



# VATCAR Ground Training Manual



**\* For VATCAR member only**  
**\* Not for real world use**



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## PHONETIC ALPHABET

Letter	Telephony	Pronunciation	Number	Telephony	Pronunciation
<b>A</b>	Alpha	<b>AL-FAH</b>	<b>1</b>	One	<b>WUN</b>
<b>B</b>	Bravo	<b>BRAH-VOH</b>	<b>2</b>	Two	<b>TOO</b>
<b>C</b>	Charlie	<b>CHAR-LEE</b>	<b>3</b>	Three	<b>TREE</b>
<b>D</b>	Delta	<b>DELL-TAH</b>	<b>4</b>	Four	<b>FOW-ER</b>
<b>E</b>	Echo	<b>ECK-OH</b>	<b>5</b>	Five	<b>FIFE</b>
<b>F</b>	Foxtrot	<b>FOKS-TROT</b>	<b>6</b>	Six	<b>SIX</b>
<b>G</b>	Golf	<b>GOLF</b>	<b>7</b>	Seven	<b>SE-VEN</b>
<b>H</b>	Hotel	<b>HOH-TEL</b>	<b>8</b>	Eight	<b>AIGHT</b>
<b>I</b>	India	<b>IN-DEE-AH</b>	<b>9</b>	Nine	<b>NIN-ER</b>
<b>J</b>	Juliet	<b>JEW-LEE-ETT</b>	<b>0</b>	Zero	<b>ZEE-RO</b>
<b>K</b>	Kilo	<b>KEY-LOH</b>			
<b>L</b>	Lima	<b>LEE-MAH</b>	<b>DECIMAL</b>		<b>DAY-CEE-MAL</b>
<b>M</b>	Mike	<b>MIKE</b>			
<b>N</b>	November	<b>NO-VEM-BER</b>			
<b>O</b>	Oscar	<b>OSS-CAH</b>			
<b>P</b>	Papa	<b>PAH-PAH</b>			
<b>Q</b>	Quebec	<b>KEH-BECK</b>			
<b>R</b>	Romeo	<b>ROW-ME-OH</b>			
<b>S</b>	Sierra	<b>SEE-AIR-RAH</b>			
<b>T</b>	Tango	<b>TANG-GO</b>			
<b>U</b>	Uniform	<b>YOU-NEE-FORM</b>			
<b>V</b>	Victor	<b>VIK-TAH</b>			
<b>W</b>	Whiskey	<b>WISS-KEY</b>			
<b>X</b>	X-ray	<b>ECKS-RAY</b>			
<b>Y</b>	Yankee	<b>YANG-KEY</b>			
<b>Z</b>	Zulu	<b>ZOO-LOO</b>			

All numbers except whole hundreds, whole thousands and combinations of thousands and whole hundreds shall be transmitted by pronouncing each digit separately. Whole hundreds and whole thousands shall be transmitted by pronouncing each digit in the number of hundreds or thousands followed by the word "HUNDRED" or "THOUSAND" as appropriate. Combinations of thousands and whole hundreds shall be transmitted by pronouncing each digit in the number of thousands followed by the word "THOUSAND" followed by the number of hundreds followed by the word "HUNDRED"

<b>10</b>	<b>WUN ZEERO</b>
<b>22</b>	<b>TOO TOO</b>
<b>78</b>	<b>SEVEN AIGHT</b>
<b>100</b>	<b>WUN ZEERO ZEERO</b>
<b>1600</b>	<b>WUN SIX HUNDRED</b>
<b>11000</b>	<b>WUN WUN TOUSAND</b>
<b>28000</b>	<b>TOO AIT TOUSAND</b>

Numbers containing a decimal point shall be transmitted with the decimal point in appropriate sequence being indicated by the spoken word "DAYCEEMAL".

100.3	<b>WUN ZEERO ZEERO DAYCEEMAL TREE</b>
38,143.9	<b>TREE AIGHT WUN FOWER TREE DAYCEEMAL NINE</b>

## **RADIO**

Most R/T around the world uses an ICAO format for radio communications. The main way of passing messages between pilots and controllers is via **two way radio communication**. Standard words are used to avoid confusion and misunderstandings.

ICAO defines it: *The information and instructions transmitted are of vital importance in the safe and expeditious operation of aircraft. Incidents and accidents have occurred in which a contributing factor has been the use of non-standard procedures and phraseology. The importance of using correct and precise standardized phraseology cannot be overemphasized.*

ICAO has defined a transmitting technique that is also of great importance in our virtual world.

To be able **to have a clear communication**:

1. **before transmitting, listen out** on your frequency to make sure that there is no other conversation on-going at that moment;
2. **know how to use your microphone**, hereby paying attention to the distance between mouth and microphone and the volume of your voice;
3. use a normal conversational tone, **don't speak too loud or too slow** and **speak clearly and not too fast**;
4. a very **short pause before and after numbers** will make it easier to understand them;
5. **avoid hesitations** and **unnecessary interruptions** or sounds such as **"eh" and "yeah"**;
6. **press the transmit switch before you start speaking** and keep it pressed **until the full message is completed**.

Many of these points are of importance in our virtually world alike and sometimes even more, because of the limitations we have in comparison with real life.

## **READABILITY**

Readability is measured on a scale of 1 to 5.

1. Unreadable.
2. Barely readable, occasional words distinguishable.
3. Readable with considerable difficulty.
4. Readable with practically no difficulty.
5. Perfectly readable.

## PHRASEOLOGY

The following words and phrases shall be used in radiotelephony communications as appropriate and shall have the meaning given below.

ACKNOWLEDGE	"Let me know that you have received and understood this message."
ADVISE INTENTIONS	Tell me what you plan to do.
AFFIRM	"Yes."
APPROVED	"Permission for proposed action granted."
BACK-TAXI	A term used by air traffic controllers to taxi an aircraft on the runway opposite to the traffic flow. The aircraft may be instructed to back-taxi to the beginning of the runway or at some point before reaching the runway end for the purpose of departure or to exit the runway.
BREAK	"I hereby indicate the separation between portions of the message." Note. - To be used where there is no clear distinction between the text and other portions of the message.
BREAK BREAK	"I hereby indicate the separation between messages transmitted to different aircraft in a very busy environment."
CANCEL	"Annul the previously transmitted clearance."
CHECK	"Examine a system or procedure." Note. - Not to be used in any other context. No answer is normally expected
CLEARED	"Authorized to proceed under the conditions specified."
CLEARED AS FILED	Means the aircraft is cleared to proceed in accordance with the route of flight filed in the flight plan.
CONFIRM	"I request verification of: (clearance, instruction, action, information)."
CONTACT	"Establish communications with . . ."
CORRECT	"True" or "Accurate".
CORRECTION	"An error has been made in this transmission (or message indicated). The correct version is . . ."
DISREGARD	"Ignore."
<del>GO AHEAD</del>	<del>"Proceed with your message." Note. Not used whenever the possibility exists of misconstruing "GO AHEAD" as an authorization for an aircraft to proceed. The phrase "GO AHEAD" may be omitted and, in its place, a response made by using the calling aeronautical station's call sign followed by the answering aeronautical station's call sign.</del>
HOW DO YOU HEAR ME?	A question relating to the quality of the transmission or to determine how well the transmission is being received.
HOW DO YOU READ	"What is the readability of my transmission?"
I SAY AGAIN	"I repeat for clarity or emphasis."
IMMEDIATELY	Used by ATC or pilots when such action compliance is required to avoid an imminent situation.
MAINTAIN	Continue in accordance with the condition(s) specified or in its literal sense, e.g. "maintain VFR".

MAKE SHORT APPROACH	Used by ATC to inform a pilot to alter his/her traffic pattern so as to make a short final approach.
MAYDAY	The international radiotelephony distress signal. When repeated three times, it indicates imminent and grave danger and that immediate assistance is requested.
MONITOR	"Listen out on (frequency)."
NEGATIVE	"No" or "Permission not granted" or "That is not correct" or "not capable"
OUT	"This exchange of transmissions is ended and no response is expected." Note.- Not normally used in VHF communications.
OVER	"My transmission is ended and I expect a response from you." Note.- Not normally used in VHF communications.
READ BACK	"Repeat all, or the specified part, of this message back to me exactly as received."
RECLEARED	"A change has been made to your last clearance and this new clearance supersedes your previous clearance or part thereof."
REPORT	"Pass me the following information . . ."
REQUEST	" I should like to know . . ." or "I wish to obtain . . ."
RESUME OWN NAVIGATION	Used by ATC to advise a pilot to resume his/her own navigational responsibility. It is issued after completion of a radar vector or when radar contact is lost while the aircraft is being radar vectored.  " I have received all of your last transmission." Note.- Under no circumstances to be used in reply to a question requiring "READ BACK or a direct answer in the affirmative (AFFIRM) or negative (NEGATIVE).
ROGER	"Repeat all, or the following part, of your last transmission."
SAY AGAIN	"Reduce your rate of speech."
SPEAK SLOWER	"Wait and I will call you." Note.-- The caller would normally re-establish contact if the delay is lengthy, STANDBY is not an approval or denial.
STANDBY	"I cannot comply with your request, instruction, or clearance." Note.-UNABLE is normally followed by a reason.
UNABLE	"I understand your message and will comply with it." (Abbreviation for "will comply".)
WILCO	a) As a request: "Communication is difficult. Please send every word or group of words twice." b) As information: "Since communication is difficult, every word or group of words in this message will be sent twice."
WORDS TWICE	

## DEFINITIONS

**Aerodrome.** A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

**Aerodrome control tower.** A unit established to provide air traffic control service to aerodrome traffic.

**Aerodrome elevation.** The elevation of the highest point of the landing area.

**Aerodrome traffic.** All traffic on the manoeuvring area of an aerodrome and all aircraft flying in the vicinity of an aerodrome.

**Aerodrome traffic circuit.** The specified path to be flown by aircraft operating in the vicinity of an aerodrome.

**Aircraft.** Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

**Aircraft identification.** A group of letters, figures or a combination thereof which is either identical to, or the coded equivalent of, the aircraft call sign to be used in air-ground communications, and which is used to identify the aircraft in ground-ground air traffic services communications.

**Aircraft proximity.** A situation in which, in the opinion of a pilot or air traffic services personnel, the distance between aircraft as well as their relative positions and speed have been such that the safety of the aircraft involved may have been compromised. An aircraft proximity is classified as follows:

**Risk of collision.** The risk classification of an aircraft proximity in which serious risk of collision has existed.

**Safety not assured.** The risk classification of an aircraft proximity in which the safety of the aircraft may have been compromised.

**Air-taxiing.** Movement of a helicopter/VTOL above the surface of an aerodrome, normally in ground effect and at a ground speed normally less than 37 km/h (20 kt).

*Note.— The actual height may vary, and some helicopters may require air-taxiing above 8 m (25 ft) AGL to reduce ground effect turbulence or provide clearance for cargo slingloads.*

**Air traffic.** All aircraft in flight or operating on the manoeuvring area of an aerodrome.

**Air traffic control clearance.** Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

*Note 1.— For convenience, the term “air traffic control clearance” is frequently abbreviated to “clearance” when used in appropriate contexts.*

*Note 2.— The abbreviated term “clearance” may be prefixed by the words “taxi”, “take-off”, “departure”, “en-route”, “approach” or “landing” to indicate the particular portion of flight to which the air traffic control clearance relates.*

**Air traffic control service.** A service provided for the purpose of:

a) preventing collisions:

1) between aircraft, and

2) on the manoeuvring area between aircraft and obstructions; and

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

**Alphanumeric characters (alphanumerics).** A collective term for letters and figures (digits).

**Alternate aerodrome.** An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing. Alternate aerodromes include the following:

**Take-off alternate.** An alternate aerodrome at which an aircraft can land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure.

**En-route alternate.** An aerodrome at which an aircraft would be able to land after experiencing an abnormal or

**Destination alternate.** An alternate aerodrome to which an aircraft may proceed should it become either impossible or inadvisable to land at the aerodrome of intended landing.

*Note.— The aerodrome from which a flight departs may also be an en-route or a destination alternate aerodrome for that flight.*

**Altitude.** The vertical distance of a level, a point or an object considered as a point, measured from mean sea level (MSL).

**Apron.** A defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading

passengers, mail or cargo, fuelling, parking or maintenance.

**Area navigation route.** An ATS route established for the use of aircraft capable of employing area navigation.

**ATIS.** The symbol used to designate automatic terminal information service.

**Ceiling.** The height above the ground or water of the base of the lowest layer of cloud below 6 000 m (20 000 ft) covering more than half the sky.

**Clearance limit.** The point to which an aircraft is granted an air traffic control clearance.

**Code (SSR).** The number assigned to a particular multiple pulse reply signal transmitted by a transponder in Mode A or Mode C.

**Elevation.** The vertical distance of a point or a level, on or affixed to the surface of the earth, measured from mean sea level.

**Estimated elapsed time.** The estimated time required to proceed from one significant point to another.

**Estimated off-block time.** The estimated time at which the aircraft will commence movement associated with departure.

**Estimated time of arrival.** For IFR flights, the time at which it is estimated that the aircraft will arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the aerodrome, the time at which the aircraft will arrive over the aerodrome. For VFR flights, the time at which it is estimated that the aircraft will arrive over the aerodrome.

**Flight level.** A surface of constant atmospheric pressure which is related to a specific pressure datum, 1013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals.

*Note 1.— A pressure type altimeter calibrated in accordance with the Standard Atmosphere:*

*a) when set to a QNH altimeter setting, will indicate altitude;*

*b) when set to QFE altimeter setting, will indicate height above the QFE reference datum;*

*c) when set to a pressure of 1 013.2 hPa, may be used to indicate flight levels.*

**Flight plan.** Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

**Flow control.** Measures designed to adjust the flow of traffic into a given airspace, along a given route, or bound for a given aerodrome, so as to ensure the most effective utilization of the airspace.

**Forecast.** A statement of expected meteorological conditions for a specified time or period, and for a specified area or portion of airspace.

**Heading.** The direction in which the longitudinal axis of an aircraft is pointed, usually expressed in degrees from North (true, magnetic, compass or grid).

**Height.** The vertical distance of a level, a point or an object considered as a point, measured from a specified datum.

**Holding point.** A point so marked on a taxiway or exit so as to ensure clearance between aircraft holding at such point and other aircraft landing or taking off an adjoining runway.

**IFR.** The symbol used to designate the instrument flight rules.

**IFR flight.** A flight conducted in accordance with the instrument flight rules.

**Instrument meteorological conditions (IMC).** Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions.

*Note 1.— In a control zone, a VFR flight may proceed under instrument meteorological conditions if and as authorized by air traffic control.*

**Level.** A generic term relating to the vertical position of an aircraft in flight and meaning variously, height, altitude or flight level.

**Location indicator.** A four-letter code group formulated in accordance with rules prescribed by ICAO and assigned to the location of an aeronautical fixed station.

**Manoeuvring area.** That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.

**Meteorological information.** Meteorological report, analysis, forecast, and any other statement relating to existing or expected meteorological conditions.

**Movement area.** That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s).

**NOTAM.** A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

**Pilot-in-command.** The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.

**Radar.** A radio detection device which provides information on range, azimuth and/or elevation of objects.

**Reporting point.** A specified geographical location in relation to which the position of an aircraft can be reported.

**Runway.** A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

**Special VFR flight.** A VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC.

**Taxiing.** Movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing.

**Taxiway.** A defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including:

a) *Aircraft stand taxilane.* A portion of an apron designated as a taxiway and intended to provide access to aircraft stands only.

b) *Apron taxiway.* A portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron.

c) *Rapid exit taxiway.* A taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimizing runway occupancy times.

**VFR.** The symbol used to designate the visual flight rules.

**VFR flight.** A flight conducted in accordance with the visual flight rules.

**Visual meteorological conditions.** Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima.

**Waypoint.** A specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation. Waypoints are identified as either:

*Fly-by waypoint.* A waypoint which requires turn anticipation to allow tangential interception of the next segment of a route or procedure, or

*Flyover waypoint.* A waypoint at which a turn is initiated in order to join the next segment of a route or procedure.

## THE PURPOSE OF THE GROUND CONTROLLER IS TO

1. To prevent collisions from occurring on MOVEMENT AREA between:
  - a. Aircraft, and
  - b. Aircraft and obstructions on that area;
2. To issue instructions and/or clearance i.e TAXI INSTRUCTION(S), ATC CLEARANCE, & PARKING INSTRUCTION(S); and
3. EXPEDITE AND MAINTAIN AN ORDERLY FLOW OF AIRCRAFT.

Before providing any ATC services to an aircraft, a controller must first establish where the aircraft is and controllers are reminded that on VATSIM, Ground does not have authority/jurisdiction of the Runway. The runways falls under Aerodrome control or in his absence by whatever position is above this.

## THE PURPOSE OF A FLIGHT PLAN

A flight plan should be submitted to the air traffic services prior to departure. Clearances are issued solely for expediting and separating air traffic and are based on known traffic conditions which affect safety in aircraft operation. Such traffic conditions include not only aircraft in the air and on the manoeuvring area over which control is being exercised, but also any vehicular traffic or other obstructions not permanently installed on the manoeuvring area in use.

## ANALYZING AND CORRECTING A FLIGHT PLAN:-

Before an aircraft is allowed to push back from the gate/stand or given his ATC Clearance, his Flight Plan needs to be correct. Controllers are encouraged to scan all flight plans for errors AS SOON AS the pilot files/sends in his flight plan. This should be done in a max of 10 seconds. If a controller knows it will take longer to fully analyze the flight plan, he should tell the pilot "STANDY". There are 4 (four) main fields that needs to be correct in a flight plan: The **Departure**, **Arrival**, **Cruise Altitude** and **Route** fields. In the event that a flight plan has an error in it, the controller shall bring that error to the pilot's attention and make the necessary changes before any pushback and ATC clearance is given. Let's take a look at each field in small details:

## CRUISING LEVELS / ALTITUDES

The Cruising Level/Altitude *at which a flight or a portion of a flight is to be conducted shall be in terms of:-*

- a) Flight levels, for flights at or above the lowest usable flight level or, where applicable, above the transition altitude.
- b) Altitudes, for flights below the lowest usable flight level or, where applicable, at or below the transition altitude.

## The FLIGHT LEVEL to use shall be determined as follows: -

If your course [The track of your airplane across the ground (not your heading)] is between 180 and 359 degrees, fly at an even Flight Level. If however your course [The track of your airplane across the ground (not your heading)] is between 000 and 179 degrees, fly at an odd Flight Level.

## HERE IS AN EXAMPLE OF A FLIGHT PLAN WITH AN ERROR:

Flight Plan - BWA610 (Name unknown)

Callsign: BWA610	A/C Type: B738	Flight Rules: IFR	Amend Plan
Depart: TTTP	Arrive: CYYZ	Alternate:	Refresh Plan
Cruise Alt: 41000	Scratchpad:	Squawk: 0000	Assign Squawk
Route: POS UG449 ANADA L452 BQN ELMUC L451 CERDA JORGG LNHOM L452 KASAR GALVN OMALA L452 OXANA TOMMZ OHPEA AR8 ECG FAK J109 BUF V36 LINNG YOUTH2	Plot		
Remarks: /N/			

As noted in this flight plan, the cruising altitude is incorrect based on his direction of flight. On detecting this error the controller shall then bring this error to the pilot's attention, suggesting the appropriate altitudes, above and below his invalid altitude.

BWA610, your cruising altitude for direction of flight is invalid; I can offer you FL400 or FL420.

*We can accepted FL400, thank you.*

At this point the controller will acknowledge he has received the request for FL400 and then make the necessary changes to the flight plane for the pilot.

## ICAO FLIGHT PLAN

Form Approved: OMB NO. 2120-0026

U.S. Department of Transportation Federal Aviation Administration		International Flight Plan	
PRIORITY	ADDRESSEE(S)		
FF			
FILING TIME	ORIGINATOR		
SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND / OR ORIGINATOR			
3 MESSAGE	7 AIRCRAFT IDENTIFICATION	8 FLIGHT RULES	TYPE OF FLIGHT
(FPL)			
9 NUMBER	TYPE OF	WAKE TURBULENCE CAT.	10 EQUIPMENT
13 DEPARTURE AERODROME	TIME		
15 CRUISING SPEED	LEVEL	ROUTE	
16 DESTINATION	TOTAL EET HR MIN	ALTN AERODROME	2ND ALTN AERODROME
18 OTHER INFORMATION			
19 SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED IN FPL MESSAGES)			
SURVIVAL EQUIPMENT		PERSONS ON BOARD	
E/	HR MIN	P/	EMERGENCY
			UHF VHF ELBA
			R/ U V E
DINGHIES		JACKETS	
S	POLAR DESER MARITIM JUNGLE	J	LIGHT FLUORE UHF VHF
			L F U V
AIRCRAFT COLOR AND MARKINGS		REMARKS	
D/	NUMBER CAPACITY COVER COLOUR	N/	
PILOT-IN-COMMAND		FILED BY	
C/		ACCEPTED BY	ADDITIONAL INFORMATION

## VATSIM FLIGHT PLAN

Flight Plan - N247G (Name unknown) - Amended

Callsign: N247G      A/C Type: BN2P      Flight Rules: VFR      Amend Plan

Depart: TBPB      Arrive: TVSB      Alternate: TVSM      Refresh Plan

Cruise Alt: 8500      Scratchpad:      Squawk: 1075      Assign Squawk

Route: BGI DCT TVSB

Plot

Remarks: /N/

**CALLSIGN:** This item refers to the registration marking of the aircraft [EIAKO, 4XBCD, N2477G], or the ICAO designator for the aircraft operating agency followed by the flight identification number [KLM511, NGA213, JTR25].

**A/C [Aircraft] TYPE:** This item refers to the ICAO designator for the aircraft type [B777, PA32, etc].

### **Aircraft types are indicated by an ICAO designator.**

#### **Here are some examples and their meaning.**

B727	Boeing Model 727	BN2	Britten-Norman Islander
DH8	De Havilland Dash 8	C500	Cessna Model Citation 500
B230	Bell Helicopter Model 230	DH6	De Havilland Twin Otter
MD83	McDonnell Douglas Model 83	T204	Tupolev Model 204

**FLIGHT RULES:** In addition to the GENERAL RULES of the AIR, insert one of the following rule with which the pilot intend to comply:

1. **IFR** [Instrument Flight Rules]
2. **VFR** [Visual Flight Rules]
3. **SVFR** [Special Visual Flight Rules]

### **GENERAL FLIGHT RULES**

#### **Proximity**

An aircraft shall not be operated in such proximity to other aircraft as to create a collision hazard.

#### **Surface movement of aircraft:-**

In case of danger of collision between two aircraft taxiing on the movement area of an aerodrome the following shall apply:

- a) when two aircraft are approaching head on, or approximately so, each shall stop or where practicable alter its course to the right so as to keep well clear;

- b) when two aircraft are on a converging course, the one which has the other on its right shall give way;
- c) an aircraft which is being overtaken by another aircraft shall have the right-of-way and the overtaking aircraft shall keep well clear of the other aircraft.

An aircraft taxiing on the manoeuvring area shall stop and hold at all runway-holding positions unless otherwise authorized by the aerodrome control tower.

***INSTRUMENT FLIGHT RULES:-***

1. An Aircraft flying under IFR shall be equipped with instruments and navigation equipment appropriate to the route to be flown.
2. Except when necessary for take-off or landing, or except when specifically authorized by the appropriate authority, an IFR flight shall be flown at a level which is not below the minimum flight altitude established by the State whose territory is overflown, or, where no such minimum flight altitude has been established:
  - a) over high terrain or in mountainous areas, at a level which is at least 2 000ft above the highest obstacle located within 5NM of the estimated position of the aircraft;
  - b) elsewhere than as specified in a), at a level which is at least 1 000ft above the highest obstacle located within 8 km of the estimated position of the aircraft.

***VISUAL FLIGHT RULES:-***

1. Remain more than 1 000ft above obstacles in a congested area,
2. Pilots flying under VFR assume responsibility for their separation from all other aircraft,
3. Operate only between the hours of sunrise and sunset
4. Must not fly into cloud but must remain 1 000ft above or below cloud,
5. Must have a flight visibility of not less than 5NM.

***SPECIAL VFR [VISUAL FLIGHT RULES]***

Flight operated under VISUAL FLIGHT RULES i.e. vertical limit restrictions, but in meteorological conditions below VMC i.e. less than 5NM flight visibility.

**DEPART:** This item refers to the ICAO four (4) letter designation for the AERODROME/AIRPORT **FROM** which the aircraft will depart [TTPP, EGKK, TFFF ETC.].

**ARRIVE:** This item refers to the ICAO four (4) letter designation for the AERODROME/AIRPORT **TO** which the aircraft intends to land [KJFK, TJSJ, TLPL etc.].

**ALTERNATE:** In the event that it becomes either impossible or inadvisable for a pilot of an aircraft to land at the AERODROME/AIRPORT of 1<sup>st</sup> intended landing above [Example: Aerodrome/Runway closure, Emergency etc.], he will proceed to this AERODROME/AIRPORT of 2<sup>nd</sup> choice.

**CRUISE ALT [Altitude]:** This is the level [Altitude or Flight Level] at which a significant portion of the flight will be flown [FL350, FL090, 3000FT, etc.].

**SCRATCHPAD:**

**SQUAWK:** A four (4) digit code [2756, 1075, 7700] which when entered into the transponder of an aircraft, will provide Air Traffic Controllers using RADAR with information specific to that aircraft [Aircraft Call sign, Cruising Altitude, Present Flight Level or Altitude etc.]

**ROUTE:** This is the predetermine path inclusive of reporting points which the pilot will fly [UA555 ILURI A555 COY DCT BIMINI etc.].

A reporting point is a navigational aid/location. [PERRY, ANADA, ILLURI, FOF etc.].

**REMARKS:** Any important addition remarks may be placed here [Communications capability, Operating Agency etc.].

## COMMUNICATION ON VATSIM

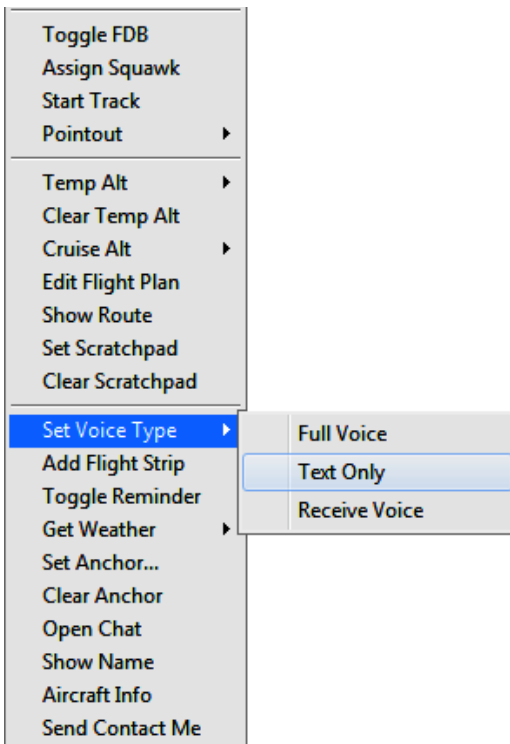
On VATSIM pilots use 3 main forms of communication.

- 1) V – Voice
- 2) T – Text only
- 3) R – Receive voice only (controller can use voice to communicate with the pilot but the pilot will only use text in return)

The communication capability is indicated in the “**Remarks**” section at the bottom of a Flight Plan, as showed below:



At times, some pilot’s flight plan may not specify which means of communication they are using, so the controller will then have to wait until the pilot makes initial contact with him in order to determine the means of communication. On acquiring the info, the controller shall then input the correct prefix into the flight plan. This can be done as shown:



**\*Controllers are asked to make sure they have the appropriate voice type and any other vital information pertaining to the pilot and his flight plan, finalized and inputted, before transfer of control, as it would assist the next controller in providing efficient ATC to the pilot.\***

### **AIR TRAFFIC CLEARANCE:-**

An authorization by air traffic control [for the purpose of preventing collision between known aircraft], for an aircraft to proceed under specified traffic conditions within controlled airspace. The pilot-in-command of an aircraft may not deviate from the provisions of a visual flight rules (VFR) or instrument flight rules (IFR) air traffic clearance except in an emergency or unless an amended clearance has been obtained. Additionally, the pilot may request a different clearance from that which has been issued by air traffic control (ATC) if information available to the pilot makes another course of action more practicable or if aircraft equipment limitations or company procedures forbid compliance with the clearance issued. Pilots may also request clarification or amendment, as appropriate, any time a clearance is not fully understood, or considered unacceptable because of safety of flight. Controllers should, in such instances and to the extent of operational practicality and safety, honor the pilot's request. 14 CFR Part 91.3(a) states: **"The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft."** THE PILOT IS RESPONSIBLE TO REQUEST AN AMENDED CLEARANCE if ATC issues a clearance that would cause a pilot to deviate from a rule or regulation, or in the pilot's opinion, would place the aircraft in jeopardy.

### **THE FOLLOWING ELEMENTS MAKE UP AN ATC CLEARANCE: -**

- |  |   |
|--|---|
| a) Station Identifier  | ADAMS CONTROL   |
| b) Aircraft identification as shown in the flight plan;  | AAL1658   |
| c) Clearance limit;  | TTPP  |
| d) SID (if applicable)   | GORET4E   |
| e) Route of flight;  | UR515   |
| f) Level(s) of flight for the entire route or part thereof and changes of levels if required;  | FL260   |
| g) Any necessary instructions or information on other matters such as approach or departure maneuvers, communications and the time of expiry of the clearance. | RIGHT TURN/ X RAKAN FL200 OR ABOVE/<br>SQUAWK 2711/ CE 34 |

**Example of an IFR clearance: -** Adams Control clears Caribbean 411 to Piarco via the UR515 flight plan route, climb to and maintain FL260, right turn after departure, Squawk 2711.

**Example of a VFR Clearance: -** Cleared to Joshua Direct, while in (Station Callsign) airspace observe VFR FLxxx or below.

**\* Controllers should note that Clearances may vary from airport to airport. Some including SIDs, some with or without Squawks and some with different departure maneuvers. These will be taught by individual trainers.\***

### **Information that should be passed to an aircraft on request for start-up & pushback, or taxi:-**

If the use of an ATIS is employed, in addition to the instructions given, the pilot should be also informed of the **TIME**, with only minutes being given. If no ATIS is employed, in addition to the instructions given, the pilot should be also informed of the **RUNWAY** in use, **SURFACE WIND**, **QNH** in millibars or inches, and the **TIME**, with only minutes being given.

# CLEARANCES

*Note:* This document uses RTF examples showing both pilot (denoted by *blue italic text*) and ATCO (denoted by grey text) communication. For example: *Pilot - Metro Ground, Big Jet 345, request taxi*  
ATC - Big Jet 345, Metro Ground, taxi to holding point A1, hold short of Runway 18

## CLEARANCE AND TAXI

Radio Telephony is crucial to the safety of the flight during taxiing. Any mistake that causes the aircraft to enter a runway in error could be catastrophic.

## TAXI CLEARANCE LIMIT

*An aircraft taxiing instruction should be composed as follows: -*

1. LIMIT Holding Point A1
2. ROUTE Via Taxiway Alpha
3. TIME 27

All taxi clearances will contain a clearance limit, which is the point at which the aircraft must stop unless further permission to proceed is given.

*Metro Ground, Big Jet 345, request taxi*

Big Jet 345, Metro Ground, taxi to holding point C, runway 27

*Taxi to holding point C, runway 27, Big Jet 345*

Big Jet 345, contact Metro Tower 119.2

*Contact Metro Tower 119.2, Big Jet 345*

## **A HELICOPTER TAXIING INSTRUCTION SHOULD BE COMPOSED AS FOLLOWS: -**

1. Air taxi to location or route as appropriate
2. Caution [dust, loose debris, taxiing aircraft, or personnel]

## **AN AIRCRAFT TAXIING INSTRUCTION SHOULD BE COMPOSED [IN THE CASE OF ONE AIRCRAFT FOLLOWING ANOTHER] AS FOLLOWS: -**

1. SEQUENCE Taxi # 2 to a B727
2. LIMIT Holding Point Exit 2
3. ROUTE Via Taxiway Alpha
4. TIME 48

BWA610 Taxi number two to follow the B737 to holding point Alpha 2 via taxiway Alpha. Time 13.

**OR**

BWA600 taxi number three to the DH8 to the holding point Alpha 1 via Alpha. Time 14

## **CROSSING AN INTERMEDIATE RUNWAY**

If a taxi route involves crossing a runway, whether active or not, specific clearance to cross that runway is required. In the event that an aircraft is required to cross an active runway or backtrack the runway, Ground control must coordinate with Aerodrome/Tower control and request permission for the aircraft to either cross or Backtrack.

*Metro Ground, Big Jet 345, request taxi*

Big Jet 345, Metro Ground, taxi to holding point A1 runway 18

*Taxi to holding point A1 runway 18, Big Jet 345*

## **When traffic permits**

Big Jet 345 cross runway 18 at A1, taxi to holding point C, runway 27

*Cross runway 18 at A1, taxi to holding point C, runway 27, Big Jet 345*

**NB: ATC may request Big Jet to confirm when Runway 18 is vacated.**

## ***A CONDITIONAL TAXI CLEARANCE***

Conditional clearances may expedite traffic flow, but there are risks. Read-back must be in full and in the same sequence as given. A taxi clearance, shown below, allows taxi after another action has first taken place ie. the condition of the clearance. Where there may be ambiguity as to the subject of the condition, additional details such as livery and/or colour are given to aid identification.

A conditional taxi clearance allows the aircraft to taxi only **after** another action has taken place. The structure and order of conditional clearances is essential to their safe execution. Correct read-back of a conditional clearance is vital.

*Metro Ground, Big Jet 345 Stand B1, request taxi*

Big Jet 345, Metro Ground, after the red and white Antonov with the purple fin, taxi to holding point runway 08  
*After the red and white Antonov with the purple fin, taxi to holding point runway 08  
after, Big Jet 345*

In all cases a conditional clearance shall be given in the following order and consist of:

1. Identification;
2. The condition
3. The clearance; and
4. Brief reiteration of the condition

## ***CONDITIONAL CLEARANCE TO CROSS INTERMEDIATE RUNWAY***

Conditional phrases, such as “**behind** landing aircraft” or “**after** departing aircraft”, shall not be used for movements affecting the active runway(s), except when the aircraft or vehicles concerned are seen by the appropriate controller *and* pilot. The aircraft or vehicle causing the condition in the clearance issued shall be the first aircraft/vehicle to pass in front of the other aircraft concerned.

**NB:** Beware - the ICAO phrase ‘**behind**’ has been misinterpreted as an instruction to ‘get close to’ the preceding aircraft, leading to serious jet blast incidents.

Big Jet 345, after landing Airbus 321, cross Runway 09 at C2, after  
*After landing Airbus 321, cross Runway 09 at C2 after, Big Jet 345*

**Then:**

Big Jet 345, taxi to holding point C1, runway 27  
*Taxi to holding point C1, runway 27, Big Jet 345*

**Then:**

Big Jet 345, contact Metro Tower 123.625  
*Contact Metro Tower 123.625, Big Jet 345*

## ***TAKE OFF AND DEPARTURE CLEARANCE***

‘**Take-off**’ shall only be used when issuing a clearance to take-off. Do not use phrases such as ‘prior to take-off’ or ‘after take-off’. If the controller uses ‘after departure’ or ‘follow’, this is NOT a clearance to take-off.

Any instructions to HOLD, HOLD POSITION or HOLD SHORT OF, shall be read back in full using the appropriate phrase – *HOLDING* or *HOLD SHORT OF*.

In the airport environment, the word ‘**cleared**’ shall only be used in connection with a clearance to take-off or land. To aid clarity, a take-off clearance will always be issued separately.

*Metro Tower, Big Jet 345, approaching holding point C1*

Big Jet 345, Metro Tower, line up runway 27  
*Lining up runway 27, Big Jet 345*

Big Jet 345, runway 27, cleared for take-off  
*Cleared for take-off, Big Jet 345*

**Once airborne:**

Big Jet 345, airbourne 45, contact Metro Departure 124.6

*Airbourne 45, contact Metro Departure on 124.6, Big Jet 345*

**CLEARANCE AMENDMENT**

Amendments to departure clearances are known to contribute to runway incursion incidents. The phraseology for amendments to departure clearances where the aircraft is approaching the runway will begin with **'hold position'**.

*Metro Tower, Big Jet 345, approaching holding point C1*

Big Jet 345, Metro Tower, hold at holding point C1

*Hold at holding point C1, Big Jet 345*

Big Jet 345, hold position, amendment to clearance, T3F departure, climb to 6000 feet

*Holding, T3F departure, climb to 6000 feet, Big Jet 345*

**Or:**

Big Jet 345 hold position, after departure climb to altitude 6000 feet

*Holding, after departure climb to 6000 feet, Big Jet 345*

**CONDITIONAL LINE-UP CLEARANCE**

Important points involving the active runway:

1. The condition is always given directly after the call-sign and before the clearance.
2. Conditional clearances must be read back in full and in exactly the same sequence as given plus a brief reiteration of the condition.
3. The aircraft or vehicle that is the subject of the condition must be visible to the flight crew and the controller.
4. The subject aircraft or vehicle of the condition shall be the first aircraft/vehicle to pass.
5. The condition must relate to only one movement.
6. Always clarify if unsure.

*Metro Tower, Big Jet 345, approaching holding point C1*

Big Jet 345, Metro Tower, hold at C1

*Hold at C1, Big Jet 345*

Big Jet 345, behind landing Boeing 757, line up runway 27, behind

*Behind landing Boeing 757, line up runway 27, behind, Big Jet 345*

**CANCELLING TAKE-OFF CLEARANCE**

If take-off clearance has to be cancelled before the take-off roll has commenced, the flight crew shall be instructed to hold position, stating reason. If it is necessary to cancel take-off clearance after the aircraft has commenced the take-off roll, the flight crew shall be instructed to stop immediately.

**Aircraft has not commenced take-off roll:**

Big Jet 345 hold position, Cancel take-off, I say again cancel take-off due to vehicle on the runway

*Holding, Big Jet 345*

**Aircraft has commenced take-off roll:**

Big Jet 345 stop immediately, (Big Jet 345 stop immediately)!

*Stopping, Big Jet 345*

## **READ-BACK**

Read-back is vital for ensuring mutual understanding between the pilot and the controller of the intended plan for that aircraft.

1. Following correct read-back the flight crew must ensure that they carry out the correct action. Statistics show that one of the most common causes of a level bust in Europe is correct read-back followed by **incorrect** action.
2. Strategies to prevent the above error include noting down the clearance prior to read-back and ensuring that both flight crew members listen to all clearances, including taxi clearance. **If in doubt check!**

Any safety related message or part of message transmitted by voice must always be read-back.

### ***The Following Shall Always Be Read Back***

1. Taxi instructions
2. Level instructions
3. Heading instructions
4. Speed instructions
5. Airways/route clearances
6. Runway in use
7. All clearances affecting any runway
8. SSR operating instructions
9. Altimeter settings

Frequency changes should always be read-back in full. Checking the accuracy of a read-back is far easier if the information is read back in the same order as given. Omissions are more difficult to pick up than incorrect data.

1. **When a read-back is required ensure it is complete and in the order given.**
2. **Always listen for (and check) ATC confirmation or correction of readback.**

## **PUSHBACK AND STARTUP**

The request for startup and pushback should be obtained from the ATC unit providing Ground Control.

In the case of such a request, it should be made in the following order: -

- a. ATC Unit
- b. Aircraft Call sign [And Parking Position if available]
- c. Request Pushback and Startup.

On receipt of a request for Pushback and Startup from an aircraft, the ATC providing Ground Control should ensure that a Flight Plan for the proposed flight has been received, and processed prior to issuing Pushback and Startup clearance.

In any event the following phraseology should be used: - AIRCRAFT CALLSIGN

- a. Pushback and Startup approved;
- b. Expect Startup at [time]
- c. Startup approved, standby on Pushback due [Reason]
- d. Expect [Number] minutes delay due[Reason]

*Metro Ground, Caribbean 610 requesting start up and push back*

Caribbean 610, Metro Ground, start up and pushback approved, runway in use 10, surface wind 110 degrees at 12 knots, QNH 1013.4 millibars, time 52.

## ARRIVING AIRCRAFT

The handling of arriving aircraft is very simple. Upon vacating the active, aircrafts will be handed over to the Ground control for parking. The controllers will then issue taxi clearance to a gate or allow the pilot to choose via the appropriate taxiway (s), being vigilant when there are both arriving and departing aircrafts. Once parked, the pilot is to report engines off and the Ground control will then close the pilot's Flight Plan.

*Piarco Ground, Caribbean 411 cleared on Alpha 2, request taxi to gate.*

Caribbean 411, Piarco Ground, taxi to north apron via Alpha and Zulu, park at parking position your discretion, report engines off.

*Roger, north apron via Alpha and Zulu, will report engines off, Caribbean 411.*

(Parked and at the gate)

*Piarco Ground Caribbean 411, we are at the gate and engines off.*

Caribbean 411 roger, flight plan closed at time 01:00 zulu. Enjoy the rest of your day.

## GMT REPRESENT

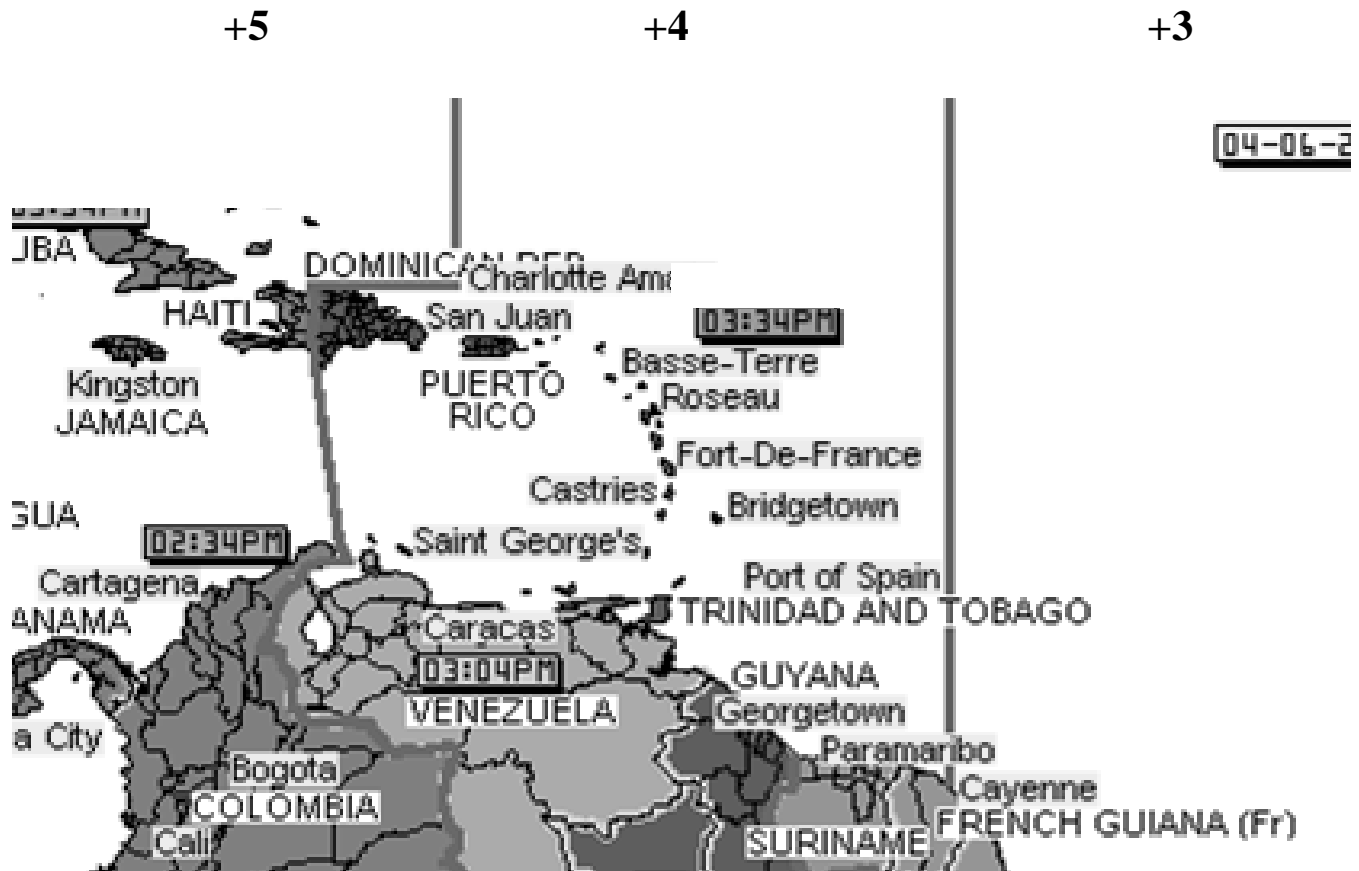
Greenwich Mean Time.

## UTC REPRESENT

Coordinated Universal Time.

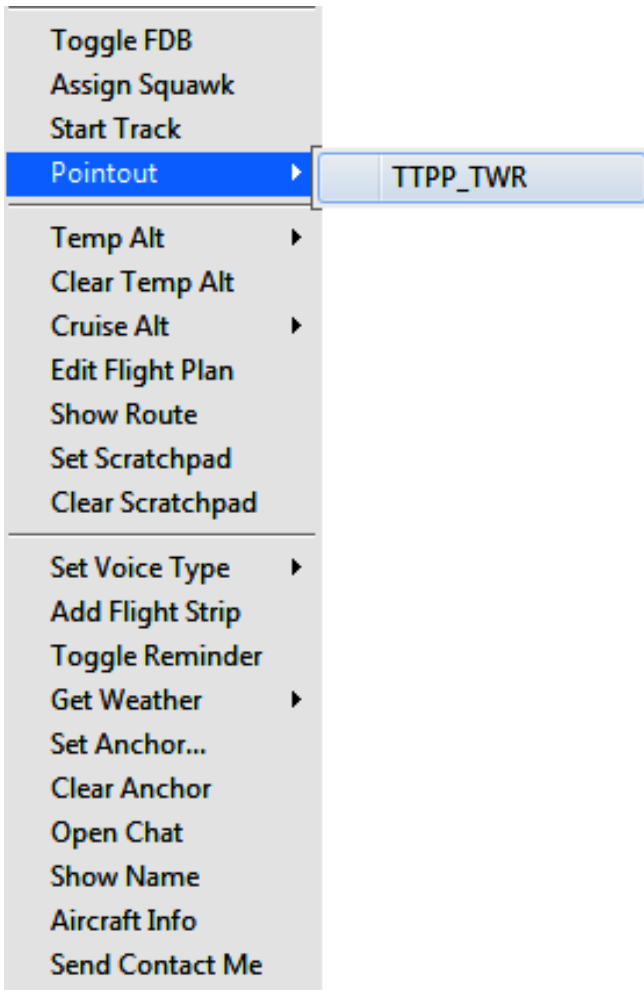
## CALCULATING UTC TIME

UTC time is calculated in the Caribbean Region, by **adding 3, 4, 5 hours** [+3, +4, +5 Hrs] to Local Time.



## TRANSFER OF AIRCRAFT FROM ONE CONTROL TO ANOTHER

When the aircraft has received its ATC clearance and is approaching its clearance limit ready for departure, the Ground Controller must then initiate his hand off to Tower/Aerodrome Controller, or the next higher unit above Ground Control. The hand off shall begin with a VRC Pointout to the appropriate controller, to alert their recipient of its location.



Followed by a verbal frequency transfer.

Caribbean 411, contact Adams Tower on 118.7.

*Over to 118.7 thank you for the ATC services, Caribbean 41.*

***\*For radar based TMAs ONLY, controllers are asked to make sure pilots are Squawking mode Charlie/ Squawking normal or their transponders are on before transfer of control or before they leave the ground.\****

# METAR

A METAR is a meteorological report describing the **CURRENT** weather conditions at a location. It consists of several groups of alpha numeric characters separated by a space, describing various aspects of current weather e.g. Wind, Visibility, Precipitation, Cloud Coverage, Temperature, Barometric Pressure etc.

**TTPP 071500Z 11012 9999 DZ SCT018 BKN280 31/24 1014.7**

**A B C D E F G H I J**

**A** ICAO 4 letter code representing the Station Identifier

**B** Two digits representing the day of the month, followed by four digits representing UTC time, denoted by Z.

**C** Three digits representing wind direction TRUE North, followed by two digits representing wind speed expressed in knots.

**NB.** *If the wind is calm, it should be displayed as 00000.*

**D** 4 digits representing horizontal visibility expressed in kilometers.

**NB.** *9999 means that the visibility is better than 10 km.*

**E** Two letters representing weather phenomena as follows:

HZ Haze

DS Dust

DZ Drizzle

RA Rain

SN Snow

IC Ice

GR Hail

UP Unknown

**F & G** 3 letter code representing cloud amount followed by 3 digits representing height of cloud base measured in hundreds of feet.

For Cloud Coverage the sky is divided into 8 parts called OCTAS.

SKY COVERAGE	CODE	MEANING
0/8	SKC	SKY CLEAR
1/8 TO 2/8	FEW	FEW CLOUD
3/8 TO 4/8	SCT	SCATTERED CLOUD
5/8 TO 7/8	BKN	BROKEN CLOUD
8/8	OVC	OVERCAST

**NB.** CAVOK [CEILING & VISIBILITY OK] is a meteorological term used in a METAR. Under this condition the visibility is 10 km or more, no cloud below 5000 ft. (1500 m), no Cumulonimbus at any altitude, and no significant weather phenomena i.e., precipitation or thunderstorms.

**H & I** 2 digits representing Temperature in degrees Celsius, an oblique stroke, and then followed by 2 digits representing Dew Point in degrees Celsius.

**NB.** *Dew Point is the temperature at which air becomes saturated with respect to water vapor.*

**J** The pressure at mean sea level [QNH] measured in millibars, or hectopascals (hPA).

**What is a METAR?**

**What elements make up a METAR?**

**What does CAVOK mean? [See Note in F & G above]**

**In forecasting into how many parts is the sky broken into?**

**In a METAR what does the two (2) letter code \_\_\_\_ represent? [See E above]**

**Under cloud coverage, What does the three (3) letter code \_\_\_\_ represent? [See F & G above]**

**In a METAR what does the four (4) digits 9999 mean? [See D above]**

**What does the four (4) letter ICAO designator represent? [See A above]**

## **NOTAM**

A NOTAM is a quasi-acronym which stands for **NO**tice **T**o **A**ir **M**en. It is information filed with an aviation authority to alert aircraft pilots in a timely manner of any establishment, condition or change in any aeronautical facility, service, procedure or hazard. These notices are usually distributed by means of telecommunication [AFTN Circuit].

**NOTAMS are issued for reasons such as:**

- Flights by important people such as Heads of State
- Inoperable radio navigational aids
- Military operation resulting in restricted airspace
- Runway closure
- Temporary erection of obstacles near the airfield e.g. cranes
- Notification of runway(s), taxiway(s) and/or apron status as respects to precipitation.

**What is a NOTAM?**

**What is the purpose of filing a NOTAM?**

**What are some elements that may be contained in a NOTAM?**

## ATIS

**THE FOLLOWING ELEMENTS SHALL BE CONTAINED IN A ATIS MESSAGE: -**

- b) Arrival and/or departure indicator;
- c) Contract type, if communication is via D-ATIS;
- d) Designator;
- e) Time of observation, if appropriate;
- f) Type of approach(es) to be expected;
- g) The runway(s) in use; status of arresting system constituting a potential hazard, if any;
- h) Significant runway surface conditions and, if appropriate, braking action;
- i) Holding delay, if appropriate;
- j) Transition level, if applicable;
- k) Other essential operational information;
- l) Surface wind direction and speed, including significant variations and, if surface wind sensors related specifically to the sections of runway(s) in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;
- m) Air temperature;
- n) Dew point temperature;
- o) Altimeter setting(s);
- p) Any available information on significant meteorological phenomena in the approach and climb-out areas including wind shear, and information on recent weather of operational significance;
- q) Specific ATIS instructions.

Controllers are reminded that the ATIS frequency for each airport can be found in the top left corner of any approach chart for the airport:

TTPP/POS PIARCO INTL		<b>JEPPESEN</b> PORT OF SPAIN, TRINIDAD 13 NOV 09 <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">11-1</span>		<b>VOR ILS Rwy 10</b>			
ATIS		PIARCO Approach		PIARCO Tower		Ground	
<b>126.7</b>		<b>119.0</b>		<b>118.1</b>		<b>121.9</b>	
<i>LOC</i> IPOS <b>109.7</b>	<i>Final Apch Crs</i> <b>104°</b>	<i>GS</i> <i>LOM/INT</i> <b>1400' (1370')</b>	<i>ILS</i> <i>DA(H)</i> <b>265' (235')</b>	<i>Apt Elev</i> <b>58'</b> <i>RWY 10</i> <b>30'</b>			

\*Controllers are reminded, an unattended connection as ATC can result in a suspension from VATSIM. While logged on as ATC, **NEVER** leave VRC unattended. If you are leaving the pc, it is advised you disconnect from VATSIM\*

\*Also controllers are asked to **ALWAYS** be polite, respectful, courteous and cooperative to all pilots. It goes a very long way in helping not only your FIR but VATCAR as well \*