

17 June 2019

English only

**Committee on the Peaceful
Uses of Outer Space
Sixty-second session
Vienna, 12–21 June 2019
Item 12 of the provisional agenda*
Use of space technology in the United
Nations system**

**Marine environmental effects of jettisoned waste from
commercial spaceflight activities**

1. The Office for Outer Space Affairs has been contacted by the Office for the London Convention/Protocol and Ocean Affairs at the International Maritime Organization (IMO), which serves as the Secretariat of the London Convention (LC) and London Protocol (LP) (see <http://londonprotocol.imo.org> for more information on LC / LP).
2. The LC and LP are the two international treaties of global application that protect the marine environment from pollution caused by the dumping of wastes and other matter at sea. Under the LP, the more modern treaty, dumping of all wastes and other materials is prohibited, with the exception of certain listed categories of wastes or other matter, and then only following a rigorous assessment process.
3. The issue of marine environmental effects of jettisoned waste from commercial spaceflight activities has been raised at the joint session of the LC/LP Scientific Groups.
4. Following discussion, the LC/LP Scientific Groups decided to establish an intersessional correspondence group to collect further information on the issue, with a view to assessing the impacts of these activities on the marine environment and also review the relevant guidelines of the Committee on the Peaceful Uses of Outer Space. The Groups also requested the LC/LP Secretariat to contact the Committee on the Peaceful Uses of Outer Space, in order to initiate a dialogue between the two bodies to encourage an exchange of information on issues of common interest.
5. The present document contains an excerpt from the Report of the forty-second meeting of the Scientific Group of the London Convention and the thirteenth meeting of the Scientific Group of the London Protocol held in Canada from 18 to 22 March 2019 (LC/SG 42/16) and the Progress of the Correspondence Group on the Marine Environmental Effects of Jettisoned Waste from Commercial Spaceflight Activities (LC/SG 42/8/1).

* [A/AC.105/L.316](#).



SCIENTIFIC GROUP OF THE LONDON
CONVENTION – 42nd Meeting; and

LC/SG 42/16
8 April 2019
Original: ENGLISH

SCIENTIFIC GROUP OF THE LONDON
PROTOCOL – 13th Meeting
18-22 March 2019
Agenda item 16

**REPORT OF THE FORTY-SECOND MEETING OF THE SCIENTIFIC GROUP OF THE
LONDON CONVENTION AND THE THIRTEENTH MEETING OF THE
SCIENTIFIC GROUP OF THE LONDON PROTOCOL**

Table of contents

Section	Paragraph Nos.	Page Nos.
1 INTRODUCTION – ADOPTION OF THE AGENDA	1.1 – 1.7	3
2 WASTE ASSESSMENT GUIDANCE	2.1 – 2.52	3 – 14
3 MARINE GEOENGINEERING	3.1 – 3.11	14 – 16
4 CO ₂ SEQUESTRATION IN SUB-SEABED GEOLOGICAL FORMATIONS	4.1 – 4.9	16 – 17
5 REPORTING ON DUMPING ACTIVITIES	5.1 – 5.29	17 – 24
6 TECHNICAL COOPERATION AND ASSISTANCE	6.1 – 6.20	24 – 27
7 MONITORING AND ASSESSMENT OF THE MARINE ENVIRONMENT	7.1 – 7.19	27 – 31
8 COASTAL MANAGEMENT ISSUES ASSOCIATED WITH ACTIVITIES TO PREVENT MARINE POLLUTION	8.1 – 8.49	31 – 40
9 HABITAT MODIFICATION AND ENHANCEMENT	9.1 – 9.5	41
10 MATTERS RELATED TO RADIOACTIVE WASTES	10.1 – 10.4	41 – 42
11 OUTCOME OF SCIENCE DAY: "PRACTICAL AND ACHIEVABLE MONITORING TECHNIQUES"	11.1 – 11.7	42 – 44
12 GUIDELINES, MANUALS, BIBLIOGRAPHIES AND INFORMATION EXCHANGE	12.1 – 12.6	44 – 45

Section	Paragraph Nos.	Page Nos.
13 REVIEW OF THE JOINT WORK PROGRAMME	13.1 – 13.7	45 – 46
14 ANY OTHER BUSINESS	14.1 – 14.8	46 – 49
15 ELECTION OF OFFICERS FOR BOTH SCIENTIFIC GROUPS	15.1 – 15.3	49
16 CONSIDERATION AND ADOPTION OF THE REPORT	16.1	49

LIST OF ANNEXES

ANNEX 1	AGENDA FOR THE FORTY-SECOND MEETING OF THE SCIENTIFIC GROUP OF THE LONDON CONVENTION AND THE THIRTEENTH MEETING OF THE SCIENTIFIC GROUP OF THE LONDON PROTOCOL
ANNEX 2	REVISED SPECIFIC GUIDELINES FOR ASSESSMENT OF PLATFORMS OR OTHER MAN-MADE STRUCTURES AT SEA
ANNEX 3	ONGOING AND PLANNED WORKSHOPS AND PROJECTS 2019-2020
ANNEX 4	DRAFT COMMUNICATION STRATEGY ON MARINE LITTER AND MICROPLASTICS
ANNEX 5	LC/LP SCIENTIFIC GROUPS WORK PROGRAMME (2019-2021)

Deposition of materials jettisoned during the launch of space vehicles

8.41 The Scientific Groups recalled that in 2018, the governing bodies had been informed that this issue had been considered by the Scientific Groups in 2018 and noted the Groups' discussion on the deposition of materials jettisoned during the launch of space vehicles (LC 40/16, paragraph 9.66 and LC/SG 41/16, paragraphs 8.42 to 8.46).

8.42 The Groups also recalled that in 2018 the governing bodies had endorsed the Scientific Groups' decision to establish an intersessional correspondence group on the issue, under the lead of the United Kingdom, and requested the Secretariat to contact the Chair of the UN Committee on the Peaceful Uses of Outer Space (COPUOS), in order to initiate a dialogue between the two bodies and to encourage an exchange of information on issues of common interest (LC 40, paragraph 9.68).

8.43 The Scientific Groups considered document LC/SG 42/8/1 (Chair of the Correspondence Group), providing a progress report of the Correspondence Group on the Marine Environmental Effects of Jettisoned Waste from Commercial Spaceflight Activities (United Kingdom). The Groups noted that an initial call for engagement to the Correspondence Group was circulated on 20 July 2018. Interest in participating in the Group was received from Canada, Italy, New Zealand, the United Kingdom, the United States and Greenpeace International. Information had been received from Canada, New Zealand, the United Kingdom and the United States. Substantive comments on the scale of activity associated with commercial space flight activity were captured in the annex to the submission.

8.44 The Groups noted that further work was needed to capture additional information in this developing sector in order to develop a fuller understanding of potential for environmental impacts and therefore whether any additional recommendations on managing these activities should be considered by the Scientific Groups.

8.45 The Scientific Groups considered document LC/SG 42/8/3 (Secretariat), informing on the Secretariat's recent engagement with the Secretariat for COPUOS. In February 2019, the Secretariat held a teleconference with the United Nations Office for Outer Space Affairs (UNOOSA). The Secretariat informed UNOOSA that the issue of marine environmental effects of jettisoned waste from commercial spaceflight activities had been raised at the joint session of the LC/LP Scientific Groups and that work was ongoing to look into the issue. UNOOSA informed the Secretariat that the environmental impacts of space flight activities had been identified as an issue by States participating in the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), held in Vienna in 1999. At that conference, 33 recommendations had been adopted (A/CONF.184/6) including recommendation 1.a, which states:

"Protecting the Earth's environment and managing its resources: action should be taken:

[...]

(v) To ensure, to the extent possible, that all space activities, in particular those which may have harmful effects on the local and global environment, are carried out in a manner that limits such effects and to take appropriate measures to achieve that objective."

8.46 UNOOSA had further informed the Secretariat that since 1999 the issue had not been followed up, but also highlighted it as an important issue that warranted further consideration. Furthermore, UNOOSA recommended that the Secretariat attend the sixty-first session of the COPUOS General Assembly, taking place in Vienna, Austria, from 12 to 21 June 2019, to highlight the issue to Member States, with a view to establishing a way forward for both bodies to address the issue together.

8.47 In the discussion that followed, the Groups noted that there was a need to continue building the evidence base and collect information, and that this work was currently in its early stages. Finding data and information was difficult, and it was agreed to request the Secretariat, in its contacts with UNOOSA, to explore any information that UNOOSA might have and that could be shared with the LC/LP bodies. It was also agreed to propose to the governing bodies that they request delegations to draw the attention of their respective space agencies to the ongoing work by LC/LP.

8.48 The observer from Greenpeace International offered to share the background data used in their submission to the previous joint session of the Scientific Groups.

Action by the Scientific Groups

8.49 Following discussion, the Scientific Groups:

- .1 re-established the Correspondence Group on the Marine Environmental Effects of Jettisoned Waste from Commercial Spaceflight Activities, under the lead of the United Kingdom,¹¹ with the same terms of reference and taking into account the discussion in plenary, to continue to collect information and report back to the following year's session;
- .2 encouraged delegations to take active part in the Correspondence Group;
- .3 encouraged delegations to liaise with their delegations attending COPUOS, highlighting the need to address this issue, and the opportunities for the two bodies and Secretariats to work together;
- .4 instructed the Secretariat to continue its outreach efforts, in particular with UNOOSA, and report back to the next joint session in 2020;
- .5 instructed the Secretariat to invite UNOOSA to deliver a lunch-time presentation at the next meeting of the governing bodies in October 2019; and
- .6 agreed to change the target completion date of this activity to 2020.

¹¹ The coordinator, Mr. David Carlin, can be contacted at: david.carlin@cefas.oc.uk

SCIENTIFIC GROUP OF THE LONDON
CONVENTION – 42nd Meeting; and

LC/SG 42/8/1
25 January 2019
ENGLISH ONLY

SCIENTIFIC GROUP OF THE LONDON
PROTOCOL – 13th Meeting
18-22 March 2019
Agenda item 8

**COASTAL MANAGEMENT ISSUES ASSOCIATED WITH ACTIVITIES TO PREVENT
MARINE POLLUTION**

**Progress of the Correspondence Group on the Marine Environmental Effects of
Jettisoned Waste from Commercial Spaceflight Activities**

Submitted by the Chair of the Correspondence Group

SUMMARY

Executive summary: In 2018, the Scientific Groups agreed there was a need to better understand the potential magnitude of jettisoned waste from commercial spaceflight activities, with a view to considering the potential for environmental impact. This document provides a report on the progress made by the intersessional Correspondence Group established to conduct this work.

Action to be taken: Paragraph 7

Related documents: LC/SG 41/16, LC/SG 41/8/2 and LC/SG 41/INF.10

Introduction

1 In 2018, the Scientific Groups were informed of work undertaken on quantifying the potential for material jettisoned by commercial space flight by Greenpeace International (LC/SG 41/INF.10). The Scientific Groups agreed to recommend to the governing bodies that a further assessment on material and its potential impact on the marine environment would be useful.

2 The Scientific Groups established a correspondence group to develop further guidance on disposal site selection, under the lead of the United Kingdom. Initial correspondence took place over 2018 although at this stage not all members or contributing bodies were able to engage fully with the work of the Correspondence Group. This is likely as a result of the relative infancy of the commercial spaceflight sector.

Terms of reference

3 The Correspondence Group on the Marine Environmental Effects of Jettisoned Waste from Commercial Spaceflight Activities was assigned the following initial terms of reference (LC/SG 41/16, paragraph 8.47):

- .1 establish an intersessional correspondence group under the lead of the United Kingdom to collect further information on the issue, with a view to assess the impacts of these activities on the marine environment, review the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) guidelines, and provide a report to the next joint session of the Scientific Groups in 2019; and
- .2 request the Secretariat to contact the Chair of COPUOS, in order to initiate a dialogue between the two bodies and to encourage an exchange of information on issues of common interest.

Progress to date

4 An initial call for engagement to the Correspondence Group was circulated on 20 July 2018. Interest in participating in the Group was received from Canada, Italy, New Zealand, the United Kingdom, the United States and Greenpeace International.

5 Information has been received from Canada, New Zealand, the United Kingdom and the United States. Substantive comments on the scale of activity associated with commercial space flight activity are captured in the annex.

6 Work is still in progress on engagement between the LC/LP Secretariat and COPUOS.

Action requested of the scientific groups

7 The Scientific Groups are invited to note the progress of this Correspondence Group and encourage members to actively contribute to its work. Further work is needed to capture additional information in this developing sector in order to develop a fuller understanding of potential for environmental impacts and therefore whether any additional recommendations on managing these activities should be considered by the Scientific Groups.

ANNEX

Updates on the scale of commercial space flight activities and the associated jettisoning of material into the marine environment																																				
Canada	Global Affairs Canada receives weekly launch forecasts from the Canadian Space Operations Centre (CANSPOC), of the Canadian Armed Forces. These forecasts cover launches taking place from various parts of the world, including those that may affect Canada. However, the status of rocket stages after launch, including time and location of re-entry of upper stages are classified, so this information is not available.																																			
New Zealand	<p>Prior to any space launches occurring in New Zealand which had the potential to deposit material in the waters of the exclusive economic zone (EEZ), the Government undertook an environmental risk assessment (http://www.mfe.govt.nz/node/22064) of the proposed activity in order to determine the level of risk associated with the activity and to inform our management approach. This exercise was repeated a year later when the expected trajectory of the space launches changed (http://www.mfe.govt.nz/publications/marine/ecological-risk-assessment-of-impact-of-debris-space-launches-marine-environment). The activity was assessed as being a low risk given the size and material of the rockets to be used and the expectation that material would mostly burn up on re-entry. The activity was therefore allowed to be undertaken subject to certain conditions (there are regulations for managing the environmental impacts of this activity in New Zealand's EEZ). Other legislation manages any potential effects on land and in the territorial sea, and the payloads that are allowed to be sent into orbit). Given there is very little information about the cumulative impacts of this activity (in isolation and in-combination with other stressors), and there is some uncertainty about if and where the debris will deposit on the seabed, New Zealand took a precautionary approach and placed an upper limit on the amount of launches that could be undertaken before a review of the regulations is triggered (100 in total). This is not an absolute cap but provides a trigger for the environmental effects to be reconsidered so that the regulatory approach can be modified if necessary.</p> <p>To date there have been three successful space launches. Post-activity reports are required to be provided as a condition of this activity.</p> <table border="1"> <tbody> <tr> <td>RLABPA01</td> <td>ITSATEST</td> <td>Complete</td> <td>May 2017</td> <td>Post activity 25/05/2017</td> </tr> <tr> <td>RLABPA02</td> <td>STILLTESTING</td> <td>Withdrawn</td> <td>Dec 2017</td> <td></td> </tr> <tr> <td>RLABPA03</td> <td>STILLTESTING</td> <td>Withdrawn</td> <td>Dec 2017</td> <td></td> </tr> <tr> <td>RLABPA04</td> <td>STILLTESTING</td> <td>Complete</td> <td>Jan 2018</td> <td>Post activity 21/01/2018</td> </tr> <tr> <td>RLABPA05</td> <td>BUSINESSTIME</td> <td>Withdrawn</td> <td>Apr 2018</td> <td></td> </tr> <tr> <td>RLABPA06</td> <td>BUSINESSTIME</td> <td>Withdrawn</td> <td>Jun 2018</td> <td></td> </tr> <tr> <td>RLABPA07</td> <td>BUSINESSTIME</td> <td>Complete</td> <td>Nov 2018</td> <td>Post activity 11/11/2018</td> </tr> </tbody> </table>	RLABPA01	ITSATEST	Complete	May 2017	Post activity 25/05/2017	RLABPA02	STILLTESTING	Withdrawn	Dec 2017		RLABPA03	STILLTESTING	Withdrawn	Dec 2017		RLABPA04	STILLTESTING	Complete	Jan 2018	Post activity 21/01/2018	RLABPA05	BUSINESSTIME	Withdrawn	Apr 2018		RLABPA06	BUSINESSTIME	Withdrawn	Jun 2018		RLABPA07	BUSINESSTIME	Complete	Nov 2018	Post activity 11/11/2018
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United Kingdom	Following the passing of the United Kingdom Space Industry Bill in March 2018, which intends to create a regulatory framework for the expansion of commercial space activities and the development of a United Kingdom space-port, the United Kingdom Government has announced investment in a new vertical launch site in Sutherland, on the north coast of Scotland. This will be the United																																			

	<p>Kingdom's first space-port and will be designed for vertical rockets that can carry approximately 150 kg of satellites. In addition, the Government has announced a development fund for new horizontal launch space-ports across the United Kingdom (including Cornwall, Glasgow and Snowdonia), with the intention to grow their sub-orbital flight, satellite launch and spaceplane ambitions. In light of this funding, satellite launch company Virgin Orbit has announced plans to partner with Cornwall Airport Newquay for the development of a horizontal space-port to provide launches from this site by 2021.</p>
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