



International Union of Aerospace Insurers (IUAI)

Members Conference 30 May – 1 June 2022





Sub-orbital Flights A regulated Activity?

Cecile Gaubert

Attorney – Gaubert Law Firm

SUMMARY

1) What is sub-orbital flight / space tourist or participant?

2) Legal framework

3) Regulatory Requirements

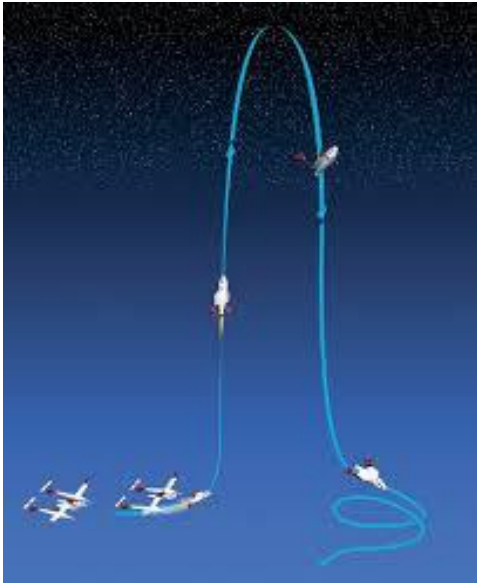
- imposed on the flight operator : duty of information
- Conditions imposed on the participant
- Liability

4) Contractual issues

- damages to or caused by participant,
- cancelation,
- delays...



WHAT IS SUB-ORBITAL FLIGHT?



- **Sub-orbital flight** is a flight up to a very high altitude which does not involve sending the vehicle into orbit (UNOOSA)
- **‘Sub-orbital trajectory’** is defined in the legislation of the United States as (49 U.S.C. § 70102 (20) (2004))
- **A flight** up to an altitude at which the vehicle does not reach its corresponding orbital velocity



WHAT IS SPACE TOURISM?



- **Space tourism** is human space travel for recreational purposes, leisure,
- ... or business purposes
- Includes travel and stay in space



WHAT IS SPACE TOURIST OR PARTICIPANT?

US CSLA Act of 2004

Flight Participant: *“an individual, who **is not a crew member**, carried within a launch vehicle or reentry vehicle.”*

SIA 2021

*« **spaceflight participant** » means an individual, other than a member of the crew, who is to be carried on board a launch vehicle with the spaceflight operator’s permission*



LEGAL FRAMEWORK

No delimitation of Airspace and Outerspace

Space law concerned or not concerned...

- International space law mute on space tourism (wether in-orbit or sub-orbital flights)

...Air law applicable?

- Definition of aircraft vs space object
- International transport



LEGAL FRAMEWORK

...but few dedicated regulations



- *Putting the law at the service of innovation!* It is on this concept that the United States promulgated the CSLAA in 2004



- The UK legislated on this issue with the 2018 Act and 2021 SIA.



- Federal Law No. (12) of 2019 (UAE)



REGULATORY REQUIREMENTS

Duty of information

- Safety records
- no certification of vehicle for crew transport.
- No creation of safety obligation, information presented must be « understandable »



- Safety recommendations « **easily understandable** » i/c information on accidents
- Information to be provided before signature of consent form



- awareness and information of the risks
- risk and safety assessments i/c emergency plan.



REGULATORY REQUIREMENTS

Requirements on the participant

- Medical evaluation:
recommendation



- Training

- Informed consent:
mandatory

- Age and mental capacity

- Medical evaluation

- Training

- Consent form:
mandatory



- Necessary training

- Physical and health fitness

- Written approval of the physical person to take the Spaceflight



REGULATORY REQUIREMENTS US REGULATION

INFORMED CONSENT FOR SPACE FLIGHT PARTICIPANTS ACKNOWLEDGEMENT OF RECEIPT

Company Name: Vehicle Name:

I ACKNOWLEDGE that before paying compensation or agreeing to fly on [INSERT THE SPECIFIC LAUNCH OR REENTRY VEHICLE THE CONSENT COVERS], I received and reviewed the following information from [INSERT OPERATOR NAME].

INFORMATION

- 1.(1) The following are known hazards and risks that could result in a serious injury, death, disability, or total or partial loss of physical and mental function. [INSERT or ATTACH: LIST OF EACH KNOWN HAZARD AND RISK] (____) INITIAL EACH HAZARD AND RISK
- 2.(2) There are hazards that are not known. (____) INITIAL
- 3.(3) My participation may result in my death, serious injury, disability, or total or partial loss of physical and mental function; (____) INITIAL
- 4.(4) The United States Government has not certified the launch vehicle and any reentry vehicle as safe for carrying crew or space flight participants. (____) INITIAL
- 5.(5) I have received from [INSERT OPERATOR NAME] Appendix A (Human Space Flight Safety Record) to this Acknowledgment of Receipt, and have been informed of the safety record of all launch and reentry vehicles that have carried one or more persons on board, including both U.S. government and private sector vehicles, which included (i) the total number of people who have been on a suborbital or orbital space flight and the total number of people who have died or been seriously injured on these flights and (ii) the total number of launches and reentries conducted with people on board and the number of catastrophic failures of those launches and Guidance on Informing Crew and Space Flight Participants of Risk – Version 1.0
- 6.(6) I have received from [INSERT OPERATOR NAME] Appendix B (Vehicle Safety Record) to this Acknowledgment of Receipt, which describes the safety record of [INSERT VEHICLE NAME], as detailed at Appendix B to this Acknowledgment of Receipt. This description included the number of any launch and reentry accidents and human space flight incidents that occurred during and after vehicle verification performed, and included: the number of vehicle flights; the number of accidents and human space flight incidents; and whether any corrective actions were taken to resolve these accidents and human space flight incidents. (____) INITIALS [PROVIDE APPENDIX B TO THIS AGREEMENT]
- 7.(7) I understand that I may request additional information regarding any accidents and human space flight incidents reported. (____) INITIALS
- 8.(8) I have been provided with the opportunity to ask questions orally to acquire a better understanding of the hazards and risks of this mission. (____) INITIALS

ACKNOWLEDGE OF RECEIPT

I knowingly consent to participate in the launch and/or reentry of the [INSERT THE SPECIFIC LAUNCH OR REENTRY VEHICLE THE CONSENT COVERS] vehicle. I understand the risk and my presence on board is voluntary.

SPACE FLIGHT PARTICIPANT

DATE

REGULATORY REQUIREMENTS

US REGULATION

Waiver of recourse

- Opt-out clauses may be provided for in favour of the operator.
- "Warning statement"
- waiver of the participant's mandatory recourse to the U.S. government

WARNING AND ACKNOWLEDGEMENT

I understand and acknowledge that, under Virginia law, there is no civil liability for bodily injury, including death, emotional injury, or property damage sustained by a participant in space flight activities provided by a space flight entity if such injury or damage results from the risks of the space flight activity. I have given my informed consent to participate in space flight activities after receiving a description of the risks of space flight activities as required by federal law pursuant to 49 U.S.C. § 70105 and 14 C.F.R. § 460.45. The consent that I have given acknowledges that the risks of space flight activities include, but are not limited to, risks of bodily injury, including death, emotional injury, and property damage. I understand and acknowledge that I am participating in space flight activities at my own risk. I have been given the opportunity to consult with an attorney before signing this statement.

Virginia Space Flight Liability and Immunity Act, Va. Code. Ann. §§ 8.01-227.8 to 8.01-227.10 (West 2010)

REGULATORY REQUIREMENTS

UK REGULATION

- **Details to be included in the consent form**
 - Identification of the participant
 - Information provided by the operator

- **Statements to be included in the consent form (not exhaustive)**
 - Participant has read and understood the risk,
 - Has been given the opportunity to ask questions and received answers,
 - Accepts and understands that the operator's spaceflight activities carry an inherent risk of danger
 - Acknowledge the regulator has not certified the launch vehicle
 - The provision referred to in paragraph [\(2\)](#) will not apply in the event of the human occupant dying or sustaining injury by taking part in the operator's spaceflight activities



CONTRACTUAL ISSUES

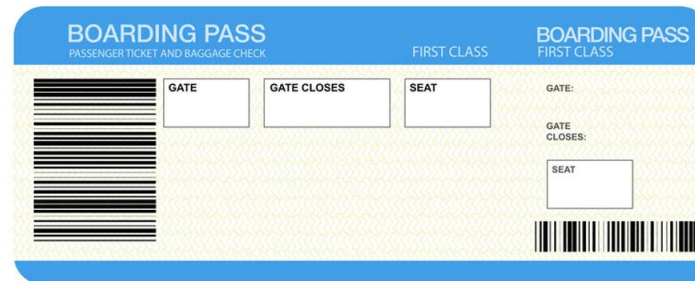
damages to or caused by participants

- Waiver of recourse
- Insurance



Flight cancelation

- Due to the operator
- Due to the tourist



delays...



NEXT STEP

Tourism in hotel in space, on the Moon and beyond...





IUAI International Union
of Aerospace Insurers

