MILITARY AERONAUTICAL INFORMATION PUBLICATION (M.A.I.P.) LOW ALTITUDE

AIRPORT DIAGRAMS INSTRUMENT APPROACH PROCEDURES (IAP)

ISRAEL THEATER - FALCON BMS 4.33

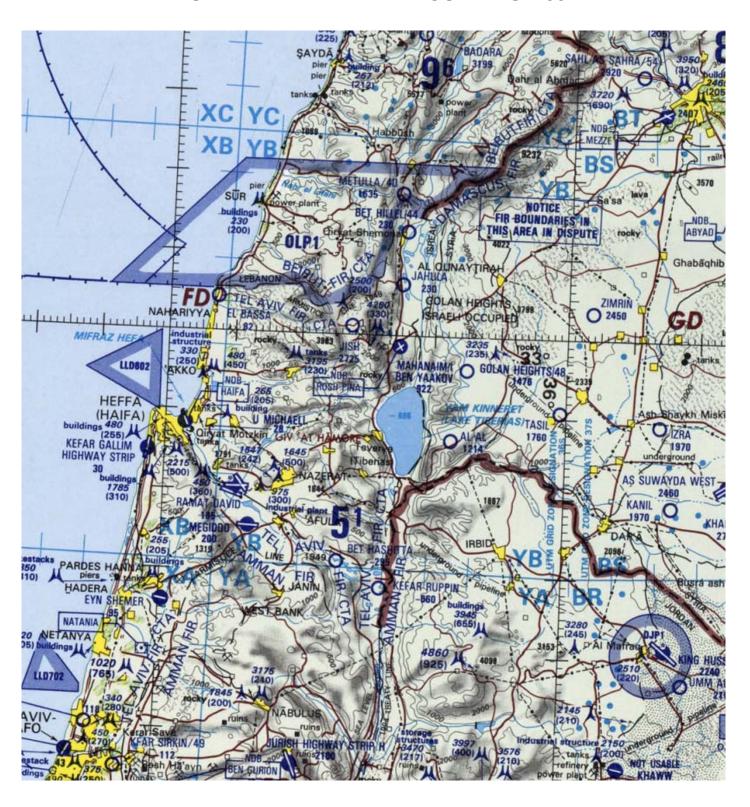


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FALCON BMS 4.33 ISRAEL THEATER



A. GENERAL INFORMATIONS & ABBREVIATIONS

Distances in nautical miles.

Runway dimensions in feet.

Altitudes/Elevations in feet Mean Sea Level (MSL).

Radials/Headings are magnetic.

Vertical Descent Angle (VDA) is calculated from FAF to threshold.

ALT Altitude Chan Channel

DME Distance Measuring Equipment

FAF Final Approach Fix

FT Feet

IAF Initial Approach Fix IAS Indicated Airspeed

Ldg Landing Localizer

LR- Lead Radial (followed by 3 digits)

MDA Minimum Descent Altitude
MSA Minimum Safe/Sector Altitude

NM Nautical Miles

R- Radial (followed by 3 digits)

RWY Runway

S- Straight-in approach

TACAN Tactical Air Navigation equipment

TDZE Touchdown Zone Elevation

VORTAC VOR and TACAN navigational facilities collocated

WPT Waypoint

RATE OF CLIMB/DESCENT TABLE

CLIMB/DESCENT	CLIMB/DESCENT
ANGLE (DEGREES)	GRADIENT (FT/NM)
2.5°	265 ≈ 250
3.0°	318 ≈ 300
5.0°	530 ≈ 500
10.0°	1,060 ≈ 1,000

B. USEFUL INFORMATIONS ABOUT THE EXECUTION OF THE PROCEDURES

1) Maximum precise in DME (distance in Nautical Miles)

In order to have the maximum precise in indication of DME (distance from the NavAid in NM), do the follow: insert the GPS coordinates of the NavAid (TACAN or VORTAC station) over a steerpoint (STPT) and make this steerpoint as current. GPS coordinates of the NavAid given by the IAP chart. Then set the proper NavAid channel, the band to X (airports - ground) and the Instr Mode switch to TCN. In this way you will have indications for bearing and distance at the HSI from NavAid as in real life, but also indication for distance with one decimal digit in the lower right corner in the HUD. This is critical for the precise of the final turn due to the fact that very often the DME of the last steerpoint (that we turn to final approach course aligned with runway centerline) has a decimal digit and the indication for distance at the HSI reads only integer numbers.

2) Turns

<u>If not published in the IAP charts</u>, turns to join and to leave an arc, turns of missed approach and holding turns must be executed with IAS 250 KTS and bank angle of 30 degrees. Also <u>if not published in the Departure charts</u>, turns must be executed with IAS 300 KTS and bank angle of 30 degrees.

3) Final turn and impact of wind

Even if you turn at final steerpoint at exactly DME, you may find yourself aligned with runway centerline but offset. This is happens due to active wind and not of the inaccuracy of the IAP chart. So in this situation:

A) The NavAid is LEFT of the runway, example of Bocas Del Toro Intl with final turn at R-151/2.1 DME.



i] if you fly offset of runway and left of it (red course in photo) execute a missed approach and at the next approach turn 0.1 DME sooner, means at R-151/2.2 DME.

ii] if you fly offset of runway and right of it (green course in photo) execute a missed approach and at the next approach turn 0.1 DME later, means at R-151/2.0 DME.

B) The NavAid is RIGHT of the runway, example of Nea Anchialos with final turn at R-090/2.5 DME.



i] if you fly offset of runway and left of it (red course in photo) execute a missed approach and at the next approach turn 0.1 DME later, means at R-090/2.4 DME.

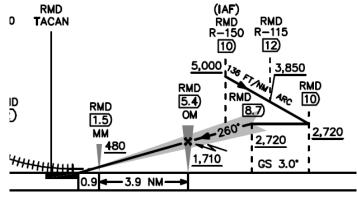
ii] if you fly offset of runway and right of it (green course in photo) execute a missed approach and at the next approach turn 0.1 DME sooner, means at R-090/2.6 DME.

All the previous can be applied when at the final steerpoint the AOA is 11-13 degrees and the CDI at HSI centered almost perfect or at least with 0.5 degree maximum variation.

4) Calculating the descent

In order to execute the descents with precise, you must convert the rate of descent that shown in the IAP charts in FT/NM to degrees. This can be done via the table "RATE OF CLIMB/DESCENT TABLE" in page 3 as follow: multiply the FT/NM of the rate of descent with 3 and then divide the result with 318.

E.g. at the example of ILS approach to Ramat David, we have at the 12 DME arc rate of descent

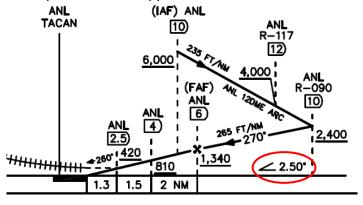


136 FT/NM. So this gives:

(136X3)/318=1.28 ≈ 1.3 degrees, means that we must descent from IAF Fix at 10 DME to 10 DME via the 12 DME arc with 1.3 degrees. Note that we have the same result with any pair, e.g. 5 deg. - 530 FT/NM gives also 1.3 degrees: $(136X5)/530=1.28 \approx 1.3 \text{ degrees}$.

Keep in mind that the rate of descent in FT/NM is independent of velocity of the aircraft, as also its conversion to degrees.

Also the descent from FAF Fix to runway threshold for non-precision approaches is given with the VDA (Vertical Descent Angle) and shown in the IAP charts in degrees just after its symbol (< or >). In the next example of TACAN approach to Nea Anchialos, we see VDA of 2.50 degrees.



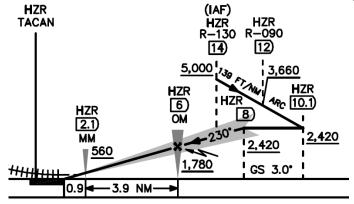
5) Setting the QNH

Don't forget to set the QNH of the altitude instrument while you transit from transition altitude to lower altitude by asking ATC (keys "T" and "T" and "1"). Transition altitude is given by the IAP charts in the profile at the lower left corner.

6) ILS limits

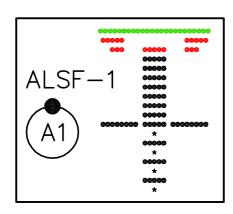
ILS Localizer provides course indications to 10 degrees either side of the course along a radius of 18 NM from the antenna and from 10 to 35 degrees either side of the course along a radius of 10 NM. ILS Glide slope transmits a glide path beam 1.4 degrees wide. It is normally usable to the distance of 10 NM. In Falcon BMS 4.32 Glide slope's beam is 1.57 degrees wide (+0.085 degrees and -0.085 degrees). Obviously Glide slope's zone of receiving signal is very narrow and a lot of Falcon pilots think very often that the ILS Glide slope is not transmitting and it's an issue of the simulator, but actually they aren't in the proper altitude at the specific DME from runway.

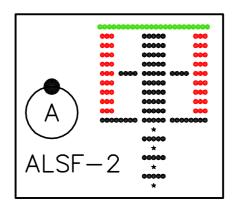
In order to understand this better, let's see the example of ILS approach to Hatzor:

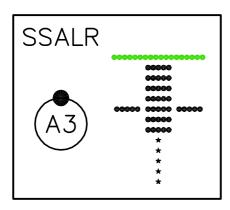


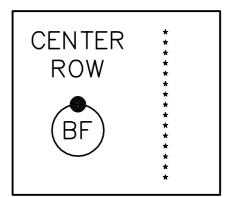
You see that at 6 DME from TACAN station (and at 0.9+3.9=4.8 NM from runway threshold) must be at 1,780 FT. At the distance of 4.8 NM from runway threshold the Glide slope's beam has limits ±400 FT, means from 1,780-400=1,380 FT up to 1,780+400=2,180 FT. In other words when you are exactly at 6 DME and on Localizer course, you will not have signal from Glide slope if you are below of 1,380 FT or if you are higher of 2,180 FT and the Glide slope bar inside HUD will be dashed and not moving. So pay special attention to altitude that intercepts the glidepath.

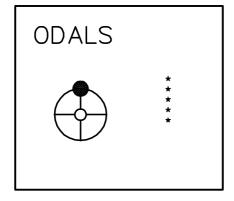
C. Approach Lighting Systems (ALS)



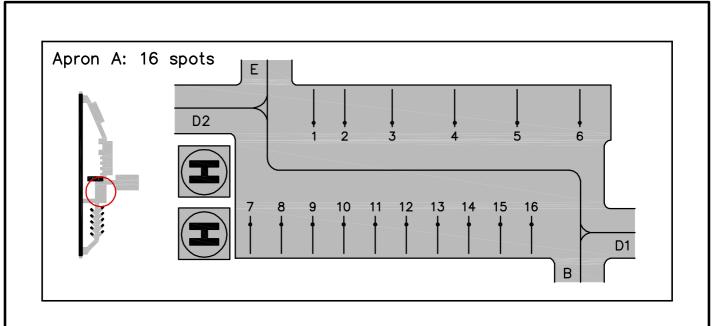


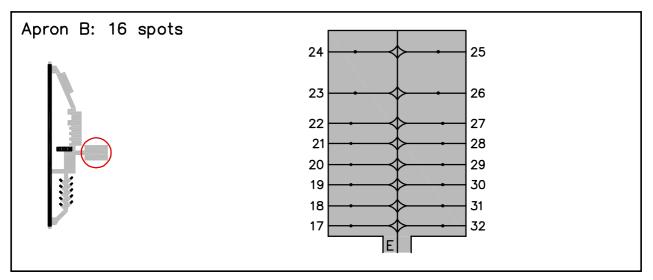


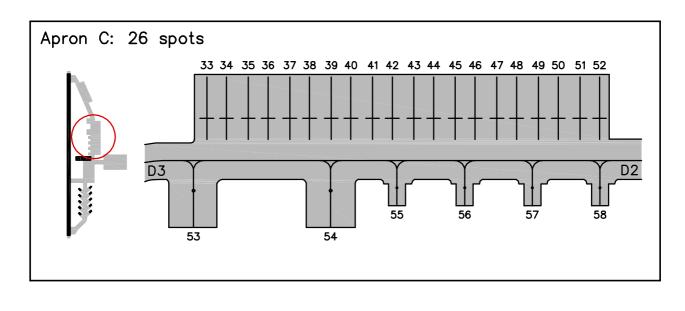




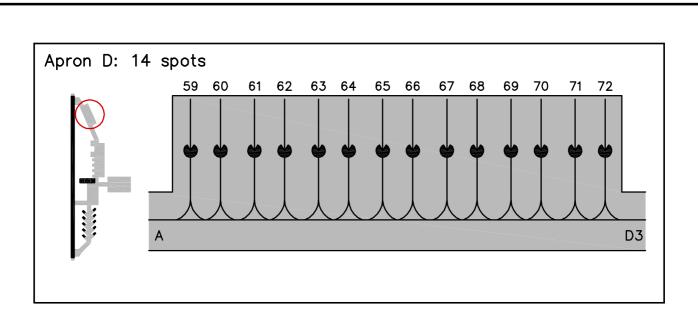
D. Airports Parking Positions — Single RWY

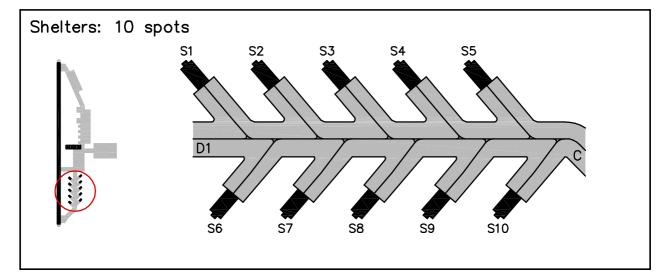




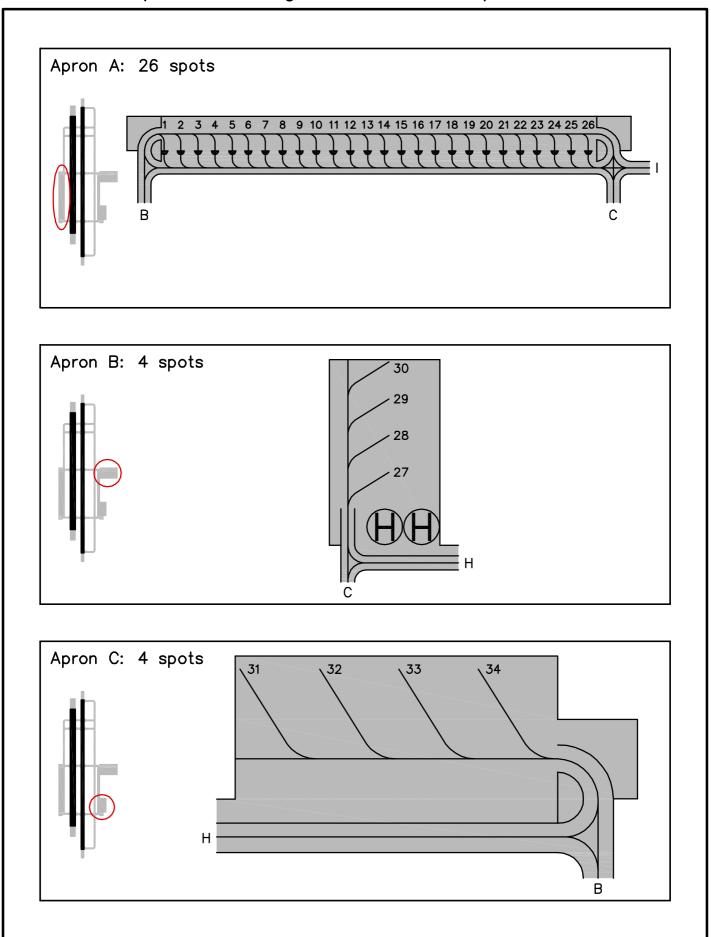


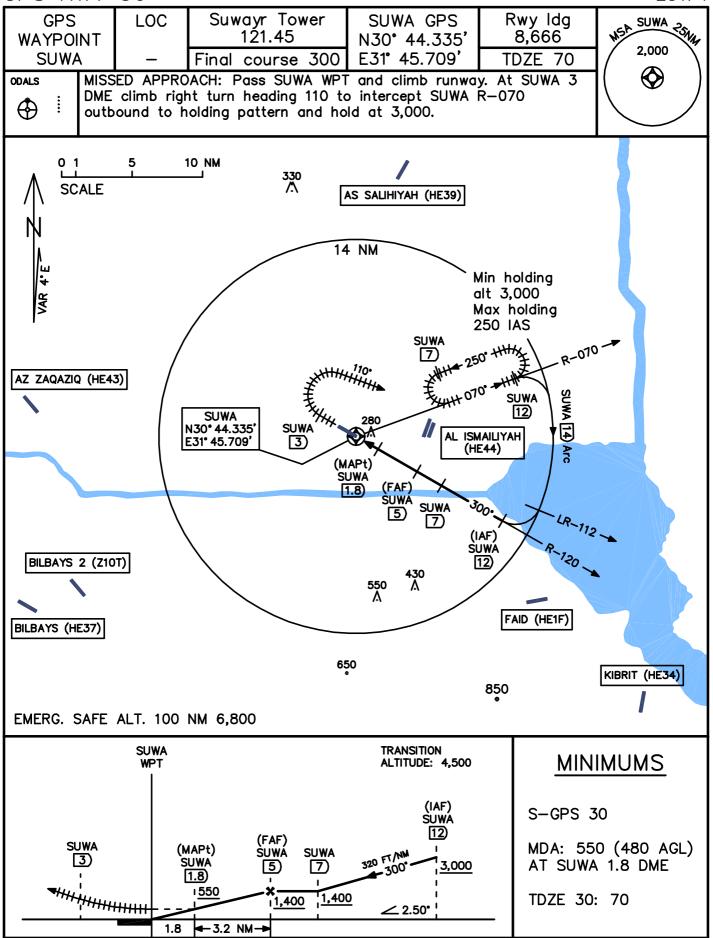
D. Airports Parking Positions — Single RWY



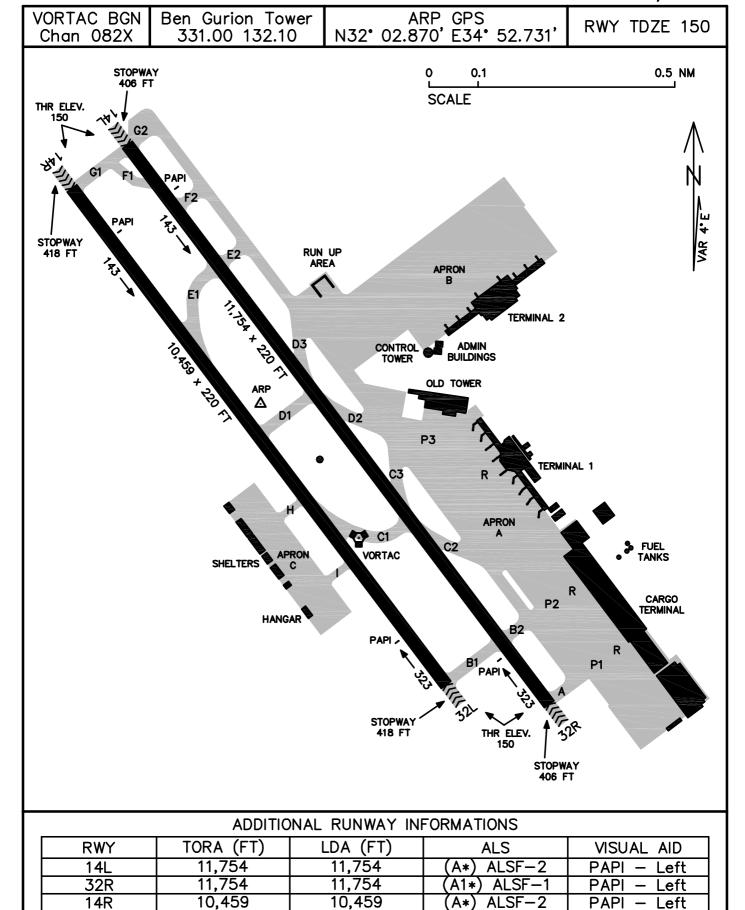


D. Airports Parking Positions — 2 parallel RWYs





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32L

10,459

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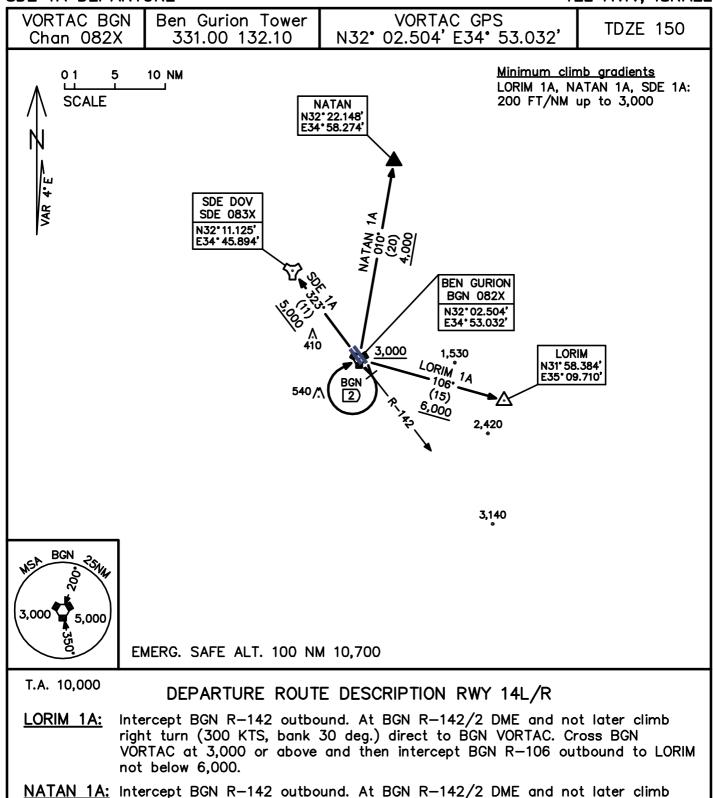
PAPI

Left

10,459

A*

ALSF-2



SDE 1A:

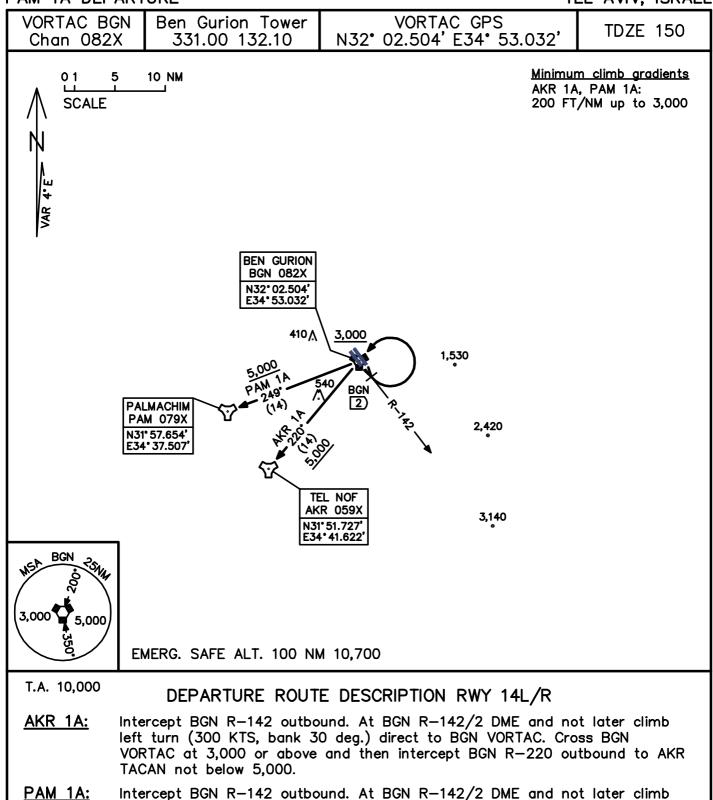
NATAN not below 4,000.

TACAN not below 5,000.

right turn (300 KTS, bank 30 deg.) direct to BGN VORTAC. Cross BGN VORTAC at 3,000 or above and then intercept BGN R—010 outbound to

Intercept BGN R-142 outbound. At BGN R-142/2 DME and not later climb right turn (300 KTS, bank 30 deg.) direct to BGN VORTAC. Cross BGN

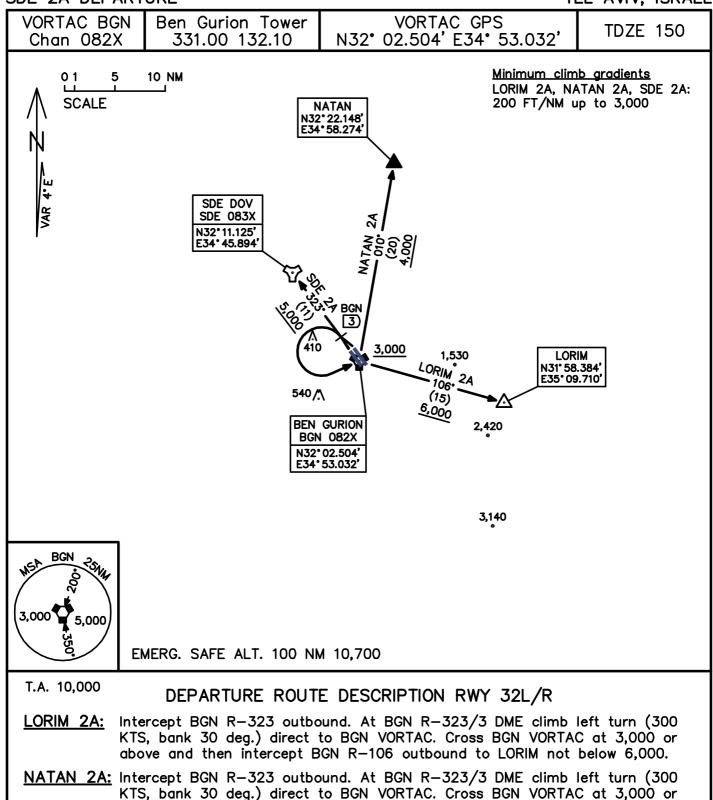
VORTAC at 3,000 or above and then intercept BGN R-323 outbound to SDE



TACAN not below 5,000.

left turn (300 KTS, bank 30 deg.) direct to BGN VORTAC. Cross BGN

VORTAC at 3,000 or above and then intercept BGN R-249 outbound to PAM

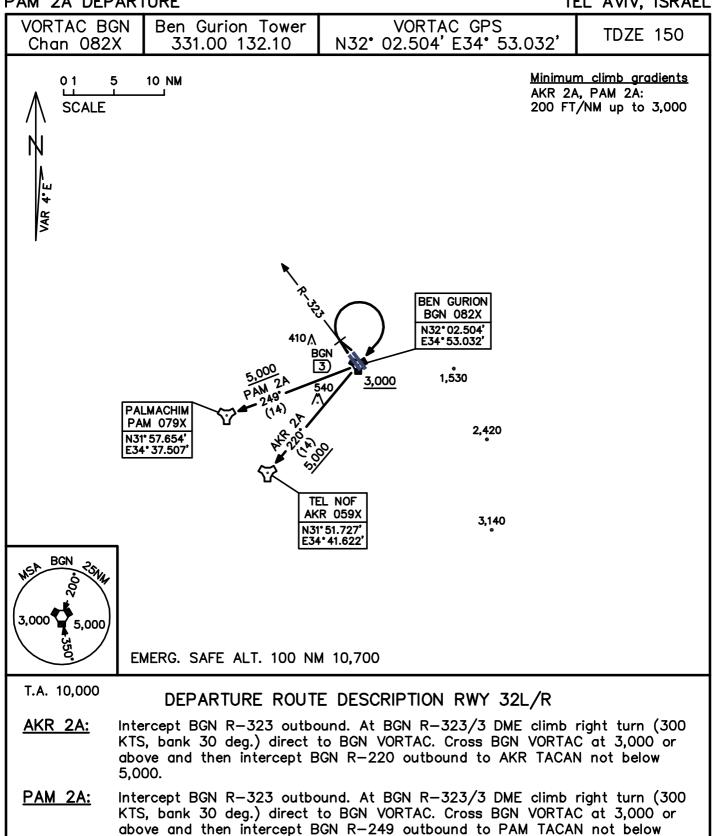


5,000.

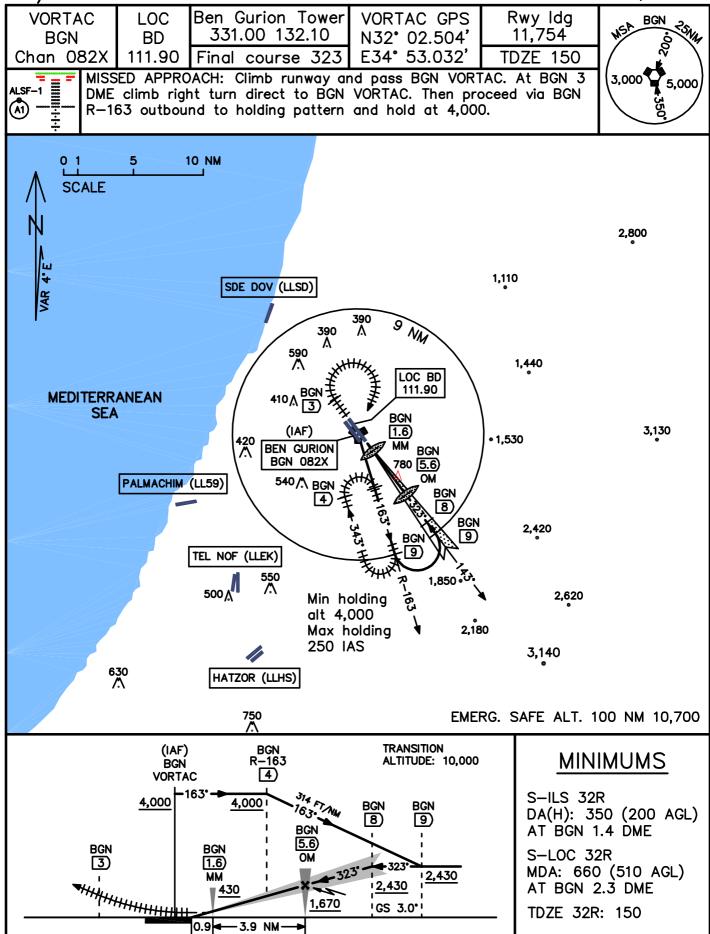
SDE 2A:

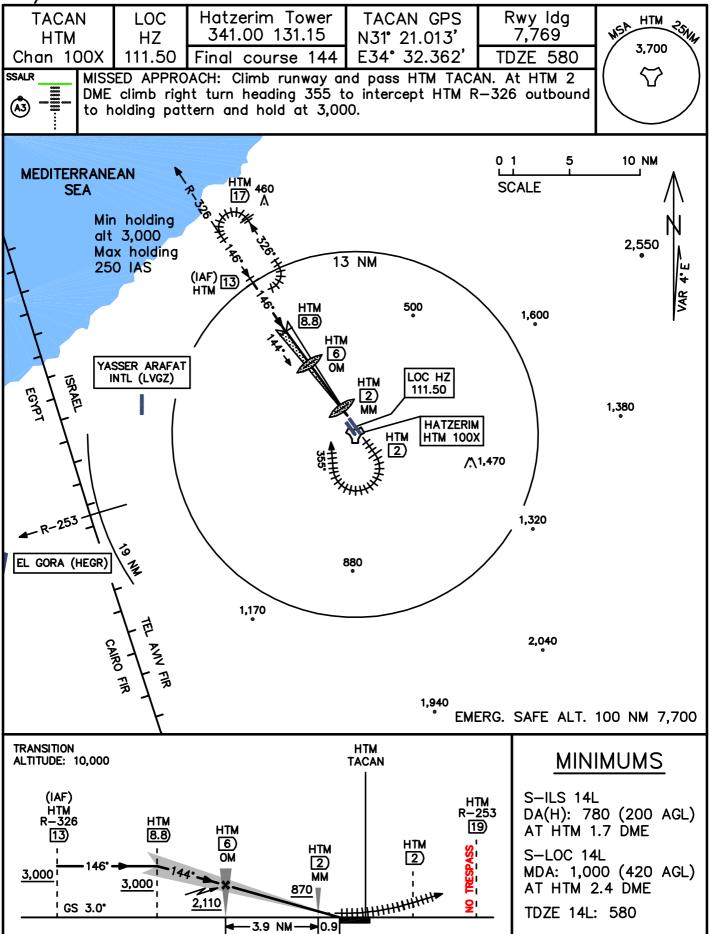
above and then intercept BGN R-010 outbound to NATAN not below 4,000.

Intercept BGN R-323 outbound. At BGN R-323/3 DME climb left turn (300 KTS, bank 30 deg.) direct to BGN VORTAC. Cross BGN VORTAC at 3,000 or above and then intercept BGN R-323 outbound to SDE TACAN not below

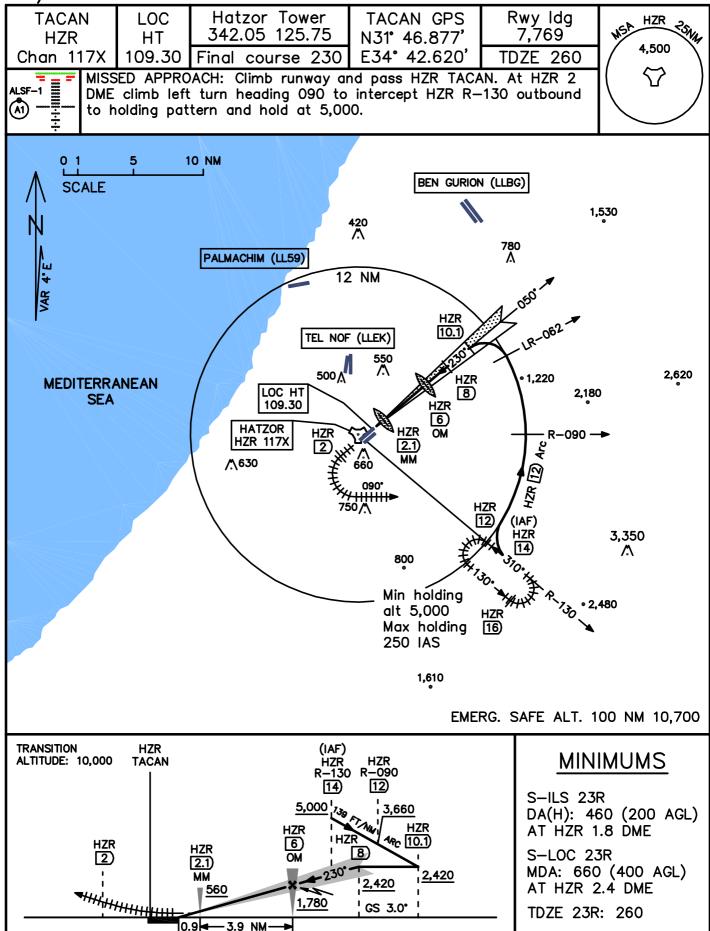


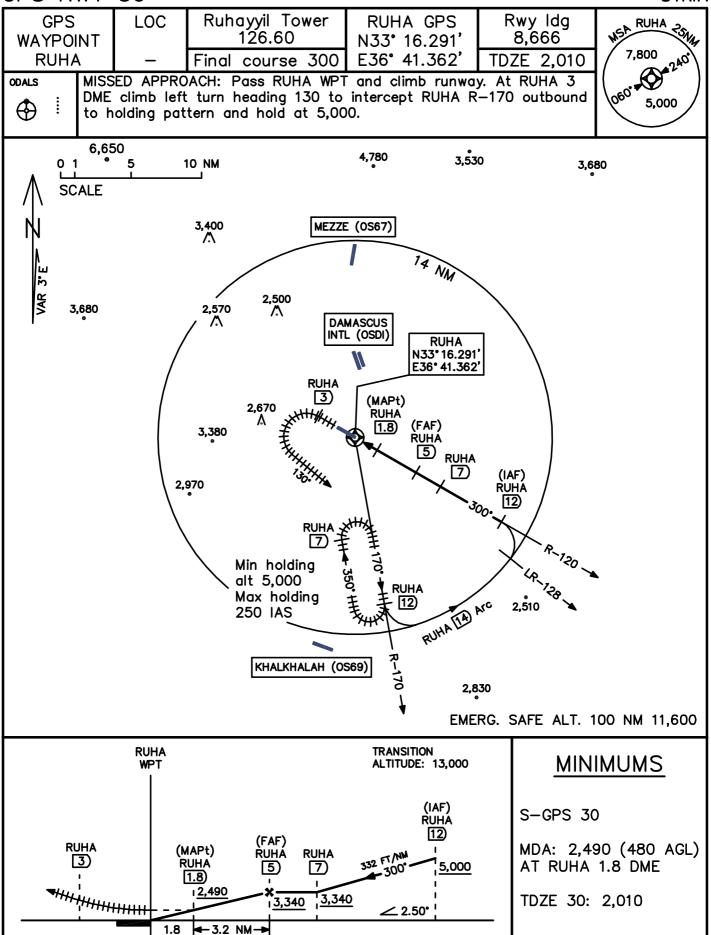
5,000.

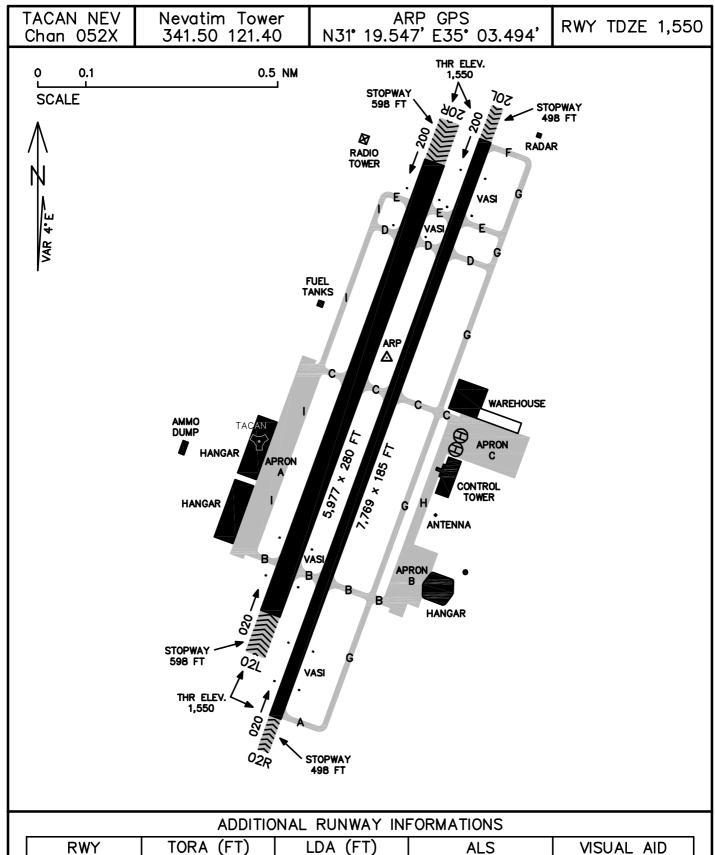




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5,977

5,977

7,769

7,769

RWY

021

20R

02R

20L

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VISUAL

VASI

VASI

VASI

VASI

AID

L/R

L/R

ALS

A3*)

A3*

(*A

A3*)

SSALR

SSALR

ALSF-2

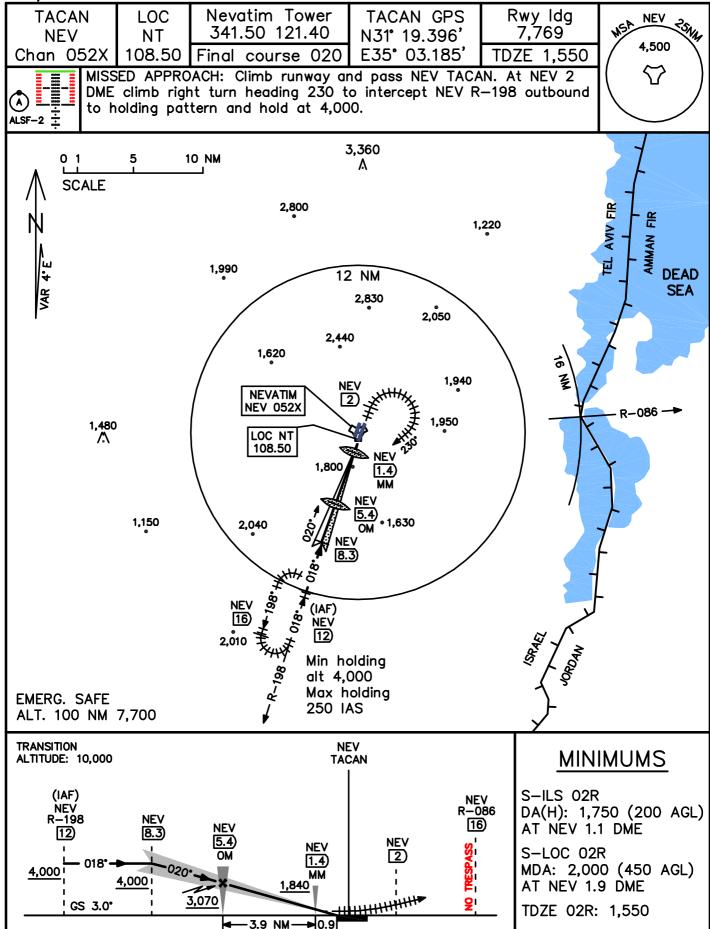
SSALR

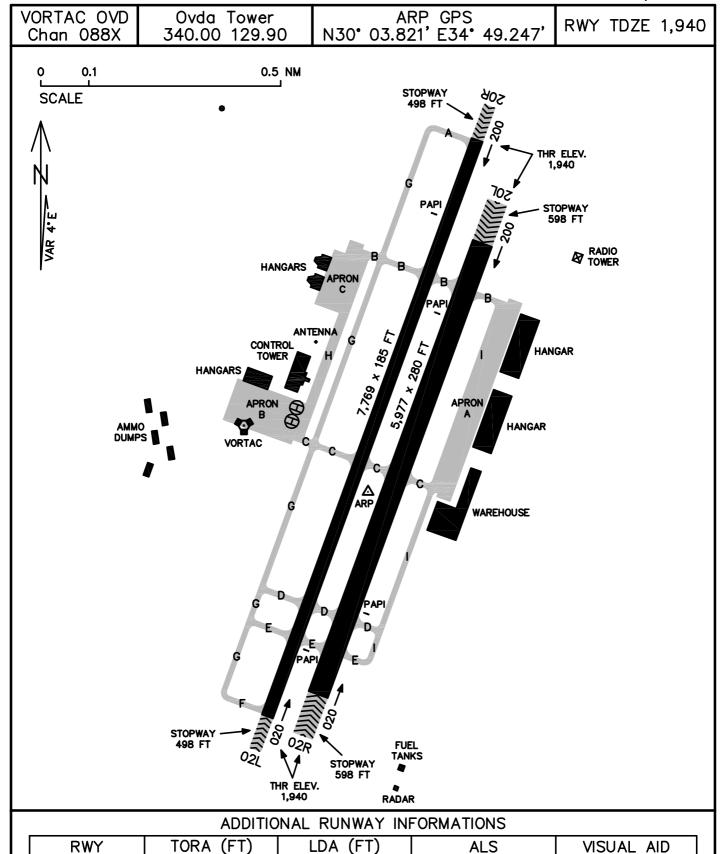
5,977

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7,769

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7,769

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5,977

021

20R

02R

20L

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PAPI -

PAPI -

PAPI

PAPI

Right

Right

Right

Right

SSALR

SSALR

ALSF-1

SSALR

A3*

A3*

A1*)

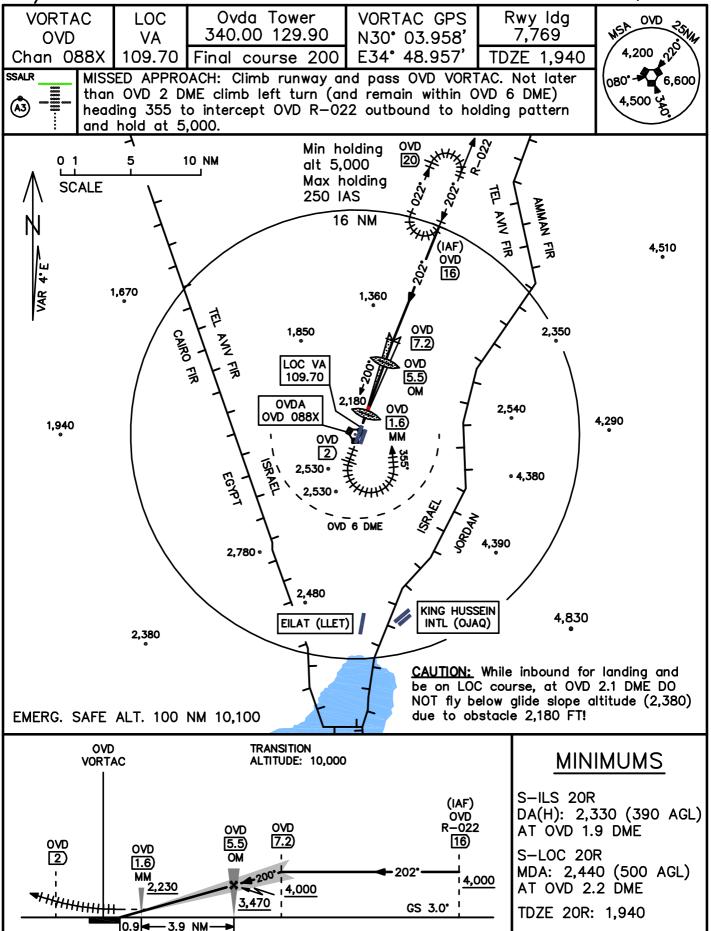
A3*)

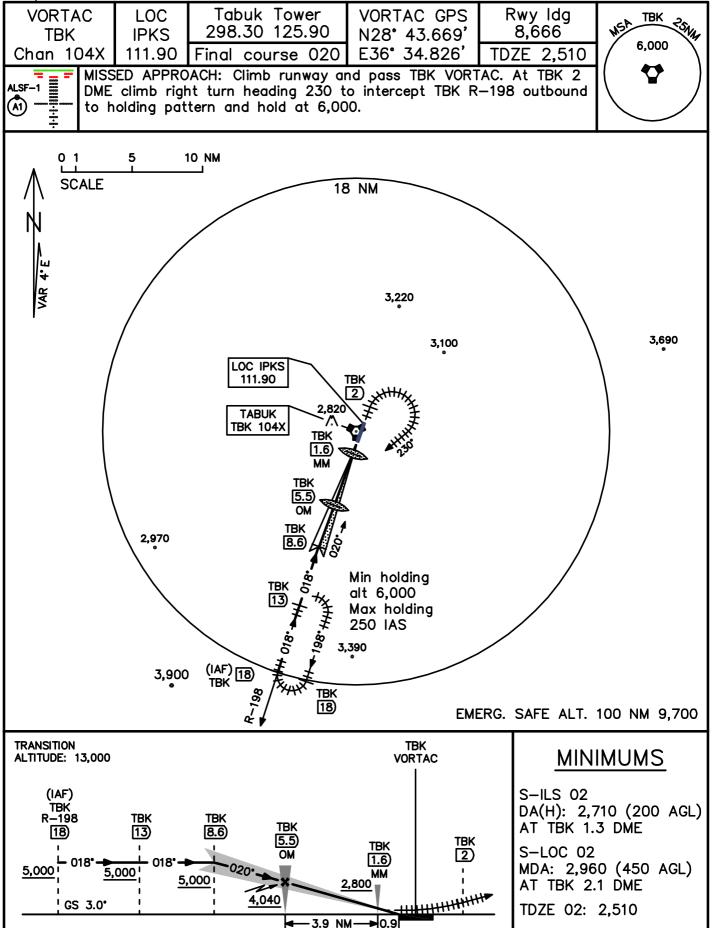
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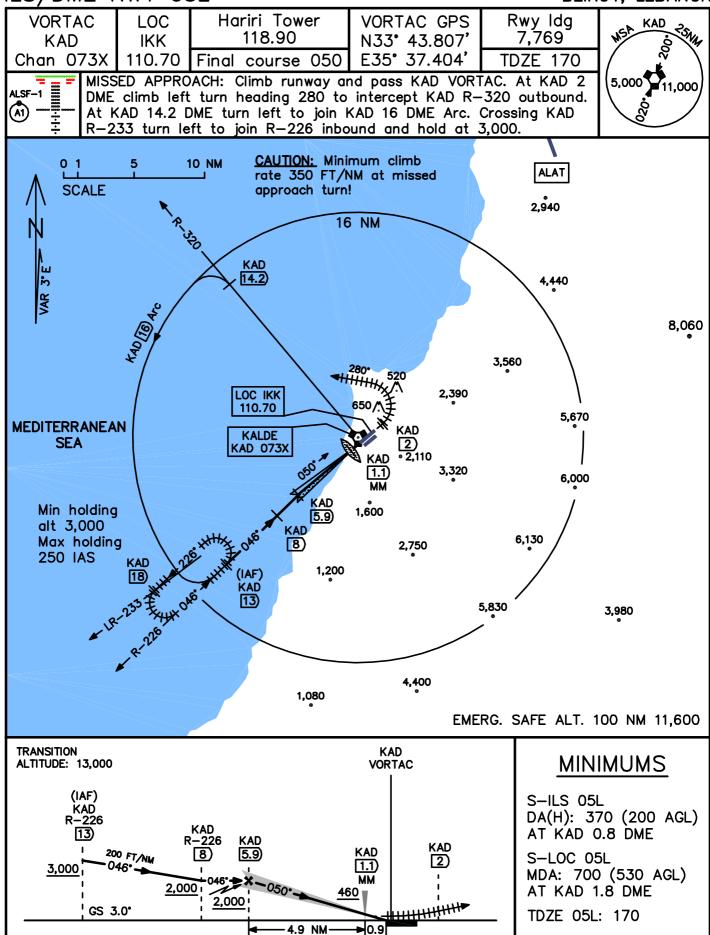
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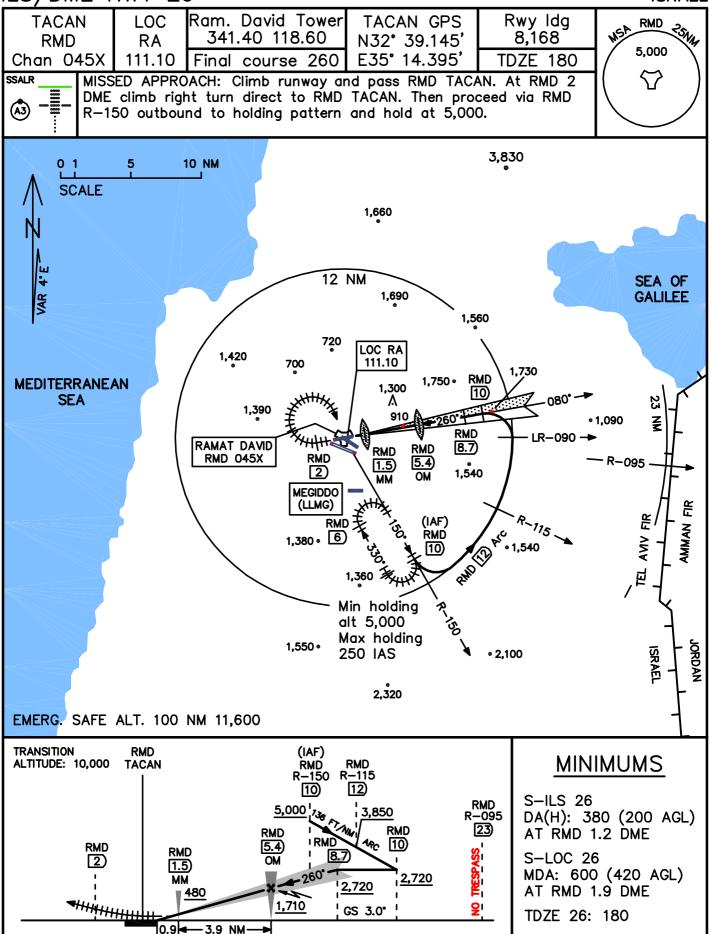
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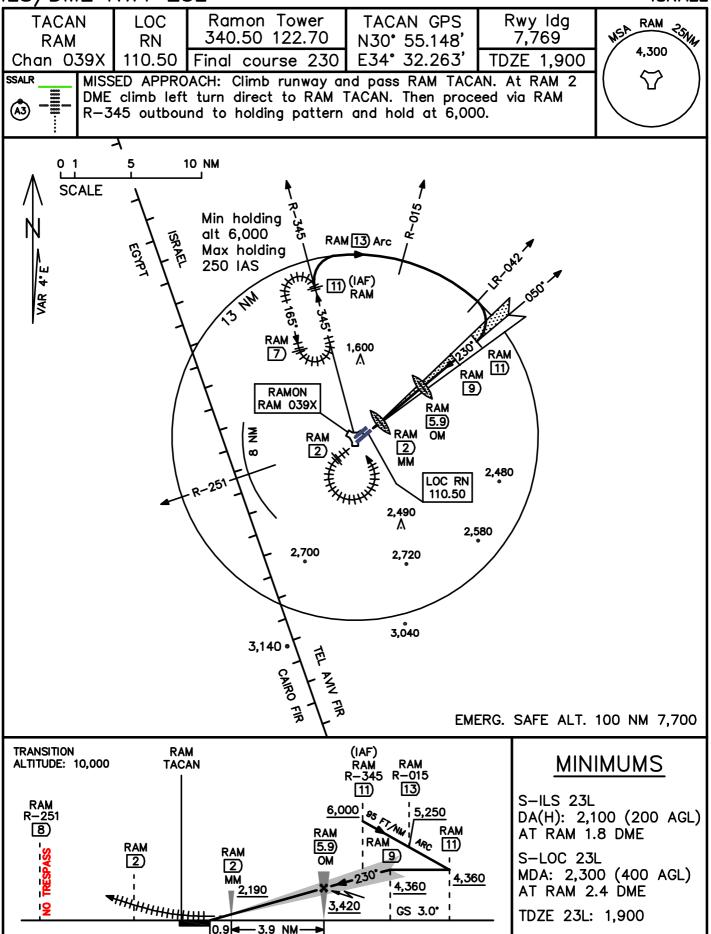


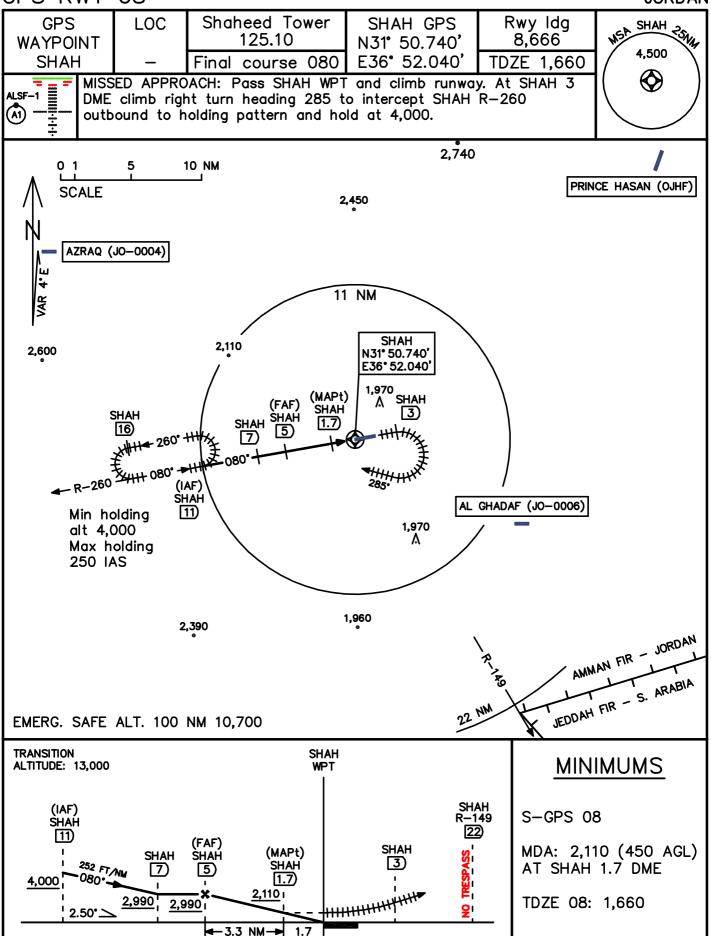




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