S2 Position Overview
March 2021

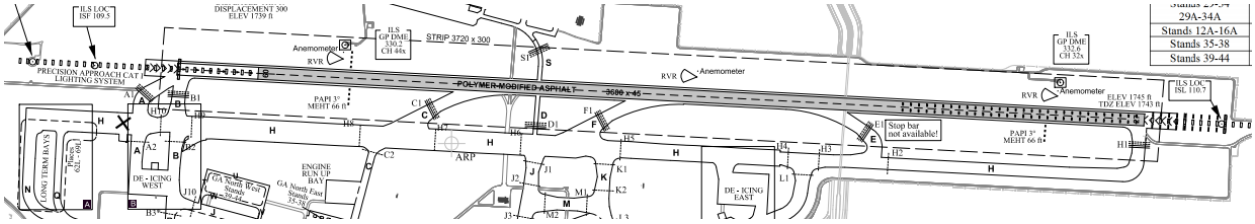
Position Overview

Tower is responsible for all ground movements, take-offs and landings and gives instructions to effect proper sequencing and separation of aircraft for departure. Tower decides which runways are being used for take-offs and landings depending on wind direction etc. Tower is also responsible for aircraft on the ground, when they are on the runway or are about to cross a runway. Departing aircraft are handed over to the next controller when they leave the Sofia Tower airspace. Sofia Tower is also responsible for the CTR_Sofia from SFC to 8500ft. Separation between IFR traffic is handled by the approach controller. Whilst approach is responsible for sequencing arrival aircraft, Tower shall make sure that the separation between two aircraft is enough to allow both of them to land without any problems. If the spacing becomes too small between the two arriving aircraft, the tower should instruct the second aircraft to go around and to commence a missed approach procedure.

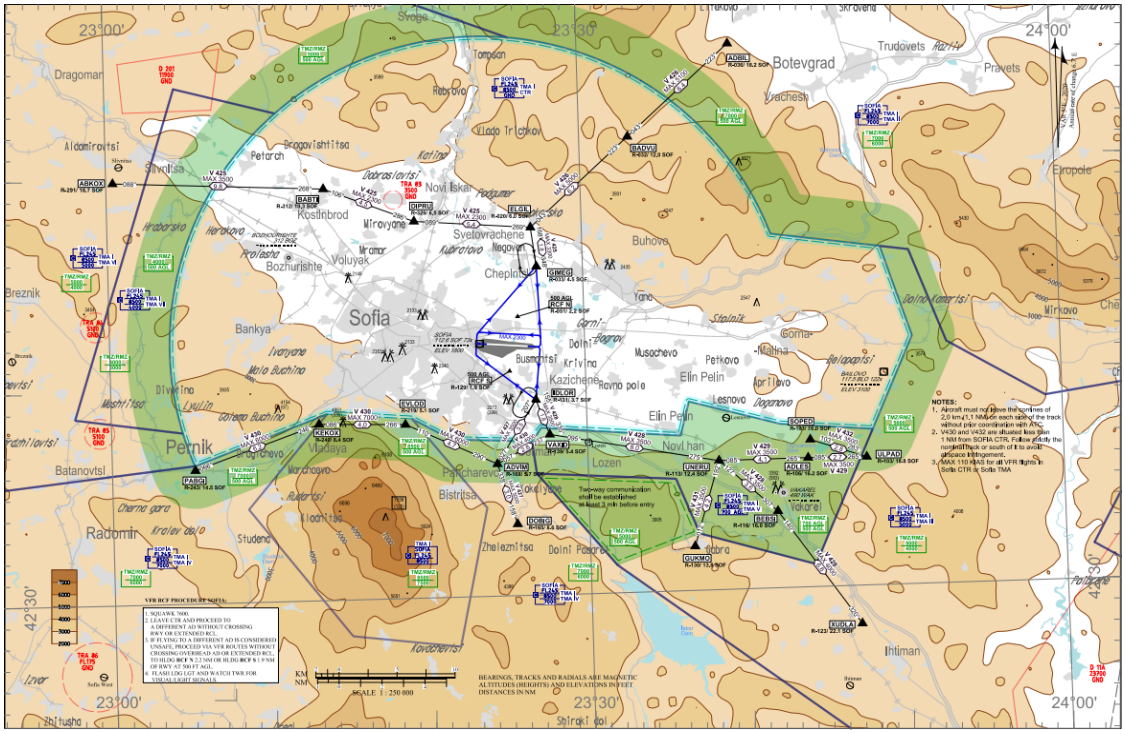
Sofia Tower is responsible for all aircraft and ground vehicles movements on the apron and the runways. The main objective of a tower controller is to ensure the safe departure and arrival of aircraft.

When coming online as Tower on VATSIM, select the active runways from the “Active airport/runway selector dialog” in Euroscope. The selection of active runways depends on the winds. The preferred runway for departure at LBSF is 09 and the preferred arrival runway at LBSF is 27. So when the

wind is calm and also even if there is light wind favorable for runway 09 (till 5kt tailwind component) it is preferred to use runway 27. A Tower controller must select ”PUSH”, ”TAXI” and “DEPART” status. In addition, the Tower controller must provide an ATIS. This can be generated using the appropriate Euroscope function.
The controller must not forget about coordination with Approach before takeoff. A Tower Controller cannot line-up aircraft without coordination because it is possible to receive an instruction from approach which the aircraft is not able to comply with, this will cause the runway to be blocked. The holding point is the line before entering the runway which ensures the safety distance between aircraft. Also, Tower will receive coordination reports from the Approach controller where they receive the arrival runway for each aircraft and the estimate time that it is from final, this helps Tower to manage the departing traffic efficiently.



Beside the runway and the aerodrome, the Sofia Tower is also responsible for control over the Sofia CTR.



The Sofia CTR covers from ground to 8500ft. Sofia Tower has to control all VFR flights which are flying within the Sofia CTR, even if they are not departing or arriving at LBSF or at any other airfields within the CTR. Control of aircraft within the CTR is procedural and Tower must request and provide further information to the aircraft. Sofia Tower has to request the current squawk code of the aircraft if they are departing from an airfield other than LBSF that are within the CTR (also for Sofia departures if it is unknown) or are just entering in the CTR from the outside. In normal conditions the pilot should inform Tower of their squawk code on initial contact. For an aircraft flying traffic patterns, Tower can request that they report the leg of the pattern and also any position report (buildings, waypoints, distance from VORs, etc.). For aircraft which are not flying in the pattern, Tower can request at any time entry and exit points, followed route within CTR, estimate times for entry or leaving the airspace, altitude, direction of leaving the CTR, speed and other information which help Tower separate the aircraft. Sofia Tower shall inform VFR aircraft about the local QNH and active runway. The tower shall also inform IFR traffic and also VFR traffic about any aircraft from vicinity mentioning the approximate distance in

miles and clock direction toward other aircraft. Because the top limit of the CTR is 8500ft and the upper airspace is TMA Sofia which is a class C airspace where VFR flights are not allowed without special clearance, you have to be sure, as a Tower controller, that VFR aircraft are not flying above 8500ft until the exit below of TMA Sofia. When an aircraft leaves CTR Sofia, they have to be transferred to Sofia Information on 130.600 or Sofia Approach on 123.700, because they are entering a class G or C airspace. In normal conditions, the pilot should report when they exit Tower's airspace

3. Duties

We will discuss a flight from its first call to its transfer to the Approach controller and another flight from its approach to its arrival at a gate.

We suppose LZB972 is flying from Sofia to Varna:

Note: Radio check request from pilots is not mandatory. If any pilot asks for it you should respond with one number from 1 to 5. 1 - Unreadable, 2 - Readable now and then, 3 - Readable but with difficulty, 4 - Readable, 5 - Perfectly readable.

Pilot: LZB972 request IFR clearance to Varna.
ATC: LZB972, Cleared Varna via GOL3H departure, runway 27, climb initially FL230, squawk 4747.
Pilot: We are cleared to Varna via GOL3H departure, runway 27, climb initially FL230, squawk 4747, LZB972.
ATC: LZB972, read-back correct.

Note: This is standard IFR clearance. After coordination with other positions you may give to the aircraft radar vectors or any heading after departure instead of SID, other initial climb (without coordination should be FL240 for westbound aircraft and FL230 for

eastbound in Sofia and 12000 ft for westbound, and 11000 ft for eastbound in Varna/ Burgas). It is mandatory to check if you select the runway and SID from departure list (First you select the runway and after this the SID). Before you gave the ATC clearance to an aircraft you have to check if the filed flight level is correct, even for westbound and odd for eastbound.

Pilot: LZB972 request start-up.
ATC: LZB972, QNH1013 start-up approved.
Pilot: QNH1013, Start-up approved, LZB972.

Note: Correct time stands for the minutes of the hour.
Note: If an aircraft is parked on a stand which requires pushback, pushback clearance together with the start-up clearance. For example: LZB972 Correct time 38, QNH1013, Push-back and start-up approved face East.

Pilot: LZB972, ready for taxi.
ATC: LZB972, taxi to holding point runway 27 via N, J, H.
Pilot: N, J, H to holding point runway 27, LZB972.

Note: You can customize the taxi route however you want, but should use the shortest route to the runway. During the taxi you can give to the aircrafts instruction like: stop taxi, hold position, reconfiguring the taxi route to avoid conflicts with other aircrafts on taxi. You can also give the instruction to an aircraft to give way to other traffic. Example: “Give away to the passing A320 from Bulgarian air charter passing from your left to right on taxiway xxx”.

ATC: LZB972, report ready for departure.
Pilot: We will report ready for departure, LZB972.

Note: This is optional, it shall be used in case an aircraft has advised that it is not ready for departure once at the holding point.

Pilot: LZB972 is ready for departure.
ATC: LZB972, line-up and wait runway 09.
Pilot: Line-up and wait 09, LZB972.

Note: This is optional

ATC: LZB972, when airborne contact Sofia Approach on 123.70, wind 060 degrees 5 knots, runway 27 cleared for take-off. Good bye!
Pilot: Clear for takeoff runway 27, after departure contact Sofia Approach 123.700, LZB972, good bye.

Note: You can jump straight to takeoff clearance should traffic permit this, and if coordination with approach is complete. The coordination with Approach is mandatory, as if the Approach gives you any instruction for aircraft after departure you have to tell them before aircraft entry on the runway (heading, initial climb, etc.). After the takeoff instruction you can tell the aircraft to report airborne and after his report to handoff him to Approach. When you hold an aircraft at the holding point because other is on short final you have to tell the holding aircraft the reason for the hold and information about the landing traffic like distance for example (Example: ”Hold position 09, traffic short final 09, 3 miles”). If it is an aircraft departing and other aircraft approaching holding point you can tell the second aircraft to “hold short runway 09, (departing traffic)”. If the aircraft ahead is rolling you can tell to second aircraft “behind departing traffic, line-up and wait runway 09”. When the first aircraft is airborne, to give the takeoff clearance to the second aircraft you have to wait for the separation. The minimum separation time is 2 minutes between a LIGHT or MEDIUM aircraft taking off behind a HEAVY aircraft and a LIGHT aircraft taking off behind a MEDIUM aircraft to avoid wake turbulence. Also, you have to ensure 4 miles interval between aircraft with the same category, 5 miles interval between aircraft with 1 category difference (MEDIUM before LIGHT or HEAVY before MEDIUM) and 6 miles interval between aircraft with 2 category difference (HEAVY before LIGHT). The moment when you have to coordinate with approach controller is when an aircraft is approaching the holding point. You have to tell the approach the callsign of the aircraft and the departure runway and procedure(SID name or radar vectors).

We suppose BUC1820 is flying from Leipzig to Sofia:

Pilot: Sofia Tower, good evening, BUC1820 on ILS approach runway 27.
ATC: BUC1820, Sofia Tower, good evening, wind is 050 at 4 knots, runway 27 clear to land.
Pilot: Clear to land runway 27, BUC1820.

Note: The extract above is the ideal one. When an aircraft is on approach his landing clearance is influenced by traffic and weather or runway condition. So if the runway is occupied for the moment, there is another landing traffic before the said aircraft or there will be a departing aircraft before the arrival of the above said aircraft, you have to

tell the aircraft to continue approach “BUC1820, continue approach runway 27”. You can also tell him the traffic information: “Number two/three for landing” / “Traffic departing”. When the runway is clear for him you can clear him to land using the phraseology from above. Note:You can give speed restrictions (after coordination with the approach controller!) to an aircraft on approach to ensure time for landing clearance: “reduce minimum approach speed” / “maintain speed 140 (or less)”, however this should be avoided. If the tower controller realises that a landing clearance is not possible(due to the runway being occupied), the tower controller has to issue a go-around instruction. When an aircraft is going around you say for example: “BUC1820 Go around, I say again go around, fly published missed approach” or as the approach controller requests. Thereafter the aircraft shall be transferred to the approach controller. When you give landing clearance you can tell the aircraft which taxiway to vacate on (“Vacate via B”) and also you can tell him to report when the runway is vacated.

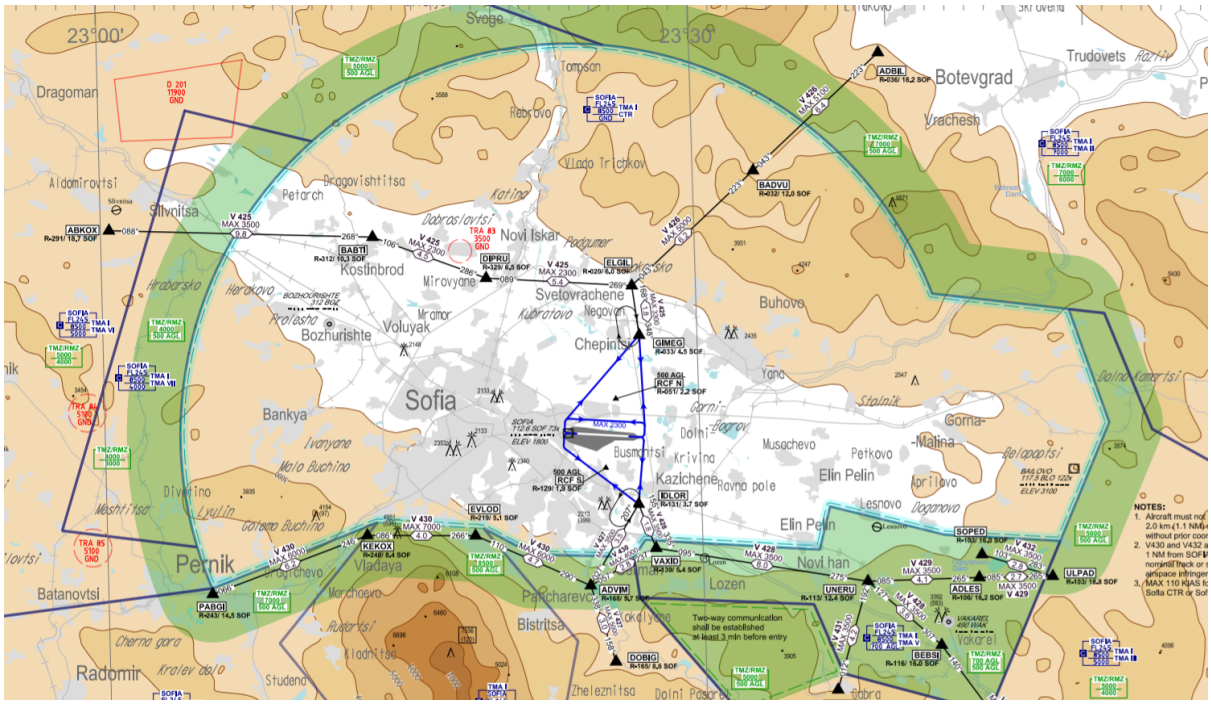
ATC: BUC1820, Taxi to stand 6 via H, J, N.
Pilot: Taxi to stand 6 via H, J, N, BUC1820.

4. VFR

The Aerodrome CTR airspace can quite often experience quite a bit of VFR traffic. A Tower controller controlling a Bulgarian aerodrome holds responsibility over the aerodrome and any traffic within the given CTR. The Sofia CTR starts from the ground and goes up to 8500ft. Any VFR traffic that is within the CTR is considered to be in Bulgarian airspace and is required to be in communication with the Tower controller. Any aircraft intending to enter the controlled zone needs to have a clearance to enter - the same applies for any departing aircraft - they need to have a clearance to leave the control zone.

Sofia Airport has designated VFR departure and arrival routes, found on the visual approach chart:
https://www.bulatsa.com/wp-content/themes/bulatsa-theme/AIP/AD_files

/LB_AD_2_LBSF_59_1_2_3_4_5_6_en.pdf



Aircraft wishing to depart the Sofia CTR in VFR conditions will receive their clearance at the holding point. The aircraft would call Sofia Tower first, requesting engine startup clearance, whilst stating their intentions.

LZ-BGP: Sofia Tower, LZ-BGP request startup clearance, VFR flight to Lesnovo.

ATC: LZ-BGP, startup approved, QNH1026.

At Holding Point:

ATC: LZ-BGP, cleared to leave Sofia control Zone, runway 27 via V428 airway, maintain 4000ft or below, squawk 0204.

LZ-BGP: Cleared to leave Sofia control Zone via V428 airway, maintain 4000ft or below, squawk 0204, and we are ready for takeoff.

ATC: LZ-BGP readback correct, runway 09 cleared for takeoff, wind variable 5 knots, after departure, remain on Tower frequency.

Upon leaving the CTR, the aircraft is no longer a part of Tower's airspace and may therefore leave the frequency as they are leaving the Sofia controlled airspace. If they intend to enter the Sofia controlled TMA airspace, controlled by Sofia Approach, they would have to contact Sofia Approach. Otherwise, they may "freecall" them for a flight information service.

From the chart above, it can be deducted that any aircraft intending to stay within the VFR circuit of the runway needs to maintain a circuit to the north of the airfield (i.e. left-hand circuits for RWY09 and right-hand for RWY27), at a maximum altitude of 2300ft. Just like with VFR departures, the circuit clearance will also be given on the holding point.

ATC: LZ-BGP, after departure join right-hand visual circuit, runway 27, maintain 2300ft or below, squawk 0207.

Typically, an aircraft will report when they are downwind, stating their intentions - this can be full stop landing, touch and go, low approach and more.

LZ-BGP: LZ-BGP, downwind runway 27 for touch and go.

ATC: LZ-BGP, report final runway 27.

The instructions given to the aircraft can vary depending on the traffic conditions within the CTR. All aircraft within the CTR, both VFR and IFR (this can be departing IFR traffic or IFR traffic on final) shall be informed of other traffic within the CTR.

ATC: LZ-BGP, traffic is an Airbus A320 in 5-mile final, runway 27.

LZ-BGP: Traffic in sight, L-GP.

ATC: L-GP, number 2, behind traffic, join final runway 27, caution wake turbulence

ATC: LZB451, traffic is a Cessna 172, on right-hand downwind for runway 27.

Such traffic information can also be given to departing aircraft.

ATC: WZZ463, traffic is a Cessna 172 on right-hand downwind, runway 27 cleared for takeoff, wind is variable at 5kts.

Aircraft intending to enter the control zone follow a similar procedure to VFR departures.

LZ-BGP: Sofia Tower, LZ-BGP, VFR flight from Lesnovo, request clearance to enter the Sofia control zone via V429.

ATC: LZ-BGP, Sofia Tower, cleared to enter the control zone via V428, maintain 3500ft or below, QNH1026, squawk 0206, expect left-hand base runway 27.

31 March 2021