Fourth Edition, June 2025

Beograd (LYBE)

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Contents

1. Overview

The Beograd (LYBE) Standard Operating Procedures (SOP) outline the essential guidelines for air traffic controllers operating on the VATSIM network under VATAdria vACC. The purpose of these procedures is to ensure the quality of virtual air traffic control services provided at Beograd Airport and its associated airspace. All controllers, covering LYBE top-down including all Beograd Airport positions, are required to adhere to these procedures. In alignment with the VATEUD Divisional Training Policy, compliance with the SOP is mandatory. Any violation will be considered a breach of the competency requirements set by VATEUD and the local Training Policy. Beograd is an unrestricted airport and also serves as a training facility, allowing control without special endorsement. However, controllers must be listed on the Active ATC roster and strictly follow the guidelines outlined in this SOP.

This SOP covers operations out of runway 12L/30R. In case runway 12R/30L is used for operations most still applies, check for notes within the SOP regarding specifics of the runway 12R/30L.

For additional information not explicitly covered within the SOP, controllers should refer to the publicly available SMATSA AIP, which provides updated and comprehensive information on the airport.

This SOP consists of five distinct sections:

1. **General Information**: Provides details about the ATC positions at the airport, their frequencies, and when they can be utilized, as well as conditions under which their use is prohibited. Additionally, this section covers service provision on specific positions during events and other situations with expected higher traffic volumes.
2. **Delivery**: Explains duties and responsibilities of controllers operating the Delivery position. It includes procedures for coordination with other controllers, assigning appropriate SIDs for departures, and coordinating those with higher-level stations.
3. **Ground**: Outlines duties and responsibilities of controllers on the Ground position, detailing operational procedures, coordination with other controllers, and ensuring an adequate traffic flow within the controller's Area of Responsibility (AoR). It also addresses coordination, flow management, and communication with a Flow Manager during events with high traffic volumes.
4. **Tower**: Defines duties and responsibilities of controllers at the Tower position. It covers coordination with other controllers, runway selection, handling VFR traffic in the CTR, and other duties specific to the Tower role.
5. **Radar**: Describes duties and responsibilities of controllers on the Radar (Approach) position. This section includes operational procedures, separation of arriving and departing traffic, separation techniques, ensuring minimum lateral separation, sequencing arriving aircraft, handling missed approaches, and the separation of aircraft of different wake turbulence categories.

VATAdria

1.1. Beograd (LYBE) ATC Stations

Delivery	BED	LYBE_DEL	121.975	primary
Ground	BEG	LYBE_GND	118.300	primary
Tower				
Tower	BET	LYBE_TWR	118.100	primary
Flow Manager	--	LYBE_FMP	--	Airport wide flow management
Approach				
Radar	BER	LYBE_APP	133.100	primary arrival
Final	BEF	LYBE_F_APP	119.100	primary feeder, operates only on BER approval or during events on request of FMP.

Beograd ATIS (BEI) shall be implemented by BET or higher stations if online (BER or higher). In the absence of other controllers, BEG shall be responsible for implementing ATIS to inform pilots of the operational runway in use.

Beograd Delivery (BED) shall be staffed **only during high-traffic situations or events**, provided there is at least a GND controller connected. It is in VATAdria's interest that controllers with an S1 rating connect to GND to provide ATC services within their Area of Responsibility (AoR). The Delivery position plays an important role by coordinating airport traffic flow with the Ground controller, releasing aircraft for pushback only when approved by BEG. During regular operations, BED will serve as the clearance delivery position to relieve BEG of unnecessary frequency time spent on providing ATC clearances.

Beograd Ground (BEG) shall be staffed independently of other stations online by any controller on active ATC roster with rating S1 or higher. BEG is responsible for traffic flow within their AoR. It is important to organize traffic flow, expedite ground movements and relieve BET and BER of unnecessary high traffic volume for departures, congesting the holding point. BEG is responsible also to LYBE_FMP if connected to secure correct times for pushback, coordinate necessary clearance changes, secure slotting works (if implemented etc).

Beograd Tower (BET) is responsible for selecting the active runway(s) in coordination with adjacent ATC units and ensuring smooth runway operations. BET shall communicate the active runway to all controllers and pilots and adjust based on wind conditions and operational needs. BET must keep close coordination

with Ground (BEG), Radar (BER), and other relevant ATC positions to ensure seamless traffic flow. This includes coordinating arrivals and departures with Radar controllers, ensuring efficient handoffs, and managing runway crossings in collaboration with Ground. BET shall manage all VFR (Visual Flight Rules) traffic within the Control Zone (CTR). This includes providing instructions for takeoffs, landings, and transits, as well as handling VFR departures and arrivals, ensuring compliance with flight paths and altitudes within the CTR. BET must ensure clear and precise communication with all aircraft within its AoR and hand off departing aircraft to Radar (BER) or other relevant positions. Similarly, BET will receive arriving traffic from Radar (BER) and provide landing clearances. BET must continuously check weather conditions, including wind speed, visibility, and any potential hazards such as thunderstorms. BET should adjust runway usage and issue necessary advisories or warnings to pilots based on current weather conditions.

Beograd Radar (BER) handles providing radar-based separation between arriving, departing, and transitioning aircraft within its Area of Responsibility (AoR). BER must ensure the minimum required horizontal and vertical separation between aircraft, following the established separation standards. BER handles efficiently sequencing arriving aircraft to ensure a smooth flow of traffic toward the airport. This includes coordinating with neighboring radar sectors and arranging aircraft in an optimal sequence for final approach. BER must consider wake turbulence separation, aircraft speeds, and operational requirements when managing this sequence.

Beograd Final (BEF), also known as “Director,” will be staffed only upon request from BER or a higher station and only during periods of high traffic volume. BEF should be staffed only if BET is online to provide CTR operations, and it will not provide top-down service. The primary responsibility of BEF is vectoring and sequencing aircraft into the ILS/RNP within their TMA, as defined by this SOP, ensuring that separation is maintained according to AIP-defined standards in the LYBE TMA.

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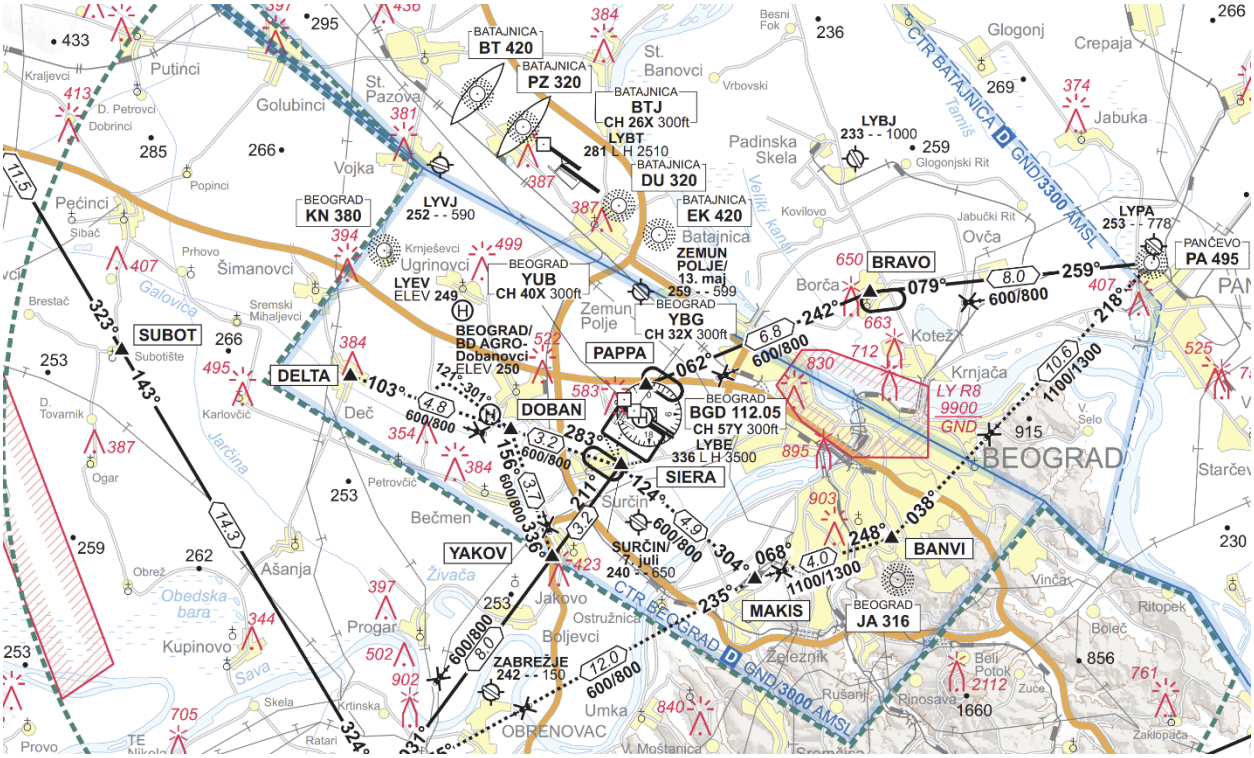
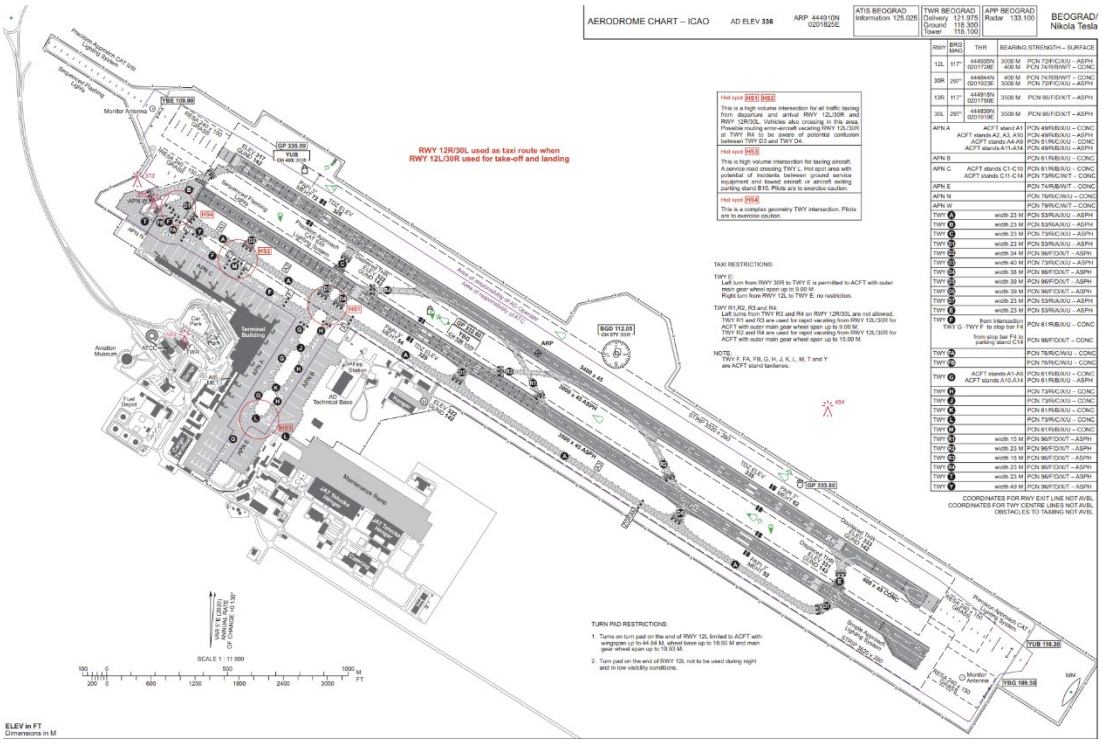
1.2. Beograd CTR





Pictures taken from SMATSA AIP – available here

1.3. Airport Capacity: Hourly Operations Overview

Beograd (LYBE) has a single runway, designated 12L/30R. The runway is defined according to the SMATSA AIP, with a length of 3,400 meters and a width of 45 meters. Both runway 12L and 30R are equipped with ILS, with runway 12L exclusively used for LVP (Low Visibility Operations).

Beograd (LYBE) features a set of RETs (Rapid Exit Taxiways), allowing aircraft to vacate the runway at speeds of 60-70 knots. This reduces runway occupancy time, enabling a minimum separation of 3 nautical miles for inbound traffic, as specified in the AIP.

In cases where runway 12L/30R is inoperative due to an incident or is closed by a specific NOTAM, runway 12R/30L will be used for traffic operations. In all other cases, this runway is used as a taxiway.

Longest Arrival Route: As per SMATSA AIP, the longest arrival is RIGMU2D for runway 30R, which is 115 Nm. The time required for the longest arrival, without shortcuts and using an average speed of 210 knots as defined in the AIP, is 33 minutes.

If we consider a 1:1 ratio of arrivals to departures, the runway time for each arrival and departure cycle would be 4 minutes (2 minutes for an arrival, 2 minutes for a departure), giving us a total of 15 cycles per hour. This means that we can handle 8 arrivals and 8 departures per hour, regardless of the airport's operational direction.

With proper speed management by Arrival Controllers, Beograd (LYBE) can handle around 20-22 arrivals per hour **if handling arrivals only**.

If traffic exceeds this, controllers should consider opening published holding patterns to relieve pressure on Tower and Approach controllers.

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2. Delivery

Beograd Delivery is responsible for enroute clearances for all departing IFR aircraft. **VFR aircraft have to call Delivery for departure information**. For all departures (IFR and VFR) Beograd Delivery is the first station to contact.

Euroscope: Delivery shall ensure that the initial climb for departure is properly set and that the correct SID is coded into the flightplan (**every flightplan needs to be checked**). When clearance is issued the clearance received flag need to be set to „OK".

Events: For events, Delivery has a very important role regarding the efficient flow of traffic at the airport. Check the usage of slots (if any) and communicate further with Flow Manager. Traffic needs to report ready for push and start on Delivery frequency before being transferred to Ground controller. In case of MDI (Minimum Departure Interval) Delivery is responsible not to hand off traffic to Ground before necessary time passed according to MDI using this principle:

1. First traffic calls, gets released when calls for push and start.
2. Second traffic calls, gets released 1 minute before MDI passes.
3. Third traffic calls, gets released 1 minuted before MDI compared to second departure etc.

In all cases, release by BEG is mandatory for startup and pushback.

Coordination: When ready to release the aircraft to the Ground controller and only after aircraft confirmed ready for push and start (or startup and powerback in case of a turboprop) Delivery shall contact Ground.

Delivery: Ground for Delivery
Ground: Go ahead
Delivery: ASL123 ready for push and start
Ground: Released – in case that handoff is permitted, or in case handoff is not permitted

Ground: Standby, due to traffic, expect start and push in X minutes.

Always provide reason for standby – never only „standby"

Controller shall always confirm that they understood instruction by responding with „standing by".

Example of clearances given in Beograd (LYBE):

ASL54K: „Beograd, hello, ASL54K, stand A5, information A, destination LSZH, ready to copy clearance"

BED: „ASL54K, Beograd Delivery, dobar dan, **CLEARED TO DESTINATION**, TISAK3Z departure, runway 12L, climb initially 6000ft, squawk 5260"

ASL54K: reading back the clearance

BED: „ASL54K, CLEARANCE COPIED CORRECTLY" or „COPIED CORRECTLY"

This differentiates from ICAO 4444 and is a part of local procedures.
„Hello, dobar dan, dobro jutro, good morning, good day, good evening" is a courtesy only and not part of standard phraseology.

2.1. SID Assignment

RW	Direction	Clearance limit	Preferred SID	Initial climb	Remark
12L/12R	North	**TISAK**	**TISAK3H**	6000	ALWAYS aim to issue TISAK3Z. TISAK3H remains if aircraft is unable to achieve climb gradient for TISAK3Z. If aircraft is unable for GNSS – issue **TUVAR4N**
	Southwest	**VALJEVO (VAL)**	**VAL3F**	6000	If requested due to sequencing, VAL3D on request from BER
	Southwest	**TOPOLA (TPL)**	**TPL3D**	6000	if requested due to sequencing, TPL3G on request from BER
	East	**DONIV**	**DONIV3N**	6000	Prefered direct to LYBA FIR exit point when possible (e.g. to NISVA)
	Northeast	**PELOV**	**PELOV3F**	FL130	
	Northwest	**TADAM**	**TADAM3L**	6000	To be assigned by ATC only, and only if NOTAM is active so TISAK departure can't be assigned. Proper issued reclearance also means that controller need to change the exit point from LYBA in the flightplan (e.g. from PARAK to TONDO). Conventional departure to TADAM is **TADAM5Y**
	West	**TUVAR**	**TUVAR3L**	6000	Aircraft to receive direct to TUVAR as soon as possible
30R/30L	North	**TISAK**	**TISAK3L**	6000	If NOTAM not active, reclear via TISAK3S in coordination with BER
	Southwest	**VALJEVO (VAL)**	**VAL3J**	6000	If unable due to traffic situation, reclear via **VAL3Z** but plan a direct to **VAL** when able
	Southwest	**TOPOLA (TPL)**	**TPL3W**	6000	If unable due to traffic situation, reclear via **TPL3R** but plan a direct to **TPL** when able
	East	**DONIV**	**DONIV3W**	6000	If unable due to traffic situation, assign this departure and BER vectors aircraft to DONIV during climbout phase.
	Northwest	**TADAM**	**TADAM3Z**	6000	Only when NOTAM north of LYBE is active, otherwise reclear via TISAK
	West	**TUVAR**	**TUVAR3V**	6000	Assign direct TUVAR as soon as possible.

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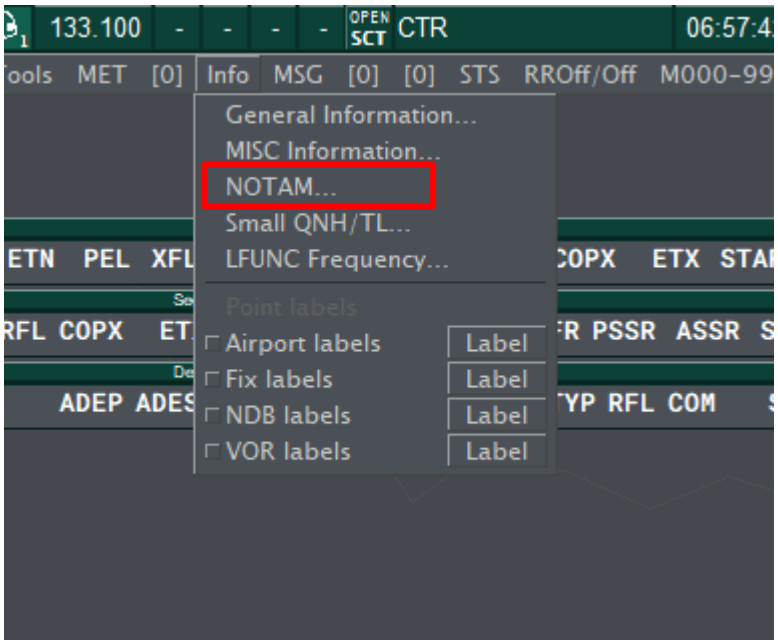
All controllers must obtain a release for a different SID if it differs from the preferred one. The release is given by BER or a higher station before the clearance is issued. If there is a need to change the clearance after the clearance flag has been set, it must be released by BER or a higher station or done upon request from BER.

The delivery controller should be mindful of airspace restrictions, particularly regarding the activation of **any NOTAMs due to military activity north of the field**. Information about NOTAMs must be provided by a higher station.

To activate the NOTAM, you need to use the following menu in Topsky and switch to the APP view to see whether any restricted zones are active and where they are located (to check if they affect your departure routes). If BER is online, it is the duty of the Approach controller to inform the respective lower stations about the closed airspace – as well as about the closure of the same zones.



PELOV departures (available only for runway 12L) shall be assigned at the discretion of ATC only.

If re-clearance is given due to active NOTAM north of the field, re-clearance shall always be issued like in example below:

Delivery: ASL54K, reclearance ready, advise when ready to copy.

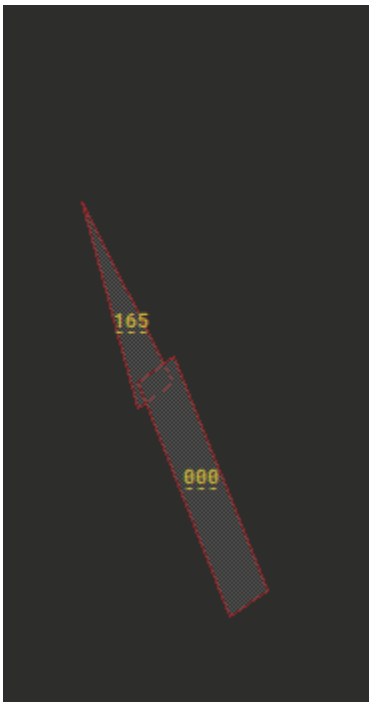
ASL54K: Ready.

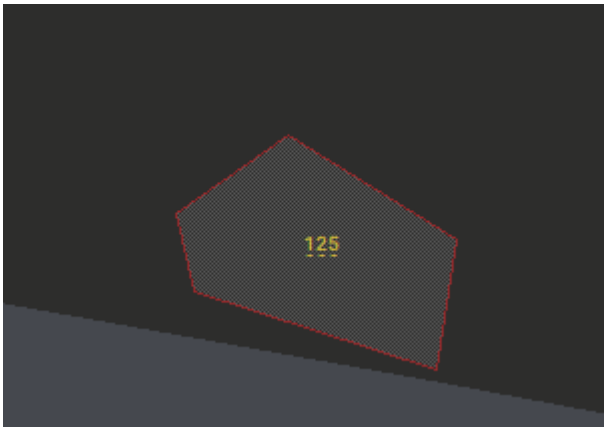
*Delivery: ASL54K, **recleared via TADAM3G departure due to special traffic north of the field**, rest of the clearance remains unchanged.*

ASL54K: Reads back the instruction.

REMEMBER: In reclerance you are to state only the parts of the clearance CHANGED from the initial ATC clearance!

The following picture illustrates how restricted airspace looks and is shown in APP view of your respective Euroscope window. The numbers 165 and 125 underlined by a line represent the maximum flight level up to which this zone is active. The red line indicates the lateral boundaries of the zone, showing where it extends laterally, while the numbers indicate the vertical limits of the zone. This is particularly important for BER, as traffic must not pass through these zones if it is below the maximum altitude defined within the zone itself.





2.2. Selection of runway in use

Runway in use is the sole responsibility of BET or higher station. TWR controller shall inform Delivery through coordination channels about the runway in use and expected departures. In case APP controller (BER) is requesting a different departure compared to the preferred one as stated in the table below, for the whole duration of event or a session, release shall be given upon connecting.

BEG (Ground) cannot decide on the runway in use, as it is not within their AoR. If only BEG is staffed, it is allowed for BEG to open the ATIS with the runway in use; however, this is subject to change upon request from BET or a higher station.

2.3. Datalink Clearance (PDC/DCL)

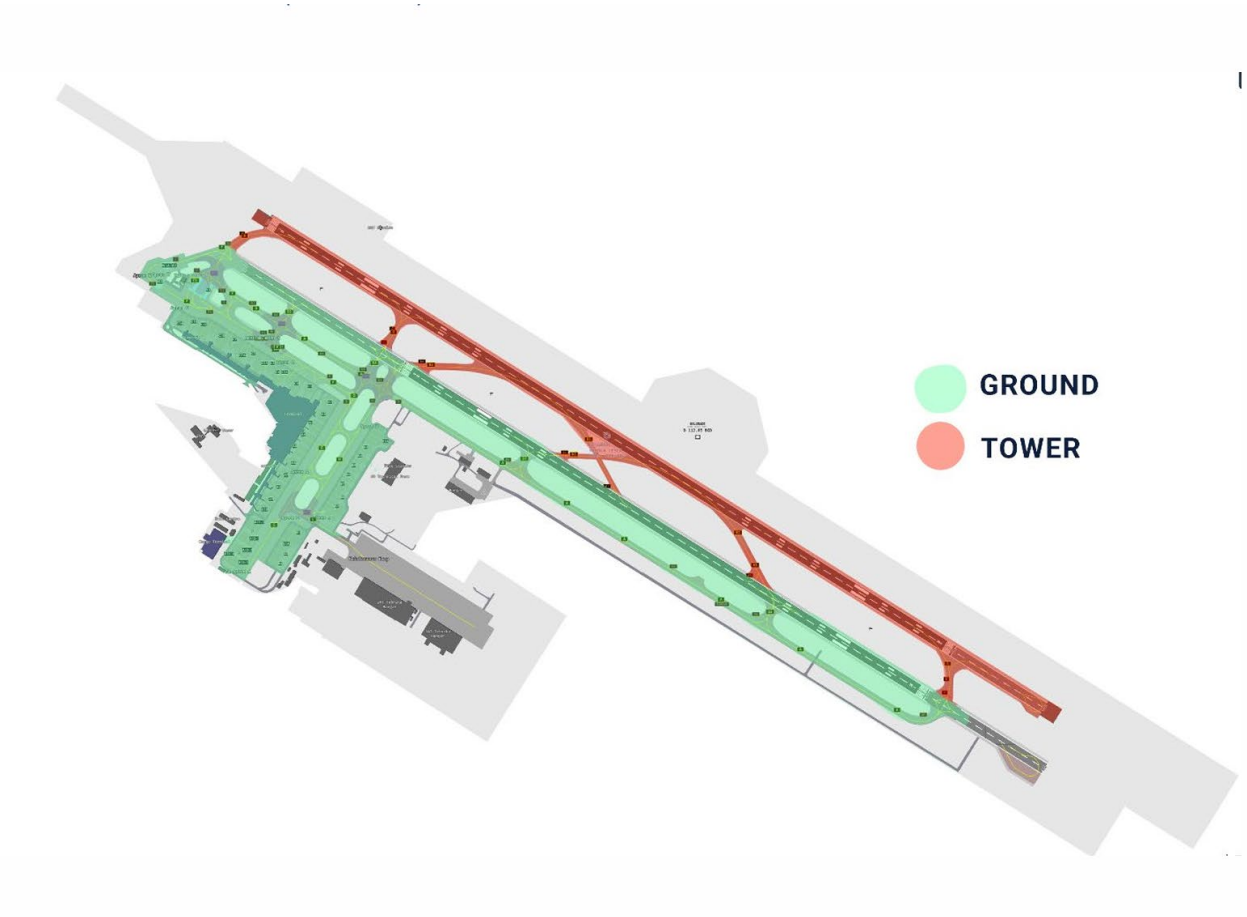
At Beograd Datalink Clearance is provided to pilots throughout the Hoppie System and the Topsky plugin implemented in VATADRIA Sector file. The airport code LYBE should be used.

3. Ground

Beograd has one ground station responsible for all ground movements including but not limited to:

- Enroute clearance delivery (if no BED online),
- Startup and pushback clearances,
- Taxi clearances within BEG AoR (Area of Responsibility),
- Arrival traffic taxi to stand instructions,

3.1. Area of Responsibility



Under the jurisdiction of "Ground" air traffic control at Beograd Airport (BEG) are:

1. Taxiway "A" - the main taxiway from holding point "B" for runway 12L to holding point "E" for runway 30R. In the case of operations with runway 12R/30L, BEG's jurisdiction extends from holding point "D1" to holding point "D7." **When runway 12R/30L is used for taxiing, this runway is under BEG's jurisdiction.**
2. Taxiways on the airport's maneuvering areas "G," "H," "F," "K," "L," "J."
3. Operations on stands C1-C14, A1-A10, general aviation stands, E1-E4 including E1A, stands B1-B9.
4. **Operations of any aircraft at "MAINT - Maintenance" positions are NOT under the jurisdiction of air traffic control.**
5. **Runway 12R/30L is under competence of BEG at all times when not used as a runway (due to closure of main runway 12L/30R).** Do note however that BET shall always receive traffic ready for departure as soon as they reach „A“ or runway 12R/30L if clear of traffic. Same applies for arrivals – if no potential conflict aircraft will be handed off to BEG as soon as they leave the runway – always act proactively and observe traffic situation as it is essential.

Ground control is responsible for ensuring constant and unobstructed traffic flow within its sector, especially concerning the maneuvering areas of the Apron (ramp).

3.2. Mode of Operations

Pushback:

At any given time, the BEG controller will take the following into account:

1. For aircraft on **apron "A"**, no more than **2** pushback instructions will be issued simultaneously. Simultaneous pushback is possible if there is at least one empty stand between the two aircraft. For example, a simultaneous pushback instruction can be issued for an aircraft on stand A1 and an aircraft on stand A3, provided that both aircraft are in the **MEDIUM** category.

If a heavy aircraft is parked on stand A1 (up to the limit of B757-A310-B767), a simultaneous pushback instruction can only be issued to an aircraft on stand A4 or further.

The pushback instruction is issued as follows:

"ASL54K, startup pushback approved, facing north/south, runway 12L, QNH 1013."

Issuing the current airport pressure (QNH) is mandatory with this instruction and should be issued ONLY at this time, unless there is a change in QNH pressure.

2. For aircraft on **apron "C"**, no more than **4** pushback instructions will be issued simultaneously. Simultaneous pushback is possible if there are at **least 2 empty stands** between the aircraft, except in the case of HEAVY aircraft – use common logic to establish a necessary clearance for simultaneous pushback of HEAVY and a MEDIUM at the same time, taking into account a heavy wingspan.

If a pushback is being conducted for a HEAVY aircraft, ensure that there are at least two empty stands between other aircraft in the pushback process.

On apron C, the instruction for "facing East/West" is given depending on the runway in use, the intersection from which the tower wants the aircraft to depart, and to expedite the traffic flow.

Aircraft will not be pushed back if it is foreseen that they could be in conflict during the process of entry onto taxiway "A."

3. For aircraft on **apron "B"**, a maximum of two simultaneous pushback instructions will be allowed. For aircraft types such as ATR, DH8D, or similar turboprop aircraft, engine start on the stand position and self-propelled pushback ("powerback") will be approved. This is ONLY possible if there are at least two empty stand positions between the aircraft conducting the self-propelled pushback. If the pushback is conducted via a tug, i.e., "pushback," one empty stand is sufficient.
4. For aircraft on **apron "E"**, only one self-propelled pushback ("powerback") or pushback is allowed at any given time. If an aircraft is being pushed back from apron "E," taxiing or exiting from the general aviation position is prohibited until the aircraft on position "E" begins its taxiing. **All aircraft from apron "E" will taxi via route "L" - "H" and further as instructed.**

For turboprops powerback from „B“ or „E“ apron, if a pilot requests to start taxiing after completed powerback it shall be permitted in case there is no conflicting traffic on the same apron.

Example:

Ground: ASL54K, powerback approved, facing north, **once completed** taxi via H, hold short A *or*

Ground: ASL54K, powerback approved, facing north, **once completed** taxi via H, A to holding point E runway 30R (or holding point B runway 12L).

Please do note – if there is a conflicting traffic, another powerback ahead or an aircraft that is already been issued with a taxi clearance in front of the traffic, you can always use conditional clearance.

Ground: ASL54K, powerback approved, facing north, once completed taxi via H, A, to holding point E runway 30R (or holding point B runway 12L), ***give way to company Airbus A320 coming left to R via J.***

Taxiing:

Aircraft entering taxiway "A" will taxi toward one of the holding points for the runway in use. **It is mandatory to hand the aircraft over to BET (Tower) once the aircraft is on taxiway "A," provided that:**

1. We know there will be no conflict with arriving traffic on the active runway.
2. We know there are no operations in the opposite direction where potential conflicts may arise.
3. **To secure smooth and efficient traffic flow.**

Runway 12R/30L is used as a taxi route and as such responsibility for operations at this runway is within Beograd Ground (BEG). If runway 12R/30L is used as operational runway it is mandatory to handoff traffic on „A“ as soon as operationally possible, with previous coordination with BET.

Ground shall NOT clear any traffic into the HOLDING POINT. If no BET online, BEG shall release traffic BEFORE they reach ANY HOLDING POINT.

- keep the traffic flow dynamical and use conditional instructions as often as practicable. Resolve a hold short with a conditional instruction as soon as practicable.
- you may deviate from the default taxi flow (coordination might be required) to enable an efficient flow (e.g.route aircraft from A apron via taxiway H to clear inbound traffic arriving to G and subsequently apron A)
- you may have to adjust the routing to avoid conflicts and holdshorts
- you have to monitor taxiway M and the holding points to see what you can expect entering your sector within the next minutes

Refer to SMATSA AIP – when runway 12R/30L is used for taxiing, there is NO NEED to request a runway crossing clearance from BET or handoff to BET.

Runway and RET Operational Integration for Ground

With the implementation of Rapid Exit Taxiways (RETs) into daily operations at Beograd (LYBE), Ground controllers must adapt taxi instructions accordingly to support efficient runway vacation and expedite surface movement:

RET Utilization Awareness:

When Tower (BET) is utilizing RETs (R1–R4) for arrivals, Ground (BEG) must anticipate runway exit points and adjust taxi instructions based on aircraft type and expected runway vacation:

• For Runway 12L, expect exits via R1 or R2.

• For Runway 30R, expect exits via R3 or R4.

• Use real-time awareness and coordination with BET to determine exit points when not explicitly provided by the pilot

RET Exit Restrictions for Ground Consideration:

• RETs R1 and R3: Only usable by aircraft with wingspans up to 24 meters (e.g., regional jets, turboprops).
o Exception: ATR 72 series aircraft are permitted on R1/R3 only if operator confirms landing distance performance of less than 1200 meters.

• RETs R2 and R4: Usable by aircraft with wingspan up to 52 meters.

• Heavy aircraft must be expected to vacate at either „C“, „B“ or „E“

Best practices:

Optimize for shortest route while avoiding hotspots (especially HS1 and HS3 around D3/D4 and RETs).

Use 12R/30L strategically to:

• Reroute traffic between RETs and stands without crossing active arrival/departure paths.

• Separate outbound and inbound flows.

Hotspot Conflict Mitigation:

HS1 (R4/D3/D4 area): High risk of route misidentification.

• Always confirm if the pilot is on D3 or D4, especially when vacating via R4.

3.3. Coordination

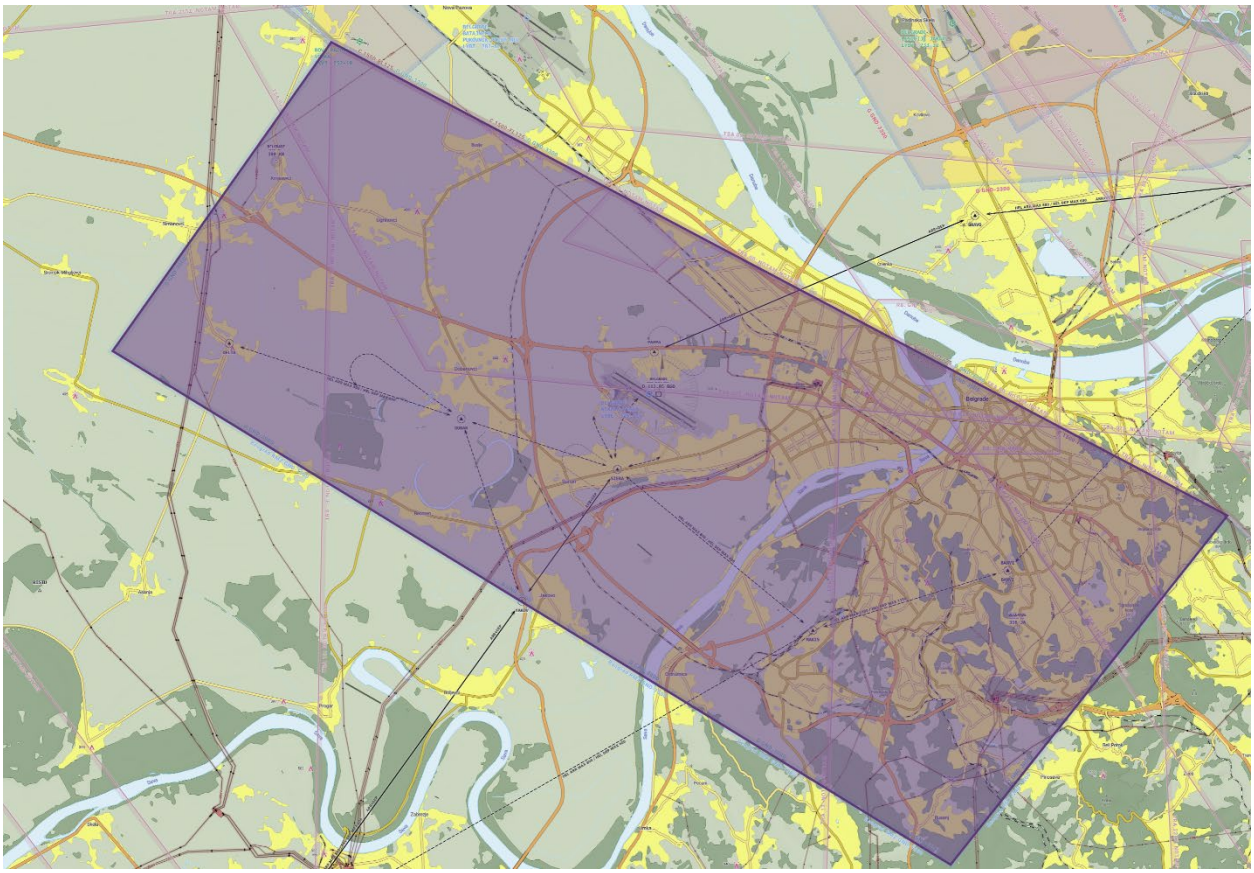
During periods of expected high traffic, whether during regular operations (non-event) or during events with anticipated high traffic, BEG must always conduct operations in a manner that accommodates and relieves BET and BER of congestion at the holding points or within the TMA. Traffic shall only be released with approval from a higher station or upon request from FMP.

Except in cases of LVP, you are permitted to have more than 2 aircraft at the holding point, however do have in mind not to congest other adjacent taxiways, or to prevent movements elsewhere. Coordination and common sense is mandatory.

During events with expected high traffic volumes, VFR traffic may be delayed. **Always provide a reason for the delay and the expected wait time is permitted according to VATSIM Code of Conduct B12.**

4. Tower

Beograd Tower (BET) represents a single station handling all movements within Beograd (LYBE) CTR in their lateral and vertical boundaries.



Beograd Airport (LYBE) has CTR within Class „D“ airspace with vertical limit of 3000 feet AGL.

Please refer to SMATSA AIP for runway characteristics, declared distances etc.

4.1. Runway Usage

Beograd Tower is responsible for the direction of operations. The preferred runway in use shall always be 12L due to the installed CAT III approach system and to prevent noise over populated areas (such as those near runway 30R).

Runway 30R can also be offered if there is a significantly greater number of inbounds from the south and southeast, or to accommodate shorter taxiing times—this shall be coordinated with BER and always considered for sequencing reasons.

Runway 12L shall always be selected as the runway in use with a tailwind component of up to 5 KTS.

If it is more convenient for a pilot to depart from runway 30R, coordination with BER is required and approval will be given if feasible and **if it would not cause a delay to other aircraft awaiting their departure from the opposite runway.**

Intersection departures shall only be allowed if they contribute to a more optimized traffic flow (e.g., aircraft ready for departure near an intersection while an inbound aircraft is close to the OM for runway 12L). In all other cases, taxi clearances shall be given for the full length of the runway—intersection departures are permitted only if they accommodate the controller and upon a pilot's request.

Do note intersection departures are possible only for runway 12L and only via „C". Departures out of RETs are not permitted. Once SMATSA defines TODA out of any RET we will reconsider and eventually publish changes/ammendments to this SOP.

4.2. General Procedures

Modes of Operation: BET must coordinate with BER regarding any out-of-the-ordinary operations taking place at Beograd. **No visual approaches shall be allowed without BET approval. Visual approaches shall not be permitted if there is a sequence of a minimum of two aircraft within 15 NM of the ARP.**

ILS approaches are preferred for operations in Beograd both for runways 12L and 30R.

RNP can be approved without coordination, on aircraft crew request.

Separation: Initially BER (or BEF) are responsible for separation until transfer of communication. **The minimum separation between two aircraft approaching the same runway shall be 3 Nm. Usage of rapid exits shall be announced within the ATIS as well.** In cases of **LVP (Low Visibility Procedures)** minimum separation shall be **8 Nm** always.

When transfer of communication is completed, Beograd Tower is responsible for maintaining separation, if necessary by use of adequate means (e.g. speed control), of arriving traffic from transfer of communication until touchdown or during the initial part of missed approach.

BET (Tower) is allowed to use APP view screen in order to view position of the aircraft within their CTR, and also to provide precise traffic information (e.g. traffic 12 o'clock, 3 Nm – for example). BET shall NEVER use APP view to provide vectors, issue climbs or to provide any sort of work regarding Radar service. For any instructions like the ones mentioned above coordination with BER is mandatory at all times. If no other Radar station is online, APP view shall again only be used for the purposes of situational awareness and NOTHING else.

By clearing an aircraft for approach, aircraft is automaticaly cleared for the missed approach procedure as well. **Aircraft shall always fly missed approach procedure as published.**

Exceptions from this rule are possible on request by BER however runway heading in missed approach shall be given only in extraordinary circumstances. In all other cases missed approach shall not be coordinated separately – as it is published on the approach procedure chart.

4.2.1. Positive Radar Identification

In accordance with **ICAO Doc 4444 (PANS-ATM), Chapter 8**, the following methods are approved for the **positive identification of aircraft** using radar services at LYBE. These procedures shall be applied by all radar-capable positions, including **LYBE_APP, LYBE_F_APP, and LYBE_TWR**, when providing ATS surveillance services on the VATSIM network.

An aircraft shall be **positively identified** using one or more of the following methods, as defined in **ICAO Doc 4444, §8.6.3.1**:

4.2.1.2. Correlation with a Position Report (ICAO 4444 §8.6.3.1 a)

An aircraft may be identified by correlating a particular radar position indication with a pilot position report stating that the aircraft is over, or directly over, a known ground reference point that is depicted on the radar display.

4.2.1.3. Transfer of Radar Identification (ICAO 4444 §8.6.3.1 b)

Radar identification may be transferred from one controller to another, provided that **both controllers are satisfied** with the correct identification of the aircraft. This is often achieved through a **handoff function** in the radar system (e.g., TopSky).

4.2.1.4. SSR Code Correlation – including IDENT (ICAO 4444 §8.6.3.1 c)

Radar identification may be established by using SSR transponder information in one of the following ways:

- **Assigning a discrete SSR code** and observing the radar return with that code.
- Instructing the pilot to **"squawk IDENT"** and observing the corresponding IDENT response on the radar screen.

4.2.1.5. Observing a Departing Aircraft (ICAO 4444 §8.6.3.1 c) 2)

An aircraft may be identified by **observing its departure** from a known runway and correlating its radar return with the expected position and time of departure.

4.2.1.6. Change of SSR Code (ICAO 4444 §8.6.3.1 c) 3)

The aircraft may be instructed to **change to a specific transponder code**, and the identification is established once the controller observes the radar return with the new code.

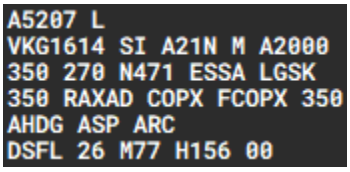
4.2.1.7. Passing Over a Navigational Aid or Fix

This method is considered a specific application of **§8.6.3.1 a)**, where the aircraft is identified by passing over a known **navigational fix or VOR/DME station** visible on the radar display and reported by the pilot.

4.2.1.8. Position Relative to a Known Aircraft

While **not explicitly defined as a standalone method** in ICAO Doc 4444, identification may be supported by observing an aircraft's position relative to another **previously identified aircraft**, especially if the aircraft are in proximity or following the same route. This technique may be used with **caution** and in combination with other methods above.

4.2.2. Labels (e.g. Tags)



Line-by-Line Breakdown of the TopSky Label:

Line 1: A5207 L

- **A5207** – The aircraft is currently **squawking 2000** (Mode A code).
    - **Note:** The aircraft has a **squawk warning**, which usually means the transponder code is **not the correct one** or was **not changed** as instructed and it should be advised to set squawk to **5207**
- **L** – This indicates the aircraft's **RVSM status** or **transponder status**, depending on configuration.
    - In some setups, **"L" may mean level confirmation** received or that transponder is Mode S equipped.

Line 2: VKG1614 SI A21N M A2000

- **VKG1614** – Aircraft callsign.
- **SI** – This will show either a station keeping the label now (working with the aircraft) or if you are working with the aircraft, it will show you what is the next station that should receive an aircraft. Controllers are required to check & eventually change the receiving station, so the tag does not get transferred to an incorrect frequency.
- **A21N** – Aircraft type: **Airbus A321neo**.
- **M** – Wake turbulence category: **Medium**.
- **A2000** – Current squawk.

Line 3: 350 270 N471 ESSA LGSK

- **350** – **Current Flight Level** – Mode C reported
- **270** – **Assigned Flight Level**
- **N471** – Aircraft ground speed
- **ESSA** – Departure airport (**Stockholm Arlanda**).
- **LGSK** – Destination airport (**Skiathos, Greece**).

Line 4: 350 RAXAD COPX FCOPX 350

- **350** – Requested flight level
- **RAXAD** – FIR Exit waypoint
- **COPX** – Coordinated exit point (for sector handoff).
- **FCOPX** – Flight's filed exit point from the current sector (Future COPX).
- **350** – Coordination level (expected FL at exit point).

Line 5: AHDG ASP ARC

These are sector controller tools (depending on configuration):

- **AHDG** – Assigned Heading (if being radar vectored).
- **ASP** – Assigned Speed (if under speed restriction).
- **ARC** – Assigned Rate of Climb/Descent (used in tactical vectoring).

In this label, they are empty, meaning no vectors, speed, or rate are assigned.

4.2.3. Tower Departure procedure

Upon receiving radio communication from the handed of aircraft (e.g. from BEG), BET shall:

1. Check the Squawk Code

- **Verify that the aircraft is squawking the correct discrete SSR code** assigned by Clearance Delivery or Ground.
- This is done by visually confirming that the **label matches the callsign** and the **code is correct**.

If the squawk is correct:

No further squawk action needed.

If the squawk is incorrect or not received:

Issue the instruction:

- *"ASL54K, set squawk 5206"* (or the correct assigned code).
  Once the correct squawk appears on the radar display, the aircraft can be identified later on.

2. Assume the Radar Label

- Once the **squawk is verified** and the radar return is consistent with the **expected departure**, **assume the tag** (via TopSky).
- This action confirms radar identification in accordance with:
    - **ICAO 4444 §8.6.3.1 c) 2)** – Observing a Departing Aircraft from a Known Runway
    - Optionally supported by squawk IDENT or direct SSR code correlation

3. Positively Identify the Aircraft

- Once the label is assumed and departure observed:

Use phraseology:
"ASL54K, identified"

This confirms the **aircraft is radar-identified**, per ICAO requirements.

4. Transfer to Next Station

- Immediately after identification, **handoff the aircraft** to the higher radar unit (e.g., **BER**, **LYC**, or other sectors), depending on configuration and traffic.

Use standard phraseology:
"ASL54K, identified, contact Radar 133.100"

4.2.4. Low Visibility Procedures (LVP)

Low Visibility Procedures: In case of LVP (Low Visibility Procedures) that is triggered when RVR at TDZ or midpoint (refer SMATSA AIP) reaches values of less than 550 metres, and cloud base/vertical visibility is less than 200m (60ft), runway 12L **shall always** be used together with equipped CAT III APP ILS.

LVP operations shall always be included in the ATIS together with RVR at touchdown zone (RVR is in real life reported at 3 points along the runway, unfortunately VATSIM does not allow us to do so as well).

In case of LVP, all taxiing aircraft shall hold at CAT III Holding points to avoid interference with ILS Critical Area. There can only be 2 aircraft taxiing on „A" and 2 aircraft taxiing on runway 12R/30L. **In case of a heavy taxiing either on „A" or runway 12R/30L there will not be any taxiing aicraft on adjacent taxiway.**

Aircraft shall mandatory vacate the runway via „E" or „C" and taxi either runway 12R/30L or via A, according to controller instruction. Aircraft needs to inform that runway is vacated.

LVP Phraseology:

LVP shall be announced both in the ATIS and via voice on the active frequency.

Aircraft: Beograde dobar dan, ASL54K, ILS 12L
Tower: ASL54K, dobar dan, Beograd Tower, **low visibility procedures in progress**, continue approach 12L, wind 120 degrees 5 knots, RVR TDZ 270 metres, report **4 mile final** (this is the OM).
Aircraft: reads back instruction and reports 4 mile final
Tower: ASL54K, cleared to land 12L, wind 120 degrees 5 knots, RVR TDZ 270m, **report on ground**
Aircraft: Cleared to land RW12L, reporting on ground, ASL54K
Aircraft: On ground, ASL54K
Tower: ASL54K, roger, vacate via E
Aircraft: Roger, will vacate E, ASL54K
Tower: ASL54K, report vacated.

Aircraft: Runway vacated, ASL54K

Once vacated the aircraft shall be instructed to hold red bars at **ZORAN** (check SMATSA AIP) and is transferred to BEG.

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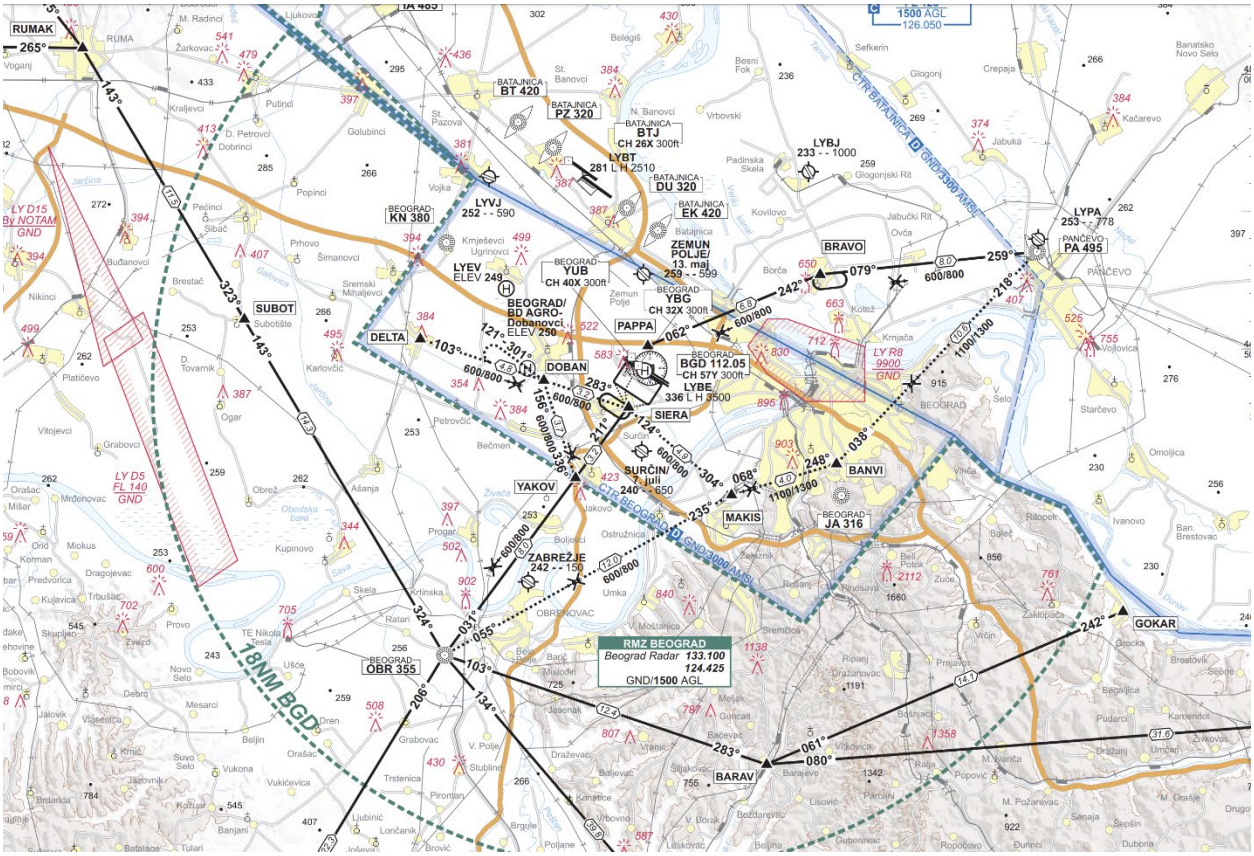
4.3. VFR traffic



Picture taken from SMATSA-AIP

Mode of operations:

Please do note – within Beograd FIR – usage of allocated VFR levels (with 500ft increments) is not used.

VFR traffic in the Beograd CTR will fly at altitudes within the vertical boundaries of the CTR. The assigned altitude can be based on the flight plan or at an altitude where the airport elevation (340 feet) is used as a reference.

VFR traffic in the Beograd CTR can perform maneuvers on the runway, such as touch-and-go, stop-and-go, low pass, etc., and may also fly routes that either exit or enter the Beograd CTR.

Flights primarily related to operations on the runway at Beograd Airport are the responsibility of BET, and such flights will be conducted with BET's approval.

Flights that are leaving/entering the Beograd CTR will exit/enter exclusively via the following VRP points, as specified in the SMATSA AIP.

Departure to the north, northeast: takeoff, entry into the traffic pattern, PAPPA - BRAVO. The exit from the CTR between the PAPPA and BRAVO points must be coordinated with BER, including mention of the

flight altitude and the next waypoint. If BER accepts that the aircraft leaves the CTR, after passing and reporting the PAPPA point, communication transfer between BET and BER will be performed. If BER requests a delay, the aircraft will enter an orbit over the PAPPA point, waiting for clearance.

Departure to the west, south, southwest: takeoff, entry into the traffic pattern, route SIERA - YAKOV. The exit from the CTR between the SIERA and YAKOV points must be coordinated with BER, including mention of the flight altitude and the next waypoint. If BER accepts that the aircraft leaves the CTR, after passing and reporting the SIERRA point, communication transfer between BET and BER will be performed. If BER requests a delay, the aircraft will enter an orbit over the SIERRA point, waiting for clearance.

Orbiting above the BRAVO and YAKOV points is prohibited unless approved by BER.

VFR AIRCRAFT LABEL SHALL ALWAYS BE ASSUMED ACCORDING TO PROVIDED INSTRUCTIONS ABOVE GIVEN FOR AN IFR AIRCRAFT.

4.4. Helicopter operations

Any helicopter operating in/out of Beograd shall operate as any other aircraft. Parking shall in most cases be given at the GA apron. Helicopter shall airtaxi out to the runway using taxiway system in Beograd and shall depart only from the runway (intersection departures are approved pending the requirements).

In case helicopter has a fixed landing gear, instructions are issued as to a regular aircraft.

Avoid calling helicopter pilot for anything unnecessary during airtaxi procedure.

Helicopter in case that it is operating VFR shall leave Beograd CTR exclusively via PAPPA/SIERA and further as explained in 4.3. VFR traffic.

Departure out of heliport at Beograd is allowed only for military and police helicopters.

Helicopter VFR routes as explained in SMATSA AIP shall be allowed for helicopter operations only (route DELTA-DOBAN-SIERA-MAKIS-BANVI).

5. Approach

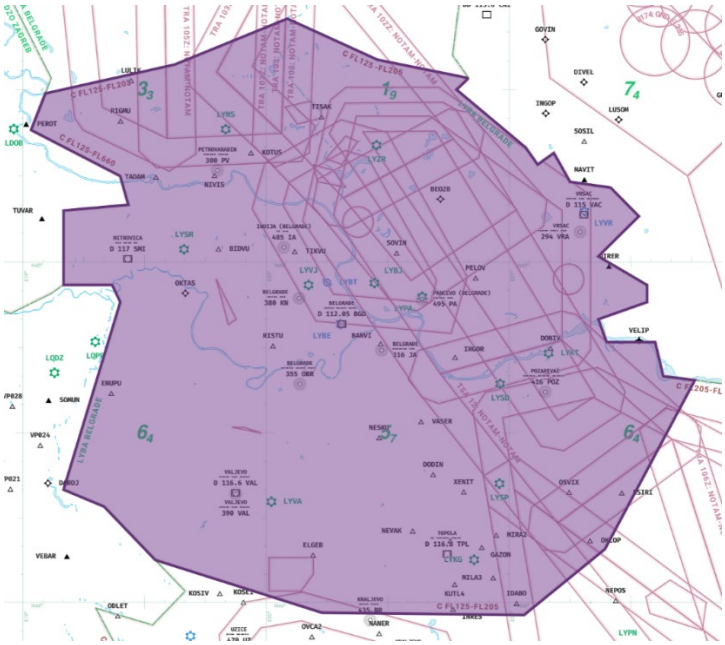
Approach is split in 2 stations as shown in table below:

Approach				
Radar	BER	LYBE_APP	133.100	primary arrival
Final	BEF	LYBE_F_APP	119.100	primary feeder, operates only on BER approval or during events on request of FMP.

5.1. Terminal Manuevering Area (TMA)

Below you can find the approach sector of Beograd TMA. In most cases, except when BEF is online, the whole sector is controlled by BER. There is no specific Departure frequency – BER handles all arriving/departing traffic in/out of LYBE.

If BEF is online, they will be responsible for sequencing arrivals into LYBE from 7000 ft to the intercept of the ILS approach, when traffic will be handed off to BET.



Overview of Beograd TMA (BER)

5.1. General Procedures

Arrival Routes: As the clearance limits for all LYBE STARs are inside the TMA, BER will clear the aircraft for arrival on initial contact via standard (preferred) arrival route pending the aircraft type and equipment data (GNSS aircraft receives preferred RNAV star, while aircraft unable for GNSS navigation will be using conventional STARs as defined in SMATSA AIP).

Example:

ASL54K: „Beograde, good day, ASL54K, inbound ELGEB, descending FL200, passing FL230“
BER: „ASL54K, Beograd Radar, dobar dan, cleared for ELGEB2A arrival, information A“
ASL54K: readsback the correct instruction for arrival together with ATIS info
BER: „ASL54K, continue descent/maintain level XXX due to YYYY“

You should always aim for continuous descend procedure within the TMA. If the traffic load is intense or reaching TMA limits, aircraft are to fly predescribed arrivals with shortcuts to IAF given (or expected) at 15Nm final – or when traffic situation allows.

Do not allow traffic to fly whole arrival routes without any operational reason.

Example only – descends are on discretion of the BER controller.

Initial descent patterns: Initially to FL200 (TMA vertical limit) if handed of at higher level from FIR controller, followed with either FL130 (or higher pending TL), then to 7000ft, then to 5000ft, then to 4000ft/3000ft. Avoid giving more than 10.000ft in descend.

Vectoring is always allowed even after the STAR clearance.

5.2. Approaches

The following approaches are available at Beograd.

Approach	Runway	Remarks
ILS	30R	3° glide path *RNAV not required*
RNP	30R	3° descend path *GNSS required*
VOR	30R	3.2° descend path *RNAV not required*
ILS	12L	3° glide path *RNAV not required*

CAT II/III ILS	12L	3.0° glide path *shall only be used upon pilot request and in LVP*
RNP	12L	3° descent path *shall only be used upon pilot request*
VOR	12L	3° descent path *shall only be used upon pilot request*

Usage of different approaches: By default, ILS approaches are **always** used. Visual approach shall only be given if a pilot is unable to fly specific ILS/RNP/VOR approach for any reason, and only in coordination and approval from BET. No visual approaches shall be allowed without BET approval. Visual approaches shall not be permitted if there is a sequence of a minimum of two aircraft within 15 NM of the ARP.

RNP approaches to be used on pilot request only.

VOR approaches to be used on pilot request only.

Non-GNSS compliant aircraft shall be cleared for ILS approach.

Be mindful of aircraft types Ilyushin Il-76, Tu-154, B-727 – those are allowed to land at 12L only, and depart only from 30R. Arrange traffic flow to accommodate this requirement.

Intercepting localizer:

BER shall always vector aircraft into the ILS starting from 10-15Nm from runway threshold. Short approach may be allowed if aircrew is able to accommodate – meaning that controller will ask a question to the aircrew whether they can accommodate X Nm final. If approved, proper sequencing will be provided.

If you are vectoring an aircraft bear in mind the following:

Intercept angle shall always be 30 to 40 degrees off localizer.

If assigning ILS approach via IAF (e.g. DEVDA) make sure the aircraft is capable of intercepting ILS with an angle higher than 30-40 degrees and include in your instruction “via DEVDA, cleared ILS 12L, report established”.

5.3. Separation on final

BER or BEF shall secure the necessary separation of aircraft on arrival to LYBE active runway. The radar separation minimum of 3 Nm (5 Nm also allowed) applies at the final approach between 15 Nm and touchdown, provided the following conditions are met:

a) The preceding aircraft has the same or a lower weight category. Aircraft of the weight category HEAVY and the B757 are excluded from this procedure.
b) The exit taxiways of the runway can be observed from the tower visually.
c) The runway is dry.

In all other cases, especially in cases where rapid exits are closed by NOTAMs, minimum separation of aircraft of the same weight category shall be 5 Nm.

In cases of LVP, separation shall always be 8 Nm with WTC M/M. If WTC H/J separation shall always be 10 Nm.

5.4. Missed approaches.

Clearance for approach automatically clears an aircraft for missed approach procedure. BER shall handle missed approaches according to traffic separation. Once aircraft climb above MSA, vectoring for another approach attempt are preferred. Avoid holding over OBR if situation permits.

By clearing an aircraft for approach, aircraft is automaticaly cleared for the missed approach procedure as well. **Aircraft shall always fly missed approach procedure as published.**

Exceptions from this rule are possible on request by BER however runway heading in missed approach shall be given only in extraordinary circumstances. In all other cases missed approach shall not be coordinated separately – as it is published on the approach procedure chart.

5.5. Departure procedures

Departures shall be given according to preferential SID table, as described in this SOP. Any different procedure needs to be coordinated with BER at all times.

Runway heading for departure may be given only in special circumstances where initial climb shall always be coordinated and approved with BER.

5.6. Holdings

Holding patterns in the LYBE TMA are activated as published at the start of each STAR procedure, under conditions specified in the **SMATSA AIP**. Aircraft that are not cleared for an arrival procedure must enter the published hold above the respective STAR entry point until otherwise instructed.

It is strictly prohibited for aircraft to enter the STAR procedure without explicit clearance. The **BER (Belgrade Radar)** controller is obligated to issue clearance for all arriving traffic onto a STAR procedure **prior to the commencement of that procedure**. If, for any reason, clearance cannot be issued or holding is anticipated due to traffic congestion in the LYBE TMA, the controller must advise the aircraft:

"Hold over [ENTRY POINT] as published, FL[XXX]. Expect hold for [XX] minutes due to capacity."

The BER controller is authorized to adjust arrival procedures for incoming traffic to align with sequencing and flow management within the TMA. This may involve reassigning a different STAR via the same entry point or re-clearing the aircraft to a STAR entry point other than the one in the flight plan.

The use of holding patterns is permitted only when the volume of arriving and departing traffic reaches the capacity of the TMA. Holding at the IAF for RWY 12L/30R is only allowed following prior consultation and coordination with the **BET (Belgrade Tower)** station, and exclusively during **Low Visibility Procedures (LVP)**.