performance is monitored by maintenance personnel rather than ATC, report malfunctions to the nearest Flight Service Station (FSS) facility by radio or telephone, or by sending an email to the ADS–B help desk at adsb@faa.gov. Reports should include:

1. Condition observed;

2. Date and time of observation;

3. Altitude and location of observation;

4. Type and call sign of the aircraft; and

5. Type and software version of avionics system.

4–5–8. Traffic Information Service–Broadcast (TIS–B)

a. Introduction

TIS–B is the broadcast of ATC derived traffic information to ADS–B equipped (1090ES or UAT) aircraft from ground radio stations. The source of this traffic information is derived from ground–based air traffic surveillance sensors. TIS–B service will be available throughout the NAS where there are both adequate surveillance coverage from ground sensors and adequate broadcast coverage from ADS–B ground radio stations. The quality level of traffic information provided by TIS–B is dependent upon the number and type of ground sensors available as TIS–B sources and the timeliness of the reported data. (See FIG 4–5–8 and FIG 4–5–9.)

b. TIS–B Requirements.

In order to receive TIS–B service, the following conditions must exist:

1. Aircraft must be equipped with an ADS–B transmitter/receiver or transceiver, and a cockpit display of traffic information (CDTI).

2. Aircraft must fly within the coverage volume of a compatible ground radio station that is configured for TIS–B uplinks. (Not all ground radio stations provide TIS–B due to a lack of radar coverage or because a radar feed is not available).

3. Aircraft must be within the coverage of and detected by at least one ATC radar serving the ground radio station in use.

c. TIS–B Capabilities.

1. TIS–B is intended to provide ADS–B equipped aircraft with a more complete traffic picture in situations where not all nearby aircraft are equipped with ADS–B Out. This advisory–only application is intended to enhance a pilot's visual acquisition of other traffic.

2. Only transponder–equipped targets (i.e., Mode A/C or Mode S transponders) are transmitted through the ATC ground system architecture. Current radar siting may result in limited radar surveillance coverage at lower altitudes near some airports, with subsequently limited TIS–B service volume coverage. If there is no radar coverage in a given area, then there will be no TIS–B coverage in that area.

d. TIS–B Limitations.

1. TIS–B is NOT intended to be used as a collision avoidance system and does not relieve the pilot's responsibility to "see and avoid" other aircraft, in accordance with 14CFR §91.113b. TIS–B must not be used for avoidance maneuvers during times when there is no visual contact with the intruder aircraft. TIS–B is intended only to assist in the visual acquisition of other aircraft.

NOTE–
No aircraft avoidance maneuvers are authorized as a direct result of a TIS–B target being displayed in the cockpit.

2. While TIS–B is a useful aid to visual traffic avoidance, its inherent system limitations must be understood to ensure proper use.

(a) A pilot may receive an intermittent TIS–B target of themselves, typically when maneuvering (e.g., climbing turns) due to the radar not tracking the aircraft as quickly as ADS–B.

(b) The ADS–B–to–radar association process within the ground system may at times have difficulty correlating an ADS–B report with corresponding radar returns from the same aircraft. When this happens the pilot may see duplicate traffic symbols (i.e., "TIS–B shadows") on the cockpit display.

(c) Updates of TIS–B traffic reports will occur less often than ADS–B traffic updates. TIS–B position updates will occur approximately once every 3–13 seconds depending on the type of radar system in use within the coverage area. In comparison, the update rate for ADS–B is nominally once per second.