1082. TEST, INSPECTION AND PRODUCTION EQUIPMENT

Water tunnels, having a background noise of less than 100 dB (reference 1 micropascal, 1 Hz) in the frequency range from 0 to 500 Hz, designed for measuring acoustic fields generated by a hydro-flow around propulsion system models.

1083. MATERIALS

1083. Syntactic foam for underwater use:
1. Designed for marine depths exceeding 1,000 m; and
2. With a density less than 561 kg/m^3.

Technical Note:
Syntactic foam consists of hollow spheres of plastic or glass embedded in a resin matrix.

1084. SOFTWARE

1084. 1. "Software" specially designed or modified for the "development", "production" or "use" of equipment or materials embargoed by 1081., 1082. or 1083;
2. Specific "software" specially designed or modified for the "development", "production", repair, overhaul or refurbishing (re-machining) of propellers specially designed for underwater noise reduction.

1085. TECHNOLOGY

1085. 1. Technology according to the General Technology Note for the "development" or "production" of equipment or materials embargoed by 1081., 1082. or 1083.;
2. Other technology, as follows:
   a. Technology for the "development", "production", repair, overhaul or refurbishing (re-machining) of propellers specially designed for underwater noise reduction;
   b. Technology for the overhaul or refurbishing of equipment embargoed by 1081.1., 1081.2.b., j., o. or p.

NOTES:
1. Governments may permit, as administrative exceptions, the shipment to the Czech Republic, Poland, and Slovak Republic of everything embargoed by this Category except:
   a. Submersible vehicles embargoed by 1081.1.a., 1081.1.b., 1081.1.c. or 1081.1.d.;
   b. Submersible systems or equipment embargoed by 1081.2.a., 1081.2.b., 1081.2.c., 1081.2.i. or 1081.2.j.;
   c. "Software" specially designed and technology "required" for the submersible vehicles, systems or equipment described in a. or b. embargoed by 1084 or 1085.
   d. Other technology for submersible vehicles, systems or equipment embargoed by 1085.2.
2. Governments may permit, as administrative exceptions, the shipment for civil end-uses (e.g., underwater oil, gas or mining operations) of manipulators embargoed by 1081.2.i.2. having 5 degrees of freedom of movement.
3. The Committee will favourably consider the export to the Czech Republic, Poland, and Slovak Republic of air independent power systems embargoed by 1081.2.j, and "software" specially designed and technology "required" therefor embargoed by 1084. or 1085. The Committee will approve exception requests tabled under the provisions of this Note if no member country has filed an objection within four weeks of the receipt of complete information on the case.

1090. PROPULSION

1091. EQUIPMENT, ASSEMBLIES AND COMPONENTS

(For propulsion systems designed or rated against neutron or transient ionizing radiation, see the Munitions List.)

1091. 1. Aero gas turbine engines incorporating any of the technologies embargoed by 1095.3.a., as follows:
   a. Not certified for the specific "civil aircraft" for which they are intended;
      NOTE:
      For the purpose of the "civil aircraft" certification process, a limited number of civil certified engines, assemblies or components may be exported as determined by Member Governments. This limited number is defined as the minimum required (up to 16, including spares) for civil certification.
   b. Not certified for civil use by the aviation authorities in a member country;
   c. Designed to cruise at speeds exceeding Mach 1.2 for more than thirty minutes;

1091. 2. Marine gas turbine engines with an ISO standard continuous power rating of 13,795 kW or more and a specific fuel consumption of less than 0.243 kg/kWh, and specially designed assemblies and components therefor;

1091. 3. Specially designed assemblies and components, incorporating any of the technologies embargoed by 1095.3.a., for the following gas turbine engine propulsion systems:
   a. Embargoed by 1091.1.; or
   b. Whose design or production origins are either proscribed countries or unknown to the manufacturer;

   NOTE:
   1091.3. does not embargo multiple domed combustors operating at average burner outlet temperatures equal to or less than 1,813 K (1,540°C).

1091. 4. Space launch vehicles or "spacecraft" (not including their payloads);
(For the embargo status of products contained in "spacecraft" payloads, see the appropriate Categories.)

1091. 5. Liquid rocket propulsion systems containing any of the systems or components embargoed by 1091.6.;

1091. 6. Systems or components, as follows, specially designed for liquid rocket propulsion systems:
   a. Cryogenic refrigerators, flightweight dewars, cryogenic heat pipes or cryogenic systems specially designed for use in space vehicles and capable of restricting cryogenic fluid losses to less than 30% per year;
   b. Cryogenic containers or closed-cycle refrigeration systems capable of providing temperatures of 100 K (-173°C) or less for "aircraft" capable of sustained flight at speeds exceeding Mach 3, launch vehicles or "spacecraft";
   c. Slush hydrogen storage or transfer systems;
   d. High pressure (exceeding 17.5 MPa) turbo pumps, pump components or their associated gas generator or expander cycle turbine drive systems;
   e. High-pressure (exceeding 10.6 MPa) thrust chambers and nozzles therefor;
   f. Propellant storage systems using the principle of capillary containment or positive expulsion (i.e., with flexible bladders);

1091. 7. Solid rocket propulsion systems with any of the following:
   a. 1. Total impulse capacity exceeding 1.1 MNs; or
      2. Specific impulse of 2.4 kNs/kg or more when the nozzle flow is expanded to ambient sea level conditions for an adjusted chamber pressure of 7 MPa;
   b. 1. Stage mass fractions exceeding 88%; and
      2. Propellant solid loadings exceeding 86%;
   c. Any of the components embargoed by 1091.8.; or
   d. Insulation and propellant bonding systems using direct-bonded motor designs to provide a strong mechanical bond or a barrier to chemical migration between the solid propellant and case insulation material;

1091. 8. Components, as follows, specially designed for solid rocket propulsion systems:
   a. Insulation and propellant bonding systems using liners to provide a strong mechanical bond or a barrier to chemical migration between the solid propellant and case insulation material;
   b. Filament-wound "composite" motor cases exceeding 0.61 m in diameter or having structural efficiency ratios (PV/W) exceeding 25 km;
      Technical Note:
      The structural efficiency ratio (PV/W) is the burst pressure (P) multiplied by the vessel volume (V) divided by the total pressure vessel weight (W).
   c. Nozzles with thrust levels exceeding 45 kN or nozzle throat erosion rates of less than 0.075 mm/s;

1091. 8. d. Movable nozzle or secondary fluid injection thrust vector control systems capable of:
      1. Omni-axial movement exceeding ±5°;
      2. Angular vector rotations of 20°/s or more; or
      3. Angular vector accelerations of 40°/s^2 or more;