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Le mot du Président

On se réfère souvent en termes généraux au praticien du droit spatial européen, c'est-à-dire au juriste qui exerce ses activités dans le domaine spatial. Mais qui est-il ? et quelle sorte de travail fait-il ?

Dans cette cinquième livraison, ESCL News *présente le monde du praticien à travers des articles signés par :*

- *Ian Awford, associé principal chez Barlow, Lyde & Gilbert, Londres, et président du comité spatial de l'IBA;*
- *Sa'id Mosteshar, de chez Mosteshar Mackenzie, Londres, et président désigné du comité spatial de l'IBA;*
- *Ralph Kröner, associé chez Trenité-Van Doorne, Rotterdam, et membre responsable des affaires juridiques au bureau ECSL;*
- *Dagmar Entholt-Laudien, associé chez Wessing Berenberg-Gossler Zimmermann, Hambourg;*
- *Stephen Kahn, chef de la Division Règlement des Contrats de l'ESA.*

Ces articles couvrent des domaines d'activité actuels allant de l'assurance et des télécommunications spatiales aux approvisionnements, tandis que R. Kröner – à qui nous adressons tous nos remerciements pour avoir pris contact avec les autres auteurs – nous donne un avant-goût des problèmes de l'ère des stations spatiales. A ces articles qui nous rappellent que les préoccupations traditionnelles du choix du droit applicable et du règlement des différends conservent toute leur importance à côté des nouveaux facteurs juridiques, j'ai ajouté quelques notes sur les litiges auxquels l'ESA s'intéresse.

ECSL News *reviendra plus tard sur ce sujet aux facettes multiples et abordera d'autres domaines – comme la télédétection – qui restent encore à couvrir. Les propositions des lecteurs concernant des articles futurs seront toujours les bienvenues.*

Pour terminer, je me permets d'adresser au nom de tous les membres de l'ECSL tous nos voeux de prompt rétablissement à G. Lafferranderie que nous espérons voir rapidement reprendre ses fonctions de président de l'ECSL.

Kevin Madders
Président par intérim de l'ECSL

Coopération spatiale ESA-URSS

Signature du premier accord-cadre sur la coopération spatiale entre l'ESA et l'URSS par le Directeur général de l'ESA et l'Ambassadeur d'URSS à Paris (25 avril 1989).

Insurance in Outer Space

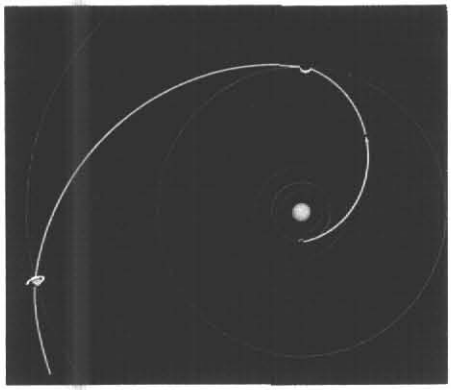
The most satisfactory way for me to describe the day to day work of a lawyer in private practice in the insurance areas of outer space commercial activities is to examine a specimen scenario:

Let's take a regional satellite operator that has insured one of its satellites for the launch phase. I will assume the law firm acts for the insurers. There is a systems failure which renders the satellite a total or partial loss. After receiving instructions, the firm's first task will be to examine whether the terms of the policy and/or the circumstances of the loss fall within the insurance cover provided. Visits to the insured company will then be required to discuss the claim. This is normally done in a constructive fashion, confrontation serving no one for this kind of claim.

The main – and often complex – issue will be to determine exactly what form of insurance payment is due. If destruction of the satellite during launch is involved, the answer will probably be simple, but partial in-orbit systems failure at whatever time will often pose problems of accurate loss-assessment. For this reason, launch policies generally contain specially designed formulae to produce different kinds of payment for loss of propellant, loss of electrical power and other failures, and also for their varying deleterious effects on the functioning of the satellite payloads. In a mixed-capability satellite – for example telecommunications + broadcasting, or remote sensing + meteorology – payments for a partial failure are likely to vary greatly among affected payloads. The factors influencing the insured and the insurers to chose these formulae are their assessment of the payloads' comparative values and likely failure modes, relative to deductions and adjustments built into the policy.

No policy being capable of foreseeing all eventualities, the lawyer needs to understand the basic technical characteristics of the satellite, based on the manufacturing contract and specifications. Experts will provide advice in the particular area of failure or, where needed, on orbital dynamics, etc.

If there is any disagreement between the satellite operator and its insurers then the effect of the policy's clauses on proof of loss, choice of law, jurisdiction and dispute resolution need to be analysed



against the facts. Procedurally, the insurers' experts will first look at the proof of loss for technical justification of the claim. Salvage issues may also require examination. Time limits will apply for submitting and responding to this proof of loss, unless mutually extended. Failing agreement after this, a typical policy will provide for a technical appraisal, with arbitration as a final recourse.

The satellite operator may, of course, have uninsured losses to be pursued against the manufacturer or others. The insurers may also have subrogation claims against the satellite manufacturer or sub-contractor. Potential causes of action in contract and tort will depend on the terms of the manufacturing contract, especially its exclusion clauses, and the applicable law. It can happen that lawyers in one country have drafted a manufacturing contract with the laws of that country in mind, but due to the bargaining position of the customer the latter's law is specified, without dealing with the consequences of doing this.

Indeed, conflicts of laws and choice of forum problems often provide the major aspects of uninsured loss and subrogation claims – as the Westar VI and Palapa B2 litigation in California has shown. Elsewhere, the issue may be one of vice caché if French law applies, or of the reach of the Indian Sale of Goods Act where Indian law applies. The permutations are endless, although claims against the launch services provider will normally be excluded under the launch contract.

Aspects of insurance in commercial space activities provide other absorbing legal issues, while policies also cover manufacturers, in orbit life insurance, and other risks. In summary, this specialist area involves a knowledge of insurance laws, contract and tort, conflicts of laws, litigation and arbitration in an international context, as well as a reasonable technical understanding of satellite hardware and software.

I. Awford

Where the money's made – Space Communications

Not surprisingly, the communications industry represents the largest client base of a space lawyer in private practice, even if space clients and issues can come from almost any quarter.

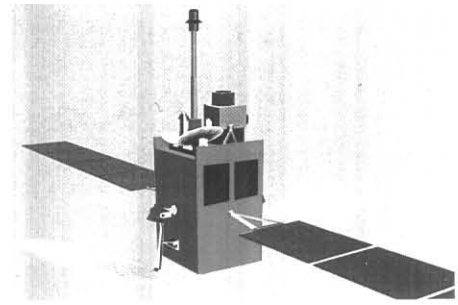
A typical transaction undertaken by a satellite communications company can involve its lawyer in a wide range of issues. Where the satellite is being constructed for the client, a first consideration will be to determine which entity is responsible for the launch. If the company itself is responsible under domestic legislation such as the UK 1986 Outer Space Act, it will have to arrange insurance, but will also wish to negotiate indemnities against any manufacturing defect. Further and complex arrangements will in addition usually need to be contracted with the manufacturer and those providing finance in order to spread the risk.

Separate from these arrangements, the launch agreement is distinguished by the fact that neither the satellite owner nor the provider of the launch facility and the launch vehicle can avoid becoming liable for any damage that may result from the launch and the presence of the satellite in outer space. The parties will need therefore to allocate responsibility amongst themselves. Much depends here on understanding clearly what occurs during a launch. An issue that has more than once given rise to difficulty and dispute is determining exactly when a launch commences – this can decide who must bear the loss.

In recent years 'turn-key' contracts between manufacturers and purchasers of satellites have gained currency. By such contracts the manufacturer delivers a functioning satellite into orbit, thereby attracting the same sort of responsibility *just described* for the communications company.

Questions that need to be addressed for such contracts are the prospects under the relevant national law of any argument to the effect that an entity acquiring a satellite in orbit has neither 'launched' nor 'procured the launch' of the satellite itself (e.g. the UK Outer Space Act perhaps goes further than the 1972 Liability Convention, in bringing within its regulatory ambit those engaged in 'any activity in outer space').

As well as the questions of substantive law in the situations described above, one is almost invariably confronted with questions of jurisdiction, forum and conflicts of law. The frequently sophisticated arrangements used for financing space



ESA's Data Relay Satellite (artist's view).

activities in advantageous tax and legal environments present the best examples. One is a satellite that might be built by a US firm for an Indian broadcasting entity with finance from a UK bank. In cases like this loans are often non-recourse, with the satellite providing the only security. A myriad of questions across the interplaying legal systems present the lawyer with a fascinating challenge as he tries to ensure that the security is valid and can be perfected.

Perfection of the security alone is of course, not sufficient. Its realisation and possible generation of revenue need to be considered. Specifically, limitations imposed by the ITU and national authorities on orbits and frequencies will directly affect the security's value to a bank or potential purchaser, while a new licence will probably need to be sought.

Another family of issues concerns copyright. These arise frequently in satellite broadcasting of programmes and data. The place from which a satellite broadcast is made is still open to debate under international law. The UK Copyright, Designs & Patents Act 1988 attempts to resolve this question by deeming such broadcasts to be made from 'the place from which the signals carrying the broadcast are transmitted to the satellite', but without adequately tying down the meaning of 'broadcast' or broadcaster for the purposes of the telecommunication market. Such difficulties and associated questions of conflict of laws make this aspect of satellite law more than usually interesting.

Lastly, apart from advising commercial entities and international organisations on the types of issues I have discussed, the space lawyer in this branch of practice – as in others – is also, increasingly, consulted by government departments and entities on space legislation and policy. He finds himself, therefore, active in the larger community of space lawyers engaged in the advancement of this area of law.

M. Mosteshar

Reflections on business of the future

– the Space Stations –

As activities in space have gained momentum, a number have become almost 'domesticated' – that is, the private lawyer has rough precedents to turn to when it comes to drafting a satellite insurance contract, for example. Indeed, the understanding already gained from practice is what makes it justifiable to talk of space law as a recognisable 'specialisation'.

So far, the specialist in space law has work primarily related to launch activities and satellite use. And what the 'space lawyer' does is to turn methods known primarily from private tort, commercial and intellectual property law to the particular client's needs, taking due account of the relevant national regulations, on the one side, and the UN space treaties, on the other.

With the signature of the International Space Station Intergovernmental Agreement (IGA) in 1988, however, came not only an additional field of activity but an international legal regime that, for the first time, reaches down into significant parts of national law and harmonises them for the IGA's purposes.

I shall only mention ownership, liability and intellectual property in this connection. Consider a situation where a user wishes to transfer ownership over a product developed on the International Space Station using equipment that is assembled there but produced in various countries on Earth. The outcome of that transfer will in turn affect questions of intellectual property and which court might address certain liability questions not excluded by the IGA's cross-waiver. But how to effect a transfer ? Roman and Anglo-Saxon law have different approaches, and much may turn on which is and can be chosen, as well as in which element of the Space Station the transfer takes place.

Beyond this, flight opportunities now on MIR open other issues, even if that station has a national regime. Looking further into the future than the late 1990's Space Station, lunar projects are certain to bring radical innovation, while a body of space salvage law may need to be developed.

Of one thing, however, a young space practitioner can be sure, like EC law, the law related to European manned space activities can only grow.

R.P. Kröner

The national regulative environment

If building up the necessary corporate environment, and making financial, fiscal, insurance and intellectual property arrangements, along with looking at related questions of conflict of laws and arbitration, constitute the main points of international private space practice, the national practitioner's work is rarely confined only to the private sector.

He may equally find himself in commercial negotiations with a public procurer like ESA or dealing with a national authority. In the Federal Republic of Germany particularly, space activities are still largely the province of government. The Ministry of Post & Telecommunication for example holds a monopoly over all communications the source of which is the *Grundgesetz*. And even where activities are non-governmental, the Ministry of Research & Technology, or another ministry, usually finances them wholly or partly, directly or indirectly.

Such a national environment makes the role of governmental acts all the more important, and especially the strings that are attached to State funding. All technical standards relating to supplies for spacecraft and obligations arising from them are, for instance, covered by German administrative law.

For the few areas left open to the private sector in such a context, the State may still have the final say despite the necessarily rudimentary national space law that will apply. In the FRG, the Aviation Act *(Luftverkehrsgesetz)* extends to "devices destined for the use of the air space, in particular spacecraft, rockets and similar flying objects". The fact that one has to pass through the air to reach space has persuaded the German Ministry of Transport to feel competent regarding registration and granting permission to use space objects.

D. Entholt-Laudien

Progress on rules for safe use of nuclear power sources (NPS) in space

After a breakthrough at technical level in February, the UN Committee on the Peaceful Uses of Outer Space (UNCOPUOS) Legal Sub-Committee (29th session, Geneva, 2-20 April 1990) reached consensus on the central Principle 3 of the draft Principles on the use of nuclear power sources in space.

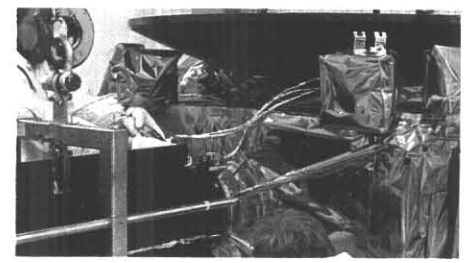
Principle 3 aims to:

- limit the use of NPSs and the hazard, if used, of local exposure to 1 millisievert (mSv) in a year;
- establish a safety-design philosophy ('defence in depth'), and;
- take account of the different circumstances of reactors and radio-isotope generators relative to fuel, orbit/mission and risk.

This standard for NPS design and use will undoubtedly guide space organisations, even before consensus on issues such as pre-launch notification and compensation permits the formal recommendation of the NPS Principles to the UN General Assembly for approval.

A number of ESA Member States worked closely with Canada in securing general consensus on Canada's draft of Principle 3. NPS became a major focus in UNCOPUOS from 1978 following radioactive contamination of Canadian territory after the uncontrolled re-entry of Cosmos 954. Establishment of the NPS Principles will be the first concrete measure taken by the international community to protect the space environment.

K.J. Madders



Ulysses' radio-isotope generator (RTG).

Space litigation affecting European interests: the Hughes claims and the Ulysses case

Hughes: Patent infringement actions against European companies and the US Goverment regarding : (1) the companies' supply of certain equipment for a number of ESRO/ESA and two other European satellites; and (2) the Government's launch/use of the satellites and provision of some ground support to them. Still under litigation. Value: Several billion dollars.

Ulysses: Application by certain environmentalist groups in the Washington DC US District Court for an injunction against NASA to stop its October 1990 Space Shuttle launch of the ESA-built solar-polar observatory. Ulysses will derive its energy from radio-isotope generators (RTGs, i.e. *not* reactors). A similar application was denied last year regarding the Galileo launch. NASA is defending the action.

R&D Procurement Practice

Because ESA's Contracts Department places some 1000 contracts a year, from small technology studies to the R&D of major orbital systems, the commercial experience it shares with industry represents a significant part of European space-law practice. Leaving future *ECSL News* articles to discuss ESA procurement rules and industry viewpoints, let me here outline sectors of law touched by this practice and highlight some of its special characteristics.

• *Choice of law and dispute-settlement.* While ESA contracts almost invariably stipulate the law of the Contractor, with which he is most familiar, disputes are referable to arbitration under International Chamber of Commerce rules, with provision for prior negotiation and amicable settlement in the case of large contracts.

• *Standard clauses* cover liability for damage and infringement of third party proprietary rights.

• *Delivery and guarantee.* The way a spacecraft is developed and tested at subsystem level, assembled and tested at system level, transported, launched, tested and commissioned in orbit and then operated either for scientific purposes or on a commercial basis has led to complex variations on the themes of delivery, both physical and legal; acceptance, both provisional and final; and transfer of title and risk. Guarantee clauses have to cope with the usual inability to repair in orbit and the dramatic consequences of failure.

• *Price.* Extreme quality and reliability requirements, and necessary trade-offs against performance, costs and schedule result in complex price and incentive clauses, plus detailed schedules on costing.

Beyond these categories, a problem that has to be addressed with prime contractors is how to cope with five or six tiers of sub-contractors over at least as many countries. A fine balance has here to be sought in order to ensure an adequate flow of rights and obligations between the levels without weakening the proper contractual responsibilities of any unit.

Particularly this degree of structural complexity, together with the duration of the contracts (perhaps 5 – 10 years) provides similarities with major civil engineering and industrial plant contracting. Some of the techniques that have been evolved are similar; ESA, however, tends to take a far more 'interventionist' approach than most customers, justified by the extreme technical complexity and delicacy of the work.

S. Kahn

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During Mr G. Lafferranderie's absence for health reasons, ESA has appointed Mr K. Madders to fulfil his ECSL functions, including ex officio Board chairmanship.

ECSL Activities

14 June, Utrecht – Meeting of Board members responsible to prepare especially plans for allocation of bursary funds. A call for research proposals will be published later this year.

Completion of analysis on the state of space law teaching in Europe. This publication will be sent to ECSL members free of charge later this year.

Membership is currently at 214 members.

NPOC founded in Netherlands – Leiden University.

Preparation for start-up NPOC meeting for UK members.

Agreements signed

1. ESA-FR Germany agreement on the establishment and use of a European Astronauts Centre (EAC), Cologne, 10 May 1990.
2. ESA-DLR agreement on EAC support, Cologne, 10 May 1990.
3. ESA-USSR framework agreement on cooperation, Paris, 25 April 1990.
4. USSR-Sweden preliminary agreement on space cooperation, Kiruna, Dec.89, under which the Swedish Space Corporation will receive and sell worldwide Soviet Reurs and Okean remote-sensing image data.

Recent Conferences

Moscow, November 1989 – United Nations' Institute for Disarmament Research (UNIDAR) Seminar on space weapons.

Tokyo, 14 March – CSP Japan Inc. Seminar on space business and law, including European aspects.

Paris, 13 June – L'Espace, enjeu commercial. Symposium sur la commercialisation et la coopération US-Europe, organisée par l'Ambassade des Etats-Unis à Paris.

Forthcoming Conferences

Paris, 6-7 Dec. 1990 – International Bar Association (IBA) Seminar on legal status of experiments & inventions in space.

Bangkok, Feb/Mar. 1991 – IBA Aerospace Committee/Lloyd's of London Press Conference on Pacific Basin Liability Insurance

Paris, 14-15 May 1991 – Colloque sur l'avion spatial, organisé par la Société française de Droit aérien & spatial, avec le concours de l'ESA et du CNES.

Publication

D. I. Fisher, Prior Consent to International Direct Satellite Broadcasting, in *Utrecht Studies in Air & Space Law Series* (1990).

Lecture/Course

Utrecht, 19 June – 'Legal, Economic & Political Aspects of the International Space Station', by K. Madders, ESA.

University of Amsterdam – Ph. D. vacancy open in research programme on 'Telecommunications & International Law' under Prof. Dr. Malanczuk.

Vacancy

ECSL Secretary post open to young graduates at end of 1990. Apply to ECSL Chairman.