

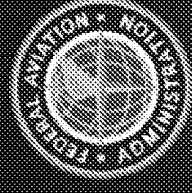
Unmanned Aircraft Systems

Integration into the National Airspace System (NAS)

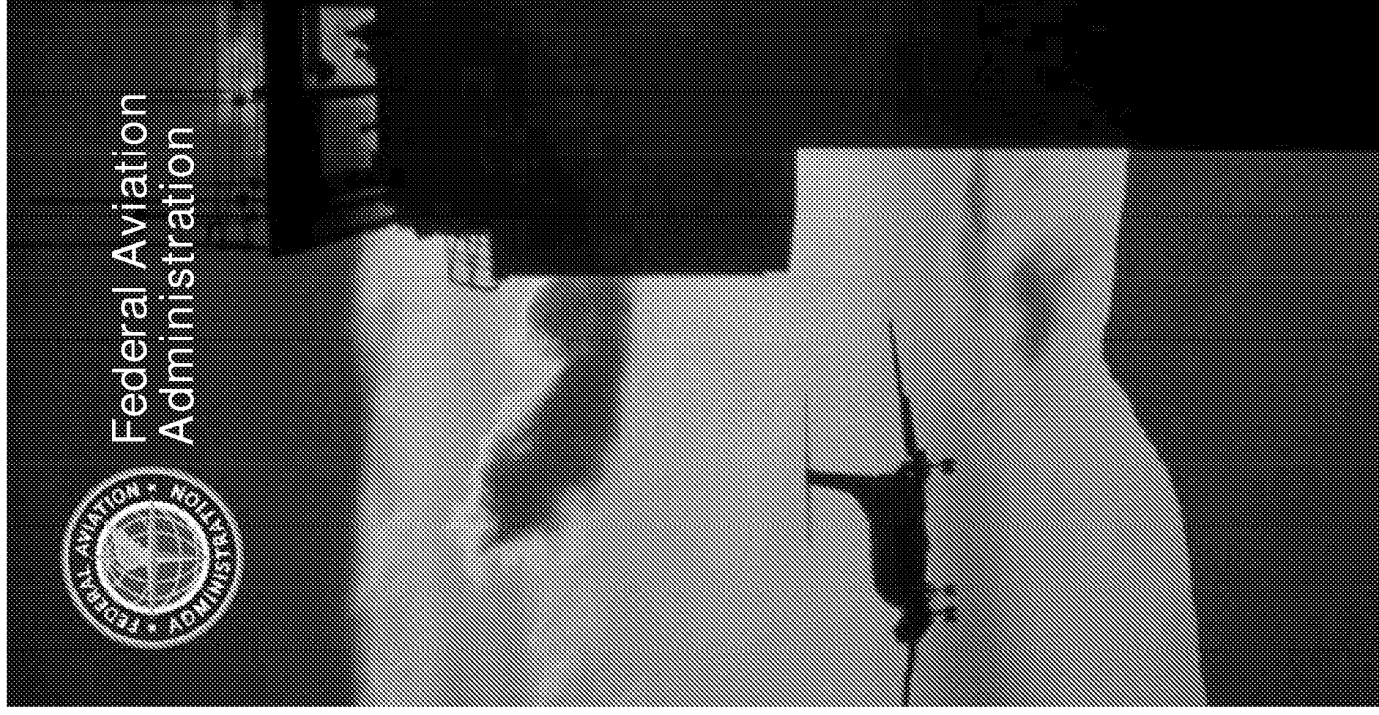
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By: John Timmerman

Date: July 12, 2005

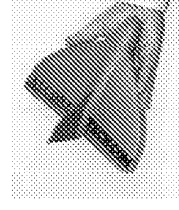
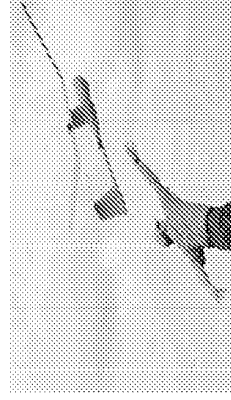
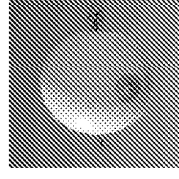
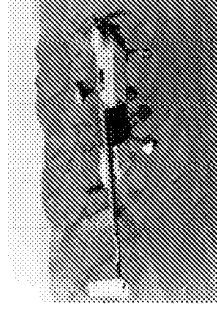
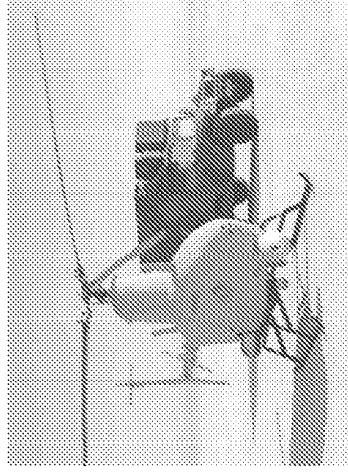
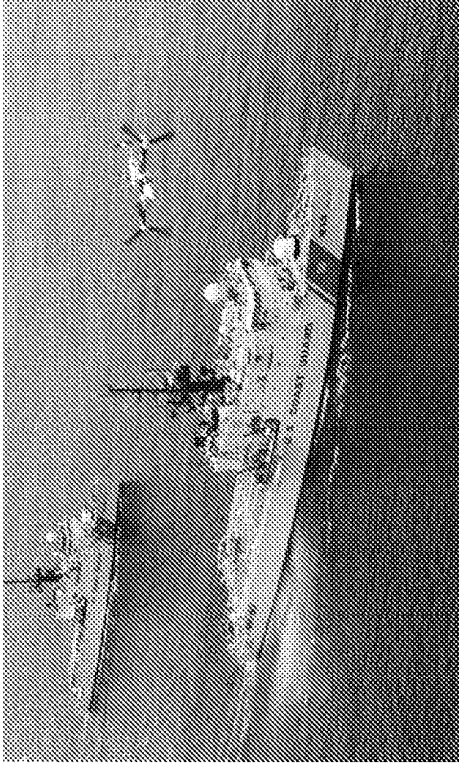


Federal Aviation
Administration



What is UAS?

- Unmanned Aircraft Systems (UAS) historically called by various terms:
 - Drone/ROA/RPV/UAV/Model/R-C
- Includes:
 - Unmanned Aircraft (UA)
 - Aircraft Control Station
 - Command & Control Link/s
- Operated or flown by a “pilot”



Current UAS Operations in the NAS

- Within “segregated” airspace
 - Includes Special Use Airspace (SUA) & Air Traffic Control Assigned Airspace (ATCAA)
 - Primarily by DOD
- In non-segregated airspace
 - “Public” UAS – through Certificate of Authorization (COA) process
 - Includes initial “trials” in support of DHS
 - “Civil” UAS – using experimental / type certification process
 - “Model” aircraft – with guidance from AC 91-57, dated June 1981
 - Variety of other operations believed to be occurring by both the public and private sector
 - Some based on interpretations of “model” aircraft guidance
 - Others with a lack of knowledge of aviation environment requirements
- While ensuring “no harm” to other NAS customers and public

Expected Changes - Next 5-10 years

- Many UAS's transitioning from R&D to operational status
 - Routine UAS flight - both VFR and IFR and in all airspace classes
- Wider scale development and uses for UAS
 - R&D activities in public and civil sectors continue to grow
 - New uses and applications – innovative customers and providers
- Increased demands on the NAS
 - Greater numbers and diversity of requests to operate in the NAS
 - UAS operations “mushrooming” in an increasingly busy NAS
 - Additional airspace and access requested for UAS flight
 - Including security and surveillance
 - Border and harbor patrol
 - Broad spectrum of law enforcement activities
 - Pressure for quicker access - “file and fly”
 - Conflicting interests among aviation stakeholders
- International efforts to “harmonize out of the box”

2015 and Beyond

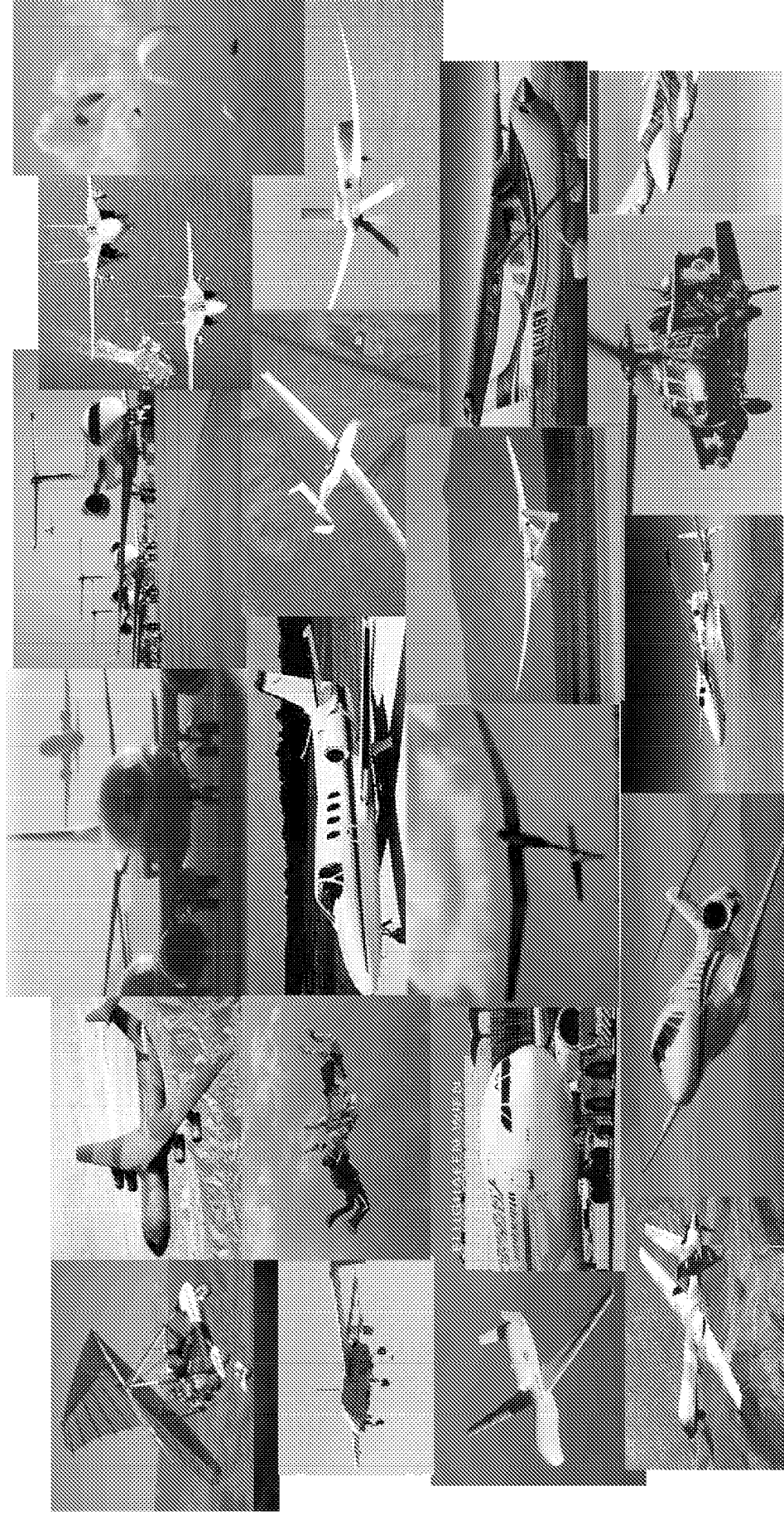
- UAS operations dominate some aviation sectors
 - Particularly those “dirty, dull or dangerous”
- Commercial UAS applications steadily grow
 - Driven by “business cases” for reduced costs
- Consumers becoming increasingly receptive to reduced human presence in aircraft cockpits
 - Passenger flights with a single “supervisory” pilot
 - Cargo operations without an on-board pilot
- Increased “cooperation” needed between aviation segments to efficiently manage finite airspace resources
- Increased expectations for higher levels of safety



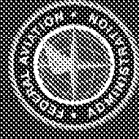
GOAL & RESPONSIBILITY!



A Safe NAS for All

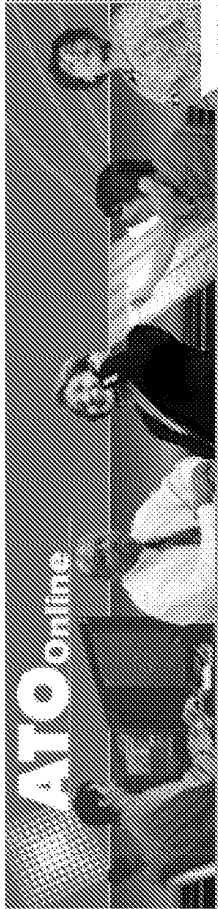


Unmanned Aircraft in the NAS
July 2005

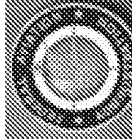


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