TIS-B

To: ALL OPERATORS OF AIRCRAFT EQUIPPED WITH CAPSONE I

From: UAA/ATD

Subject: Capstone Training Manual Revision for TIS-B use.

Dear Capstone Participant:

TIS-B (Traffic Information Service Broadcast) is now available in the Anchorage area only. You will be seeing traffic on your MX20 that is in addition to the ADS-B traffic you have been seeing.

TIS-B traffic is Transponder traffic that is being read by Anchorage Terminal Radar, and then relayed to your aircraft via the GBT / ADS-B data link. For you to see the transponder traffic the aircraft must be in the Anchorage radar coverage area and you must be within the service volume of the Anchorage GBT.

Notes:
You may receive intermittent TIS-B target of yourself, typically when you are maneuvering (e.g., climbing turn) - due to radar not tracking you as quickly as ADS-B.
TIS-B target of yourself will tend to lag behind your current position/altitude.
TIS-B position update is approx 5 sec (i.e., terminal radar update rate), ADS-B is 1 sec.
TIS-B only sees transponder equipped aircraft.
No-transponder = no TIS-B target - always look outside.

This package of information is designed to provide the Capstone pilot the information needed to understand and properly interpret the information being provided by the TIS-B product.

Included with this package:

a. Training Manual revision.
   All training revisions need to be submitted to your POI for approval.
b. Training material
   1. Prints of MX20 display with ADS-B and TIS-B traffic
   2. Pages 50-57 of the pilot operating handbook with details on the use of the traffic page including a description of TIS-B symbology.
   3. CD with all documents in Microsoft Word and PDF for easy use to revise your training program.

The following information has been prepared by The FAA Air Traffic Division

All Capstone pilots/operators are reminded that the airborne equipment that displays other ADS-B equipped aircraft and transponder equipped aircraft via TIS-B is for pilot situational awareness and is not approved as a collision avoidance tool. Any deviation from an air traffic control clearance based on cockpit information must be approved by the controlling ATC facility prior to commencing the maneuver. Uncoordinated deviations may place an aircraft in close proximity to other aircraft under ATC control not seen on the airborne equipment and may possibly result in the issuance of a pilot deviation.

Please provide each Capstone pilot with this information.

Thank You

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CAP AVIATION 121/135 TRAINING PROGRAM D-18/R-003/04-10-2004

LESSON PLAN:	Apollo MX20 Multi-Function Display
OBJECTIVE:	Provide the Airman with the knowledge and skills required to use the MX20 for en-route advisory information.
REFERENCES:	MX20 users manual, Student Handbook
COURSEWARE:	MX20 simulator, overhead projector or PowerPoint presentation.
INSTRUCTIONAL DELIVERY METHODS:	Lecture, demonstration, hands on exercises
TESTING / CHECKING:	Student handbook exercises
STANDARD:	Minimum passing score 70%

A. The user interface of the Apollo MX20 Multi-Function Display.
   1. Menu Keys.
   2. Smart Keys

B. Function Selection Menu.

C. Incorporated Functions.
   1. Message Function
   2. Screen Layout
   3. En Route
   4. Smart Key Assignment

D. Custom Map Function
   1. Screen Layout
   2. Smart Key Assignment
   3. Menu Option Assignment

E. IFR Chart Function
   1. Screen Layout
   2. Smart Key Assignment
   3. Menu Option Assignment

F. VFR Chart Function
   1. Screen Layout
   2. Smart Key Assignment
   3. Menu Option Assignment

A. Traffic Function
   4. Screen Layout
   5. Smart Key Assignment
   3. Menu Option Assignment
   4. Traffic symbols
      a. ADS-B Traffic
      b. TIS-B Traffic
      c. Ground Traffic

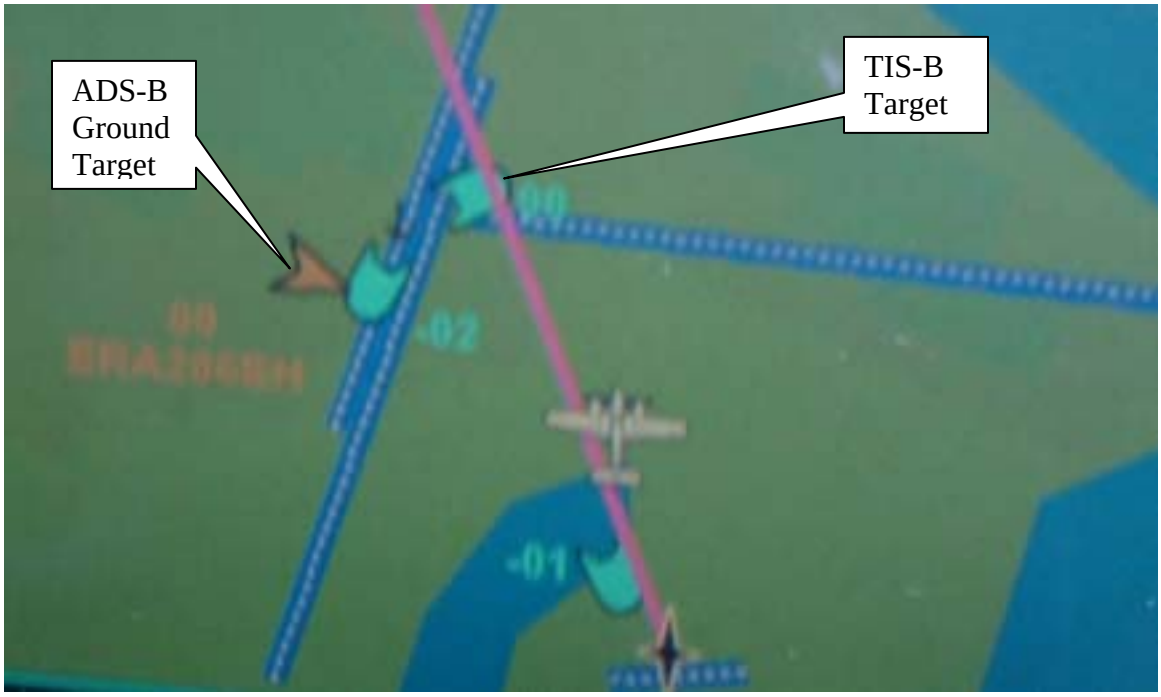
B. Flight Plan Function.
   6. Screen Layout
   7. Smart Key Assignment
   8. Menu Option Assignment

C. Terrain Function.
   9. Screen Layout
   10. Smart Key Assignment
   11. Menu Option Assignment
   12. EMPASIS ON ALTIMETRY / BAROMETRIC LIMITATIONS
      a. HIGH TO LOW ILLUSTRATIONS OF LIMITATIONS
      b. USE BET HPB EXAMPLE WITH BERING SEA LOW

J. SPLIT Screen Function.
   1. Selecting elements to display
   2. Changing display
   3. Profile display

K. Test Function
   1. Screen Layout
   2. Smart Key Assignment (none)
   3. Menu Option Assignment

TIS-B and ADS-B Targets on MFD


ADS-B
Ground
Target
TIS-B
Target

Capstone TIS-B Services
Pilot Questionnaire

The information you provide in this questionnaire will be used to evaluate and improve the services provided by the Capstone equipment. Please fill in as many blanks as you have information for and circle the appropriate choice following each question. Thanks for your assistance.

In Flight Occurrence

Briefly describe the in flight occurrence using TIS-B that you are addressing.

_____

_____

_____

Flight Information

Date of Flight: ____/____/_____ Time of Flight: _____:___ Z or L
mm dd yyyy

Duration of Flight: _____ hrs. _____ min. Flight conditions IMC or VMC

Departed from: (list all if multiple) _____

Arrived at: (list all if multiple) _____

General Information

a. Have you had Capstone training? Yes/No Source of training UAA or Company

b. Flying experience: _____ hours (____ years)

c. Hours experience with Capstone suite? _____ hrs.

d. Type of aircraft _____

e. UAT Equipage: 981 or 978 MHz

f. Did you have any targets displayed? Yes / No
If yes, were there TIS-B targets visible? Y / N
Were there ADS-B targets visible? Y / N

g. Did the TIS-B target displays assist with visual acquisition? Y / N
Comments: _____
_____

h. Did the TIS-B target display assist with departure procedures? Y / N
Comments: _____
_____

i. Did the TIS-B target display assist with arrival procedures? Y / N
Comments: _____
_____

J. Were you able to visually acquire TIS-B targets? Y / N
Comments: _____
_____

k. Did you request any call-outs of TIS-B targets from control? Y / N
If yes, how close were the associations?
Comments: _____
_____

l. Do you believe the display accurately depicted the TIS-B targets? Y / N
(altitude, range, heading, etc.)
Comments: _____
_____

m. At any time did you see your ownship as a TIS-B target? Y / N
If yes, were you performing any maneuvers at that time? Y / N
If yes, please describe: (climbing, descending, turning, etc.)
_____
_____
_____

n. Do you prefer any particular zoom level on the MX20 when monitoring traffic?
Y / N . Scale used 10 20 30 40 Auto Other _____

o. On the zoom scale you are using on the MX20 please describe the density of other aircraft targets? _____
_____

Can you suggest any enhancements or changes to the display of TIS-B targets?
Comments: _____
_____
_____
_____

Please forward comments to:

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Thank You!27/5/2004