

High Altitude Redesign (HAR) Phase I RNAV routing, pitch and catch points:

The purpose of this section of the Special High Altitude Routes is to present user routing options for flight within the initial HAR Phase I expansion airspace. Users are able to fly user-preferred routes, referred to as non-restrictive routing, between specific fixes described by **pitch** (entry into) and **catch** (exit out of) the HAR airspace. Pitch points indicate an end of departure procedures, preferred IFR routings, or other established routing programs where a flight can begin a segment of non-restrictive routing. The catch point indicates where a flight ends a segment of non-restrictive routing and joins published arrival procedures, preferred IFR routing, or other established routing programs.

The HAR Phase I expansion airspace is defined as that airspace at and above FL 350 in fourteen of the western and southern Air Route Traffic Control Centers (ARTCCs). The airspace includes Minneapolis (ZMP), Chicago (ZAU), Kansas City (ZKC), Denver (ZDV), Salt Lake City (ZLC), Oakland (ZOA), Seattle Centers (ZSE), Los Angeles (ZLA), Albuquerque (ZAB), Fort Worth (ZFW), Memphis (ZME), and Houston (ZHU). Jacksonville (ZJX) and Miami (ZMA) are included for east-west routes only.

To develop a flight plan, select pitch and catch points based upon your desired route across the Phase I airspace. Filing requirements to pitch points, and from catch points, remain unchanged from current procedures. For the portion of the route between the pitch and catch points, non-restrictive routing is permitted.

Where pitch points for a specific airport are not identified, aircraft should file an appropriate departure procedure (DP), or any other user preferred routing prior to the NRR portion of their routing. Where catch points for a specific airport are not identified aircraft should file, after the non-restrictive routing portion of their routing, an appropriate arrival procedure or other user preferred routing to their destination.

Additionally, information concerning the location and schedule of Special Use Airspace (SUA) and Air Traffic Control Assigned Airspace (ATCAA) can be found on the Web Site: www.faa.mil/hialt. ATCAA refers to airspace in the high altitude structure supporting military and other special operations. Users are encouraged to file around these areas when they are scheduled to be active.

In conjunction with the HAR program RNAV routes have been established to provide for a systematic flow of air traffic in specific portions of the enroute flight environment. The designator for these RNAV routes begin with the letter Q, for example, Q-501. Where those routes aid in the efficient orderly management of air traffic they will be published as preferred IFR routes.

HAR Special High Altitude Pitch (entry) Points for non-restrictive routing for Airports Located Outside HAR Phase I Expansion Airspace

Westbound traffic originating outside of HAR airspace entering ZMP, ZAU, ZKC and ZME can begin non-restrictive routing over any of the following pitch points (listed from north to south):

DLH, CESNA, GEP, BAE, MKG, GRR, PMM, GSH, CADIZ, FWA, VHP, FLM, IIU, PXV, SGF, RZC, BNA, SALMS, VUZ, BOYDD, or MIE.

Traffic originating outside of HAR airspace may also begin non-restrictive routing upon crossing the pitch line depicted on the associated graphic.

HAR Special High Altitude Pitch Points for Airports Located Within (below) HAR Phase I Expansion Airspace

This section lists pitch points for airports within the HAR Phase I expansion airspace.

Albuquerque	ABQ, GUP, HANOS or ZUN
Austin Terminal Area	ABI, FUZ, JCT, MQP, NAVYS, SJT or TNV
BOCA RATON, FL	TBIRD KPASA Q118 LENIE or TBIRD KPASA Q116 CEEYA or TBIRD KPASA Q110 FEONA or TBIRD SMELZ Q106 BULZI or TBIRD SMELZ Q106 GADAY
Burbank includes Santa Monica And Van Nuys	DAG LAS or HEC EED or PMD BLH or GMN, or MAKRS
Chicago Terminal Area	IOW, PLL275065, MZV or BAE
Dallas/Fort Worth Terminal Area	Aircraft landing ORDT (Except MDW) shall file EAKER MIDEE BDF STAR or MLC J105 SGF BDF STAR. ABI, LBB, TCC, CDS, MRMAC, IRW, TUL, MLC, TXK ELD, or SWB
Denver Terminal Area	PUB, DVC, DBL, RLG, EKR, LAR, MBW, CYS, BFF, HANKI, NATTI, ASHBY, BELKE, CABET, WEEDS, or BINKE
Fort Lauderdale (or) Fort Lauderdale Executive	THNDR KPASA Q118 LENIE or THNDR KPASA Q116 CEEYA or THNDR KPASA Q110 FEONA

or
THNDR SMELZ Q106 GADAY
or
THNDR SMELZ Q106 BULZI

Houston Bush
LIT, EMG, MLC, JCT
or
Aircraft destined ATL Terminal Area
LCH Q24 PAYTN HONIE-RNAV STAR
or
Aircraft joining J37 to the North-East:
BPT GUSTI Q22 CATLN
Aircraft joining J42 to the North-East,
ELD Q32 J42

Houston Hobby
LIT, EMG, MLC, JCT,
or
Aircraft joining J42 to the North-East,
ELD Q32 J42

Jacksonville, FL
TAY

Kansas City Terminal Area
TIFTO, CATTS or KENTN

Los Angles, includes
Ontario
DAG LAS
or
TRM EED
or
TRM PKE
or
GMN, or RZS

Las Vegas
DOBNE, MOSBI, NICLE, TRALR or ZELOT

Long Beach includes
Orange County
TRM PKE
or
TRM EED
or
GMN, SNS, EHF or LANDO

Memphis
BNA, HAAWK, SALMS or SQS

Miami Terminal Area
WINCO KPASA Q118 LENIE
or
WINCO KPASA Q116 CEEYA
or
WINCO KPASA Q110 FEONA
or
WINCO SMELZ Q106 GADAY
or
WINCO SMELZ Q106 BULZI

Milwaukee
GREAS

Minneapolis Terminal Area*	ONL, ABR, FAR, OBH, OVR, FOD
New Orleans Terminal Area	AEX, MEI, SQS or KAPLN
Orlando Terminal Area	WEBBS BRUTS Q118 LENIE or WEBBS GULFR Q116 CEEYA or WEBBS BULZI Q106 GADAY or WEBBS FEONA or WEBBS BULZI
Palm Beach, FL	TBIRD KPASA Q118 LENIE or TBIRD KPASA Q116 CEEYA or TBIRD KPASA Q110 FEONA or TBIRD SMELZ Q106 BULZI or TBIRD SMELZ Q106 GADAY
Palm Springs	TRM JOTNU BLD or TRM EED or TRM PKE
Phoenix	CHILY, CIE, CULTS, RSK, DOVEE, GCN, MESSI, SUN, DRYHT or MOHAK
Portland, OR	PDT or TIMEE
Salt Lake City	HVE, DTA, MLF, BCE, OAL, MTU, BVL, OCS, TWF, DBS or BPI or TCH J56 CHE or TCH J173 EKR
Saint Louis	VIH, MAP, MYERZ or MCM or HLV MCI
San Antonio Terminal Area	Aircraft North of LFK, LFK or Aircraft South of HUB, ELA or Aircraft South of LFK and North of HUB, LCH or FUZ, SJT, MQP or ABI
San Diego	TRM EED or TRM PKE or

TRM JOTNU BLD

San Francisco Bay Area GALLI, INSLO, HAROL or JSICA
Oakland GALLI, INSLO, HAROL or JSICA
San Jose GALLI or INSLO

Seattle BLUIT

Southwest Florida Airports JOCKS KPASA Q118 LENIE
(RSW/FMY) or
 JOCKS KPASA Q116 CEEYA
 or
 JOCKS KPASA Q110 FEONA
 or
 JOCKS SMELZ Q106 GADAY
 or
 JOCKS SMELZ Q106 BULZI

Tampa Terminal Area BRUTS Q118 LENIE
 or
 GULFR Q116 CEEYA
 or
 BULZI Q106 GADAY
 or
 FEONA or BULZI

* MSP area departures with destinations east of 93 degrees west longitude via preferred IFR routing.

Catch Points for Airports Located Outside HAR Phase I Expansion Airspace

This section lists exit points for aircraft destined to specific destinations which are outside the HAR Phase I airspace.

Atlanta Terminal Area Aircraft through Memphis airspace from Kansas
 City Center East of FAM,
 PLESS Q19 BNA-STAR
 or
 Aircraft through Memphis airspace from Kansas
 City Center West of FAM,
 ARG Q26 DEVAC-STAR
 or
 MEM-STAR
 Or
 Aircraft through Memphis airspace from Indianapolis
 Center West of a line
 from VHP to BWG,
 BNA-STAR
 Or
 Aircraft through Memphis airspace from Indianapolis
 Airspace East of a line
 from VHP to BWG,
 BWG-STAR
 or
 Aircraft through Memphis airspace from Ft. Worth
 Center,

	MEM-STAR or MIE-STAR or MEI HONIE-RNAV STAR or PAYTN HONIE-RNAV STAR
Baltimore-Washington*	GIJ, GEP, FLM, IIU, BAE, VHP, WHETT, BNA OR VUZ
Boston*	GEP, CRL, ECK, IIU, BNA or VUZ
Buffalo*	GEP or CRL
Hartford Bradley*	GEP or CRL
Canton-Akron*	GIJ, VHP or GEP
Charlotte	BNA or VUZ
Cincinnati Terminal Area	Aircraft North of SLC: JOT or Aircraft over or South of SLC: ENL or SLC or SFO Departures: ENL or JOT BNA or PXV
Cleveland Terminal Area*	OBK
Detroit Terminal Area	BAE MKG POLAR-STAR or VHP FWA MIZAR-STAR
Detroit City	LAN SPRTN-STAR Or VHP FWA
Indianapolis Terminal Area	BIB, SPI or JOT
Louisville	ENL or MEM
Newark*	GEP, VHP, FLM, IIU, BNA OR VUZ or IOW GIJ J554 CRL J584 SLT FQM-STAR
New York Kennedy*	GEP, VHP, FLM, IIU, BNA OR VUZ or DBQ J94 PMM J70 LVZ LENDY-STAR
New York LaGuardia*	GIJ, GEP, VHP, BAE, FLM, IIU, BNA OR VUZ,
Philadelphia Terminal Area*	GIJ, GEP, VHP, BAE, WHETT, BNA or VUZ
Pittsburgh Terminal Area*	VHP, GIJ, BAE or GEP
Pontiac	LFD, LAN, VHP, FWA or GEP
Providence	JHW, HEMDI, CESNA, GEP, GRB, TVC, ASP, VHP, IIU, BNA OR VUZ

Raleigh-Durham	FLM, IIU, BNA or VUZ
Toronto Terminal Area	ECK, SVM, SSM or GEP
Teterboro*	GEP, VHP, CRL, BNA OR VUZ
Washington Dulles/National*	GIJ, GEP, FLM, IIU, BAE, VHP, WHETT, BNA or VUZ
White Plains*	GEP, VHP, CRL, FLM, IIU, BNA or VUZ
Willow Run*	LAN, LFD, VHP FWA or GEP

* *Eastbound aircraft over-flying Minneapolis center airspace:
 Entering Toronto center, direct SSM or via J63 or J522 or Q505 or Q504 or
 Q502 or Q501.
 or
 Entering Chicago or Cleveland Center airspace from north of DPR J16 MCW: GEP
 or
 Entering Chicago or Cleveland center airspace from or south of DPR J16 MCW: CRL.*

Catch Points for Airports Located Within (Below) HAR Phase I Expansion Airspace

This section lists exit points for aircraft destined to airports which are below HAR Phase I airspace.

Albuquerque Terminal Area	CURLY-STAR or ESPAN-STAR or LAVAN-STAR or LVS-STAR or MIERA-STAR
Austin Terminal Area	Aircraft West of a N-S line @LFK BLEWE-STAR or Aircraft East of a N-S line @LFK IDU-STAR or LLO-STAR
Boca Raton, FL	CEW DEFUN Q112 INPIN SHDAY-STAR Aircraft through ZHU remain South of ZME/ZTL airspace or DEFUN Q112 INPIN SHDAY-STAR Aircraft through ZHU remain South of ZME/ZTL airspace

or
SZW INPIN SHDAY-STAR

Chicago Midway

CVA MOTIF-STAR
or
PIA MOTIF-STAR
or
DBQ CVA MOTIF-STAR
or
LMN MOTIF-STAR

Chicago O'Hare Terminal Area

GEP DLL MSN JVL JVL-STAR
or
TVC PMM-STAR
or
FOD DBQ JVL JVL-STAR
or
MCW JVL-STAR
or
GCK IRK BDF-STAR

Dallas/Fort Worth Terminal Area

Aircraft entering ZFW from ZHU between a line from, but not including, AEX to TTT, to, but not including, JCT, shall file JUMBO or AEX.

or
Aircraft flying between a line from JCT to TTT to CME,
TQA

or
Aircraft flying between a line from, but not including, CME to TTT to, but not including, TCC
TURKI

or
Aircraft flying between a line from TCC to TTT, to but not including, LBL,
HEATR

or
Aircraft flying between a line from LBL to TTT to, but not including PER,
MOOSE or HEATR

or
Aircraft flying between a line from PER to TTT to, but not including, RZC
LOSZY

or
Aircraft through Memphis airspace from North and West
of PXV,
RZC Q23 FSM-STAR

or
Aircraft through Memphis airspace from East of PXV,
PXV Q25 MEEOW-STAR

or
Aircraft through Memphis airspace from J6 down to, but not including J52,

LIT-STAR
or
SQS-STAR
or
Aircraft through Memphis airspace from J52
and South of J52,
SQS-STAR
or
Aircraft flying between a line from, but not
including,
MLU to TTT to AEX,
AEX

Denver Terminal Area

OATHE DANDD-STAR
or
HGO QUAIL-STAR
or
LOPEC-STAR
or
ALS LARKS-STAR
or
HBU POWDR-STAR
or
EKR TOMSN-STAR
or
CHE TOMSN-STAR
or
BFF LANDR-STAR
or
LBF SAYGE-STAR
or
HCT SAYGE-STAR
or
RSK LARKS-STAR
or
LAA QUAIL-STAR
or
GCK J154 RYLIE DANDD-STAR
or
OCS J154 ALPOE RAMMS-STAR
or
YANKI J114 SNY LANDR-STAR
or
Aircraft filed BIL or east: MBW RAMMS-STAR

Ft Lauderdale or
Ft Lauderdale Executive

CEW DEFUN Q104 PIE SWAGS-STAR
Aircraft through ZHU remain South ZME/ZTL
airspace
or
DEFUN Q104 PIE SWAGS-STAR
Aircraft through ZHU remain South of ZME/ZTL
airspace
or
SZW HEVVN Q104 PIE SWAGS-STAR

Houston Bush

CRP-STAR
or
CVE-STAR

or
Aircraft South and East of LLA
LLA-STAR
or
LLO-STAR
or
LUKIY-STAR
or
MISLE Q40 AEX-STAR
or
SAT-STAR
Or
Aircraft North and East of SJI
SJI-STAR
or
Aircraft east of PXV
PXV Q31 DHART SWB-STAR
Or
Aircraft North and West of PXV
PROWL Q33 DHART SWB-STAR

Houston Hobby

Aircraft South and East of GIRLY
GIRLY-STAR
or
Aircraft North and East of SJI
SJI-STAR
or
CRP-STAR
or
ELLVR-STAR
or
SAT-STAR
or
SWB-STAR
Or
BESOM Q38 ROKIT ROKIT-STAR
or
Aircraft East of PXV
PXV Q29 HARES SWB-STAR
or
Aircraft North and West of PXV
PROWL Q33 DHART SWB-STAR

Jacksonville

GADAY ZOOSS TAY-STAR
Aircraft through ZHU remain south of ZME/ZTL
airspace
or
ZOOSS TAY-STAR

John Wayne-Orange County

HEC, PGS, BLD
or
Aircraft south of TBC (from ZAB)
HIPPI

Kansas City Terminal Area

LMN BQS-Star
or

PWE RBA-Star
or
EMP JHAWK-Star

Las Vegas

Aircraft over PGA or North of PGA
KSINO-STAR
or
Aircraft South of PGA
PGS LYNSY-STAR
or
DILCO-STAR
or
LIDAT-STAR
or
IGM-STAR

Los Angeles Terminal Area

Aircraft North of TBC
HEC or PGS
or
Aircraft South of TBC (from ZAB)
HIPPI
or
BLD

Miami Terminal Area

CEW DEFUN Q104 CYY DEEDS-STAR
Aircraft through ZHU remain South of ZME/ZTL
airspace
or
DEFUN Q104 CYY DEEDS-STAR
Aircraft through ZHU remain South of ZME/ZTL
airspace
or
SZW HEVVN Q104 CYY DEEDS-STAR

Minneapolis Terminal Area

Aircraft from North/West/South:
FAR GEP-STAR
or
RWF SKETR-STAR
or
ALO KASPR-STAR
or
BRD GEP-STAR
or
BAE EAU-STAR
or
FOD TWOLF-STAR

Memphis Terminal Area

ARG-STAR
or
BWG-STAR
or
FSM-STAR
or
PXV-STAR
or
LIT-STAR
or
RZC-STAR
or

SQS-STAR
or
VUZ-STAR
or
BNA-STAR
or
GQO-STAR
or
ELD-STAR

Naples, FL

CEW DEFUN Q104 PLYER PIKKR-STAR
Aircraft through ZHU remain South of ZME/ZTL
airspace
or
DEFUN Q104 PLYER PIKKR-STAR
Aircraft through ZHU remain South ZME/ZTL
airspace
or
SZW HEVVN Q104 PLYER PIKKR-STAR

Nashville

CCT-STAR
or
GHM-STAR
or
GUITR-STAR
or
TINGS-STAR
or
VOLLS-STAR

New Orleans Terminal Area

BLUEZ-STAR
or
GPT-STAR
or
LCH-STAR
or
MCB-STAR
or
TBD-STAR
or
FATSO

Oakland

ILA
or
KATTS PAMMY
or
Aircraft over or South of a line ILC J16 DVC
REANA KATTS PAMMY
or
Aircraft from North OF ILC: JOPER PAMMY
or
KATTS PAMMY
or
Over OR South OF ILC: REANA KATTS PAMMY

Orlando Terminal Area

GADAY Q108 CLAWZ LEESE-STAR
Aircraft through ZHU remain south of ZME/ZTL
airspace

	or OTK LEESE-STAR
Palm Beach, FL	CEW DEFUN Q112 INPIN GULLO-STAR Aircraft through ZHU remain south of ZME/ZTL airspace or DEFUN Q112 INPIN GULLO-STAR Aircraft through ZHU remain south ZME/ZTL airspace or SZW INPIN GULLO-STAR
Phoenix Includes Williams	CORKR DRK-STAR or Aircraft from ZDV GUP-STAR or Aircraft from ZAB ZUN-STAR or MOHAK-STAR or SSO or VYLLA TUS-STAR
Phoenix Satellites	FLG-STAR Or SSO-STAR or MOHAK-STAR or VYLLA TUS-STAR
Portland, Or Terminal Area	ARNIT BONVL-STAR or LARNO BONVL-STAR or MOXEE MOXEE-STAR
St. Louis	SGF TRAKE-STAR Or BUM TRAKE-STAR Or ANX TRAKE-STAR Or LMN IRK RIVRS-STAR Or RBS VILA-STAR
Salt Lake City Terminal Area	JNC J12 HELPR SPANE-STAR or EKR MTU SPANE-STAR or BCE DTA-TCH or MLF DTA-TCH

or
BVL BVL-STAR
or
BYI BEARR-STAR
or
PIH BEARR-STAR
or
DBS LHO-STAR
or
JAC LHO-STAR
or
BPI LHO-STAR
or
OCS LHO-STAR

San Diego Terminal Area EED-STAR
or
LAX-STAR
or
GBN-STAR

Santa Ana HEC, PGS, BLD or HIPPI

San Antonio Terminal Area West of a N-S line @ LFK
BLEWE-STAR
or
East of a N-S line @ LFK
IDU-STAR
or
CSI-STAR
or
JCT-STAR
or
LLO-STAR
or
CRP-STAR
or
LRD-STAR

San Francisco FMG GOLDN-STAR
or
MVA MOD-STAR
or
ENI GOLDN-STAR
or
OAL MOD-STAR
or
South of a line ILC to DVC:
REANA KATTS OAL MOD-STAR

San Jose FMG HYP HYP-STAR
or
OAL HYP HYP-STAR
or
ENI GOLDN-STAR
or South of a line ILC to DVC
REANA KATTS KICHI CANDA HYP-STAR

Seattle Terminal Area

Aircraft From Northeast/Southeast/South:
TEMPL GLASR-STAR
or
SUNED CHINS-STAR
or
BTG OLM-STAR

Southwest Florida Airports
RSW and FMY

CEW DEFUN Q104 SWABE JOSFF-STAR
Aircraft through ZHU remain south of ZME/ZTL
airspace
or
DEFUN Q104 SWABE JOSFF-STAR
Aircraft through ZHU remain south of ZME/ZTL
airspace
or
SZW HEVVN Q104 SWABE JOSFF-STAR

Tampa Terminal Area

CEW DEFUN Q104 HEVVN DARBS-STAR/CLAMP-STAR
Aircraft through ZHU remain south of ZME/ZTL
airspace
or
DEFUN Q104 HEVVN DARBS-STAR/CLAMP-STAR
Aircraft through ZHU remain south of ZME/ZTL
airspace
or
SZW DARBS-STAR/CLAMP-STAR

Tucson

DRK PXR-STAR
or
MOHAK GBN-STAR