USAR TL MEETING 2014

RPAS and their challenges
Some Definitions

- UAV: unmanned aerial vehicle
- UAS: unmanned aerial system
- RPAS: remotely piloted aerial system
- SUA: small unmanned aircraft
- SUSA: small unmanned surveillance aircraft
- MALE: medium altitude long endurance
- HALE: high altitude long endurance
- CAA: Civil Aviation Authority
Common (wrong) arguments & perceptions

- They are only small (<7-20Kg)
- Same size/weight as a large bird
- They don’t go fast
- They don’t fly in the same airspace as big aircraft

Aviation Rules are, historically, written in blood
Americas

Hurricane Katrina, Bay of St Louis, USA (2005) SR-530 Mudslide, Oso, Washington, USA (2014)

Source: Center for Robot-Assisted Search and Rescue (CRASAR), Texas A&M University
Asia

LuShan earthquake, China, April 2013
Europe

Balkan Floods, 2014
Operations Manual

Training

Pilot/Operator Competence

CAA Procedures
Aviation Process
Assess (who)

Initial Training
Advanced Training
Type Training Variant

Security Management System
SOP + Checklist
Limits

CONSOLIDATION PERIOD

“Airmanship”
OPERATIONS MANUALS (OM) - Why?

- CAA regulations (Cfr UK CAA IN-2014/115)
  - Guidance; engage stakeholders
- Safety during operations
  - Limitations to operations (what can/cannot be done)
- Forward planning
- Risk Management $\rightarrow$ methodology
- Knowledge sharing (turnover Opr/Staff)
- Efficiency (! Not a paperwork mountain!) $\rightarrow$ OM backed up by professional aviation processes and practice (including language terminology)
Pilot/Operator’s competences

• Certificate of Competence (who – authority?)
  – Initial, advanced, specific?
• Type of training (you must tailor your flight training to reflect the specific skills required)
• Scenarios ➔ developments ➔ simple to complex
• Continuation Training & Currency
  – Perishable skills
  – Supervision of Flying – routine checks
  – Re-Currency (30 days/ 180+ days?)
  – Re-certification – (annual, by whom?)
INSARAG-role: Questions to be answered

- Lessons learned from “off shore companies”
- RPAS System User Manual (key part to OM)
- How does our operation reflect our target “market”
- Do we use the same language? ➔ misunderstanding = source of aviation incidents!!!
- Training: mandatory training or relevant competency? USAR specific training requirements?
- RPAS Servicing and Maintenance (accountability, responsibility, quality insurance) ➔ “airworthiness”
INSARAG-role: Questions to be answered

• Airworthiness
  – Monitor defects, record and log flight data
  – Technical log of all maintenance
  – System maintained up to date at all times
  – Maintenance is carried out correctly to schedule

Independent Verification !?
INSARAG-role: Questions to be answered

- Regulations (Fit to operate within the rules)
  - Aviation and Industry rules → are we compliant?
  - **Who** will be carrying out flight Ops? Are they current, fit to operate and have the correct qualification? #-man operations?
  - **What** is the nature of our flight Ops? Within the rules, SOP, Trg,...?
  - **How** have we planned our flying activity? Have we prepared a Method Statement, Risk Assessment and Safety Plan appropriate to support this activity? Does NDMA knows our “bottom lines”?
  - **Where** are you operating? Within regulatory tolerances?
  - **When**? Time of day, weather window, airspace and other traffic?
Conclusions

• Many questions, few answers

• Standard approaches and procedures are required to:
  – Define a common level of required pilot competencies
  – Define common training standards and practices
  – Define common operational procedures, ensuring safe operations
  – Ensure team and data interoperability on the field