic may be resumed (cancellation of distress).

6.14 Acknowledgment of Receipt of a Distress Message

The acknowledgment of receipt of a distress message shall be given in the following form:

1. the distress signal "MAYDAY";
2. the call sign of the station in distress (spoken three times);
3. the words "THIS IS";
4. the call sign of the station acknowledging receipt (spoken three times);
5. the words "RECEIVED MAYDAY".

Example:
MAYDAY
PIPER FOXTROT X-RAY QUEBEC QUEBEC
PIPER FOXTROT X-RAY QUEBEC QUEBEC
PIPER FOXTROT X-RAY QUEBEC QUEBEC
THIS IS
WINNIPEG TOWER
WINNIPEG TOWER
WINNIPEG TOWER
RECEIVED MAYDAY

6.15 Action by Stations Acknowledging Receipt of a Distress Message

1. Immediately acknowledge the distress message.
2. Take control of the communications, or, specifically and clearly transfer that responsibility, advising the aircraft if a transfer is made.
3. Take immediate action to ensure that all necessary information is provided as soon as possible to the Air Traffic Service (ATS) unit concerned, and the aircraft operating agency concerned (or its representative).
4. Continue to monitor the frequency on which the distress message was received and, if possible, any other frequency that may be used by the station in distress.
5. Warn other stations, as appropriate, in order to prevent the transfer of aeronautical traffic to the frequency of the distress communication.
6. Cease all transmissions that may interfere with the distress traffic.

6.16 Relay of a Distress Message

A distress message repeated by a station other than the station in distress shall transmit a signal comprising:

1. the signal "MAYDAY RELAY" (spoken three times);
2. the words "THIS IS";
3. the call sign of the station relaying the message (spoken three times);
4. the distress signal "MAYDAY" (once);
5. the particulars of the station in distress such as its location, nature of distress, number of persons on board, etc.

Example:
MAYDAY RELAY, MAYDAY RELAY, MAYDAY RELAY
THIS IS
CESSNA NOVEMBER JULIETT INDIA
CESSNA NOVEMBER JULIETT INDIA
CESSNA NOVEMBER JULIETT INDIA
MAYDAY
PIPER FOXTROT X-RAY QUEBEC QUEBEC
STRUCK BY LIGHTNING
DITCHING AIRCRAFT
POSITION: 20 MILES EAST OF WINNIPEG
ALTITUDE: 1500 FEET
AIRSPEED: 125 KNOTS

HEADING: 270 DEGREES
ONE PERSON ON BOARD
PIPER FOXTROT X-RAY QUEBEC QUEBEC

6.17 Imposition of Silence

The station in distress, or the station in control of distress traffic, may impose silence on all stations in the area or on any station that interferes with the distress traffic. It shall address these instructions to "all stations", or to one station only as appropriate.

The station in distress, or the station in control, shall use the expression "SEELONCE MAYDAY".

If it is believed to be essential, other stations near the station in distress may also impose silence during a distress situation by use the international expression "SEELONCE DISTRESS".

Should radio silence be imposed during a distress situation, all transmissions shall cease immediately except from those stations involved in distress traffic.

Examples: Imposition of silence on a specific station by the station in distress. (Cessna C-FNJI is causing interference to distress traffic.)

CESSNA FOXTROT NOVEMBER JULIETT INDIA
THIS IS
PIPER FOXTROT X-RAY QUEBEC QUEBEC
SEELONCE MAYDAY
OUT

Imposition of silence on all stations by a station other than the station in distress.

ALL STATIONS, ALL STATIONS, ALL STATIONS
THIS IS
CESSNA FOXTROT NOVEMBER JULIETT INDIA
SEELONCE DISTRESS
OUT

6.18 Cancellation of Distress

When a station is no longer in distress, or when it is no longer necessary to observe radio silence (i.e. the rescue operation has concluded), the station that controlled the distress traffic shall transmit a message addressed to "ALL STATIONS" on the distress frequency(ies) used, advising that normal working may resume. The proper procedure for cancelling a distress message is:

1. the distress signal "MAYDAY" (once);
2. the words "HELLO ALL STATIONS" (three times);
3. the words "THIS IS";
4. the call sign of the station transmitting the message;
5. the filing time of the message;
6. the call sign of the station in distress (once);

7. the words "SEELONCE FEENEE";

Example:
MAYDAY
HELLO ALL STATIONS, HELLO ALL STATIONS, HELLO ALL STATIONS
THIS IS
WINNIPEG TOWER
TIME 1630 ZULU
PIPER FOXTROT X-RAY QUEBEC QUEBEC
SEELONCE FEENEE
OUT

Note: The procedure outlined above is mainly for the benefit of other stations so they can resume regular service. To ensure that search and rescue stations are advised that a station is no longer in distress, a normal call to the nearest aeronautical station detailing the reasons for cancelling the distress call MUST be made.

7. Urgency Communications

7.1 Urgency Signal

The urgency signal indicates that the station calling has a very urgent message to transmit concerning the safety of an aircraft, ship or other vehicle, or the safety of a person, but which does not require immediate assistance and shall be sent only on the authority of the person in charge of the station.

The urgency signal is "PAN PAN" spoken three times. It should be used at the beginning of the first urgency communication.

The urgency signal and the urgency message may be addressed to all stations or to a specific station.

7.2 Priority

The urgency signal has priority over all other communications except distress.

Stations that hear the urgency signal shall continue to listen for at least three minutes on the frequency which the signal was heard. After that, if no urgency message has been heard, an aeronautical ground station should, if possible, be notified of the receipt of the urgency signal and normal working may be resumed. All stations that hear the urgency signal must take care not to interfere with the urgency message which follows. Stations that are in communication on frequencies other than those used for the transmission of the urgency message may continue normal work without interruption provided that the urgency message is not addressed to all stations.

7.3 Frequencies to be Used

The first transmission of the urgency signal and message by an aircraft should be made on the air-ground frequency in use at the time. If the aircraft is unable to establish communication on the frequency in use, the urgency signal and message should be repeated on the aeronautical emergency frequency (121.5 MHz), or any other frequency available, in an effort to establish communication with any aeronautical ground or other aircraft station.

7.4 Urgency Message

The urgency signal shall be followed by a message giving further information about the incident that necessitated the use of the urgency signal.

When the urgency message is not addressed to a specific station (i.e. all stations) and is acknowledged by another aircraft or aeronautical ground station, the acknowledging station shall forward the urgency information to the appropriate authorities (i.e. air traffic service unit, airport operating agency or its representative).

The urgency message should contain as many of the following elements as required, spoken distinctly and, if possible, in the following order:

1. the urgency signal "PAN PAN" (three times);
2. the name of the station addressed or the words "ALL STATIONS" (three times);
3. the words "THIS IS";
4. the identification of the aircraft;
5. the nature of the urgency condition;
6. the intentions of the person in command;
7. the present position, flight level or altitude and the heading;
8. any other useful information.

Example:
PAN PAN, PAN PAN, PAN PAN
ALL STATIONS, ALL STATIONS, ALL STATIONS
THIS IS
CESSNA FOXTROT NOVEMBER JULIETT INDIA
LOST, REQUEST RADAR CHECK
POSITION: UNKNOWN
AIRSPEED: 112 KNOTS
ALTITUDE: 1050 FEET
CESSNA FOXTROT NOVEMBER JULIETT INDIA
OVER

Example of reply:

PAN PAN
CESSNA FOXTROT NOVEMBER JULIETT INDIA
THIS IS WINNIPEG TOWER
YOUR POSITION IS 20 MILES SOUTH OF WINNIPEG
WINNIPEG TOWER
STANDING BY

7.5 Cancellation of Urgency Message

When the urgency message which calls for action by the stations receiving the message has been transmitted, the station responsible for its transmission shall cancel it as soon as it knows that action is no longer necessary. The cancellation message shall be addressed to "ALL STATIONS".

Example:
PAN PAN
ALL STATIONS, ALL STATIONS, ALL STATIONS
THIS IS
CESSNA FOXTROT NOVEMBER JULIETT INDIA
CESSNA FOXTROT NOVEMBER JULIETT INDIA HAS BEEN POSITIONED AT
20 MILES SOUTH OF WINNIPEG AIRPORT PROCEEDING NORMALLY
CESSNA FOXTROT NOVEMBER JULIETT INDIA
OUT

Appendix A - Definitions - Aeronautical Terms

Aerodrome

Any area of land, water (including frozen surface) or any other supporting structure used, designed, prepared, equipped or set apart for use, either whole or in part, for the arrival, departure, movement or servicing of aircraft. This includes any buildings, installations and equipment situated thereon or associated therewith.

Aeronautical Service

A radiocommunication service that provides for the safety and navigation and other operations of aircraft, and that may also include the exchange of air-to-ground messages on behalf of the public.

Aircraft Station

A mobile station in the aeronautical service, other than a survival craft, located on board an aircraft.

Aeronautical Operational Control Communications (AOCC)

Communications related to the regularity of flight.

Aeronautical Station

A land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example, on board a ship or on a platform at sea.

Air Traffic Control Service (ATC Service)

A service provided for the purpose of:

a. preventing collisions between:

- aircraft;
- aircraft and obstacles; and
- aircraft and vehicles on the manoeuvring area; and

b. expediting and maintaining an orderly flow of air traffic.

Controlled Aerodrome

An aerodrome at which an air traffic control unit is in operation.

Flight Service Station

An Air Traffic Service (ATS) unit established to provide selected flight services.

General Aviation Communications (GAC)

Communications relating to all civil aviation operations other than for scheduled air service and non-scheduled air transport operations for remuneration or hire.

Ground Control Communications

ATC Service communications provided for the purposes of:

a. preventing collisions on the manoeuvring area between aircraft, and between aircraft and obstacles or vehicles; and
b. expediting and maintaining the orderly flow of aircraft operating on the manoeuvring area.

Private Advisory Service

A communication service offered at controlled aerodromes for use in connection with company business such as the servicing of aircraft, availability of fuel, lodging, etc. Such services shall not include information relating to ATC Service, weather reports, the condition of landing strips, or any other communication normally provided by ATC Service units.

Private Multiple Station

An aircraft or aeronautical station established to provide air-ground multipurpose communications of an operational nature.

Appendix B - Procedural Words and Phrases

Word or Phrase	Meaning
ACKNOWLEDGE	Let me know that you have received and understood this message.
AFFIRMATIVE	An expression used in radiocommunication meaning "Yes."
BREAK	Indicates the separation between portions of the message. (To be used where there is no clear distinction between the text and other portions of the message.)
CLEARED	Authorized to proceed under the conditions specified.
CONFIRM	Have I received the following ... or Did you receive the message?"
CORRECTION	An error has been made in this transmission (or message indicated). The correct version is ....
DISREGARD	Consider this transmission as not sent.
GO AHEAD	Proceed with your message.
HOW DO YOU READ?	What is the readability of my transmission?
I SAY AGAIN	An expression used in radiocommunication meaning "I repeat for clarity or emphasis."
MAYDAY	An expression meaning "I am in distress." It is the international radiotelephony distress signal. Preferably spoken three times, it indicates imminent and grave danger and means that immediate assistance is requested.
MAYDAY RELAY	The spoken word for the distress relay signal.
MONITOR	Listen (on frequency).
NEGATIVE	No, or that is not correct, or I do not agree.
OUT	Conversation is ended and no response is expected.
OVER	My transmission is ended and I expect a response from you.
PAN PAN	The international radiotelephony urgency signal. Preferably spoken three times, it indicates a condition that concerns the safety of an aircraft or

	another vehicle, or some person on board or within sight, but that does not require immediate assistance.
READ BACK	Repeat all, or the specified part, of this message back to me exactly as received.
ROGER	I have received all of your last transmission.
ROGER NUMBER	I have received your message Number _____.
SAY AGAIN	An expression used to request a repetition of the last transmission.
STANDBY	I must pause for a few seconds or minutes. Please wait and I will call you.
SEELONCE	International expression to indicate that silence has been imposed on the frequency due to a distress situation.
SEELONCE FEENEE	International expression to indicate that the distress situation has ended.
SEELONCE MAYDAY	An international expression to advise that a distress situation is in progress. The command comes from the station in control of the distress traffic.
WILCO	Your instructions received, understood and will be complied with.
WORDS TWICE	(a) As a request: Communication is difficult, please send each word, or group of words, twice;
	(b) As information: Since communication is difficult, I will send each word, or group of words, twice.

Appendix C - Equipment Fundamentals

Maintenance

Microphone and Antenna Connections

There are various types of connectors used to attach cables to the electronic equipment. Each connector requires its own assembly technique. Care should be exercised when repairing or replacing connectors. The main problems with connectors are shorts (when two bare wires are touching either each other or the metal case) or open wires (when the wire is broken inside the plastic shield or outer covering).

All connections should be tight and clean. Where connections are exposed to the weather, they should be protected with a coating of silicone to prevent corrosion build-up and to keep water from getting inside the outer casing of the cable.

Fuses

Electric circuits are protected against overload and short-circuits by fuses, each rated for a given amperage. **Never replace a fuse with one of a higher rating.** That will simply compromise or negate its protective function and create a definite fire hazard.

Fuses (or circuit breakers, if your electrical system is so equipped) act as safety valves. When something goes wrong with a circuit, the fuse for that circuit blows (or the breaker trips off), shutting down power to the circuit. In addition to preventing overheating and possible fire, this action also warns you that there is a problem on the circuit. The fault should be corrected before the fuse is replaced.

Note: Always exercise caution when changing a fuse. Make sure that your hands are dry.

Appendix D - Radio Station Licences

Unless otherwise exempted, all radio stations in Canada must be licensed by the Minister of Industry. Certain conditions exist that exempt aeronautical stations from requiring a radio station licence. Please consult your local district office of Industry Canada for details (See Appendix F).

The licence (or copy thereof) must be made available at the request of an Industry Canada inspector.

The radio station licence generally specifies the call sign of the station, the frequencies to be used for transmitting and any special conditions under which the station should be operated.

To obtain a radio station licence, a completed licence application form with the prescribed fee should be submitted to Industry Canada. To be eligible for licensing in Canada, radio equipment must be type-approved or found to be technically acceptable for licensing by the Department.

Radio station licence fees are due on April 1st of each year. Billing notices are mailed directly to licensees from the Department's headquarters in Ottawa.

Note: Any person who establishes a radio station without a radio authorization is liable, on summary conviction, in the case of an individual, to a fine not exceeding five thousand dollars or to imprisonment for a term not exceeding one year, or to both, or, in the case of a corporation, to a fine not exceeding twenty-five thousand dollars.

Inquiries concerning radio licensing may be directed to any of the district offices of Industry Canada.

Appendix E - Frequency Assignments

The following table indicates, for each frequency band listed, the service and primary use of the band.

Band	Service
108.1000 - 111.9750 MHz	Aeronautical Radionavigation
111.9750 - 117.9750 MHz	Aeronautical Radionavigation
117.9750 - 121.9625 MHz	Air Traffic Control Services
121.9825 - 123.5875 MHz	General Aviation Communications
123.5875 - 128.8125 MHz	Air Traffic Control Services
128.8125 - 132.0125 MHz	Aeronautical Operational Control Communications
132.0125 - 136.0000 MHz	Air Traffic Control Services

Appendix F - District Offices of Industry Canada

If you require additional information about certificates, you may contact any district office of Industry Canada located in the cities listed below:

St. John's, N.L.
Dartmouth, N.S.
Sydney, N.S.
Moncton, N.B.
Saint John, N.B.
Montréal, Que.
Gatineau, Que.
Québec, Que.
Sherbrooke, Que.
Val d'Or, Que.
London, Ont.
Ottawa, Ont.
Sault Ste. Marie, Ont.
Toronto, Ont.
Winnipeg, Man.
Regina, Sask.
Saskatoon, Sask.
Calgary, Alta.
Edmonton, Alta.
Vancouver, B.C.
Kelowna, B.C.
Surrey, B.C.
Prince George, B.C.
Victoria, B.C.
Whitehorse, Y.T.

For current addresses and telephone numbers, please refer to Radiocommunication Information Circular RIC-66, *Addresses and Telephone Numbers of Regional and District Offices*. RIC-66 can be found at http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01742.html.