

WRESAT

29 Nov 1967

THE WRESAT (Woomera Reconnaissance Satellite) HAS BEEN RECEIVED FROM THE WOOMERA SPACE FLIGHT CENTRE.

THE WRESAT WAS LAUNCHED ON THE 29TH NOVEMBER 1967 BY THE WOOMERA SPACE FLIGHT CENTRE.

THE WRESAT IS A 2.5 TONNE SATELLITE 53.97 METRES IN LENGTH AND 1.5 METRES IN DIAMETER.

LENGTH	53.97	METRES
DIAMETER	1.5	METRES
WEIGHT	2500	KILOGRAMS
LAUNCH WEIGHT	2500	KILOGRAMS
LAUNCH ALTITUDE	281.120	FOOT PER DAY
LAUNCH SPEED	281.120	FOOT PER DAY
LAUNCH DIRECTION	09.0492	DEGREES
LAUNCH TIME	0396.97440	MINUTES
LAUNCH DATE	0.00000	HRS PER DAY
LAUNCH MONTH	000170.14	KILOMETRES
LAUNCH YEAR	001248.91	KILOMETRES
LAUNCH DAY	029137	KM PER HR
LAUNCH HOUR	025016	KM PER HR
LAUNCH MINUTE	-20.567	DEGREES

THE WOOMERA MANUAL ON THE INTERNATIONAL LAW OF MILITARY SPACE OPERATIONS



THE UNIVERSITY
of ADELAIDE



UNSW
CANBERRA

MISSION

To develop a Manual that objectively articulates and clarifies existing international law applicable to military space operations.

LEGAL FRAMEWORK AND CONTEXT

Between 1967 and 1984 five space-specific treaties entered into force. The first and most comprehensive of those, the 1967 *Outer Space Treaty*, refers to the use and exploration of outer space for 'peaceful purposes'. However, the instruments do not expressly address the initiation and conduct of hostilities involving outer space, and little State practice exists on the subject.

Since the 1980s, the United Nations General Assembly has annually adopted a resolution urging States to refrain from actions that contribute to an arms race in outer space. Various initiatives, such as the proposed treaty to prevent the placement of weapons in outer space (PPWT), the proposed International Code of Conduct for Outer Space Activities (ICOC), and multilateral diplomatic efforts aimed at developing transparency and confidence-building measures (TCBMs) have not sufficed to ensure the sustainability and security of outer space.

The law governing the resort to force set forth in the UN Charter and the law of armed conflict have long been accepted by States as applicable to operations involving outer space. Yet, the manner in which these bodies of law should be interpreted in the context of outer space has not been comprehensively examined. This resulting lack of normative clarity presents the risk of State or non-State actors taking action involving outer space that might be misunderstood by others, or even characterised as unlawful. It also allows States that might wish to conduct hostile space operations to do so in a zone of uncertainty, that complicates responses by other States. Therefore, it is essential that space actors not only acknowledge that there is a rules-based order that applies to outer space, even in periods of tension and hostilities, but also that they have an understanding of when and how those rules apply.

Non-governmental efforts can help clarify the application of the law governing resort to force and law of armed conflict to new domains and means and methods of armed conflict. The success of the *San Remo Manual on International Law Applicable to Armed Conflict at Sea*, the *Harvard Manual on International Law Applicable to Air and Missile Warfare*, and the *Tallinn Manual on International Law Applicable to Cyber Operations* (versions 1.0 and 2.0) demonstrate how international experts and associated engagement with governments can offer an authoritative and clear articulation of international law in new domains for government legal advisers, decision-makers, and operators. The Woomera Manual aims to replicate - with respect to outer space - the successes of these earlier manuals.

BACKGROUND

The possibility of conflict, including armed conflict, extending to outer space is growing ... the resulting disruption of space infrastructure could prove devastating to life as we know it.

RATIONALE

Nations have come to rely so heavily on space - economically, socially and militarily - that disruption of space infrastructure could prove devastating to life as we know it.

The possibility of conflict, including armed conflict, extending to outer space is growing. Not only might such conflict be the consequence of increasing geo-political polarisation, but the congested and contested nature of outer space also contributes to the fragility of the cooperative use of space. Through commercialisation and technical innovation, space has become essential to the functioning of societies in areas including communications, transportation, commerce and health.

During periods of high tension, the heavy reliance of States on space infrastructure for security and the functioning of civil society represents a vulnerability that can be exploited. Such exploitation could act as a flashpoint leading to escalation of a situation, perhaps to the point of hostilities.

Diplomatic efforts to prevent an arms race in outer space or the breakout of conflict include the implementation of transparency and confidence-building measures, sometimes through the proposal of new international instruments. Such efforts, however, have not clarified how relevant

international law that is already in place applies to outer space. In particular, there has been no comprehensive examination of the application of the law on the resort to the use of force by and against States (*jus ad bellum*) and the law of armed conflict (*jus in bello*) in outer space.

AIM

The Woomera Manual on the International Law of Military Space Operations aims to articulate and clarify extant law applicable to military activities associated with the space domain, especially that which is relevant in periods of tension (when States and non-State actors may consider using force) or outright hostilities. The Manual will examine the circumstances in which operations associated with space infrastructure would be considered unlawful as a violation of the law on the use of force. It will also consider the responses available to States in reacting to such operations. Further, the Manual will discuss how the law of armed conflict governs operations that are conducted from, to or through outer space, should armed conflict break out. Ultimately, the Manual is meant to support a stable, rules-based global order, even in periods of tension and armed conflict.

OUTCOME

The Woomera Manual aims to be a widely-recognised and accepted objective statement of existing international law (*lex lata*) applicable to military space operations. It will be published by a major international publisher. Government lawyers (especially military lawyers), policy-makers, decision-makers and military space operators comprise the key target audience of the Manual. However, it is also expected to spark interest and debate among a wide range of international institutions and the general public, as well as serve as a platform for further academic discourse and research, particularly as legal principles and policies are further developed in response to changing political realities and the evolving global security environment.



DRAFTING THE WOOMERA MANUAL



SCOPE

The Woomera Manual follows in the footsteps of, *inter alia*, the *Oxford Manual*, the *San Remo Manual*, the *Harvard Manual* and the *Tallinn Manuals*. Importantly, in the tradition of these manuals, it will maintain a strict focus on the law as it is (*lex lata*), not on the law as we might wish it to be (*lex ferenda*). The latter is more appropriate for official, intergovernmental efforts in drafting new international instruments. Yet, it is unlikely that the diverse interests of States in the current geopolitical environment will coalesce around any new international instruments on space security. For that reason, we consider a strict focus on *lex lata* to be essential.

EXPERTS

The Woomera Manual gathers together legal experts specialised in the fields of international space law, international law on the use of force and the law of armed conflict, together with technical experts. Experts contribute in a personal capacity on the basis of their own conclusions as to the state of the law, independent of the official position or preference of any State or organisation.

Core Experts draft Rules and Commentary and attend each Workshop. The number attending each Workshop will vary, but there are expected to be approximately 20 such experts. There are also Associate Experts, who do not attend Workshops, but who contribute as reviewers of all draft Rules and

Commentary and contribute in niche areas, including by providing examples of State practice and State assertions of a legal position.

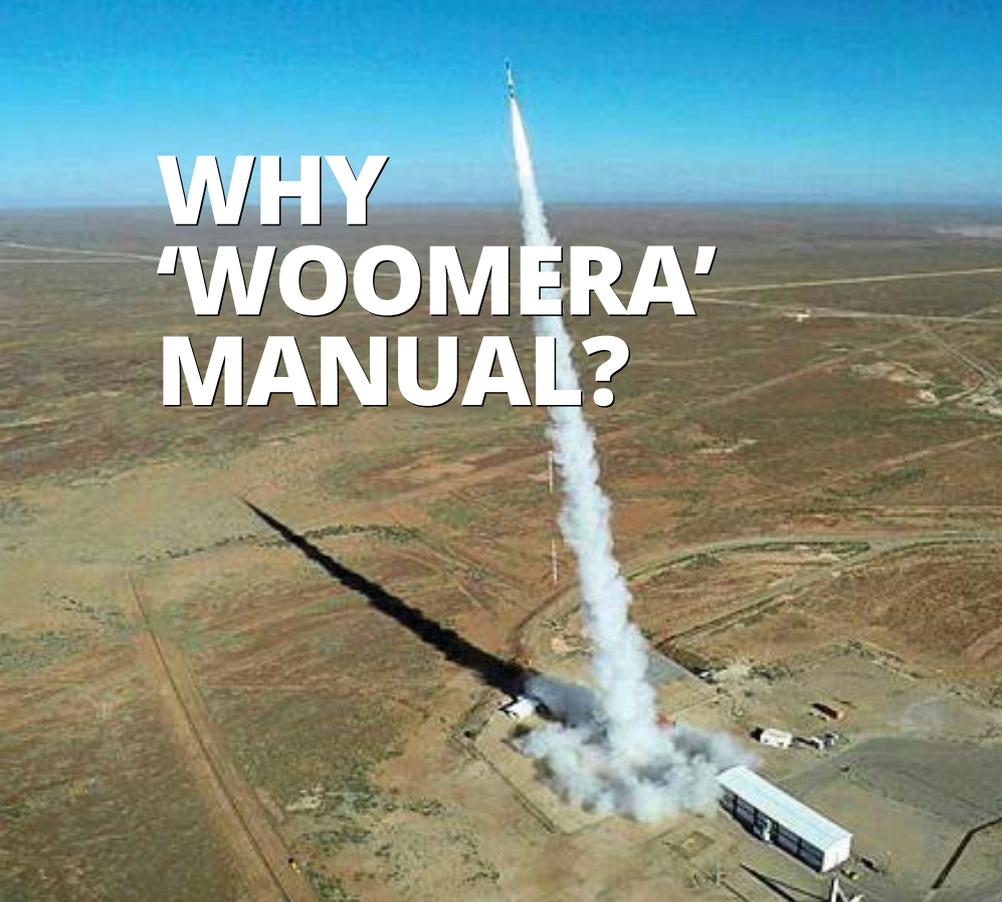
RULE-DRAFTING PROCESS

The Rules set forth in The Woomera Manual are succinct statements of international law in a military space context. A Commentary accompanying each Rule expands on its interpretation, discusses difficult issues of application, and provides examples or scenarios as a means of clarification. Experts will come together in a series of workshops over the next several years to agree upon the Rules and Commentary on the basis of non-attribution and consensus (where possible). However, most of the work will take place between workshops, when the experts draft the proposed Rules and Commentary to be considered at the workshops.

STATE ENGAGEMENT

Once the Rules and Commentary are consolidated into a single text, the complete draft will be shared with officials from States that participate in State engagement events. The Board of Directors will also seek other opportunities for State engagement while the Rules and Commentary are being drafted. Other international law and space operations experts around the world will carefully scrutinise the draft text in a robust 'peer review' process. The Board welcomes proposals by States to host and contribute to State engagement events.

WHY 'WOOMERA' MANUAL?



Woomera Test Range, South Australia. Image courtesy of Australia's Department of Defence. © Commonwealth of Australia, Department of Defence

The name is drawn from the village of Woomera, in South Australia. Woomera has a long association with both Australian and multi-national military space operations.

It was the site from which Australia became only the fourth nation to successfully launch a satellite from its own soil when WRESAT was launched in 1967. Woomera served as a British, American, European and Australian centre for space operations throughout the 1960s and 70s.

Woomera is an Australian Aboriginal word in the Dharug language (of the Eora people, traditional custodians of the Sydney area) for a traditional Aboriginal spear-throwing device. The word Woomera was chosen as the name of the rocket range because a key purpose of a woomera was to enable much greater distance and accuracy in throwing a spear. In many areas of Australia, woomeras also served as a bowl and were equipped with a cutting implement making them an important tool.

The Woomera Manual on the International Law of Military Space Operations celebrates the military space heritage of Woomera; acknowledges the dual-use (civilian and military; weapon and human tool) nature of space objects and technologies; and is a metaphor for the use of outer space by States simultaneously as a military force multiplier and driver of civilian advancement.

GOVERNANCE OF THE WOOMERA MANUAL PROJECT

The major funders of the Woomera Manual Project are the University of Adelaide, the University of Exeter, the University of Nebraska College of Law and the University of New South Wales in Canberra. These Founding Universities are joined by other partners across the globe.

The senior representatives from each of the Founding Universities form the Board of Directors, who are responsible for managing the resources of the project and ensuring it delivers the anticipated outcome. The General Editors are responsible to the Board for managing the drafting of the Manual and they are assisted by two Managing Editors who are responsible for collating all the generated content (draft Rules and Commentaries) into one cohesive publication.

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SUPPORT AND FUNDING

The Woomera Manual does not seek endorsement by individual States. It is funded through academic institutions, principally the four founding institutions:

- University of Adelaide
- University of Exeter
- University of Nebraska College of Law
- University of New South Wales in Canberra

These universities have been awarded certain research grants associated with this project and are applying for others. The grants do not presuppose particular outcomes in respect of the content of the Woomera Manual and no endorsement of the content of the Manual by the relevant government funding agencies can be implied from the awarding of a grant.

None of the participants in the Woomera Manual receive any remuneration for their efforts in drafting the Manual. Many of them are funded by their institutions to participate in the project, but such support is not to be interpreted as endorsement of the legal positions taken in the Manual. Rather, the Woomera Manual reflects the views of the experts involved in their personal capacity.

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