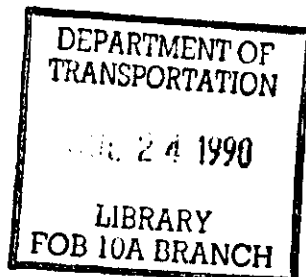




U.S. Department
of Transportation
**Federal Aviation
Administration**



Advisory Circular

Subject: DIRECT ROUTES IN THE
CONTERMINOUS U.S.

Date: 4/26/90
Initiated by: ATM-100

AC No: 90-82A
Change:

1. PURPOSE. This advisory circular is issued to provide notification to all users equipped with direct route capability of a test program to develop procedures to allow direct routes in the conterminous United States.

2. EFFECTIVE DATE. May 1, 1990.

3. CANCELLATION. Advisory Circular No. 90-82, Random Area Navigation Routes, dated October 28, 1983, is cancelled.

4. BACKGROUND. In October, 1983, the Federal Aviation Administration (FAA) issued FAA Order 7110.93, ATC Procedures For Random Area Navigation Routes, and Advisory Circular 90-82 to prescribe procedures to be used in conjunction with random area navigation (RNAV) routes. Because of the development of the preferred route system, miles-in-trail spacing, and sector management practices, the users of the system have been limited in their use of direct routes and RNAV capability. With the introduction of the OMEGA, LORAN-C, inertial navigation (INS), and flight management (FMS) navigation systems, and the development of the global positioning system (GPS), the FAA recognizes that direct routes are becoming an essential component of the air traffic control system. Today a significant number of aircraft with direct/minimum time track route capability are operating in the air traffic system.

5. CONCEPT OF OPERATION.

a. The FAA has developed a phased-in program that will allow the implementation of direct routes while managing the impact these routes have upon the system.

(1) Phases I and III are operational phases and will be limited in their scope. Phase II will be a continual critique of Phase I and will determine the limitations of Phase III. Phase IV will determine the feasibility of further expanding the program based on the knowledge gained from the previous phases.

b. Aircraft equipped with direct navigation capability will be authorized to file and fly direct routes between defined fixes on specific preferred routes. Radar separation shall be provided to all participating aircraft, but navigation on the filed route shall be the responsibility of the pilot.

c. The following factors will affect the usage and approval of direct routes planned in accordance with advisory circular.

- (1) Traffic volume.
- (2) Traffic Management programs.
- (3) ATC capability of providing service.
- (4) Confliction with airways, preferred routes, and/or special use airspace.

6. PROCEDURES. The procedures contained in this advisory circular are applicable only to aircraft equipped with the appropriate LORAN-C, INS, FMS, or OMEGA navigation system(s) and otherwise meeting FAR requirements for IFR flight .

a. Pilots requesting ATC clearance for direct routes shall:

- (1) File standard flight plans.
- (2) File the appropriate altitude as per Appendix 1.
- (3) Fly all routes/route segments on great circle tracks.
- (4) Limit procedures defined in this advisory circular to flight between defined airports as per Appendix 1, Table 1.
- (5) Plan the direct route segment of the flight to begin and end over defined entry/exit fixes as per Appendix 1, Table 2.
 - (a) The entry fix is that defined fix at which the flight will commence the direct segment of the route.
 - (b) The exit fix is that defined fix at which the flight will terminate the direct segment of the route.
- (6) The route of flight from the origination airport to the entry fix and from the exit fix to the destination airport shall be as per Appendix 1, Table 2.

(7) Define the route of flight between the entry and exit fixes in terms of waypoints in the fix/radial/distance (FRD) format.

(a) One waypoint per each air route traffic control center (ARTCC) that the flight traverses.

(b) No less than one waypoint every 250 nautical miles.

(c) FRD's defined as a position from a VHF omni-directional range navigation aid with a standard high altitude service volume (High VOR).

(8) Avoid restricted airspace by three (3) nautical miles unless permission has been obtained to operate in that airspace and the appropriate ATC facility is advised.

(9) Enter the phrase "Direct Route Program" in the remarks section of the flight plan.

b. The following IFR clearance procedures are applicable:

(1) Direct routes will be approved only when ATC radar service can be provided.

(2) Approval of requested routes will be based upon controllers workload and system capacity.

(3) Aircraft vectored off the filed route will be recleared direct to the next flight plan waypoint or issued a revised clearance. Responsibility remains with the pilot to inform ATC if unable to comply with the return to the filed route without radar assistance.

c. Aircraft operators participating in the stored flight plan program are responsible for advising the appropriate ARTCC when the direct route is a modification to the permanent stored flight plans. Such notification shall be in accordance with the established procedures for route of flight modification.

7. PROGRAM EXPANSION. In the initial phase, the program is limited to flight between defined airports and to specific altitudes. If the program proves to be effective with minimal impact upon the air traffic system, the list of defined airports will be expanded and the base altitude lowered in subsequent phases. Appendix 1 of this document will define the limitations and will be revised to reflect the appropriate changes.

for Stanley Mathew
David J. Hurley
Acting Director, Air Traffic
System Management

Appendix 1

LIMITATIONS. Phase I of the direct route program shall be limited to:

a. Flight at or above flight level 410 (FL410).

(1) Altitude assignment shall be in accordance with FAA Handbook 7110.65.

(2) Participating aircraft shall be at or above FL410 prior to crossing the direct route entry fix. Exceptions to this requirement can be approved after prior coordination with all facilities involved.

b. Flight between the metropolitan areas and defined airports as per Table 1.

(1) Table 1.

Seattle
(SEA)

Boston Area
(BOS/PVD/BDL)

San Francisco Area
(SFO/OAK/SJC)

To/From

New York Area
(LGA/EWR/JFK/TEB/HPN/PHL)

Los Angeles Area
(LAX/ONT/BUR/SNA)

Washington Area
(IAD/DCA/BWI)

c. Flights shall enter the direct route segment and exit the direct route segment over specific fixes as per Table 2.

Appendix 1

(1) Table 2.

(a) Entry fixes.

ORIGINATION	DESTINATION	ENTRY FIX	VIA BEFORE ENTRY FIX
BOS	ALL*	ECK	..MHT..CAM.J547.XU.J16.ECK..
PVD/BDL	ALL*	ECK	..CTR..CAM.J547.ECK..
IAD/BWI/DCA	ALL*	FLM or CRL or ROD	..LDN.J134.FLM.. ..BUFFR.J518.DJB.J34.CRL.. ..AML.J149.ROD..
PHL	ALL*	FWA	..PTW.PTW320..J64.FWA..
JFK	LAX/ONT/ BUR/SNA	AIR	..RBV.J230.AIR..
LGA/EWR/TEB/ HPN	LAX/ONT/ BUR/SNA	AIR	..ELIOT.J80.AIR..
JFK/LGA/EWR/ TEB/HPN	SEA/SFO/ OAK/SJC	ECK	..GAYEL.J95.BUF.J16.ECK..
SEA	ALL*	HLN	SEA.MOUNTAIN2..RV..HLN..
SFO	ALL*	FMG or MVA or OAL	SFO.SFO SID.SAC.J32.FMG.. SFO.SFO SID.LIN.J84.MVA.. SFO.SFO SID.LIN.J84..J92.OAL..
SJC	ALL*	FMG or MVA or OAL	SJC.LOUPE SID.SAC.J32.FMG.. SJC.LOUPE SID.LIN.J84.MVA.. SJC.LOUPE SID.PXN..CZQ..OAL..
OAK	ALL*	FMG or MVA or OAL	OAK.OAK SID.SAC.J32.FMG.. OAK.OAK SID.LIN.J84.MVA.. OAK.OAK SID.LIN.J84..J92.OAL..
LAX	ALL*	DVC	LAX.LOOP7.DAG.J146.DVC..
ONT	ALL*	DVC	ONT.POM4.DAG.J146.DVC..
BUR	ALL*	DVC	BUR.VNY6.DAG.J146.DVC..
SNA	ALL*	DVC	SNA.MUSEL5.TRM..EED..DVC

* ALL refers only to those airports as per Table 1.

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Appendix 1

Appendix 1

(1) Table 2 continued.

(b) Exit fixes.

ORIGINATION	DESTINATION	EXIT FIX	VIA AFTER EXIT FIX
ALL*	BWI	IIU or APE or CRL	..IIU.J213.BKW.J147.CSN.OTT1.BWI ..APE..AIR.J162.MGW.EMI1.BWI ..CRL.J34.AIR.J162.MGW.EMI1.BWI
ALL*	IAD	IIU or APE or CRL	..IIU.J213.BKW.DOCCS3.IAD ..APE.J30.ESL.ESL2.IAD ..CRL.J34.AIR.MGW2.IAD
ALL*	DCA	IIU or APE or CRL	..IIU.J213.BKW.FINKS3.DCA ..APE.J30.ESL.BUCKO2.DCA ..CRL.J34.BUCKO.BUCKO2.DCA
ALL*	PHL	BKW or ROD or CRL	..BKW.J42.OTT.DPNT3.PHL ..ROD.J152.HAR.HAR3.PHL ..CRL.J34.DJB.J518.. J152.HAR.HAR3.PHL
SEA	JFK	GRB	..GRB.J106..J70.AVP.LENDY2.JFK
ALL*	JFK	DBQ	..DBQ.J82.OBK.J584.CRL.J554.JHW. J70.AVP.LENDY2.JFK
ALL* VIA ZDC AIRSPACE	JFK	RDU	..RDU.J209.TYI.J209.ORF.J121. SIE.CAMRN2.JFK
ALL*	LGA	SBN	..SBN.J146.ETG..MIP.MIPSTAR.LGA
ALL*	EWR	CRL	..CRL.J584.SLT.SLT6.EWR
ALL* VIA ZDC AIRSPACE	EWR	LIB	..LIB.J208.HPW.J191.PXT. WARRD2.EWR
ALL*	TEB	CRL	..CRL.J554.JHW.J70. AVP.AVP2.TEB
ALL*	HPN	CRL	..CRL.J554.JHW..JHW087125.. DNY.V483.IGN.V157.HAARP..HPN
ALL*	SEA	MLP	..MLP..EPH.EPH3.SEA

* ALL refers only to those airports as per Table 1.

Appendix 1

(1) Table 2 continued.

(b) Exit fixes continued.

ORIGIN	DEST.	EXIT FIX	VIA AFTER EXIT FIX
ALL*	BOS	JHW or TVC	..JHW.J82.ALB.GDM2.BOS ..TVC.J522..J16.ALB.GDM2.BOS
ALL*	PVD	JHW or TVC	..JHW..HNK.J68..V130.LAFAY..PVD ..TVC.J522.HNK.J68..V130.LAFAY..PVD
ALL*	BDL	JHW	..JHW..RKA.RODA5.BDL
ALL*	SFO	FMG or MVA or OAL	..FMG.GOLDN STAR.SFO ..MVA.MOD STAR.SFO ..OAL.MOD STAR.SFO
ALL*	SJC	FMG or OAL	..FMG.HYP STAR.SJC ..OAL.HYP STAR.SJC
ALL*	OAK	FMG or MVA or OAL	..FMG.MADN STAR.OAK ..MVA.MADN STAR.OAK ..OAL.MADN STAR.OAK
ALL*	LAX	BCE or PGS or DRK	..BCE.J60.LAX ..PGS.J64.LAX ..DRK.J10.LAX
ALL*	ONT	BCE or PGS or DRK	..BCE.J60.HEC.ZIGGY1.ONT ..PGS.J64.HEC.ZIGGY1.ONT ..DRK.J96.PSP.SETER1.ONT
ALL*	SNA	BCE or PGS or DRK	..BCE.J60.HEC.KAYOH1.SNA ..PGS.J64.HEC.KAYOH1.SNA ..DRK.J96.KAYOH1.SNA
ALL*	BUR	BCE or PGS or DRK	..BCE.J60.HEC.J6.PMD.LYNXX5.BUR ..PGS.J64.HEC.J6.PMD.LYNXX5.BUR ..DRK.J6.PMD.LYNXX5.BUR

* ALL refers only to those airports as per Table 1.

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