



communiqué

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CONTROL OF TRANSFER OF MISSILE TECHNOLOGY

The Right Honourable Joe Clark, Secretary of State for External Affairs, announced today that the Government of Canada, in cooperation with the Governments of France, the Federal Republic of Germany, Italy, Japan, the United Kingdom and the United States of America, has agreed to guidelines to control the export of missile equipment and technology which could make a contribution to a missile system capable of delivering nuclear weapons. The guidelines formulated for missile technology control will standardize the export control policies of the subscribing countries. It will also serve to complement and strengthen Canada's commitment to the Non-Proliferation Treaty.

The Minister noted that Canada's agreement to adhere to the guidelines for the export of missiles and technology followed careful consideration of the implications of the guidelines for Canada's international treaty obligations. Mr. Clark pointed out that it was the continuing aim of the seven subscribing governments to encourage international cooperation in the peaceful use of modern technology and the guidelines are not intended to impede this objective. However, such cooperation must be carried out in ways which are consistent with the aims of the Government's non-proliferation policies.

Mr. Clark, in making the announcement, welcomed the adherence of all states to the missile technology control guidelines in the interest of international peace and stability.

GUIDELINES FOR SENSITIVE MISSILE-RELEVANT TRANSFERS

1. The purpose of these Guidelines is to limit the risks of nuclear proliferation by controlling transfers that could make a contribution to nuclear weapons delivery systems other than manned aircraft. The guidelines are not designed to impede national space programs or international cooperation in such programs as long as such programs could not contribute to nuclear weapons delivery systems. These Guidelines, including the attached Annex, form the basis for controlling transfers to any destination beyond the Government's jurisdiction or control of equipment and technology relevant to missiles whose performance in terms of payload and range exceeds stated parameters. Restraint will be exercised in the consideration of all transfers of items contained within the Annex and all such transfers will be considered on a case-by-case basis. The Government will implement the guidelines in accordance with national legislation.

2. The Annex consists of two categories of items, which term includes equipment and technology. Category I items, all of which are in Annex items 1 and 2, are those items of greatest sensitivity. If a category I item is included in a system, that system will also be considered as Category I, except when the incorporated item cannot be separated, removed, or duplicated.

Particular restraint will be exercised in the consideration of Category I transfers, and there will be a strong presumption to deny such transfers. Until further notice, the transfer of Category I production facilities will not be authorized. The transfer of other Category I items will be authorized only on rare occasions and where the Government (A) obtains binding government-to-government undertakings embodying the assurances from the recipient government called for in paragraph 5 of these Guidelines and (B) assumes responsibility for taking all steps necessary to ensure that the item is put only to its stated end-use. It is understood that the decision to transfer remains the sole and sovereign judgement of the Canadian Government.

3. In the evaluation of transfer applications for Annex items, the following factors will be taken into account:

- A. Nuclear proliferation concerns;
- B. The capabilities and objectives of the missile and space programs of the recipient state;
- C. The significance of the transfer in terms of the potential development of nuclear weapons delivery systems other than manned aircraft;

D. The assessment of the end-use of the transfers, including the relevant assurances of the recipient states referred to in sub-paragraphs 5.A. and 5.B. below;

E. The applicability of relevant multilateral agreements.

4. The transfer of design and production technology directly associated with any items in the Annex will be subject to as great a degree of scrutiny and control as will the equipment itself, to the extent permitted by national legislation.

5. Where the transfer could contribute to a nuclear weapons delivery system, the Government will authorize transfers of items in the Annex only on receipt of appropriate assurances from the Government of the recipient state that:

A. The items will be used only for the purpose stated and that such use will not be modified nor the items modified or replicated without the prior consent of the Canadian Government.

B. Neither the items nor replicas nor derivatives thereof will be retransferred without the consent of the Canadian Government.

6. In furtherance of the effective operation of the Guidelines, the Canadian Government will, as necessary and appropriate, exchange relevant information with other Governments applying the same Guidelines.

7. The adherence of all states to these Guidelines in the interest of international peace and security would be welcome.

EQUIPMENT AND TECHNOLOGY ANNEX

1. Introduction.

(a) This annex consists of two categories of items, which term includes equipment and technology. Category I items, all of which are in Annex Items 1 and 2, are those items of greatest sensitivity. If a Category I item is included in a system, that system will also be considered as Category I, except when the incorporated item cannot be separated, removed or duplicated. Category II items are those items in the Annex not designated Category I.

(b) The transfer of design and production technology directly associated with any items in the Annex will be subject to as great a degree of scrutiny and control as will the equipment itself, to the extent permitted by national legislation.

2. Definitions For the purpose of this Annex, the following definitions shall apply:

- (a) The term technology means specific information which is required for the development, production or use of a product. The information may take the form of technical data or technical assistance.
- (b)(1) Development is related to all stages prior to serial production such as
- design
 - design research
 - design analyses
 - design concepts
 - assembly and testing of prototypes
 - pilot production schemes
 - design data
 - process of transforming design data into a product
 - configuration design
 - integration design
 - layouts
- (2) Production means all production stages such as
- production engineering
 - manufacture
 - integration
 - assembly (mounting)
 - inspection
 - testing
 - quality assurance
- (3) Use means
- operation
 - installation (including on-site installation)
 - maintenance (checking)
 - repair
 - overhaul and refurbishing

- (c)(1) Technical data may take forms such as blueprints, plans, diagrams, models, formulae, engineering designs and specifications, manuals and instructions written or recorded on other media or devices such as disk, tape, read-only memories.
- (2) Technical assistance may take forms such as
- instruction
 - skills
 - training
 - working knowledge
 - consulting services
- (d) Note: This definition of technology does not include technology in the public domain nor basic scientific research.
- (1) In the public domain as it applies to this Annex means technology which has been made available without restrictions upon its further dissemination. (Copyright restrictions do not remove technology from being in the public domain.)
- (2) Basic scientific research means experimental or theoretical work undertaken principally to acquire new knowledge of the fundamental principles of phenomena and observable facts, not primarily directed towards a specific practical aim or objective.
- (e) The term production facilities means equipment and specially designed software therefor integrated into facilities for prototype development or for one or more stages of serial production.
- (f) The term production equipment means tooling, templates, jigs, mandrels, moulds, dies, fixtures, alignment mechanisms, test equipment, other machinery and components thereof, limited to those specially designed or modified for prototype development or for one or more stages of serial production.

ITEM 1 - CATEGORY I

Complete rocket systems (including ballistic missile systems, space launch vehicles, and sounding rockets) and unmanned air vehicle systems (including cruise missile systems, target drones, and reconnaissance drones) capable of delivering at least a 500 kg payload to a range of at least 300 km as well as the specially designed production facilities for these systems.

ITEM 2 - CATEGORY I

Complete subsystems usable in the systems in Item 1, as follows, as well as the specially designed production facilities and production equipment therefor:

- (a) Individual rocket stages;

- (b) Reentry vehicles, and specially designed equipment therefor, as follows, except as provided in note (1) below for those designed for non-weapons payloads:
 - (1) Heat shields and components thereof fabricated of ceramic or ablative materials;
 - (2) Heat sinks and components thereof fabricated of light-weight, high heat capacity materials;
 - (3) Electronic equipment specially designed or modified for reentry vehicles;
- (c) Solid or liquid fuel rocket engines, having a total impulse capacity of 2.5×10^5 lb-sec or greater, except as provided in note (1) below for those specially designed or modified for orbital correction of satellites;
- (d) Guidance sets capable of achieving system accuracy (CEP) of 10km or less at a range of 300 km, except as provided in note (1) below for those designed for missiles with range under 300 km or manned aircraft;
- (e) Thrust vector controls, except as provided in note (1) below for those designed for rocket systems with range under 300 km;
- (f) Warhead safing, arming, fuzing, and firing mechanisms, except as provided in note (1) below for those designed for systems other than those in Item 1.

Notes to Item 2:

- (1) The exceptions in (b), (c), (d), (e), and (f) above may be treated as Category II if the subsystem is exported subject to end use statements and quantity limits appropriate for the excepted end use stated above.
- (2) CEP (circle of equal probability) is a measure of accuracy; the radius of the circle centered at the target, at a specific range, in which 50 percent of the payloads impact.

ITEM 3 - CATEGORY II

Propulsion components and equipment usable in the systems in Item 1, as follows, as well as the specially designed production facilities therefor:

- (a) Lightweight turbojet and turbofan engines (including turbocompound engines) that are small and fuel efficient;
- (b) Ramjet/Scramjet engines, including devices to regulate combustion, and specially designed production equipment therefor;
- (c) Rocket motor cases and specially designed production equipment therefor;

- (d) Staging mechanisms and specially designed production equipment therefor;
- (e) Liquid fuel control systems and components therefor, specially designed to operate in vibrating environments of more than 12g rms between 20 Hz and 2000 Hz including:
 - (1) Servo valves designed for flow rates of 24 liters per minute or greater at a pressure of 250 bars, and having flow contact surfaces made of 90 percent or more tantalum, titanium or zirconium, either separately or combined, except when such surfaces are made of materials containing more than 97 percent and less than 99.7 percent titanium;
 - (2) Pumps (except vacuum pumps), having all flow contact surfaces made of 90 percent or more tantalum, titanium or zirconium, either separately or combined, except when such surfaces are made of materials containing more than 97 percent and less than 99.7 percent titanium.

Notes to Item 3:

- (1) Item 3(a) engines may be exported as part of a manned aircraft or in quantities appropriate for replacement parts for manned aircraft.
- (2) Item 3(e) systems and components may be exported as part of a satellite.

ITEM 4 - CATEGORY II

Propellants and constituent chemicals for propellants as follows:

- (a) Propulsive substances:
 - (1) Hydrazine with a concentration of more than 70 percent;
 - (2) Unsymmetric dimethylhydrazine (UDMH);
 - (3) Spherical ammonium perchlorate with particles of uniform diameter less than 500 microns;
 - (4) Spherical aluminum powder with particles of uniform diameter of less than 500 microns and an aluminum content of 97 percent or greater;
 - (5) Metal fuels in particle sizes less than 500 microns, whether spherical, atomized, spheroidal, flaked or ground, consisting of 97 percent or more of any of the following: zirconium, titanium, uranium, tungsten, boron, zinc, and alloys of these; magnesium; Misch metal;

- (6) Nitro-amines (cyclotetramethylene-tetranitramine (HMX), cyclotetramethylenetrinitramine (RDX)) when specially formulated as propulsive substances.
- (b) Polymeric substances:
 - (1) Carboxy-terminated polybutadiene (CTPB);
 - (2) Hydroxy-terminated polybutadiene (HTPB);
- (c) Composite propellants including molded glue propellants and propellants with nitrated bonding and aluminum content in excess of 5 percent.
- (d) Other high energy density fuels such as Boron Slurry, having an energy density of 40×10^6 joules/kg or greater.

ITEM 5 - CATEGORY II

Production technology or production equipment specially designed or modified for production, handling, mixing, curing, casting, pressing, machining and acceptance testing of the liquid or solid propellants and propellant constituents as described in Item 4.

ITEM 6 - CATEGORY II

Equipment, technical data and procedures for the production of structural composites usable in the systems in Item 1 as follows, and specially designed components and accessories and specially designed software therefor:

- (a) Filament winding machines of which the motions for positioning, wrapping and winding fibres are coordinated and programmed in three or more axes, specially designed to fabricate composite structures or laminates from fibrous and filamentary materials; and coordinating and programming controls;
- (b) Tape-laying machines of which the motions for positioning and laying tape and sheets are coordinated and programmed in two or more axes, specially designed for the manufacture of composite airframes and missile structures;
- (c) Interlacing machines, including adapters and modification kits for weaving, interlacing or braiding fibres to fabricate composite structures, except textile machinery which has not been modified for the above end-uses;
- (d) Specially designed or adapted equipment for the production of fibrous and filamentary materials as follows:
 - (1) Equipment for converting polymeric fibers (such as polyacrylonitrile, rayon, or polycarbosilane) including special provision to strain the fibre during heating;

- (2) Equipment for the vapor deposition of elements or compounds on heated filamentary substrates; and
- (3) Equipment for the wet-spinning of refractory ceramics (such as aluminum oxide);
- (e) Specially designed or adapted equipment for special fibre surface treatment or for producing prepregs and preforms. Note: Equipment covered by this sub-item includes but is not limited to rollers, tension stretchers, coating equipment, cutting equipment and clicker dies.
- (f) Technical data (including processing conditions) and procedures for the regulation of temperature, pressures or atmosphere in autoclaves when used for the production of composites or partially processed composites.

Note to Item 6: Specially designed or adapted components and accessories for the machines covered by this entry include, but are not limited to, moulds, mandrels, dies, fixtures and tooling for the preform pressing, curing, casting, sintering or bonding of composite structures, laminates and manufactures thereof.

ITEM 7 - CATEGORY II

Pyrolytic deposition and densification equipment and technology as follows:

- (a) Technology for producing pyrolytically derived materials formed on a mold, mandrel or other substrate from precursor gases which decompose in the 1300°C to 2900°C temperature range at pressures of 1 mm Hg to 150 mm Hg (including technology for the composition of precursor gases, flow-rates, and process control schedules and parameters);
- (b) Specially designed nozzles for the above processes;
- (c) Equipment and process controls, and specially designed software therefor, specially designed for densification and pyrolysis of structural composite rocket nozzles and reentry vehicle nose tips.

ITEM 8 - CATEGORY II

Structural materials usable in the systems in Item 1, as follows:

- (a) Composite structures, laminates, and manufactures thereof, including resin impregnated fibre prepregs and metal coated fibre preforms therefor, specially designed for use in the systems in Item 1 and the subsystems in Item 2 made either with an organic matrix or metal matrix utilizing fibrous or filamentary reinforcements having a specific tensile strength greater than $7.62 \times 10^4 \text{m}$ (3×10^6 inches) and a specific modulus greater than $3.18 \times 10^6 \text{m}$ (1.25×10^8 inches);
- (b) Resaturated pyrolyzed (i.e., carbon-carbon) materials specially designed for rocket systems;

- (c) Fine grain artificial graphites for rocket nozzles and reentry vehicle nosetips having all of the following characteristics:
 - (1) Bulk density of 1.79 or greater (measured at 293K);
 - (2) Tensile strain to failure of 0.7 percent or greater (measured at 293K);
 - (3) Coefficient of thermal expansion of 2.75×10^{-6} or less per degree K (in the range of 293K to 1,255K);
- (d) Ceramic composite materials specially designed for use in missile radomes.

ITEM 9 - CATEGORY II

Compasses, gyroscopes, accelerometers and inertial equipment and specially designed software therefor, as follows; and specially designed components therefor usable in the systems in Item 1:

- (a) Integrated flight instrument systems which include gyrostabilizers or automatic pilots and integration software therefor, specially designed or modified for use in the systems in Item 1;
- (b) Gyro-astro compasses and other devices which derive position or orientation by means of automatically tracking celestial bodies;
- (c) Accelerometers with a threshold of 0.005 g or less, or a linearity error within 0.25 percent of full scale output or both, which are designed for use in inertial navigation systems or in guidance systems of all types;
- (d) Gyros with a rated free directional drift rate (rated free precession) of less than 0.5 degree (1 sigma or rms) per hour in a 1 g environment;
- (e) Continuous output accelerometers which utilize servo or force balance techniques and gyros, both specified to function at acceleration levels greater than 100 g;
- (f) Inertial or other equipment using accelerometers described by subitems (c) and (e) above or gyros described by subitems (d) or (e) above, and systems incorporating such equipment, and specially designed integration software therefor;
- (g) Specially designed test, calibration, and alignment equipment for the above;
- (h) Specially designed production equipment for the above, including the following:
 - (1) For ring laser gyro equipment, the following equipment used to characterize mirrors, having the threshold accuracy shown or better:

- (i) Rectilinear Scatterometer (10 ppm);
- (ii) Polar Scatterometer (10 ppm);
- (iii) Reflectometer (50 ppm);
- (iv) Profilimeter (5 Angstroms);

(2) For other inertial equipment:

- (i) Inertial Measurement Unit (IMU Module) Tester;
- (ii) IMU Platform Tester;
- (iii) IMU Stable Element Handling Fixture;
- (iv) IMU Platform Balance Fixture;
- (v) Gyro Tuning Test Station;
- (vi) Gyro Dynamic Balance Station;
- (vii) Gyro Run-In/Motor Test Station;
- (viii) Gyro Evacuation and Fill Station;
- (ix) Centrifuge Fixture for Gyro Bearings;
- (x) Accelerometer Axis Align Station;
- (xi) Accelerometer Test Station.

Note to Item 9: Items (a) through (f) may be exported as part of a manned aircraft or satellite or in quantities appropriate for replacement parts for manned aircraft.

ITEM 10 - CATEGORY II

Flight control systems usable in the systems in Item 1 as follows, as well as the specially designed test, calibration, and alignment equipment therefor:

- (a) Hydraulic, mechanical, electro-optical, or electro-mechanical flight control systems (including fly-by-wire systems) specially designed or modified for the systems in Item 1;
- (b) Attitude control equipment specially designed or modified for the systems in Item 1;
- (c) Design technology for integration of air vehicle fuselage, propulsion system and lifting and control surfaces to optimize aerodynamic performance throughout the flight regime of an unmanned air vehicle;
- (d) Design technology for integration of flight control, guidance, and propulsion data into a flight management system for optimization of rocket system trajectory.

Note to Item 10: Items (a) and (b) may be exported as part of a manned aircraft or satellite or in quantities appropriate for replacement parts for manned aircraft.

ITEM 11 - CATEGORY II

Avionics equipment specially designed or modified for use in unmanned air vehicles or rocket systems and specially designed software and components therefor usable in the systems in Item 1, including but not limited to:

- (a) Radar and laser radar systems, including altimeters;
- (b) Passive sensors for determining bearing to specific electromagnetic sources (direction finding equipment) or terrain characteristics;
- (c) Equipment specially designed for real-time integration, processing, and use of navigation information derived from an external source;
- (d) Electronic assemblies and components specially designed for military use incorporating any of the following:
 - (1) Specially designed, integral structural supports;
 - (2) Techniques for conductive heat removal;
 - (3) Radiation hardening;
 - (4) Design for reliable short term operation at temperatures in excess of 125°C;
- (e) Design technology for protection of avionic and electrical subsystems against electromagnetic pulse (EMP) and electromagnetic interference (EMI) hazards from external sources, as follows:
 - (1) Technology for design of shielding systems;
 - (2) Technology for the configuration design of hardened electrical circuits and subsystems;
 - (3) Determination of hardening criteria for the above.

Notes to Item 11:

- (1) Item 11 equipment may be exported as part of a manned aircraft or satellite or in quantities appropriate for replacement parts for manned aircraft.
- (2) Examples of equipment included in this item:
 - Terrain contour mapping equipment;
 - Scene mapping and correlation (both digital and analog) equipment;
 - Doppler navigation radar equipment;
 - Passive interferometer equipment;
 - Imaging sensor equipment (both active and passive).

ITEM 12 - CATEGORY II

Launch and ground support equipment and facilities usable for the systems in Item 1, as follows:

- (a) Apparatus and devices specially designed or modified for the handling, control, activation and launching of the systems in Item 1;

- (b) Military vehicles specially designed or modified for the handling, control, activation and launching of the systems in Item 1;
- (c) Gravity meters (gravimeters), gravity gradiometers, and specially designed components therefor, designed or modified for airborne or marine use, and having a static or operational accuracy of one milligal or better, with a time to steady-state registration of two minutes or less;
- (d) Telemetry and telecontrol equipment suitable for use with unmanned air vehicles or rocket systems;
- (e) Precision tracking systems:
 - (1) Tracking systems which use a translator installed on the rocket system or unmanned air vehicle in conjunction with either surface or airborne references or navigation satellite systems to provide real-time measurements of inflight position and velocity;
 - (2) Software systems which process recorded data for post mission precision tracking enabling determination of vehicle position.

ITEM 13 - CATEGORY II

Analog computers, digital computers, or digital differential analyzers specially designed or modified for use in air vehicles or rocket systems and usable in the systems in Item 1, having any of the following characteristics:

- (a) Rated for continuous operation at temperatures from below -45°C to above 55°C ;
- (b) Designed as ruggedized or radiation hardened equipment and capable of meeting military specifications for ruggedized or radiation-hardened equipment; or,
- (c) Modified for military use.

Note to Item 13: Item 13 equipment may be exported as part of a manned aircraft or satellite or in quantities appropriate for replacement parts for manned aircraft.

ITEM 14 - CATEGORY II

Analog-to-digital converters, other than digital voltmeters or counters, usable in the systems in Item 1 and having any of the following characteristics: rated for continuous operation at temperatures from below -45°C to above 55°C ; designed to meet military specifications for ruggedized equipment, or modified for military use; or designed for radiation resistance, as follows:

- (a) Electrical input type analog-to-digital converters having any of the following characteristics:

- (1) A conversion rate of more than 200,000 complete conversions per second at rated accuracy;
 - (2) An accuracy in excess of 1 part in more than 10,000 of full scale over the specified operating temperature range;
 - (3) A figure of merit of 1×10^8 or more (derived from the number of complete conversions per second divided by the accuracy).
- (b) Analog-to-digital converter microcircuits having both of the following characteristics:
- (1) A maximum conversion time to maximum resolution of less than 20 microseconds;
 - (2) A rated non-linearity of better than 0.025 percent of full scale over the specified operating temperature range.

ITEM 15 - CATEGORY II

Test facilities and equipment usable for the systems in Item 1, as follows:

- (a) Vibration test equipment using digital control techniques and specially designed ancillary equipment and software therefor capable of imparting forces of 100 kN (22,500 lbs) or greater;
- (b) Supersonic (Mach 1.4 to Mach 5), hypersonic (Mach 5 to Mach 15), and hypervelocity (above Mach 15) wind tunnels, except those specially designed for educational purposes and having a test section size (measured internally) of less than 25 cm (10 inches);
- (c) Test benches with the capacity to handle solid or liquid fuel rockets of more than 20,000 lbs of thrust, and capable of measuring the three thrust components.

Note to Item 15(a): The term "digital control" refers to equipment, the functions of which are, partly or entirely, automatically controlled by stored and digitally coded electrical signals.

ITEM 16 - CATEGORY II

Specially designed software, or specially designed software and related specially designed analog or hybrid (combined analog/digital) computers, for modeling, simulation, or design integration of rocket systems and unmanned air vehicle systems, usable for the systems in Item 1.

ITEM 17 - CATEGORY II

Technology, materials, and devices for reduced observables such as radar reflectivity, optical/infrared signatures and acoustic signatures (i.e., stealth technology), for military application in rocket systems and unmanned air vehicles, and usable for the systems in Item 1, for example:

- (a) Structural materials and coatings specially designed for reduced radar reflectivity;
- (b) Optical coatings, including paints, specially designed or formulated for reduced optical reflection or emissivity, except when specially used for thermal control of satellites.

ITEM 18 - CATEGORY II

Technology and devices specially designed for use in protecting rocket systems and unmanned air vehicles against nuclear effects (e.g., Electromagnetic Pulse (EMP), X-rays, combined blast and thermal effects), and usable for the systems in Item 1, for example:

- (a) Hardened microcircuits and detectors specially designed to withstand radiation as follows:
 - (1) Neutron dosage of 1×10^{12} neutrons/cm² (single event);
 - (2) Gamma dose rate of 1×10^9 rads/sec;
 - (3) Total dose 1500 rads (single event).
- (b) Radomes specially designed to withstand a combined thermal shock greater than 100 cal/cm² accompanied by a peak overpressure of greater than 7 pounds per square inch.

Note to Item 18(a): A microcircuit is defined as a device in which a number of passive and active circuit elements are considered as indivisibly associated on or within a continuous structure to perform the function of a circuit.

BACKGROUND PAPER

MISSILE TECHNOLOGY CONTROL REGIME

Questions and Answers

Q1: What is the purpose of the Missile Technology Guidelines?

A1: The purpose of the Guidelines is to limit the risks of nuclear proliferation by controlling transfers of equipment and technology which could make a contribution to nuclear weapons delivery systems other than manned aircraft. These Guidelines would complement existing non-proliferation efforts.

Q2: Which countries participated in the formulation of the Guidelines?

A2: Canada, France, the Federal Republic of Germany, Italy, Japan, the United Kingdom, and the United States.

Q3: Is this an international agreement?

A3: No. The seven governments have issued identical statements of national policy.

Q4: Is this just another attempt by the Economic Summit Seven to impose further controls on high technology to the developing world?

A4: No. The seven countries are the major Western suppliers of missile-related technology and equipment. It is the continuing aim of our policy to encourage international cooperation in the peaceful use of modern technology, but this should be done in a way fully consistent with the aims of our mutually agreed non-proliferation policy.

Q5: Is there any special reason why these Guidelines are being announced at this particular time?

A5: No. Discussions on the content of the Guidelines have been continuing for about four years and full convergence of views was only reached in December of 1986.

Q6: Were any developing countries invited to participate in these discussions?

A6: The participants in the discussion were those countries which are major suppliers of missile-related equipment and technology. As technology holders, they are therefore the

countries which are in the best position to decide how to standardize their national controls. As is stated in the Guidelines, the Canadian Government welcomes the adherence of all states to the guidelines in the interest of international peace and stability.

Q7: What criteria will be used in deciding whether an export will contribute to a nuclear weapons delivery system?

A7: The criteria, as described in paragraph 2 of the Guidelines, are as follows:

- a) nuclear proliferation concerns;
- b) the capabilities and objectives of the missile and space programmes of the recipient states;
- c) the significance of the transfer in terms of the potential development of nuclear weapons delivery systems other than manned aircraft;
- d) the assessment of the end-use of the transfers;
- e) the applicability of relevant multilateral agreements.

Q8: Is there a "Hit-List" of countries at which the controls set forth in the Guidelines are specifically aimed?

A8: There is no such list of countries and the Guidelines are not directed against peaceful cooperative activities with developing countries.

Q9: Will a decision on whether to approve an export be made on the basis of consensus?

A9: No. The decision is left to national discretion.

Q10: The USSR has been a prominent participant in non-proliferation agreements. Was it invited to participate in discussions on the Missile Technology Guidelines?

A10: No. It is true that the Soviet interest in non-proliferation generally parallels that of Western countries. In this instance, however, the countries involved preferred to discuss and develop the Guidelines among themselves. The USSR and, in fact, all countries are invited to adhere to the Guidelines.

Q11: Is there any connection between the Missile Technology Guidelines and the Nuclear Suppliers' Guidelines?

A11: No. The two sets of guidelines are aimed at controlling different items and differ in other details. However, they are parallel efforts arising from shared proliferation concerns.

Q12: Will adoption of the Guidelines by the Canadian Government jeopardize our exports?

A12: We believe that adoption of the Guidelines will have little effect on Canada's commercial competitiveness. The Guidelines are not aimed at preventing exports for peaceful purposes.

Q13: How will each Government use the Annex?

A13: Each government will use its own national export control legislation and procedures to implement control of the transfer of the items on the Annex. In Canada these items are controlled by the Export Control List of the Export and Import Permits Act.

Q14: Are there any secret provisions to the Missile Technology Guidelines?

A14: The material released today is the complete package to which we hope all nations will adhere. As is always the case with diplomatic discussions, the record of the discussions on the Guidelines is and shall remain confidential.

Q15: Do the Guidelines permit the export of these items to recipient countries which do not have nuclear weapons development programs, since a country without such a program poses no nuclear proliferation threat?

A15: This depends on the individual case. However, it is worth noting that missiles for delivering nuclear weapons can be acquired in advance of developing the weapons themselves.

Q16: Can all items on the Annex be sold to countries which participated in the formulation of the Guidelines?

A16: We do not foresee any transfers to these countries that would be prevented by these Guidelines.

Q17: What measures, if any, have the participating governments adopted to ensure complete compliance with the Guidelines by other participants?

A17: Each government which is adhering to the Guidelines is doing so voluntarily and has publicly expressed its policy to control the export of equipment and technology applicable to missiles.

Q18: What measures, if any, have the participating governments adopted to penalize organizations or individuals who violate the Guidelines?

A18: Within its own jurisdiction or control, each government adhering to the Guidelines is solely responsible for their implementation and enforcement.

Q19: Are there any countries in particular which the original seven plan to recruit or hope will adhere to these guidelines?

A19: All countries are invited to adhere to the guidelines.

Q20: Won't the Guidelines hamper NORAD and NATO cooperation?

A20: No. The application of these Guidelines is subject to Canada's international treaty obligations.

Q22: What international cooperation is permitted by the Guidelines in the areas of science and space activity?

A22: The Guidelines are not designed to impede programs or cooperation that could not contribute to nuclear weapons delivery systems. Under the Guidelines, international cooperation will continue, grow, and diversify. Specifically, the Guidelines permit a broad range of international cooperation including:

- [1] provision of launch services;
- [2] cooperative educational and institution-building activities;
- [3] laboratory-to-laboratory and service-to-service agreements;
- [4] coordinated bilateral and multilateral research programs; and
- [5] exports of hardware, software, technology, and services.

Q23: What international cooperation is permitted by the Guidelines in the area of military activity?

A23: The Guidelines permit cooperation on manned aircraft and on all forms of missiles with range less than 300 km or payload less than 500 kg.

Q24: Why were the parameters for Category I missile systems set at a range of at least 300 km and a payload of at least 500 kg?

A24: The 300 km range was established for two reasons. First, this parameter corresponds to strategic distances in the most compact theaters of potential conflict where nuclear missiles might become a threat. Allowing for military practice of deploying long range missiles well back from a national border, a strategic distance is approximately 300 km or greater. Second, a 300 km range is a workable parameter with respect to existing international commerce. There are no large missile systems in widespread commerce with ranges of 300 km, with the possible exception of the Soviet SCUD B. Because there is substantial trade in missiles with lower ranges, the 300 km parameter is the lowest realistically achievable control parameter.

The 500 kg payload parameter takes into account the fact that potential nuclear weapons relevant to this policy are not highly sophisticated. It takes a relatively high level of technological expertise to make a very small warhead. Warheads of concern are likely to require a payload of 500 kg or greater.