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Private Pilot Research - Aircraft Instruments (Blockage of the Pitot-Static System)

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There are many different scenarios that could occur with a pitot-static system blockage. The following are the most common occurrences:

- Blocked pitot tube with open drain hole
- Blocked pitot tube with blocked drain hole while at level flight
- Blocked pitot tube with blocked drain hole while climbing or descending
- Blocked static port with open pitot tube
- Blocked static and pitot systems

In the first scenario, a blocked pitot tube with an open drain hole, the Airspeed Indicator (ASI) will show zero because there is no pressure in the pitot system. In the second scenario, a blocked pitot tube with a blocked drain hole while at level flight, the Airspeed Indicator (ASI) will freeze. In the third scenario, a blocked pitot tube with a blocked drain hole while climbing or descending, the Airspeed Indicator (ASI) will increase when climbing and decrease when descending. In the fourth scenario, a blocked static port with an open pitot tube, the Airspeed Indicator (ASI) will indicate an inaccurate airspeed. Lastly, in the fifth scenario, a blocked static and pitot system, the ASI will freeze and the VSI will indicate zero.