

Standard Operating Prodecures





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1. Introduction

1.1. Document Release Information

DC Ver.	Editor/Author	Edited Date	Description	Revised Section
1.4	Yoel Strikovsky	November 11, 2019	Removed LLSD, LLOV & LLET Added LLER SSR code Changed LLSC_CTR UPD for LLER LLSC_CTR UPD for LLER	4.3 ALL 2.4.1 2.4.3.2
1.5	Yoel Strikovsky	April 20, 2020	Revamp Chapter 2 and Chapter 3 Removed LLBG_TMA station. It is now part of LLBG Approach Changes in traffic separation at LLSC Some changes in arrival/departure at LLER SSR changed in the entire FIR	
1.51	Yoel Strikovsky	November 15, 2020	 Minor changes in Ground East & West Minor changes in Clearance delivery 	3.3 3.4
1.52	Adar Polachek	April 4, 2021	Minor changes in TowerMinor changes in Tower General	3.2 4



1.2. Purpose and Scope

In order to be able to enjoy our hobby. We can train so as to function as realistically as possible in our environment with the balance of usability in the simulation world and the VATSIM network. This brings with it the requirement for the standardization of the training especially for the controllers. The purpose of this document is to assist this standardization in VATIL.

Above all we must never forget that our hobby is actually a game. At the end of the day, nobody is going to die, nobody is at risk, and no money will be lost. So, relax, take it easy and enjoy it. The reality of our hobby is that we can't possibly simulate everything or sometimes it would be a pity to provide less, when in the network we can provide more

The procedures we apply online are different than the real-life procedures to a small degree. All our traffic is correlated with the positions being very precise and we don't have problems such as obstacles and gaps in our radar coverage. However, there are number of limitations in which we cannot depict online on VATSIM network in which are practiced in the real world due to all kinds of reasons.

The purpose of the Standard Operating Procedure (from now on will be referred as "SOP") is to centralize all **LLLL** airspace procedures of all stations into one large complete document. There will be no other procedures outside of this document unless appears in the "related documents" below. This SOP supersedes any other standalone procedure that was ever released prior to the SOP.

The basic requirements in reality are according to ICAO, the International Civil Aviation Organization. ICAO publishes 18 annexes. Of interest to us are the following annexes:

• Annex 2 - Rules of the air and Annex 11 – Air traffic services

On top of that ICAO publishes the following documents of interest to us:

- Doc 4444 Air Traffic Management, this is the bible of air traffic control
- Doc 9432 Phraseology + DOC 4444, ATM/501
- Doc 7030 Regional Procedures

Obviously, thousands of documents, books, manuals, tutorials etc. exist in general. The more you read, the better you become. If you have any questions don't hesitate to contact the training department.



1.3. Related Documentation

Document Name	
LLBG Cheat Sheets bundle	
Letter of Agreement between CvACC and VATIL	
Letter of Agreement between JOvACC and VATIL	
VATIL CoC document	

1.4. Terms and Definitions

Term	Definition
SOP	Standard Operating Procedure
R&R	Roles and Responsibilities
LOA	Letter of Agreement
CoC	Code of Conduct
TMA	Terminal Control Area
ACC	Area Control Center
ATS	Air Traffic Service
APP	Approach
TWR	Tower
GND	Ground
FEQ / FQ	Frequency
RWY	Runway
SSR	Secondary surveillance radar
SQ	Squawk
QNH	Query: Nautical Height (local barometric pressure)
QNE	Query: Nil Elevation (standard barometric pressure 1013 / 29.92)
QFE	Query: Field Elevation
CAA	Civil Aviation Authority
T/O	Take Off
ENG	Engine(s)
R/V	Radar Vector
H/P	Holding Point
S.P	Starting Point
P/B	Push Back
A/C	Aircraft



2. ISRAEL ACC

2.1. LLLL Area Control Centers

Israel has three main ACC, each one of them has a different role than the other. The following table shows the ACC, call sign & radio frequency

Call sign		Frequency
Pluto Control	LLPT_CTR	118.400
South Control	LLSC_CTR	120.900
Tel Aviv Control	LLLL_CTR	121.400

The Transition level/altitude in Israel FIR is only relevant over the Mediterranean Sea. Every aircraft that reaches the cost (inland) must be transferred to Area QNH. All Area QNH would be Ben-Gurion QNH

Example: "JORDANIAN 117, set QNH 1016,"



Note: Incase the LLLL/LLSC/LLPT CTR also control local airports (e.g. local tower, such as LLER is not online, the CTR controller should switch the aircraft to local airport QNH before landing)

- ♣ The transition level is 20,000ft (TL200)
- ♣ The transition altitude is 18,000ft (TA180)

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2.1.1. Standard Terminal Arrival Routes (STAR)

Assignment and clearance of a STAR to all inbound traffic are done by the ACC only.

The table shows the STARs approved to be used in VATSIM/online

Arrival waypoint gate	Runway / Approach	STAR
ZUKKO		
	ILS RWY 12	GODED 2
	RNP Z RWY 30 DONAG VISUAL RWY 30	AMMOS 1G / H
	RNP X RWY 30 GAVRI VISUAL RWY 30	NINET 1
	ILS RWY 30	AMMOS 1E / F
	ILS RWY 21	AMMOS 1A / B
	ILS X RWY 26	AMMOS 1C / D
SALAM / TOMAL		
	RWY 21	SALAM / TOMAL 2A
	RWY 12	SALAM / TOMAL 2B
	RWY 26	SALAM / TOMAL 2C
	RNP Z RWY 30	SALAM / TOMAL 1G
	RNP X RWY 30	Radar Vector
	ILS RWY 30	SALAM / TOMAL 2E



- AMMOS 1A/C/E/G is the preferred STAR to use and does not require coordination with the Approach controller. However, the approach controller can coordinate to assign a different STAR (AMMOS 1B/D/H/F), if needed, such as traffic separation, etc.
 - o As a preset AMMOS 1A is the preferred one for RWY21
 - O As a preset AMMOS 1G is the preferred one for RWY30 (RNP Z)
 - o As a preset AMMOS 1C is the preferred one for RWY26
- When <u>RWY21</u> is the active landing runway at **LLBG**, it is LLLL_CTR responsebility to verify with the approaching traffic that they are able to performe the <u>RWY21</u> landing due to scenery constrains and/or the aircraft is not a 4 engine aircraft. In case RWY21 can't be used, LLLL_CTR shall advise the APP/TWR controllers and cordinate an alternate landing runway (RWY26).

When deviating the traffic to alternative runway, LLLL controller must keep an adequate traffic separation between traffic heading for landing at RYW21 and traffic heading for landing at the alternate runway



More information and easy graphical layout of the full STARs available for <u>LLBG</u> and arrival waypoint gate, could be found at the "**LLBG cheat sheets**" documents available at VATIL web site or the official charts at the official Israeli CAA website:

<u>http://en.caa.gov.il/index.php?option=com_content&view=articl</u> e&id=414&Itemid=278



2.1.2. **SSR** codes

The ACC is responsible to give an SSR codes to all CVFR and some IFR flights traffic leaving the aerodrome to a remote destination apart from LLBG airport, which hands its own SSR codes.

The table below shows the SSR codes that are in use

SSR Code	Use case	ACC
5101 - 5177	CVFR	ALL
5601 - 5677	IFR	ALL

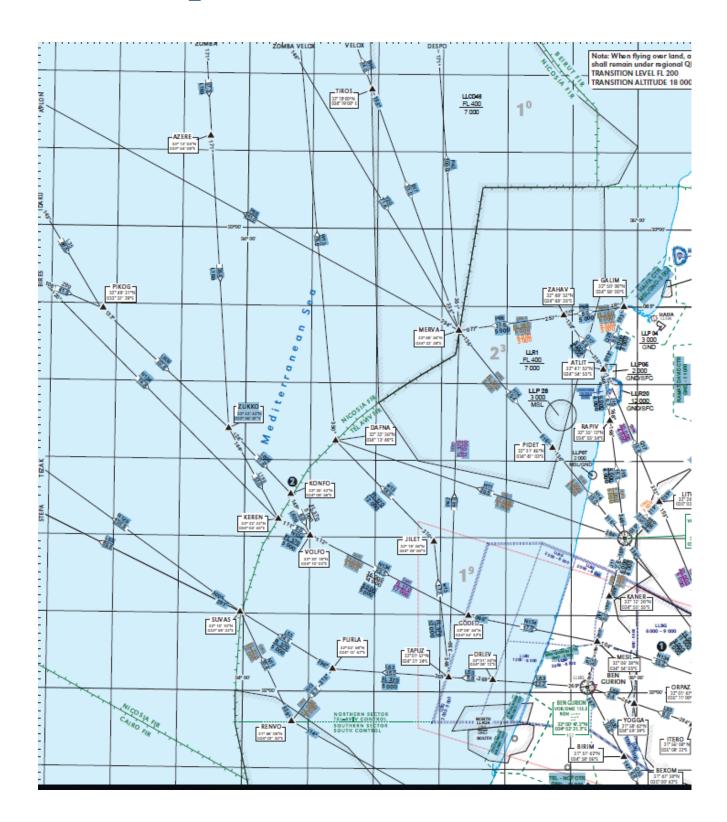
- * There are few situations in which LLLL will give SSR Codes for Int'l flights
 - 1. Any international departing aircraft at the northern control (North Center/LLPT_CTR) that is not departing from **Ben-gurion** (LLBG). e.g. Int'l flights leaving from **LLHA**
 - 2. See Section: 2.2.1
 - ❖ All CVFR flight will be on SQ 5100 at the aerodrome. Once the aircraft took off and handed over to the ACC, the ACC will perform radar identification and assign a new SSR code from the table above.
 - ❖ All IFR flight, the local Tower will assign the SSR code during clearance after asking for a code from the relevant ACC. ACC will give an available code to Tower when asked from the table above.



Note: the SSR code section is not relevant for flights leaving **LLBG**. LLBG handles its own SSR codes to all flight types



2.2. LLLL_CTR





LLLL_CTR, otherwise known as Tel-Aviv Center/Control is responsible for any incoming / outgoing traffic to/from Israel. This is mainly valid for traffic coming from the West, however also traffic coming from the east (e.g. Jordan) that are crossing Israel airspace. LLLL_CTR will also assume position of all other ACCs if not connected online.

Most of the time LLLL_CTR will be responsible to regulate traffic coming from the west to land in Israel and accepting traffic taking off such as from LLBG; leaving Israel air space.

- LLLL_CTR is responsible for incoming traffic from the west, heading to LLER, OJAI (Jordan) and responsible for their initial descend before handing them over.
- Arriving traffic that their destination is LLBG, LLLL_CTR, responsibility to descend the traffic
 - Inbound traffic from the west, LLLL_CTR will clear the traffic to descend to 5000ft according to the STAR
 - ➤ Inbound traffic from the west for **ILS RWY 30** (AMMOS 1E/F), LLLL_CTR will clear the traffic to descend to 6000ft according to the STAR.
- LLLL_CTR will control any traffic fly over BGN TMA when the traffic is coming from the west (e.g. Europe) and is headed to the south, such as LLER, or headed to Jordan airspace, such as OJAI.
- All traffic reaching the cost of Israel from the west or crossing the Jordan border to the west over Israel airspace, must tune to Ben-Gurion QNH and <u>not</u> set to QNE

Example: "JORDANIAN 117, set QNH 1016,"

- Traffic separation: 1000ft or 5nm
- Any traffic arriving that its destination is **LLER**, LLLL_CTR will descend the traffic to cross ADLOD waypoint no higher than Altitude 29,000ft.
- LLLL CTR will prioritize controlling IFR traffic upon CVFR traffic.

That means that if **LLLL_CTR** feel he doesn't have the capacity to control both IFR flights and CVFR flights due to busy IFR traffic at the time, LLLL_CTR can instruct all CVFR traffic to fly without ATC services (UNICOM/122.80).



2.2.1. SSR codes

All international inbound traffic to Ben-Gurion and/or crossing/entering LLLL FIR heading to other destination (e.g. OJAI, LLER, etc.), will remain with their current SSR code. No new SSR code will be issued. However, Radar Identification is still required to verify the traffic on radar.

SSR Codes 5601 - 5677

In some cases, a new SSR code will need to be issued for inbound traffic.

In the following cases a new SSR code will always be issued for Int'l inbound traffic:

- o Aircraft arriving with default VATSIM code (e.g. 1200, 2200, etc.)
- o Aircraft arriving with SQ code. 51xx.
- Duplicate codes/planes two or more planes with the same SSR code in LLLL FIR
- o In some cases, in order to establish radar identification of an aircraft

Example: Turkish airlines flight 111 (THY111) leaving Istanbul bound to Eilat or Amman. Currently SQ 5167 (in use for CVFR). In that case LLLL will issue the traffic a new SSR code in the LLLL FIR SSR code range (56xx)



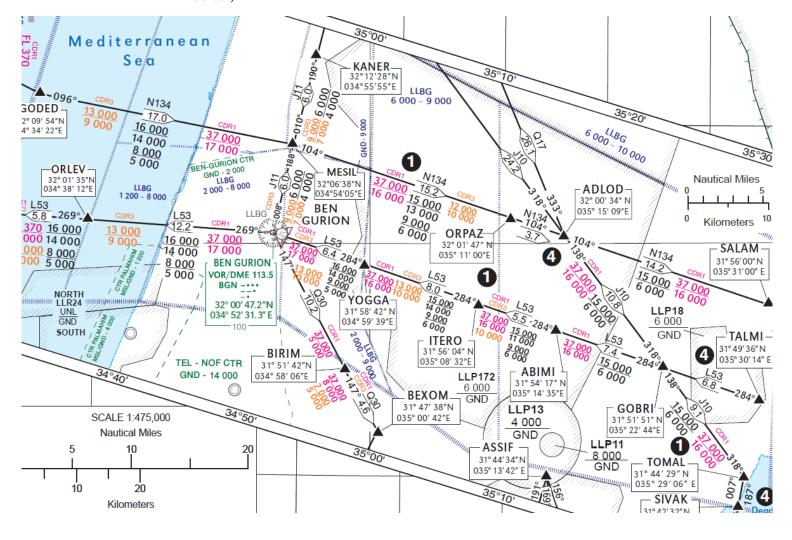
2.2.2. Military, restricted areas

There are two main military training area that of concern to LLLL_CTR that in some cases are close for civil aviation and in some cases are open for civil aviation.

2.2.2.1. "Jordan"

The area between the Jordanian border and ORLEV.

The image below depicts the eastern part of the restricted area $(BGN-Jordan\ border)$





The area between ORLEV and the east is known for its military activity at 9000ft - 13,000ft & 16,000ft - 27,000ft and 30,000ft and above. Leaving the civil aviation for use only the altitude of GND to 8000ft & 14,000ft - 15,000ft and in some parts, 11,000-12,000ft. since it is the area that effects the Jordanian airlines that cross Israel, this is where is got its name "Jordan Open/Close" from.

"Jordan" status (Open/Close) will be in a status of "Jordan Close" only when there is a military activity in the area connected to VATSIM.

The rest of the time the status will be "Jordan Open".

♣ Jordan close: When the area is closed due to military activity, all traffic leaving Jordan to the west (e.g. EU) crossing Israel must level at altitude 12,000ft at TALMI and remain at that altitude until reaching ABIMI. Once at ABIMI, LLLL_CTR can clear the traffic to continue and climb to 14,000ft, once cross ORLEV, LLLL_CTR can climb the traffic higher (according to the Cyprus / Israel LOA).

Arriving traffic from the west (EU) heading to **OJAI** / **OJAM** (Jordan), **LLLL_CTR** will descend the traffic to cross GODED at altitude 15,000ft and maintain this altitude until reaching waypoint ORPAZ, than descend to cross SALAM at 11,000ft.

Example: "JORDANIAN 117, expect GODED at altitude 15,000, report ready for decent"

Any traffic taking off from LLBG to the west, must be given the instruction to climb 8000ft via the SID. Only after reaching <u>TAPUZ</u>, the plane could be given to continue and climb to <u>FL260</u> or according to CvACC & VATIL LOA.



↓ Jordan Open: when the is open for civil aviation (no restrictions), LLLL_CTR can clear the traffic from Jordan to climb higher (according to the Cyprus / Israel LOA). Traffic coming from the west (EU) to OJAI / OJAM (Jordan) shall be cleared to cross SALAM at altitude 11,000ft

Example: "JORDANIAN 117, expect SALAM at altitude 11,000, report ready for decent"

when reaching the Israel coast: "JORDANIAN 117, set QNH 1016.

Traffic from LLBG to AMMAN, could be authorized at 7000ft or 9000ft

Any traffic taking off from LLBG to the west, could be given the unrestricted climb via the SID to **FL260** (8000ft at **TAPUZ** restriction is canceled).

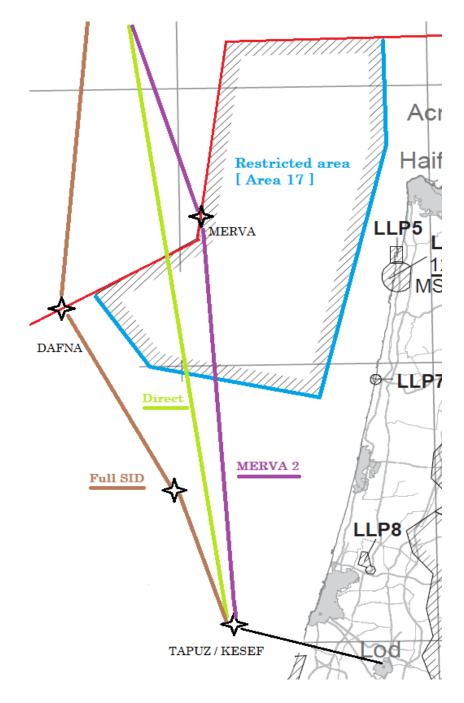


For more detailed on LLLL / Jordan handovers and regulations please refer to the "Letter of Agreement between JOVACC and VATIL" document



2.2.2.2. Area 17 (LLR1).

The area over the sea, North of LLBG TMA/APP.



Area 17 will be closed for civil aviation most of the time apart from the below in which Area 17 is open for civil aviation (all in Local time)

- o Sunday Wednesday: between 23:00 07:00
- o Friday from 11:30 until Sunday 09:15



- ♣ Area 17 Close: when area 17 is closed for civil aviation, Traffic heading to VELOX / DESPO, must complete the full DAFNA SID. SID MERVA 2 cannot be executed & is not approved, SID DAFNA 1 must be used instead
- → Area 17 Open: when area 17 is open for civil aviation, Traffic heading to VELOX, DESPO could be given Direct to VELOX, DESPO after <u>TAPUZ</u>. SID MERVA 2 is permitted and could be used.

2.2.3. Traffic transfer

2.2.3.1. Transfer to LLPT CTR

LLLL_CTR will transfer the landing traffic bound at LLHA to LLPT_CTR as soon as possible, but not lower than 5000ft. Coordination required

2.2.3.2. Transfer to LLBG APP

LLLL_CTR will transfer all incoming traffic from the west that their destination is LLBG when cleared of traffic conflict & proper separation of at least 12nm between traffic.

Any arriving traffic from the west, the traffic will be transferred to Approach controller no later than waypoint **NINET / AMMOS**

2.2.3.3. Transfer to/from Jordan

The only time there is a traffic transfer between Jordan and LLLL_CTR is when traffic is crossing Israel either from the East or from the West heading to/from Jordan.

Traffic departing from OJAI bound to LLBG and vice versa will not be handled by LLLL_CTR, but to LLBG Approach

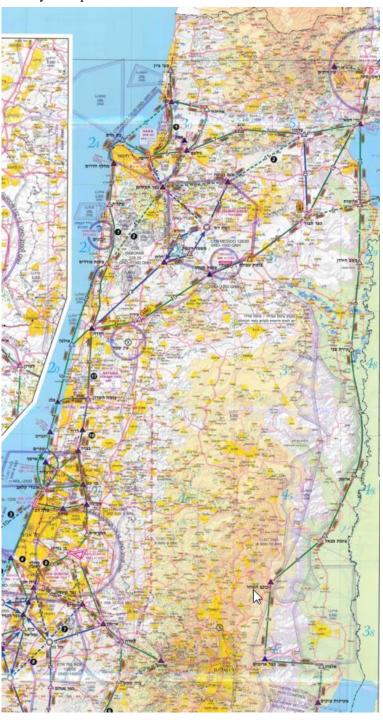
For further details, see the JOvACC / VATIL LOA document.

2.2.3.4. Transfer to/from NICOSIA.

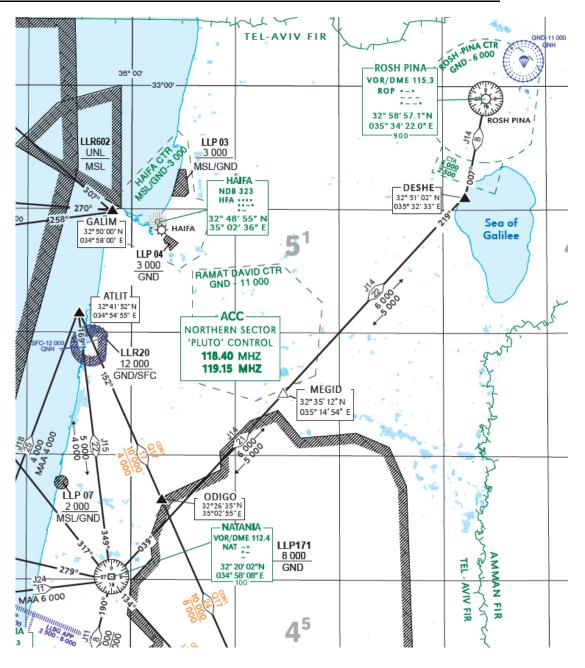
For more detailed information of LLLL / NICOSIA traffic transfer & regulations, please refer to the "Letter of Agreement between CvACC and VATIL" document

2.3. LLPT_CTR

LLPT_CTR is responsible for both IFR & CVFR flight at the northern part of the country as depicted below:









SSR Codes

- LLPT_CTR will give SSR codes to all CVFR flights once airborne
- LLPT_CTR will provide SSR codes to all Tower controllers for IFR flights before clearance.
- **LLPT_CTR** will give Int'l SSR codes for traffic leaving LLHA only incase if LLLL_CTR is offline. The SSR codes will be from the LLLL Int'l flight pool.



Note: For more information on the SSR codes pool refer to section: 2.1.2

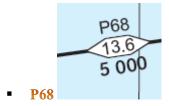
* Traffic Separation

CVFR: 500ft or 2nmIFR: 1000ft or 5nm

2.3.1. IFR routes







➤ International flights from LLHA should file "GALIN P68 MERVA". flights must be at or below 5000ft until MERVA

For more information on the air space restrictions, please refer to the official AIP website :

http://caa.gov.il/index.php?option=com_content&view=article&id=69&Itemid=1 57



2.3.2. Traffic Transfer

2.3.2.1. Transfer to LLBG Approach

LLPT_CTR shall transfer any traffic entering the TMA area from the north to LLBG_D_APP

2.3.2.2. Transfer to Local airports.

LLPT_CTR will transfer aircrafts to local tower(s) at the following points

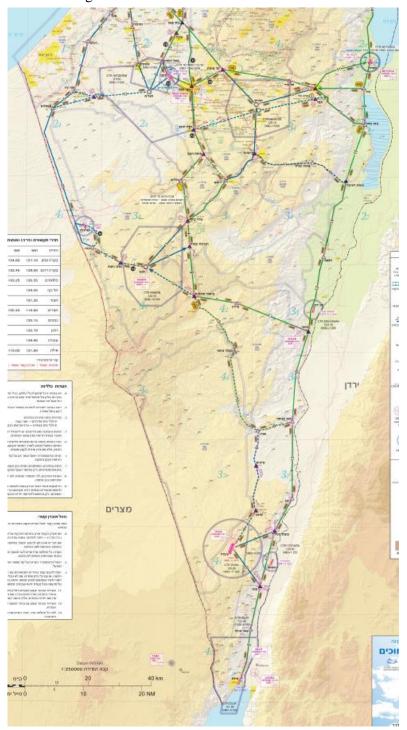
- **▶ LLHZ** BAZRA
- ➤ LLIB KAREI DESHE
- **▶ LLHA** M. DAROM

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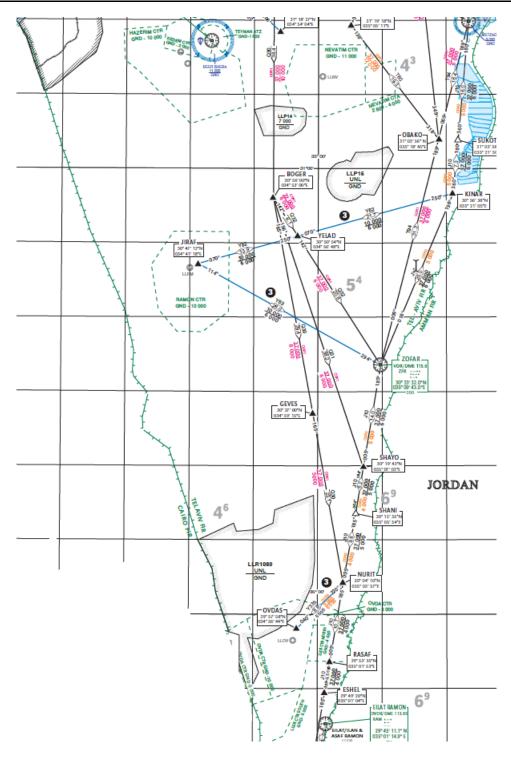


2.4. LLSC_CTR

LLSC_CTR also known as "South Center / Control" is responsible for all CVFR & IFR flights of the southern part of Israel. The air space is controlled by the station call sign "**South Center**".







The south control area has number of CVFR routes and IFR routes.

The CVFR routes could be downloaded from the AIP official website at the following link:

 $\underline{\text{http://caa.gov.il/index.php?option=com_content\&view=article\&id=69\&Itemid=1}}\underline{57}$



SSR Codes

- LLSC will give SSR codes to all CVFR flights once airborne
- LLSC will provide SSR codes to all Tower controllers for IFR flights before clearance.



Note: For more information on the SSR codes pool refer to section: 2.1.2

2.4.1. IFR Routes

For IFR routes there are number of IFR routes at the south part of Israel, however not all routes are in use in real life all the time and so in VATSIM.

The list below states the IFR routes that are in use or can be approved by ATC for IFR use if the criteria are met.

J10

this is the regular usual and the most popular route at which will be used most of the time. That route is used for flights to/from Eilat (LLER) Airports. This route is also used by international flights that cross Israel to/from the south, such as "Sharm el sheikh", Africa and EL AL flight from/to the far east.

The minimum field altitude is 6000ft, Maximum allowed is FL370

- ❖ There is a limit of maximum eight aircrafts that are allowed to be on J10 at the same time
- ❖ **During Week days:** J10 is the exclusive route used both for southbound & northbound traffic (apart from the exception mentioned at T84), no other routes permitted.
- ❖ During Weekends (Fri 14:00 Sun 06:00): J10 is <u>only</u> open for <u>northbound</u> traffic (South-to-North), at ZFR Aircraft then shortcut through ZFR OBAKO ASSIF (T94/T84). Aircraft shall not be completing the whole J10 route to SIVAK, unless requested by pilot. e.g. NURIT J10 ZFR T94 OBAKO T84 ESTER

• T84

During weekdays: this route can be used only during special events when there is heavy traffic (e.g. VATSIM event), as instructed by VATIL Operations.

At any other situation, this route should remain closed. In case **T84** is in use, route <u>J10</u> (above) will be used for <u>northbound</u> traffic (South-to-North) and <u>T84</u> will be used for <u>southbound</u> traffic (South-to-North / ASSIF-MZD).

❖ During Weekends (Fri 14:00 – Sun 06:00): see J10 description above (Short cut description)



Q30/Q31/Q32

The minimum filed altitude for this route is **8000ft**. maximum allowed altitude for this route is **FL370**.

- ❖ During weekdays: the route is closed
- ❖ During Weekends (Fri 14:00 Sun 06:00): Southbound route to Eilat, this is the only route to be used to Eilat (J10 is used Northbound - from Eilat) this is <u>southbound</u> only.
- N11, T80, G35, G37 are closed for traffic and shall not be used.



- ♣ All Southbound traffic will file ODD altitude
- ♣ All Northbound traffic will file EVEN altitude
- **4** Traffic Separation

CVFR: 500ft or 2nmIFR: 1000ft or 5nm

LLSC_CTR must follow the traffic separation in between aircrafts bound to **LLER** based on the table below. Separation is by miles from **NURIT** waypoint when RWY19 is in use and waypoint **RASAF** when RWY01 is in use (when 1st aircraft reach NURIT/RASAF 2nd aircraft needs to be "X" miles behind). The table is valid when the 1st and 2nd aircrafts are at the same performance or the 1st aircraft is faster than the second aircraft.

The following conditions determine what is Slow/fast aircraft:

- Any aircraft that is 250kt or above (in flight plan) is considered "fast" / "same performance" (no matter what the speed difference between them)
- If any of the aircrafts is below 250kt speed in flight plan, it is subject to be considered "slow"
 - **Slow**: 1st aircraft that is 40kt (or more) slower than the 2nd aircraft in the flight plan.

NOTE: This only applicable to aircrafts below 250kt. e.g. if 1st aircraft is 470kt and the 2nd is 300kt, even though it is more than 40kt difference, they are still considered same performance (as mentioned above). But if 1st is 250kt and second is 210kt, the second is considered "slow"

RWY 01 – Same performance / 1st fast

1 st Aircraft	Leading Aircraft	Miles
ILS	ILS	25
ILS	RNAV VISUAL	30
RNAV VISUAL	ILS	15
RNAV VISUAL	RNAV VISUAL	10

RWY 19 – Same performance / 1st fast

1 st Aircraft	Leading Aircraft	Miles
Any approach	Any approach	12

- **↓** 1st Aircraft is slow requires coordination with tower (all runways).
- ♣ Traffic bound to **LLER** must assign/set their QNH to **LLBG** QNH



- **♣** Destination to Cairo FIR, Cross "**NALSO**" at 29,000ft.
 - When approaching to NALSO, switch aircraft from Area QNH to QNE (FL290).
- **♣** International flights from LLER: after

"NURIT" climb altitude 28,000ft via "SIVAK" (cross SIVAK at 28,000ft), maintain altitude until crossing LLLL FIR, unless coordinated with LLLL_CTR to climb higher.

in case that LLLL_CTR is not connected (online), than you can climb the traffic to its final filed Altitude boundary, then climb to flight plan altitude. With coordination with LLLL, it is possible to climb the aircraft to 32,000ft before crossing LLLL FIR.

The following table is the recommended altitude for IFR flights to/from LLBG <=> LLER, based on real world flights:

Aircraft Type	Direction	Altitude
Turbo Prop (e.g. ATR72)	North => South	9000ft, 11,000ft, 13,000ft
	South => North	8000ft, 10,000ft, 12,000ft, 14,000ft
Jet (e.g. A320)	North =>South	19,000ft -25,000ft
	South => North	FL18,000ft -24,000ft

Flights from the south leaving bound to LLBG: LLSC_CTR will coordinate with LLBG Approach the route after TOMAL (last instruction to Aircraft before transfer to LLBG Approach) or the assigned STAR



2.4.2. Strategic Lateral Offset Procedure (SLOP)

SLOP procedure is applicable only if both conditions are true

- ✓ IFR flights operating with-in route **J10**
- ✓ Traffic heading north bound from <u>ESHEL</u> waypoint to SIVAK/ASSIF waypoint.
- Aircraft shall deviate 1 NM to the right (EAST) of the route center, if capable of being programmed with automatic offset.
- ➤ Offset will not exceed 1 NM right of route center (radial); and <u>must not</u> be to the left (WEST) of the route centerline.
- An aircraft that cannot comply with the procedure must advise ATC and fly the route center.
- ➤ There is no ATC clearance required for this procedure, yet it is recommended that ATC be advised in case of an aircraft unable to comply with the procedure.
- ➤ During the procedure, the aircraft will maintain altitude as instructed by ATC, and report position as instructed, based on waypoints of the current ATC clearance and not the actual offset positions.
- ➤ SLOP shall be terminated automatically after crossing EAST of SIVAK / EAST of ASSIF, such termination will be accompanied with further instructions with-in Ben-Gurion TMA airspace.

2.4.3. Traffic Transfer

2.4.3.1. Transfer to Approach.

South Control will transfer the traffic to **LLBG Approach** no later than <u>AMMIT</u> waypoint at altitude(s) of: 8000ft & 10,000ft.

Altitude 6000ft is also possible but require coordination

2.4.3.2. Transfer to LLER Tower.

South Center will transfer the traffic to **LLER** airport tower as follows:

- ❖ IFR traffic after passing **NURIT**, no later than **RASAF**
 - ➤ In case the traffic is going to land on RWY 19, LLSC_CTR would give the approached clearance to the aircraft (e.g. "cleared ILS approach RWY 01…") and transfer the traffic to tower once the aircraft is on the ILS
- ❖ CVFR traffic crossing **KTORA** at 2500ft



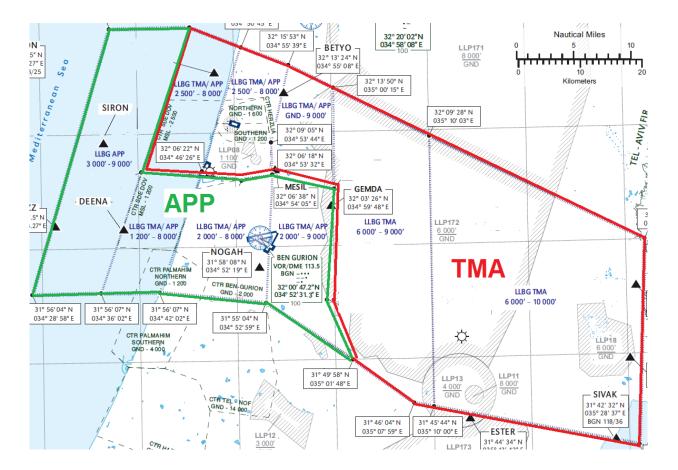
3. BEN-GURION

3.1. Approach

The LLBG Approach (APP) and the TMA in VATSIM are both under the Approach controller responsibility (LLBG_D_APP) as depicted below:

The control area is both for IFR flights and for CVFR flights in the control area.

LLBG_D_APP is responsible for the entire TMA control as well as the approach and departure.









Call sign		Frequency
Ben-Gurion Approach/Departure	LLBG_D_APP	120.500
Ben-Gurion Arrival	LLBG_A_APP	131.100

LLBG Approach R&R:

- Departing/arriving traffic to/from LLBG
- Selecting the Instrument approach procedure for the Active landing runway
- Traffic taking off from LLBG heading to the south/east
- Traffic taking off from LLBG heading to the north (e.g. NAT)
- Traffic arriving to LLBG coming from LLSC_CTR
- Traffic coming from Jordan that their destination is LLBG
- Traffic leaving LLBG to Jordan (OJAI / OJAM).
- flights crossing the TMA area from north to south and vice versa



Please reffer to the VATIL /JOvACC letter of Agrement (LOA) for restrictions and regulations on flights from/to Jordan

- ➤ LLBG_D_APP will be used in normal operation, in which it controls both departures and arrivals to/from LLBG, regardless to departure/landing runway.
- > LLBG_D_APP will control the TMA
- ➤ LLBG_D_APP will assume LLLL_CTR position in case LLLL_CTR is not connected, Only for traffic departure / arrival to/from LLBG from/to the WEST (over the international water), Nothing else.
- ➤ LLBG_A_APP is an optional station and only allowed to be used when both conditions are met.
 - ✓ RWY21 is in use for landing at LLBG
 - ✓ **LLBG_D_APP** is connected (online)
- ➤ LLBG_A_APP will control arriving traffic on RWY21 at LLBG exclusively.
- ➤ LLBG_A_APP when connected, LLBG_D_APP will handle departures from all runways and arrivals to all runways apart from RWY21 (under LLBG_A_APP) and the TMA control.



3.1.1. Traffic separation in the TMA/APP

- ♣ The minimum traffic separation is 3nm or 1000ft
- Traffic separation due to wake turbulence should be kept
 The following table should be used as a reference for the
 minimum separation aircrafts due to wake turbulence

Succeeding Aircraft	behind	preceding aircraft	Separation minima
Heavy	behind	Heavy	4 NM
Medium	behind	Heavy	5 NM
Light	behind	Heavy	6 NM
Light	behind	Medium	5 NM

These minima are typically categorized as follows (ICAO):

- **Light** MTOW of 7,000 kilograms (15,000 lb) or less;
- **Medium** MTOW of greater than 7,000 kilograms, but less than 136,000 kilograms (300,000 lb);
- **Heavy** MTOW of 136,000 kilograms (300,000 lb) or greater.

3.1.2. SSR codes

LLBG_D_APP will provide SSR code to aircraft taking off from LLHZ that cross the TMA, right after departure.

- ❖ All CVFR flight will be on SQ 5100 at the aerodrome. Once the aircraft took off and is handed over to the LLBG_D_APP, the Approach controller will perform radar identification and assign the aircraft with a new SSR code from the table at section 2.1.2
- ❖ All IFR flight crossing the TMA/APP, the local Tower will receive the SSR code during clearance from the LLBG_D_APP, in which will be taken from the table at section 2.1.2



Note: the SSR code that the Approach controller provides is not relevant for flights leaving **LLBG**. **LLBG** clearance delivery station handles its own SSR code to all flight leaving the airport. Even though the SSR codes are from the same SSR code pool(s)

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3.1.3. SID/STAR, Release / Reduction

3.1.3.1. Release / Reduction procedure

There is a LOA between the approach station and the Tower station that set number of rules on when traffic could be automatically released by the tower controller and when the approach station must set a manual release statement to a specific traffic to the tower controller.

Another LOA that is set between the two stations talks about when a departure aircraft stays under the tower control and when it is transferred on to the approach controller manually in certain situations. That is called the "reduction procedure"

For more information and details on the "*Release*" procedure, please refer to section: 3.2.1.2

For more information and details on the "*Reduction*" procedure, please refer to section: <u>3.2.1.3</u>

3.1.3.2. Standard Instrument Departures (SID)

- All SID at LLBG would be assigned by the clearance delivery station during clearance.
- Flights to AMMAN, Jordan leaving from LLBG, that their cruising altitude is 9000ft, will depart on SID SALAM, APP controller would climb the ACT to 9000ft

3.1.3.3. LLHZ IFR Departure:

IFR departure to the <u>north</u> from **LLHZ** Will depart on "*PEPIR 1*" procedure, once at PEPIR, LLBG_D_APP will radar vector the aircraft to its air route waypoint.

IFR departure to the <u>east/south</u> from **LLHZ** Will depart on "*PEPIR 1*" procedure, LLBG_D_APP will radar vector the aircraft to its air route waypoint.



3.1.3.4. Standard Terminal Arrival Routes (STAR)

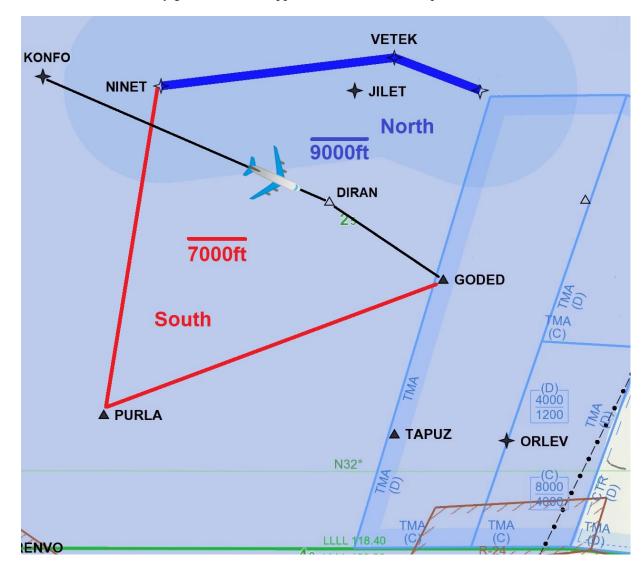
The actual assignment of the arrivals (STAR) is under the ACC responsibility. At any given time, LLBG_APP could cancel an assigned STAR and route traffic based on it needs in order to avoid traffic conflicts & creating a better approach sequence if needed.



For the full list of available STARs and more info, please reffer to section 2.1.1

Once traffic was transferred from **LLLL_CTR** to the Approach controller:

- ➤ R/V to the North of the STAR route is allowed once traffic is at 9000ft or below
- ➤ R/V to the South of the STAR route is allowed once traffic is at 7000ft or below
- ➤ At any given time, the Approach controller cannot pass the North/South





3.1.4. Instrument Approach Procedure

The Approach controller is responsible what instrument approach procedure is to be used on the active runway at **LLBG**. Every active runway has its restrictions and limitations as described below.

3.1.4.1. RWY12

Priority	Approach type	Comments
1	ILS	See reduction procedure at section: 3.2.1.3
2	VFR	*For prop driven aircrafts and helicopters only *aircraft must not exceed more than 3nm from the airport

† NOTE: RNP approach available, by pilot request *only*

3.1.4.2. RWY30

Priority	Approach type	Comments
1	RNP Z	*Non RNP Aircraft would be assigned with DONAG VISUAL *DONAG is the lost fix to intercept the precedure.
2	RNP X	*DONAG is the last fix to intercept the procedure *Non RNP Aircraft would be assigned with GAVRI VISUAL *REBDO is the last fix to intercept the procedure
3	VISUAL	*in case of approach from the south: A/C shall maintain 4000ft or above until passing RWY26 extended centerline

† NOTE: RNP Y approach is forbidden.

ILS 30 approach is currently not in use.

However, if there is an aircraft that cannot perform RNP approach or the Visual (for whatever reason), the approach controller is authorized to allow them the ILS approach.

3.1.4.3. RWY21

Priority	Approach type	Comments	
1	ILS		* Approved only for landing * Landing is permitted only for aircraft with 3 engines or less. Unless the weather does not permit landing on another runway

RWY21 When RWY21 is the active landing runway at **LLBG**. For any reason landing at RWY21 & RWY26 at the same time is forbidden.

† NOTE: RNP approach is not in use

NAMIM Visual approach is not in use



3.1.4.4. RWY26

Approach type	Comments
ILS X	* AMMOS 1C / D STAR and/or R/V
VISUAL (South)	* A/C shall maintain 4000ft or above until passing RWY26 extended centerline
	* A/C must not exceed more than 6nm east of the airport
VISUAL (North)	* A/C shall maintain 4000ft or above until passing PARDES. can allow lower with Tower coordination
VFR	* For prop driven aircrafts and helicopters only
	ILS X VISUAL (South)

† NOTE: RNP approach available, by pilot request *only*

3.1.4.5.	RWY03
not in use	
3.1.4.6.	RWY08
not in use	



3.1.5. Traffic transfer

3.1.5.1. Transfer to LLLL CTR

 Departing traffic from LLBG to the west shall be transferred to LLLL_CTR when clear of conflict, but no later than <u>ORLEV</u>

3.1.5.2. Transfer to LLSC_CTR

Southbound traffic will be transferred to **LLSC_CTR** no later than TOMAL waypoint at altitude of 7000ft / 9000ft.

3.1.5.3. Transfer to LLPT_CTR

• Traffic heading north (e.g. LLER -> LLHA) shall be transferred to LLPT CTR at the north part of the TMA (ADLOD).

Coordination required.

3.1.5.4. Transfer to/from Jordan

For more detailed on LLLL / Jordan traffic transfers and regulations please refer to the "Letter of Agreement between JOvACC and VATIL" document

3.1.5.5. **LLBG Tower**

ILS 12: APP will transfer IFR traffic inbound to ILS 12 to tower anywhere between 12nm – 8nm from the aerodrome, but not before APP cleared any potential traffic conflict, except in reduction procedure (section: <u>3.2.1.3</u>).

ILS 21: APP will transfer the traffic to LLBG_A_TWR (if online) or LLBG_D_TWR (if LLBG_A_TWR is offline) once established on the ILS

ILS (X) 26: APP will transfer the traffic once established on the ILS

RNP Z 30: APP will transfer the traffic to tower not before ROCAT

RNP X 30: APP will transfer the traffic to tower not before <u>GAVRI</u>

3.1.5.6. LLHZ

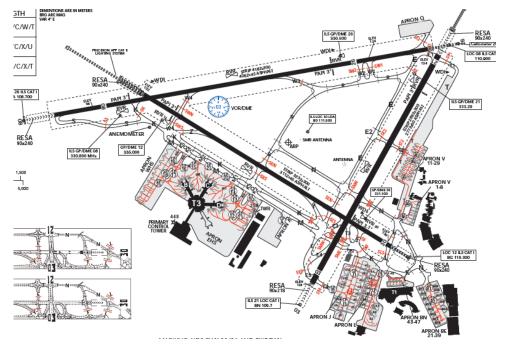
APP will transfer traffic to LLHZ between PARDES & GANAI AM

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3.2. Tower

Call sign		Frequency
Ben-Gurion Tower	LLBG_D_TWR	134.600
Ben-Gurion Tower	LLBG_A_TWR	132.100
(Arrivals)		
ATIS	LLBG_ATIS	132.500
RWY	12/30 26/08 03/21	



- ➤ LLBG_D_TWR will be used in normal operation, in which it controls both departures and arrivals to/from LLBG, regardless to departure/landing active runway.
- LLBG_A_TWR is an optional position. it shall only be used when those two conditions are met.
 - ✓ RWY21 is the active runway for landing
 - ✓ **LLBG_D_TWR** is connected online.
- ➤ LLBG_A_TWR will control landing traffic at RWY21 exclusively and is also responsible for crossing RWY21 (e.g. traffic TAXI from terminal 1 for departure at RWY26).
- ➤ LLBG_A_TWR if connected, LLBG_D_TWR will handle all <u>departures</u>, and arrivals to any other runway than RWY21.



LLBG (Ben-Gurion) is Israel's largest Int'l airport. The airport mainly serves International commuter flights; however, it also serving Domestic flights.

LLBG Int'l airport serves also CVFR flights as well. However, in some cases when the airport is busy when connected on line, the tower will not be able and serve CFVR flights and/or airport circuits training and could request the pilot to deviate to an alternate aerodrome.

 It is the Tower's controller full discretion rather to allow or disallow CVFR flights into/out the aerodrome and/or circuits training over the aerodrome.

LLBG Tower R&R:

- 1. Tower is responsible for selection of the active runway.
- 2. Tower is responsible for selecting the Instrument Approach for the active landing runway in case the Approach controller is offline.
- 3. Tower is responsible for loading ATIS station. The controller can delegate this to someone else (e.g. Approach controller), however it is the Tower responsibility for the ATIS and its content.

Visual Circuits:

Altitude:

- ✓ For class A & B aircraft, is 1200ft
- ✓ For class C & D aircraft, is 2000ft



♣ When RWY21 is active (landing), the North section of "E" to RWY12-30 belongs to Tower Controller and not to ground east as usual. Therefore, when traffic is TAXI to RWY26 for departure from the East, it will hold shot at "N", be transferred to Tower Arrival (LLBG_A_TWR), cross RWY21, then Tower arrival will transfer the traffic to Tower Departure (LLBG_D_TWR)





when tower arrival is not connected, ground will transfer the traffic to tower departure holding short at "N". the tower departuer will assume the traffic until airborne



3.2.1. Departure / Arrival

The preferred runway in general for takeoff is **RWY26**.

In case of strong winds from the east, **RWY12** will be used for T/O.

Please refer to the table below for the runway configuration priority

The Tower controller can approve or disapprove in special cases an exception takeoff or landing of any other runway at his discretion. However, this must be prior approved by the **LLBG_D_APP** controller.

In situation in which the aircraft only remain in the Tower's CTR (e.g. circuits training over the aerodrome), Approval from **LLBG_D_APP** is not required, but should be advised.

The tower controller when assigning active runway shall take into consideration weather when selecting an active runway for takeoff & landing.

Wind factor comes into account when tail wind is greater than:

- > 5kt for takeoff
- ➤ 10kt for landing when runway is dry or 5kt when runway is wet

The following table shows the preferred runway configuration based on weather (visibility, wind, etc.)

Priority runway configuration	Sunrise -Sunset	Sunset - Sunrise
1 st	30/26, 12/26	12/26
2 nd	21/26	12/12
3 rd	30/30	30/26
4 th	12/12	30/30
5 th	26/26	21/26
6 th		26/26

Active runway for landing is also subject to the time of the day due to environmental considerations & traffic management.

- I. All planned landings Between 23:00 to 01:00 local time (winter and summer),
 - Will land on RWY30, using the approach based on the "Sunset-Sunrise" table at section: 3.1.4.2.
- II. Preferred runway for landing every day from **05:30** to **07:00** during winter, and from **05:00** to **07:00** during summer, will be RWY30.



for more information refere to the following link: https://www.iaa.gov.il/environment-and-sustainability/air-craft-noise/



The tower controller is responsible for clearing an aircraft for takeoff. Some considerations need to be accounted for before takeoff clearance is given

- ❖ Departure from RWY26 or RWY30
 - The minimum separation allowed for departures is once the first aircraft reached 2nm from the end of the runway, we can clear the second aircraft for takeoff. The aircraft must be on SID.
 - The minimum separation allowed between 2 departures on a MERVA/DAFNA SID is once the first aircraft reached 3nm from the end of the runway, we can clear the second aircraft for takeoff.
 - Any other departure minimum is based on Approach controller manual release (see section: 3.2.1.2)
- Departure on RWY26 When RWY30 is the landing runway could be allowed only after the landing aircraft confirmed able to vacate before runway 26. Preferably Z.

Example: "Jordanian 342, vacate Z, left K"

- ❖ Departure from RWY26 via "E" When RWY21 is used for landing, is allowed no later than 4nm final of the landing aircraft. Departure roll must start before landing aircraft reaches 4nm finals.
 - o In case the landing aircraft at or less than 4nm finals, the departing aircraft can T/O only once the landing aircraft passes behind RWY26 line (Jet Blast risk of departing Aircraft)
- ❖ The last departure clearance of a lined-up aircraft on RWY26 when an arriving aircraft is bound to land on RWY12, could be given up until the arriving traffic is established on the ILS and no shorter than 12nm from the runway.

Anything shorter than this, the reduction procedure is in effect.

for more information refere to the reduction proceadure at section: 3.2.1.3

- ❖ Departure aircraft from RWY30 must be airborne before arriving traffic landing at RWY12 has crossed waypoint **GODED**
- ❖ Departure from RWY12, the proceeding aircraft can be given takeoff clearance only after the 1st aircraft's nose passed heading 180 degrees during the SID's turn (usually around 2,500ft).
- ❖ When lining up an aircraft on RWY12 for takeoff, the controller will Instruct the aircraft: "TAXI via RWY08, line up and wait RWY12"
- ❖ The controller must provide wake turbulence separation as described at section: 3.2.1.1, before clearing an aircraft for takeoff.



3.2.1.1. Wake turbulence separation

The following wake turbulence separation minima for departing aircraft shall be applied by the tower controller:

Succeeding Aircraft	behind	preceding aircraft	Separation minima
Medium	behind	Heavy	1.5 Minutes
Light	behind	Heavy	1.5 Minutes
Light	behind	Medium	1.5 Minutes

These are typically categorized vortex category as follows (ICAO):

- **Light** MTOW of 7,000 kg (15,000 lb) or less;
- **Medium** MTOW of greater than 7,000 kg, but less than 136,000 kg (300,000 lb);
- **Heavy** MTOW of 136,000 kg (300,000 lb) or greater.
- The time count starts from the moment the aircraft appears on the radar as airborne
 - (in real life the time count starts from the moment the aircraft rotates)
- Landing traffic on RWY12, no take off clearance will be given to departing aircraft on RWY26 for 1.5 min time count from the moment the landing traffic crossed RWY12/26 intersection, if the arriving aircraft is a heavier category.
- If the following aircraft does not start its takeoff roll from the same point as the preceding aircraft, this is increased to 2.5 minutes (e.g. first airplane takes off from "E" while the second smaller airplane takes off from "W1").
 - a) W1 and W2 are considered the same intersection point
- ♣ A separation minimum of 1.5 minutes shall be applied when:
 - a) A departing LIGHT or MEDIUM aircraft will depart after a HEAVY aircraft <u>arrival</u>, or if a departing LIGHT aircraft will depart after a MEDIUM aircraft arrival.



3.2.1.2. Traffic release

Some departures must be coordinated with **LLBG_D_APP** station & some departures don't require coordination with **LLBG_D_APP**. This is referred to as "release".

There are two types of conditions. One is an "<u>automatic release</u>", in which the tower controller can clear an aircraft for a takeoff at his discretion at any given time without receiving an approval prior from the Approach controller.

The other condition is "<u>stop-automatic release</u>", in which the tower controller must receive a release (for departure) authorization from the approach controller before clearing the aircraft for takeoff.

The airport will always operate under automatic release **except** for the following conditions:

- Active runway change
- Any takeoff from a runway other than the runway in use for takeoff
 - T/O on RWY30 when RWY26 is in use for departure, is "Automatic release" in case RWY 12 is not used for landing as an exeption
- After any departure of a slow aircraft, (e.g. ATR, or any Prop Aircraft), until Approach controller instructs to "resume automatic release"
- Any nonstandard departure (Training flights, vectors, NAT, RIPUD or PIDET departures)
- Any missed approached / go around, until Approach controller instructs to "resume automatic release"
- Approach controller declared that he is operating "stop automatic release"
 - * At any given time, an Approach controller can "stop the automatic release"



NOTE: In a single runway configuraion (e.g. RWY26 both for T/O & landing), the Tower controller is not allowed to line up the aircraft onto the runway if there is no release (automatic or none automatic).



NOTE: After any exeption (mention above), once received a release from APP controller, the status remains on "stop automatic release" untill APP controller resumes "Automatic release". There is one



3.2.1.3. Reduction procedure

At the following conditions, the Tower controller will instruct the departing aircraft to remain on its frequency when airborne and will transfer the aircraft manually to the approach controller when conditions permit so.

Example: Jordanian 341, when airborne remain on my frequency, wind variable at 2knots, runway 26, cleared for takeoff.

In configuration of 12/26:

Departing aircraft on RWY26 on its run, must cross 12/26 intersection before the arriving aircraft crosses **LIMKO** waypoint

- Departure on 26 must be immediate takeoff
- Departing traffic must be on tower frequency. Landing traffic must be either on tower frequency or approach controller will transfer the arriving traffic no later than FAF.
- Allowed only if departing aircraft will depart on a SID, to MRISN, NSHRM or any other departure route between runway 26 heading and heading 180.
- Minimum visibility 5km and/or ceiling of 2000ft or above
- Transfer departure traffic to departure controller, is allowed only when there is at least 1000ft separation.

3.2.1.4. Arrival

If able Pilots are requested to vacate runways after landing as follows:

- o RWY26 "Vacate W4, Cross runway 12"
- o RWY08: "Vacate W3, right R"
- o RWY30: "Vacate Z, left K"
- o **RWY12:** "Vacate Y, right M" or "Vacate Y, left K, hold short of runway 21"
- o RWY21: "Vacate E3, right M" or "Vacate T3, left K"



3.2.2. Active runway / instrument approach for use

methods for the Tower controller and approach controller to decide on what active runway for takeoff and landing and the instrument approach (for approach controller)

Option 1:

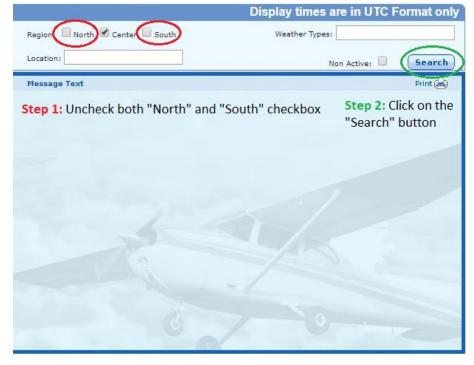
to listen to the **LLBG** official **ATIS** / **VOLMET**.

The **LLBG ATIS** / **VOLMET** could listen to over the phone, through the following numbers:

- # +972(0)37755074(ATIS)
- # +972 (0)3 973 0699 (VOLMET)

Option 2:

http://brin.iaa.gov.il/aeroinfo/AeroInfo.aspx?msgType=Weather



Results







3.2.3. Traffic transfer

3.2.3.1. Transfer to LLBG APP

- In case of a Go-Around, Tower will transfer the traffic to the approach controller after assuring aircraft safety and coordination with the approach controller.
- Transfer to Approach controller in "reduction" situation will be done based on the reduction procedure at section: 3.2.1.3.
- Flight to LLHZ before PARDS.

3.2.3.2. LLBG_A_TWR to LLBG_D_TWR

In situations when **RWY21** is the landing runway, traffic taxing from the east apron, **LLBG_A_TWR** will transfer the traffic once crossed the runway into the "E". See more details at section: 3.3.1

3.2.3.3. Transfer to Ground

Landing aircrafts will be transferred to Ground controller as soon as they vacated the runway. (the idea is to continue the traffic flow, that aircraft won't stop and jam the runway)



3.3. Ground

Call sign		Frequency
Ben-Gurion Ground or Ground West	LLBG_W_GND	118.050
Ground East	LLBG_E_GND	129.200
Ben-Gurion Clearance	LLBG_DEL	118.300
RWY	12/30 26/08 03/21	

Ground controller is responsible for ground movement at the aerodrome.

That includes outgoing traffic which are parking/gate and wish to TAXI to the runway & incoming traffic that just landed and wish to TAXI to their parking space/gate.

There are Two ground stations at LLBG, Ground East and Ground West



Ground Controller responsibility:

- Issue appropriate and accurate instruction to avoid collisions on the ground.
- Issue taxi and pushback clearances
- Controllers must validate that the pilot has the correct ATIS information / QNH prior to the push.
- crossing of an active runway must be passed to Tower frequency.



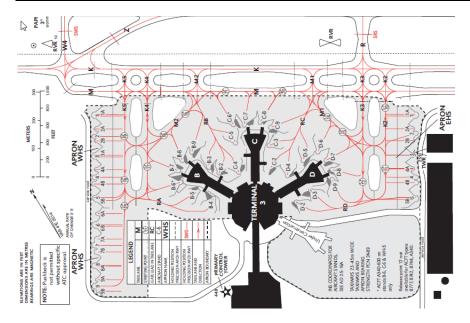
- Controller should validate squawk mode C before TAXI.
- Ground controller must coordinate with Tower controller any TAXI to a RWY that is not currently the active departure RWY. (e.g. if pilot wants to T/O from RWY30 when RWY26 is the active departure RWY)

3.3.1. Ground West

Ground west is responsible for all traffic ground movements at the west side of the aerodrome (west of "E" TAXI way), as depicted below.







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- ♣ Ground West will assume the ground east (LLBG_E_GND) position and Clarence Delivery in case the ground east is not connected
- ♣ When **RWY21** is active (landing), the "E" south section to runway 12-30 and onwards to the west belongs to ground west and not to ground east as usual



1) Aerodrome control area & responsibility

- a) Terminal 3 & west ramp
- b) TAXI on taxi ways west of "E"

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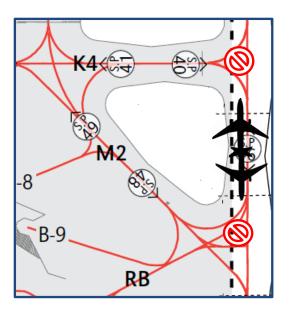


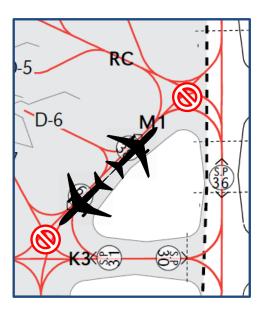
2) Push back & Engine start (T3)

Starting point	Traffic facing	Comment
20	North	
21	South	
22	North	
23	South	
24	North	
25	South	
32	North	
33	South	
34	North	
35	South	
37	East	
38	North	
39	South	
42	North	
43	South	
47	West	
48	East	
49	West	
50	North	
51	South	
52	North	
53	South	
54	North	
55	North	



- P/B & ENG start to "a none" S.P is only approved due to pilot difficulties to comply.
- ENG start at the gate before P/B is only approved for the right engine only (the outer right in case of a 4-engine aircraft) and it must be at IDLE
- Pushing two aircrafts at adjacent Starting Points, Back to Back is prohibited, apart from 37/47, in which it is allowed.







3) TAXI Instructions:

- a) When RWY26 is the active departure runway, TAXI via "R". If not possible (scenery issues), TAXI via "M" / "K" and "E" or "L", "N" and "E"
- b) When RWY 12-30 is active runway (Departure/Landing), traffic will hold at "R" (or "E" / "L") holding point 12-30 and transferred to Tower controller
- c) When RWY12-30 is <u>not</u> active, runway crossing (on "R") will be on Ground West frequency, traffic will be transferred to Tower controller any time before holding short of the runway (preferred some time before the actual holding point, not to hold up traffic flow)
- d) Traffic TAXI to the east of the aerodrome should be transferred to ground east any time before reaching taxiway "E"
- e) In general, all eastbound traffic will TAXI on the "K" and all westbound traffic will TAXI on the "M". However, this is not mandatory nor limited to that configuration.
- f) K2, K3, K4, K5 taxi ways are not one-way TAXI even though it is marked as one-way on the charts. The Ground controller could utilize those taxi ways at any direction at any time apart from the following:
 - Heavy aircraft <u>recommended</u> to TAXI through K2 due to large radius turn at M1
 - ➤ Traffic at S.P 39 will TAXI via K3 north
 - ➤ Wide-body aircraft entering gate B6 will be done through K5 only
- g) A346 limitations
 - **×** TAXI to C6 only from the west
 - × P/B to S36, S46 is prohibited
- h) B77W / A346 / A35K / B78X parking gate will be in the following priority by order:
 - 1. B6
 - 2. C6
 - 3. E6G / E8G
 - ✓ Entrance to gate C6 for A346, will be through "M" from the west side.
 - 4. WH5
 - 5. B9 is available for 77W (not for A346/A35K/B78X)

4) TAXI to Holding Point (H/P) will be conducted as follows

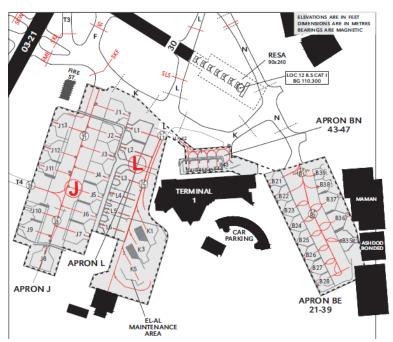
- a) RWY26 at W2 (W1 and/or "E" can be used but only after coordination with Tower controller)
- b) RWY30 at LS (coordinate with Ground east)
- c) RWY12 at "K"



3.3.2. Ground East

Ground east is responsible for all traffic ground movements at the east side of the aerodrome (from taxiway "E" and to the east), as depicted below.







NOTE: This station is allowed to connect online to **VATSIM** <u>only</u> if there is a ground west (**LLBG_W_GND**) station connected online. Otherwise this station is inoperable.



♣ When **RWY21** is active (landing), the "E" south section to runway 12-30 and onwards to the west belongs to ground west and not to ground east as usual.



The North section of "E" to RWY12-30 belongs to Tower Controller and not to ground east as usual. Therefore, when traffic is TAXI to RWY26 for departure from the East, it will hold shot at "N", be transferred to Tower Arrival (**LLBG_A_TWR**).





when tower arrival is not connected, ground will transfer the traffic to tower departure holding short at "N".



♣ Ground East will assume the Clarence Delivery (LLBG_DEL) station as well in case the Clarence Delivery is not connected

1) Aerodrome control area & responsibility

- a) Ramp "BE", "L" & "J" (Terminal 1)
- b) Ramp "V"
- c) TAXI ways east to "E"

2) TAXI to holding points will be conducted as follows

- a) "SSL" (Lima South) or "SLN" (Lima North) for RWY30
- b) "W1" for RWY26
- c) "E" for RWY26 (must coordinate with Tower controller)
- d) Any other intersection departure (apart from W1) must be coordinated with tower controller

3) Pushback and engine start at Terminal1

- a) Ramp "J": S.P 60, 61, 62, 70, 71 facing north, 65 facing west
- b) J2 & J3 cannot start their engines at the same time
- c) Ramp "L": L1 & L2, facing north.
- d) Ramp "BE", facing north.

4) TAXI Instructions

 a) When RWY26 in use for departure, TAXI to H/P W1 via K, K1, N, cross RWY21, E & R (or only on E without R in case the traffic is taking off frown E H/P)



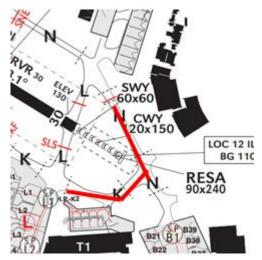
NOTE: When RWY21 is <u>not</u> the active landing runway, crossing RWY21 will be done on Ground east frequency. When RWY21 is the active runway for landing, Ground controller will stop the aircraft before the runway and hand him over to Tower arrival controller

- b) Must not cross an aircraft at RWY 12-30 at "L" when it is an active runway.
- c) When runway 12-30 is active, traffic should be transferred to Tower controller before crossing the runway.



5) Holding Point (H/P) Approach RWY30

- a) When RWY30 is the active landing runway or RWY12 is used for departure, avoid traffic at intersection "K" & "N" during takeoff/landing traffic.
- b) Holding at RWY30 will be done at SK1 & SN2 or at intersections "L" & "K" & "L" & "N"
- c) Traffic leaving Ramp "BE" will hold in parallel B21 (Hold abeam parking B21)
- d) Proceed TAXI on those critical areas only after the aircraft Passed (took off/landed)



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3.4. Clearance Delivery

Call sign		Frequency
Ben-Gurion Clearance	LLBG_DEL	118.300
RWY	12/30 26/08 03/21	

Clearance delivery station is responsible approving flight planes for traffic taking off from LLBG airport.



NOTE: This station allowed to connect online to **VATSIM** <u>only</u> if there is a ground west (**LLBG_W_GND**) and ground east (**LLBG_E_GND**) stations connected online at the same time. Otherwise this station is inoperable.

ATC Clearance will follow the Standard ICAO format:

- Callsign
- Destination
- SID/Radar Departure
- Initial Altitude
- SSR Code



- Responsibility to verify flight plan validity, such as cruising altitude, air route, etc., based on local AIP rules, RVSM, ICAO, etc.
- ♣ In case there is ATIS at the airport, DEL must verify with the pilot that haves the current ATIS
- ♣ Any "exception" RWY departure on a different RWY that is not on the runway in use, due to pilot request or other reason, the DEL must coordinate with LLBG_TWR
- The Delivery will assign the standard departure based on the 1st waypoint on the air route (flight plan) as described at the table below.
- ♣ Departures from RWY30 / RWY26 Initial altitude is 3000ft
- ♣ Departures from RWY08 / RWY12 which is 5000ft (RWY08 is closed for departures)
- Departures on RWY 03, 08, 21 are not in use.
- Flights to AMMAN Jordan could file their flight plan at altitude of 7000ft & 9000ft
- Any Exception/other departure (SID / radar vectors) must be coordinated with Approach controller or higher station that covers APP before approving them as part of the clearance. In case APP (or higher) are not connected, clearance controller would give the departure at his/her discretion



- The following SID are not in use:
 - PIDET
 - ORLEV
 - NAT



More information and easy graphical layout of the full SIDs available for <u>LLBG</u> and air route waypoint gate, could be found at the "**LLBG cheat sheets**" documents available at VATIL web site the official charts at the official Israeli CAA website:

http://en.caa.gov.il/index.php?option=com_content&view=article&id=414&Itemid=278

 In case the aircraft/pilot cannot perform a standard departure (SID), the clearance delivery station shall coordinate a different clearance with the Approach controller

Example: "ELY315 Cleared to London Heathrow, RWY26, Fly RWY heading, expect radar vectors to XXXXX, initially climb 3000ft, Squawk 5643"

Example: "ELY315 Cleared to London Heathrow, RWY26, when passing xxxx feet, turn left/right heading xxx, expect radar vectors to XXXXX, initially climb 3000ft, Squawk 5626"



NOTE: When clearing an aircraft using radar vectors the RWY in use must be as part of the clearance.

 In case any IFR departure to NAT from RWY26, DEL must coordinate with the Approach controller (most likely it will be R/V – same as mentioned above).



The table shows the available SIDs / Radar Departure

LLBG	RWY26	RWY30	RWY12	Air route (flight plan)
				Waypoint gate
DAFNA	1 E	1F	1 C	DAFNA
SUVAS	1 E	1 F	1C	SUVAS
MERVA	2E*	2F	2C	MERVA
TOMAL	4E	4F	4C	TOMAL/SIVAK/TALMI [J10]
SALAM	4E	4F	4C	SALAM
NAT	SUVAS 1	SUVAS 1	SUVAS 1	NAT (VOR) [J11]
	+ R/V	+ R/V	+ R/V	
BIRIM	TOMAL 4	TOMAL 4	TOMAL 4	BIRIM
	+ R/V	+ R/V	+ R / V	
ASSIF	TOMAL 4	TOMAL 4	TOMAL 4	ASSIF
	+ R/V	+ R/V	+ R/V	

^{*} available according to section <u>0</u>



SSR Codes at LLBG during clearance:

SSR Code	Use case	Note
5101 - 5177	CVFR	All
5601 - 5677	IFR	All

CVFR: the DEL will give clearance to the pilot with the following elements:

- o Call sign
- o Destination
- o Departure RWY
- Altitude at the 1st waypoint
- o QNH
- → DEL will hand over the traffic to Ground (LLBG_E_GND / LLBG_W_GND) after a successful clearance read-back.



4. Tower General

4.1. General aviation small airfields

In Israel there are number of airfields that are specialized in small general aviation, mainly for CVFR flights but not limited to. Those airfields have their own procedures in which could be found at the official Israel CAA web site at the following link:

https://www.gov.il/he/Departments/Guides/aip

Those include very small-uncontrolled airfields as well. Those airfields are not covered in the SOP, their rules and regulations are based on the official documents published by the Israel CAA.



4.2. Common rules

4.2.1. Clearance & SSR

All flights require flight plan approval & clearance before they can commit a flight. The Tower is responsible to issue clearance to pilots.

- **CVFR:** The Tower will give clearance to the pilot with the following elements:
 - Call sign
 - Destination
 - Departure RWY
 - QNH
 - Altitude and 1st waypoint

Example: "AKL, startup for Haifa approved, runway in use 11, QNH 2997, BAZRA 800ft"



Note: The SSR code rule is not relevant for LLHZ taking off to LLBG. LLHZ **do** deliver an SSR code as part of clearance for traffic heading to LLBG

x IFR: Prior of giving IFR clearance to an aircraft at the aerodrome, the tower controller will contact the ACC/Ben-Gurion in which the aircraft is planned to cross through (the first ACC/Ben-Gurion that the plane will cross after departure) and ask for an IFR clearance in which includes the SSR code for the aircraft. Once received, the Tower can give clearance to the IFR flight.

All IFR flights the Tower will give clearance with the following elements **after startup**:

- Call sign
- Destination
- Departure procedure / RWY in use
- Initial Altitude
- SSR code

Example: "DAG, startup for Ben-Gurion approved, runway in use 29, QNH 2968, call me after startup for clearance"

Thereafter: "DAG, cleared to Ben-Gurion, after departure SHAFIM 1200ft thereafter BENQO1 departure, squawk 5643"

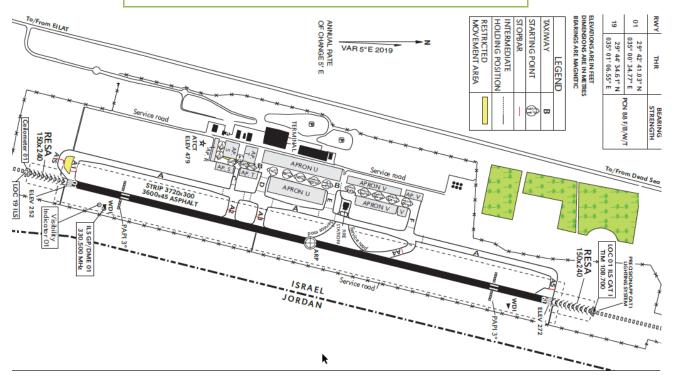


Note: The above is not relevant for traffic leaving **LLBG**. LLBG has its own clearance delivery station & procedures



4.3. LLER

Call sign		Frequency
Eilat Ramon Tower	LLER_TWR	119.00
ATIS	LLER_ATIS	132.55



LLER is Israel's major International Airport in the south of Israel and is the main bridge for the city of "Eilat". The Airport has some sort of Radar coverage, but only as for an aiding tool. The Aerodrome is based on "procedural control" and not "radar control"

Tower station is responsible for all operations of the aerodrome in which includes

- Clearance
- Ground
- Tower

English is the only language used at **LLER** for ATC services / control for all types of flights and aircrafts.



4.3.1. Circuits

All Circuits are always to west Circuits (e.g. RWY01 Left / RWY19 Right).

Circuits Altitude:

- Category A & B aircrafts 1500ft at Day and 2000ft at night
- Category C Aircrafts 2500ft both day & night
- Category D Aircrafts 3000ft both day & night.
- Category E Aircrafts **not permitted**

4.3.2. Clearance

Clearance will be given to the aircraft by the tower to any flight before engine start.

- Departure flights shall file NURIT exclusively as the first waypoint in flight plan. no SID/STAR procedure (e.g. NURIT 1H) in flight plan. ATC/Pilot must correct flight plan before ATC clearance.
- All IFR departures must be via SID and no R/V departure
 - For SID chart/assignment please refer to 4.3.5
- o CVFR flights clearance: 1500ft

Example: "Cleared CVFR to Matzadah, after departure climb 1500ft, squawk 5152"

SSR codes for International flights west bound SSR code of:

5601-5677 range should be assigned to the aircraft during clearance.

All other flights, SSR codes would be assigned by LLSC_CTR.

In case LLSC_CTR is offline, tower would assign SSR code based on Section: 2.1.2



4.3.3. **Ground**

Parking:

• "U" stands (1-10) are for commercial flights (all types of aircrafts), Only the West stands (west to TAXI way "B") are in use.

You can use any of the "U" stands however in real life the priority is to fill up the south stands / lower "U" numbers 1st (e.g. U1, U2, etc.) and climb up to the north (U3,4,5,6, etc.). the use of "U" or "U" with "A" (e.g. U1 vs. U1A) is up to the controller discretion based on the amount of aircraft he wants to fit

- "R" (1-8) for GA aircrafts, usually the "A" stand is in use (e.g. R5A), but it is up to the controller's discretion.
- "T" (1-4) are for business jets, sometimes IsraAir ATR aircrafts are parked at T4).
 Only the West stands (west to TAXI way "B") are in use.
- "S" for Helicopters and for GA when "R" is full and Business jets if "T" is full.

Only the West stands (west to TAXI way "B") are in use.

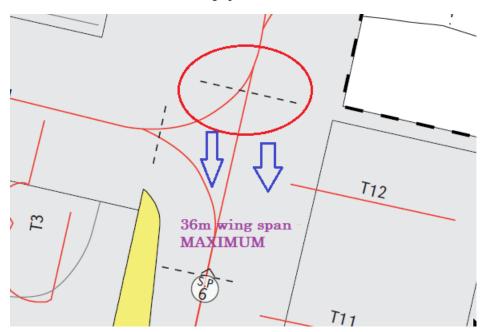
• "V", "T east", "S east" are not in use.





Pushback & TAXI:

- Pushbacks only to S.P
- T1-T4, no Pushback
- Pushback to S.P facing north/south based on the runway in use. (e.g. RWY 01 in use, face South)
- TAXI way "A" & "B" are both for inbound and outbound traffic
- TAXI way C, D, E, F are both for inbound and outbound traffic
 - o "C" TAXI way is up to category C aircraft
 - o TAXI way "F" & TAXI way "B" north of "E" is limited up to category **D** aircrafts
- Default Takeoff are done from A1 & A5, unless requested otherwise by pilot
 - RWY 01 ATRs usually request A3 for T/O.
 Light weight B737/A32x can give A2 & A3.
 A3 for T/O is not approved if there is a landing aircraft.
 - o RWY 19 ATRs usually request A4 for T/O. Light weight B737/A32x can give A4.
- TAXI traffic at "B" south to "D" intersection, allowed for aircraft of maximum 36m wing span.



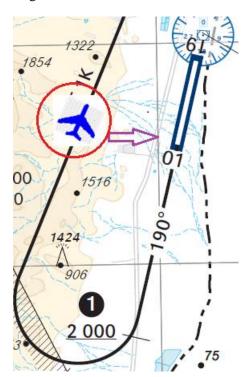


4.3.4. Tower

In general, RWY 01 is the preferred Runway for takeoff and landing. the use of RWY 01 is preferred, unless winds are greater than 5 Knots.

Takeoff spacing between Aircrafts should follow the flowing:

- > **RWY 01** (Flying North)
 - between aircrafts if the 1st aircraft is faster is **2 Min**'
 - between aircrafts at the <u>same performance</u> is **3 Min**'
 - between aircrafts if the 1st aircraft is <u>slower</u>, until the 1st aircraft reach the waypoint **NURIT** or **LLSC_CTR** gives a release
- > RWY 19 (flying North)
 - between aircrafts if the 1st aircraft is <u>faster</u> is 2 Min' and the traffic reached parallel to the beginning of RWY 01 (see picture below)
 - between aircrafts at the <u>same performance</u> is 3 Min' and the traffic reached parallel to the beginning of RWY 01 (see picture below)
 - between aircrafts if the 1st aircraft is <u>slower</u>, until the 1st aircraft reach the waypoint **SAMAR** or **LLSC_CTR** gives a release





- departing CVFR traffic on <u>RWY 01</u> cannot cross **YOTVETA** higher than 1500ft or **GOFRIT** 2000ft or **KTORA** 3000ft, before you can release an IFR traffic for takeoff after the CVFR traffic departure.
- departing CVFR traffic on <u>RWY 19</u>, once the CVFR aircraft turns right / west (right crosswind departure), you can release an IFR traffic for takeoff after the CVFR traffic departure.
- ♣ In case there is departing CVFR traffic on <u>RWY 19</u> and IFR traffic arriving for landing, the CVFR traffic must Cross **KTORA** at 3000ft before the IFR arriving traffic crosses waypoint **NURIT**

the following table describes the spacing between Arrivals and departures in order to prevent conflicts.

the table shows a potential conflict that could happen when there is a takeoff and landing at the same relative time. The table should give you a safe margin that would prevent such conflict if followed correctly.

In other words, the table shows you: what is the last point in time which you can allow an aircraft to start the takeoff roll based on the distance of the arriving Aircraft on final from the runway/airport

Minimum spacing between aircrafts:

Aircraft in final	Taking off aircraft	Distance (NM)
Turbo prop	Jet	4
Same performance		5
Jet	Turbo prop	6
Turbo prop Slow aircraft		7
Jet	(less than 140knts)	

Other potential conflicts you should be aware of:

- If RWY 01 is the Active runway:
 - If a CVFR arrives for landing, the CVFR aircraft, once crossed KTORA, the CVFR aircraft can't be higher than 3000ft at "KTORA" -or-> 2000ft at "GOFRIT" -or-> 1500ft at "YOTVETA"

if you wish to release an IFR traffic for takeoff.

 LLSC_CTR needs to provide minimum traffic separation between two or more aircrafts arriving to LLER for landing. for more details please refer to section: 2.4.1



4.3.5. Standard Instrument Departures (SID)

LLER	RWY 01	Air route (flight plan) Waypoint gate	Initial Altitude	Comment
NURIT	1F	NURIT	5000	RNAV
		[J10]		
NURIT	1H	NURIT	5000	Non-RNAV
		[J10]		

 RNAV SID is the preferred SID. unless the departing aircraft is a non-RNAV equipped aircraft, then use the non-RNAV SID, otherwise always use the RNAV SID.

LLER	RWY 19	Air route (flight plan) Waypoint gate	Initial Altitude	Comment
NURIT	1K	NURIT [J10]	8000	RNAV
NURIT	1J <mark>*</mark>	NURIT [J10]	8000	RNAV
NURIT	1M	NURIT [J10]	8000	Non-RNAV
NURIT	1N <mark>*</mark>	NURIT [J10]	8000	Non-RNAV

- RNAV SID is the preferred SID. unless the departing aircraft is a non-RNAV equipped aircraft, then use the non-RNAV SID, otherwise always use the RNAV SID.
- For RNAV Aircraft, NURIT 1K is the preferred SID
 - * NURIT 1J is for "Category D" aircrafts (B757 or above) and/or slow climbing aircrafts such as ATR aircrafts
- For Non-RNAV Aircraft, **NURIT 1M** is the preferred SID
 - * NURIT 1J is for "Category D" aircrafts (B757 or above) and/or slow climbing aircrafts such as ATR aircrafts
- As a rule of thumb, the preferred departure/landing is RWY 01. However, if there is wind restricting using RWY 01 (5 knot or greater), then RWY 19 should be used



4.3.6. Standard Terminal Arrival Route (STAR)

LLER	RWY 01	Comment
NURIT	1D	ILS Z
NURIT	1B	RNP Z

4.3.7. Visual / Instrument Approach

4.3.7.1. RWY 01

Priority	Approach type	Comments
1	ILS Z	* ILS approach should be used in most cases
2	RNP Z	* Only by pilot request
3	RNAV	* Only by pilot request
	VISUAL	

† NOTE: ILS Y/RNP Y approach is not in use

■ In case that there are two aircrafts inbound for landing, one on ILS/RNP RWY 01 and another aircraft (2nd aircraft) that is inbound for VISUAL approach RWY 01, you need to make sure that there is at least 10 min' separation between the traffic when crossing **RASAF**.

e.g. if the 1st aircraft is at waypoint **ELDAD** and the leading aircraft is at around **DUBIT** (beginning of RWY 19).

4.3.7.2. RWY 19

Priority	Approach type	Comments
1	ILS	* ILS approach should be used in most cases
2	RNP	* Only by pilot request
3	RNAV	* Only by pilot request
	VISUAL	

4.3.7.3. CVFR

CVFR flights are all VFR approach.

RWY 01 – circle to land west downwind of the aerodrome

RWY 19 – straight in approach



4.3.8. Traffic transfer

- ❖ LLER Tower shall transfer <u>IFR</u> traffic to **LLSC_CTR** when clear of traffic conflict:
 - o **RWY 01 departure** between 2000ft to 3000ft
 - **RWY 19 departure** as soon as the traffic starts the "right" turn.
- ❖ LLER Tower shall transfer <u>CVFR</u> traffic to **LLSC_CTR** when clear of traffic conflict at **KTORA** waypoint at 3000ft



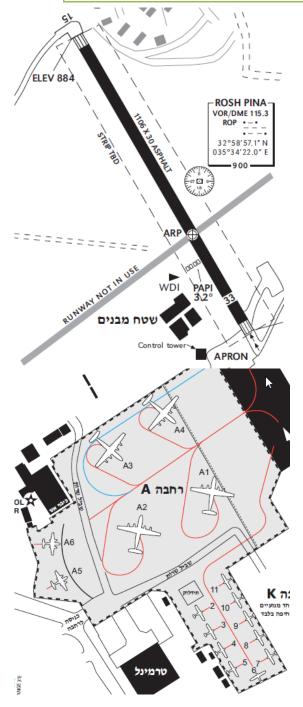
Note: In case of potential traffic conflict, all conflicting traffic must be on the same frequency and same QNH

For more details and Aerodrome charts please refer to the Israel CAA website http://en.caa.gov.il/index.php?option=com_content&view=article&id=413&Itemid=277



4.4. LLIB

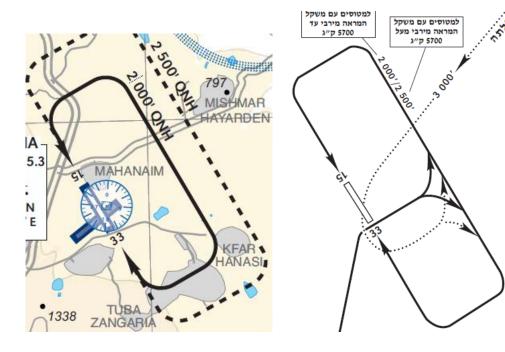
Call sign		Frequency
Rosh Pina Tower	LLIB_TWR	118.450
RWY	15 / 33	



LLIB servers both IFR flights and CVFR flights. Tower station is responsible for all operations of the aerodrome in which includes



- Clearance
- Ground
- Tower
- * RWY in use is determined based on the wind/weather
- ❖ Landing traffic could be vacated at the "RUNWAY NOT IN USE" in order to allow expedition of traffic movement.
 - ❖ The circuit altitude is 2000ft / 2500ft QNH





4.4.1. Clearance

Clearance will be given by the tower before any flight could be performed.

The aircraft will fist get the clearance to start engines. Once engines are started and fully operational, then flight plan clearance could be given.

For the full detailed clearance procedure, please refer to section 4.2.1

4.4.2. VFR / Instrument Approach

LLIB	RWY15	RWY33
	VFR	VFR
	VOR	VOR



The **VFR** approach is always the prefered approach to be used & should always be the one to be use if weather permits so. Incase of low visability and/or heavy clouds, the **VOR** procedure could be used.

4.4.3. Traffic transfer

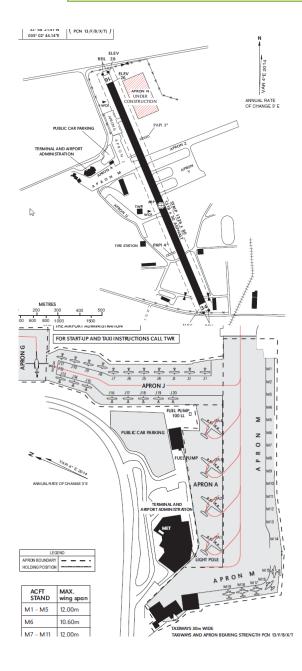
Flights leaving LLIB can leave LLIB both in VFR and IFR. LLIB will transfer the traffic to LLPT_CTR no later than <u>DESHE</u> waypoint.

For more details and Aerodrome charts please refer to the Israel CAA website http://caa.gov.il/index.php?option=com_content&view=article&id=264&Itemid=214



4.5. LLHA

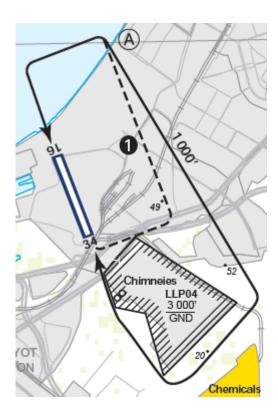
Call sign		Frequency
Haifa Tower	LLHA_TWR	133.000
ATIS	LLHA_ATIS	135.400
RWY	16 / 34	





LLHA servers both IFR flights and CVFR flights. Tower station is responsible for all operations of the aerodrome in which includes

- Clearance
- Ground
- Tower
- * RWY in use is determined based on the wind/weather
- Circuits are always flown to avoid the chemical refinery plants, as this is a no fly zone.
- The circuit altitude is 1000ft QNH
- There is a possibility to circuit the aerodrome (DSHANIM) by circumventing the chemical refinery in order to extend downwind



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Flights leaving LLHA will always leave LLHA in VFR and may switch to IFR at <u>GALIM</u> waypoint. The same is true for inbound traffic, at <u>GALIM</u>, the approach will be VFR.

 Clearance will be given by the tower before any flight could be performed. or the full detailed clearance procedure, please refer to section 4.2.1

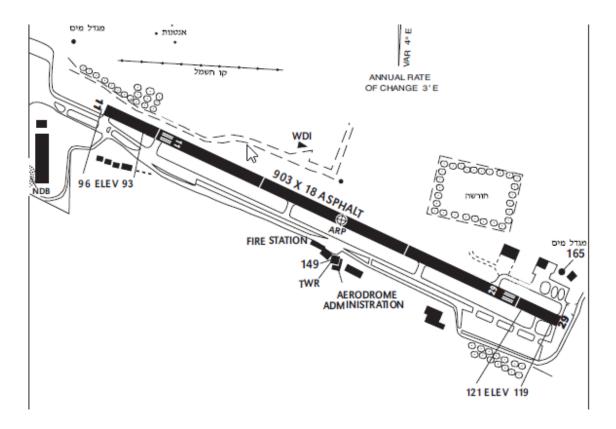
There is an exception of the general rule at section 4.2.1

- Int'l flights departing from LLHA, LLHA Tower will contact LLLL_CTR for an SSR code and not to LLPT_CTR as practiced for domestic IFR flights. In case LLLL_CTR is not connected, than LLPT_CTR will deliver the SSR code
- Int'l flights (west) cannot use H4A and H4B ATS routes, only H4C
- ❖ Traffic transfer to LLPT_CTR will be done no later than <u>MEHLAF DAROM</u> waypoint
- ❖ Int'l flights leaving LLHA would be transferred directly to LLLL_CTR no later than **GALIM** waypoint.
- ❖ LLHA training area traffic transfer will be at AFFEK at 2500ft
- Helicopters can wait/hold at DUGIT & KISHON
- ❖ Helicopter landing can land in the middle of the runway, but must land on the runway
- Commuter flight have priority both in air and ground.



4.6. LLHZ

Call sign		Frequency
Herzelia Tower	LLHZ_TWR	122.200
RWY	11 / 29	



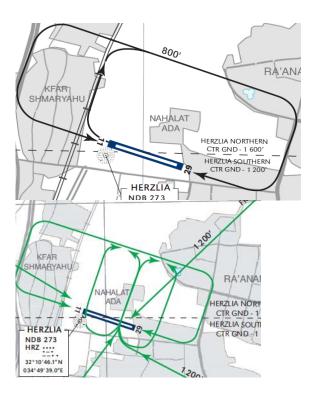
LLHZ can serve both IFR flights and CVFR flights, however it is mainly used for CVFR flights. Tower station is responsible for all operations of the aerodrome in which includes

- Clearance
- Ground
- Tower

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- * RWY in use is determined based on the wind/weather. RWY29 is the preferred runway when winds are not factor
- ❖ When RWY29 is in use, an aircraft must not cross the rail tracks to the west
- ❖ When RWY11 is in use, an aircraft can cross the rail tracks, but up until road "2" to the west
- ❖ The circuit altitude is 800ft QNH



- ❖ Clearance will be given by the tower before any flight could be performed. For the full detailed clearance procedure, please refer to section <u>4.2.1</u>.
 - \triangleright There are few exceptions of the general rule at section <u>4.2.1</u>
 - LLHZ will give an SSR code during clearance as well for CVFR flight heading to LLBG. LLHZ controller will ask for an SSR code from Ben-Gurion. Once given, LLHZ will give the SSR code during the clearance.
 - Any departing aircrafts from LLHZ to the LLHZ training areas, LLHZ will give the SSR code during clearance.
 The LLHZ training areas SSR code range is the normal CVFR SSR code

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- ❖ IFR departure will use "BENQO 1"
- ❖ Traffic transfer to LLPT_CTR will be done no later than <u>DROR</u> waypoint 800ft
- ❖ Traffic transfer to LLBG will be done at GANAI AM 1200ft
- ❖ Inbound traffic will be at the waypoints:
 - o From LLPT_CTR DROR at 2000ft
 - o From LLBG GANEI AM 1200ft

For more details and Aerodrome charts please refer to the Israel CAA website http://caa.gov.il/index.php?option=com_content&view=article&id=261&Itemid=211



APPENDIX A.

This document was designed to help ATC personal in VATIL and dictate procedures and regulations to the VATSIM online ATC services. The SOP document is based on real world regulations, Procedures and best practices throughout **LLLL FIR**.

The document was not intended to aid pilots; however, pilots are advised to read throughout the document in order to be familiar with the procedures.

This document and its content should <u>not</u> be used in the real world and only allowed to be used for flight simulator hobbyists and mainly for VATISM ATC services at **LLLL FIR**.

The Document does not address ATC online behavior nor ethics & Code of conducts, this document is focus purely on the technical professional ATC procedures.

ATC controllers must also read and agree to the VATIL Code of Conduct (CoC) document and VATSIM code of conduct, code of regulations, user agreement and others regulations documents in addition to the published SOP document to be fully comply to provide ATC services at **LLLL FIR** at VATSIM network.

The full set of VATSIM policies and regulations could be found at the following link: https://www.vatsim.net/documents

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For any questions and concerns or comments you would like to raise or clarification You can send an email to one of the following email addresses:

 $\frac{ops@vatil.org.il}{}-VATIL\ global\ operations\ department$ or

joel@vatil.org.il – Joel Strikovsy – VATIL 7