

## Systems Safety

Overview: There are four major components to making UAVs safer to operate: See and Avoid, UAV classification, operator classification, and documentation of mishaps.

- The most important issue in integration of UAVs in the NAS is the 'see and avoid' problem
  - UAVs cannot see and avoid like manned aircraft
  - Procedures for integration of UAVs must be worked out—not just technologies
- An important question in integration is defining what a UAV is
  - There is a continuum running from small, hand-sized UAVs to large UAVs such as the Global Hawk
  - UAVs must be classified much like airplanes are starting with small craft and moving up to larger, more complex craft
  - Ratings may need to be UAV specific
  - A UAV is not simply an aircraft—it is an entire system
  - They can be large, but simple to operate or small and complex. The same UAV can be totally autonomous or directly controlled. Operator skills would be different based on complexity
- Operator classification/qualification
  - Would have to mirror the UAV classification system and addresses what skills a UAV operator needs
  - Medical qualifications have two issues
    - UAV operators don't need the same medical qualifications as pilots
    - Or some may simply opt to obtain medical qualification rather than waiting for the debate on what should make up those qualifications to subside
- A system that deals with safety and UAVs must be established. There are two approaches:
  - Create a UAV category in the Aviation Reporting System
    - The UAV category would be further broken down into specific categories such as engine problems, etc.
    - The UAV community would get updates on what problems occur and would be better prepared to act when a similar problem arises
  - Capture what happens when a mishap actually occurs
    - Mishaps are well documented in the military, but not in the civilian sector