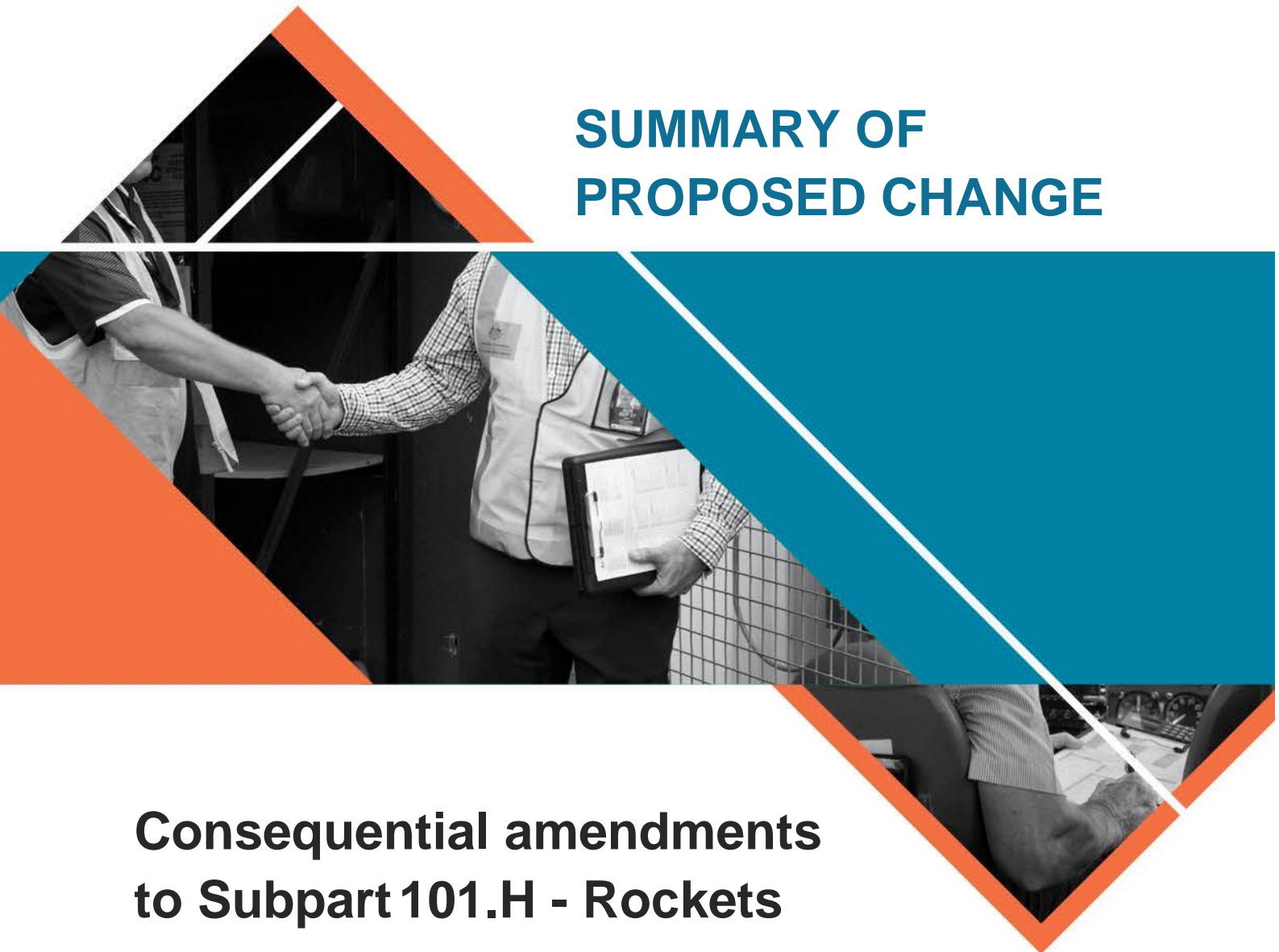




Australian Government
Civil Aviation Safety Authority

SUMMARY OF PROPOSED CHANGE



Consequential amendments to Subpart 101.H - Rockets

Civil Aviation Safety Amendment Subpart 101.H - Rockets (No. 1) 2020

Date	July 2020
Project number	SS 19/03
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Introduction

The Australian Space Agency (ASA) was established on 1 July 2018 and has administrative responsibility for *The Space (Launches and Returns) Act 2018* (SLRA). The ASA has the role of developing and promoting Australia's space industry, coordinating domestic activities, administering research and development grants, and identifying and establishing opportunities for international space engagement. The SLRA and the rules made under it¹ set the legislative framework such as permits and approval processes for launches to, and returns from, space and associated activities.

Under the SLRA, and the HPR Rules which commenced on 30 June 2020, the ASA is responsible for regulatory oversight of high power rocket permits and launches. A high power rocket is defined as a rocket that is propelled by a motor(s) with a combined total impulse greater than 889,600 Newton seconds, or a rocket propelled by a motor(s) with a combined total impulse greater than 40,960 Newton seconds and fitted with a system(s) that allow active control of its trajectory.

As a result of this shift in regulatory responsibility from CASA to the ASA, consequential amendments are required to CASA's legislation (specifically, provisions in Part 101 of the *Civil Aviation Safety Regulations 1998* (CASR) to clarify definitions and offence provisions to align with government policy on space-related activities. The proposed consequential amendments are simple in nature and do not establish any new policy. The amendments should be considered as a follow up measure to the package of rules (including the HPR Rules) consulted by the ASA in June 2019.

¹ General rules, Insurance rules, and High Power Rocket rules (HPR Rules).

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Reference material

Acronyms

The acronyms and abbreviations used in this Summary of Proposed Change are listed in the table below.

Acronym	Description
AC	Advisory Circular
ASA	Australian Space Agency
CAR	<i>Civil Aviation Regulations 1988</i>
CASA	Civil Aviation Safety Authority
CASR	<i>Civil Aviation Safety Regulations 1998</i>
HPR	<i>High power rocket</i>
HPR Rules	<i>Space (Launches and Returns) (High Power Rocket) Rules 2019</i>
SLRA	<i>Space (Launches and Returns) Act 2018</i>
Part 101	<i>Part 101 of CASR</i>

References

Regulations and guidance materials

Regulations are available on the Federal Register of Legislation website <https://www.legislation.gov.au/>

Document	Title
CASR	Civil Aviation Safety Regulations 1998 (Part 101) available at: https://www.legislation.gov.au/Details/F2019C00821/Html/Volume_3
SLRA	Space (Launches and Returns) Act 2018 available at: https://www.legislation.gov.au/Details/C2019C00246
HPR Rules	Space (Launches and Returns) (High Power Rocket) Rules 2019 available at: https://www.legislation.gov.au/Details/F2019L01119
AC 101-2(0)	Advisory Circular 101-2(0) dated July 2002 on Unmanned Aircraft and Rockets

Purpose and scope of the proposed amendments

Overview and policy rationale

The purpose of the proposed consequential amendments—Civil Aviation Safety Amendment (Part 101 - High Power Rockets) Regulations 2020—is to align Part 101 of CASR with the ASA's legislative framework in relation to high power rockets, and to transfer certain responsibilities for overseeing regulatory risk of high power rockets to the ASA consistent with broader government policy. The focus of the amendments is to support the HPR Rules (which commenced on 30 June 2020), including updating cross-references to 'high power rocket' definition which is described in the ASA's legislation, and to remove the overlap of offences that are otherwise dealt with in the ASA's legislation.

The ASA's definition of **launch** in section 8 of the SLRA is shown below in Table 1:

Table 1 – Definition of launch (SLRA)

<p>launch</p> <ul style="list-style-type: none"> a. a space object, means launch the whole or a part of the object into an area beyond the distance of 100 km above mean sea level, or attempt to do so; or b. a high power rocket, means launch the rocket into an area that is not beyond the distance of 100 km above mean sea level, or attempt to do so.
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From 30 June 2020, as shown in Table 2, the ASA's definition of **high power rocket** in section 5 of the HPR Rules states:

Table 2 – Definition of high power rocket (HPR Rules)

<p>5 Definition of high power rocket</p> <p>For the purposes of the definition of high power rocket in section 8 of the Act, an object is a high power rocket if:</p> <ul style="list-style-type: none"> a. it is a rocket propelled by a motor or motors with a combined total impulse greater than 889,600 Newton seconds; or b. it is a rocket propelled by a motor or motors with a combined total impulse greater than 40,960 Newton seconds and is fitted with a system or systems that allow active control of its trajectory.
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An important principle which flows through the ASA's legislation and these CASA proposed amendments is consideration of the concepts of 'air risk' and 'ground risk'. Implementing the ASA's oversight of high power rocket activities, consistent with CASA's existing regulatory responsibilities in relation to aviation safety, means that in terms of a regulatory approval timeline the ASA is the 'entry control' regulator for all high power rocket activities. Once an applicant has applied to the ASA for a high power rocket permit, and has been granted the permit, the next step would be for the applicant to then apply to CASA for an area approval to conduct launch. Accordingly, the applicant would be required to apply to two separate regulators in succession since there are separate pieces of legislation administered by two regulatory agencies. CASA and the ASA will collaborate closely on any regulatory approvals required and share information to ensure applications and regulatory issues are considered in a streamlined

manner. Table 3 shows the delineation in regulatory responsibility between CASA and the ASA for different kinds of rocket.

Table 3 – Regulation of different kinds of rockets

Pre-30 June 2020 concepts	Post-30 June 2020 concepts	Regulatory responsibility
Small Model Rocket (101.440 of CASR)	<p>Grouping A</p> <p>Small Model Rocket (101.440 of CASR) – no change to existing provisions in the CASR</p>	<p>Air risk – CASA</p> <p>Ground risk – CASA</p>
Model Rocket (101.425 of CASR)	<p>Grouping B</p> <p>Model Rocket (101.425 of CASR) – no change to existing provisions in the CASR</p>	<p>Air risk – CASA</p> <p>Ground risk – CASA</p>
High Power Rocket (101.425 of CASR)	<p>Grouping C</p> <p>Repeal of definition of high power rocket in 101.425 of CASR.</p> <p>New concept of a ‘rocket that is not a model rocket’ to be used in regulation 101.450 of CASR for regulating launch of rockets in an area approved by CASA.</p> <p>CASA will consider both the air and ground risks of rockets that are:</p> <ol style="list-style-type: none"> not a model rocket; and not a <i>high power rocket</i> (within the meaning of the SLRA); and not a rocket that facilitates the launch of a space object (within the meaning of the SLRA). <p>For ease of reference, CASA will consider referring to rockets in grouping C as amateur rockets in relevant instruments issued by CASA.</p> <p>The provision creating an offence if a person launches a rocket in a way that creates a hazard to an aircraft in subregulation 101.055(2) is unchanged.</p> <p>The provision creating an offence if a person launches a rocket in a way that creates a hazard to another person or to property in subregulation 101.055(3) is narrowed to only apply to rockets in Grouping A, B and C.</p>	<p>Air risk – CASA</p> <p>Ground risk – CASA</p>
	<p>Grouping D</p> <p>Repeal of definition of high power rocket in CASR 101.425 for regulating launch of rockets in an area approved by CASA.</p> <p>New concept of a ‘rocket that is not a model rocket’ to be used in regulation 101.450 of CASR for regulating launch of rockets in an area approved by CASA.</p>	<p>Air risk – CASA</p> <p>Ground risk – ASA</p>

Pre-30 June 2020 concepts	Post-30 June 2020 concepts	Regulatory responsibility
	<p>Grouping D is aligned with the operation of a rocket that is defined as a high power rocket set out in the ASA’s legislation (within the meaning of the SLRA). These rockets will have air risk regulated by CASA (the grant of area approvals and offence provisions including subregulation 101.055(3)) but ground risk is regulated by the ASA.</p>	
	<p>Grouping E</p> <p>Repeal of definition of high power rocket in CASR 101.425 for regulating launch of rockets in an area approved by CASA.</p> <p>New concept of a ‘rocket that is not a model rocket’ to be utilised in regulation 101.450 of CASR.</p> <p>Grouping E is aligned with the operation of a rocket that facilitates the launch of a space object (including suborbital rockets and similar launch vehicles) is regulated under the ASA’s legislation.</p> <p>CASA will continue to oversight air risk associated with these launches but ground risk and space risk are regulated by the ASA.</p>	<p>Air risk – CASA Ground risk – ASA Space risk – ASA</p>

Note: A ‘space object’ could, but not necessarily, be facilitated by a rocket. It is important to note that a space object is not a high power rocket since the former (space object) exceeds 100 km in altitude and the latter (high power rocket) must not exceed 100 km in altitude.

The following proposed amendments for Part 101 of CASR have the purpose of clarifying the policy delineation described above and remove certain areas of CASA's regulatory responsibility:

Proposed amendments

Item 1 of Schedule 1

It was noted by CASA during a review of Part 101 of CASR that the word ‘rocket’ was referred to in regulation 101.025 of CASR and it also sets out the definition of a populous area. A ‘populous area’ is not used in any meaningful manner in Subpart 101.H of CASR (compared with other subparts of Part 101 where the concept of populous area is used for regulating the operation of remotely piloted aircraft systems). This safety risk is adequately covered by the obligation to not launch a rocket that would cause a hazard to aircraft, or to another person and property, in accordance with regulation 101.055 of CASR. CASA therefore proposes to remove references to ‘rocket’ in the meaning of ‘populous area’ in regulation 101.025 of CASR.

Item 2 of Schedule 1

Under Part 101 of CASR and airspace legislation, CASA and the ASA have agreed that air risk (risk to aircraft and air navigation) from the operation of all rockets will remain CASA's regulatory responsibility. However, CASA's regulatory responsibility for oversight of ground risk (risk to persons and property on the ground) for high power rockets as well as launch of space objects

using a rocket is required to be transferred to the ASA as this is the purpose of the regulatory amendments.

For rockets that are small model rockets (defined in regulation 101.440 of CASR) and model rockets (defined in regulation 101.425 of CASR), CASA will retain regulatory responsibility for both air risk and ground risk oversight and this requires no change to existing regulatory provisions in Part 101 of CASR. However, for rockets that are high power rockets or space objects within the meaning of the SLRA, CASA will no longer have regulatory responsibility for ground risk assessment since the ASA's entry control process will oversight that activity. There is a final category of rockets between model rocket (in CASA's legislation) and high power rocket (in ASA's legislation) that will be undefined for the purposes of Part 101 of CASR, but which will be regulated by CASA area approvals as, notionally, an 'amateur rocket'. CASA will retain regulatory oversight of the ground risk aspects of amateur rockets.

To give effect to the ASA's regulatory responsibilities discussed above, CASA proposes to repeal the provision in subregulation 101.055(3) of CASR which creates an offence for a person to launch a rocket, that is not an aircraft, in a way that creates hazard to another person or to property, and to replace that provision with a narrower offence that would apply to launch of a rocket that is not an aircraft, not a high power rocket, and not a space object (or part of a space object).

Item 3 of Schedule 1

CASA regulates model rockets and high power rockets under Subpart 101.H of CASR as well as airspace risk matters under the *Airspace Act 2007* and the *Airspace Regulations 2007*. The ASA regulates 'space objects' which are objects that exceed 100 km above mean sea level (AMSL) in altitude. On and after 30 June 2020, a new definition of high power rocket is set out in the HPR Rules and new requirements are imposed such as obtaining a launch permit and satisfying the requirements of a revised flight safety code. The new definition of high power rocket in the HPR Rules is inconsistent with the definition set out in regulation 101.425 of CASR.

Under regulation 101.425 of CASR, which is outdated, a high power rocket means a rocket that is not a model rocket, and, to avoid doubt, includes:

- a. a sounding rocket;
- b. a sub-orbital rocket; and
- c. a launch vehicle (within the meaning given by the *Space Activities Act 1998*).

CASA proposes that the definition of high power rocket in regulation 101.425 should be repealed entirely, meaning that the only definition (or single source of truth) for the meaning of high power rocket is located in the ASA's legislation (specifically, section 8 of the SLRA which defines 'high power rocket' as an object of a kind prescribed by the HPR Rules).

Item 4, 5 and 6 of Schedule 1

Regulation 101.450 of CASR currently states that a person may launch a high power rocket, or permit a high power rocket to be launched, only in an approved area. For the purposes of this requirement, CASA may grant an area approval under regulation 101.030 of CASR. In order to align concepts relating to rocket activities in Part 101 of CASR with the SLRA and HPR Rules, the references to high power rocket are outdated and no longer aligned with the meaning of high power rocket under the SLRA. As shown in [Table 3](#), and described in [Item 3 of Schedule 1](#), the

updated regulation 101.450 of CASR is intended apply to a 'rocket other than model rocket' which would clarify that the requirement to hold an area approval applies to persons seeking to launch a high power rocket (within the meaning of the SLRA) as well as a space object (within the meaning of the SLRA). This machinery change combined with the changes to subregulation 101.055(3) described in [Item 1 of Schedule 1](#) has the effect of aligning the regulatory responsibilities and definitions between the CASR and the SLRA.

Item 7 of Schedule 1

Finally, CASA proposes to also make a minor editorial change to the note in subregulation 101.455(1) of CASR which refers incorrectly to subregulation 101.030(5) of CASR in respect of CASA's responsibility for publishing details of an area approval in a NOTAM or on an aeronautical chart. The correct cross-reference should be to subregulation 101.030(7) of CASR.

Previous consultations

The ASA consulted on the Space (Launches and Returns) (High Power Rocket) Rules 2019 between May and June 2019. <<https://consult.industry.gov.au/space/space-launches-and-returns-act-2018-draft-rules/>> CASA's proposed consequential amendments are subsequent to the ASA's legislation from that project.

Impact on industry

As discussed, there is no substantive policy change in CASA's proposed amendments. The changes are consequential in nature and flow from government legislation, explored in 2019, that established the regulatory responsibilities of the ASA in respect of high power rockets and launches of space objects.

As at the date of this consultation paper and since the HPR Rules have commenced, all operators proposing to launch a high power rocket (within the meaning of the SLRA) would be required to apply to the ASA for a high power rocket permit and meet the requirements of the flight safety code to conduct any such launch. This requirement is separate to, and antecedent to, CASA's regulatory assessment for grant of an area approval to launch the rocket.

To complement the ASA's legislative requirements for persons who hold existing CASA area approvals (under regulation 101.030) for the launch of rockets, CASA proposes to:

- a. impose a general condition on all existing area approvals granted for the purposes of regulation 101.450 of CASR, to require launches of high power rockets (within the meaning of the SLRA) to hold a high power rocket permit granted by the ASA
or
- b. amend each individual existing area approval granted for the purposes of regulation 101.450 of CASR, to clarify that the approval would only apply to rockets other than high power rockets.

CASA has assessed that there are less than 10 current rocket operators, including hobby rocketry associations, that would be affected by these administrative changes. Affected operators will be further engaged directly by CASA as part of the instrument making process.

After the consequential amendments have commenced for the purpose of launching a rocket other than a model rocket (this would include launching a high power rocket within the meaning of the SLRA), the air risk component would continue to be regulated under regulation 101.450 of CASR. CASA will consider requiring applicants for an area approval for that purpose—where the rocket being launched is a high power rocket within the meaning of the SLRA—to demonstrate that they have first secured a high power rocket permit from the ASA to undertake that launch as part of CASA's regulatory assessment for grant of an area approval. This process ensures that there is administrative simplicity for industry to first approach the ASA, as entry controlling regulator, on matters regarding oversight of high power rockets, as well as administrative continuity in relation to CASA's subsequent regulatory role on airspace deconfliction and oversight of risks to air navigation when the high power rocket is operationally prepared for launch.

Safety risk analysis

As the proposals are consequential amendments, the underlying safety risk analysis and public consultation undertaken by the ASA (including in consultation with CASA) during policy development of the SLRA and the HPR Rules has not changed.

Regulation impact statement

The Office of Best Practice Regulation (OBPR) assessed that the proposed amendments will have machinery impacts and that no further analysis in the form of a Regulatory Impact Statement was required (OBPR ID: 26423).

Closing date for comment

CASA will consider all comments received as part of this consultation process and incorporate changes as appropriate. Comments on the draft Civil Aviation Safety Amendment (Part 101 - High Power Rockets) Regulations 2020 should be submitted through the online response form by close of business 28 August 2020.