

Allianz Global Corporate & Specialty

RPAS/UAV: Challenges and opportunities from an insurance perspective

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Allianz 

Cet aéronef circule avec un certificat de navigabilité restreint. Son utilisation est soumise à des restrictions spécifiques, notamment le transport de passagers, à titre onéreux est interdit.

Plongée Normale = 2000 lbs / 1000 kg
Croisière économique = 0.72 / 2750 lbs / 1300 kg
Circuit fermé = 0.65 / 2750 lbs / 1300 kg
Décollage = 0.55 / 2750 lbs / 1300 kg

Table of contents

- 1 Introduction
- 2 Opportunities
- 3 Regulatory surrounding and law enforcement
- 4 Risk Selection
- 5 Considerations on Coverage, Profitability, Efficiency of UAV insurance

1

Introduction

- In 1915 Allianz started the Aviation insurance business
- The underwriting of its first airship insurance policy in Germany commenced what –this year- becomes a century-old partnership with the flight industry.
- Similar to Allianz and its 100 years of Aviation insurance for manned aircraft, the insurance for UAVs can become a similarly interesting journey with its own challenges and opportunities.

Opportunities

2



Examples of current innovative solutions



2

Opportunities

- Once the integration into National/European Airspace is successfully completed, the number of UAVs may explode.
- There are plenty of uses today and certainly even more in the future for unmanned Aviation
- Many questions go along the opportunities:
 - How fast/strong will beyond visual line of sight operations develop?
 - Will there be unmanned commercial passenger transport?
 - One day, as a passenger will it be as safe to fly with unmanned aircraft as with manned?
- But however fast the journey will develop, the UAV industry is already on its way to stimulate economic activity

Opportunities

2

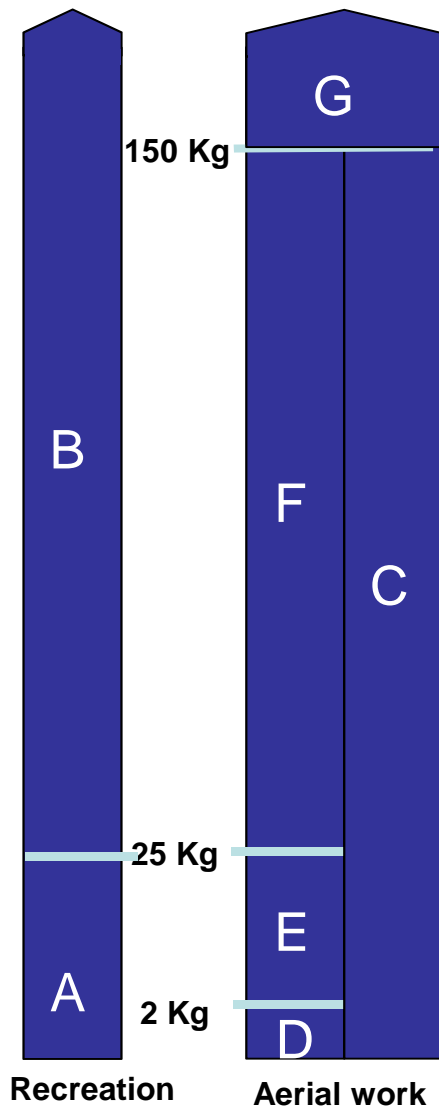
- For the insurance industry it is both a challenge and an opportunity to be the risk partner of unmanned Aviation
- To provide risk solutions for the unmanned Aviation can become (under certain circumstances) a win-win-situation for your industry and us as risk carrier
- And it will help to protect the public to have high safety standards and to prevent the public from uninsured UAV accident
- For the insurance industry, we can use the UAV insurance segment to grow our portfolios in a world of mostly saturated markets
- The insurance of UAVs can diversify our books through additional new premium

3

Regulatory surrounding and law enforcement

- What impact does a comprehensive regulatory framework have on the UAV industry and on the UAV insurance segment?
- What methods of law enforcement will impact the safety of the UAV industry?

French Regulation: Art 4, categories



Use	Categories	Take-off weight	Tethered/not tethered	Flight scenarios
Recreational	A	< 25 Kg	Both	S1
	B	> 25 Kg	Both	S1
Aerial work	C	< 150 Kg	Tethered	S1 & S3(<4Kg)
	D	< 2Kg	Not tethered	S1 to S4
	E	< 25 Kg	Not tethered	S1, S2, S3 (<4Kg)
	F*	< 150 Kg	Not tethered	N/A
	G*	> 150 Kg	Not tethered	N/A

* Mainly military UAV

This classification drives the conditions and authorizations required for using an UAV

French Regulation: UAV scenarios

- Categories are defined related to operations type



Flight scenarios	Direct view	Max horizontal distance	Max Distance to the soil and artificial barriers	Flight area
S1	Yes	100 m	small	Outside of populated area
S2	No	1000 m	50 m	Outside of populated area
S3	No	100 m	N/A	Urban areas or near people or animals
S4	No	No limit	N/A	Outside of populated area (specific training required)

French Regulation: some key requirements

- Flight authorization depends on scenarios and categories
- For category A UAV flight area limitations are applicable but no license is required.
- For categories B, C, D, E, F and G, a license is required
- For category D, E, F and G minimum safety on board equipment are required
- The license process includes a review of pilot training, UAV technical level, air-worthiness, flight demonstration
- A Declaration of conformity of the aircraft is required
- All accidents/incidents to be reported to the authority

Other EU countries

- In UK in 2010, regulations introduced that small UAVs (<20kg) for aerial work to obtain permission from CAA before a flight in congested areas. UAVs above 20kg/150kg must be registered with CAA (unless specific exemptions)
- Other EU countries such as Italy (2014) or Spain (2014) have also implemented national UAV regulations; reasons for regulation in Spain: safe conditions for UAVs, but also diversifying and stimulating economic activity.
- Even with comprehensive regulations, the risks remain a serious challenge (illegal use of UAVs, privacy infringement, etc). Law enforcement will need to face these challenges.

Impact in France

- Very comprehensive French regulation in force (April 2012), updated in 2014; supports manufacturing/operation of UAVs. 2012 to 2014 France has authorised over 600 companies to operate UAVs; up to date even more. Germany and France have highest volume of authorised UAV operations in Europe.
- Potential need for larger (more than 25 kg) UAVs in energy/transport industry (EDF & SNCF) in France for survey of engineering structures. Interest beyond the S1-S4 scenarios.
- Delair-Tech, wins EU tender to enrich COPERNICUS (environmental Earth surveillance program of EU). The UAV DT18, endurance of 100km and/or 2 hours. DT18 is first civilian UAV that has been certified by a Civil Aviation Authority for Beyond Visual Line of Sight operations.

Example for challenge for law enforcement: UAV containing radiation on roof of Japan PM's office

- On April 22, 2015, a small drone (Phantom 2, painted in black color) was found on the roof of PM's office in central Tokyo.
- A man (suspect) declared that he released the drone in dark on April 9.
- A plastic container with low level of radioactive cesium was attached.
- Suspect declared he collected contaminated soil near Fukushima nuclear power plant.
- Suspect appealed he was against Government policies on nuclear power plants.

UAV incident in central Tokyo



plastic container with low level of radioactive cesium



4

Risk Selection

- The risk selection of risks with high safety management awareness is crucial for our insurance industry
- Questionnaires are very important to assess and select risks in an appropriate manner
- Topics such as operator training/experience or type of use, geographic scope are to be reviewed by underwriters
- Please see in a separate document our current questionnaire for the UAV operator hull and liability insurance

Who?

Market Management/
Underwriting

Underwriting

Operations

Claims

What?

- Client relationship
- Distribution channel mgmt

- Assessment of UW risk information from submission
- Wording and limits analysis
- Technical quotation
- Binding of risk, formation of contract
- R/I considerations
- ARC involvement

- Policy and invoice issuance
- Booking of Premium

- Claims service if necessary
- Coverage, hull, liability

5

Considerations on Coverage, Profitability,
Efficiency of UAV insurance

- Coverage: Operator/Owner Hull and Liability insurance, Manufacturer Product Liability
- Future importance of UAV Manufacturer Product Liability
- Profitability of portfolios, Solvency II, actuarial calculations
- Efficiency: low premium and high volume of policies for operator/owner for small to medium UAV risks, group insurance more efficient, also combination Manufacturer Product Liability and Operator/Owner Hull and Liability insurance

Thank you for your attention!

Any questions?