

## LAS VEGAS (LAS/KLAS)

Elevation 2181ft

### CATEGORY B

AV brief required – not available

### GENERAL

- Harry Reid Intl (renamed from McCarran Intl in Dec 2021) is near the centre of a broad desert valley in the S outskirts of the city.

### Threats

#### CFIT

- Airfield is surrounded by mountains, the highest Charleston Peak ~12,000ft amsl 30 nm WNW.
- 17 nm N there is high ground to ~7,000ft amsl; beyond this there are peaks to ~10,000ft amsl 30 nm N.
- W of the airfield the terrain is flat at first but rises rapidly to over 4,000ft amsl beyond 10 nm.
- 8 nm NE is a peak to ~4,000ft amsl and by 10 nm SE the terrain reaches ~5,000ft amsl.

#### Loss of Control

- Bird and Bat hazard.

#### Runway Incursion

- Possibility of a runway incursion if departing from the apron via taxiway C3 and continuing along taxiway A3.
- Be alert to all Rwy crossing clearances. Readback of all Rwy holding instructions is required

#### Mid Air Collision

- Local Airspace – Nellis AFB, 10 nm NE, generates intensive military jet training activity to the N and there is considerable light aircraft traffic from local airfields.
- Glider activity to the South West.

#### Special Considerations

- See OM C RIM – 'Hot and High' Operations brief (found on BAV Forums) for details on High Density Altitude Operations.

**ARRIVAL**
**Diversion Airports**

SAN DIEGO	SAN/KSAN	225 nm/207°T	CAT B
LOS ANGELES	LAX/KLAX	205 nm/231°T	CAT B
PHOENIX INTL	PHX/KPHX	222 nm/136°T	CAT B
DENVER	DEN/KDEN	545 nm/065°T	CAT B
SAN FRANCISCO	SFO/KSFO	359 nm/285°T	CAT B
ONTARIO INTL	ONT/KONT	171 nm/225°T	CAT B
(USA)			

**Approach**

- Rwy 19L/R:
  - Heavy helicopter traffic routing from downtown Las Vegas to the Grand Canyon transits along an East-West corridor at 3000ft approx 3–4 nm N of the threshold for these runways. Inbound traffic for these runways is kept to a minimum of 4000ft until clear of the traffic. If this is the case, the aircraft will intercept the vertical profile from above and will require proactive energy management to achieve the SAC.
  - ATC cannot vector you more than 6 nm North of the airfield, which results in a very short final approach, typically only 3 nm.
- Vectors to a visual approach are most likely for Rwys 08L/R and Rwys 19. ATC are restricted by their radar vectoring minimum altitudes, potentially leaving aircraft high with late descents and increased rates of descent required to acquire the correct vertical profile. (A higher rate of go-around is reported from these Rwys due to being unable to meet the stable approach criteria.)
- If visual with the ground, requests can be made to ATC for lower altitudes, which may assist in establishing a standard circuit altitude of 3700ft and more familiar profile management. This is not the case when flying the RNAV Visual procedures as the altitude constraints and tracks must be flown as published.
- Non RNAV Visual Rwy 08R: Expect an initial descent to altitude 7000ft and 210 kts on a right-hand downwind, followed by further clearance to 5000ft. Expect radar vector to finals at approx. 5 nm downwind along with a descent to 3500ft to call visual.
- Rwy 01R Visual App: ATC have requested crews fly visual approaches to Rwy 01R both during the day and at night, sometimes as a last minute Rwy change. Consideration should be given to the following to ensure compliance with VMC Flight Below MSA and the Safe Landing Policy:
  - ATC assigned altitudes will be below MSA/SSA. Terrain and obstacle definition, especially at night can be difficult.
  - Parallel approaches may be in use to Rwy 01L. Care should be taken to ensure aircraft does not fly through the extended centreline for Rwy 01R.
  - Maximum use of lateral and vertical guidance should be made to enable SAC to be met. Use of appropriate MCP ALT targets should be briefed for the approach and a potential go-around.
  - Minimal approach lighting is provided and marking of the touch-down zone is limited.

- The PAPIs can be difficult to distinguish early on due to the dust. Use of the fix page and range-rings may be of benefit in early assessment of the profile.
- During the briefing discuss the “How” of flying these approaches. Taking account of the high-density altitude and increased TAS and RoD set bottom lines and conservative gates. Consider being fully configured with landing checks complete by the end of the downwind leg to allow capacity for positively acquiring and monitoring the vertical profile early on base leg.
- Rwy 01L ILS or LOC DME not authorised for CAT D aircraft because FAA regulations do not allow publication of Cat D minima for precision approaches with glide path angles in excess of 3.1° without specific Flight Standards Approval. Absence of minima for such an approach might only indicate that Flight Standards Approval was not obtained by the airport authority.

### **RNAV Visual approaches for 08R, 19L and 19R**

RNAV Visual approaches are now available for the above runways from the 12th October 2017. These RNAV visual approaches are labelled (08R for example) in the FMC/FMGC as RNAVV 08R for Boeing fleets and RNV 08R V for Airbus fleets. BA now has approval from the FAA to operate these RNAV Visual approaches and crews can expect clearance from KLAS ATC for them if the associated runways are in use. While ATC become familiar with BA now being approved for these approaches, crews may have to request the RNAV Visual approach on first contact.

The RNAV visual approaches greatly reduce the issues associated with energy and profile management over the previous ‘raw’ visual approaches and allow for better descent planning.

**Note:** It is important that crews do not deviate from the RNAV visual published tracks when cleared for the RNAV visual approach. KLAS ATC expect the aircraft to fly the published procedure and so deviation from the published route is not permitted.

### **RNAV Visual 08R**

This approach begins at YOSST not below 7700' and 210 kts (max) with altitude constraints at both JAMMD and MEEUP. The approach will place the aircraft on the inbound QDM for 08R at MEEUP at 4300' QNH (2143' AAL) at the start of a 3° descent to the runway. Careful energy management is required to ensure the aircraft is appropriately configured and flown in accordance with the BAV OM A – Safe Landing Policy. Appropriate briefing is required to avoid the challenges of hot and high operations as well as management of the APFDS during the approach. As this is a visual approach, there is no published missed approach altitude and crews should request this from ATC if required. Previous ASR's report that 7000' is the likely ATC requested altitude for the missed approach, but that a busy RT frequency can make the call for the level off information challenging during a time of high workload.

### **RNAV Visual 19L/19R**

Both of these approaches begin at LOOSN at 6000' and take the aircraft inside the terrain to the northeast of the airfield. The final descents begin at 4000' at LEAVN for 19L and LUMPE for 19R. Both approaches have two short RF legs with a brief straight segment between them in order to establish on the final approach track to both runways. Careful energy management is required to ensure the aircraft is appropriately configured and flown in accordance with BAV OM A – Safe Landing Policy. Appropriate briefing is required to avoid the challenges of hot and high operations as well as management of the APFDS during the approach. As this is a visual approach, there is no published missed approach altitude and crews should request this from ATC if required.

**RNAV Visual 19L** will establish the aircraft on the runway centreline at WILSE at ~2660' QNH (~700' RA) with approximately 10° angle of bank. This gives plenty of opportunity to allow the APFDS to roll off the bank before the minimum autopilot disconnect height (Boeing fleets).

**RNAV Visual 19R** will establish the aircraft on the runway centreline at SVERE at ~2550' QNH (~600' RA) with slightly less than 10° angle of bank (wind permitting). There is still ample opportunity for the APFDS to roll off the bank before the minimum autopilot disconnect height (Boeing fleets).

Both of these approaches offer 3° slopes to 19L/R with coding that tracks the aircraft on a route that allows KLAS ATC to de-conflict with Nellis AFB traffic. This avoids being vectored towards a very short final, onto the steeper RNAV (GPS) 19R/L approaches that have been previously available and are mentioned earlier in this arrival brief.

## GROUND

- BAV use Terminal 3, Concourse E, parking stands E1 and E2.
- The apron is generally accessed from taxiway B via taxiways C3 and spot 2. Exercise caution as aircraft depart the apron from concourse D and E via taxiway C2 and spot 1.

## DEPARTURE

- A single taxiway separates Concourse E from concourse D and joins taxiways C2 and C3 with C5 and C6. When departing the apron, ensure the correct taxiway (C2, 3, 5 or 6) is followed to avoid conflict with arriving aircraft. Departing aircraft will generally be cleared to taxi via taxiway C2 to spot 1 prior to requesting further clearance from ground control.
- Engine start not possible until pushback complete.
- Rwy 19L/R not available for departures after 8pm (local) due to noise restrictions.
- Emergency turn procedures are published. Full details from CARD.
- **B777** - B777-200/200ER Operation Only – This is a focus airfield where CLC will target MACTOW aft of the Alternate Forward CG Limit. Refer to FCOM SP.CG.
- **B777** - Due to the difference in elevation between runway ends, LNAV can engage on the runway.

## BAV Crew Reports

- Crew report that speed intervene may be required to achieve altitude restrictions on departure.

## WEATHER

- Summers are typically “desert” with max temps usually in the 40°C bracket. The proximity of the mountains contributes to the relatively cool summer nights, with the majority of the minimums being between 21°C/24°C.
- There is a period of about two weeks almost every summer when warm, moist, tropical air predominates weather conditions in this area, and causes scattered thundershowers, occasionally quite severe, together with higher than average humidity. Although max temps are much lower during this humid period, min temps are higher than usual. These summer thundershowers have in the past developed into “cloudburst” proportions.

- Winters, on the whole are mild. Daytime temps average nearly 15°C, with clear skies and warm sunshine. Winter min temps average just above 0°C.
- The Spring and Autumn seasons are generally fine although sharp temperature transients occur during these months.
- Rainy days average from less than one in June to three per month in the winter months.
- Snow is rare and usually melts as it falls.
- Strong winds, associated with major storms, usually reach this valley from the SW or through the pass from the NW. Winds over 50 mph are infrequent but bring blowing dust and sand.

### OPERATIONAL INFORMATION

<b>Handling Agent</b>	Worldwide Flight Services
<b>Handling Agent VHF</b>	129.300
<b>Potable Water</b>	Uplift Permitted

<b>IF ONLY Electrical Power is required</b>	<b>Use ground power at all times</b>
<b>If BOTH electrical power and air conditioning is required:</b>	Airport (PCA) – Use both ground services at all times. GHA (ACU) – DO NOT USE EITHER SERVICE – Use APU instead.