



**PYSSENS SOLICITORS
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**PYSSENS OCTOBER 2011: SCIENCE AND TECHNOLOGY AND
INTERNATIONAL LAW WITH REFERENCE TO TRANSPORT.**

1. **House of Parliament - Parliamentary Office of Science and Technology (“POST”)**: The “Post” on its “Postnote” Number 361 stated that ““Space weather” means changes in the near-Earth space environment. It is caused by varying conditions within the Sun’s atmosphere. The Sun emits a continuous stream of particles, some highly energetic, and radiation of varying intensity. Solar activity changes according to an approximately 11-year cycle and the current consensus is that the next peak will occur in 2012-13” and that “A geomagnetic storm caused an electrical blackout in Canada affecting several million people for 9 hours. The Montreal metro was suspended during the morning rush hour and the Montreal-Dorval international airport temporarily paralysed” also that “Solar storms caused an hour-long power outage in Sweden and a \$640 million Japanese satellite was permanently damaged. Some aircraft were forced to re-route due to a communications blackout and excessive radiation exposure to air travellers. In the UK, the compass north changed temporarily by five degrees in just six minutes”
2. **“Defence of Error in Navigation”**: The maritime Convention known as the “*Rotterdam Rules*” (not having the force of law) has no defence of error in navigation. This was thought to be largely outmoded due to technological advances in navigation. Under the “*Hague*” and “*Hague Visby*” Rules, such a defence exists and

under the “**Hamburg**” Rules, whilst this defence is not expressly stated there is a defence whereby the carrier, whose fault and neglect, combines with another cause to produce loss, damage or delay, is only liable to the extent that the loss, damage or delay is attributable to such fault or neglect provided the carrier proves the amount of loss, damage or delay is not attributable thereto. Given the circumstances referred to in 1 above the carrier under Hague and Hague-Visby and Hamburg would escape liability if the solar storm caused the GPS on board to fail but in the case of the Hamburg Rules the carrier would have to prove that there was no neglect or default through using manual navigation aids whilst under Hague and Hague-Visby there would be no such need. What of the Rotterdam Rules? Acts of terrorism do relieve the carrier of liability as do Acts of God under these Rules. The solar storm would be an act of God but it is an indirect cause so again the carrier would have to prove it was not at fault if despite the availability of manual navigation aids loss or damage occurred. In other words, Hamburg and Rotterdam place the burden on the carrier to prove the “Act of God” caused or contributed to the loss. However does the failure of satellites cause the carrier to be back in the position of those carriers who had the benefit of the error in navigation clause under Hague and Hague-Visby who have a complete defence? Should satellite failure through Act of God or terrorism (see below) have been taken into account before giving up so completely the error in navigation defence in the Rotterdam Rules?

3. **Piracy:** We have heard anecdotally that ships navigating off the coast of Somalia are disengaging their GPS (Global Positioning System) so they may not be tracked in order to avoid piracy which may involve liability in the event of an accident arising out of an error in navigation under Hamburg and the Rotterdam Rules if they come into force. It is of course that much more difficult to prove the involvement of an indirect effect causing or contributing to the damage as it is not the piracy that is the direct effect but the knowing decision to disengage the GPS. This raises even more complications than the scenario offered in point 2 above due to the point of the deliberate act.
4. **Outer space Terrorism:** With the increasing access of the general population to technology, we read more often about how private individuals involved in personal projects launch rockets into space which brings the issue the possibility of such individuals unwittingly and indeed terrorists deliberately trying to disable satellites thereby affecting the transportation of ships, airplanes (cargo/passengers), Helicopters (cargo/passengers), trucks etc. One suspects these individuals are not suitably insured for such actions in the event of damage being caused to third party property. Terrorism is often specifically or indirectly excluded in terms of liability but would it have to have a direct effect as opposed to an indirect one to be an effective defence or is the break in chain of causation i.e. the loss of the satellite by terrorism and then failure in navigation? Unwitting acts may potentially give rise to liability subject to issues of remoteness.
5. **Final Comment:** Technological advances bring positive effects to humanity but they also bring about potential legal responsibilities. In the case of commercial transportation of goods and people and terrorism, the dependency of humans on satellites in terms of communication and navigation needs to be considered in relation to contractual and statutory consequences. It is clear that progress is bringing different disciplines closer and closer all the time and consideration of interaction is paramount.

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Note: In producing this press release by Pysdens Solicitors, the model published in the book entitled "GUIDELINES TO CONSIDERATION IN RESPECT OF COMMERCIAL DEALINGS" by S. Perez-Goldzveig and K.Pysden forming part of the research and development programme "COMMERCIAL GUIDE INITIATIVE" by S. Perez-Goldzveig and K.Pysden being part of "TheHouseofBranchofGold" was used with the authorisation of the authors.

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