1956-A12 (D Air CFG 6)

November 2004

Mr. Bas Cleary
Director
Environmental Assessment Division
Department of Environment and Conservation
P.O. Box 8700
St. John's, NL
A1B 4J6

Dear Sir:

Reference: Environmental Assessment – Use of Air Defence Countermeasure Flares at 5 Wing Goose Bay Military Training Area

1. Air Contracted Force Generation has amended the referenced Environmental Assessment because the explanation of the different types of flares used within Air Force inventories was not clearly defined. The amendment does not substantively change the original document; rather, it further specifies the types of Air Defence flares that Air Forces operating from 5 Wing Goose Bay may use within the Goose Bay Military Flying Area.

2. The following paragraphs were amended.

   a. Section 1.2.1, sentence 2, change to read, "However, activity levels have declined substantially during the last few years; 2000 sorties per year are forecast for the next few years."

   b. Section 2.1, Boxed text, change to read,

      i. "**Non-parasitic** – This type of flare incorporates a mechanical mechanism to prevent ignition of the pellet in the case. This includes, a push button and spring, a firing pin, and primer assembly. When ignited by the firing pin, the primer assembly fires the ignition charge, which fires the output charge, which ignites the flare pellet. This type of flare is likely to produce the largest number of duds, albeit infrequently, and the most debris due to the complexity of the ignition process.

      ii. "**Parasitic** – The parasitic type of flare is ignited in the aluminium case before it leaves the aircraft by holes in the piston that permit ignitor gases to contact the first fire mixture on top of the flare pellet. Should ignition of the flare not occur, the flare would not eject from the

aircraft. This type of flare is less likely than the Non-Parasitic flare to produce duds.

iii. "**Semi-Parasitic** – This type of flare has a two-stage ignition sequence where, typically, the first-stage ignition occurs in the aluminium case before it leaves the aircraft, which ejects the flare pellet. Once the pellet is ejected, the first stage burn then ignites the Infrared (IR) decoy compound (second stage). This system is safer for the combat aircrews than the Parasitic system and has increasingly been adopted for most of the IR counter-measure suites that are flown from 5 Wing Goose Bay. Should ignition of the flare not occur, the flare would not eject from the aircraft. This type of flare is also less likely than the Non-Parasitic flare to produce duds.

c. Section 2.2, change to read, "DND assumes that about half of the total sorties flown (or 1000 sorties of the forecast 2000 sorties per year) would deploy self-protection flares, with an estimated maximum of about 30 flares ((each weighing about 200 grams) per sortie. Accordingly, approximately 30,000 flares, or 6,000 kilograms of flare material would be dispersed annually, nearly all of which will have been consumed before depositing on the ground."

d. Section 3.2, Boxed text, change to read, "Given that the primary environmental concerns, and the potential impacts with the most serious consequences, involve instances of 'dud' flares that do not remain with the aircraft, DND is proposing to authorize training only with **Parasitic** and **Semi-Parasitic** flares. This would essentially preclude the possibility of duds reaching the ground (the flare material could not eject from the aircraft unless it was already ignited). The balance of the assessment does not exclude the 'dud' factor, but readers should be mindful of the improbability of such an occurrence."

e. Section 3.7, paragraph 4, sentence 2, change to read, "Similarly, the choice of parasitic and semi-parasitic flares, in conjunction with specific operating procedures regarding their use (Section 4), should minimize any potential for fires resulting from this undertaking (last two issues on the list)."

f. Section 4.3, paragraph 2, bullet 1, change to read, "only parasitic and semi-parasitic flares will be authorized for use in allied training (this will essentially prevent dud flare remains from being deposited on the ground)"

g. Annex A, section A 1.2, paragraph 4, change to read, "The parasitic type flare is much less likely to produce duds. However, there is an increased risk of fire damage to the aircraft, compared with the semi and non-parasitic flare. Because of the design of the parasitic flare, dud parasitic flares will remain with the airframe for the remainder of the flight. The dud semi-parasitic flare is also designed to remain with the aircraft, in that the impulse cartridge must ignite to jettison the flare pellet. If the impulse cartridge does not fire, the semi-parasitic flare will neither jettison nor burn. The non-parasitic flare can be expected to produce the largest number of duds and the most debris, due to the complexity of the ignition process."

h. Annex A, section A 1.2, add paragraph 5: “In absolute terms, 2000 fighter sorties were flown over the Goose Bay Military Flying Area during Year 2004, and 2005 should prove to generate approximately 2000 sorties again. Up to half of these sorties may involve the use of flares. If each aircraft expends all of the on-board flares on every mission (which typically does not happen) and each airframe carries 30 flares (20 to 30 is normal), then the maximum number of flares that could be expended would be approximately 30,000 flares per year. The accepted dud rate on the parasitic flare is less than 1%, and the dud rate on the semi-parasitic flare falls between 1% and 3%; hence, a 2% dud rate can be comfortably used for this case. Consequently, the “worst case scenario” would have dud flares occurring 600 times per year (2% of 30,000 flares). The design characteristics of both these flare types is such that the dud flares would remain with their aircraft for the remainder of the flight.”

3. Please note that the entire Environmental Assessment, with amendments, is included as an enclosure. Thank you for your kind attention.

//original signed by//
Colonel T.J. Lawson
Director Air Contracted Force Generation
National Defence Headquarters

Enclosure: 1

Cc:

Mr. Thomas R. Graham
Director
Resource and Economic Policy
Executive Council, Intergovernmental Affairs
Government of Newfoundland and Labrador
PO Box 8700
St. John’s NF
A1B 4J6

Ms. Jennifer Crummey
Resource and Economic Policy
Executive Council, Intergovernmental Affairs
Government of Newfoundland and Labrador
PO Box 8700
St. John’s NF
A1B 4J6

Dr Louis La Pierre
Institute for Environmental Monitoring and Research

PO Box 1722
Moncton, NB
E1C 9X5

Mr Richard Nuna
Environment, Culture, and Conservation
Innu Nation Environment Office
PO Box 119
Sheshatshiu, Labrador
A0P 1M0

Mr Larry Innes
Olthuis, Kleer, Townshed Barristers
PO Box 2162 Stn B
Goose Bay, Labrador
A0P 1E0