UAS regulation in foreign countries: Alternatives to UAS operations in the United States.

Drs. D. Ison, B. Terwilliger, D. Vincenzi

Embry-Riddle Aeronautical University – Worldwide
Wide range interest in Unmanned Aerial Systems (UAS) across the globe

Rapid growth has been stymied in the U.S. due to slow progression of integration and privacy concerns

U.S. may lose competitive advantage

Other countries provide opportunities for potential research and collaboration
Many countries have been more open to UAS than the US
- Australia
- New Zealand
- Japan
- Brazil
- Mexico
- African nations

Others are more lenient, but still not “open”
- Canada
- UK
Canada

- Two groups: “Unmanned Aerial Vehicles” (commercial use) and “model aircraft” (recreational use).
- Model aircraft: less than 77.2 pounds, individually owned (no companies allowed) and not profit-seeking.
- “Unmanned Aerial Vehicles” and require Special Flight Operations certificates.
Much of mainland Europe operates under the jurisdiction of the European Aviation Safety Agency (EASA),

- Need certification in any situation
- Certification granted on a case-by-case basis
- Requests proposing flight in unpopulated areas usually approved
20 kg (or 44 pounds) – considered “small unmanned aircraft”
* Needs “Permit to Fly” classification, which is relatively easy to acquire
* Anything heavier or used for aerial photography requires a “Permit to Carry Out Aerial Work;” has tougher restrictions
  * E.g.: pilot qualification, design & construction certificates.
* Privacy less of an issue due to differences in laws
An “Unmanned Aircraft System” profit-seeking “air work,”
* Has requirements including pilot certification, but relatively easy to meet
* Otherwise “model aircraft, flown for sport & recreation and education,” which essentially are not regulated (except VFR required)
* Privacy loop hole – current law does not apply to individuals
New Zealand

- Very few limitations up to 25 kg (55 lbs)
- No operations near airports, above 400’, line of sight (over 15 kg [33 lbs])
Brazil

- Brazil has become a leading player in UAV use
- Uses UAVs to patrol its borders
- No laws that cover civilian use
Mexico

- No Civil Aviation Authority regulations on UAV users in Mexico.
- Actually encourage UAV use.
- UASs used to monitor drug trafficking and university research.
* UASs have been in use since 1980
* Mainly agricultural purposes – in response to aging farming population
Japan

- No common rules outside agriculture
- Relatively open but under development
- Recently used in Fukushima disaster monitoring
Africa

- Relatively open slate
- Continent wants drones
  - Agriculture
  - Wildlife monitoring
  - Medicine delivery
  - Military/enforcement purposes
  - Many places $$$ = yes
Opportunities

* Manufacturers should utilize lax rules in foreign nations to research and test their vehicles
* Research institutions should partner with schools or other organizations in countries with less regulation
* Research into legislation and rules in other countries should be used to assist in the development of those items here in the U.S.

* Use success stories / avoid errors
References