Training material and operational manual for position **EVRA_TWR (Riga Tower)**

0 Introduction

0.1 Purpose

This document is an operational manual for the virtual air traffic control position of Riga Tower (EVRA_TWR) on the VATSIM network, the competencies of which are covered by the STUDENT 2 (S2) rating. This document shall NOT be used for any real-life air traffic control operations. All information provided in this document is for flight simulation use ONLY.

0.2 Credits

This document was created by 1433887 for the Virtual Area Control Centre of Latvia (Latvia vACC) on the VATSIM network. The rights to distribute this document belong solely to Latvia vACC.

0.3 Amendment history

Date	Description
20th of November 2022 (20.11.2022)	Initial Draft
3rd of May 2023 (03.05.2023)	Initial version with full syllabus complete
17 of July 2023 (17.07.2023)	SOP ready to be published
11th of September 2023 (11.09.2023)	Helicopter/FATO procedures added, 2.9

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1 General

1.1 Abbreviations

AIP – Aeronautical Information Publication
AMSL – Above Mean Sea Level
ATC – Air Traffic Controller
AoR – Area of Responsibility
ATIS – Automatic Terminal Information Service
ATZ – Aerodrome Traffic Zone

CFL – Cleared Flight Level
CTAF – Common Traffic Advisory Frequency
CTR – Control Traffic Zone
COPX – Coordination Point Exit

FIR – Flight Information Region

GA – General Aviation
GMC – Ground Movement Control

IHP – Intermediate Holding Position
ILS – Instrumental Landing System
ITHP – Intermediate Taxi-Holding Position
IRL – In Real Life

LOC – Localiser
LVP – Low Visibility Procedures

METAR – Meteorological Aerodrome Report

NIL – None
N/A – Not Applicable
NM – Nautical mile
NOTAM – Notice to Airmen

PBN – Performance Based Navigation

RFL – Requested Flight Level
RNAV – Area Navigation
RNP – Required Navigation Performance
RVR – Runway Visual Range
RWY – Runway

SNOWTAM – Snow Warning to Airmen
SID – Standard Instrument Departure
S2 – Student 2

TAF – Terminal Aerodrome Forecast

vACC – Virtual Area Control Centre
VRP – Visual Reporting Point

WTC – Wake Turbulence Category

1.2 References to other learning materials

For basic information about Riga airport and aeronautical information used in Latvia, see Riga Ground operational manual (distributed by Latvia vACC).

2 Controlling Riga Tower (standard operations)

2.1 Introduction

This manual will be structured as a walkthrough of your session on Riga Tower from start to finish. This includes everything that you will need to know to operate the position of Riga Tower.

2.2 Before you connect

Air Traffic Controllers in Latvia vACC use the EuroScope controller client. The sector file and plugins are configured by Latvia vACC staff and are available at files.aero-nav.com/EVRR. Make sure to always have the latest version installed in your EuroScope client. Once you're ready to connect, make sure that Riga Tower isn't already occupied by someone else, otherwise you won't be able to connect. You can check that using such services as VAT-SPY or SimAware.

2.3 Once you connect

Now you must perform every step mentioned in the Riga Ground operational manual before heading to the duties of Riga Tower. Said duties are described in this manual.

2.3.1 Selection of runway in use

The duty of selecting the runway in use is a joint responsibility of Riga Tower (EVRA_TWR) and Riga Approach (EVRA_APP or EVRA_B_APP if online).

The main method of determining the runway in use is based on surface wind. The current METAR always contains that information in the following format: `35011KT`. This contains the direction of the wind (350 degrees in this case) and its speed (11 knots). If the wind direction is closer to 360 degrees (from 270 degrees to 089 degrees), runway 36 shall be selected; otherwise, if the wind direction is closer to 180 degrees (from 090 degrees to 269 degrees), runway 18 shall be selected.

The following factors can be also taken into consideration when selecting the runway in use:

- approach and landing facilities serviceability
- meteorological conditions (RVR)
- reported or forecast wind shear, or when thunderstorms are expected to affect the approach or departure;
- air traffic flow/direction
- preferential runway system.

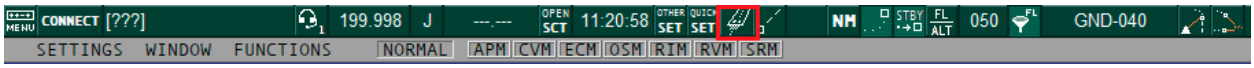
A runway-in-use direction with a tail wind component, including gusts, not exceeding 5 kt can be assigned, when:

- air traffic flow expected to runway direction
- the crosswind component, including gusts, does not exceed 15 kt and/or
- the runway condition is not worse than "WET" and braking action is not worse than "GOOD" and
- braking action is not adversely affected by runway contaminants such as ice, slush, snow, frost and water.

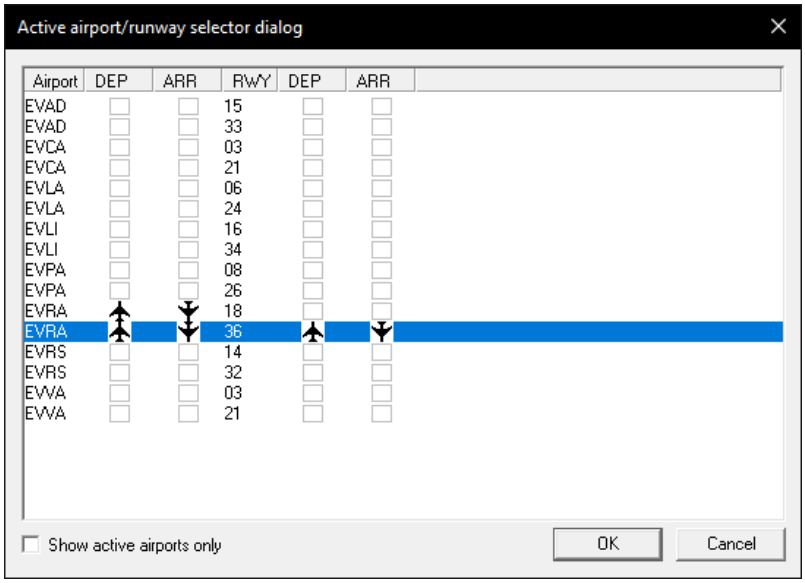
As mentioned before, a preferential runway system may also be used to determine the runway in use (Riga local time).

	00:00 to 17:59	18:00 to 23:59
TAKE OFF	18/36	18/36
LANDING	18/36	36

Finally, once the decision has been made, select the runway in use in the runway selection dialog. The button that opens the dialog is highlighted in red on the screenshot below.



The dialog should look like this:



2.3.2 ATIS

Weather information from the current METAR, runway in use and all relevant NOTAMs to Riga Airport shall be compiled into the Automatic Terminal Information Service or ATIS. Riga ATIS (EVRA_ATIS) is hosted on frequency 120.180 MHz (120.175 MHz). As well as all the information mentioned before an ATIS also contains an 'ATIS letter' – a letter that identifies the edition of the ATIS and the time of its issue. If a pilot reports to you the correct ATIS letter, you'll know that they have the latest information.

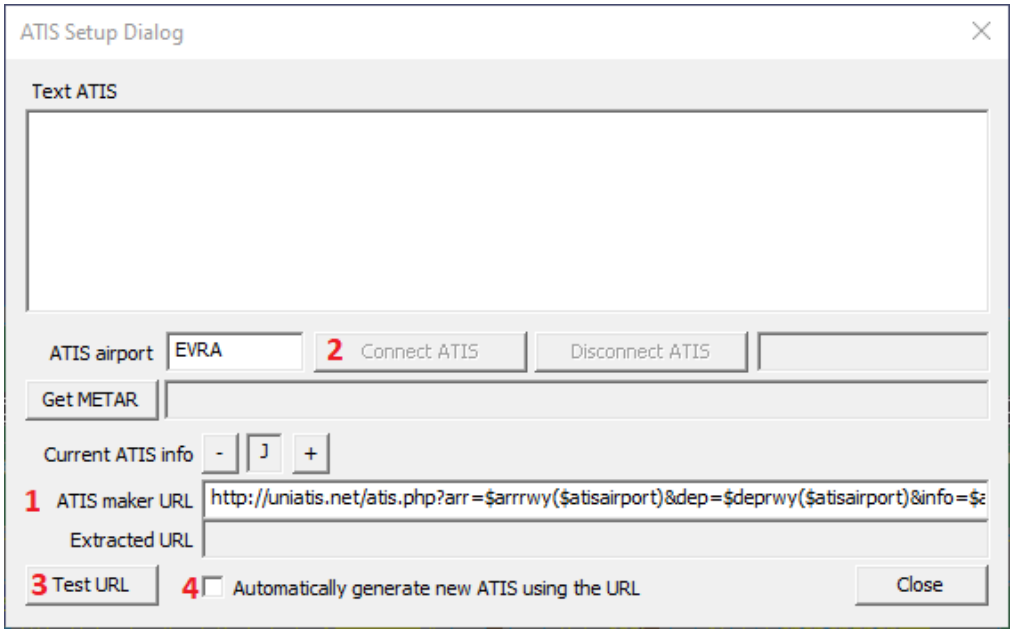
2.3.3 Hosting the ATIS

If the ATIS is not yet online, Riga Tower (EVRA_TWR) is the one responsible for hosting it, because the responsibility to determine available approach types and the active runway belongs to that position. To do that, open the dialog by pressing the ATIS letter in the top:

To host the ATIS correctly, you shall do the following:

1. Acquire the correct ATIS URL from Latvia vACC ATIS maker that includes all the taxiway closures and conditions relevant to pilots. Paste the URL into the 'ATIS maker URL' input field
2. Select the ATIS letter (normally A at the start of a session) and connect the ATIS
3. Test the URL

4. Enable automatic generation of the new ATIS



2.3.4 Initial coordination with other controllers

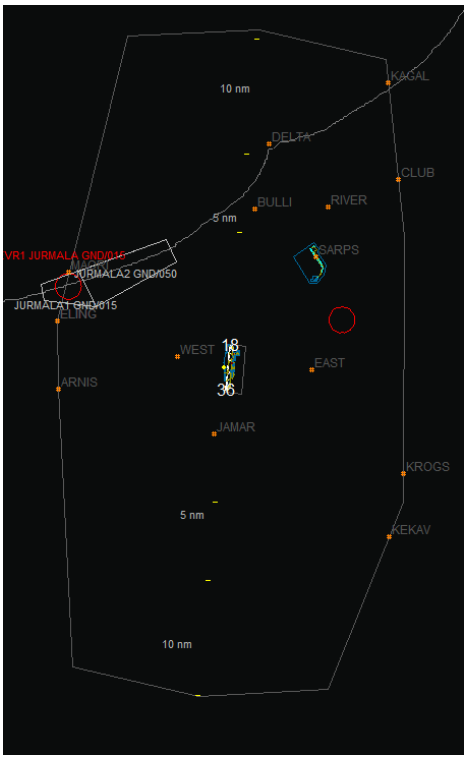
Most often you won't be the only one online, there may be some stations above and / or below you. It is important to notify the station directly above you that you're online and get all relevant information from them – usually it will be the runway in use and the ATIS letter. It is also recommended to notify all other stations in the ATC chat in the EuroScope client. To do that simply type a forward slash (/) and your message. Below you can see a list of all other positions in EVRR FIR that you may encounter.

2.3.5 Position list for EVRR FIR

Identifier	Radio callsign	Frequency (MHz)	Remarks and/or Airspace Covered
Stations that you'll encounter most frequently			
EVRA_ATIS	Riga ATIS	120.180* (120.175)	NIL
EVRA_GND	Riga Ground	118.805* (118.800)	IRL station isn't open 24/7, sometimes is combined with TWR
EVRA_TWR	Riga Tower	118.105* (118.100)	Covers Riga CTR SFC – 2500FT
EVRA_B_APP	Riga Approach	134.850	Covers Riga TMA B 1500FT – FL95 IRL station isn't open 24/7, most of the time is combined with APP on 129.925
EVRA_APP	Riga Approach	129.925	Covers Riga TMA A and C (and most of the time B sector too) C sect. 3000FT – 5500FT B sect. 1500FT – FL285 A sect. 3000FT – FL285
EVRR_CTR	Riga Control	135.100	Covers Riga FIR Primary Riga Control freq. FL95 – FL660
EVRR_N_CTR	Riga Control	135.100	Covers Riga FIR NORTH FL95 – FL660
EVRR_E_CTR	Riga Control	133.200	Covers Riga FIR EAST FL95 – FL660
EVRR_S_CTR	Riga Control	134.750	Covers Riga FIR SOUTH FL95 – FL660
EVRR_W_CTR	Riga Control	134.125	Covers Riga FIR SOUTH and NORTH FL95 – FL660
Other stations			
EVLA_I_TWR	Liepāja Information	129.400	Covers Liepāja TMA GND – FL95
EVRR_I_CTR	Riga Information	120.225	Covers Riga FIR GND – FL660 Only services VFR traffic
EVVA_ATIS	Ventspils ATIS	126.800	NIL

*These frequencies belong to an 8.33 kHz channel, advise the frequency in brackets to aircraft unable to tune into 8.33 kHz frequencies.

2.4 Your area of responsibility



This is Riga CTR (Control Traffic Zone), which on the frequency must be referred to as "the controlled airspace". This airspace is under your control and spans from the surface level (SFC) and up to 2500 ft AMSL. The airspace contains the Riga International Airport (EVRA) and Spilve Airfield (EVRS) and its ATZ, most of the city of Riga as well as Jūrmala.

Several restricted airspace zones are located inside Riga CTR:

- Restricted area above the presidential palace (SFC – 4500FT)
- JURMALA 1 (EVR1) noise abatement zone (SFC – 1500FT)
- JURMALA 2 (EVR2) noise abatement zone (SFC – 5000FT)

No traffic is permitted to enter and/or cross those parts of Riga CTR. Main concern for those restricted parts of the airspace comes from VFR traffic. Handling of such issues is covered in the appropriate section of this SOP.

Top-down coverage

VATSIM applies top-down as its coverage principle. A position controls all the positions below it should those be offline. For Riga this is the case in real life as well. Riga Ground sometimes isn't staffed due to low traffic levels. When that happens, Ground is combined with Tower on frequency 118.105 (118.100). Thus, when positions below are offline, it is your responsibility to carry out the duties of those positions.

2.5 Handling departing aircraft

2.5.1 Types of departure readiness

Whenever an aircraft approaches a runway holding point they may or may not be ready for departure. A standard sequence departure is a situation in which the pilot has up to 60 seconds after being cleared for takeoff to prepare for departure, thus, the pilot has the right to line up on the runway and delay their takeoff roll as needed for up to 60 seconds.

A pilot may also report to be 'ready for immediate departure' or 'ready on reaching [the holding point]' thus removing their right to stop after the takeoff clearance is issued. There are many applications for this type of readiness, such as 'reduced runway separation minima' which is described in latter parts of this SOP.

2.5.2 Issuing a takeoff clearance

To issue a takeoff clearance the following conditions must be met:

- The departing aircraft is ready for departure
- The runway is clear and there are no aircraft overflying the runway below 2500ft AMSL
- Previous departing aircraft (if there are any) must have crossed the end of the runway and / or made a turn leaving the runway heading
- Previous arriving aircraft (if there are any) must have vacated the runway and crossed the holding point with their aircraft's tail
- Incoming arriving aircraft must not be closer than 5 NM on final and must not be cleared to land

The phraseology to issue a takeoff clearance is as follows:

`BTI123: "Riga Tower, Air Baltic 123, ready for departure"` (Note: pilots are recommended to contact using callsign only, such a contact also means that they are ready if there are no aircraft in front of them)

`Riga Tower: "Air Baltic 123, surface wind 030 degrees, 10 knots, runway 36, cleared for takeoff, bye-bye"`

`BTI123: "Cleared for takeoff, runway 36, Air Baltic 123, bye-bye"`

Note: the word 'takeoff' must only be used on frequency when issuing a takeoff clearance. In all other instances the word 'departure' must be used instead.

Note: whenever reported RVR is 6000 meters or less said number must be added to the takeoff clearance in the following format: 'visibility 4500 meters' after the surface wind.

2.5.3 Automatic handoff procedure

As mentioned in the previous section the takeoff clearance ends with 'bye-bye'. That phrase is a part of the so-called 'automatic handoff procedure'. The main point is that after the takeoff clearance is issued there is no more communication with Tower. The pilot is supposed to contact the next station themselves before passing 1500ft or whenever practical. If the pilot does not do so, they should be advised with a standard handoff.

`Riga Tower: "Air Baltic 123, contact Riga Approach on 129.925"`

2.5.4 Line-up clearance and conditional clearances

There are certain cases in which you can't issue a takeoff clearance but there is a necessity to continue the flow of traffic. In this case a line-up clearance should be issued. Such situations include, but are not limited to:

- 2 or more aircraft departing from the same intersection in a row
- Preceding arriving aircraft has landed, though not vacated the runway as of yet
- Preceding departing aircraft has started their takeoff roll and there is enough space on the runway to accommodate for a potential line-up

Note: a line-up clearance, same as a takeoff clearance, is subject to safety precautions

A line-up clearance can be issued as follows:

`Riga Tower: "Air Baltic 123, line up and wait, runway 36"`

`BTI123: "Line up and wait, runway 36, Air Baltic 123"`

Line-up clearances more often than not are conditional. Usually, the condition refers to the previous aircraft occupying the runway. Such a clearance should be used to expedite the flow of traffic and allow for smoother runway operations. In accordance with Latvian AIP EVRA AD 2.20.5.2.1 such clearances are subject to 'High intensity runway operation'. Here are examples of conditional clearances for preceding departing and arriving aircraft respectively:

`Riga Tower: "Air Baltic 123, behind departing Boeing 737, line up runway 36 and wait behind"`

`BTI123: "Behind the departing Boeing 737, line up, runway 36, and wait behind, Air Baltic 123"`

Note: the conditional clearance must be read back in full.

Note: the name of the airline may be added before the aircraft type for clarity purposes. If the aircraft being addressed is of the same airline, the word 'company' should be used instead.

Example of a conditional clearance with an arriving aircraft:

```
Riga Tower: "Air Baltic 123, behind arriving Boeing 737 [on short final], line up runway 36 and wait behind"
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OR

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Riga Tower: "Air Baltic 123, behind landing Boeing 737 [on short final], line up and wait behind"
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BTI123: "Behind the arriving Boeing 737 [on short final], line up, runway 36, and wait behind, Air Baltic 123"
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2.5.5 Tag handling for departures

Same as with pushback and taxi clearances, takeoff and line-up clearances must be followed-up with a status change in the departure list. It is recommended that you explore the functionality of the departure list deeper to make your controlling experience smoother and more comfortable.

The tags of departing aircraft shall not be assumed by Riga Tower.

2.6 Handling arriving aircraft

2.6.1 Issuing a landing clearance

To issue a landing clearance the following conditions must be met:

- The aircraft willing to land has made a call on Tower frequency
- The runway is clear and there are no aircraft overflying the runway below 2500ft AMSL
- Previous departing aircraft (if there are any) must have crossed the end of the runway and / or made a turn leaving the runway heading
- Previous arriving aircraft (if there are any) must have vacated the runway and crossed the holding point with their aircraft's tail

The phraseology to issue a landing clearance is as follows:

```
Riga Tower: "Air Baltic 123, surface wind 030 degrees, 10 knots, runway 36, cleared to land"
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BTI123: "Cleared to land, runway 36, Air Baltic 123"
```

Note: whenever reported RVR is 6000 meters or less said number must be added to the landing clearance in the following format: 'visibility 4500 meters' after the surface wind.

2.6.2 Tag handling for arrivals

There is no need to change anything in the tag when issuing a landing clearance or any other instruction Tower might give to an arriving aircraft. Tower will most of the time assume arrivals' tags. It is expected that once an aircraft is established on the ILS or is in any other way ready to land the APP controller will initiate a tag handoff to Tower. Such a handoff will make the tag change colour in EuroScope and will produce a beeping sound. The handoff should only be accepted if the incoming aircraft has made a call on the frequency, and they are able to continue on / towards final approach with no obstacles.

Once the aircraft is on the ground, the tag should be released.

2.6.3 'Continue approach' instruction

In case there is an aircraft on final, but they can't be cleared to land yet (for any reason applicable) a 'continue approach' instruction must be issued:

Riga Tower: "Air Baltic 123, continue ILS Y approach runway 36"

BTI123: "Continue ILS Y approach, runway 36, Air Baltic 123"

Note: the full type of approach must be mentioned in the 'continue approach' instruction.

Note: the instruction to 'maintain minimum approach speed' may be appended to the 'continue approach' instruction.

2.6.4 Go-arounds

A go-around (or a missed approach), in a nutshell, is a safety measure of last resort. Every now and then there is a situation in which an arriving aircraft cannot safely land on the runway for various reasons (runway occupied, inadequate spacing, lack of a landing clearance, unstable approach, etc.) and in that case, a go-around must be initiated. It can be either initiated by the pilot or by the Tower controller.

The standard go around procedure at Riga is as follows:

FLY RUNWAY HEADING, CLIMB 2500FT

If the go-around is initiated by the controller, the phraseology is as follows:

Riga Tower: "Air Baltic 123, GO AROUND, GO AROUND, [runway occupied], climb out runway heading 2500ft, contact Riga Approach on 129.925"

BTI123: "Go around, climb out runway heading 2500ft, contact Riga Approach on 129.925, Air Baltic 123"

Note: it is good practice to provide the go-around reason to the pilot.

Note: the go-around and its reason MUST be reported to the station above you immediately after the handoff is initiated.

Note: the tag handoff to the station above you MUST be initiated immediately before issuing the instruction.

If the go-around is initiated by the pilot, the phraseology is as follows:

BTI123: "Going around, [unstable approach], Air Baltic 123"

Riga Tower: "Air Baltic 123, roger, climb out runway heading 2500ft, contact Riga Approach on 129.925"

Note: some pilots don't report the reason for their go-around. If the traffic situation permits, they should be prompted to report it to you or to the next station (this is a matter of personal preference).

Note: the go-around and its reason MUST be reported to the station above you immediately after the handoff is initiated.

Note: the tag handoff to the station above you MUST be initiated immediately after receiving the report of the go-around being initiated.

In cases where separation minima are breached, Riga Tower has the right to instruct the pilot to turn heading 270 when going around. The 'runway heading' should just be substituted with heading 270 in the go-around instruction.

2.6.5 Transfer of control and transfer of communications to Riga Ground

In accordance with Latvian AIP EVRA AD 2.20.5.2.2.4 the handoff to Riga Ground is automatic unless other instructions were issued by Tower. However, many pilots are not aware of this procedure, so a standard handoff may be given after the aircraft fully vacates the runway. Transfer of control and

transfer of communications happen and the same time and must not happen later than the release of the tag and the vacation of the runway.

2.7 VFR procedures

2.7.1 Issuing a clearance

There are 2 types of clearances that can be issued to a VFR pilot on the ground: a circuit clearance and a departure clearance. All clearances shall be issued in accordance with Latvian AIP EVRA AD 2.20.16 and 2.22.2. A circuit clearance allows the pilot to fly a 'visual circuit' around the airport without leaving the Riga CTR. A departure clearance allows the pilot to leave Riga CTR via one of the published exit points.

Phraseological examples of VFR clearances are provided in sections 2.7.2 and 2.7.3.

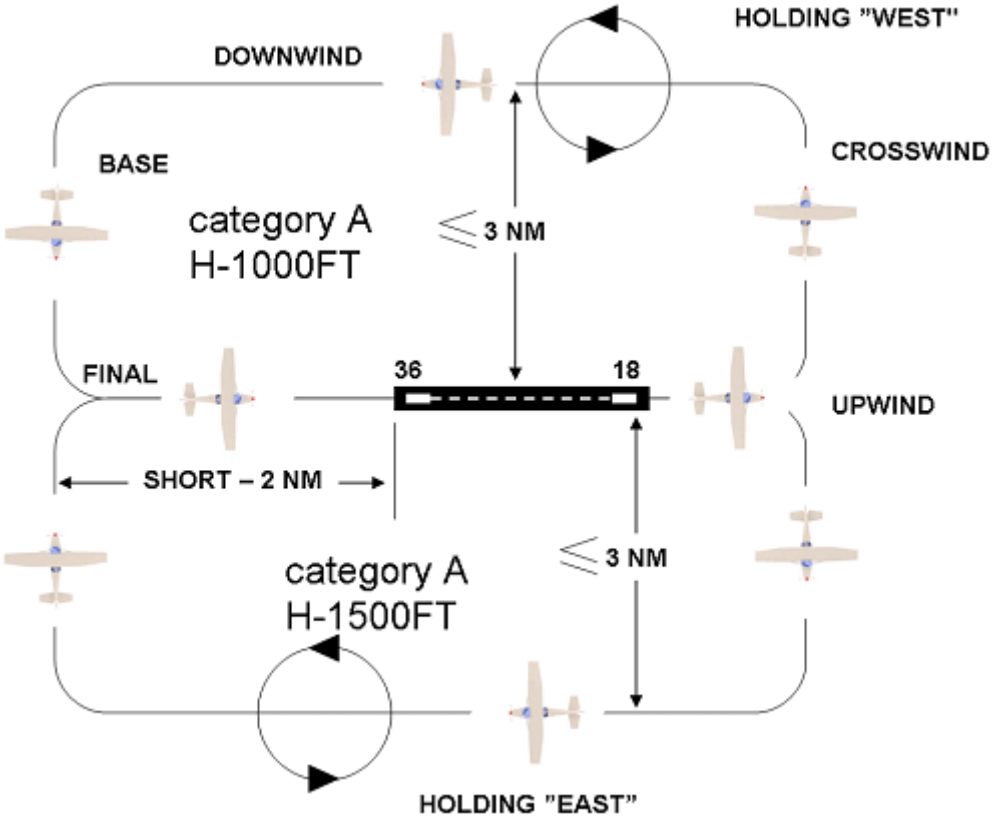
Note: the clearance may sometimes not need to be issued directly, the GMC station below you (if online) may receive the clearance request and relay it to TWR with clearance information in response expected.

Note: if there are persistent high volumes of IFR traffic, VFR aircraft may be reasonably delayed, prioritising IFR aircraft.

Note: IFR traffic must always have priority over VFR traffic.

Note: any departing VFR traffic must be instructed to report airborne as part of their takeoff clearance.

2.7.2 The visual circuit and separation instruments



The visual circuit is 5-part circling pattern around the aerodrome. The diagram above depicts the visual circuit rules at Riga airport. The 5 parts are: upwind, crosswind, downwind, base, final. Here is an example of a circuit clearance:

`YLKGB: "Riga Tower, YLKGB, with information A, Cessna 172 Skyhawk on stand 479, requesting visual circuits"`

Riga Tower: "YLKGB, Riga Tower, good afternoon, information A is correct, cleared for left hand visual circuit, runway 18, not below 1500ft, QNH1013, squawk 0060"

YLKGB: "Cleared for left hand visual circuit, runway 18, not below 1500ft, QNH1013, squawk 0060, YLKGB"

Riga Tower: "YLKGB, your readback is correct"

Note: the domestic squawk range for EVRR FIR is 0060 – 0077.

The circuit clearance must be issued in accordance with the published circuit dimensions and reasonable safety analysis. In normal circumstances the circuit clearance should be issued as follows:

- Left-hand circuit for runway 18 and right-hand circuit for runway 36 (east of the field)
- Altitude restriction NOT BELOW 1500FT
- Circuit width must be 3 nm

In case there are reasonable grounds to believe that altering the circuit dimensions is safer in the situation that is presented, such action is not forbidden.

The direction of the circuit may be altered, however the published altitude restriction in that case is AT OR BELOW 1000FT for noise abatement purposes (west of the field).

The altitude restriction may also be changed, though this is allowed exclusively for separation and sequencing purposes (e.g., if there are multiple aircraft in the CTR that are not on the extended runway centreline).

The width of the circuit must not be altered.

Note: if a pilot is not aware of the width of the circuit, they must be advised of it as follows:

Riga Tower: "YLKGB, please remain 3 nautical miles from the field on downwind"

When issuing a circuit clearance, the direction of inbound and outbound traffic flows, traffic density, noise abatement and separation with other traffic should be considered.

When handling circuit traffic, adequate separation must be provided. It can be ensured by such means as:

- Issuing an 'extend downwind' instruction (does not allow the pilot to turn towards the 'base' leg until explicitly cleared to do so
  Riga Tower: "YLKGB, extend downwind till advised"
- Issuing a holding instruction over one of the VRPs or over one of the recommended holding points (EAST and WEST)
  Riga Tower: "YLKGB, hold over holding point EAST"
- Issuing mandatory reporting instructions of legs parallel to the runway or VRPs
  Riga Tower: "YLKGB, report downwind/final"
  Riga Tower: "YLKGB, report passing overhead JAMAR"
- Issuing conditional clearances and requesting pilot intentions
- Providing traffic information (see section 2.7.6)

During normal circuit operations regardless of the amount of traffic and/or other obstacles in the vicinity of the airport, VFR pilots must always be instructed to report downwind and their intentions. Riga Tower must always be aware of the position of traffic in Riga CTR (due to not having a secondary

identification radar) and of said traffic's intentions. After receiving traffic's intentions, they should be instructed to report final.

Note: in case there is no arriving/departing traffic within 3 minutes of a VFR aircraft turning on downwind, they may be cleared for runway manoeuvres without reporting final.

In accordance with Latvian AIP EVRA AD 2.20.16.4 the following runway manoeuvres are permitted at Riga airport:

- Touch-and-go
- Low approach
- Full stop landing

Each of them has their specific clearance phraseology:

Riga Tower: "YLKGB, continue visual [traffic] circuit, surface wind 150 degrees, 5 knots, runway 18, cleared for touch-and-go, report airborne"

Riga Tower: "YLKGB, continue visual [traffic] circuit, surface wind 150 degrees, 5 knots, runway 18, cleared for low approach, report passing reciprocal runway threshold/report passing threshold runway 36"

Riga Tower: "YLKGB, continue visual [traffic] circuit, surface wind 150 degrees, 5 knots, runway 18, cleared to land" (full stop landing is just a normal landing clearance).

2.7.3 Exiting/entering the controlled airspace

Note: on frequency Riga CTR must always be referred to as 'controlled airspace'.

VFR traffic shall cross Riga CTR boundary via the following CTR entry/exit points: ARNIS, ELING, KROGS. VFR traffic heading towards Spilve ATZ may use exit point SAPRS (at 1000 ft). VFR traffic arriving from Spilve ATZ may use entry points SARPS (at 1000ft) and RIVER (at 500ft).

Aircraft may request to exit the controlled airspace as a departure clearance while on the ground. The difference between a clearance issued on the ground and in the air is that a clearance on the ground needs a squawk code.

Note: VFR aircraft requesting to exit the controlled airspace may provide a direction instead of a VRP in their clearance. In that case Riga Tower has the duty to select the most appropriate exit point for the pilot (e.g., a pilot requesting a departure to the east would normally be offered exit point KROGS).

The altitude restrictions for exiting/entering the controlled airspace shall be AT OR BELOW 1500FT.

Normally, a pilot exiting the controlled airspace is expected to do so as soon as reasonably practical and an arriving pilot is expected to land as soon as possible, unless requested otherwise.

Here is an example of an exit clearance:

YLKGB: "Riga Tower, YLKGB, requesting to exit the controlled airspace, exit point ARNIS."

Riga Tower: "YLKGB, cleared to exit the controlled airspace, exit point ARNIS, altitude at or below 1500ft, QNH1013"

YLKGB: "Cleared to exit the controlled airspace, exit point ARNIS, altitude not above 1500ft, QNH1013, YLKGB"

Note: if exiting via SARPS, the altitude restriction shall be AT 1000FT.

Here is an example of an entry clearance:

YLKGB: "Riga Tower, YLKGB, requesting to enter the controlled airspace, entry point ELING"

Riga Tower: "YLKGB, report your intentions"

YLKGB: "Requesting to join the visual [traffic] circuit and full stop landing, YLKGB"

Riga Tower: "YLKGB, roger, you are cleared to enter the controlled airspace, entry point ELING, at or below 1000ft, QNH1013, join left hand downwind, runway 36, report passing overhead ELING"

YLKGB: "Cleared to enter the controlled airspace, entry point ELING, at or below 1000ft, QNH1013, join left hand downwind, runway 36, report passing overhead ELING, YLKGB"

The entry clearance is quite different from an exit clearance due to the need to add further instructions after entering Riga CTR.

Note: this example features an altitude restriction of AT OR BELOW 1000FT due to VRP ELING being on the west side of the CTR and thus requiring al altered circuit direction.

Note: entering aircraft may be cleared to 'cross the field' for traffic flow reasons to join the normal circuit direction, in that case the clearance in the example above would sound as follows:

Riga Tower: "YLKGB, roger, you are cleared to enter the controlled airspace, entry point ELING, at 1500ft, QNH1013, cleared to cross the field, join right hand downwind, runway 36, report passing overhead ELING"

Note: the altitude restriction is altered specifically not to cause disruptions in runway operations. Once an inbound aircraft has joined the circuit, their altitude restriction shall be changed to the appropriate one for their circuit direction.

Note: inbound VFR pilots may request any of the approved runway manoeuvres and if reasonably practical/safe should be cleared to execute any of them.

Note: if entering via SARPS, the altitude restriction shall be AT 1000FT; if entering via RIVER, the altitude restriction shall be NOT BELOW 500FT.

2.7.4 Provision of service in Spilve ATZ (EVRS)

Spilve Aerodrome Traffic Zone is a class G airspace and thus is uncontrolled. However, Riga Tower still has the authority to use the VRPs inside Spilve ATZ for holding and routing purposes as well as handle CTR exits and entries via Spilve ATZ.

Any traffic manoeuvring in Spilve ATZ should report said manoeuvres on UNICOM CTAF frequency or on Riga Information frequency (if online). Any traffic in Spilve ATZ has the right to information and traffic service from Riga Tower.

Information service includes weather information about the traffic's vicinity. Traffic in Spilve ATZ may request any METAR, TAF, or SNOWTAM published items from Riga Tower and should receive published information for Riga International Airport (EVRA) in return due to that being the closest continuously reporting weather station to them.

Traffic service is covered in section 2.7.6.

2.7.5 Transiting the controlled airspace

Note: on frequency Riga CTR must always be referred to as 'controlled airspace'.

Riga CTR may be 'transited'. Transiting the CTR means entering via an entry point and exiting via an exit point while remaining on a static altitude without executing any runway manoeuvres. The controlled airspace may be transited using either the North transit route (Latvian AIP EVRA AD 2.22.2.3) or custom routing.

The altitude restriction for the North transit route is AT OR BELOW 500FT; for custom routes it is AT 1500FT, unless altered for safety reasons.

The North transit route is bi-directional between VRPs MAORI and KAGAL in the northern part of the CTR.

Here is an example of a transit clearance using the North transit route:

YLKGB: "Riga Tower, YLKGB, request to transit the controlled airspace following the North transit route, entry point MAORI, exit point KAGAL"

Riga Tower: "YLKGB, you are cleared to transit the controlled airspace, entry point MAORI, follow the North transit route, exit point KAGAL, remain at or below 500ft, QNH1013, report passing overhead MAORI"

YLKGB: "Cleared to transit the controlled airspace, entry point MAORI, follow the North transit route, exit point KAGAL, remain at or below 500ft, QNH1013, report passing overhead MAORI, YLKGB"

Here is an example of a transit clearance using custom routing:

YLKGB: "Riga Tower, YLKGB, request to transit the controlled airspace, entry point KEKAV, routing JAMAR, exit point ARNIS"

Riga Tower: "YLKGB, you are cleared to transit the controlled airspace, entry point KEKAV, routing JAMAR, exit point ARNIS, remain at 1500ft, QNH1013, report passing overhead KEKAV"

YLKGB: "Cleared to transit the controlled airspace, entry point KEKAV, routing JAMAR, exit point ARNIS, remain at 1500ft, QNH1013, report passing overhead KEKAV, YLKGB"

Note: custom routes may contain more than one point.

Note: Riga Tower may reject a transit request for safety or operational efficiency reasons.

Note: holding points EAST and WEST, as well as thresholds of the runway may be used as routing waypoints. If overflying the field or crossing the extended runway centreline without a VRP, VFR traffic must be explicitly cleared to do so or instructed to hold over a VRP or a holding point.

2.7.6 Issuing routing restrictions and providing traffic information

There are also 2 Special VFR arrival routes published that may be used for swift VFR handling without them joining the visual circuit. The routes are as follows:

- KAGAL – BULLI – straight-in-approach runway 18 **OR** left-hand circuit runway 36
- KEKAV – JAMAR – straight-in-approach runway 36 **OR** right-hand circuit runway 18

Riga Tower has the right to refuse any VFR aircraft request for safety reasons. It is strongly recommended that VFR pilots be provided with other solutions of achieving their routing intentions without causing unreasonable delays.

Riga Tower has the right to use informational separation tools if weather and traffic conditions permit to do so. Due to TWR not having a secondary identification radar, the only such tool is provision of traffic information.

Riga CTR is a class C airspace, that means that IFR aircraft should be separated from VFR aircraft and traffic information should be given to all aircraft, regardless of flight rules if that is necessary. To justify the provision of traffic information, one of the following conditions must be true:

- An aircraft making their first call on TWR frequency without being aware of a VFR aircraft in the airspace*
- An aircraft is joining a nearby/the same routing as a VFR aircraft in the vicinity*
- Two or more aircraft are on the same visual [traffic] circuit leg (even if they are following opposite circuit directions)
- There is NO risk of conflict between two or more aircraft, but there IS a risk of a loss of separation between them

*in those cases provision of traffic information may be omitted if the aircraft in question cause 'no factor' for each other ('causing no factor' means to not create any possible conditions for delay or a loss of separation in the current traffic situation).

Traffic information to VFR aircraft about IFR aircraft should be given as follows:

Riga Tower: "YLKGB, traffic information, Air Baltic Airbus A220 on final runway 36, 2 o'clock, altitude 1400ft indicating, distance 6 nautical miles, report in sight and maintain visual separation"

YLKGB: "Traffic in sight, YLKGB"

Riga Tower: "YLKGB, roger"

Traffic information to any aircraft about VFR aircraft should be given as follows:

Riga Tower: "Air Baltic 123, traffic information, Cessna 172 Skyhawk on right downwind, runway 36, 1 o'clock, altitude 1500ft indicating, distance 6 nautical miles, report in sight [and maintain visual separation]"

YLKGB: "Traffic in sight, Air Baltic 123"

Riga Tower: "Air Baltic 123, roger"

Note: if the aircraft is not in a visual circuit, the traffic information item with flight path should be omitted, unless the aircraft is in the vicinity of a clearly visible VRP from the position of the traffic receiving traffic information.

Note: the instruction to 'maintain visual separation' should be issued to VFR traffic only.

Note: the direction should be described in the "o'clock" notation. Below is a table explaining the meaning of each type of direction. The numbers should be read in-full, without using the ICAO pronunciation guideline (e.g. 12 is twelve and not one-two).

PHRASEOLOGICAL DIRECTION	MEANING
12 o'clock	Directly in front
1 o'clock	Up to 30 degrees to the right
2 o'clock	From 30 to 60 degrees to the right
3 o'clock	To the right
4 o'clock	From 120 to 150 degrees to the right
5 o'clock	From 150 to 180 degrees to the right.

6 o'clock	Directly behind
7 o'clock	From 150 to 180 degrees to the left
8 o'clock	From 120 to 150 degrees to the left
9 o'clock	To the left
10 o'clock	From 30 to 60 degrees to the left
11 o'clock	Up to 30 degrees to the left

Note: traffic information provision should be dealt with a 'better safe than sorry' approach. It is better to provide traffic information unnecessarily rather than not provide it and cause a loss of separation or a conflict.

2.8 Situational awareness, priority rules, and workload management

For basic principles of workload management, refer to the Riga Ground operational manual. Tower control principles are quite similar, however, here are some additions and nuances that must be always considered when making a decision and/or pre-planning:

- IFR traffic has priority over VFR traffic
- Traffic in the air has priority over traffic on the ground
- Traffic that is burning fuel has priority over traffic that is not burning fuel
- Efficiency is key, though safety should be prioritised
- All pilots' requests must be of equal importance
- The runway and runway extended centreline occupation time should be kept to a minimum

To execute greater situational awareness and manage workload, it is recommended to often look over the available traffic lists and to check positions and intentions of all aircraft on the frequency.

2.9 Helicopter procedures

Helicopter movement at Riga is regulated by Latvian AIP EVRA AD 2.16 and 2.20.10. Helicopters may take off both from the runway and from the helipad (next to stand 230). Special helicopter stands are available at Riga – H01 and H02. **ALL** helicopter movement must be coordinated between Riga Ground and Riga Tower. The following are mandatory rules for helicopter handling:

- Any helicopter vacating the helipad must report "helipad vacated" or be asked to confirm this.
- Helicopters with skid undercarriage are to use all ground taxiways as air taxiways.
- All helicopters intending to air taxi should include the term "air taxi" in the taxi requests. If it is unclear, which type of taxi the pilot is requesting it is better to ask them to report said type of taxi.
- Wheeled helicopters shall not use helicopter stands for turning on the ground and may ground taxi for departure when pre-aligned on the respective lead-out line. Wheeled helicopters shall not touch down or lift off on aircraft stands 313, 314, 315, and 316.
- Helicopters landing on the helipad shall avoid, as far as practicable, overflying any other aircraft, de-icing pads, and all aprons except Apron 2. It is a joint duty of Riga Ground and Riga Tower to prevent them from doing so.
- Simultaneous movement on the helipad and H01/H02 stands is NOT allowed.
- Simultaneous movement on the helipad and the runway is NOT allowed.
- Any traffic overflying Riga Airport at or below 1500 ft is considered to be an obstruction to runway movements (this includes both helicopters and winged aircraft).

3 Advanced concepts and additional procedures

3.1 Low visibility procedures and CAT II approaches

For LVP conditions and effects that affect GMC, refer to the Riga Ground operational manual. The following LVP effects affect Riga Tower procedures:

- Runway 18/36 is only approved for manoeuvres when RVR is greater or equal to 250 meters. This means that with RVR less than 250 meters, no runway operations may be authorised, and traffic movement shall be halted until visibility conditions improve.
- In order to maintain protection of the ILS, no vehicle or aircraft shall penetrate/infringe ILS critical and sensitive areas. In order to fulfil this requirement, more than 8 NM spacing between arrivals will be used.

CAT II approaches (both simulated and during real LVP) make no difference for Riga Tower operations, however, 8 NM arrival spacing must be observed. Runway 18/36 is equipped with CAT II holding points at taxiways A, B, E, and G. A and G should be prioritised; B and/or E should only be used when A and/or G are not available.

To read about LVP and CAT II approaches, see Latvian AIP EVRA AD 2.22.3 and 2.22.4.

3.2 Different types of approaches and additional runway information

Birds are not simulated on the VATSIM Network, though, information about their migration is available in the Latvian AIP EVRA AD 2.23.1 as it may affect aircraft operations from March to May and from August to October.

In terms of additional runway procedures, 180 degree turns on the runway are possible. However, in accordance with Latvian AIP AD EVRA 2.23.3, during winter when the declared cleared width of the runway is below 45 metres, aircraft longer than 30 metres will not be allowed to perform 180 degree turns on the runway to avoid potential runway excursions.

Runway procedures may also differ in the type of approach that an aircraft uses. The following types of approach are available:

TYPE OF APPROACH	USE CASE AND DETAILS	FINAL LENGTH (DME, NM)
ILS/LOC Y 108.1, 355° (RWY 36) 111.1, 175° (RWY 18)	default type of approach; RNAV 1 equipped aircraft only	10 (6.5 short approach)
ILS/LOC Z 108.1, 355° (RWY 36) 111.1, 175° (RWY 18)	conventional ILS/LOC, available via PEVEK (36) and GUDIN (18) for non-RNAV aircraft	10 (6.5 short approach)
RNP Y 355° (RWY 36) 175° (RWY 18)	default RNAV type of approach; RNAV 1 equipped aircraft only	10 (6.5 short approach)
RNP Z 355° (RWY 36) 175° (RWY 18)	special authorisation required; RNAV 1 equipped aircraft only	2.9 (RWY 18) 3.2 (RWY 36)
VOR (RIA 114.0) 351° (RWY 36) 179° (RWY 18)	racetrack procedure requires an explicit request; available for training purposes and non-RNAV aircraft	12/10 (RWY 18) 11.9 (RWY 36)
Visual	May only be used if RVR is greater than or equal to 4000 meters	6.5

For all types of approach except RNP Z, the transfer of control and communications between Riga Approach and Riga Tower is expected to happen after the aircraft has turned onto final. For RNP Z transfer of control and communications between Riga Approach and Riga Tower happens before the final turn. For details see Latvian AIP EVRA AD 2.24.13.

All types of approach that are not an ILS Y approach with a 10 NM final will be coordinated by Riga Approach.

3.3 Separation and sequencing

Separation in Riga CTR and on holding points before the runway should follow priority rules outlines in section 2.8. Sequencing should be achieved using conditional clearances and holding instructions where necessary. Here are some rules that should be followed in general for safe and efficient sequencing:

- There should be no more than 2 aircraft on the same holding point
- The departure sequence from different holding points should be alternating
- Departure priority is inversely proportional to the WTC of the aircraft
- Arrival priority is handled by Riga Approach except for VFR
- Coordination about traffic levels leads to easier sequencing
- A sequence plan made in advance that includes all aircraft involved can be really helpful in most situations

In general, traffic sequencing is based on thinking about the safest and most efficient application of priority rules to the situation presented.

3.4 Reduced runway separation minima

In accordance with Latvian AIP EVRA AD 2.20.5.3, reduced runway separation minima shall be applied for runway 18/36 during the hours of daylight from 30 minutes after local sunrise to 30 minutes before local sunset. This procedure allows for non-precise departure and arrival intervals (see sections 2.5.2 and 2.6.1 for mandatory takeoff and landing respective clearance conditions).

Under Reduced runway separation minima the aircraft are divided into 3 categories:

- Category 1 aircraft: single-engine propeller aircraft with a maximum certificated take-off mass of 2 000 kg or less
- Category 2 aircraft: single-engine propeller aircraft with a maximum certificated take-off mass of more than 2 000 kg but less than 7 000 kg; and twin-engine propeller aircraft with a maximum certificated take-off mass of less than 7 000 kg
- Category 3 aircraft: all other aircraft

Reduced runway separation minima shall be applied with the following restrictions:

- Wake turbulence separation minima shall be applied (see ICAO WTC separation minima or table below this list)
- Visibility shall be at least 5 km and ceiling shall not be lower than 1000 ft (those conditions also allow for multiple line-ups, see Latvian AIP EVRA AD 2.20.6)
- Tailwind component shall not exceed 5 kt
- The runway condition shall not be worse than “wet” and braking action shall not be worse than “GOOD”, and braking action shall not be adversely affected by runway contaminants such as ice, slush, snow, frost and water
- The use of conditional clearances for line-ups is mandatory
- Reduced runway separation minima shall only apply between succeeding and preceding landing aircraft. It shall NOT apply between a departing aircraft and a preceding landing aircraft

Regardless of any other factors, in accordance with Latvian AIP EVRA AD 2.20.5.3.5 established separation shall be as follows:

- A succeeding landing Category 1 aircraft may cross the runway-in-use threshold when a preceding Category 1 or 2 aircraft: has landed and has passed a point at least 600 m from the threshold of the runway-in-use, is in motion and will vacate the runway without backtracking
- A succeeding landing Category 2 aircraft may cross the runway-in-use threshold when a preceding Category 1 or 2 aircraft: has landed and has passed a point at least 1500 m from the threshold of the runway-in-use, is in motion and will vacate the runway without backtracking
- A succeeding landing aircraft may cross the runway-in-use threshold when a preceding Category 3 aircraft: has landed and has passed a point at least 2400 m from the threshold of the runway-in-use, is in motion and will vacate the runway without backtracking

Establishing arrival separation is the duty of Riga Approach, however, Riga Tower must preserve that separation or use go-around instructions if a loss of separation has occurred. Departure separation is a joint duty of Riga Tower and Riga Approach; the separation minima in this case may be time based or distance based.

Time-based separation applies only during LVP or for non-RNAV aircraft (as well as succeeding and preceding aircraft). Time-based separation is based on departure direction:

CONDITION	TIME (MIN)
different SID / departure direction	2
same SID / departure direction	3

Distance-based separation applies WTC differential and only applies to RNAV/PBN-capable aircraft when LVP are not in effect. Below is a WTC table and a WTC separation minima table:

CATEGORY AND DESIGNATOR	CONDITIONS
Light (L)	MTOW ≤ 7 000 kg
Medium (M)	7000 kg < MTOW ≤ 136 000 kg
Heavy (H)	MTOW > 136 000 kg (except Super aircraft, see ICAO Doc 8643)
Super (J)	aircraft specified in ICAO Doc 8643 (only Airbus A380-800)

SUCCEEDING AIRCRAFT	PRECEDING AIRCRAFT	MININMA (NM)
Light	Medium	5
Heavy	Heavy (and B757)	4
Medium	Heavy (and B757)	5
Light	Heavy (and B757)	6
Heavy	Super	6
Medium	Super	7
Light	Super	8

Note: Riga International Airport (EVRA) is not capable of servicing Super WTC aircraft.

3.5 Final notes and advice

To the student learning from this SOP:

Air Traffic controllers' priorities must always lie in safety and realism of operation. As long as everyone has passion and will to learn, those principles will be upheld.

If you have any questions, please direct them to your mentor/instructor. If there are any issues with this document or any other training material issued by Latvia vACC, please contact the training department.

If at any point in studying this or any other learning material anything is unclear or not explained in enough detail, please reach out to your mentor/instructor.

Remember, other members of the network are here to help you!