

**Virtual Air Traffic Simulation
Caribbean Division**

VATCAR

GROUND CONTROL STUDY GUIDE

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Bill Raymond, VATCAR Director

Mike Nowinski, VATCAR Training Director

Note: This is not for real-world training

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INTRODUCTION

This Ground Control Study Guide is designed to provide you with the basic information necessary to work the Ground Control position. It builds and expands on the information you have already learned in the Basic Study Guide. In real-life, Ground Control and Local Control (TWR) are located next to each other in the Tower Cab. They can communicate by visual signals or simply speaking to each other. They control aircraft based primarily on what they see out the windows. In ASRC, it is a bit more complicated. You can't see when TWR points to an aircraft, chatboxes aren't nearly as quick as speaking, and you can't throw the flight strip for the next departure at TWR to get his attention. Neither of you can actually see the aircraft holding short or exiting the runway. Therefore, some accommodations have to be made. These will be discussed as the need arises.

CHAPTER 1 - INITIAL CONTACT AND POSITION DETERMINATION

1-1. Provide airport traffic control service based on known or observed conditions. This is more difficult in ASRC than in real-life. Even with a specific Ground Control sector file aircraft positions may not be exact. Greater reliance must be put on aircraft position reports.

1-2. The Movement Area consists of the runways, taxiways, and other areas used for taxiing, takeoff, and landing of aircraft. It does not include loading ramps and parking areas. ATC is only responsible for and only has control over operations on the Movement Area. Movement of aircraft or vehicles on non-movement areas is at the discretion of and is the responsibility of the pilot, the aircraft owner, or airport management.

1-3. Before you begin controlling an aircraft, you must know where it is. It could be on the other side of the airport from where you think, in someone else's airspace, or even at whole different airport! Issuing control instructions in these cases could easily create a conflict.

1-3-1. When an aircraft calls you, first look for a data block with its callsign. If all you see is a code and altitude, and don't have a flight strip for the aircraft, ask the pilot to resend his flight plan. If you have a flight strip but all you see is a "/" or "V" you have several options.

1-3-1-1. Tell the aircraft to "SQUAWK NORMAL." That means to uncheck "Squawk Standby" in the SB menu. Then the full data block should appear.

1-3-1-2. Select the flightstrip for the aircraft. The "/" or "V" of that aircraft will change color.

1-3-1-3. Tell the aircraft to "IDENT." The "/" or "V" will momentarily change to a stack of three horizontal lines.

1-3-2. If you still can't find the aircraft, just ask the pilot to "SAY LOCATION." Once in a great while even these techniques don't work. The only solution is for the aircraft to log off and back on.

1-4. If you find it necessary to reduce clutter around the airport, have all aircraft not taxiing and those going directly to parking "Squawk Standby."

CHAPTER 2 - COORDINATION, ADVISORIES, AND OBSERVED ABNORMALITIES

2-1. In addition to the general concept of coordination covered in the Basic Study Guide, Ground Control has specific areas you should know.

2-2. You must obtain approval from Tower before authorizing an aircraft or vehicle to enter any part of an active runway. In real-life, each instance must be individually coordinated. In ASRC, it isn't unusual for TWR to grant a blanket approval to cross when GND sees it's safe to do so. You should coordinate with TWR to determine the method he wants to use when you first sign on.

2-3. TWR will coordinate with you before using any runway not previously designated as active. This allows you to taxi aircraft on or across any inactive runways without coordination.

2-4. If you are working Ground combined with Clearance Delivery you should coordinate with the controller performing the Departure function. This may be DEP, APP, or CTR. Determine any preferred routes or initial altitude restrictions to be included in IFR clearances and what departure frequency and squawks to assign.

2-5. You must notify TWR anytime you taxi an aircraft to any runway other than the active or to a runway intersection for departure.

2-6. When coordinating with another controller or responding to requests from aircraft use the following terms:

2-6-1. To grant permission for the requested operation, state the operation and the word "APPROVED", e.g. "ENGINE START AND PUSHBACK APPROVED" or simply state "APPROVED AS REQUESTED."

2-6-2. To deny permission use the word "UNABLE" and when possible give the reason, e.g. 'UNABLE DEPARTURE OFF RUNWAY 36 DUE TO NOISE ABATEMENT."

2-6-3. If you aren't able to respond to a request right away, use the word "STANDBY." This is neither an approval nor denial; just that you have received the request and will respond later.

2-7. Issue information about the airport necessary for an aircraft's safe operation

in time for it to be useful to the pilot. Aircraft parked on the movement area is the only one likely to occur in ASRC/SB. Other information would include construction, less than normal braking action, or other pertinent airport conditions.

2-8. Issue information about other aircraft, vehicles, or personnel in an easy to understand manner such as "AIRBUS TO YOUR RIGHT" or "L-1011 AHEAD OF YOU" or "FIRE TRUCK LEFT OF RUNWAY 27."

2-9. When describing any observed abnormal aircraft condition, always use the term "APPEARS", e.g. "IT APPEARS YOU HAVE TAXIED PAST THE RUNWAY END."

CHAPTER 3 - GROUND TRAFFIC MOVEMENT

3-1. Issue specific instructions which approve or disapprove the movement of aircraft or vehicles on the movement area. It isn't likely you will control many vehicles in ASRC but if the situation comes up you should apply these procedures.

3-2. Do not issue conditional instructions that are dependent upon the movement of an arriving aircraft on or approaching the runway or a departing aircraft established on takeoff roll. Do not say, "TAXI INTO POSITION AND HOLD BEHIND LANDING TRAFFIC" or "TAXI ACROSS RUNWAY 36 BEHIND DEPARTING JETSTAR." You may however, issue instructions to follow another aircraft on the movement area operating in accordance with an ATC instruction e.g. "FOLLOW THE 737 TAXIING AHEAD OF YOU."

3-2-1. Do not use the word "CLEARED" to authorize an aircraft to taxi or for vehicle operations. Use the words "TAXI" "PROCEED" or "HOLD" for aircraft and "PROCEED" or "HOLD" for vehicles.

3-2-2. When taxiing helicopters you may use standard phraseology or the following special phraseology.

3-2-2-1. For a helicopter to proceed at a slow speed above the surface, normally below 20 knots and in ground effect use the term "HOVER TAXI" e.g. "HOVER TAXI TO HELIPAD BRAVO."

3-2-2-2. For a helicopter to proceed expeditiously from one point to another, normally below 100 AGL and at airspeeds above 20 knots use the term "AIR TAXI" e.g. "AIR TAXI TO THE HOSPITAL PAD."

3-2-3. Avoid clearances which require heavy jet aircraft to use greater than normal taxiing power or small aircraft or helicopters to taxi in close proximity to taxiing or hover-taxiing helicopters.

3-3. Sometimes it is more efficient for an aircraft to depart from a runway

intersection instead of going all the way to the end. Issue the estimated distance from the intersection to the runway end to any pilot who requests it and to all military aircraft e.g. "RUNWAY 36 INTERSECTION DEPARTURE ESTIMATED 4000 FEET AVAILABLE."

3-3-1. Be careful about initiating or approving pilot requests for intersection departures. Depending on aircraft weight categories an intersection departure may incur a greater delay due to wake turbulence separation or the aircraft may block landing aircraft from exiting the runway.

CHAPTER 4 - TAXI AND GROUND MOVEMENT OPERATIONS

4-1. It usually isn't necessary to issue taxi route or progressive taxi information. If you choose to do so, issue it in concise and easy to understand terms e.g. "TAXI STRAIGHT AHEAD, TURN LEFT AT THE NEXT INTERSECTION." This is particularly important in ASRC because many SB pilots don't have airport diagrams and in pre-FS9 versions of FlightSim, many airports may not have taxiway markings.

4-2. There are two basic types of taxi instructions: Without Hold Short Instructions and With Hold Short Instructions.

4-2-1. When you instruct an aircraft to taxi or proceed to any point other than an assigned takeoff runway, if you don't issue any hold short instructions the aircraft may cross all taxiways and runways that intersect the taxi route, including the active runway. If you want the aircraft to hold short at any point along the taxi route you must issue specific hold short instructions. For example, "TAXI TO PARKING" allows the aircraft to go directly to parking crossing any runways or taxiways along the way. "TAXI TO PARKING, HOLD SHORT OF RUNWAY 36" also allows the aircraft to go to parking but now it must hold short of Runway 36 and obtain approval before crossing.

4-2-2. Use the phrase 'TAXI TO' when instructing an aircraft to taxi to an assigned takeoff runway without hold short instructions. This authorizes the aircraft to cross all runways and taxiways which intersect the taxi route except the assigned takeoff runway at any point. For example "TAXI TO RUNWAY 36" allows the aircraft to taxi directly to the runway hold line at end of Runway 36 but it may not cross or enter Runway 36 at any point. Therefore, it is not necessary to tell the aircraft to "TAXI TO RUNWAY 36 AND HOLD SHORT." He is required to hold short of the active runway without being told.

4-2-3. DO NOT use the phrase "TAXI TO" if hold short instructions will be issued. Simply state the runway for departure, any necessary taxi instructions, and the hold short instructions. For example 'RUNWAY 36, TAXI APPROVED, HOLD SHORT OF RUNWAY 27' or "RUNWAY 36, TAXI VIA THE INNER TAXIWAY, HOLD SHORT OF RUNWAY 27" allows the aircraft to proceed to the end of Runway 36 but it must hold short of Runway 27 and obtain permission to cross

along the way.

4-3. If the pilot does not read back the hold short instructions or any other time you feel it necessary ask him to do so e.g. "READ BACK HOLD INSTRUCTION."

4-3-1. If the pilot does not read back the runway when you issue taxi instructions confirm he has the correct runway assignment e.g. "COMFIRM TAXIING TO RUNWAY 33L."

4-4. When you want to speed up a taxiing aircraft or vehicle use the term "WITHOUT DELAY."

4-5. Handoffs from Ground to Tower are not required. Simply instruct aircraft to contact Tower when they are ready for takeoff, or stopped behind aircraft holding ahead.

CHAPTER 5 - DEPARTURE INFORMATION AND DEPARTURE DELAYS

5-1. Before an aircraft departs you must provide current departure information. This is normally done when the aircraft taxis.

5-1-1. Departure information contained in the ATIS broadcast may be omitted if the pilot states the appropriate ATIS code.

5-2. Departure information consists of:

5-2-1. Runway in use.

5-2-2. Surface wind.

5-2-3. Altimeter setting.

5-2-4. Ceiling and visibility when below VFR conditions.

5-2-5. Taxi information. You need not issue taxi route information unless specifically requested.

5-2-6. Time (UTC), when requested.

5-2-7. An advisory for General Aviation aircraft to "CHECK DENSITY ALTITUDE" if the field elevation/temperature (F) is above 2000/85, 3000/80, 4000/75, 5000/70, 6000/65, 7000/60.

5-2-8. Braking action reports any time braking action is reported as "POOR" or "NIL."

5-2-9. Put together, various combinations of taxi instructions and departure information would look like this:

"TAXI TO RUNWAY 36, WIND 360 AT 4, ALTIMETER 2992."

"RUNWAY 27, TAXI APPROVED, HOLD SHORT OF RUNWAY 36, WIND 300 AT 5, ALTIMETER 2988, CEILING 800 VISIBILITY 2."

"N12345 DENVER GROUND, TAXI TO RUNWAY 34, WIND CALM, ALTIMETER 3004, CHECK DENSITY ALTITUDE."

"RUNWAY 21, TAXI APPROVED, HOLD SHORT OF RUNWAY 18, WIND 200 AT 10, ALTIMETER 2979, BRAKING ACTION POOR."

5-3. When gate-hold procedures are in effect, advise departing aircraft of the time they can expect to receive engine startup approval. "GATE HOLD PROCEDURES ARE IN EFFECT. EXPECT ENGINE START AT (TIME)." In ASRC, these procedures are occasionally used to cope with the very heavy traffic associated with fly-ins.

5-3-1. Advise departing aircraft when to start engines and to advise when ready to taxi, e.g. "START ENGINES, ADVISE WHEN READY TO TAXI."

5-3-2. If the pilot requests to start anyway and hold in parking, approve his request if space and traffic conditions permit.

5-3-3. Advise all aircraft when gate hold procedures are terminated, e.g. "GATE HOLD PROCEDURES NO LONGER IN EFFECT."