PC-12 Fuel System
Airworthiness presentation
Fuel System

Delivery Fuel Pump

To Engine

Delivery Fuel Pump

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Fuel System

Engine-Driven Fuel Pump

To Engine

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Fuel Low Pressure

To Engine
Fuel Low Pressure
Fuel Low Pressure
Fuel Quantity Imbalance
Accident Scenario

• Low fuel pressure 1 hour 13 minutes into flight
• Corrected through fuel boost pump operation
• No fuel pressure cautions
• Annunciations first indications of anomaly
Accident Scenario

- Low pressure state
- Described in checklist
- Occurred on previous flights
- Lack of FSII
- Ice accumulation
- Ice/water might have been found if pilot performed preflight inspection
Flight Time - 1 Hour 13 Minutes
Flight Time - 1 Hour 21 Minutes

To Engine
Accident Scenario

- Performance of fuel system degraded over time, resulting in significant fuel imbalance
- If pilot had added FSII, low pressure state and subsequent imbalance would not have developed
Accident Scenario

• By 1 hour 52 minutes, imbalance about 25% of one tank’s capacity
• Pilot likely recognized fuel imbalance before this point
• Pilot attempted to manually balance fuel through activation of left boost pump
• Similar actions observed later in flight
Flight Time - 2 Hours 17 Minutes
Safety Issues

• Fuel filler placards not required to advise necessity for FSII
• FAA guidance on fuel system icing prevention does not include information on need for FSIIIs