SANTO DOMINGO FIR

VATSIM FLIGHT INFORMATION REGION

Aerodrome Control Guide

S1 – S2 Training

Version 1.0 – Updated 13/7/16

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Contents

Introduction

This document has been designed by the Santo Domingo FIR training team to provide all of the general information required to control at an aerodrome level. Further, aerodrome specific information can be found in the relevant SOPs.

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Situational Awareness		
Communication Priority		
Standard Phraseology		
Tag Management		
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Coordination		
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Aerodrome Operations		
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Separation Requirements		
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Learning Outcomes	**Confident**	**Fully confident**
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Phraseology

In this section we will discuss the key parts of phraseology in the Santo Domingo FIR. There are different types of phraseology depending on the aspect covered. For example, VFR or IFR. This section will cover basic phraseology.

Clearances

Before issuing a clearance to a pilot, you should be in receipt of the four key elements: the aircrafts stand number, aircraft type, ATIS on board and current QNH.

[Callsign] cleared to [destination], [SID] departure, [squawk]

Push Instructions

As a controller, you should be able to safely push aircraft in the correct direction, which allows for smooth aerodrome operations.

[*Callsign], push and start approved face [direction]*

[Callsign], after the American A321 passes behind you right to left on A, push and start approved (face)

Taxi Instructions

As an S2 student, you should be able to provide safe taxi instructions to aircraft, this includes anticipating any possible conflicts on the ground and informing an aircraft to 'hold position' if required.

[Callsign], Taxi via [taxiways] hold short [runway]

[*Callsign], push and start approved face [direction]*

Crossing Instructions

Crossing is utilised at Punta Cana airport.

[Callsign], via [taxiway] cross [runway] once vacated tax via [taxiway] hold short [runway].

[Callsign], behind the departing/arriving [aircraft], cross [runway] behind, once vacated via [taxiway] hold short [runway].

Departure Instructions

As an S1, a student should be able to taxi an aircraft to the active runway. However, at an S2 level, this is further extended and the student should be able to issue appropriate instructions for runway use. The student should aim for a minimum delay time for all pilots departing from their relevant aerodrome.

[*Callsign*] [Runway] cleared for takeoff. Winds [wind] degrees [speed] kts.

OR

[Callsign], line up [runway] and wait [one intersection departure ahead].

Provisional Instructions

Provisional line up

In some instances. Such as when an aircraft is landing before the departing aircraft, it may be the most efficient option to provide the aircraft with a provision line up clearance, this is in essence a 'do this after' instruction. Using provision instructions can often be very handy when you are busy and need to utilise your time finely.

[Callsign], Behind the arriving/departing [Airline][Aircraft] line up [runway] and wait behind.

Provisional Crossing (Punta Cana Only)

[Callsign], behind the departing [Airline][Aircraft] cross [runway] behind. Taxi via[taxiway] hold short [runway]

Arrival Instructions

Landing

[Callsign][runway] cleared to land winds [wind] degrees [speed] knots

Continued approach

[Callsign] Continue approach [runway] winds [winds] Degrees [speed] knots

Aborted Landing

When not rolling

HOLD POSITION, CANCEL TAKE-OFF I SAY AGAIN CANCEL TAKE-OFF (reasons).

Rolling

STOP IMMEDIATELY [(repeat aircraft call sign) STOP IMMEDIATELY].

Further phraseology example can be found in the ICAO-9432 document.

General

Alias'

Alias' are dot (.) based commands which can help save time when communicating with text pilots. Some common alias' are:

.taxi
.land
.stand
.ho

Controllers are recommended to utilise the alias' as they speed up communications with text pilots and utilises time effectively.

Monitoring correct pilot readbacks

As a controller you are responsible to ensure all aircraft are following correct procedures. In doing so you should ensure pilots are following the correct instructions. Common read back errors are:

- INCORRECT SIDS
- SQUAWK ERRORS

The controller should also ensure that any information passed to them from the pilot is correct; for example, the reported aircraft type, stand number, QNH or ATIS information on first contact. If the aircraft type or stand number is incorrect, the student should ask the pilot to 'say again.'

Communication Priority

When controlling, aircraft should be prioritised based on their order of importance. The best way to work around and visualise this is by making the runway, therefore departures and arrivals the main priority. Then working your way down from the runway inwards from taxiing aircraft until finally, those on stand.

The controller should manage the frequency to ensure they can handoff any departing aircraft between 1000 – 2000 feet.

To help maintain the flow of the frequency, controllers should plan ahead. This can be done by offering *conditional clearances* or by giving clearances such as those for take-offs prior to the holding point when the radio is silent and safety allows. By doing this the controller can maintain the flow of aerodrome movements.

Remember: Use '*standby*' if you have other aircraft to deal with before that traffic. 'Standby' should not be used as a means of planning as this should be done beforehand.

Tags

As an aerodrome controller, the student **should not** use Tags. They should however utilise the scratchpads for memory purposes. There is no standard procedure for using scratchpads and controllers should devise their own scratchpad methodology.

Coordination

Coordination is a key aspect of controlling. As tower you are likely to need to coordinate with all ground frequencies as well as approach and in some cases, area control. To coordinate, you should always begin with the station you are calling, followed by your station name. Eg:

Radar, tower

VFR Coordination

In the Dominican Republic, most VFR will not need to contact approach due to the airspace dynamics. However, you should '*prenote*' a VFR departure or circuit with the approach controller for identification purposes.

Radar, tower

Pass your message

HL243, C172, departing to the North, SQK1517

Roger

Release Coordination

Releases may be required at some aerodromes as a standard procedure, or in some cases due to nonstandard traffic movements. It should also be noted that in the event of a go around, the next departure requires a release from the approach controller.

Radar, tower

Pass your message

Request release, TOM325 KERSO1J departure.

Released

***Note**: A release does not mean a controller should not apply the appropriate separation. Furthermore, a release only lasts for 3 minutes.*

Go Around Coordination

In the event of a go around, the student should issue a standard missed approach before coordinating with approach. The coordination is as follows:

Radar, tower

Pass your message

TOM325, going around, due unstable approach. Flying the standard missed.

Roger. TOM325 to contact me [frequency]

Inbound Spacing

It is the towers responsibility to request for radar to increase spacing on final approach if they want to increase the departure rate. If Director is online spacing must be coordinated with them.

Non-standard practices

All non-standard practices must be coordinated with the relevant positions. For example, an aircraft requesting a non-standard departure will require a clearance and release from radar.

Knowledge

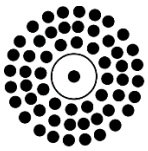
Chart reading

When reading charts. Remember that the information is always going to be in front of you. Below is a key of things you might find on a chart:

Distance Measuring Equipment (DME)

VHF omnidirectional range (VOR)

VOR-DME



NDB

Departure order for minimum delay

On departure there are two types of separation which could apply:

Wake Separation

Wake turbulence is turbulence that forms behind an aircraft as it passes through the air. This turbulence includes various components, the most important of which are wingtip vortices and jet wash.

Wake turbulence applies in two different forms, for departures from the same position and for departures from intermediate holding points. Those departures from intermediate points usually require larger amounts of separation.

Wake turbulence separation minima shall be based on a grouping of aircraft types into three categories

according to the maximum certificated take-off mass as follows:

- HEAVY (H) — all aircraft types of 136 000 kg or more;
- MEDIUM (M) — aircraft types less than 136 000 kg but more than 7 000 kg; and
- LIGHT (L) — aircraft types of 7 000 kg or less.

Departure Wake Turbulence Separation

Preceding Aircraft	Following Aircraft	Holding Point	Minimum Separation
Heavy	Medium/Light	Same	2 minutes
Heavy	Medium/Light	Intermediate	3 minutes
Medium	Light	Same	2 minutes
Medium	Light	Intermediate	3 minutes

Wake turbulence also applied to aircraft within the circuit requesting touch and go. This is applied as an intermediate holding point departure and therefore a circuit aircraft commencing a touch and go **cannot** receive his clearance until the wake separation time period has passed.

Arrival Wake Turbulence Separation

Preceding Aircraft	Following Aircraft	Minimum Separation
HEAVY	HEAVY	4.0 NM
HEAVY	MEDIUM	5.0 NM
HEAVY	LIGHT	6.0 NM
MEDIUM	LIGHT	5.0 NM

Route Separation

Route separation is used when wake turbulence is not applied. It is applied at every 45° angle. Therefore:

- Departures that are not separated by 45° require 2 minutes' route separation
- Departures that are separated by 45° require 1-minute route separation

Minimising the effect of wake separation

To minimise the effect of wake separation you can use intermediate holding points to depart a smaller aircraft before that of a heavy category. For example:

747 on a KERSO* and A320 on a KERSO* departure would have:

- 2 minutes route separation
- 2 minutes wake separation

Therefore, this technique does not work for aircraft on the same departure SID.

Note*: The KERSO departure is a departure from Las Americas to the North. This departure was used as an example only*.

However, a 747 on a KERSO* departure and an A320 flying an AVRES* departure would have:

- 2 minutes wake separation
- 1 minute route separation

Therefore, you should position the A320 at an intermediate holding point and depart them ahead of the heavy, 747, to save 1 minute of separation.

Note*: The KERSO is a Northerly departure, and the AVRES a southerly from Las Americas Airport.*

Missed approach procedures

The missed approach procedures are followed by IFR aircraft if they, for some reason decide to go around. The tower controller should know the procedures in the event they are needed to be relayed to an aircraft.

The tower controller should ensure that they provide the aircraft with a suitable missed approach procedure, be it a tactical heading or the standard missed approach. This information should then be relayed to the approach controller before handing the aircraft over.

Phraseology Example (IFR)

Tower: "BAW123, go around"

Pilot: "Going around, BAW123"

Tower: "BAW123, fly standard missed approach runway 17"

Pilot: "Standard missed, BAW123"

Coordination with Radar;

Tower: "Hello, BAW123 going around, standard missed, due to unstable approach"

Radar: "BAW123, standard missed due to unstable approach"

Now hand the aircraft off to approach for resequencing. You should also note that the next departure is subject to radar release.

Phraseology Example (VFR)

Pilot: "Going around, GCD"

Tower: "GCD, roger"

You can ask the aircraft to "*turn now left crosswind*" if it would be beneficial, but otherwise they should just fly the circuit.

Tactical Separation

Tactical separation is used when the standard missed approach is not appropriate, for example when a loss of separation is plausible. To avoid this, the tower controller will issue an appropriate heading/altitude for the go around.

Airspace Classification

All tower airspace (the ATZ) in the Dominican Republic is Class D. The following airspace restrictions should be known at a Tower level:

Airspace	Separation	Traffic Information	Notes
A	IFR-IFR	NA	No VFR
B	ALL		
C	IFR - All traffic SVFR - all traffic	VFR - VFR	
D	IFR – SVFR/IFR SVFR - SVFR	VFR – IFR/VFR/SVFR	
E	IFR-IFR	IFR – VFR	
F	NA	If FIS service	Air traffic advisory
G	NA	If FIS service	

VMC Minima

Visual meteorological conditions (VMC) are the meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling equal to or better than specified minima.

Airspace	Visibility	Distance from clouds	
		Horizontal	Vertical
C	8KM	1500m	300m (1000ft)
D		1500m	300m (1000ft)
E		1500m	300m (1000ft)
F		1500m	300m (1000ft)
G		Clear of clouds & surface in sight	

Controlling

Role of the Tower Controller

The tower controller is responsible for the Aerodrome Traffic Zone (ATZ) at their respective aerodrome (if the aerodrome is controlled.) The ATZ in the Dominican Republic tends to be a 10NM radius from the aerodrome reference point to an altitude of 2000ft; this will be discussed in local documentation.

Furthermore, the controller is responsible for the safe and efficient operations of the runway, ATZ and final approach. This expands to include the apron and taxiways in the absence of a ground controller.

The Red Carpet Rule

'You can join the red carpet but you cannot run across it'

The simple red carpet rule helps controllers ensure safety is not compromised. This rule ensures aircraft cannot collide at intersections as the route becomes 'reserved' after instruction – this rule must be enforced at all times

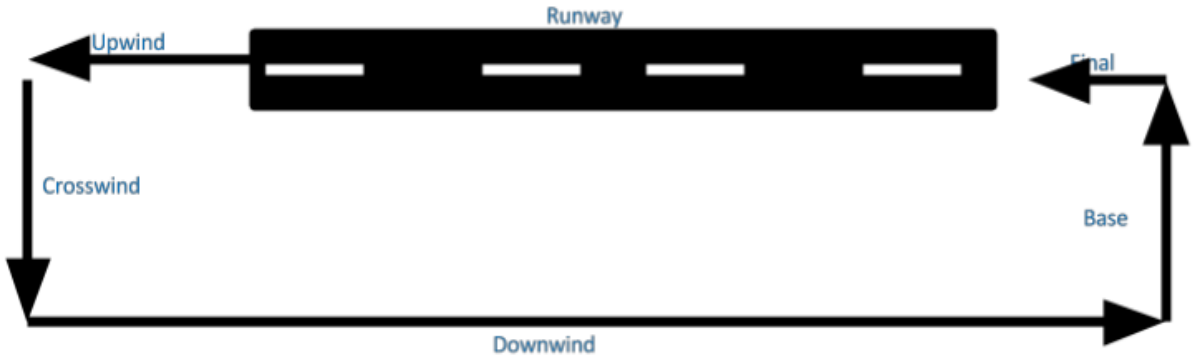
VFR

Visual Flight Rules are often flown by pilots for sightseeing flights and day trips. As the tower controller, you are responsible for VFR in your ATZ

VFR Standard Routing

Some aerodromes in the Santo Domingo FIR have published VFR standard routings. These are discussed in the respective Standard Operating Procedures.

Legs of a circuit



VFR Circuit

With a circuit the first thing you should do is inform radar that the circuit is now active. Once the circuit has become inactive you must also inform radar.

Clearance

[Taxi them to runway]
[Callsign], Hold Position, after departure cleared Left hand VFR Circuit not above [altitude] feet, [QNH] Squawk 1201.
[Callsign] read back correct, report ready for departure.

Once Airborne

[Callsign], report downwind with intentions.

Once Downwind

[Callsign], roger report final [runway] you are number [N]

Once Final

[Callsign], [runway] cleared touch and go surface wind [direction] degrees [speed] knots

OR

[Callsign] [runway] cleared to land surface wind [wind] degrees [speed] knots

If there is another aircraft in the circuit, you should use this phraseology after the aircraft reports downwind with his intensions:

[Callsign], report final number 2, following a [aircraft type] on [circuit leg]

VFR Joiner

Joining VFR aircraft will contact you prior to entering the ATZ if they are not inside controlled airspace. You should then clear them to enter via a specific point, be it a compass direction or a published visual routing.

The aircraft should then be joined to the most appropriate part of the VFR circuit, as well as being provided with any relevant traffic information of aircraft within 5-10NM.

VFR Leaver

There are two scenarios with a VFR leaver. One where an aircraft is to contact radar and one without radar.

With Radar

If a departure is requesting to fly within controlled airspace after departure, the tower controller should coordinate with approach to request a departure routing. The approach controller will subsequently provide a clearance consisting of a visual routing, squawk and an altitude.

If a departure is to enter the TMA of approach after departure, the controller **must request a release** as this is a non-standard movement.

Without Radar

If radar is offline, or the aircraft is leaving controlled airspace outside of the ATZ. The student can decide an appropriate VFR clearance. The aircraft does not require a release and on passing the ATZ boundary, the controller should allow the student to change their frequency.

HL532, do you require Flight Information Service?

If yes, co-ordinate with radar and hand the aircraft over. If no, the aircraft should then be told this when on the boundary of the ATZ:

HL532, squawk 1200, frequency change approved

VFR Transit

There are two scenarios with a VFR leaver. One with radar and one without radar.

With Radar

When radar is online you will be handed the aircraft with the field in sight. Your role will be simply to transit the aircraft across the threshold and as soon as he reports overhead you hand him back off to Radar. You are required to control the aircraft as it is passing through the ATZ.

Without Radar

When radar is not online or the aircraft is outside of controlled airspace, you are required to cover the aircraft from entering the control zone until he leaves. It is easier to think of it in three ways:

Enter

Give the aircraft a joining instruction. Route him as close to the field as possible and hold him there if required.

Transit

When the aircraft is near to the field and traffic permits; Deliver the transit clearance.

[Callsign] transit the zone via [threshold]

When transiting an aircraft there can be two issues:

> **Inbound IFR** – You cannot avoid this. The aircraft must be held in orbits until the inbound flow has stopped
> **VFR Circuit** – To alleviate this problem you can give the aircraft a not below 2800ft instruction to allow 1000ft separation – This must be coordinated with radar. Or join the aircraft to the circuit.

Leave

Once the aircraft has reported overhead the threshold, give him his leaving instruction.

Traffic Information

In class D airspace you are required to provide traffic information. You should provide this on an IFR/VFR-VFR basis. The flowing phraseology can be used to achieve this:

1. **Method 1**
    a. [Callsign] report final [runway] number 2, following an [aircraft] on an [N] mile final, recommended distance [N] miles
2. **Method 2**
    a. [Callsign], traffic is an [airline][aircraft]. On a [N] mile final, [runway] report the traffic in sight.

    [Callsign], you are number 2 to that traffic, report final [runway], recommended distance [N] miles

3. **Method 3**
    Traffic is a [Airline][Aircraft] on [stage] with the traffic in sight [runway] cleared for takeoff Surface winds [winds] degrees [speed]

VFR/IFR Integration

Integration is a key aspect of maintaining the flow, especially when the circuit is active. To integrate you have to ensure the VFR aircraft will be able to land with enough separation from the leading aircraft to avoid wake and with enough separation to avoid losing separation with the trailing aircraft. Integration can be seen as an extension onto traffic information, as you are utilising it to get the VFR traffic onto final.

In Class D airspace you are not responsible for VFR separation with VFR or IFR.

Meteorology and Altimetry

METARs

The METAR is the Metrological Aerodrome Report. These reports provide information on the current weather at the aerodrome. For this section you are required to be able to decode intermediate level METARs such as:

- MDPC 022020z 20012KT 160V220 R23R/0800N 3500 +RA -SN BCBR OVC002 SCT010 BKN015CB 02/M01 Q965 TEMPO 1000 RERA NOSIG
- MDPC 171850Z 28017KT 9999 -RA FEW009 BKN011 10/09 Q1008 TEMPO BKN008
- MDPC 241655Z 20013KT 9999 FEW010 BKN013 OVC016 16/14 Q1007 GRN 21015KT 7000 FEW010 BKN012 OVC015 TEMPO 4000 DZRA
- MDPC 121520Z 25019KT 9999 FEW018TCU FEW021CB M2/M4 Q1024 +PRFZFG BCMG NSW

TAFs

The TAF is the Terminal Aerodrome Forecast which is the outlook for the weather over a period of time. Example:

MDPC 311700Z 3118/0118 24017KT 9999 SCT020 TEMPO 3118/3121 25018G31KT SCT018CB PROB40 TEMPO 3118/3121 5000 SHRAGS BECMG 3121/3124 21014KT PROB30 TEMPO 3121/0104 BKN013 PROB30 TEMPO 0105/0109 5000 SHRA BECMG 0107/0110 20020G32KT TEMPO 0108/0118 5000 RA BKN012 BECMG 0110/0112 20025G40KT BECMG 0115/0118 27018KT

Runway change

If you are to change your runway. You should follow the checklist below:

- Pick a time to change
- Inform adjacent controllers
- Fill scratch pads (to know who has been cleared)
- Create new ATIS and change Euroscope runways
- Station broadcast

QNH & QFE

Both QNH and QFE are pressure settings used by aircraft. However, the QNH is the altitude at mean sea level and the QFE is the height above a given geographical position, often the aerodrome.

To calculate the QFE you must first know the aerodrome elevation and that 1 hPa is 27ft. You would then divide the aerodrome elevation by the value of the QNH. For example, at Las Americas the aerodrome elevation is 58ft:

$$\frac{58}{28} = 2HPA$$

Therefore, we take 2 away from the QNH to calculate the QFE!

Emergency

When dealing with an emergency you should always briefly follow the below checklist:

- Acknowledge the 7700
- Sort out the 7700 – All runways available for landing. Relay information from Radar
- Move other aircraft out of the emergency's path
- Radio silence
- Runway change? Do you need to change runways?
- Coordinate with radar and relay the information regarding heading etc to the aircraft. Coordinate with all adjacent controllers eg ground to stop ground movements if required.

Revisions

Name	CID	Date	Approved by	Reason
CW	1244469	13/07/16	JDB - ATM	First edition

Further Reading

Skybrary

EuroControl Phraseology Page