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(d) Non-Combatant Support, Service and Miscellaneous Vessels (e.g., including but not limited to: DSRV, DSV, NR, YRR).

[58 FR 60115, Nov. 15, 1993]

§ 121.16 Missile Technology Control Regime Annex.

Some of the items on the Missile Technology Control Regime Annex are controlled by both the Department of Commerce on the Commodity Control List and by the Department of State on the United States Munitions List. To the extent an article is on the United States Munitions List, a reference appears in parentheses listing the U.S. Munitions List category in which it appears. The following items constitute all items on the Missile Technology Control Regime Annex which are covered by the U.S. Munitions List:

ITEM 1—CATEGORY I

Complete rocket systems (including ballistic missile systems, space launch vehicles, and sounding rockets (see § 121.1, Cat. IV(a) and (b)) and unmanned air vehicle systems (including cruise missile systems see § 121.1, Cat. VIII (a), target drones and reconnaisance drones (see § 121.1, Cat. VIII (a)) capable of delivering at least a 500 kg payload to a range of at least 300 km.

ITEM 2—CATEOGRY I

Complete subsystems usable in the systems in Item 1 as follows:

(a) Individual rocket stages (see § 121.1, Cat. IV(h));

(b) Reentry vehicles (see § 121.1, Cat. IV(g)), and equipment designed or modified therefor, as follows, except as provided in Note (1) below for those designed for non-weapon payloads;

(1) Heat shields and components thereof fabricated of ceramic or ablative materials (see § 121.1, Cat. IV(f));

(2) Heat sinks and components thereof fabricated of light-weight, high heat capacity materials;

(3) Electronic equipment specially designed for reentry vehicles (see § 121.1, Cat. XI(a)(7));

(c) Solid or liquid propellant rocket engines, having a total impulse capacity of 1.1 x 10 N-sec (2.5 x 10 lb-sec) or greater (see § 121.1, Cat. IV, (h)).

(d) ''Guidance sets'' capable of achieving system accuracy of 3.33 percent or less of the range (e.g., a CEP of 1 j,. or less at a range of 300 km), except as provided in Note (1) below for those designed for missiles with a range under 300 km or manned aircraft (see § 121.1, Cat. XII(d));

(e) Thrust vector control sub-systems, except as provided in Note (1) below for those designed for rocket systems that do not exceed the range/payload capability of Item 1 (see § 121.1, Cat. IV);

(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 (see § 121.1, Cat. IV(h)).

NOTES TO ITEM 2

(1) The exceptions in (b), (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, and defined as the radius of the circle centered at the target, at a specific range, in which 50 percent of the payloads impact.

(3) A ''guidance set'' integrates the process of measuring and computing a vehicle's position and velocity (i.e. navigation) with that of computing and sending commands to the vehicle's flight control systems to correct the trajectory.

(4) Examples of methods of achieving thrust vector control which are covered by (e) include:

(i) Flexible nozzle;

(ii) Fluid or secondary gas injection;

(iii) Movable engine or nozzle; Deflection of exhaust gas stream (jet vanes or probes); or

(v) Use of thrust tabs.

ITEM 3—CATEGORY II

Propulsion components and equipment usable in the systems in Item 1, as follows:

(a) Lightweight turbojet and turbofan engines (including) turbocompound engines) that are small and fuel efficient (see § 121.1, both Cat. IV(h) and VIII(b));

(b) Ramjet/Scramjet/pulse jet/combined cycle engines, including devices to regulate combustion, and specially designed components therefor (see § 121.1, both Cat. IV(h) and Cat. VIII(b));

(c) Rocket motor cases, ''interior lining'', ''insulation'' and nozzles therefor (see § 121.1, Cat. IV(h) and Cat. V(c));

(d) Staging mechanisms, separation mechanisms, and interstages therefor (see § 121.1, Cat. IV(c) and (h));

(e) Liquid and slurry propellant (including oxidizers) control systems, and specially designed components therefor, designed or modified to operate in vibration environments of more than 100 g RMS between 20 Hz and,000 Hz (see § 121.1, Cat. IV(c) and (h));

(f) Hybrid rocket motors and specially designed components therefor (see § 121.1, Cat. IV(h)).

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) In Item 3(C), ''interior lining'' suited for the bond interface between the solid propellant and the case or insulating liner is usually a liquid polymer based dispersion of refractory or insulating materials, e.g., carbon filled HTPB or other polymer with added curing agents to be sprayed or screeded over a case interior (see § 121.1, Cat. V(c)).

(3) In Item 3(c), ''insulation'' intended to be applied to the components of a rocket motor, i.e., the case, nozzle inlets, case closures, includes cured or semi-cured compounded rubber sheet stock containing an insulating or refractory material. It may also be incorporated as stress relief boots or flaps.

(4) The only servo valves and pumps covered in (e) above, are the following:

(i) Servo valves designed for flow rates of 24 liters per minute or greater, at an absolute pressure of 7,000 kPa (1,000 psi) or greater, that have an actuator response time of less than 100 msec;

(ii) Pumps, for liquid propellants, with shaft speeds equal to or greater than 8,000 RPM or with discharge pressures equal to or greater than 7,000 kPa (1,000 psi).

(5) Item 3(e) systems and components may be exports as part of a satellite.

ITEM 4—CATEGORY II

Propellants and constituent chemicals for propellants as follows: (see § 121.1, Cat. V(c) and § 121.12 and § 121.14).

(a) Propulsive substances:

(1) Hydrazine with a concentration of more than 70 percent and its derivatives including monomethylhydrazine (MMH) (see § 121.12(a)(22));

(2) Unsymmetric dimethylhydrazine (UDHM) (see § 121.12(a)(22));

(3) Ammonium perchlorate (see § 121.12(a)(23));

(4) Spherical aluminum powder with particle of uniform diameter of less than 500 x 10-m (500 micrometer) and an aluminum content of 97 percent or greater (see § 121.12(a)(1));

(5) Metal fuels in particle sizes less than 500 x 10-m (500 Microns), whether spherical, atomized, spheroidal, flaked or ground, consisting of 97 percent or more of any of the following: zirconium, beryllium, boron, magnesium, zinc, and alloys of these (see § 121.12(a)(2));

(6) Nitro-amines (cyclotetramethylene-tetranitramene (HMX) (see § 121.12(a)(11)), cyclotrimethylene-trinitramine (RDX)) (see 121.12(a)(35));

(7) Perchlorates, chlorates or chromates mixed with powdered metals or other high energy fuel components (see § 121.12(a)(4);

(8) Carboranes, decaboranes, pentaboranes and derivatives thereof (see § 121.12(a)(10);

(9) Liquid oxidizers, as follows:

(i) Nitrogen dioxide/dinitrogen tetroxide (see § 121.14.(g));

(ii) Inhibited Red Fuming Nitric Acid (IRFNA) (see § 121.12(f)(1);

(iii) Compounds composed of flourine and one or more of other halogens, oxygen or nitrogen (see § 121.12(a)(9).

(b) Polymeric substances:

(2) Hydroxy-terminated polybutadiene (HTPB) (see § 121.12(a)(38);

(3) Glycidyl azide polymer (GAP) (see § 121.12(b)(1)).

(c) Other high energy density propellants such as, Boron Slurry, having an energy density of 40 x 10 joules/kg or greater (see § 121.12(a)(3)).

(d) Other propellant additives and agents:

(1) Bonding agents as follows:

(i) tris(1-(2-methyl)aziridinyl phosphine oxide (MAPO) (see § 121.12(b)(17));

(ii) trimesol-1(2-ethyl)aziridine (HX–868, BITA) (see § 121.12(b)(13));

(iii) ''Tepanol'' (HX–878), reaction product of tetraethylenepentamine, acrylonitrile and glycidol (see § 121.12.(b)(11));

(iv) ''Tepan'' (HX–879), Reaction product of tet enepentamine and acrylonitrile (see § 121.12(b)(11));

(v) Polyfunctional aziridene amides with isophthalic, trimesic, isocyanuric, or trimethyladipic backbone also having a 2-methyl or 2-ethyl aziridine group (HX–752, HX–872 and HX–877). (see § 121.12(b)(13)).

(2) Curing agents and catalysts as follows:

(i) Triphenyl bismuth (TPB) (see § 121.12(b)(23));

(3) Burning rate modifiers as follows:

(i) Catocene (see § 121.12(b)(5));

(ii) N-butyl-ferrocene (see § 121.12(b)(5));

(iii) Other ferrocene derivatives (see § 121.12(b)).

(4) Nitrate esters and nitrato plasticizers as follows:

(i) 1,2,4-butanetriol trinitrate (BTTN) (see § 121.12(b)(3));

(5) Stabilizers as follows:

(i) N-methyl-p-nitroaniline (see § 121.12(d)(1)).

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 organix matrix or metal matrix utilizing fibrous or filamentary reinforcements having a specific tensile strength greater than 7.62×10^4 m (3

x 10^6 inches) and a specific modules greater than 3.18 x 10^6 m (1.25 x 10^8 inches), (see § 121.1, Category IV (f), and Category XIII (d));

(b) Resaturated pyrolized (i.e. carbon-carbon) materials designed for rocket systems, (see § 121.1 Category IV (f));

(c) Fine grain recrystallized bulk graphites (with a bulk density of at least 1.72 g/cc measured at 15 degrees C), pyrolytic, or fibrous reinforced graphites useable for rocket nozzles and reentry vehicle nose tips (see § 121.1, Category IV (f) and Category XIII;

(d) Ceramic composites materials (dielectric constant less than 6 at frequencies from 100 Hz to 10,000 MHz) for use in missile radomes, and bulk machinable silicon-carbide reinforced unfired ceramic useable for nose tips (see § 121.1, Category IV (f));

ITEM 9—CATEGORY II

Instrumentation, navigation and direction finding equipment and systems, and associated production and test equipment as follows; and specially designed components and software therefor:

(a) Integrated flight instrument systems, which include gyrostabilizers or automatic pilots and integration software therefor; designed or modified for use in the systems in Item 1 (See § 121.1, Category XII(d));

(b) Gyro-astro compasses and other devices which derive position or orientation by means of automatically tracking celestrial bodies or satellites (see § 121.1, Category XV(d));

(c) Accelerometers with a threshold of 0.05 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 (see § 121.1, Category VIII(e) and Category XII (d));

(d) All types of gyros usable in the systems in Item 1, with a rated drift rate stability of less than 0.5 degree (1 sigma or rms) per hour in a 1 q environment (see § 121.1, Category VIII(e) and Category XII(d));

(e) Continuous output accelerometers or gyros of any type, specified to function at acceleration levels greater than 100 g (see § 121.1, Category XII(d));

(f) Inertial or other equipment using accelerometers described by subitems (c) and (e) above, and systems incorporating such equipment, and specially designed integration software therefor (see § 121.1, Category VIII (e) and Category XII(d));

NOTES TO ITEM 9

(1) 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.

(2) In subitem (d):

(i) Drift rate is defined as the time rate of output deviation from the desired output. It consists of random and systematic components and is expressed as an equivalent angular displacement per unit time with respect to inertial space.

(ii) Stability is defined as standard deviation (1 sigma) of the variation of a particular parameter from its calibrated value measured under stable temperature conditions. This can be expressed as a function of time.

ITEM 10—CATEGORY II

Flight control systems and ''technology'' as follows; designed or modified for the systems in Item 1.

(a) Hydraulic, mechanical, electro-optical, or electro-mechanical flight control systems (including fly-by-wire systems), (see § 121.1, Category IV (h));

(b) Attitude control equipment, (see § 121.1, Category IV, (c) and (h));

(c) Design technology for integration of air vehicle fuselage, propulsion system and lifting control surfaces to optimize aerodynamic performance throughout the flight regime of an unmanned air vehicle, (see § 121.1, Category VIII (k));

(d) Design technology for integration of the flight control, guidance, and propulsion data into a flight management system for optimization of rocket system trajectory, (see § 121.1, Category IV (i)).

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, ''technology'' and components as follows; designed or modified for use in the systems in Item 1, and specially designed software therefor:

(a) Radar and laser radar systems, including altimeters (see § 121.1, Category XI(a)(3));

(b) Passive sensors for determining bearings to specific electromagnetic sources (direction finding equipment) or terrain characteristics (see § 121.1, Category XI(b) and (d));

(c) Global Positioning System (GPS) or similar satellite receivers;

(1) Capable of providing navigation information under the following operational conditions:

(i) At speeds in excess of 515 m/sec (1,000 nautical miles/hours); and

(ii) At altitudes in excess of 18 km (60,000 feet), (see § 121.1, Category XV(d)(2); or

(2) Designed or modified for use with unmanned air vehicles covered by Item 1 (see § 121.1, Category XV(d)(4)).

(d) Electronic assemblies and components specifically designed for military use and operation at temperatures in excess of 125 degrees C, (see § 121.1, Category XI(a)(7)).

(e) Design technology for protection of avionics and electrical subsystems against electromagnetic pulse (EMP) and electromagnetic interference (EMI) hazards from external sources, as follows, (see § 121.1, Category XI (b)).

(1) Design technology for shielding systems;

(2) Design technology for the configuration 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:

(i) Terrain contour mapping equipment;

(ii) Scene mapping and correlation (both digital and analog) equipment;

(iii) Doppler navigation radar equipment;

(iv) Passive interferometer equipment;

(v) Imaging sensor equipment (both active and passive);

(3) In subitem (a), laser radar systems embody specialized transmission, scanning, receiving and signal processing techniques for utilization of lasers for echo ranging, direction finding and discrimination of targets by location, radial speed and body reflection characteristics.

ITEM 12—CATEGORY II

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

(a) Apparatus and devices designed or modified for the handling, control, activation and launching of the systems in Item 1, (see § 121.1, Category IV(c));

(b) Vehicles designed or modified for the transport, handling, control, activation and launching of the systems in Item 1, (see § 121.1, Category VII(d));

(c) Telemetering and telecontrol equipment usable for unmanned air vehicles or rocket systems, (see § 121.1, Category XI(a));

(d) Precision tracking systems:

(1) Tracking systems which use a translb nv 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 in-flight position and velocity, (see § 121.1, Category XI(a));

(2) Range instrumention radars including associated optical/infrared trackers and the specially designed software therefor with all of the following capabilities (see § 121.1, Category XI(a)(3)):

(i) angular resolution better than 3 milliradians (0.5 mils);

(ii) range of 30 km or greater with a range resolution better than 10 meters RMS;

(iii) velocity resolution better than 3 meters per second.

(3) Software which processes post-flight, recorded data, enabling determination of vehicle position throughout its flight path (see § 121.1, Category IV(i)).

ITEM 13—CATEGORY II

Analog computers, digital computers, or digital differential analyzers designed or modified for use in the systems in Item 1 (see § 121.1, Category XI (a)(6), having either of the following characteristics:

(a) Rated for continuous operation at temperature from below minus 45 degrees C to above plus 55 degrees C; or

(b) Designed as ruggedized or ''radiation hardened''.

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, usable in the system in Item 1, having either of the following characteristics:

(a) Designed to meet military specifications for ruggedized equipment (see § 121.1, Category XI(d)); or,

(b) Designed or modified for military use (see § 121.1, Category XI(d)); and being one of the following types:

(1) Analog-to-digital converter ''microcircuits,'' which are ''radiation hardened'' or have all of the following characteristics:

(i) Having a resolution of 8 bits or more;

(ii) Rated for operation in the temperature range from below minus 54 degrees C to above plus 125 degrees C; and

(iii) Hermetically sealed.

(2) Electrical input type analog-to-digital converter printed circuit boards or modules, with all of the following characteristics:

(i) Having a resolution of 8 bits or more;

(ii) Rated for operation in the temperature range from below minus 45 degrees C to above plus 55 degrees C; and

(iii) Incorporated ''microcircuits'' listed in (1), above.

ITEM 16—CATEGORY II

Specially designed software, or specially designed software with related specially designed hybrid (combined analog/digital) computers, for modeling, simulation, or design integration of the systems in Item 1 and

Item 2 (see §121.1, Category IV(i) and Category XI(a)(6)).

NOTE TO ITEM 16

The modelling includes in particular the aerodynamic and thermodynamic analysis of the system.

ITEM 17—CATEGORY II

Materials, devices, and specially designed software for reduced observables such as radar reflectivity, ultraviolet/infrared signatures on acoustic signatures (i.e. stealth technology), for applications usable for the systems in Item 1 or Item 2 (see §121.1, Category XIII (e) and (k)), for example:

(a) Structural material and coatings specially designed for reduced radar reflectivity;

(b) Coatings, including paints, specially designed for reduced or tailored reflectivity or emissivity in the microwave, infrared or ultraviolet spectra, except when specially used for thermal control of satellites.

(c) Specially designed software or databases for analysis of signature reduction.

(d) Specially designed radar cross section measurement systems (see §121.1, Category XI(a)(3)).

ITEM 18—CATEGORY II

Devices 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, as follows (see §121.1, Category IV (c) and (h)):

(a) ''Radiation Hardened'' ''microcircuits'' and detectors (see §121.1, Category XI(c)(3) Note: This commodity has been formally proposed for movement to category XV(e)(2) in the near future).

(b) Radomes designed to withstand a combined thermal shock greater than 1000 cal/sq cm accompanied by a peak over pressure of greater than 50 kPa (7 pounds per square inch) (see §121.1, Category IV(h)).

NOTE TO ITEM 18(a)

A detector is defined as a mechanical, electrical, optical or chemical device that automatically identifies and records, or registers a stimulus such as an environmental change in pressure or temperature, an electrical or electromagnetic signal or radiation from a radioactive material. The following pages were removed from the final itar for replacement by DTC's updated version section 6(l) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(l)), as amended. In accordance with this provision, the list of MTCR Annex items shall constitute all items on the U.S. Munitions List in §121.16.

PART 122—REGISTRATION OF MANUFACTURERS AND EXPORTERS

Sec.
122.1 Registration requirements.
122.2 Submission of registration statement.
122.3 Registration fees.
122.4 Notification of changes in information furnished by registrants.
122.5 Maintenance of records by registrants.

AUTHORITY: Secs. 2 and 38, Pub. L. 90–629, 90 Stat. 744 (22 U.S.C. 2752, 2778); E.O. 11958, 42 FR 4311, 1977 Comp. p. 79; 22 U.S.C. 2658.

SOURCE: 58 FR 39298, July 22, 1993, unless otherwise noted.

§122.1 Registration requirements.

(a) Any person who engages in the United States in the business of either manufacturing or exporting defense articles or furnishing defense services is required to register with the Office of Defense Trade Controls. Manufacturers who do not engage in exporting must nevertheless register.

(b) *Exemptions.* Registration is not required for:

(1) Officers and employees of the United States Government acting in an official capacity.

(2) Persons whose pertinent business activity is confined to the production of unclassified technical data only.

(3) Persons all of whose manufacturing and export activities are licensed under the Atomic Energy Act of 1954, as amended.

(4) Persons who engage only in the fabrication of articles for experimental or scientific purpose, including research and development.

(c) *Purpose.* Registration is primarily a means to provide the U.S. Government with necessary information on who is involved in certain manufacturing and exporting activities. Registration does not confer any export rights or privileges. It is generally a precondition to the issuance of any license or other approval under this subchapter.

§122.2 Submission of registration statement.

(a) *General.* The Department of State Form DSP–9 (Registration Statement) and the transmittal letter required by paragraph (b) of this section must be submitted by an intended registrant