GOVERNMENT/INDUSTRY AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
April 22, 2008
HISTORY RECORD

FAA Control # 08-01-280

Subject: Minimum Obstruction Clearance Altitudes Depicted on Standard Instrument Departures (SIDs)

Background/Discussion: FAA Order 8260.46C, Departure Procedure Program, paragraph 10(f)(1), Charting Minimum Altitudes, requires that SIDs (both conventional and RNAV) must depict minimum altitudes for obstruction clearance; and, where appropriate, any required minimum ATC altitudes. Where these differ, documentation of both minimum altitudes is required on the 8260-15 form. Appendix 5 (Non-RNAV DP's) and Appendix 6 (RNAV DP's) of this Order require that SIDs accommodate ATC and obstruction clearance requirements by documenting the ATC altitude followed by the altitude required for obstruction clearance. Charting agencies must depict the obstruction altitude as a minimum crossing altitude (MCA). An example of the application of this requirement may be seen on the attached ZEPHR THREE RNAV SID at Reno, NV (RNO).

Some recently published Graphic DP's fail to depict minimum obstruction clearance altitudes in accordance with the above stated requirements. Two examples of SIDs that do not comply are the EDETH ONE (RNAV) at Salt Lake City, UT (SLC) and the GABRE SIX at Los Angles, CA (LAX), both of which are attached. Further, there are several other Graphic DPs currently in coordination that also fail to depict the minimum altitudes for obstruction clearance.

The failure to provide minimum altitudes for obstruction clearance on SIDs published at airports located in mountainous terrain, coupled with the absence of lost communication procedures on these same SIDs, creates a serious hazard to a departing aircraft whenever ~~if~~ ATC intervenes with the published climb instructions and if communication with ATC is subsequently lost. Without minimum obstruction clearance altitudes depicted on these Graphic DP's as required by 8260.46C, a pilot is unable to apply the requirements of 14 CFR 91.185 and 14 CFR 91.191 following loss of communication with ATC. This raises the very significant potential for a Controlled Flight Into Terrain (CFIT) event.

Further, without minimum altitudes for obstruction clearance published on the Graphic DP, a pilot is unable to apply the recently issued guidance contained in AIM 5-2-8 (e)(7):

> **7.** If an altitude to "maintain" is restated, whether prior to or after departure, previously issued "ATC" altitude restrictions are cancelled. All minimum crossing altitudes which are not identified on the chart as ATC restrictions are still mandatory for obstacle clearance. If an assigned altitude will not allow the aircraft to cross a fix at the minimum crossing altitude, the pilot should request a higher altitude in time to climb to the crossing restriction or request an alternate routing. ATC altitude restrictions are only published on SIDs and are identified on the chart with "(ATC)" following the altitude. When an obstruction clearance minimum crossing altitude is also to be published at the same fix, it is identified by the term "(MCA)."

The above guidance was added to the 14 February 2008 edition of the AIM in response to ACF-IPG agenda item 07-01-274. The purpose of this change was to emphasize that an altitude restriction not identified on the chart as an ATC restriction is mandatory for obstruction clearance purposes. NBAA feels that this ACF-IPG agenda item cannot be closed until Graphic DP's properly depict minimum altitudes for obstruction clearance in accordance with 8260.46C.

Recommendations:

All Graphic DP's should be designed and charted in accordance with the criteria contained in FAA Order 8260.46C with respect to fix minimum altitudes for obstruction clearance (MCA) and for air traffic purposes (ATC). Further, the future revision to the 8260.46 Graphic DP's should require the charting of the applicable MOCA for all non-vector procedure legs.

An immediate review of all Graphic DP's published since the issuance of the "C" revision to the 8260.46 Order should be initiated to ensure that minimum crossing altitudes for obstruction clearance are properly charted. Priority should be given to SIDs established at airports located in designated mountainous terrain as specified in 14 CFR 95, Subpart B. Further, all Graphic DP's currently in coordination should also be reviewed for compliance with 8260.46C.

To ensure that controllers fully understand the design implications of altitude restrictions and climb gradients published on all DPs, both ODPs and SIDs, whether textually or graphically depicted, ATO-T should provide additional guidance through an appropriate means, i.e. Air Traffic Bulletin, Mandatory Briefing Item, and/or revision to the 7110.65 Handbook, regarding which altitude restrictions and/or climb gradients cannot be canceled or otherwise amended by the controller. This guidance should further advise that tactical intervention applied to departing aircraft should not unduly restrict the aircraft's ability to meet a climb gradient established for obstruction clearance, to achieve a (MCA) crossing altitude established for a fix, or the MOCA for a leg as published on the Graphic DP.

Comments: This recommendation affects all Departure Procedures, especially SIDs that have both ATC and obstruction clearance requirements, developed in accordance with FAA Order 8260.46C & future revision and Air Traffic Organization's guidance to air traffic controllers.

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ZEFFR THREE DEPARTURE (RNAV)

SL-346 (FAA)

RENO/TAHOE INTL (RNO)
RENO, NEVADA

ATIS 135.8 363.0
CLNC DEL
124.9 370.85
GND CON
121.9 348.6
RENO TOWER
118.7 257.8
RENO DEP CON
119.2 279.55

TAKE-OFF OBSTACLE NOTES

RWY 16L: Antenna, trees, and light poles beginning 618' from DER, 131' left of centerline, up to 40' AGL/4449' MSL.
Terrain beginning 5189' from DER, 821' left of centerline, up to 4939' MSL.

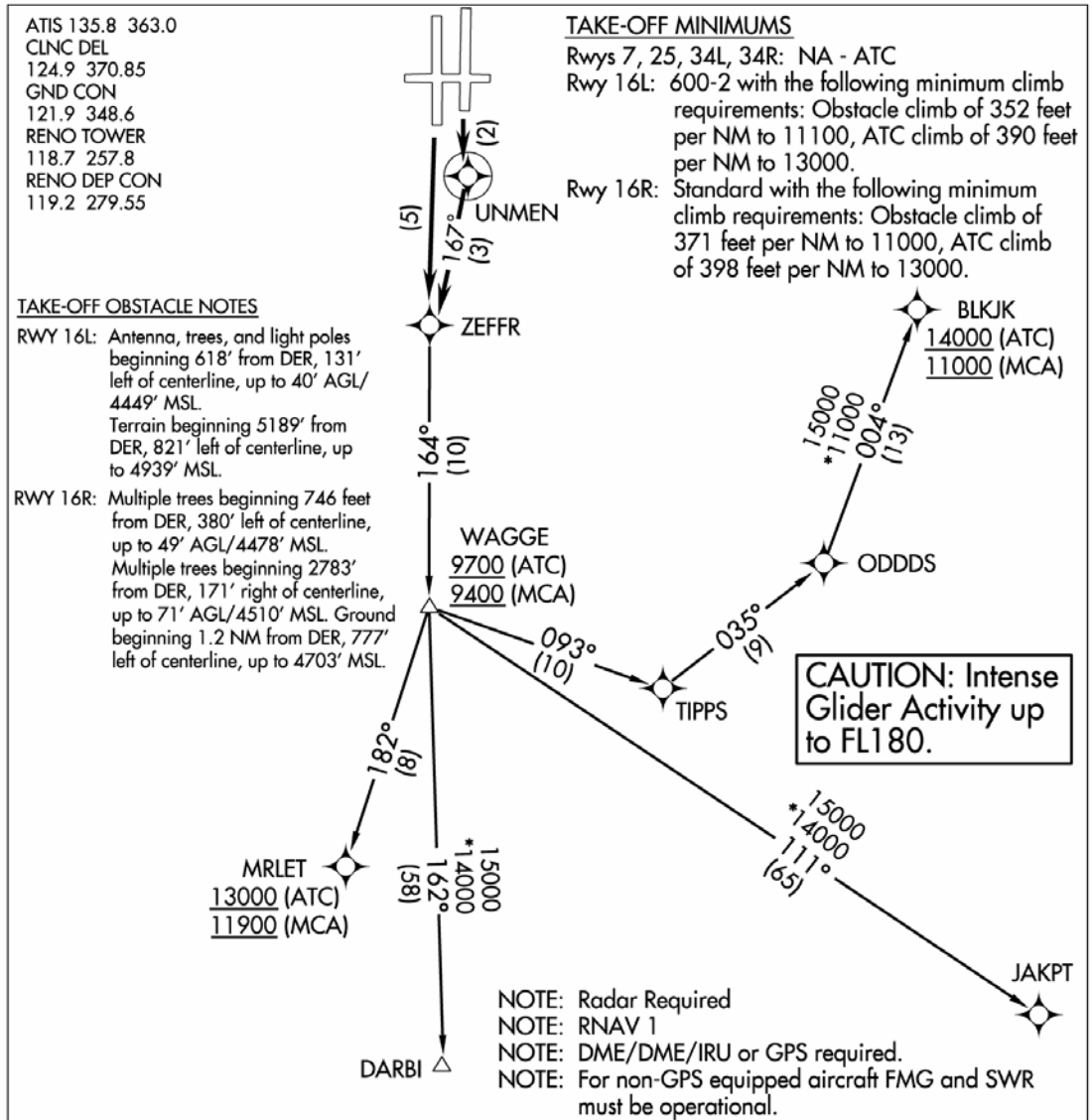
RWY 16R: Multiple trees beginning 746 feet from DER, 380' left of centerline, up to 49' AGL/4478' MSL.
Multiple trees beginning 2783' from DER, 171' right of centerline, up to 71' AGL/4510' MSL. Ground beginning 1.2 NM from DER, 777' left of centerline, up to 4703' MSL.

TAKE-OFF MINIMUMS

Rwys 7, 25, 34L, 34R: NA - ATC

Rwy 16L: 600-2 with the following minimum climb requirements: Obstacle climb of 352 feet per NM to 11100, ATC climb of 390 feet per NM to 13000.

Rwy 16R: Standard with the following minimum climb requirements: Obstacle climb of 371 feet per NM to 11000, ATC climb of 398 feet per NM to 13000.



NOTE: Chart not to scale.

DEPARTURE ROUTE DESCRIPTION

TAKE-OFF RUNWAY 16L: Climb direct UNMEN, then via 167° track to ZEFFR, Thence...

TAKE-OFF RUNWAY 16R: Climb direct ZEFFR, Thence...

....via (transition) or (assigned route). Maintain 15000. Expect clearance to filed altitude five minutes after departure.

BLKJK TRANSITION (ZEFFR3.BLKJK)

DARBI TRANSITION (ZEFFR3.DARBI)

JAKPT TRANSITION (ZEFFR3.JAKPT)

MRLET TRANSITION (ZEFFR3.MRLET)

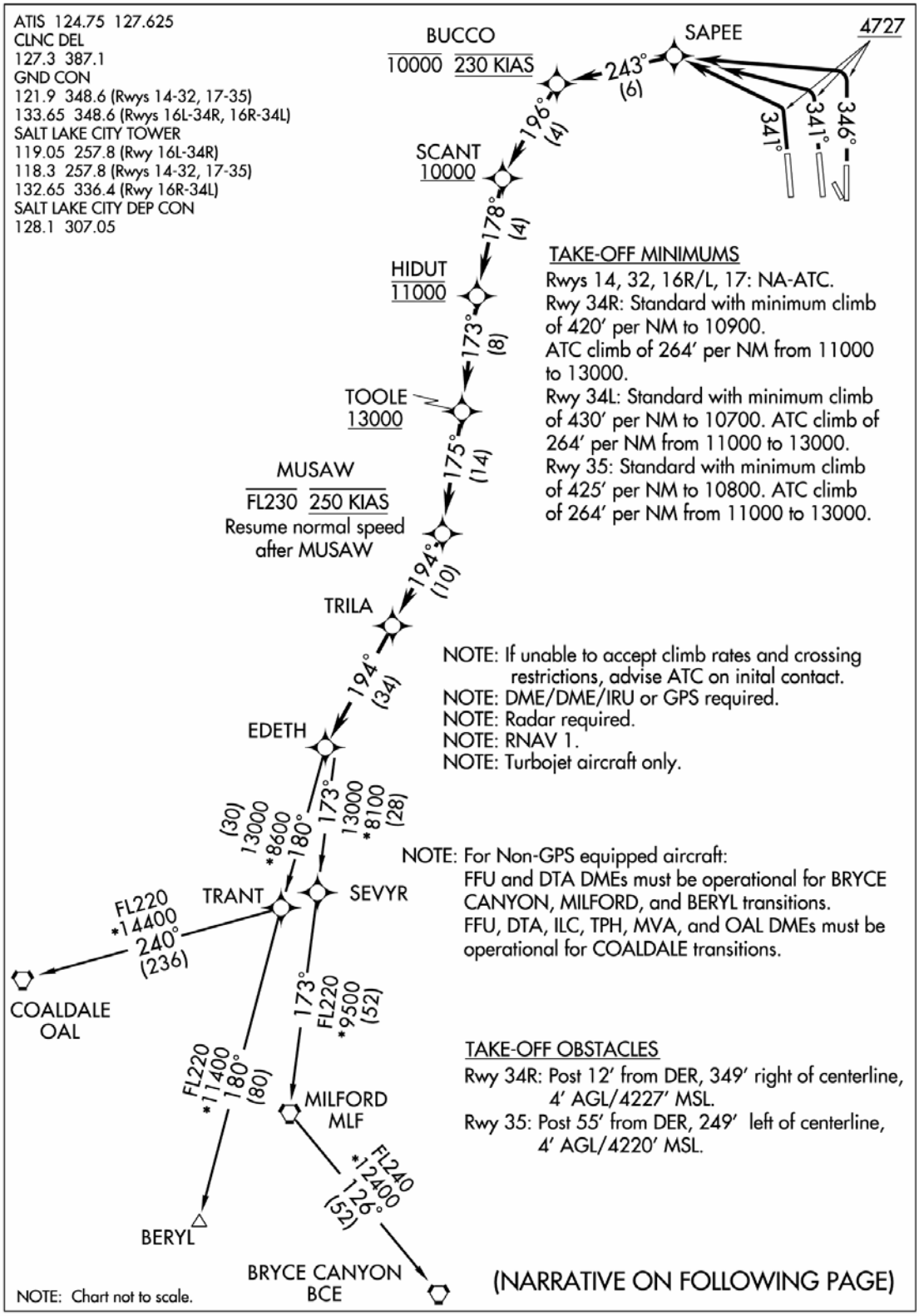
ZEFFR THREE DEPARTURE (RNAV)

RENO, NEVADA
RENO/TAHOE INTL (RNO)

(ZEFFR3.ZEFFR) 08045

SW-4, 14 FEB 2008 to 13 MAR 2008

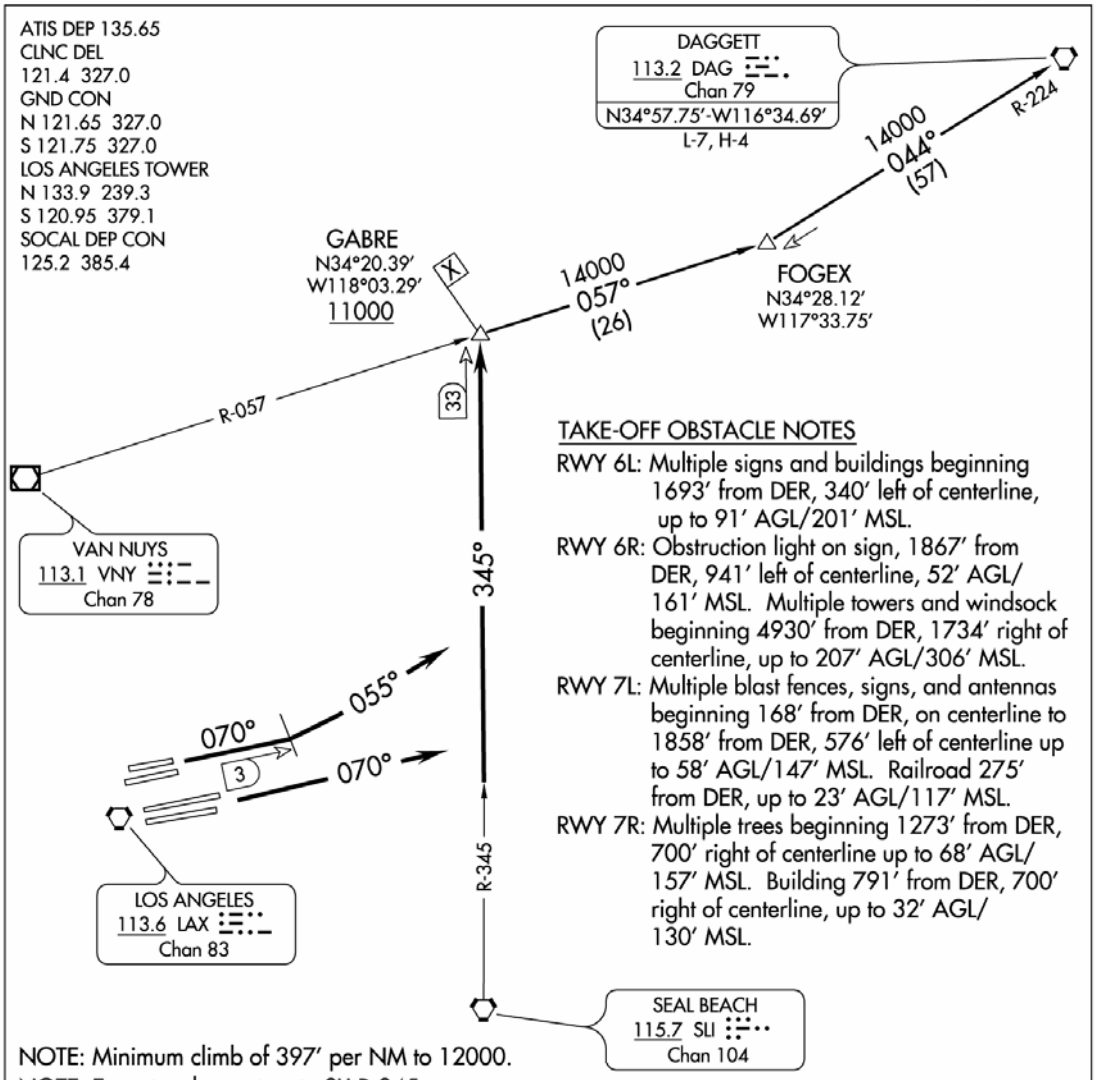
EDETH ONE DEPARTURE (RNAV)



EDETH ONE DEPARTURE (RNAV)
(EDETH1.EDETH) 07354
SALT LAKE CITY, UTAH
SALT LAKE CITY INTL (SLC)

GABRE SIX DEPARTURE

LOS ANGELES INTL (LAX)
LOS ANGELES, CALIFORNIA



DEPARTURE ROUTE DESCRIPTION

TAKE-OFF RUNWAY 6L/R: Climb heading 070° until the LAX VORTAC 3 DME, then turn left heading 055° for vector to SLI R-345. Thence....

TAKE-OFF RUNWAY 7L/R: Climb heading 070° for vector to SLI R-345. Thence....

....via SLI R-345 to GABRE INT. Then via (transition) or (assigned route).

DAGGETT TRANSITION (GABRE6.DAG): From over GABRE INT via VNY R-057 and DAG R-224 to DAG VORTAC.

SW-3, 10 APR 2008 to 08 MAY 2008

Initial Discussion - Meeting 08-01: New issue introduced by Rich Boll, NBAA, regarding charting of dual (ATC and obstruction clearance) altitude requirements on SIDs. This issue was brought into the discussion of issue 07-01-274 and the group as a whole recommended the two issues be combined and both worked by the ad-hoc departure working group. To review status and updates, refer to Issue 07-01-274. CLOSED
