

TRANSPONDER OPERATIONS ON THE GROUND



ASDE-X: Coming To An Airport Near You - To Squawk Or Not To Squawk, That Is The Question

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Milwaukee's General Mitchell International Airport
(MKE) was the first US airport to go operational

with ASDE-X. ASDE-X is coming on line at other airports around the country and by January of 2007, it will be operational at a total of 34 airports.

What is ASDE-X and why should you care? Standard ASDE (no "X") is Airport Surface Detection Equipment - ground radar that depicts primary returns (raw radar) on the airport as an aid for the ground or ramp controller. ASDE-X is a multi-modal system that will display an ID tag next to every radar target depicted on the ground controller's display. This is obviously a tremendous advantage to the ground or ramp controller, but it comes at the price of a small compromise on the part of pilots.

Where ASDE-X is operational, the ATIS will request pilots to set their transponder to "On" while operating on taxiways and runways. This is so the system will pick up your ID from your transponder code, and depict that on the controller's ASDE display. The system will also sense and display an ID and position of every suitably equipped vehicle on the airport's movement area, based on an ADS-B broadcast.

If your airplane's transponder is tied to a "weight-on-wheels" switch, the FAA says that some functionality of Mode-S transponders may be affected (e.g. TCAS-II), but the avionics capability to provide the aircraft's squawk code when interrogated is not affected.

Setting the transponder to "On" while on the ground contradicts traditional pilot training and current procedures. As you know, the reason transponders are currently left in "Standby" is to prevent the Airport Surveillance Radar (ASR) from "acquiring" our airplane as an airborne target. At airports with ASDE-X, acquisition by ASR will be inhibited with a software patch, so we can "squawk" without affecting ASR. Unfortunately, differences in size and layout mean that every airport must have a unique mask made for the software patch to the ASR. Ultimately, it is the FAA's goal that we may leave the transponder on at all times, but that is several years away. Until all airports have this capability, we will be required to know which procedures are in use at which airports.

In the meantime, if you hear the ATIS broadcast an instruction to set your transponder to "On" while on taxiways and runways, you know the airport is operating with ASDE-X. Adjust your thinking, and your checklists, to comply with this request. At all other airports, continue to set your transponder to "Standby" or "Off" while on the ground.