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Tuesday May 8, 2012

DELIVERED

Dr. Christopher Watson
Director and Chief Inspector of Explosives
Explosives Safety and Security Branch
Department of National Resources
1431 Merivale Road
Ottawa, Ontario
K1A 0G1

Re: Revisions to the Explosives Regulations

Dear Sir;

As a holder of an Explosive Licence, I received your letter requesting comment on the proposed regulations as published in Canada Gazette 1 on March 17, 2012.

Sunward Aerospace Group Limited is a Canadian manufacturer of model rocket kits and parts with exports worldwide. We are also a reseller of rocket motors and igniters at the retail level and at the distributor/wholesale level.

The new regulations would impact our business and as a result we are writing this letter to provide feedback and voice our concerns.

As further background I am the President Emeritus of Canadian Association of Rocketry - L'Association Canadienne De Fuséologie (CAR-ACF) and dealt with the department as the explosives liaison. The history of the CAR-ACF goes back to being incorporated by the The Royal Canadian Flying Clubs Association back on July 1, 1965 (Gazetted 13 Nov 1965). The history of CAR-ACF is long and safe with an outstanding safety record. The association has always taught science and skills to many youth across the country.

Rocketry in Canada is safe and a recognized sport.

But first I would like to thank the Department for giving rocket motors and their regulations their own section instead of a subset of consumer fireworks as in the past.

Based on an initial reading of the proposed regulations, we believe:

Part 3, Section 25b, AUTHORIZATION NOT REQUIRED as worded:

(c) the manufacture of up to 5 kg of explosives to be used in conducting an experiment, test or analysis at a private or commercial laboratory;

requires clarification. As local police departments are uneasy as to the possession or the making of explosives, a clarification is required as to what is a “private or commercial laboratory.” Rocketeers and hobbyists would interpret this as being able to make their own motors or explosives in their own private, at home, lab. Police departments may not have the same opinion.

Would this new section allow hobbyists to make their own explosive products? If so, does Transport Canada now allow these motors to be flown when installed in a rocket kit?

Part 3, Section 25c:

(e) the manufacture of *small arms cartridges or black powder cartouches for personal use;

currently CAR-ACF members have an exemption for the making of ejection charges¹. Would this section null the need for the exemption?

For imports of explosives with no permit required as in in Part 4, Section 45 Table, I fail to see the need for the requirements and restrictions as proposed:

Model rocket motors that each have a maximum total impulse of 40 newton-seconds (NFPA alpha designations A to E, as indicated on the motor or its packaging) - 6

Rocketry, as a sport, is a very safe hobby in Canada. Limiting the importing of authorized motors to a maximum classification of “E” thrust, and to a limit of 6, is unreasonable. If a motor is authorized for sale in Canada, then the only restrictions should be the limits as set forth by the Canada Border Services Agency² for Canadians returning from a visit.

Labelling requirements in Part 4, Section 47-4a (imports) and Section 49-1a(exports):

the words “Explosives/Explosifs”, “Fireworks/ Pièces pyrotechniques” or “Pyrotechnics/Pièces pyrotechniques”, as the case may be, on the outer packaging and any inner packaging;

This type of labelling, even for model rocket motors, would cause additional markings to be added to retail packages and to outer cases. Not only would this lead to increased costs which are passed on to the consumer, but will lead to unneeded inspections and delays at the border.

As most rocketry products are crossing the Canadian / US border, US Homeland Security would likely inspect all packages due to security concerns, even for model rocket motors.

Canadian companies and consumers would bear the extra delays and additional costs.

¹ http://www.canadianrocketry.org/files/ERD_BP_letter.jpg

² <http://www.cbsa-asfc.gc.ca/media/facts-faits/060-eng.html>

Part 9, Section 190, Transporting Small Quantities of Explosives:

A clarification as to the weights, either gross weights or NEQ weights, needs to be distinguished.

Section 192, Part 3, requires clarification. In the case of a shipment of rocket motors and rocket kits, (“other than explosive”), would cardboard case packaging be a sufficient separation?

PART 10 - MILITARY EXPLOSIVES AND LAW ENFORCEMENT EXPLOSIVES

This section is not clear as to dual use explosives. Would a consumer rocket and or rocket motor used by the military, for example in training, be regulated under this section?

Would a product suitable for consumer use and certified as such, but only available to the military be either the manufacturer, the distributor, or licence holder, be regulated under this section?

A clarification is required.

PART 11 - INDUSTRIAL EXPLOSIVES

While this section list a number of products covered under “industrial explosive,” there is no exemption or process in place for any product or process not listed or currently not available.

Part 15, Section 307:

“reloading kit” means a package that contains a solid propellant and other components that are designed to be used in a reloadable rocket motor.

The wording is vague as many may take the “reloading kit” to include a “reloadable rocket motor case.” A clarification indicating any “reloadable rocket motor case” is not part of the “reloading kit” is needed in this definition.

Section 308, is too restrictive as many high power rocket motors are heavy due to their nature.

A reference to a mass of rocket motors or reloading kits in this Part is a reference to their gross mass (the mass of the motors or kits plus the mass of any packaging or container).

Due to nature of small size of the rocket hobby sport in Canada, Section 312, Part 1

Rocket motors, reloading kits and igniters must not be displayed for sale in a dwelling

may cause problems for small sellers, especially in remote locations.

Section 312, Part 2

In the case of a sales establishment that is not a dwelling, no more than 25 kg of rocket motors and reloading kits (combined quantity) and no more than 300 igniters may be displayed for sale.

has 2 issues:

1. 25kg would be a small number when high power motors or the sale of consumer grade model rocket motors are considered
2. Would a consumer pack with igniters have the igniters counted separately or would they be not included in the igniter count as they would be part of a packaged item?

Section 315 – 1, and at other locations:

a sign that displays the words “Danger — Fire Hazard/Risque d’incendie” in letters at least 10 cm high and that prohibits smoking using letters, or a symbol, at least 10 cm high must be posted on the storage unit in a clearly visible location.

is not practical. Many fire officials have indicated the requirement of such a sign would be nothing more than an advertisement as to the availability of potentially dangerous goods. The sign should not be a requirement in law but should be placed only when requested to be posted by fire officials.

Sections 316 and 317 will present problems to many in the industry.

The requirement that sellers not sell more than authorized by the licence would require the seller to know the limit of the licence and the current inventory in the magazine of any buyer. As shipping times are varied, this would present a legal and logistical problem for the seller and even the buyer.

The limits on selling and receiving more than licenced by the buyer would also limit any brokerage sale of motors to other licence holders and to foreign buyers.

It is also common, especially at large events, to have users place special orders. The motors are then delivered by or for the retailer to the site without being placed inside the magazine of the retailer. The restrictions in these 2 sections would seriously impede large events and or increase the cost for the retailers and end users.

Section 318 requires

A seller who sells rocket motors, reloading kits or igniters to a user must offer the user either a copy of the table at the end of this Part or a document that includes the same information

this requirement is misguided with the table not relevant on many levels:

- The section requires the addition of the table for all sales even though the safety code in the table is mainly for model rockets
- The construction deals with model rockets but the table is required for all sales
- The limit of 160 newton-seconds of impulse would mean the sale of high power motors would be viewed as unsafe and or illegal in Canada
- The requirement of being 9 km from an airport is an old one and no longer relevant.
 - In 1978, the requirement was 5 nautical miles from an airport³ based on old Air Regulation 514 which is not longer valid
 - No Association valid in Canada has this requirement

³ Youth Science Foundation – Fondation Sciences Jeunesse letter with attached rules, February 6, 1978

- Current Transport Canada Regulations only require:
 - No person shall fly a model aircraft or a kite or launch a model rocket or a rocket of a type used in a fireworks display into cloud or in a manner that is or is likely to be hazardous to aviation safety.⁴

Having this rule in place would infringe on rules Transport Canada would be better at making and enforcing.
- The rule of 9 km is too restrictive as not all air space is required by the airport as in Lac St-Jean region⁵
- In some locations, having the rule would prohibit the availability of a launch site due to the difficulty of obtaining permission from airport authorities. Many airport staff will simply not allow any rockets to be flown near their airport.
- The requirement for additional paperwork would increase the cost of selling motors in Canada and leave the retailer open to penalties for failing to meet a simple task
- Foreign manufacturers of motors will now have to have additional packaging requirements that would increase costs
- The safety code is a derivative copy of the safety code in the booklet “Control of Model Rocketry in Canada.”⁶ This booklet, originally titled “Manual of Model Rocketry in Canada,” was originally published by the Canadian Association of Rocketry which was the predecessor of CAR-ACF. CAR-ACF still owns the rights to the original work. Members who participated in the original writing of the booklet have indicated they will revoke their permission to publish the booklet in part or in whole should it possibly become law.⁷
- Misfire wording would be better served to change to a safe period:
 - Always wait at least 10 minutes before approaching a model rocket if the firing system fails to ignite the motor.

A better solution would be to allow rocketeers to use existing safety codes. All motors currently sold in Canada have a reference in their packaging to a safety code currently available. There are 4 currently in use in Canada:

1. Canadian Association of Rocketry - L'Association Canadienne De Fuséologie^{8 9}
2. Model Aeronautics Association of Canada¹⁰ (model rockets only)
3. National Association of Rocketry^{11 12}
4. Tripoli Rocketry Association, Inc¹³ (high power only)

As these codes are all slightly different, but effective. It would be more reasonable to remove the requirement from the regulations and have users follow one of the current safety codes.

⁴ Canadian Aviation Regulations – Part VI – General Operation and Flight Rules Subpart 2 – Operating and Flight Rules http://www.tc.gc.ca/eng/civilaviation/regserv/cars/part6-602-2436.htm#602_45

⁵ Email Pierre Laurendeau, 2006

⁶ Previously listed at http://www.nrcan-rncan.gc.ca/mms/explosif/pub/publi_e.html

⁷ Verbal and email discussion

⁸ http://canadianrocketry.org/model_safety_code.php

⁹ http://canadianrocketry.org/hpr_safety_code.php

¹⁰ www.maac.ca/docs/maac_safety_code_e.pdf

¹¹ <http://www.nar.org/NARmrsc.html>

¹² <http://www.nar.org/NARhpsc.html>

¹³ <http://tripoli.org/Launches/Safety/HighPowerSafetyCode/tabid/185/Default.aspx>

As new technologies and rockets come onto the market, the existence of a safety code written in law would mean they would not be legal for use in Canada. This restriction would not be warranted considering the outstanding safety record of the sport of rocketry.

Section 319 and Section 321, part 2, would limit 12-17 years old to “E” motors and would limit their participation. With adult supervision, any impulse motor should be available to youths in Canada. There has not been a problem with youth and rocket motors in Canada so this restriction is not warranted.

Section 321 is vague with total weights and NEQ weights. The weight limits are also restrictive, especially with heavy high power motors.

Section 332:

In the case of storage in a dwelling, no more than 10 kg of rocket motors and reloading kits (combined quantity) and no more than 40 igniters may be stored at any one time.

would be restrictive for many in the high power side of the sport. With high power motors being heavy, it would dramatically limit the storage by users. As for igniters, many rocketeers will have extra available to ensure the firing of their rockets during launches and a limit of 40 is unreasonable.

Section 334 requires

Rocket motors, reloading kits and igniters must be *attended when they are not in storage

doesn't specify that high power motors are only are under this restriction. This restriction would not be required in a large event, when motors are generally locked when the user is not immediately available, as in when launching a rocket.

The proposed regulations are a good effort by the Ministry but do need some modifications.

For openness, I will be posting this letter to various forums and news groups, and to the Sunward Aerospace Group Limited online blog¹⁴. This is in addition to those listed as recipients of a copy of this letter.

On behalf of Sunward Aerospace Group Limited and its staff,

Sincerely,

Angelo Castellano
President

¹⁴ <http://www.sunward1.com/blog>

cc. Canadian Association of Rocketry - L'Association Canadienne De Fuséologie
Model Aeronautics Association of Canada
National Association of Rocketry
Tripoli Rocketry Association, Inc

Cesaroni Technology Incorporated
Estes-Cox Corp
Aerotech Consumer Aerospace
Quest Aerospace